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MCB CAMP LEJUENE
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FINAL RANGE IDENTIFICATION AND PRELIMINARY RANGE ASSESSMENT MCB CAMP LEJEUNE NC

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U S ARMY CORPS OF ENGINEERS

US Army Corps of Engineers
HUNTSVILLE ENGINEERING AND SUPPORT CENTER

FINAL

RANGE IDENTIFICATION AND PRELIMINARY RANGE ASSESSMENT

MARINE CORPS BASE CAMP LEJEUNE

ONSLOW, NORTH CAROLINA

DECEMBER 2001

Prepared by

US ARMY CORPS OF ENGINEERS

ST. LOUIS DISTRICT

EXECUTIVE SUMMARY

During 1997, the Headquarters, U.S. Marine Corps contracted with the U.S. Army Corps of Engineers, St. Louis District, to conduct archives research directed towards facilitating the development of a comprehensive range inventory on active Marine Corps installations. One purpose for these investigations is to establish all the military ranges, both active and historic, and determine the past Ordnance and Explosives (OE) and Chemical Warfare Materials (CWM) use or possible disposal at each base and/or air station. A second purpose is to develop data that can be used by the Marine Corps in responding to "range rule" requirements to protect the human health and the environment.

For **Marine Corps Base (MCB), Camp Lejeune**, these purposes were achieved by compiling information obtained through historical research at various archives and records holding facilities, performing aerial photo interpretation and map analysis, conducting interviews, and then evaluating the collected information. The research placed particular emphasis on identifying all military ranges, both active and historic, the dates of use, and the types, estimated quantities, and depth and density of ordnance and munitions used. The results of the investigation for **MCB Camp Lejeune** are published in a two-volume report. The first volume, entitled *"Archives Search Report (ASR)"*, presents the results of the archival research centering on "range rule" requirements and the summary of identified ranges. The second volume, the *"Range Identification and Preliminary Range Assessment"*, compiles information required by the "range rule" and provides individual range identification and assessment information. Over 200 eligible historic and current ranges and range related training facilities were identified as potentially requiring investigations to meet the future "range rule" guidelines. Range data is provided for all Marine Corps camps, bases, training areas, etc. generally treated at part of **Camp Lejeune**. These included the WW II era areas like Hadnot Point, Tent Camp, Paradise Point, Camp Knox, Montford Point, Rifle Range, Courthouse Bay, Onslow Beach, and the Peterfield Point Airfield, and the more recent Camp Geiger, Camp Johnson, MCAS New River, HOLF Camp Davis, and the Greater Sandy Run Area facilities.

MCB Camp Lejeune, which is known as the "World's Most Complete Amphibious Training Base", is located on the coastal plain in Onslow County, North Carolina. The military installation currently covers approximately 246 square miles (153,439 acres) and is bisected by the New River, which flows in a southeasterly direction and forms a large estuary before entering the Atlantic Ocean. The Atlantic Ocean (approximately 14 miles of beach) forms the southeastern boundary of the facility. The City of Jacksonville, North Carolina is located immediately northwest of the cantonment area. The recently acquired Greater Sandy Run Area forms the southwestern segment of modern **Camp Lejeune**. The Marine Corps Air Station, Cherry Point is 52 miles away and the distance to Morehead City, port of embarkation, is 45 miles.

In 1940 the Marine Corps made an aerial and ground survey of the southeastern coast from Norfolk to the Florida Everglades and of the Gulf Coast within 90 miles of Pensacola, with the end in view to select a suitable location for a new base. Marine Corps officers eventually recommended the New River area in North Carolina for a new base. After considering the air maps and pictures, local statistics, and making personal visits to many areas, a selection board decided on the New River (**MCB Camp Lejeune**) and Neuse River (MCAS Cherry Point) area

of Onslow County, North Carolina for a new Marine Corps Base. By 21 April 1941 construction began at New River on "Tent Camp No. 1"; and late in September 1941, the base received its first Marine trainees, the lst Marine Division. On 20 December 1941, the **New River Marine Barracks** was renamed **"Camp Lejeune"**, in honor of the late Lieutenant General John Archer Lejeune, who commanded the 2nd Division of the American Expeditionary Forces in France in World War I. The "Training Center" was formally organized at **Camp Lejeune** by the end of 1941. This center consisted of a School Battalion, Quartermaster Battalion, Engineer Battalion, Artillery Battalion, Infantry Battalion, Barrage Balloon Group, Parachute Battalion and Replacement Battalions -- virtually every phase of modern warfare except an air arm, which was provided by the nearby Marine Air Base at Cherry Point. Toward the end of World War II, the camp was designated as a home base for the Second Marine Division, which began to arrive home from Japan in July 1946. During World War II, and continuing during the Korean and Vietnam conflicts, **Camp Lejeune** has functioned as the major east coast training facility to prepare marines for combat.

In the early 1970s (Vietnam era), the military reservation covered approximately 170 square miles or 110,000 acres primarily in five distinct geographical locations under the jurisdiction of the Base Command. They included Camp Geiger (Infantry Training School), Montford Point (Service Support Schools-Field Medical Service), Mainside, Courthouse Bay, and the Rifle Range area. An adjacent and related 2,772-acre facility, Marine Corps Air Station (MCAS) New River, a helicopter base, existed under separate command (MCAS Cherry Point) on the west side of the New River. Under control of MCAS New River were two Helicopter Outlying Landing Fields (HOLF), HOLF Oak Grove, approximately 25 miles to the north, and HOLF Camp Davis, 10 miles to the southwest. The three major commands at **MCB Camp Lejeune** were Marine Corps Base, the 2d Marine Division and Force Troops Fleet Marine Force, Atlantic. Other historic base commands and facilities included the 1st Marines, Headquarters and Service Company, a complete Naval Hospital, specialized schools to provide training in engineering, supply and basic military training areas. In the late 1980s and early 1990s, investigations were conducted into ways of alleviating deficiencies in land training areas and available firing ranges at **MCB Camp Lejeune**, leading to the development of the Greater Sandy Run Area.

The *ASR* presents the results of the research efforts. These investigations concentrated on determining both historic and current ranges; identifying a brief history of the military activities; and performing a summary review of related site investigations, including previous site environmental studies and engineering and planning reports. In the report are the documentation of the repositories visited and records reviewed by archivists and historians; a summary of the site aerial photo and map analysis; real estate information; and a range summary section. This *ASR* site evaluation of past operations at **MCB Camp Lejeune** and its associated sites involved consideration of past maneuvers, storage and transportation functions, and training/practice with some form of OE.

The *"Range Identification and Preliminary Range Assessment"* compiles information required by the "range rule" and provides individual range identification and assessment information for **MCB Camp Lejeune** and associated facilities. The report provides the data needed for the initial phases in the process for evaluating the appropriate response actions on closed, transferred or transferring ranges. In addition to discussing the methodology followed to comply with the Range Identification and Preliminary Range Assessment phases, the report furnishes site specific

data for each identified range, discusses general munitions safety issues, and provides Ordnance Technical Data Sheets applicable to the **Camp Lejeune** ranges.

The reader is referenced to the Section 7 of the *ASR* for summary information for possible eligible ranges. A table describing all identified ranges on **MCB Camp Lejeune** in this Executive Summary would be extremely lengthy in size and likely not a practical addition. Should one be preferred, it can be readily included in the final Executive Summary.

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1.0 INTRODUCTION

1.1 AUTHORITY

Section 107 of the Federal Facilities Compliance Act of 1992 amended the Resource Conservation and Recovery Act (RCRA). This act required the U.S. Environmental Protection Agency (EPA) to promulgate regulations identifying when conventional and chemical military munitions become hazardous waste subject to RCRA Subtitle C regulations. The EPA's final military munitions rule, published 12 February 1997 (62 FR 6622), postponed action on identifying military munitions on closed, transferred, or transferring ranges as solid waste pursuant to the Department of Defense (DoD) developing the "range rule", to adequately protect human health and the environment.

The DoD proposed "range rule", *Closed, Transferred, and Transferring Ranges Containing Military Munitions*, Title 32 Code of Federal Regulations (CFR) Part 178, contains a five part process that is not inconsistent with the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA). The proposed rule is tailored to the special risks posed by military munitions and military ranges. The rule is proposed under the authorities of the Defense Environmental Restoration Program (DERP); the DoD Explosive Safety Board (DDESB); Section 104 of CERCLA as delegated to the DoD by Executive Order (EO) 12580 (59 FR 2923, January 23, 1987). Active and inactive ranges on military installations are not covered by the "range rule". *DoD Ammunition and Explosives Safety Standards (DOD 6055.9 STD)*, published in July 1997, provides range guidance on these facilities.

In July 1997, the Headquarters, U.S. Marine Corps, contracted with the U.S. Army Corps of Engineers, St. Louis District, to prepare an *Archive Search Report* (ASR) and *Range Identification and Preliminary Assessment Report* to facilitate development of a comprehensive range inventory on Marine Corps installations. These reports provide detailed information on facility missions and features relating to ordnance, explosives, suspected chemical warfare materials (CWM) and any other warfare materials (i.e., radiological, biological).

Since 1990, the U.S. Army Engineering and Support Center, Huntsville (USAESCH), has been the Center of Expertise (CX) and Design Center for Ordnance and Explosives (OE). In cooperation with the USAESCH, the U.S. Army Corps of Engineers, St. Louis District, prepares ASRs in support of environmental restoration at active Department of Defense installations, Formerly Used Defense Sites (FUDS) and installation transitions under Base Realignment and Closure (BRAC) recommendations.

1.2 SUBJECT

Marine Corps Base (MCB) Camp Lejeune, which is known as the "World's Most Complete Amphibious Training Base", is located in Onslow County, North Carolina **(**see **Plate 1**). The base began in the late 1930s when the Marine Corps realized existing bases at Parris Island, South Carolina, and Quantico, Virginia (Washington, D.C. region), were inadequate for training an expanded amphibious landing force, an action made necessary by the increasing international crises. **MCB Camp Lejeune**, today serves as the home of "Expeditionary Forces in Readiness", functions as the formal school training of approximately 40,000 Marines, and provides job enhancement training for over 8,000 Marines and Department of Defense employees. With 6,000 civilian employees and the approximately 32,000 dependents of the active Marines, along with over 30,000 military retired in the area, **MCB Camp Lejeune's** total regional family is in excess of 100,000 people (Master Plan or History Office, Marine Corps Base, Camp Lejeune, NC, 1998).

The installation currently occupies approximately 246 square miles (153,439 acres) and is bisected by the New River, which flows in a southeasterly direction and forms a large estuary before entering the Atlantic Ocean. The Atlantic Ocean forms the southeastern boundary of the cantonment sector. The City of Jacksonville, North Carolina is located immediately northwest of the cantonment sector. The western and northwestern boundaries of the main base area are U.S. Route 17 and State Route 24, respectively. A recent base expansion has been developed southwestward into an area referred to as the Greater Sandy Run Area (GSRA). This property is bounded by U.S. Route 17 on the east and State Route 50 on the west.

MCB Camp Lejeune owns all the real estate, operates entry-level formal training schools, and provides support and training for tenant commands. According to recently published information, the Corps' most senior command in the Atlantic Region, U.S. Marine Corps Forces Atlantic (MARFORLANT) has, since 1994, had its Headquarters located at the base. Also located at **Camp Lejeune** is the Standing Joint Task Force (SJTF) Headquarters, which was formed in 1996 to provide headquarters functions for three regional commands-U.S. Atlantic Command, European Command, and Southern Command. Along with MARFORLANT and SJTF, at least six major Marine Corps and two Navy Commands are stationed at **MCB Camp Lejeune**. The 2d Marine Division (2d MAR DIV) is the ground combat element of the Force II Marine Expeditionary Force (II MEF); and the 2d Force Service Support Group (2d FSSG) is the service and support element of the II MEF. The 2d Surveillance, Reconnaissance and Intelligence Group (2d SRIG) provides command, control, communication and full intelligence support to the Marine Air Ground Task Force (MAGTF). The MEF Augmentation Command Element (formerly the Reserve Command Element, Marine Air Ground Task Force) augments and reinforces the active component. Marine Corps Air Station (MCAS), New River houses the rotary wing elements of the 2d Marine Aircraft Wing (2d MAW), Marine Air Groups (MAG) 26 and 29. The 6th Marine Expeditionary Brigade (6th MEB) provides the planning staff for the Fleet Marine Force associated with the Maritime Prepositioning Ships Squadron-I. Navy commands are the Naval Regional Medical and Naval Dental Centers that provide primary medical and dental care to

marines and sailors stationed at **MCB Camp Lejeune** and medical care to their families (Marine Corps Base, Camp Lejeune, NC, 1998).

Historically, in mid-July 1940, then Commandant of the Marine Corps, Major General Thomas Holcomb, directed Major John C. McQueen (later Major General) and Captain Verne J. McCaul (later Brigadier General) to make an aerial and ground survey of the southeastern coast from Norfolk to the Florida Everglades and of the Gulf Coast within 90 miles of Pensacola, with the end in view to select a suitable location for a new base. The site recommended by these officers was the New River area in North Carolina. The Commandant then appointed a selection board, under the leadership of Lieutenant General Julian C. Smith, to choose a site. After considering locations from Maine to Florida, the board, studying air maps and pictures, local statistics, and making personal visits to many areas, decided on the New River and Neuse River area of Onslow County, North Carolina (Brief History of Camp Lejeune, North Carolina, History Office, Marine Corps Base, Camp Lejeune, NC, 1954).

On 15 February 1941, the House Naval Affairs Committee made the initial appropriation for surveys and land purchases, and additional monies were allotted soon after, and on 21 April 1941, construction contracts were awarded totaling $14,575,000. Construction began almost immediately at New River on "Tent Camp No. 1". When Lieutenant Colonel W. P. T. Hill, **Camp Lejeune's** first commanding officer, took command on May 1, 1941, an old summer cottage was used for the headquarters. A reconstructed tobacco barn became the base's first warehouse, and a good rain would turn the mud trails connecting the base with the outside world into a quagmire, making transportation almost impossible. In September 1941, the tent camp was activated as a command post under Colonel D. L. S. Brewster; and later that month the base received its first Marine trainees, the lst Marine Division, commanded by Major General Philip H. Torrey. On 20 December 1941, the New River Marine Barracks was renamed **"Camp Lejeune"**, in honor of the late Lieutenant General John Archer Lejeune, who commanded the 2nd Division of the American Expeditionary Forces in France in World War I (Brief History of Camp Lejeune, North Carolina, History Office, Marine Corps Base, Camp Lejeune, NC, 1954).

By the end of 1942, the "Training Center" was formally organized at **MCB Camp Lejeune.** The center consisted of a School Battalion, Quartermaster Battalion, Engineer Battalion, Artillery Battalion, Infantry Battalion, Barrage Balloon Group, Parachute Battalion and Replacement Battalions -- virtually every phase of modern warfare except an air arm, which was provided by the nearby Marine Air Base at Cherry Point. The original development plan encompassed ten major areas of the base: Hadnot Point (Headquarters and Cantonment), Tent Camp, Paradise Point (Officers Mess, Bachelor Office Quarters, Married Officers Quarters, Guest House), Midway Park (low cost Housing), Camp Knox (War Dog Training), Montford Point (First Headquarters location and recruit depot for black marines), Rifle Range, Courthouse Bay (Marine Corps' Engineer School-Amphibious Training), Onslow Beach (Seacoast Artillery and Anti-aircraft Artillery) and the Peterfield Point Airfield. During World War II, and continuing during the Korean and Vietnam conflicts, **Camp Lejeune** functioned as a training area to

prepare marines for combat. Toward the end of World War II, the camp was designated as a home base for the Second Marine Division, which began to arrive home from Japan in July 1946. Since that time, Fleet Marine Force (FMF) units also have been stationed there as tenant commands (Various Documents, History Office, Marine Corps Base, Camp Lejeune, NC, 1954).

By the early 1970s (Vietnam era), the military reservation covered 170 square miles or 110,000 acres primarily in five distinct geographical locations under the jurisdiction of the Base Command. They included Camp Geiger (Infantry Training School), Montford Point (Service Support Schools-Field Medical Service), Mainside, Courthouse Bay, and the Rifle Range area. An adjacent and related 2,772-acre facility, MCAS New River, a helicopter base, existed under separate command (MCAS Cherry Point) on the west side of the New River. Under control of MCAS New River were two Helicopter Outlying Landing Fields (HOLF), HOLF Oak Grove, approximately 25 miles to the north, and HOLF Camp Davis, 10 miles to the southwest. Then there were three major commands at **MCB Camp Lejeune**. They were Marine Corps Base, the 2d Marine Division and Force Troops Fleet Marine Force, Atlantic. Other historic base commands and facilities included Headquarters and Service Company, 1st Marines, Paradise Point; a complete Naval Hospital is situated on Hadnot Point; specialized schools to provide training in engineering, supply and basic military training areas; and the largest training school of the Marine Corps Base, the 1st Infantry Training Regiment located at Camp Geiger. Located at the initial construction site at **MCB Camp Lejeune**, Camp Geiger was the "Tent City" of the WW II era, where the first construction workers were housed and the lst Marine Division trained (Various Documents, History Office, Marine Corps Base, Camp Lejeune, NC, 1954).

In the late 1980s and early 1990s, investigations were conducted into ways of alleviating deficiencies in land training areas and available firing ranges at **MCB Camp Lejeune**. The development of the Greater Sandy Run Area (GSRA) evolved to address both the short-term and long-term training needs of the Marine Corps Atlantic Forces. GSRA, a 41,000+ acre parcel of land located to the southwest of **MCB Camp Lejeune**, is planned to encompass 10 ranges: 2 multi-purpose tank training ranges; 3 multi-purpose machine gun ranges; 3 infantry fire and maneuver ranges; and 2 anti-armor tracking ranges (Master Plan Update, GSRA, Marine Corps Base, Camp Lejeune, NC, 1998).

1.3 PURPOSE

The intent of the “range rule” is to establish a process for evaluating appropriate response actions on closed, transferred or transferring ranges. Response actions will address safety, human health and the environment. This report provides the data needed for the initial phases of this process for the installation’s closed, transferred or transferring ranges, as well as provide a historical baseline for the installation’s active and inactive ranges.

1.4 SCOPE

This report, *Range Identification and Preliminary Range Assessment*, compiles information required by the Range Rule from existing information. A companion volume, the Archives Search Report, contains details about the data collection and analysis and serves the evidence for the information contained within. This volume provides individual Range Identification sheets on each of the identified ranges, whether active, inactive, closed, transferred or transferring for the installation. This volume also contains a Preliminary Range Assessment on each of the identified ranges.

Note, this report was created based on existing information. Without verification by sampling of the range, several of the Range Assessment elements, particularly the estimates for the depth, quantity and density, will be limited to an educated guess. To adequately define these elements, an expanded range assessment may be required. Additionally, this Preliminary Range Assessment does not include information concerning the environmental setting of the installation. The Range Rule stipulates a Range Assessment should include: location and identity of human and environmental receptors potentially exposed, specific exposure routes of concern, hydrologic and hydrogeologic conditions, soils and geology, terrain, climate, biological resources and cultural resources. Previous reports and investigations regarding this installation prepared comprehensive information on these topics and will not be duplicated here.

1.5 METHODOLOGY

1.5.1 Archive Search Report

The companion volume, the *Archives Search Report*, contains supportive information used to analyze the installation for the range rule, including:

- A brief history of the military activities
- A review of related site investigations
- Review of archives and repositories visited for historical records, specifying the extent of the records searched
- An aerial photography and map analysis of the site
- Real estate information, past and present
- Findings of the site inspection
- Lists of cited references and copies of pertinent documents
- Interviews
- Photographs, both current and historic
- Historical maps/drawings

1.5.2 Range Identification

Range Identification, as required by the "range rule", includes a general account of an identified range. The location data describes the position and magnitude of each range. A plate supplements the location data on each range showing aerial extent. As of this writing, a system for assigning "unique range identifiers" has not been established. Therefore, this information is not contained within this report. Also, portions of the Range Identification may need to be updated to reflect any changes.

In preparing this report three different mapping systems were encountered (Progressive, State Planer, and UTM). An attempt was made to rectify these systems to the current UTM grid system. Errors in mapping, differing mapping datums, and conversion between systems may cause the dipicted location of a range to be in different locations during different time periods. Additionally, historic range regulations supplied grid coordinates that may be different from the location shown on a map from that period. Ranges, which appear from the discription to be the same, may appear in slightly different locations on various maps. The only practical procedure for location the exact position of the range is to conduct a survey of the ground to find the reminates of the historic range.

1.5.3 Preliminary Range Assessment

The Preliminary Range Assessment compiles an appraisal of the range based on existing data of varying levels of information. This information then forms a baseline for a qualitative risk assessment. The following subparagraphs discuss the general methods used to develop the assessments.

1.5.3.1 Types, Quantities and Locations of Munitions Used

The types, quantities and locations of munitions used are determined by one or more of the following:

- Specifically stated in historical maps, documents and photography
- Past and present range names, usage and number of years in service
- Visual site inspection (non-intrusive)
- Interviews with base personnel and former employees
- Ammunition Supply Point (ASP), Range Control and Explosive Ordnance Disposal (EOD) records
- Standing Operating Procedures (SOP)
- Regulations on training requirements and ammunition allocations

Available historical records often provide information regarding specific types of munitions used. In the absence of such data, typical models of munitions items used during that era will be substituted. Frequently, historic maps and aerial photography designate the locations of ranges. Records and documentation seldom reveal quantities. At times, quantity of munitions can be calculated by referring to regulations of that time frame which specify ammunition allocations for training. This method proves useful if the unit type and the number of years trained at a location are known. More often, quantity will be expressed as a qualitative factor based on frequency and years of range use.

1.5.3.2 Estimated Density of Munitions

Generally, reliable UXO density data does not exist until after sampling. Record reviews do not provide accurate estimates. This assessment phase follows the guidelines set in the *DoD Range Rule Risk Methodology Qualitative Risk Evaluation* (QRE), draft version, dated November 26, 1997. The range assessment provides an estimate based upon one or more of the following methods:

- UXO density can be estimated based on Range Control records, Ammunition Supply Point records, or military munitions usage data collected during record review and personnel interviews. Based on usage, the estimated quantity of munitions used at the range will be multiplied by the dud rate. If the dud rate is not available a default dud rate of 10% will be assumed.
- UXO density can be estimated from available site specific range or sector survey data, or, data from a similar range at the same installation.
- If no site specific data exists, sector specific UXO densities can be estimated from range setup data. UXO density within impact areas should be designated as “very high”, for buffer zones “high”, for safety fans “moderate” and for firing and release points “low”.

The following table will be used to estimate the density of munitions:

UXO DENSITY DESIGNATION	UXO DENSITY DESCRIPTION
Very High	More than 40 UXO per acre
High	More than 5 to 40 UXO per acre
Moderate	More than 1 to 5 UXO per acre
Low	1 or fewer UXO per acre

Previous and current range clearance operations provide useful information but identify only surface density, not buried density. For active open style ranges, the frequency of

use (logged hours from range control records) and years in operation may be the only resource available.

1.5.3.3 Estimated Depth of Munitions

Penetration analysis is estimated using either the Waterways Experiment Station (WES) equation or the nomograph published in TM 5-855-1. The equation developed by WES provides fragment penetration prediction for soils ranging from clay to dry sand. The equation is given as:

$$t_p = 1.975 W_f^{(1/3)} \; k_p \log(1 + 4.65(V_s/10^3)^2)$$

where

t_p = penetration depth (inches)
W_f = fragment weight (ounces)
k_p = constant depending on soil type
V_s = striking velocity of the projectile

As conservative values, the muzzle velocity has been used for V_s for projected munitions. Air dropped munitions use velocities of 500 feet per second (corresponding to 5000' altitude), 800 fps (10,000' altitude), and 1100 fps (20,000' altitude) when actual velocities cannot be determined. The projectile weight is used for the fragment weight, W_f.

Predicting buried UXO detection depths have been evaluated by the Army Environmental Center (AEC) through a series of tests at Jefferson Proving Ground. This project data has been evaluated by the Huntsville Center Corps of Engineers, and determined that maximum UXO detection depths can be estimated upon type of instrument used and the diameter of the munition. The figures shown in this report are based upon the magnetometer using the following formula:

$$\log(\text{depth}) = 1.354 \, (\log(\text{diameter}) - 2.655)$$

DOD 6055.9-STD refers to the nomographs in TM 5-855-1 to estimate penetration depth for ammunition which impacts the ground but fails to function. The nomograph requires four input parameters including striking velocity, soil type, nose shape and projectile weight. In the absence of a ballistic program to compute striking velocity, the muzzle velocity (a more publicized statistic) is used. Muzzle velocity is greater than striking velocity, therefore this parameter is conservative. For each current range, the munition capable of greatest ground penetration will be used.

The following publications provide additional information and guidance on depth penetration of bombs, projectiles and historic munitions:

- Department of the Army Technical Manual, TM 9-1907, *Ballistic Data Performance of Ammunition*, dated July 1948.

- Lehigh University, *Bomb Damage Analysis Vol II Part I Phase I-B*, dated 30 June 1949.
- Colorado School of Mines Research Foundation, Inc., *Bomb Penetration Project*, dated 15 June 1951.
- U. S. Army Engineering and Support Center, Huntsville,AL, *Penetration of Projectiles Into Earth, an Analysis of UXO Clearance Depths at Fort Ord*, revision 2, dated 19 August 1997.

1.5.3.4 Chemical Constituents

The U.S. Army Defense Ammunition Center (USADAC) at Savanna Army Depot Activity manages the Munitions Items Disposition Action System (MIDAS) database. This relational database consists of munitions components and constituents developed to support demil execution, resource recovery and recycling, research and development technology application and environmental permitting. The MIDAS database is a "work in progress program" and contains only a portion of the current conventional ammunition inventory. The possibility exists that ammunition items may be analyzed and not yet loaded onto the database. Contact the MIDAS team at 815-273-8365 or DSN 585-8365 for further clarification. The database is accessible on the Web site at:

http://206.39.34.252/midas/gen_info.html.

For a munition listed in the database, a complete inventory of all the constituents can be reproduced. A complete constituent output listing for a single item runs from a single page to dozens of pages. This report will not reproduce this information.

Additionally, MIDAS does not contain information on historic munitions. Available sources for constituents in these types of munitions involve researching item specific historical drawings, military specifications and technical manuals.

1.5.3.5 Specific Munitions Safety Issues

General safety precautions pertaining to potential ordnance response sites are included in Section 3.0. These precautions are not all inclusive. Official guidance is provided under NAVSEA OP-5, Volume 1, *Ammunition and Explosives Ashore*. Also, section 2.0 of this report identifies any item specific safety precautions.

2.0 RANGE IDENTIFICATION AND PRELIMINARY RANGE ASSESSMENT

2.1 ARTILLERY TRAINING AREA (1941)

The 1942 Construction Completion Report for **Camp Lejeune** identified this range as follows:

> The location and extent of the artillery impact and firing areas were determined as furnishing ample maneuver and firing facilities and causing the least possible interference with training and movements of troops and supplies. They permit traverse of 500 mils at a maximum range of approximately 20,000 yards. Guns may be landed through the surf, -- open fire, displace forward as much as 5,000 yards from the initial firing position and re-open fire. As all firing points are to the west of the main highway through the Training Center and fire is generally in a northwesterly direction, no interference with other activities will be encountered, -- except that the artillery firing will have to be coordinated with boat gun and anti-boat gun practice. In order to give variation in problems, firing may also be conducted in a general southerly direction from the vicinity of the emergency flying field. (Carr and J. E. Greiner Company, 1942)

This range also appears on an August 1941 map which shows proposed ranges on **Marine Corps Base, New River (Camp Lejeune)**.

2.1.1 Range Identification

Common Name: Artillery Training Area

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 2** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina

Start line from approximately
Latitude 34° 33' 45" N Longitude: 77° 16' 49" W
To
Latitude 34° 34' 23" N Longitude: 77° 16' 05" W
Military Grid: 9079 2695 to 9194 2810

Primary Direction of fire 300° Grid

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Unknown

It is assumed based upon the range name that 75mm, 105mm, and 155mm Howitzers used this range. However, other weapons may have been used.

Information Current as of: 1 February 2000

2.1.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
75mm HE	Point Detonating
75mm WP	Point Detonating
105mm HE	Point Detonating Mechanical Time
105mm WP	Point Detonating
105mm Illumination	Mechanical Time
155mm HE	Point Detonating Mechanical Time
155mm WP	Point Detonating
155mm Illumination	Mechanical Time

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1941 to approximately 1943

Locations within Range of Known Munitions Use: Artillery firing points and impact area. Multiple ranges share the impact area.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
75mm M48	4.9	6.4	9.8	2.5
105mm M1 (charge 7)	7.7	10.1	15.4	4.0
155mm M107	14.0	18.4	28.0	6.7

[1] Maximum detection depth using a magnetometer.

Information on Past Range Clearances: The Marine Corps conducts periodic clearances of ranges, but no specific information has been found to indicate that the entire impact area has had a range clearance conducted.

Specific Munitions Safety Issues: None

Types of Targets: Unknown

Other Past Uses: This range is the earliest range identified for this area.

Anticipated Future Use: Portions of this range are currently in use by other ranges. The “K-2” Impact Area and all of the current "K" Ranges are located within the impact area of this range.

Public Access: Area is located on a restricted access military reservation.

2.2 BOAT GUN RANGE "J" LOCATION

The 1942 Construction Completion Report identified this range as follows:

> Two targets 100 yards by 6 feet and sufficient point targets will require a beach area approximately 300 yards in length. The danger zone inland should be approximately 20 degrees to each site of the beach limits of the range and approximately 5,500 yards in depth for .30 Caliber machine gun firing.
>
> Site "J" west of Duck Creek Road was selected as the most suitable site. The danger zone falls largely into the artillery impact area. It lies to the westward of the Duck Creek Crossroad, and to the eastward of the usable area of Traps Bay.
> (Barrett, 1941)

This range also appears on an August 1941 map which shows proposed ranges on **Marine Corps Base, New River (Camp Lejeune)**.

2.2.1 Range Identification

Common Name: Boat Gun Range "J" location

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 2** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina

Range at beach center at approximately
Latitude: 34° 33' 26" N Longitude: 77° 17' 19" W
Military Grid: 9001 2638

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: .30 Caliber Machine Gun

Information Current as of: 1 February 2000

2.2.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1941 to approximately 1944

Locations within Range of Known Munitions Use: The only explosive hazard associated with .30 caliber ammunition is for complete rounds. Complete rounds would be found at the firing points. For this range, the firing points were boats up to 2000 yards from shore.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

NOTE: Complete rounds would be located on the boat or in the ocean. The amount of sedimentation in the ocean off shore from Onslow Beach is not addressed in this report and the depth that the munitions may be buried because of it is not determined.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Two 100 yards by 6-foot Area Targets and Individual Point Targets

Other Past Uses: This is the first documented military use of this range area.

Anticipated Future Use: This range is no longer in use but the impact area of the range is currently in use as a maneuver area

Public Access: Area is located on a restricted access military reservation.

2.3 RIFLE RANGE

The Rifle Range was originally approved in December 1941, and is still in its original location.

Camp Training Order Number 5 –1946, dated 19 March 1946, identified the Rifle Range as consisting of "A", "B", and "C" Ranges and authorized the firing of .30 Caliber weapons.

2.3.1 Range Identification

Common Name: Rifle Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 21** for location, also see plates 3, 4, 5, 6, 10, 12, 13, 16, 18, and 20)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 37' 21" N Longitude: 77° 26' 44" W
Military Grid: 7538 3080

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms

Information Current as of: 1 February 2000

2.3.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1942 to present

Locations within Range of Known Munitions Use: Explosive hazards exist only with complete rounds. Complete rounds would only be found at or near firing lines. This Range Complex originally had firing lines at 200, 300, 500, and 600 yards.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Fixed Targets

Other Past Uses: This is the first documented military use of this Range Area.

Anticipated Future Use: Continued use as a Rifle Range.

Public Access: Area is located on a restricted access military reservation.

2.4 PISTOL RANGE (RIFLE RANGE AREA)

A Pistol Range was constructed at the Rifle Range Complex at the same time the Rifle Range was constructed. The location of this range has not changed since it was constructed.

2.4.1 Range Identification

Common Name: Pistol Range (Rifle Range Area)
L-3 Pistol Range
L-1 Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 21** for location, range also appears on plates 3, 5, 6, 10, and 12)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 35' 41" N Longitude: 77° 26' 02" W
Military Grid: 7678 3085

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms

Information Current as of: 1 February 2000

2.4.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1942 to present

Locations within Range of Known Munitions Use: Explosive hazards exist only with complete rounds. Complete rounds would only be found at or near firing lines. Firing lines were constructed at 15 and 25 yards.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Fixed Targets

Other Past Uses: This is the first documented military use of this Range Area.

Anticipated Future Use: Continued use as a Pistol Range.

Public Access: Area is located on a restricted access military reservation.

2.5 1000-INCH RANGE (TENT CAMP AREA)

The only references uncovered on this range were on the map enclosed in the Construction Completion Report for **Camp Lejeune** (Carr and J. E. Greiner Company, 1942) and Camp Training Order Number 5-1946, dated 18 March 1946. The training order stated that the range was used for .30 Caliber weapons firing and as of the date of the order the range was disestablished.

2.5.1 Range Identification

Common Name: 1000-Inch Range (Tent Camp Area)

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 4** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 44' 07" N Longitude: 77° 27' 56" W
Military Grid: 7426 4652

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms

Information Current as of: 1 February 2000

2.5.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1942 to 1945

Locations within Range of Known Munitions Use: Explosive hazards exist only with complete rounds. Complete rounds would only be found at or near firing line.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Fixed Target Line

Other Past Uses: None

Anticipated Future Use: Unknown

This area is not currently used as a range.

Public Access: Area is located on a restricted access military reservation.

2.6 MINIATURE ANTI-AIRCRAFT RANGE (TENT CAMP AREA)

The only reference uncovered on this range was on the map enclosed in the Construction Completion Report for **Camp Lejeune**. (Carr and J. E. Greiner Company, 1942) TM 9-855, dated 17 August 1944, identifies a Miniature Antiaircraft Range as a wide angle of fire range limited to .22 Caliber weapons firing against aerial targets on a wire and pulley system.

2.6.1 Range Identification

Common Name: Miniature Anti-Aircraft Range (Tent Camp Area)

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 4** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 44' 04" N Longitude: 77° 27' 48" W
Military Grid: 7446 4612

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms .22 Caliber

Information Current as of: 1 February 2000

2.6.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1942 to 1945

Locations within Range of Known Munitions Use: Explosive hazards exist only with complete rounds. Complete rounds would only be found at or near firing line.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Moving Panels

Other Past Uses: None

Anticipated Future Use: Unknown

Public Access: Area is located on a restricted access military reservation.

2.7 MINATURE ANTI-TANK RANGE (TANK BATTALION TENT CAMP)

The only reference uncovered on this range was on the map enclosed in the Construction Completion Report for **Camp Lejeune** (Carr and J. E. Greiner Company, 1942). TM 9-855, dated 17 August 1944, identifies a 1000-Inch Miniature Antitank Range that involved firing at a moving target car on a traverse track. The downrange safety distance of 1,600 yards indicated that firing was limited to .22 Caliber weapons.

2.7.1 Range Identification

Common Name: Miniature Anti-Tank Range (Tank Battalion Tent Camp)

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 3** and **4** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 43' 29" N Longitude: 77° 28' 32" W
Military Grid: 7331 4537

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms

Information Current as of: 1 February 2000

2.7.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1942 to 1944

Locations within Range of Known Munitions Use: Explosive hazards exist only with complete rounds. Complete rounds would only be found at or near firing line.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Moving Target Panels

Other Past Uses: None

Anticipated Future Use: Unknown

Public Access: Area is located on a restricted access military reservation.

2.8 MUSKETRY RANGE "A"

This range first appears on the map accompanying the 1942 Construction Completion Report. Camp Training Order Number 5-1946, dated 19 March 1946 states that this range is used for field firing of .30 and .50 Caliber at stationary targets, field firing of .30 Caliber at surprise targets, and demonstrative firing of 60mm and 81mm mortars at stationary targets. (Wachtler, 1946)

2.8.1 Range Identification

Common Name: Musketry Range "A"

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 3** and **4** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 42' 27" N Longitude: 77° 17' 10" W
Military Grid: 9062 4345

Primary direction of fire - 195° Grid

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms up to .50 Caliber, 60mm and 81mm Mortars

Information Current as of: 1 February 2000

2.8.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None
60mm Mortar, HE	Point Detonating
60mm Mortar, Illumination	Powder Train Time
81mm Mortar, HE	Point Detonating
81mm Mortar, WP	Point Detonating
81mm Mortar, Practice	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1942 to approximately 1947

The last reference to this range is in a December 1946 Range Regulation and is not on an August 1951 map.

Locations within Range of Known Munitions Use: Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line. Mortar rounds would be found within the impact area.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
.30 Caliber, Ball, M1 (NOTE: Only complete rounds represent an explosive hazard and complete rounds are found on the surface)	1.3	1.7	2.6	0.1
60mm M49	1.1	1.5	2.3	1.9
81mm M43	2.7	3.5	5.4	2.8
81mm, M56	2.0	2.7	4.1	2.8

[1] Maximum detection depth using a magnetometer.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: Some munitions may be filled with white phosphorus, which burns on contact with air.

Types of Targets: Point and Area Targets

Other Past Uses: None

Anticipated Future Use: Range F-2 is located over portions of this range.

Public Access: Area is located on a restricted access military reservation.

2.9 MACHINE GUN RANGE "A"

This range first appears on the map accompanying the 1942 Construction Completion Report. Camp Training Order Number 5-1946, dated 19 March 1946, identifies this range as a .30 Caliber Range.

2.9.1 Range Identification

Common Name: Machine Gun Range "A"

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 3** and **4** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 42' 42" N Longitude: 77° 15' 19" W
Military Grid: 9356 4345

Primary direction of fire - 181° Grid

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms

Information Current as of: 1 February 2000

2.9.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1942 to approximately 1947

Range is last referred to in a December 1946 Range Regulation and is not on an August 1951 map.

Locations within Range of Known Munitions Use: Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Individual and Area Targets

Other Past Uses: None

Anticipated Future Use: Portions of this range are covered by Range F-1.

Public Access: Area is located on a restricted access military reservation.

2.10 MUSKETRY RANGE "B"

This range first appears on the map accompanying the 1942 Construction Completion Report. Camp Training Order Number 5-1946, dated 19 March 1946, identifies this range as a .30 Caliber Range.

2.10.1 Range Identification

Common Name: Musketry Range "B"
Also identified as a Combat Range on a 1943 map

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 3** and **4** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 41' 08" N Longitude: 77° 19' 16" W
Military Grid: 8736 4069

Primary direction of fire - 105° Grid

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms

Information Current as of: 1 February 2000

2.10.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1942 to approximately 1947

Range is last referred to in a December 1946 Range Regulation and is not on an August 1951 map.

Locations within Range of Known Munitions Use: Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Point and Area Targets

Other Past Uses: None

Anticipated Future Use: Portions of this range are covered by Range F-12.

Public Access: Area is located on a restricted access military reservation.

2.11 MACHINE GUN RANGE "D"

This range first appears on the map accompanying the 1942 Construction Completion Report. Camp Training Order Number 5-1946, dated 19 March 1946, identifies this range for firing .30 Caliber, 60mm mortars, and 81mm mortars.

2.11.1 Range Identification

Common Name: Machine Gun Range "D"

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 3** and **4** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 37' 18" N Longitude: 77° 25' 08" W
Military Grid: 7823 3381

Primary direction of fire - 70° Grid

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms up to .30 Caliber, 60mm and 81mm Mortars

Information Current as of: 1 February 2000

2.11.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None
60mm Mortar, HE	Point Detonating
60mm Mortar, Illumination	Powder Train Time
81mm Mortar, HE	Point Detonating
81mm Mortar, WP	Point Detonating
81mm Mortar, Practice	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1942 to approximately 1947

The last reference to this range was in a December 1946 Range Regulation.

Locations within Range of Known Munitions Use: Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line. Mortar rounds would be found within the impact area.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
.30 Caliber, Ball, M1 (NOTE: Only complete rounds represent an explosive hazard and complete rounds are found on the surface)	1.3	1.7	2.6	0.1
60mm M49	1.1	1.5	2.3	1.9
81mm M43	2.7	3.5	5.4	2.8
81mm, M56	2.0	2.7	4.1	2.8

[1] Maximum detection depth using a magnetometer.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: Some munitions may be filled with white phosphorus, which burns on contact with air.

Types of Targets: Point and Area Targets

Other Past Uses: Range is located within the former Artillery Training Area

Anticipated Future Use: Range is located within the "K" Range Complex

Public Access: Area is located on a restricted access military reservation.

2.12 MUSKETRY RANGE "D"

This range first appears on the map accompanying the 1942 Construction Completion Report. It also appears on 1943 revisions to the base map.

2.12.1 Range Identification

Common Name: Musketry Range "D"

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 3** and **4** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 37' 02" N Longitude: 77° 24' 14"
Military Grid: 7959 3328

Primary direction of fire - 43° Grid

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Unknown

Based upon the shape of the range fan on the map it is assumed that Small Arms were fired on this range. It is unknown if any other weapons were fired on the range.

Information Current as of: 1 February 2000

2.12.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1942 to approximately 1944

Locations within Range of Known Munitions Use: Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Point and Area Targets

Other Past Uses: Located within the former Artillery Training Area

Anticipated Future Use: Located in the current "K" Range Complex

Public Access: Area is located on a restricted access military reservation.

2.13 MACHINE GUN RANGE "B"

This range first appears on the map accompanying the 1942 Construction Completion Report. Camp Training Order Number 5-1946, identifies this range for field firing of .30 Caliber.

2.13.1 Range Identification

Common Name: Machine Gun Range "B"

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 3** and **4** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 40' 33" N Longitude: 77° 19' 28" W
Military Grid: 8703 3961

Primary direction of fire - 78° Grid

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms .30 Caliber

Information Current as of: 1 February 2000

2.13.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1942 to approximately 1947

Last reference to this range is in the December 1946 range regulation. On an August 1951 map, Range F-10 is located in the general area of this range.

Locations within Range of Known Munitions Use: Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Point and Area Targets

Other Past Uses: None

Anticipated Future Use: Portions of Range F-10 are located where this range was.

Public Access: Area is located on a restricted access military reservation.

2.14 MINATURE ANTI-AIRCRAFT RANGE (AREA "D" & "F")

This range first appears on the map accompanying the 1942 Construction Completion Report. It also appears on 1943 revisions to the base map. The Construction Completion Report states that anti-aircraft weapons with a range of less than 7,500 yards may be used in this area.

2.14.1 Range Identification

Common Name: Miniature Anti-Aircraft Range (Area "D" & "F")
Also known as AA-2

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 3** and **4** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 38' 10" N Longitude: 77° 17' 56" W
Military Grid: 8927 3515

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Unknown

Regulations covering the establishment of a Miniature AA Range state that .22 Caliber weapons are fired upon this type of range. However, the range fan drawn on the base maps indicate a safety fan that is normally associated with .30 Caliber weapons.

Information Current as of: 1 February 2000

2.14.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1942 to approximately 1944

Locations within Range of Known Munitions Use: Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Moving Target Panels

Other Past Uses: None

Anticipated Future Use: Portions of this range lie within several "F" Ranges.

Public Access: Area is located on a restricted access military reservation.

2.15 MACHINE GUN RANGE "C"

This range first appears on the map accompanying the 1942 Construction Completion Report. Camp Training Order Number 5-1946, dated 19 March 1946, identifies this range as for firing .30 Caliber, 60mm and 81mm mortars.

2.15.1 Range Identification

Common Name: Machine Gun Range "C"

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 4** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 39' 50" N Longitude: 77° 14' 59" W
Military Grid: 9385 3813

Primary direction of fire - 271° Grid

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms, 60mm and 81mm Mortar

Information Current as of: 1 February 2000

2.15.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None
60mm Mortar, HE	Point Detonating
60mm Mortar, Illumination	Powder Train Time
81mm Mortar, HE	Point Detonating
81mm Mortar, WP	Point Detonating
81mm Mortar, Practice	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1942 to approximately 1947

Locations within Range of Known Munitions Use: Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line. Mortar rounds would be found within the impact area.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
.30 Caliber, Ball, M1 (NOTE: Only complete rounds represent an explosive hazard and complete rounds are found on the surface)	1.3	1.7	2.6	0.1
60mm M49	1.1	1.5	2.3	1.9
81mm, M56	2.0	2.7	4.1	2.8
81mm M43	2.7	3.5	5.4	2.8

[1] Maximum detection depth using a magnetometer.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: Some munitions may be filled with white phosphorus, which burns on contact with air.

Types of Targets: Point and Area Targets

Other Past Uses: None

Anticipated Future Use: Portions of this range lie within Range F-3.

Public Access: Area is located on a restricted access military reservation.

2.16 MUSKETRY RANGE "C"

This range first appears on the map accompanying the 1942 Construction Completion Report. Camp Training Order Number 5-1946, dated 19 March 1946, identifies this range as for firing .30 Caliber.

2.16.1 Range Identification

Common Name: Musketry Range "C"

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 3** and **4** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 39' 28" N Longitude: 77° 14' 39" W
Military Grid: 9434 3744

Primary direction of fire - 264° Grid

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms, .30 Caliber

Information Current as of: 1 February 2000

2.16.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1942 to approximately 1947

Locations within Range of Known Munitions Use: Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Point and Area Targets

Other Past Uses: None

Anticipated Future Use: Portions of this range lie within the "F" Series Ranges.

Public Access: Area is located on a restricted access military reservation.

2.17 ANTI-TANK RANGE

Camp Training Order Number 5-1946, dated 19 March 1946, identified this range for use firing "Anti-tank and rocket grenades, .30 Caliber & .50 Caliber, 20mm, 37mm, and 40mm" weapons with the danger zone extending seaward 10,000 yards from the firing point.

Base Order 11102.1B, dated 5 May 1960, identified this range as G-5 Mechanized Anti-Tank Range. It was used for firing 90mm guns (AP & HE), .50 Caliber, and 3.5" Rockets. The Right Flank coordinates were 94050 32120 with an Azimuth of 159° 50' Grid and a Left Flank coordinate of 94165 32195 with an Azimuth of 94° 28' Grid.

Base Order P11102.1G, dated 6 February 1970, identified this range for use firing tank guns 90-120mm, machine guns .30 Caliber and .50 Caliber, and recoilless rifles firing all types of ammunition except HVAP, HVAP-DS, and HVTP. The Right Flank given in this regulation was 941 321 with an Azimuth of 139° Grid and a Left Flank of 942 322 and an Azimuth of 116° Grid.

Base Order P11102.1K, dated 1 December 1986, identified this range as G-5 Mechanized Tank, and LAV Gunnery Range. It was used for firing 105mm tank guns, machine guns (including vehicle mounted), M16, 25mm cannon, TOW missiles, and artillery (direct fire). The hazard range was extended to 25,000 yards seaward.

Base Order P3570.1, dated 2 June 1994, identified the following ammunition for use on this range: .50 Caliber, 5.56mm, 7.62mm, 25mm TP-T, 105mm, 40mm (Practice, MK 19 & M203), 120mm, 155mm, M58 Line Charge, and M68 Line Charge (inert).

2.17.1 Range Identification

Common Name: Anti-Tank Range
Also known as Mechanized Anti-Tank Range
G-5, Mechanized Anti-Tank Range
G-5, Mechanized Tank and LAV Gunnery Range
G-5A, Mechanized Anti-Tank Range (1954 map only)

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 3** for location, also appears on plates 4, 5, 6, 7, 8, 10, 11, 13, 16, 18, and 20)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22

May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 36' 46" N Longitude: 77° 14' 44" W
Military Grid: 942 321 (1986 Reg)
912 321 (1994 Reg this is probably a printing error)

Primary direction of fire - 141° Grid

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms up to .50 Caliber, 20mm, 37mm, 40mm, 90mm, 105mm, 120mm, 155mm, Recoilless Rifles, TOW Missiles, M58 Line Charge, Anti-Tank Rockets, and Grenades

Information Current as of: 1 February 2000

2.17.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms up to .50 Caliber	None
20mm Cartridge, HE-I	Point Detonating
20mm Cartridge, AP-T	None
25mm, TP-T	None
37mm Shell, HE	Base Detonating
37mm Shell, AP-T	None
37mm Shell, APC	None
40mm Shell, HEI-T	Point Detonating
40mm Cartridge, AP-T	None
57mm Recoilless Rifle, HEAT	Point Detonating
57mm Recoilless Rifle, HE	Point Detonating
57mm Recoilless Rifle, WP	Point Detonating
75mm Recoilless Rifle, HEAT	Base Detonating
75mm Recoilless Rifle, HE	Point Detonating
75mm Recoilless Rifle, WP	Point Detonating
75mm Howitzer, HE	Point Detonating
3.5" AT Rocket	Base Detonating
90mm Recoilless Rifle, HEAT	Point Initiating

	Base Detonating
90mm Gun, HE	Point Detonating
90mm Gun, AP	Base Detonating
90mm Gun, WP	Point Detonating
90mm Gun, HEAT	Point Initiating Base Detonating
105mm Gun, HEAT	Point Initiating Base Detonating
105mm Gun, AP	None
105mm Gun, TP-T	None
105mm Gun HEP	Base Detonating
105mm Howitzer, HE	Point Detonating Variable Time
105mm Howitzer, WP	Point Detonating
105mm Howitzer, Illumination	Mechanical Time
106mm Recoilless Rifle, HEAT	Point Initiating Base Detonating
120mm Gun, HEAT	Point Initiating Base Detonating
120mm Gun, AP-T	None
120mm Gun, HE-T	Point Detonating
155mm, HE	Point Detonating Variable Time
155mm, WP	Point Detonating
155mm, Illumination	Mechanical Time
TOW Missile	Integral
Rifle Grenade, AT	Base Detonating
Rocket, 2.36in, AT	Base Detonating
Rocket, 3.5" AT	Base Detonating
M58 Line Charge	Integral

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1942 to present

Locations within Range of Known Munitions Use: Entire Range

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil. Most of the impact area is water and depths in the soil underwater cannot be determined.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
.30 Caliber, Ball, M1 (NOTE: Only complete rounds represent an explosive hazard and complete rounds are found on the surface)	1.3	1.7	2.6	0.1
.50 Caliber, Ball, M2 (NOTE: Only complete rounds represent an explosive hazard and complete rounds are found on the surface)	1.6	2.2	3.3	0.2
20mm, TP	2.4	3.1	4.7	0.4
37mm MK I & MK II	2.0	2.7	4.1	0.9
37mm M63	3.9	5.2	7.9	0.9
40mm, MK II	4.4	5.8	8.9	1.1
40mm, M822	2.3	3.0	4.5	1.1
40mm, M677	0.2	0.3	0.4	1.1
40mm M381	0.2	0.3	0.4	1.1
57mm M306	2.7	3.6	5.5	1.7
75mm M310	3.9	5.1	7.8	2.5
90mm M371	2.0	2.7	4.1	3.2
90mm, M71	9.7	12.7	19.4	3.2
105mm, M456	13.4	17.6	26.8	4.0
105mm M1 (charge 7)	7.7	10.1	15.4	4.0
106mm M244	6.5	8.5	13.0	4.0
120mm, M469	12.6	16.5	25.2	4.7
155mm M107	14.0	18.4	28.0	6.7
TOW Missile (penetration depths based upon missile remaining intact)	6.6	8.7	13.2	10.7
M9 Rifle Grenade	0.1	0.2	0.2	1.7
2.36" Rocket, M6	0.4	0.5	0.8	1.9
3.5" Rocket M28	0.8	1.1	1.7	3.2
M58 Line Charge	Surface	Surface	Surface	n. a.

[1] Maximum detection depth using a magnetometer.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: The rifle grenade and anti-tank rocket contain shaped charges which have a significantly larger danger forward of the munition and both have relatively sensitive fuzes. WP munitions contain a filler which burns upon contact with air.

Types of Targets: Moving Target traveling on a rail system

Other Past Uses: None

Anticipated Future Use: This range is in the general area of Range G-5.

Public Access: Area is located on a restricted access military reservation.

2.18 MUSKETRY RANGE "E"

The only reference uncovered on this range is in Camp Training Order Number 5-1946, dated 19 March 1946. This camp order states that this range was established under Camp Training Order Number 7-1945; and effective 19 March 1946, it is disestablished and will be no longer used for firing live ammunition. (Wachtler, 1946)

2.18.1 Range Identification

Common Name: Musketry Range "E"

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 4** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 38' 38" N Longitude: 77° 24' 53" W
Military Grid: 7867 3627

Primary direction of fire - 135° Grid (estimated from location)

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Unknown

It is assumed that based upon the name of the range, that Small Arms were fired on this range.

Information Current as of: 1 February 2000

2.18.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1943 to 1945

Locations within Range of Known Munitions Use: Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Point and Area Targets

Other Past Uses: Range is located within the impact area of the Artillery Training Area.

Anticipated Future Use: Range is located in the area of the "K" Range Complex

Public Access: Area is located on a restricted access military reservation.

2.19 1000-INCH RANGE (AMPHIBIAN BASE AREA)

The only reference uncovered on this range is in Camp Training Order Number 5-1946, dated 19 March 1946. This camp order states that this range was established under Camp Training Order Number 7-1945; and effective 19 March 1946, it is disestablished and will be no longer used for firing live ammunition. (Wachtler, 1946)

2.19.1 Range Identification

Common Name: 1000-Inch Range (Amphibian Base Area)

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 4** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 35' 28" N Longitude: 77° 22' 45" W
Military Grid: 8179 3033

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Unknown

Based upon the name of the range, it is assumed that Small Arms are fired on this range.

Information Current as of: 1 February 2000

2.19.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1943 to 1945

Locations within Range of Known Munitions Use: Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Fixed Target

Other Past Uses: None

Anticipated Future Use: Continued use for military training.

Public Access: Area is located on a restricted access military reservation.

2.20 1000-INCH RANGE "D"

The only reference uncovered on this range is in Camp Training Order Number 5-1946, dated 19 March 1946. This camp order states that this range was established under Camp Training Order Number 7-1945; and effective 19 March 1946, it is disestablished and will be no longer used for firing live ammunition. (Wachtler, 1946) This range is located in the same general area as the Miniature Anti-Aircraft Range (Area "D" & "F") discussed in paragraph 2.14. It is possible that these ranges used the same firing line area.

2.20.1 Range Identification

Common Name: 1000-Inch Range "D"

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 3** and **4** for location, site listed as Miniature Anti-Aircraft Range (Area D & F))

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude 34° 38' 09 " N Longitude: 77° 17' 50" W
Military Grid 8942 3512

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Unknown

Based upon the name of the range, it is assumed that Small Arms were fired on this range.

Information Current as of: 1 February 2000

2.20.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1943 to 1945

Locations within Range of Known Munitions Use: Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Fixed Target

Other Past Uses: This range is located approximately where the Miniature Anti-Aircraft Range was.

Anticipated Future Use: Portions of this range are located in the "F" Range Complex Area.

Public Access: Area is located on a restricted access military reservation.

2.21 AREA "F" 1000-INCH RANGE

The only reference uncovered on this range is in Camp Training Order Number 5-1946, dated 19 March 1946. This camp order states that this range was established under Camp Training Order Number 7-1945; and effective 19 March 1946, it is disestablished and will be no longer used for firing live ammunition. (Wachtler, 1946) This range is located at approximately the same location as Machine Gun Range "A" discussed in paragraph 2.9. These ranges may have used the same firing line.

2.21.1 Range Identification

Common Name: Area "F" 1000-Inch Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 3** and **4** for location, listed as Machine Gun Range "A")

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 42' 44" N Longitude: 77° 15' 14" W
Military Grid: 9358 4350

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Unknown

Based upon the name of the range, it is assumed that Small Arms were fired on this range.

Information Current as of: 1 February 2000

2.21.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1944 to 1945

Locations within Range of Known Munitions Use: Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Fixed Target

Other Past Uses: This range is located approximately where Machine Gun Range "A" is located.

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.22 LIVE AMMUNITION INDOCTRINATION COURSE

The only reference uncovered on this range is in Camp Training Order Number 5-1946, dated 19 March 1946. This camp order states that this range was established under Camp Training Order Number 7-1945; and effective 19 March 1946, it is disestablished and will be no longer used for firing live ammunition. (Wachtler, 1946)

2.22.1 Range Identification

Common Name: Live Ammunition Indoctrination Course

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 4** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 43' 37" N Longitude: 77° 26' 21" W
Military Grid: 7665 4553

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Unknown

Normal ammunition used on this type of range includes Small Arms, Hand and Rifle Grenades, Anti-Tank Rockets, and Recoilless Rifles.

Information Current as of: 1 February 2000

2.22.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None
Hand Grenades, HE	Integral
Hand Grenades, WP	Integral
Rifle Grenades, AT	Base Detonating
Rifle Grenades, WP	Base Detonating
2.36" Rocket, AT	Base Detonating
57mm, HE	Point Detonating
57mm, WP	Point Detonating
57mm, HEAT	Point Initiating Base Detonating
75mm, HE	Point Detonating
75mm, WP	Point Detonating
75mm, HEAT	Point Initiating, Base Detonating

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: prior to 1946

The only reference is when the range was disestablished in March 1946

Locations within Range of Known Munitions Use: Impact Area

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
.30 Caliber, Ball, M1 (NOTE: Only complete rounds represent an explosive hazard and complete rounds are found on the surface)	1.3	1.7	2.6	0.1
Hand Grenade (NOTE: Hand grenades would normally be on the surface but site dynamics may cause them to become buried to an	Surface	Surface	Surface	1.7

unknown depth)				
57mm M306	2.7	3.6	5.5	1.7
M9 Rifle Grenade	0.1	0.2	0.2	1.7
2.36" Rocket, M6	0.4	0.5	0.8	1.9
75mm M310	3.9	5.1	7.8	2.5

[1] Maximum detection depth using a magnetometer.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: Shaped charge munitions contain sensitive fuzing and present a significantly enlarged hazard area forward of the munition. WP filled munitions contain a filler that burns upon contact with air.

Types of Targets: Unknown

Other Past Uses: None

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.23 LIVE HAND GRENADE COURSE

The only reference uncovered on this range is in Camp Training Order Number 5-1946, dated 19 March 1946. This camp order states that this range was established under Camp Training Order Number 7-1945; and effective 19 March 1946, it is disestablished and will be no longer used for firing live ammunition. (Wachtler, 1946)

2.23.1 Range Identification

Common Name: Live Hand Grenade Course

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 4** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 48' 31" N Longitude: 77° 20' 54" W
Military Grid: 8518 4539

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Unknown

Based upon the name of the range, it is assumed that High Explosive and Practice Hand Grenades were used on this range.

Information Current as of: 1 February 2000

2.23.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Grenade, Hand, Fragmentation	Integral
Grenade, Hand, Offensive	Integral
Grenade, Hand, Practice	Integral

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1943 to 1945

Locations within Range of Known Munitions Use: Impact Area

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Munitions would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Fixed Target

Other Past Uses: None

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.24 MORTAR RANGE L-2

The only reference uncovered on this range is in Camp Training Order Number 5-1946, dated 19 March 1946. This camp order states that this range was established under Camp Training Order Number 7-1945; and effective 19 March 1946, it is disestablished and will be no longer used for firing live ammunition. (Wachtler, 1946)

2.24.1 Range Identification

Common Name: Mortar Range L-2

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 4** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 34' 29" N Longitude: 77° 25' 43" W
Military Grid: 7721 2862

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Unknown

Based upon the name of the range and other ranges used on **Camp Lejeune**, 60mm and 81mm Mortars (HE, WP, Illumination) were fired on this range.

Information Current as of: 1 February 2000

2.24.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
60mm Mortar, HE	Point Detonating
60mm Mortar, Illumination	Powder Train Time
81mm Mortar, HE	Point Detonating
81mm Mortar, WP	Point Detonating
81mm Mortar, Practice	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1943 to 1945

Locations within Range of Known Munitions Use: Impact Area

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
60mm M49	1.1	1.5	2.3	1.9
81mm M43	2.7	3.5	5.4	2.8
81mm, M56	2.0	2.7	4.1	2.8

[1] Maximum detection depth using a magnetometer.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: Munitions used on this range may include White Phosphorus.

Types of Targets: Unknown

Other Past Uses: None

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.25 MORTAR RANGE M-1

The only reference uncovered on this range is in Camp Training Order Number 5-1946, dated 19 March 1946. This camp order states that this range was established under Camp Training Order Number 7-1945; and effective 19 March 1946, it is disestablished and will be no longer used for firing live ammunition. (Wachtler, 1946)

2.25.1 Range Identification

Common Name: Mortar Range M-1

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 4** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 41' 11" N Longitude: 77° 27' 39" W
Military Grid: 7456 4108

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Unknown

Based upon the name of the range and other ranges used on **Camp Lejeune**, 60mm and 81mm Mortars (HE, WP, Illumination) were fired on this range.

Information Current as of: 1 February 2000

2.25.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
60mm Mortar, HE	Point Detonating
60mm Mortar, Illumination	Powder Train Time
81mm Mortar, HE	Point Detonating
81mm Mortar, WP	Point Detonating
81mm Mortar, Practice	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1943 - 1945

Locations within Range of Known Munitions Use: Impact Area

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
60mm M49	1.1	1.5	2.3	1.9
81mm M43	2.7	3.5	5.4	2.8
81mm, M56	2.0	2.7	4.1	2.8

[1] Maximum detection depth using a magnetometer.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: Munitions used on this range may include White Phosphorus.

Types of Targets: Unknown

Other Past Uses: None

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.26 OC BATTALION FIELD FIRING RANGE

The only reference uncovered on this range is in Camp Training Order Number 5-1946, dated 19 March 1946. This camp order states that this range was established under Camp Training Order Number 7-1945; and effective 19 March 1946, it is disestablished and will be no longer used for firing live ammunition. (Wachtler, 1946)

2.26.1 Range Identification

Common Name: OC Battalion Field Firing Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 4** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 38' 48" N Longitude: 77° 17' 06" W
Military Grid: 9057 3630

No information has been uncovered on the direction of fire for this range.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Unknown

Information Current as of: 1 February 2000

2.26.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Unknown	

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1943 to 1945

Locations within Range of Known Munitions Use: Unknown

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Unknown

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Unknown

Other Past Uses: None

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.27 MUSKETRY RANGE "C-1"

Camp Training Order Number 5-1946, dated 19 March 1946, identifies this range as a .30 Caliber range.

2.27.1 Range Identification

Common Name: Musketry Range "C-1"

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 4** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 39' 20" N Longitude: 77° 14' 50" W
Military Grid: 9405 3720

Primary direction of fire - 245° Grid

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms, .30 Caliber

Information Current as of: 1 February 2000

2.27.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1946 to 1947

Locations within Range of Known Munitions Use: Firing line

Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Fixed Target

Other Past Uses: None

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.28 MORTAR RANGE, L-1

Camp Training Order Number 5-1946, dated 19 March 1946, identifies this range for firing 60mm and 81mm mortars.

2.28.1 Range Identification

Common Name: Mortar Range L-1

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 4** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 37' 50" N Longitude: 77° 26' 22" W
Military Grid: 7637 3484

Primary direction of fire - 165° Grid

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: 60 mm and 81 mm Mortars (HE, WP, Illumination, and Practice)

Information Current as of: 1 February 2000

2.28.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
60mm Mortar, HE	Point Detonating
60mm Mortar, WP	Point Detonating
60mm Mortar, Illumination	Powder Train Time
81mm Mortar, HE	Point Detonating
81mm Mortar, WP	Point Detonating
81mm Mortar, Illumination	Powder Train Time
81mm Mortar, Practice	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1946 to approximately 1947

Locations within Range of Known Munitions Use: Impact Area

From the location of the range it appears that some of the impact area may be in Stone Bay.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
60mm M49	1.1	1.5	2.3	1.9
81mm M43	2.7	3.5	5.4	2.8
81mm, M56	2.0	2.7	4.1	2.8

[1] Maximum detection depth using a magnetometer.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: Munitions used on this range may include White Phosphorus.

Types of Targets: Unknown

Other Past Uses: None

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.29 INFANTRY WEAPONS DEMONSTRATION COURSE

Camp Training Order 5-1946, dated 19 March 1946, identifies the following weapons that may be used on this range: All infantry weapons to include 37mm AT guns, rockets, recoilless rifles, and 60mm & 81mm mortars. (Wachtler, 1946)

2.29.1 Range Identification

Common Name: Infantry Weapons Demonstration Course
Also known as B-17

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 4** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 41' 48" N Longitude: 77° 26' 11" W
Military Grid: 7682 4217

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms up to .50 Caliber, Mortars 60mm & 81mm, 2.36" and 4.5" Rockets, 37mm Gun, 57mm, 75mm, and 90mm Recoilless Rifles.

Information Current as of: 1 February 2000

2.29.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms up to .50 Caliber	None
60mm Mortar, HE	Point Detonating
60mm Mortar, WP	Point Detonating
60mm Mortar, Illumination	Powder Train Time
81mm Mortar, HE	Point Detonating
81mm Mortar, WP	Point Detonating
81mm Mortar, Illumination	Powder Train Time
81mm Mortar, Practice	None
2.36" Rocket, HE	Base Detonating
4.5" Barrage Rocket, HE	Point Detonating
37mm, HE	Base Detonating
57mm, HE	Point Detonating
57mm, WP	Point Detonating
57mm, HEAT	Point Detonating
75mm, HEAT	Base Detonating
75mm, HE	Point Detonating
75mm, WP	Point Detonating
90mm, HEAT	Point Initiating Base Detonating
90mm Practice	Point Initiating Base Detonating

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1946 to 1947

Locations within Range of Known Munitions Use: Impact Area and Firing Line

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
.30 Caliber, Ball, M1 (NOTE: Only complete rounds represent an explosive hazard and complete rounds are found on the surface)	1.3	1.7	2.6	0.1
37mm MK I & MK II	2.0	2.7	4.1	0.9
37mm M63	3.9	5.2	7.9	0.9
57mm M306	2.7	3.6	5.5	1.7
60mm M49	1.1	1.5	2.3	1.9
2.36" Rocket, M6	0.4	0.5	0.8	1.9
75mm M310	3.9	5.1	7.8	2.5
81mm M43	2.7	3.5	5.4	2.8
4.5" Barrage Rocket	0.5	0.7	1.0	4.4
90mm M371	8.3	10.9	16.6	3.2

[1] Maximum detection depth using a magnetometer.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: Some munitions may contain White Phosphorus. High Explosive Anti-Tank (HEAT) munitions have a significantly larger hazard area forward of the nose of the munition. HEAT munitions contain very sensitive fuzing.

Types of Targets: Unknown

Other Past Uses: None

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.30 1000-INCH MACHINE GUN RANGE

Camp Training Order Number 5-1946, dated 19 March 1946, identifies this range as part the Rifle Range Complex assigned to the Range Detachment. The range location is listed as adjacent to the Pistol Range and authorized for firing .30 caliber weapons.

2.30.1 Range Identification

This range is adjacent to the Mechanical Pistol Range

Common Name: 1000-Inch Machine Gun Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 21** for view of the Rifle Range Complex)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 35' 41" N Longitude: 77° 27' 06" W
Military Grid: 7511 2904

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms, .30 Caliber

Information Current as of: 1 February 2000

2.30.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1946 to approximately 1947

Locations within Range of Known Munitions Use: Firing Line

Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds of small arms would normally be located on the surface at the firing line, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: 12 Targets

Other Past Uses: None

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.31 1000-YARD MACHINE GUN RANGE

Base Training Order Number 5-1946, dated 19 March 1946, identifies this range as located adjacent to Rifle Range "C" (east side of the rifle ranges). The range is authorized for firing .30 Caliber Machine Guns and Rifles, 60mm Mortars, 37mm Canister Shot, Flame Throwers, and Anti-Tank Rockets. This range is part of the Rifle Range Complex controlled by the range detachment.

2.31.1 Range Identification

Common Name: 1000-Yard Machine Gun Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 21** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 35' 42" N Longitude: 77° 26' 42" W
Military Grid: 7625 3090

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms, .30 Caliber, 60mm Mortar, 37mm (Canister Shot), 2.36" AT Rocket, Flame Thrower

Information Current as of: 1 February 2000

2.31.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None
60mm Mortar, HE	Point Detonating
60mm Mortar, WP	Point Detonating
60mm Mortar, Illumination	Powder Train Time
37mm Canister Shot	None
2.36" AT Rocket	Base Detonating
Flame Thrower	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1944 to approximately 1966

This range appears on 1944 through 1954 maps but is not on a 1967 map.

Locations within Range of Known Munitions Use: Firing Line and Impact Area

Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
.30 Caliber, Ball, M1 (NOTE: Only complete rounds represent an explosive hazard and complete rounds are found on the surface)	1.3	1.7	2.6	0.1
37mm Canister, M2[2]	3.9	5.2	7.9	0.9
60mm M49	1.1	1.5	2.3	1.9
2.36" Rocket, M6	0.4	0.5	0.8	1.9

[1] Maximum detection depth using a magnetometer.
[2]Penetration depth based upon complete, unopened canister.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: The AT Rocket contains a shaped charge which presents a significantly larger danger forward of the munition.

Types of Targets: Unknown

Other Past Uses: None

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.32 1000-INCH RANGE, MONFORD POINT

Camp Training Order Number 5-1946, dated 19 March 1946, identifies this range as a Familiarization Range for .30 Caliber BAR.

2.32.1 Range Identification

Common Name: 1000-Inch Ranges, Monford Point
Also known as Range A-1, 1000-Inch Range (MG and .22 Caliber)

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 4** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 43' 46' N Longitude: 77° 24' 46" W
Military Grid: 7907 4575

Primary direction of fire - 242° Grid

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms

Information Current as of: 1 February 2000

2.32.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1946 to approximately 1955

Locations within Range of Known Munitions Use: Firing line

Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds of small arms would normally be located on the surface at the firing line, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Fixed Target

Other Past Uses: None

Anticipated Future Use: Unknown

Public Access: Area is located on a restricted access military reservation.

2.33 ROCKET RANGE NUMBER 1

Base Training Order Number 5-1946, dated 19 March 1946, identified this range as an aviation range for rocket firing only. MCAS Cherry Point controlled air operations which used this range but the range, which is located within Bomb Target Number 5, is physically located on **Camp Lejeune**. It later was redesignated Bomb Target Number 3 and eventually became part of Impact Area N-1. See the section on "N-1" Impact Area for overall use of the impact area that this target is located within.

2.33.1 Range Identification

Common Name: Rocket Range Number 1

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 4** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 37' 01" N Longitude: 77° 11' 01" W
Military Grid: 9979 3279

The range is described as a circle with a 2,500 yard radius from the above location.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Aerial Rockets

Information Current as of: 1 February 2000

2.33.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
2.25" Aircraft Rocket, Sub-caliber	None
5" Aircraft Rocket, AP	Base Detonating
5" Aircraft Rocket, HE	Point Detonating Variable Time
5" Aircraft Rocket, HEAT	Point Detonating
5" Aircraft Rocket, WP	Point Detonating
11.75" Aircraft Rocket, GP	Base Detonating

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1945 to approximately 1947

Locations within Range of Known Munitions Use: Impact Area

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
2.25" Rocket, MK 4	4.0	5.2	8.0	1.7
5" Rocket, MK 28	10.2	13.4	20.4	5.1
11.75" Rocket, MK 3	13.8	18.2	27.7	16.3

[1] Maximum detection depth using a magnetometer.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: 5" Rocket Warheads may contain white phosphorus which burns on contact with air.

Types of Targets: Fixed Target

Other Past Uses: None

Anticipated Future Use: Located within the current "N-1" Impact Area. Continued use as an impact area

Public Access: Area is located on a restricted access military reservation.

2.34 STRAFING TARGET NUMBER 2

Base Training Order Number 5-1946, dated 19 March 1946, identified this range as an aviation range for strafing with 75mm Cannon. This range was used for strafing by bomber aircraft mounting a forward firing 75mm Cannon. The target is located within Bombing Target Number 5. This became Bombing Target Number 3 and eventually Impact Area "N-1". See section in "N-1" Impact Area for complete listing of impact area that this target is located within.

2.34.1 Range Identification

Common Name: Strafing Target Number 2

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 4** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 35' 54 " N Longitude: 77° 13' 39" W
Military Grid: 9572 3082

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: 75mm

Information Current as of: 1 February 2000

2.34.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
75mm HE, M46	Point Detonating

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1945 to approximately 1947

Use of 75mm Aerial Cannon on this range was discontinued after the end of World War Two

Locations within Range of Known Munitions Use: Impact Area

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
75mm M48	4.9	6.4	9.8	2.5

[1] Maximum detection depth using a magnetometer.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Fixed Target

Other Past Uses: None

Anticipated Future Use: Located within the current "N-1" Impact Area. Continued use as an impact area.

Public Access: Area is located on a restricted access military reservation.

2.35 INDIVIDUAL FIELD FIRING RANGE NUMBER 1

This range along with Individual Field Firing Range Number 2 appears on the 1943 map as a Combat Range. Camp Training Order Number 5-1946, dated 19 March 1946, identifies this range as adjacent to Rifle Range "A" (west side of Rifle Range) and authorized for firing .30 Caliber. This range uses the same Impact Area as the Rifle Range.

2.35.1 Range Identification

Common Name: Individual Field Firing Range Number 1
Also known as Combat Range (Rifle Range area)

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 21** for view of the Rifle Range Complex)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: Unknown Longitude: Unknown
Military Grid: Unknown
This range is located on the west side of the Rifle Range, but no specific location is given.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms, .30 Caliber

Information Current as of: 1 February 2000

2.35.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1943 to 1946

Locations within Range of Known Munitions Use: Firing Line

Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds of small arms would normally be located on the surface at the firing line, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Unknown

Other Past Uses: None

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.36 INDIVIDUAL FIELD FIRING RANGE NUMBER 2

This range along with Individual Field Firing Range Number 2 appears on the 1943 map as a Combat Range. Camp Training Order Number 5-1946, dated 19 March 1946, identifies this range as adjacent to Rifle Range "A" (west side of Rifle Range) and authorized for firing .30 Caliber. This range uses the same Impact Area as the Rifle Range.

2.36.1 Range Identification

Common Name: Individual Field Firing Range Number 2
Also known as Combat Range (Rifle Range Area)

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 21** for view of the Rifle Range Complex)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: Unknown Longitude: Unknown
Military Grid: Unknown
This range is located on the west side of the Rifle Range, but no specific location is given.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms, .30 Caliber

Information Current as of: 1 February 2000

2.36.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1943 to 1946

Locations within Range of Known Munitions Use: Firing Line

Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds of small arms would normally be located on the surface at the firing line, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Unknown

Other Past Uses: None

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.37 ENGINEER FIRING RANGE

Camp Training Order Number 5-1946, dated 19 March 1946, authorized use of Anti-Tank and Rocket Grenades and Demolitions on this range. The coordinates given for the firing point are 1374.91-1293.60 (progressive map grid used on the map associated with the 1942 Construction Completion Report) with coordinates given for the danger area. Camp General Order Number 78-1946, dated 9 December 1946, changed the danger area coordinates giving instead grid squares of the area (again in the progressive map grid system). This order also authorized Flame Thrower use on the range in addition to those weapons already authorized.

2.37.1 Range Identification

Common Name: Engineer Firing Range
Also known as Engineering Firing Range (2d Marine Division)

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 4** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina

Firing Point
Latitude: 34° 37' 21" N Longitude: 77° 15' 03" W
Military Grid: 9364 3354

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Anti-Tank and Rocket Grenades, Flame Throwers, and Demolitions.

Information Current as of: 1 February 2000

2.37.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Rocket, 2.36" Anti-Tank	Base Detonating
Rifle Grenade, M9	Base Detonating
Demolitions materials	Electric and non-electric firing systems
Flame Thrower	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1945 to 1947

Locations within Range of Known Munitions Use: Entire Range

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
M9 Rifle Grenade	0.1	0.2	0.2	1.7
2.36" Rocket, M6	0.4	0.5	0.8	1.9
Demolitions (NOTE: May be buried to an unknown depth but would normally be near the surface.)	Unknown	Unknown	Unknown	n. a.

[1] Maximum detection depth using a magnetometer.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: Anti-Tank (shaped charge munitions) contain sensitive fuzing and present a significantly increased hazard forward of the munition.

Types of Targets: Unknown

Other Past Uses: None

Anticipated Future Use: This range is located in the general area of G-4 Demolition Assault Area.

Public Access: Area is located on a restricted access military reservation.

2.38 ENGINEER BEACH DEMOLITIONS AND TRAINING AREA

Camp Training Order Number 5-1946, dated 19 March 1946, identified the location of this range and authorized the use of Live Ammunition and Demolitions. The area was assigned to the Specialist Training Regiment.

2.38.1 Range Identification

Common Name: Engineer Beach Demolitions and Training Area

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 4** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 34' 32" N Longitude: 77° 15' 36" W
Military Grid: 9268 2836

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Demolition Materials

Information Current as of: 1 February 2000

2.38.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Demolition Materials	Electric and Non-Electric Firing Systems

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1945 to 1946

Locations within Range of Known Munitions Use: Entire Range

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Unknown

Demolition material may have been placed on the surface of an unknown depth below the surface depending on training needs.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Unknown

Other Past Uses: None

Anticipated Future Use: This area is part of the beach firing area known as E-1.

Public Access: Area is located on a restricted access military reservation.

2.39 ENGINEER FIRING RANGE (ENGINEER SCHOOL RANGE 1)

Modification Number 1 to Camp General Order Number 78-1946, dated 6 March 1947, identified this range under the Engineer Firing Range and authorized Anti-Tank and Rocket Grenades, Demolitions, and Flame Throwers. The location given for this range was grid square 1366-1287 (Progressive map grid system).

2.39.1 Range Identification

Common Name: Engineer Firing Range (Engineer School Range 1)

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 4** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 34' 17" N Longitude: 77° 21' 07" W
Military Grid: 8424 2809

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Anti-Tank Rockets and Grenades, Demolitions, & Flame Throwers.

Information Current as of: 1 February 2000

2.39.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Rifle Grenade	Base Detonating
Rocket, 2.36", Anti-Tank	Base Detonating
Demolition Materials	Electric and Non-Electric Firing Systems
Flame Throwers	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1947

Locations within Range of Known Munitions Use: Entire Range

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
M9 Rifle Grenade	0.1	0.2	0.2	1.7
2.36" Rocket, M6	0.4	0.5	0.8	1.9
Demolitions (NOTE: May be buried to an unknown depth but would normally be near the surface.)	Unknown	Unknown	Unknown	n. a.

[1] Maximum detection depth using a magnetometer.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: Anti-Tank munitions contain sensitive fuzing and present a significantly increased hazard area forward of the munition.

Types of Targets: Unknown

Other Past Uses: None

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.40 ENGINEER FIRING RANGE (ENGINEER SCHOOL RANGE 2)

Modification Number 1 to Camp General Order Number 78-1946, dated 6 March 1947, identified this range under the Engineer Firing Range and authorized Anti-Tank and Rocket Grenades, Demolitions, and Flame Throwers. The location given for this range was grid square 1368-1286 (Progressive map grid system).

2.40.1 Range Identification

Common Name: Engineer Firing Range (Engineer School Range 2)

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 4** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 33' 45" N Longitude: 77° 19' 57" W
Military Grid: 8600 2706

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Anti-Tank Rockets and Grenades, Demolitions, & Flame Throwers

Information Current as of: 1 February 2000

2.40.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Rifle Grenade	Base Detonating
Rocket, 2.36", Anti-Tank	Base Detonating
Demolition Materials	Electric and Non-Electric Firing Systems
Flame Throwers	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1947

Locations within Range of Known Munitions Use: Entire Range

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
M9 Rifle Grenade	0.1	0.2	0.2	1.7
2.36" Rocket, M6	0.4	0.5	0.8	1.9
Demolitions (NOTE: May be buried to an unknown depth but would normally be near the surface.)	Unknown	Unknown	Unknown	n. a.

[1] Maximum detection depth using a magnetometer.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: Anti-Tank munitions contain sensitive fuzing and present a significantly increased hazard area forward of the munition.

Types of Targets: Unknown

Other Past Uses: None

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.41 MUSKETRY RANGE "C-2"

This range only appears on the Map attached to the Camp Training Order Number 5-1946, dated 19 March 1946, but it is not mentioned in the training order.

2.41.1 Range Identification

Common Name: Musketry Range "C-2"

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 4** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 40' 24" N Longitude: 77° 15' 10" W
Military Grid: 936 392

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Unknown

The size and shape of the range fan indicates that Small Arms were fired on this range. It is unknown if any other weapons were fired.

Information Current as of: 1 February 2000

2.41.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: Approximately 1944 to 1945

Locations within Range of Known Munitions Use: Firing Line

Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Unknown

Other Past Uses: Unknown

Anticipated Future Use: This range is located in the area of current "F" Series Ranges.

Public Access: Area is located on a restricted access military reservation.

2.42 UNNAMED RANGE 1

This range appears on the 1943 revisions of the February 1942 base map but is not named.

2.42.1 Range Identification

Common Name: Unnamed Range 1

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 3** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 39' 56" N Longitude: 77° 15' 00" W
Military Grid: 9382 3832

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Unknown

The shape and size of the range fan indicates that this range was used for Small Arms. It is unknown if other weapons were fired.

Information Current as of: 1 February 2000

2.42.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: Approximately 1943 to 1945

Locations within Range of Known Munitions Use: Firing Line

Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Unknown

Other Past Uses: None

Anticipated Future Use: This range lies within several of the "F" series of ranges.

Public Access: Area is located on a restricted access military reservation.

2.43 ONSLOW BEACH/HURST BEACH FIRING AREA

This range first appears on an August 1941 map and is listed in the Code of Federal Register as a danger area in 1943. It actually occupies the beach area from approximately Salliers Bay to Brown's Inlet. Although this area was primarily used for anti-aircraft and anti-boat firing, training reports indicate that it was also used for other training such as mortar firing. This range is incorporated into the E-1 series of ranges.

2.43.1 Range Identification

Common Name: Onslow Beach/Hurst Beach Firing Area

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 2** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Centered at
Latitude: 34° 34' 15" N Longitude: 77° 16' 10" W
Military Grid: 9181 2785

The danger area is described in the Federal Register as "That portion of the Atlantic Ocean within a sector of a circle bounded by radii of 25,000 yards bearing 85° true and 220° true, respectively form Hurst Beach, Onslow County, North Carolina (Latitude 34° 34' 15" N, Longitude 77° 16' 10" W), and the included arc."

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms, .30 and .50 Caliber, 40mm AAA, 90mm AAA, and 81mm Mortar

Information Current as of: 1 February 2000

2.43.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None
40mm, HE-T	Point Detonating
40mm, AP-T	None
90mm, HE	Point Detonating
90mm, AP	None
81mm, HE	Point Detonating
81mm, WP	Point Detonating
81mm, Practice	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1941 to approximately 1950

Locations within Range of Known Munitions Use: The primary targets were aerial and seabourne and firing was toward the sea, but one training document indicated firing 81mm mortars along the beach at land targets. Specific locations were not given so the entire beach area is suspect.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil. This chart does not account for water ranges and does not reflect munition penetration into the bottom of the ocean.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
.30 Caliber, Ball, M1 (NOTE: Only complete rounds represent an explosive hazard and complete rounds are found on the surface)	1.3	1.7	2.6	0.1

.50 Caliber, Ball, M2 (NOTE: Only complete rounds represent an explosive hazard and complete rounds are found on the surface)	1.6	2.2	3.3	0.2
40mm, MK II	4.4	5.8	8.9	1.1
90mm, M71	9.7	12.7	19.4	3.2
81mm M43	2.7	3.5	5.4	2.8
81mm, M56	2.0	2.7	4.1	2.8

[1] Maximum detection depth using a magnetometer.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Towed Aerial, Remote Controlled Aircraft and Boats, Land Targets

Other Past Uses: None

Anticipated Future Use: This range became Range E-1 which was later broken down into Ranges E-1A and E-1B with the area between these two used as a beach recreation area.

Public Access: Area is located on a restricted access military reservation.

2.44 B-6, 50-FOOT SMALL ARMS RANGE

This range first appears on a 1951 range map. Base Order 11101.1B, dated 5 May 1960, stated that this range was for use with .22 Caliber Rifle and Pistol, .32, .38, and .45 Caliber Pistols. There is differences on the location of the range between the various 1950's maps and the 1960 range regulation. Exact location will require a survey of the site.

2.44.1 Range Identification

Common Name: B-6, 50-Foot Small Arms Range
Also known as B-6, 50-Foot, .22 Caliber Range
B-6, 1000-Inch Range (MG and .22 Caliber)

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 5** for location, also see plates 6 , 8, and 10)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 43' 53" N Longitude: 77° 28' 06" W
Military Grid: 7406 4495

BO 11102.1B identified the right flank at coordinates 74060 44950 and an Azimuth of 179° 50' Grid with the left flank at coordinates 74250 44965 and an Azimuth of 154° 03' Grid.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms, .22 Caliber

Information Current as of: 1 February 2000

2.44.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1950 to approximately 1961

Locations within Range of Known Munitions Use: Firing Line

Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds of small arms would normally be located on the surface at the firing line, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: 25 Stations, .22 Caliber; 10 Stations .32, .38. .45 Caliber

Other Past Uses: None

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.45 J-1, 1000-INCH RANGE

This range first appears on a 1951 range map. Base Order 11102.1B, dated 5 May 1960, identify this range as authorized firing .22 Caliber Rifles and Pistols.

2.45.1 Range Identification

Common Name: J-1, 1000-Inch Range
Also known as J-1, 50-Foot, .22 Caliber Range
J-1, 50-Foot Small Bore Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 5** for location, also see plates 6, 8, 10, and 12)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 35' 47" N Longitude: 77° 22' 22" W
Military Grid: 8253 3045

BO 11102.1B identified the right flank at coordinates 82525 30450 at an Azimuth 341° 15' Grid and a left flank at coordinates 82485 30420 at an Azimuth 320° 30' Grid.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms, .22 Caliber

Information Current as of: 1 February 2000

2.45.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1950 to approximately 1963

Locations within Range of Known Munitions Use: Firing line

Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds of small arms would normally be located on the surface at the firing line, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: 10 Stations

Other Past Uses: This range is located in the general area of the 1000-Inch Range (Amphibian Base Area)

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.46 J-2, 1000-INCH RANGE

This range first appears on a 1951 range map.

Base Order 11102.1B, dated 19 March 1960, identified this range as a .22 Caliber Rifle and Pistol Range.

Base Order P11102.1G, dated 6 February 1970, identified it as a Rifle Range (.30 Caliber).

Base Order P11102.1G, dated 1 December 1986, stated this range is identified for use with M16 firing .22 Caliber Rimfire, Brewster device for 105mm Tank Gun, and Sub-Caliber devices for LAVs/AAVs.

2.46.1 Range Identification

Common Name: J-2, 1000-Inch Range
Also known as J-2, 50-Foot, .22 Caliber Range
J-2, 50-Foot Small Bore Range
J-2, Battle Sight Range
J-2, Scaled Target Sub-Caliber Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 5** for location, also see plates 6, 8, 10, 12, 13, 14, 16, and 17)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 35' 43" N Longitude: 77° 22' 14" W
Military Grid: 8267 3056

BO 11102.1B identified the right flank at coordinates 82670 30560 at an Azimuth of 331° 30' Grid and a left flank at coordinates 82640 30520 and an Azimuth 301° 22' Grid.

BO P11102.1G identified the right flank at coordinates at 827 306 and an Azimuth of 323° Grid and a left flank at coordinates 826 305 and an Azimuth of 309° Grid.

BO P11102.1K identified the direction of fire as 310°.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms

Information Current as of: 1 February 2000

2.46.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1950 to approximately 1987

Locations within Range of Known Munitions Use: Firing Line

Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds of small arms would normally be located on the surface at the firing line, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: 30 Stations (1960), 15-yard range with Targets provided by using unit (1970), and "Pop-Up" Targets (1986)

Other Past Uses: This range is located in the general area of the 1000-Inch Range (Amphibian Base Area).

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.47 RANGE M-1

This range appears on a 1951 map. It is firing into the "L" Impact Area.

2.47.1 Range Identification

Common Name: Range M-1

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 5** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 39' 34" N Longitude: 77° 27' 46" W
Military Grid: 743 381

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Unknown

Information Current as of: 1 February 2000

2.47.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Unknown	

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: Approximately 1951

Locations within Range of Known Munitions Use: Unknown

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Unknown

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Unknown

Other Past Uses: None

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.48 F-1, FIELD FIRING RANGE

This range first appears on a 1951 range map. Base Order 11102.1B, dated 5 May 1960, authorized the use of Small Arms and 3.5" Rocket Launchers on this range. High Explosive ordnance was not to be impacted on this range, but explosive charges could be used to simulate enemy artillery.

2.48.1 Range Identification

Common Name: F-1, Field Firing Range
Also known as Range F-1
F-1 Infantry Weapons

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 5** for location, also see plates 6, 8, and 10)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 42' 31" N Longitude: 77° 15' 21" W
Military Grid: 933 429

BO 11102.1B identified the right flank at coordinates 933 429 with an Azimuth of 207° Grid and a left flank at coordinates 936 429 with an Azimuth of 182° Grid.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms, 3.5" Rockets (Practice), and Demolitions

Information Current as of: 1 February 2000

2.48.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None
3.5" Rocket, Practice	None
Demolitions	Electric and Non-Electric Firing Systems

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1950 to approximately 1961

Locations within Range of Known Munitions Use: Firing Line and Target Area

Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line. Demolition materials would be found in the target area.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil. This chart does not account for water ranges.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
Demolitions (NOTE: May be buried to an unknown depth but would normally be near the surface.)	Unknown	Unknown	Unknown	n. a.
.30 Caliber, Ball, M1 (NOTE: Only complete rounds represent an explosive hazard and complete rounds are found on the surface)	1.3	1.7	2.6	0.1
3.5" Rocket M28	0.8	1.1	1.7	3.2

[1] Maximum detection depth using a magnetometer.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Targets are to be provided by the using units.

Other Past Uses: This range is located approximately where Machine Gun Range "A" was located.

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.49 F-2, FIELD FIRING RANGE

This range first appears on a 1951 range map. Base Order 11102.1B, dated 5 May 1960, states that this range is for use firing small arms up to .30 Caliber, and that incoming artillery may be simulated using Demolition Charges.

Base Order P11102.1G, dated 6 February 1970, stated that the weapons authorized on this range were Rifles and Automatic Rifles, WP and Smoke Hand Grenades, and Demolition up to 1/2 pound.

Base Order P11102.1K, dated 1 December 1986, authorized Rifles, Pistols, Shotguns, and Smoke Grenades on this range.

Base Order P3570.1, dated 2 June 1994, authorized Small Arms; .38 Caliber, .45 Caliber, 5.56mm, 7.62mm, 9mm, and 12 Gauge for use on this range.

2.49.1 Range Identification

Common Name: F-2, Field Firing Range
Also known as Range F-2
F-2, .30 Caliber Electric Pop-Up Range
F-2, Squad Defense Firing & Machine Gun Surprise Targets
F-2, Field Firing/BZO Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 5** for location, also see plates 6, 8, 9, 10, 13, 16, 18, and 20)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 42' 27" N Longitude: 77° 17' 10" W
Military Grid: 906 428

BO 11102.1B identifies the right flank at coordinates 906 428 with an Azimuth of 223° 50' Grid and a left flank at coordinates 908 427 with an Azimuth of 177° 50' Grid.

BO P11102.1G identifies the right flank Azimuth as 205° Grid and a left flank Azimuth of 179° Grid.

BO P11102.1K identifies the range at 907 427 with a direction of fire of 191°.

BO P3570.1 identifies the direction of fire as 189°.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms, Smoke Grenades, and Demolitions (1/2 pound limit)

Information Current as of: 1 February 2000

2.49.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None
Smoke Grenades	Integral
Demolitions	Electric and Non-electric firing systems

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1950 to present

Locations within Range of Known Munitions Use: Firing Line

Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds of small arms would normally be located on the surface at the firing line, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Electromechanical Targets (1960), 24 Electromechanical Targets (1970), Silhouettes and Improvised Targets (1986), and Wood Frame Silhouette Targets (1994)

Other Past Uses: This range is located approximately where Musketry Gun Range "A" was located.

Anticipated Future Use: Continue in use as a range.

Public Access: Area is located on a restricted access military reservation.

2.50 F-12, FIELD FIRING RANGE

This range first appears on a 1951 range map. Base Order 11102.1B, dated 5 May 1960, stated that this range was under construction and small arms were authorized on this range.

Base Order P11102.1G, dated 6 February 1970, authorizes the use of .30 Caliber, 5.56mm, & 7.62mm, WP hand grenades, and ½ lb demolition blocks.

Base Order K11102.1K, dated 11 October 1985, authorized the use of service ammunition for rifles, M60 machine gun, and SAW plus ¼ lb demolitions charges to simulate artillery.

2.50.1 Range Identification

Common Name: F-12, Field Firing Range
Also known as Range F-12
F-12, .30 Caliber Electric Pop-Up Range
F-12, Reinforced Platoon Attack
F-12, Individual, Team, & Squad Assault Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 5** for location, also see plates 6, 8, 9, 10, 13, and 16)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 40' 56" N Longitude: 77° 19' 14" W
Military Grid: 874 403

BO P11102.1G identified the right flank coordinates as 874 403 with an Azimuth of 113° Grid and a left flank coordinate of 874 404 with an Azimuth of 91° Grid.

BO P11102.1K listed the primary direction of fire as 95°.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms, Smoke Grenades, and Demolitions (1/2 pound limit)

Information Current as of: 1 February 2000

2.50.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None
Hand Grenade, WP	Integral
Demolitions	Electric and Non-electric firing systems

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1950 to approximately 1985.

Locations within Range of Known Munitions Use: Firing Line

Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds of small arms would normally be located on the surface at the firing line, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Electromechanical Targets, Small Arms Simulators, and 3 Bunkers simulating enemy prepared positions (1960). 24 Electromechanical Targets, 3 Bunkers, 3 Tank Hulls (1970).

Other Past Uses: This range is located approximately where Musketry Range "B" was located.

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.51 F-11, PISTOL RANGE

This range first appears on a 1951 range map. Base Order 11102.1B, dated 5 May 1960, identifies this range for use with .22 Caliber rifle and pistol, and .32, .45 Caliber pistols.

Base Order P11102.1G, dated 6 February 1970, identifies this range for use with rifles .22 caliber, .30 Caliber, 5.56mm, and 7.62mm, and pistols and revolvers.

Base Order P3570.1, dated 2 June 1994, identifies .22 Caliber, .38 Caliber, .45 Caliber, 5.56mm, 9mm, and 12 gauge for use on this range.

2.51.1 Range Identification

Common Name: F-11, Pistol Range
Also known as Range F-11
F-11, Pistol Qualification Range
F-11, Rifle and Pistol Range
F-11, Rifle and Pistol BZO Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 5** for location, also see plates 6, 8, 10, 13, 16, 18, and 20)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 40' 23" N Longitude: 77° 19' 29" W
Military Grid: 870 393

BO 11102.1B identifies the right flank at coordinate 869 394 with an Azimuth of 91° 55' Grid and a left flank at coordinate 869 396 with an Azimuth of 85° 20' Grid.

BO P11102.1G identified the right flank at coordinate 869 393 with an Azimuth of 83° Grid and a left flank at coordinate 869 394 with an Azimuth of 83° Grid.

BO P11102.1K identified the range as located at 869 394 with a direction of fire of 98°.

BO P3570.1 listed the direction of fire as 94°.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms, .22 Caliber, .38 Caliber, .45 Caliber, 5.56mm, 7.62mm, 12 Gauge

Information Current as of: 1 February 2000

2.51.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1950 to present

Locations within Range of Known Munitions Use: Firing Line

Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds of small arms would normally be located on the surface at the firing line, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: 15 manually operated "Time Targets" and 30 .22 Caliber Stations (1960). Fifteen manually operated Pistol Targets at 15, 25, and 50 yards and 22 Fixed Fire Targets at 15 yards (1970 & 1986). 15 Pistol Targets and 15 BZO Rifle Targets (1994).

Other Past Uses: This general area has been used for firing weapons since the 1943 time period.

Anticipated Future Use: Continued use as a range.

Public Access: Area is located on a restricted access military reservation.

2.52 F-10, MACHINE GUN QUALIFICATION RANGE

This range only appears on maps from the 1950's and no information is provided on weapons fired or types of targets. This range is also called F-10B on a September 1953 map.

2.52.1 Range Identification

Common Name: F-10, Machine Gun Qualification Range
Also known as Range F-10
F-10B Machine Gun Qualification Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 5** for location, also see plates 6, 8, and 10)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 40' 16" N Longitude: 77° 19' 25" W
Military Grid: 871 391

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Unknown

Based upon the title of the range and the appearance of the range fans on range maps, it appears that at least Small Arms were fired on this range.

Information Current as of: 1 February 2000

2.52.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1950 to approximately 1959

Locations within Range of Known Munitions Use: Firing Line

Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds of small arms would normally be located on the surface at the firing line, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Unknown

Other Past Uses: This range is located approximately where Machine Gun "B" Range was located.

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.53 F-7, .22 CALIBER RANGE, 1000-INCH

This range only appears on maps from the 1950's and no information other than the title is provided on weapons fired or types of targets.

2.53.1 Range Identification

Common Name: F-7, .22 Caliber Range, 1000-Inch
Also known as Range F-7

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 5** for location, also see plates 6, 8, and 10)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 40' 13" N Longitude: 77° 19' 25"
Military Grid: 871 390

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Unknown

Based upon the name of the range and the appearance of the range fans, it is assumed that Small Arms were fired on this range.

Information Current as of: 1 February 2000

2.53.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1950 through approximately 1959

Locations within Range of Known Munitions Use: Firing line

Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing Line.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds of small arms would normally be located on the surface at the firing line, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Fixed Target

Other Past Uses: A series of musketry and machine gun ranges were constructed in this general area.

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.54 F-13, FIELD FIRING RANGE

This range only appears on maps from the 1950's and no information is provided on weapons fired or types of targets.

2.54.1 Range Identification

Common Name: F-13, Field Firing Range
Also known as Range F-13
F-13, Combined Arms Range
F-13, Mortar Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 5** for location, also see plates 6, 8, and 10)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 40' 01" N Longitude: 77° 19' 01" W
Military Grid: 877 386

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Unknown

Based upon the names of the range and the range fans, it is assumed that small arms and 60mm and 81mm mortars were fired on this range.

Information Current as of: 1 February 2000

2.54.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None
60mm Mortar, HE	Point Detonating
60mm Mortar, WP	Point Detonating
60mm Mortar, Illumination	Powder Train Time
81mm, HE	Point Detonating
81mm, Practice	None
81mm, WP	Point Detonating

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1950 to approximately 1959

Locations within Range of Known Munitions Use: Firing Line and Impact Area "G-10"

Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line. Mortar ammunition would most likely be fired into the Impact Area "G-10".

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
.30 Caliber, Ball, M1 (NOTE: Only complete rounds represent an explosive hazard and complete rounds are found on the surface)	1.3	1.7	2.6	0.1
60mm M49	1.1	1.5	2.3	1.9
81mm M43	2.7	3.5	5.4	2.8
81mm, M56	2.0	2.7	4.1	2.8

[1] Maximum detection depth using a magnetometer.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Unknown

Other Past Uses: None

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.55 F-6, LIVE HAND GRENADE RANGE

This range first appears on a 1951 range map.

In 1960 this range consisted of 5 throwing pits, 2 observation pits, and one covered troop shelter.

Base Order P11102.1G, dated 6 February 1970 identified an addition of a practice hand grenade area to this range. By 1994 only 3 throwing pits were in use.

2.55.1 Range Identification

Common Name: F-6, Live Hand Grenade Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 5** for location, also see plates 6, 8, 10, 13, 16, 18, and 20)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 39' 41" N Longitude: 77° 19' 04" W
Military Grid: 876 381

BO 11102.1B identified the right flank of this range at coordinates 876 382 to 877 381 with a hazard distance of 100 yards directly in front and on the left flank coordinates 875 838 to 876 383 with a hazard distance of 120 yards directly in front.

BO P11102.1G identified the right flank at coordinates 877 381 with an Azimuth of 97° Grid and a left flank at coordinates 877 382 with an Azimuth of 74° Grid.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Hand Grenades, HE, WP

Information Current as of: 1 February 2000

2.55.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Grenade, Hand, HE	Integral
Hand Grenade, WP	Integral
Hand Grenade, Practice	Integral

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1950 to present

Locations within Range of Known Munitions Use: Impact Area

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Hand Grenades would normally be found on the surface, but through the actions of other explosions, weathering, and construction, unexploded grenades may have become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared. Explosive Ordnance Disposal personnel routinely standby during live grenade throwing exercises and dispose of dud ammunition as it occurs.

Specific Munitions Safety Issues: WP Grenades contain a filler which burns upon contact with air.

Types of Targets: Improvised

Other Past Uses: None

Anticipated Future Use: Continued use as a range.

Public Access: Area is located on a restricted access military reservation.

2.56 F-3, FIELD FIRING RANGE

This range first appears on a 1951 range map. Base Order 11102.1B, dated 5 May 1960, identified the weapons authorized for firing on this range as all infantry weapons except 106mm recoilless rifle.

Base Order P11102.1G, dated 6 February 1970, identified the ammunition authorized for use on this range as rifle (.30 Caliber), 3.5" rocket (practice), rifle grenades (practice), and M-48 spotting round of .50 Caliber spotting rifle.

Base Order P11102.1K, dated 1 December 1986, identified the weapons authorized on this range as rifles, M60 & SAW machine guns, shotguns, pistols, M73 rocket launcher, and 1/4 lb demolition charges.

2.56.1 Range Identification

Common Name: F-3 Field Firing Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 5** for location, also see plates 6, 7, 8, 10, 11, 13, 16, 18, and 20)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 39' 43" N Longitude: 77° 14' 57" W
Military Grid: 939 379

BO 11102.1B identified the right flank at coordinates 937 379 with an Azimuth of 331° 50' Grid and a left flank at coordinates 936 378 with an Azimuth of 387° 25' Grid.

BO P11102.1G identified the right flank at coordinates 939 380 with an Azimuth of 295° Grid and a left flank at coordinates 938 378 with an Azimuth of 286° Grid.

BO P11102.1K stated that the direction of fire was 294°.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms, 2.36" and 3.5" Rockets, M73 LAAW, 60mm and 81mm Mortars, 57mm, 75mm, and 90mm Recoilless Rifles, Hand Grenades, and Rifle Grenades

Information Current as of: 1 February 2000

2.56.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None
2.36", AT Rocket	Base Detonating
3.5", AT Rocket	Base Detonating
M73 Sub-caliber Rocket	Impact
60mm Mortar, HE	Point Detonating
60mm Mortar, Prac	None
60mm Mortar, Illum	Powder Train Time
60mm Mortar, WP	Point Detonating
81mm, Mortar, HE	Point Detonating
81mm Mortar, WP	Point Detonating
81mm Mortar, Prac	None
81mm Mortar, Illum	Time
4.2 Inch Mortar, HE	Point Detonating
4.2 Inch Mortar, WP	Point Detonating
4.2 Inch Mortar, Illumination	Mechanical Time
57mm Recoilless Rifle, TP	Point Detonating
57mm Recoilless Rifle, HE	Point Detonating
57mm Recoilless Rifle, HEAT	Point Detonating
57mm Recoilless Rifle, WP	Point Detonating
57mm Recoilless Rifle, Canister	None
75mm Recoilless Rifle, HE	Point Detonating
75mm Recoilless Rifle, HEAT	Base Detonating
75mm Recoilless Rifle, WP	Point Detonating

90mm Recoilless Rifle, HEAT	Point Initiating, Base Detonating
90mm Recoilless Rifle, Canister	None
Hand Grenade, HE	Delay
Hand Grenade, Smoke	Delay
Hand Grenade, WP	Delay
Rifle Grenade, HEAT	Integral
Rifle Grenade, HE	Integral
Rifle Grenade, Smoke	Integral
Rifle Grenade, WP	Integral
Demolition materials	Electric and Non-electric firing systems

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1950 to present

Locations within Range of Known Munitions Use: Entire Range

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil. Some munitions, such as hand grenades, would normally be located on the surface, but ground movement caused by explosions, erosion and construction may have been caused them to be buried to an unknown depth.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
.30 Caliber, Ball, M1 (NOTE: Only complete rounds represent an explosive hazard and complete rounds are found on the surface)	1.3	1.7	2.6	0.1
Hand Grenades	Surface	Surface	Surface	1.7
M9 Rifle Grenade	0.1	0.2	0.2	1.7
57mm M306	2.7	3.6	5.5	1.7
60mm M49	1.1	1.5	2.3	1.9
2.36" Rocket, M6	0.4	0.5	0.8	1.9

75mm M310	3.9	5.1	7.8	2.5
81mm M43	2.7	3.5	5.4	2.8
81mm, M56	2.0	2.7	4.1	2.8
3.5" Rocket M28	0.8	1.1	1.7	3.2
90mm M371	2.0	2.7	4.1	3.2
4.2" M3 (max charge)	4.1	5.4	8.3	4.1
35mm Sub-Caliber M73	0.5	0.7	1.0	0.9

[1] Maximum detection depth using a magnetometer.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: White Phosphorus munitions contain a filler which burns upon contact with air. Shaped Charge munitions contain sensitive fuzing and have a significantly larger hazard area forward of the munition.

Types of Targets: Stationary Hulls and as improvised by using unit (1960).

Other Past Uses: This range is located approximately where Machine Gun Range "C" was located.

Anticipated Future Use: Continued use as a range.

Public Access: Area is located on a restricted access military reservation.

2.57 F-4, FIELD FIRING RANGE

This range only appears on range maps from the early 1950's.

2.57.1 Range Identification

Common Name: F-4 Field Firing Range
Also known as F-4, Moving Vehicle Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 5** and **7** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 39' 43" N Longitude: 77° 14' 57" W
Military Grid: 939 379

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Unknown

The shape and size of the range fan indicates that the range used Small Arms. No information has been found to indicate if other munitions were used on this range.

Information Current as of: 1 February 2000

2.57.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1950 to approximately 1955

Locations within Range of Known Munitions Use: Firing Line

Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Unknown

Other Past Uses: This range, along with F-3 are located approximately where Machine Gun Range "C" was located.

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.58 G-1, COMBAT RANGE

The only references uncovered on this range are 1950's range maps. This range fires into the "G-10" Impact Area indicating that some type of explosive munition may have been fired on this range but no information has been uncovered to indicate which munition.

2.58.1 Range Identification

Common Name: G-1, Combat Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 5** for location, also see plates 6, 7, 8, 10, and 11)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 39' 17" N Longitude: 77° 14' 44" W
Military Grid: 942 371

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Unknown

Information Current as of: 1 February 2000

2.58.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Unknown	

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1950 to approximately 1959

Locations within Range of Known Munitions Use: Unknown

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Unknown

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Unknown

Other Past Uses: This range is located in part of the area of Musketry Range "C-1".

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.59 G-11, BATTLE INDOCTRINATION COURSE

This range first appears on a 1951 range map. Base Order 11102.1B, dated 5 May 1960, identified this range as an infiltration course.

2.59.1 Range Identification

Common Name: G-11, Battle Indoctrination Course
Also known as G-11, Battle Infiltration Course

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 5** for location, also see plates 6, 8, 10, and 11)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 36' 59" N Longitude: 77° 16' 23" W
Military Grid: 916 329

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms, .30 Caliber and Demolition Materials

Information Current as of: 1 February 2000

2.59.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None
Demolition materials	Electric and Non-electric Firing Systems

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1950 to approximately 1961

Locations within Range of Known Munitions Use: Only complete rounds of small arms present an explosive hazard. Complete rounds of small arms would be located at the firing points and the demolition materials would be in demolition pits on the course.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds of small arms would normally be located on the surface. Demolition materials are normally placed in pits but are not buried. Over the years, construction and other ground movement may have caused these munitions to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Machine Guns fire into Fixed Positions and Demolitions are placed in Fixed Demolition Pits.

Other Past Uses: This range is located in an area that has been used as a range area since the base was built.

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.60 F-14, FIELD FIRING RANGE

This range first appears on a 1951 range map. Base Order 11102.1B, dated 5 May 1960, identified this range for use with all weapons except 106mm recoilless rifle and 90mm gun. High explosive ammunition is not to be impacted on this range, the range fires into the "G-10" Impact Area.

2.60.1 Range Identification

Common Name: F-14, Field Firing Range
Also known as F-14, Combined Arms Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 5** for location, also see plates 6, 8, and 10)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 42' 13" N Longitude: 77° 16' 51" W
Military Grid: 911 426

BO 11102.1B identified the right flank at coordinates 912 421 with an Azimuth of 188° magnetic and a left flank at coordinates 919 416 with an Azimuth of 182 ° magnetic.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Ammunition of all weapons except 106mm Recoilless Rifle and 90mm Gun.

Information Current as of: 1 February 2000

2.60.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None
60mm Mortar, HE	Point Detonating
60mm Mortar, Prac	None
60mm Mortar, Illum	Powder Train Time
60mm Mortar, WP	Point Detonating
81mm, Mortar, HE	Point Detonating
81mm Mortar, WP	Point Detonating
81mm Mortar, Prac	None
81mm Mortar, Illum	Time
4.2 Inch Mortar, HE	Point Detonating
4.2 Inch Mortar, WP	Point Detonating
4.2 Inch Mortar, Illumination	Mechanical Time
57mm Recoilless Rifle, TP	Point Detonating
57mm Recoilless Rifle, HE	Point Detonating
57mm Recoilless Rifle, HEAT	Point Detonating
57mm Recoilless Rifle, WP	Point Detonating
57mm Recoilless Rifle, Canister	None
75mm Recoilless Rifle, HE	Point Detonating
75mm Recoilless Rifle, HEAT	Base Detonating
75mm Recoilless Rifle, WP	Point Detonating
90mm Recoilless Rifle, HEAT	Point Initiating, Base Detonating
90mm Recoilless Rifle, Canister	None`
75mm Howitzer, HE	Point Detonating
75mm Howitzer, WP	Point Detonating
105mm Howitzer, HE	Point Detonating
105mm Howitzer, WP	Point Detonating
105mm Howitzer, Illumination	Mechanical Time
155mm Howitzer, HE	Point Detonating
155mm Howitzer, WP	Point Detonating
155mm Howitzer, Illumination	Mechanical Time

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1950 to approximately 1961

Locations within Range of Known Munitions Use: Explosive munitions restricted to impact within the "G-10" Impact Area. Practice munitions and small arms may be located throughout the entire range.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
.30 Caliber, Ball, M1 (NOTE: Only complete rounds represent an explosive hazard and complete rounds are found on the surface)	1.3	1.7	2.6	0.1
57mm M306	2.7	3.6	5.5	1.7
60mm M49	1.1	1.5	2.3	1.9
75mm M48	4.9	6.4	9.8	2.5
75mm M310	3.9	5.1	7.8	2.5
81mm M43	2.7	3.5	5.4	2.8
81mm, M56	2.0	2.7	4.1	2.8
90mm M371	2.0	2.7	4.1	3.2
105mm M1 (charge 7)	7.7	10.1	15.4	4.0
4.2" M3 (max charge)	4.1	5.4	8.3	4.1
155mm M107	14.0	18.4	28.0	6.7

[1] Maximum detection depth using a magnetometer.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: Some munitions may contain white phosphorus which will burn upon contact with air.

Types of Targets: Two Hulks and as provided by using unit.

Other Past Uses: The "F" area has been used as a Firing Range Area since the base was constructed.

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.61 DIRECT FIRE ARTILLERY RANGE

Camp Training Order 78-1946, with Mod 1 dated 6 March 1947, identified this range for use by all caliber artillery firing direct fire, including tanks and LVTs.

Base Order 11102.1B, dated 5 May 1960, identified this range for firing all weapon with all types of munitions.

Base Order P11102.1G, dated 6 February 1970, identified this range for use by tank guns, field artillery, recoilless rifles, and machine guns with only HVAP, HVAP-DS, and HVTP types of ammunition prohibited.

Base Order P11102.1K, dated 1 December 1986, identified this range for use by 105mm tank guns, field artillery (direct fire), machine guns, and 25mm cannon using all types of ammunition except high velocity projectiles exceeding 25,000 yards seaward.

Base Order P3570.1, dated 2 June 1994, identifies this range for use with the following types of ammunition: .50 Caliber, 5.56mm, 7.62mm, 25mm TP-T, 105mm, 155mm, 120mm, 40mm practice (MK 19 and M203).

2.61.1 Range Identification

Common Name: Direct Fire Artillery Range
Also known as G-7 Artillery Range
G-7 Field Firing Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 5** for location, also see plates 4, 6, 7, 8, 10, 11, 13, 16, 18, and 20)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 37' 42" N Longitude: 77° 13' 22" W
Military Grid: 962 341

In 1951 the firing line was in grid square 9633, with a primary direction of fire of approximately 135° Grid.

BO 11102.1B identified the right flank at coordinates 96390 33870 with an Azimuth of 175° 30' Grid and a left flank at coordinates 96390 33950 with an Azimuth of 119° 00' Grid.

BO P11102.1G identified the right flank at coordinates 958 342 with an Azimuth of 143° Grid and a left flank at coordinates 959 344 with an Azimuth of 140° Grid.

BO P11102.1K identified the firing line at 959 342 with a primary direction of fire of 146°.

BO P3570.1 adjusted the primary direction of fire to 141°.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Artillery – All types, Tank Main Gun, LVT guns

Information Current as of: 1 February 2000

2.61.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None
25mm, TP-T	None
37mm, HE	Base Detonating
37mm, Shot	None
40mm, HE, Gun	Point Detonating
40mm Grenade, Practice	None
57mm Recoilless Rifle, TP	None
57mm Recoilless Rifle, HE	Point Detonating
57mm Recoilless Rifle, WP	Point Detonating
57mm Recoilless Rifle, HEAT	Point Detonating
75mm Howitzer, HE	Point Detonating
75mm Howitzer, WP	Point Detonating

75mm Gun, HE	Point Detonating
75mm Gun, AP	None
75mm Gun, WP	Point Detonating
75mm Recoilless Rifle, HEAT	Base Detonating
75mm Recoilless Rifle, WP	Point Detonating
75mm Recoilless Rifle, HE	Point Detonating
75mm Recoilless Rifle, HEP	Base Detonating
76mm Gun, HE	Point Detonating
76mm Gun, HEAT	Point Initiating Base Detonating
76mm Gun, WP	Point Detonating
76mm Gun, AP	None
90mm Recoilless Rifle, HE	Point Detonating
90mm Recoilless Rifle, HEAT	Point Initiating Base Detonating
90mm Gun, HE	Point Detonating
90mm Gun, AP	Base Detonating
90mm Gun, WP	Point Detonating
90mm Gun, HEAT	Point Initiating Base Detonating
105mm Howitzer, HE	Point Detonating Mechanical Time Variable Time
105mm Howitzer, Smoke	Mechanical Time
105mm Howitzer, WP	Point Detonating
105mm Howitzer, Illumination	Mechanical Time
105mm Howitzer, HEAT	Base Detonating
105mm Gun, HEAT	Point Initiating Base Detonating
105mm Gun, HE	Point Detonating
105mm Gun, WP	Point Detonating
105mm Gun, TP	None
106mm Recoilless Rifle, HEAT	Point Initiating Base Detonating
120mm Gun, HEAT	Point Initiating Base Detonating
120mm Gun, TP	None
155mm Howitzer and Gun, HE	Point Detonating Mechanical Time Variable Time
155mm Howitzer and Gun, WP	Point Detonating
155mm Howitzer and Gun, Illumination	Mechanical Time

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1945 to present

Locations within Range of Known Munitions Use: Impact Area "N-1" is used which consists primarily of water. Firing point may have items such as unused propellant charges and supplementary charges.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
.50 Caliber, Ball, M2 (NOTE: Only complete rounds represent an explosive hazard and complete rounds are found on the surface)	1.6	2.2	3.3	0.2
25mm, M792	3.1	4.1	6.2	0.6
37mm M63	3.9	5.2	7.9	0.9
40mm, MK II	4.4	5.8	8.9	1.1
40mm M381	0.2	0.3	0.4	1.1
57mm M306	2.7	3.6	5.5	1.7
75mm M48	4.9	6.4	9.8	2.5
75mm M310	3.9	5.1	7.8	2.5
76mm M496	8.9	11.7	17.9	2.6
90mm, M71	9.7	12.7	19.4	3.2
105mm M1 (charge 7)	7.7	10.1	15.4	4.0
105mm, M456	13.4	17.6	26.8	4.0
106mm M244	6.5	8.5	13.0	4.0
120mm, M469	12.6	16.5	25.2	4.7
155mm M107	14.0	18.4	28.0	6.7
155mm, M101	15.8	20.7	31.6	6.7

[1] Maximum detection depth using a magnetometer.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: Shaped charged munitions contain sensitive fuzing and present a significantly larger hazard area forward of the munition. Some munitions may contain WP which burns upon contact with air.

Types of Targets: Marshes, Tank Hulls, Browns Island, and Improvised Targets (1960). Mechanical Moving Target and Stationary Targets down range and on Browns Island (1970). Eight Stationary Targets (1994).

Other Past Uses: None

Anticipated Future Use: Continued use as a range

Public Access: Area is located on a restricted access military reservation.

2.62 G-6, ARTILLERY RANGE

This range appears on range maps from 1951 to 1959.

2.62.1 Range Identification

Common Name: G-6 Artillery Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 5** for location, also see plates 6, 7, 8, 10, and 11)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 39' 02" N Longitude: 77° 13' 37" W
Military Grid: 959 366

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Unknown

Based upon the name and location of the range, it is assumed that all types of artillery were fired on this range.

Information Current as of: 1 February 2000

2.62.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
75mm Howitzer, HE	Point Detonating
75mm Howitzer, WP	Point Detonating
105mm Howitzer, HE	Point Detonating Variable Time
105mm Howitzer, WP	Point Detonating
105mm Howitzer, Illumination	Mechanical Time
155mm Howitzer, HE	Point Detonating Variable Time
155mm Howitzer, WP	Point Detonating
155mm Howitzer, Illumination	Mechanical Time

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1950 to approximately 1960

Locations within Range of Known Munitions Use: Firing Line and Impact Area

Explosive items such as propellent increments and supplemental charges may be found at the firing line. Fired projectiles would be found in the impact area.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
75mm M48	4.9	6.4	9.8	2.5
105mm M1 (charge 7)	7.7	10.1	15.4	4.0
155mm M107	14.0	18.4	28.0	6.7

[1] Maximum detection depth using a magnetometer.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: Some munitions may contain white phosphorus, which burns upon contact with air.

Types of Targets: Unknown

Other Past Uses: The G-6 Artillery Range Area has been used as a range and impact area since the establishment of the base.

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.63 G-4, DEMOLITIONS ASSAULT COURSE

This range first appears on a 1951 range map. This size and shape of this range changes over time, but because the use of the range remains the same, it is considered the same range.

Base Order 11102.1B, dated 5 May 1960, identified the munitions authorized for use on this range as all types of rifle grenades, flame throwers, and land mines. No firing was to be conducted outside of grid square 9232.

Base Order P11102.1G, dated 6 February 1970, authorized demolitions and land mines not to exceed a charge of forty pounds net TNT equivalent per shot.

Base Order 11102.1K, dated 1 December 1986 listed the explosive limit as 50 pounds net TNT equivalent per shot and authorized the use of M68A1 (inert) linear charges in addition to demolitions and land mines.

2.63.1 Range Identification

Common Name: G-4, Demolition Assault Course
Also known as G-4, Demolition Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 5** for location, also see plates 6, 7, 8, 10, 11, 13, 16, 18, and 20)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 36' 53" N Longitude: 77° 15' 43" W
Military Grid: Grid Square 926 327

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms, Rifle Grenades, Flame Throwers, Land Mines, and Demolitions (50lb NEW)

Information Current as of: 1 February 2000

2.63.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None
Rifle Grenade, HE	Integral
Rifle Grenade, WP	Integral
Rifle Grenade, HEAT	Integral
Land Mine, AT	Note 1
Land Mines, AP	Note 1
Demolition Materials	Electric and Non-Electric Firing Systems

NOTE 1: Land mines contain munition specific fuzing but may also incorporate improvised and boobytrap fuzing and devices.

No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1950 to approximately 1987

Locations within Range of Known Munitions Use: Entire Range

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
.30 Caliber, Ball, M1 (NOTE: Only complete rounds represent an explosive hazard and complete rounds are found on the surface)	1.3	1.7	2.6	0.1
Demolitions (NOTE: May be buried to an unknown depth but would normally be near the surface.)	Unknown	Unknown	Unknown	n. a.
M9 Rifle Grenade	0.1	0.2	0.2	1.7
M28/M31 HEAT Rifle Grenade	0.1	0.2	0.3	2.1
Land Mines	Near Surface	Near Surface	Near Surface	Variable

[1] Maximum detection depth using a magnetometer.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: Land mines may be employed with boobytrap devices. No information on the use of these items has been uncovered but must be suspected due to standard mine laying practices.

Types of Targets: Unknown

Other Past Uses: The "G" Area has been used as a range and impact area since the base was established.

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.64 D-6, 50-FOOT INDOOR SMALLBORE RIFLE AND PISTOL RANGE

This range appears on a 1954 base map and is identified in Base Order 11102.1B, dated 5 May 1960. It is identified as a .22 Caliber indoor range located in building 451. The description of the range remained the same in BO P11102.1G, dated 6 February 1970, and in BO P11102.1K, dated 1 December 1986.

2.64.1 Range Identification

Common Name: D-6, 50-Foot Indoor Smallbore Rifle and Pistol Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: Building 451, **MCB Camp Lejeune** (See **Plate 22** for location, also see plates 6 and 8)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms, .22 Caliber

Information Current as of: 1 February 2000

2.64.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: Before 1954 to present

Locations within Range of Known Munitions Use: Firing Line

Explosive hazards for small arms only occur with complete rounds.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

This is an indoor range and there is no possibility of complete rounds becoming buried on the range.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Eight Manually Operated Targets

Other Past Uses: Unknown

Anticipated Future Use: Unknown

Public Access: Area is located on a restricted access military reservation.

2.65 D-27, FORTIFIED BEACH ASSAULT AREA

This range first appears on a 1951 range map. Base Order 11102.1B, dated 5 May 1960, located this range in grid square 8736 and authorized the following ammunition for use on this range: Blank small arms, demolitions, practice rockets, smoke grenades, and pyrotechnics. The firing of rockets and flame throwers may take place in any direction the surface danger area of which does not include the spectator stands, the main service road, Sneads Ferry Road, or the magazine area.

Base Order P11102.1G, dated 6 February 1970, authorized the firing of the following ammunition on this range: blank small arms, 3.5" rocket (practice), thickened and unthickened fuel, demolitions (1/2 lb blocks), rifle grenades (practice), smoke and WP hand grenades.

2.65.1 Range Identification

Common Name: D-27, Fortified Beach Assault Area
Also known as D-27, Assault of a Fortified Position

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 5** for location, also see plates 6, 8, 10, 13, and 16)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 38' 49" N Longitude: 77° 18' 51" W
Military Grid: 879 364

BO P11102.1G identifies the right flank at coordinates 879 366 with an Azimuth of 270° Grid and a left flank at coordinates 879 359 with an Azimuth of 270° Grid.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms, 3.5" Rocket (Practice), Flame Throwers, Rifle Grenades (Practice), Smoke and WP Hand Grenades

Information Current as of: 1 February 2000

2.65.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None
3.5" Practice Rocket	None
Rifle Grenade, Practice	None
Hand Grenade, Smoke	Integral
Hand Grenade, WP	Integral

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1953 to approximately 1977

Locations within Range of Known Munitions Use: Entire Range

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
.30 Caliber, Ball, M1 (NOTE: Only complete rounds represent an explosive hazard and complete rounds are found on the surface)	1.3	1.7	2.6	0.1
M9 Rifle Grenade	0.1	0.2	0.2	1.7
3.5" Rocket M28	0.8	1.1	1.7	3.2

Hand Grenade (NOTE: Hand grenades would normally be on the surface but site dynamics may cause them to become buried to an unknown depth)	Surface	Surface	Surface	1.7

[1] Maximum detection depth using a magnetometer.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: WP munitions may be present and WP burns upon contact with air.

Types of Targets: Unknown

Other Past Uses: None

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.66 E-1A, AAA & ANTI-BOAT FIRING RANGE

The only references uncovered on this range are range maps from the 1950's. It appears that the former beach firing area was expanded and divided into two separate ranges E-1A and E-1B.

2.66.1 Range Identification

Common Name: E-1A, AAA & Anti-Boat Firing Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 5** for location, also see plates 6, 8, 10, and 11)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 32' 30" N Longitude: 77° 18' 19" W
To
Latitude: 34° 34' 20" N Longitude: 77° 15' 47" W

Military Grid: 8845 2470 to 9240 2800

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms, 37mm, 40mm, and 90mm Gun

Information Current as of: 1 February 2000

2.66.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None
37mm HE	Point Detonating
40mm, HE	Point Detonating
90mm HE	Point Detonating

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1953 to 1959

Locations within Range of Known Munitions Use: Firing points on the beach with targets and impact area over water.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Unknown

Impact area is in the Atlantic Ocean. Information is not available for determining penetration depths in the bottom of the ocean within the impact area.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Towed and Remote Controlled Aerial Targets plus Towed and Remote Controlled Water Borne Targets

Other Past Uses: This beach area has been used for firing since 1942.

Anticipated Future Use: Continued use as a firing area.

Public Access: Area is located on a restricted access military reservation.

2.67 E-1B, AAA & ANTI-BOAT FIRING RANGE

2.67.1 Range Identification

Common Name: E-1B, AAA & Anti-Boat Firing Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 5** for location, also see plates 6, 8, 10, and 11)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 34' 20" N Longitude: 77° 15' 47" W
To
Latitude: 34° 35' 27" N Longitude: 77° 13' 51" W
Military Grid: 9240 2800 to 9540 3000

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms, 37mm, 40mm, and 90mm Gun

Information Current as of: 1 February 2000

2.67.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None
37mm, HE	Point Detonating
40mm, HE	Point Detonating
90mm HE	Point Detonating

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1953 to 1959

Locations within Range of Known Munitions Use: Firing points on the beach with targets and impact area over water

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Unknown

Impact area is in the Atlantic Ocean. Information is not available for determining penetration depths in the bottom of the ocean within the impact area.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Towed and Remote Controlled Aerial Targets plus Towed and Remote Controlled Water Borne Targets.

Other Past Uses: This beach area has been used for firing since 1942.

Anticipated Future Use: Continued use as a firing area.

Public Access: Area is located on a restricted access military reservation.

2.68 I-4, DEMOLITION AREA

The 1951 range map identified Range I-4 as an irregular shaped area within grid square 8725. The 1953 range map depicts it as the entire grid square (8725).

2.68.1 Range Identification

Common Name: I-4, Demolition Area

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 5** for location, also see plates 6 and 8)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Military Grid: Grid Square 8725

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Unknown

It is assumed that Demolition Materials were used on this range. No information has been uncovered about other munitions being used on this range.

Information Current as of: 1 February 2000

2.68.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Demolition Materials	Electric and Non-Electric Firing Systems

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1950 to approximately 1955

Locations within Range of Known Munitions Use: Entire Range

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Unknown

Demolitions are normally placed within four feet of the surface, but continued use of the area for demolitions may cause some items to become buried to a deeper depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: None

Other Past Uses: This area has been used as a maneuver and firing area since 1942.

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.69 G-13, MINIATURE ANTI-AIRCRAFT RANGE

This range appears on range maps 1953 through 1958.

2.69.1 Range Identification

Common Name: G-13, Miniature Anti-Aircraft Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 6** for location, also see plates 8, 10, and 11)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 37' 59" N Longitude: 77° 17' 51" W
Military Grid: 894 348

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Unknown

Miniature Anti-Aircraft Ranges normally fire .22 Caliber weapons. This range fires into the “G-10” Impact Area and may involve the firing of other than .22 Caliber.

Information Current as of: 1 February 2000

2.69.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1953 to approximately 1959

Locations within Range of Known Munitions Use: Firing Line

Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Moving

Other Past Uses: This area is in a general area used as a maneuver and firing range.

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.70 M-4, FIELD FIRING RANGE

This range appears on 1953 and 1954 range maps.

2.70.1 Range Identification

Common Name: M-4, Field Firing Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plates 6** and **8** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 39' 41" N Longitude: 77° 27' 46" W
Military Grid: 743 383

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Unknown

Based upon the name of the range, it is assumed that at least Small Arms were fired on this range.

Information Current as of: 1 February 2000

2.70.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1953 to approximately 1955

Locations within Range of Known Munitions Use: Firing Line

Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Unknown

Other Past Uses: This range is located in the former "M" Impact Area.

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.71 G-14, TANK MACHINE GUN RANGE

This range appears on range maps from 1953 through 1959.

2.71.1 Range Identification

Common Name: G-14, Tank Machine Gun Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 8** for location, also see plates 10 and 11)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 38' 25" N Longitude: 77° 17' 43" W
Military Grid: 896 356

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Unknown

Based upon the name of the range, it is assumed that .30 and .50 Caliber Machine Guns were fired on this range.

Information Current as of: 1 February 2000

2.71.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1953 to approximately 1960

Locations within Range of Known Munitions Use: Firing Line

Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Unknown

Other Past Uses: This range is located in an area that was used for maneuver and fire training and as an impact area since 1942.

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.72 L-4, 1000-INCH RANGE

This range first appears on a 1953 range map. Base Order 11102.1B, dated 5 May 1960, authorizes the use of .22 Caliber rifles, .45 Caliber pistols and submachine guns on this range.

2.72.1 Range Identification

Common Name: L-4, 1000-Inch Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 6** for location, also see plates 8, 10, and 12)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 35' 13" N Longitude: 77° 26' 26" W
Military Grid: 7614 3001

BO 11102.1B identifies the right flank coordinates at 76130 29715 with an Azimuth of 96° 45' Grid and a left flank coordinates at 76140 30010 with an Azimuth of 69° 45' Grid.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms

Information Current as of: 1 February 2000

2.72.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1953 to approximately 1963

Locations within Range of Known Munitions Use: Firing Line

Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Fixed Target

Other Past Uses: None

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.73 L-3, MACHINE GUN TRANSITION RANGE

This range appears on 1953 and 1954 range maps.

2.73.1 Range Identification

Common Name: L-3, Machine Gun Transition Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plates 6** and **8** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 35' 38" N Longitude: 77° 27' 34" W
Military Grid: 747 308

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Unknown

Based upon the name of the range, it is assumed that Small Arms were fired on this range.

Information Current as of: 1 February 2000

2.73.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1953 to 1954

Locations within Range of Known Munitions Use: Firing Line

Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Unknown

Other Past Uses: None

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.74 G-5A, MECHANIZED ANTI-TANK RANGE

This range first appears on a 1953 map. This range appears on maps before and after 1960, but is not in Base Order 11102.1B, dated 5 May 1960. Base Order P11102.1G, dated 6 February 1970, identifies this range as having two firing lines. The rear firing line is authorized for firing tank guns 90mm through 120mm, artillery (less Howtar), 106mm recoilless rifles. The forward firing line is authorized for 106mm recoilless rifles, machine guns, and 3.5" rockets (practice only).

2.74.1 Range Identification

Common Name: G-5A, Mechanized Anti-Tank Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 6** for location, also see plates 8, 10, 11, 13, and 16)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina

Rear Firing Line
Latitude: 34° 37' 23" N Longitude: 77° 14' 49" W
To
Latitude: 34° 37' 27" N Longitude: 77° 14' 37" W
Military Grid: 940 336 to 943 337

Front Firing Line
Latitude: 34° 36' 48" N Longitude: 77° 14' 32" W
To
Latitude: 34° 36' 48" N Longitude: 77° 14' 28" W

Military Grid: 944 325 to 945 325
Azimuth from right flank 162° Grid and from the left flank 172°

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms, 90mm, 105mm, 120mm Tank Guns, All Artillery except HOWTAR, 106mm Recoilless Rifle, 3.5" Rocket

Information Current as of: 1 February 2000

2.74.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None
90mm Gun, HE	Point Detonating Variable Time
90mm Gun, HEAT	Point Initiating Base Detonating
90mm Gun, TP-T	None
105mm Gun, HEAT	Point Initiating Base Detonating
105mm Gun, TP-T	None
105mm Gun, WP	Point Detonating
105mm Gun, HEP	Base Detonating
120mm Gun, HE	Point Detonating Variable Time
120mm Gun, HEAT	Point Initiating Base Detonating
120mm Gun, TP-T	None
75mm Howitzer, HE	Point Detonating
75mm Howitzer, WP	Point Detonating
105mm Howitzer, HE	Point Detonating Variable Time
105mm Howitzer, WP	Point Detonating
105mm Howitzer, Illumination	Mechanical Time
155mm Howitzer or Gun, HE	Point Detonating Variable Time
155mm Howitzer or Gun, WP	Point Detonating
155mm Howitzer or Gun, Illumination	Mechanical Time
106mm Recoilless Rifle, HEAT	Point Initiating Base Detonating
3.5" Rocket, Practice	Base Detonating

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1953 to approximately 1977

Locations within Range of Known Munitions Use: Firing Line and Impact Area

Munitions likely to be found at the firing line include unused propellant charges and supplemental charges. Fired projectiles and rockets would be found in the impact area.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
75mm M48	4.9	6.4	9.8	2.5
3.5" Rocket M28	0.8	1.1	1.7	3.2
90mm, M71	9.7	12.7	19.4	3.2
90mm M371	2.0	2.7	4.1	3.2
105mm M1 (charge 7)	7.7	10.1	15.4	4.0
105mm, M456	13.4	17.6	26.8	4.0
106mm M244	6.5	8.5	13.0	4.0
120mm M73	12.0	15.7	24.0	4.7
120mm, M469	12.6	16.5	25.2	4.7
155mm, M101	15.8	20.7	31.6	6.7
155mm M107	14.0	18.4	28.0	6.7

[1] Maximum detection depth using a magnetometer.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: Shaped charge munitions contain sensitive fuzing and present a significantly enlarged hazard area forward of the munition. WP munitions contain a filler which burns upon contact with air.

Types of Targets: Unknown

Other Past Uses: The "G" Area has been used for maneuver and firing training and as an impact area.

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.75 M-5, ARTILLERY RANGE

This range appears on 1953 range maps.

2.75.1 Range Identification

Common Name: M-5, Artillery Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 6** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 42' 38" N Longitude: 77° 28' 35" W
Military Grid: 732 438

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Unknown

Based upon the name of the range, it is assumed that Artillery such as 75mm, 105mm, and 155mm Howitzers were fired on this range.

Information Current as of: 1 February 2000

2.75.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
75mm Howitzer, HE	Point Detonating
75mm Howitzer, WP	Point Detonating
105mm Howitzer, HE	Point Detonating Variable Time
105mm Howitzer, WP	Point Detonating
105mm Howitzer, Illumination	Mechanical Time
155mm Howitzer, HE	Point Detonating Variable Time
155mm Howitzer, WP	Point Detonating
155mm Howitzer, Illumination	Mechanical Time

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1953

The only reference to this range is when the range appears on a 16 February 1953 map.

Locations within Range of Known Munitions Use: Firing Line and Impact Area

Munitions likely to be found at the firing line include unused propellant charges and supplemental charges. Fired projectiles and rockets would be found in the impact area.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
75mm M48	4.9	6.4	9.8	2.5
105mm M1 (charge 7)	7.7	10.1	15.4	4.0
155mm M107	14.0	18.4	28.0	6.7

[1] Maximum detection depth using a magnetometer.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: Some munitions may contain white phosphorus filler which burns upon contact with air.

Types of Targets: Unknown

The K-2 Impact Area is used by this range.

Other Past Uses: The "M" area has been used as an impact area and as a maneuver and fire training area.

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.76 M-5A, ARTILLERY RANGE

This range appears on a 1953 range map.

2.76.1 Range Identification

Common Name: M-5A, Artillery Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 6** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 41' 59" N Longitude: 77° 28' 22" W
Military Grid: 735 426

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Unknown

Based upon the name of the range, it is assumed that Artillery such as 75mm, 105mm, and 155mm Howitzers were fired on this range.

Information Current as of: 1 February 2000

2.76.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
75mm Howitzer, HE	Point Detonating
75mm Howitzer, WP	Point Detonating
105mm Howitzer, HE	Point Detonating Variable Time
105mm Howitzer, WP	Point Detonating
105mm Howitzer, Illumination	Mechanical Time
155mm Howitzer, HE	Point Detonating Variable Time
155mm Howitzer, WP	Point Detonating
155mm Howitzer, Illumination	Mechanical Time

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1953

The only reference to this range is when the range appears on a 16 February 1953 map.

Locations within Range of Known Munitions Use: Firing Line and Impact Area

Munitions likely to be found at the firing line include unused propellant charges and supplemental charges. Fired projectiles and rockets would be found in the impact area.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
75mm M48	4.9	6.4	9.8	2.5
105mm M1 (charge 7)	7.7	10.1	15.4	4.0
155mm M107	14.0	18.4	28.0	6.7

[1] Maximum detection depth using a magnetometer.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Unknown

This range fires into the K-2 Impact Area.

Other Past Uses: The "M" Area has been used as an impact area and as a maneuver and fire area.

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.77 D-6, PRACTICE HAND GRENADE COURSE

This range appears on 1953 range maps.

2.77.1 Range Identification

Common Name: D-6, Practice Hand Grenade Course
Also known as D-6, Practice Hand Grenade Course # 2

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 6** and **8** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 39' 07" N Longitude: 77° 20' 30" W
Military Grid: 854 370

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Unknown

Based upon the name of the range, it is assumed that Practice Hand Grenades were used on this range.

Information Current as of: 1 February 2000

2.77.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Practice Hand Grenades	Integral

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: Approximately 1953

The only reference to this range is when the range appears on a 16 February 1953 map.

Locations within Range of Known Munitions Use: Throwing Pits and Targets

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Unknown

Other Past Uses: Unknown

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.78 D-3, PRACTICE HAND GRENADE COURSE

This range appears on range maps from the 1950's.

2.78.1 Range Identification

Common Name: D-3, Practice Hand Grenade Course

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 6** and **8** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 40' 18" N Longitude: 77° 21' 03" W
Military Grid: 846 392

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Unknown

Based upon the name of the range, it is assumed that Practice Hand Grenades were used on this range.

Information Current as of: 1 February 2000

2.78.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Practice Hand Grenades	Integral

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1953 to approximately 1959

Locations within Range of Known Munitions Use: Throwing Pits and Targets

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Unknown

Other Past Uses: Unknown

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.79 B-3, GAS CHAMBER

This facility appears on range maps from 1953 to 1958 and in Base Order 11102.1B, dated 5 May 1960. BO 11102.1B describes this facility as consisting of one room at GS 7546.

2.79.1 Range Identification

Common Name: B-3, Gas Chamber

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 6** for location, also see plates 8 and 10)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 43' 57" N Longitude: 77° 27' 38" W
Military Grid: 747 462

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Unknown

If this facility was used only as a gas chamber, only Chemical Warfare Training Agents (Tear Gas) would have been used. No CWM Munitions would be used. There is no evidence of other usage, however, the area surrounding gas chambers is often used for other chemical training. Thus, War Gas Identification Sets and Riot Control Hand Grenades may have been used in the area.

Information Current as of: 1 February 2000

2.79.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Unknown, Chemical Type	

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1953 to approximately 1961

Locations within Range of Known Munitions Use: Unknown

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

If munitions were used as part of the training at this facility, they would be located on the surface.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: Chemical Warfare Materials may require protective clothing and masks.

Types of Targets: NA

Other Past Uses: Unknown

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.80 D-7, GAS CHAMBER

This facility appears on range maps from 1953 and in Base Order 11102.1B, dated 5 May 1960, which described the facility as Building 756 which consisted of two rooms.

2.80.1 Range Identification

Common Name: D-7, Gas Chamber

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: Building 756, **MCB Camp Lejeune** (See **Plate 6** for location, also see plates 8 and 10)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 39' 42" N Longitude: 77° 20' 42" W
Military Grid: 85103809

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Unknown

If this facility was used only as a gas chamber, only Chemical Warfare Training Agents (Tear Gas) would have been used. No CWM Munitions would be used. There is no evidence of other usage, however, the area surrounding gas chambers is often used for other chemical training. Thus, War Gas Identification Sets and Riot Control Hand Grenades may have been used in the area.

Information Current as of: 1 February 2000

2.80.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Unknown, Chemical Type	

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1953 to approximately 1961

Locations within Range of Known Munitions Use: Unknown

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

If munitions were used as part of the training at this facility, they would be located on the surface.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: Chemical Warfare Materials may require protective clothing and masks.

Types of Targets: NA

Other Past Uses: Unknown

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.81 B-5, PRACTICE HAND GRENADE COURSE

This range appears on a 30 June 1954 map.

2.81.1 Range Identification

Common Name: B-5, Practice Hand Grenade Course

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 8** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 44' 08" N Longitude: 77° 27' 38" W
Military Grid: 74724653

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Unknown

Based upon the name of the range, it is assumed that Practice Hand Grenades were used on this range.

Information Current as of: 1 February 2000

2.81.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Practice Hand Grenades	Integral

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1953

The only reference to this range is on a 1 September 1953 map.

Locations within Range of Known Munitions Use: Throwing Pits and Targets

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Unknown

Other Past Uses: Unknown

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.82 D-9, SKEET RANGE

The range first appears on a 30 June 1954 map, it appears in range regulations from 1960 to present and is located in the parachute tower area. Skeet loads were authorized for fire from all gauges of shotguns, .410 through 12 Gauge.

2.82.1 Range Identification

Common Name: D-9, Skeet Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 8** for location, also see plates 16, 18, and 20)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 40' 35" N Longitude: 77° 20' 28" W
Military Grid: 855 397

The primary direction of fire is 28°

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Shotgun, No 7 ½, 8, or 9 Shot

Information Current as of: 1 February 2000

2.82.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Shotgun, with No 7 ½, 8, or 9 Shot	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1953 to present

Locations within Range of Known Munitions Use: Firing Line

Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Clay Pigeons

Other Past Uses: This area was initially an airborne training area

Anticipated Future Use: Continued present use

Public Access: Area is located on a restricted access military reservation.

2.83 F-9, TRIANGULATION RANGE

This range appears on a 1953 range map and is located next to Range F-11.

2.83.1 Range Identification

Common Name: F-9, Triangulation Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plates 6** and **8** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 40' 11" N Longitude: 77° 19' 26" W
Military Grid: 8707 3893

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Unknown

No information has been uncovered that identify the types of ammunition used on this range.

Information Current as of: 1 February 2000

2.83.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Unknown	

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1953

The only reference to this range appears on a 1 September 1953 map.

Locations within Range of Known Munitions Use: Unknown

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Unknown

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Unknown

Other Past Uses: The "F" Area was used as a range area and as a fire and maneuver area.

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.84 F-10A, 1000-INCH RANGE

This range appears on range maps from 1953 to 1958, but is not listed in the 1960 Range Regulation.

2.84.1 Range Identification

Common Name: F-10A, 1000-Inch Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 6** for location, also see plates 8 and 10)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 40' 13" N Longitude: 77° 19' 25" W
Military Grid: 871 390

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Unknown

No information has been uncovered to identify the type or caliber of weapons used on this range, but based upon the title of the range, it is assumed that Small Arms were fired on the range.

Information Current as of: 1 February 2000

2.84.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1953 to approximately 1959

Locations within Range of Known Munitions Use: Firing Line

Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Fixed Target

Other Past Uses: This area has been used for ranges and for fire and maneuver training in the past.

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.85 ANTI-MECHANIZED RANGE

This range appears on a 1941 map showing proposed ranges for Camp Lejeune. It is unknown if this range was used, but documents discussed using this shore of the New River and firing at towed targets on the river with the artillery impact area serving as safety area for the fire. Although listed as an Anti-Mechanized Range it was probably used as an Anti-Boat Range.

2.85.1 Range Identification

Common Name: Anti-Mechanized Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 2** for location)

County: Onslow
State: North Carolina
Latitude: 34° 35' 47" N Longitude: 77° 22' 47" W
Military Grid: 817 309

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Unknown

Information Current as of: 1 February 2000

2.85.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Unknown	

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1941 - 1942

Locations within Range of Known Munitions Use: Unknown

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Unknown

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Unknown

Other Past Uses: None

Anticipated Future Use: Continued present use

Public Access: Area is located on a restricted access military reservation.

2.86 F-16, COMBAT VILLAGE

This range first appears on a 16 February 1953 range map and is listed in the 5 May 1960 Base Order 11102.1B. The Base Order identified the range as consisting of 25 buildings.

2.86.1 Range Identification

Common Name: F-16, Combat Village

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plates 6, 8** and **10** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 39' 24" N Longitude: 77° 17' 34" W
Military Grid: 8988 3742

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Unknown

Based upon the name of the range and the weapons used on other ranges of the same type, it is assumed that Blank Ammunition, Smoke Grenades, Practice Hand Grenades, Practice Mines, Boobytrap Devices, and various Simulators and Pyrotechnics.

Information Current as of: 1 February 2000

2.86.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms, Blank	None
Hand Grenade, Smoke	Integral
Hand Grenade, Practice	Integral
Land Mine, Practice	Integral
Pyrotechnics	Integral

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1953 to approximately 1961

Locations within Range of Known Munitions Use: Entire Range

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface and Near Surface

Only complete rounds of small arms present an OE hazard. Complete rounds of small arms along with the other munitions would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth. Only practice land mines would have been intentionally buried and they would have been buried close to the surface. This area uses buildings as part of the training environment and muntions may be located anywhere in the buildings or in building debris.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: Booby Trap devices were used on this range and they present a hazard due their design to function when disturbed.

Types of Targets: This is a free play training area with no Fixed Targets.

Other Past Uses: The “G” Area has been used as an impact area and as a fire and maneuver area.

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.87 A-1, 50-FOOT .22 CALIBER RANGE

This range appears on a 1951 range map and is not on the 1958 range map. The 1960 range regulation lists a new range A-1 under construction in a new location.

2.87.1 Range Identification

Common Name: A-1, 50-foot .22 Caliber Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 5** for location, also see plates 6 and 8)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 43' 28" N Longitude: 77° 25' 00" W
Military Grid: 787 452

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Unknown

Based upon the name of the range and the ammunition used on similar ranges, it is assumed that Small Arms were used on this range.

Information Current as of: 1 February 2000

2.87.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1951 to approximately 1957.

Locations within Range of Known Munitions Use: Firing Line

Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Fixed

Other Past Uses: This range is located in approximately the same location as the 1000-Inch Range, Monford Point (Paragraph 2.32)

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.88 K-4, TRANSITION FIRING RANGE

This range first appears on the 3 April 1958 map. Base Order 11102.1B, dated 5 May 1960, lists .30 Caliber service ammunition, M48 trip flares and pyrotechnics as the ammunition authorized for use on this range.

2.88.1 Range Identification

Common Name: K-4, Transition Firing Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 10** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 38' 03" N Longitude: 77° 25' 18" W
Military Grid: 780 351

BO 11102.1B identifies the right flank at coordinates 78188-35190 with an Azimuth of 134° 30' grid and a left flank at coordinates 78188-35155 with an Azimuth of 105° 30' grid.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms and Pyrotechnics

Information Current as of: 1 February 2000

2.88.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None
Pyrotechnics, Simulators	Integral

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1958 to approximately 1961

Locations within Range of Known Munitions Use: Firing Line and Impact Area

Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line. Pyrotechnics may be found anywhere on the range.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds of small arms and pyrotechnics would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: Pyrotechnic munitions contain a filler that is extremely sensitive to heat, shock and friction.

Types of Targets: 19 Target Pits with Type "E" Targets mounted on 8-foot poles at varying distances from 75 to 350 yards

Other Past Uses: The “K” Area has been used as an impact area and as a fire and maneuver area in the past.

Anticipated Future Use: This range is where the current K-Series Ranges are located.

Public Access: Area is located on a restricted access military reservation.

2.89 K-5, COMBAT FIRING RANGE

This range appears on the 1958 range map and is identified in Base Order 11102.1B, dated 5 May 1960. The base order authorizes the firing of M1 rifles, BAR's , .30 Caliber machine guns and 3.5" rocket launchers (firing practice rounds only). Demolitions and pyrotechnics are authorized to simulate combat conditions.

2.89.1 Range Identification

Common Name: K-5, Combat Firing Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 10** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 38' 31" N Longitude: 77° 23' 41" W
Military Grid: 805 360

Base Order 11102.1B identifies the right flank at coordinates 80580-36032 with an Azimuth of 205° 20' grid and a left flank at coordinates 80810-35990 with an Azimuth of 176° 00' grid.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms, 3.5" Rocket (Practice), Pyrotechnics, Demolitions

Information Current as of: 1 February 2000

2.89.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None
3.5" Rocket, Practice	None
Pyrotechnics	Integral
Demolitions	Electric and Non-Electric Firing Systems

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1958 to approximately 1961

Locations within Range of Known Munitions Use: Firing Line and Impact Area

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
.30 Caliber, Ball, M1 (NOTE: Only complete rounds represent an explosive hazard and complete rounds are found on the surface)	1.3	1.7	2.6	0.1
3.5" Rocket M28	0.8	1.1	1.7	3.2
Pyrotechnics	Surface	Surface	Surface	n. a.
Demolitions (NOTE: May be buried to an unknown depth but would normally be near the surface.)	Unknown	Unknown	Unknown	n. a.

[1] Maximum detection depth using a magnetometer.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: Pyrotechnics contain a filler that is extremely sensitive to heat, shock, and friction.

Types of Targets: 3 Bunkers, 3 Rows of hand operated "Pop-Up" Type "E" Targets (12 per row)

Other Past Uses: The “K” Area has been used as an impact area and as a fire and maneuver area in the past.

Anticipated Future Use: This range is where the current K-Series Range Complex are located.

Public Access: Area is located on a restricted access military reservation.

2.90 K-6, TRANSITION RANGE

This range appears on the 1958 range map and in Base Order 11102.1B, dated 5 May 1960. The base order identifies the ammunition authorized on this range as .30 Caliber service, M48 trip flares and pyrotechnics.

2.90.1 Range Identification

Common Name: K-6, Transition Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 10** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 38' 28" N Longitude: 77° 22' 58" W
Military Grid: 816 359

Base Order 11102.1B identifies the right flank at coordinates 81690-35960 with an Azimuth of 240° 20' grid and a left flank at coordinates 81860 35880 with an Azimuth of 209° 00' grid.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms and Pyrotechnics

Information Current as of: 1 February 2000

2.90.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None
Pyrotechnics	Integral

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1958 to approximately 1961

Locations within Range of Known Munitions Use: Firing Line and Impact Area

Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line. Pyrotechnics may be found anywhere on the range.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds of small arms and pyrotechnics would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: Pyrotechnic munitions contain a filler that is extremely sensitive to heat, shock, and friction.

Types of Targets: 23 Target Pits with Type "E" targets mounted on 9-foot poles at varying distances

Other Past Uses: The “K” Area has been used as an impact area and as a fire and maneuver area in the past.

Anticipated Future Use: This range is where the current K-Series Range Complex are located.

Public Access: Area is located on a restricted access military reservation.

2.91 K-7, COMBAT FIRING RANGE

This range appears on a 1958 range map and in Base Order 11102.1B, dated 5 May 1960. The base order identifies the ammunition authorized for this range as service small arms, 3.5" practice rockets, and demolitions and pyrotechnics for simulation of combat conditions. The range also appears on a 1962 map.

2.91.1 Range Identification

Common Name: K-7, Combat Firing Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 10** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 37' 46" N Longitude: 77° 25' 34" W
Military Grid: 776 347

Base Order 11102.1B identifies the right flank at coordinates 77675-34720 with an Azimuth of 89° 09' grid and a left flank at coordinates 77730-34940 with an Azimuth of 89° 09' grid.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms, 3.5" Rocket (Practice), Pyrotechnics, and Demolitions

Information Current as of: 1 February 2000

2.91.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None
3.5" Rocket, Practice	None
Pyrotechnics	Integral
Demolitions	Electric and Non-Electric Firing Systems

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1958 to approximately 1963

Locations within Range of Known Munitions Use: Firing Line and Impact Area

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
.30 Caliber, Ball, M1 (NOTE: Only complete rounds represent an explosive hazard and complete rounds are found on the surface)	1.3	1.7	2.6	0.1
3.5" Rocket M28	0.8	1.1	1.7	3.2
Pyrotechnics	Surface	Surface	Surface	n. a.
Demolitions (NOTE: May be buried to an unknown depth but would normally be near the surface.)	Unknown	Unknown	Unknown	n. a.

[1] Maximum detection depth using a magnetometer.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: Pyrotechnic munitions contain a filler that is extremely sensitive to heat, shock, and friction.

Types of Targets: 24 Electromechanical Targets, two Bunkers and one Elevated Hill

Other Past Uses: The "K" Area has been used as an impact area and as a fire and maneuver area in the past.

Anticipated Future Use: This range is where the current K-Series Range Complex are located.

Public Access: Area is located on a restricted access military reservation.

2.92 K-8, CLOSE COMBAT RANGE

This range appears on a 1957 map and in Base Order 11102.1B, dated 5 May 1960. The base order authorizes M1 rifles, BAR's, submachine guns and .45 Caliber pistols firing service ammunition.

2.92.1 Range Identification

Common Name: K-8, Close Combat Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 10** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 38' 28" N Longitude: 77° 23' 17" W
Military Grid: 811 359

Base Order 11102.1B identified the right flank at coordinates 81190-35970 with an Azimuth of 208° 30' grid and a left flank at coordinates 81410-35950 with an Azimuth of 179° 30' grid.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms

Information Current as of: 1 February 2000

2.92.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1958 to approximately 1961

Locations within Range of Known Munitions Use: Firing Line

Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: 16 hand operated "Pop-Up" Type "E" Targets

Other Past Uses: The “K” Area has been used as an impact area and as a fire and maneuver area in the past.

Anticipated Future Use: This range is where the current K-Series Range Complex are located.

Public Access: Area is located on a restricted access military reservation.

2.93 K-9, 3.5 INCH ROCKET FIELD FIRING RANGE

This range appears on a 1958 map and in Base Order 11102.1B, dated 5 May 1960. The base order authorizes the firing of 3.5" rockets on this range.

2.93.1 Range Identification

Common Name: K-9, 3.5 Inch Rocket Field Firing Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 10** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 38' 26" N Longitude: 77° 24' 55" W
Military Grid: 786 359

Base Order 11102.1B identifies the right flank at coordinates 78685-35980 with an Azimuth of 160° 28' grid and a left flank at coordinates 78840-36060 with an Azimuth of 132° 20' grid.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: 3.5" Rocket

Information Current as of: 1 February 2000

2.93.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
3.5" Rocket, HEAT	Base Detonating
3.5" Rocket, Practice	None
3.5" Rocket, WP	Base Detonating

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1958 to approximately 1961

Locations within Range of Known Munitions Use: Impact Area

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
3.5" Rocket M28	0.8	1.1	1.7	3.2

[1] Maximum detection depth using a magnetometer.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: Shaped charge munitions contain sensitive fuzing and have a significantly larger hazard area forward of the munition.

Types of Targets: Tanks at varying distances (175 to 400 yards)

Other Past Uses: The “K” Area has been used as an impact area and as a fire and maneuver area in the past.

Anticipated Future Use: This range is where the current K-Series Range Complex are located.

Public Access: Area is located on a restricted access military reservation.

2.94 K-10, RIFLE GRENADE FIELD FIRING RANGE

The 1960 Range Regulation identifies this range as a Rifle Grenade Range but a 1958 map and a 1962 map identify it as a Practice Hand Grenade Range. Base Order 11102.1B, dated 5 May 1960, authorized the following ammunition for use on this range: .30 Caliber M3 crimped cartridges, M28 rifle grenades, M29 rifle grenades, white phosphorus hand and rifle grenades, pyrotechnics and demolitions.

2.94.1 Range Identification

Common Name: K-10, Rifle Grenade Field Firing Range
Also known as K-10, Practice Hand Grenade Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plates 10** and **12** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 37' 40" N Longitude: 77° 25' 33" W
Military Grid: 776 345

Base Order 11102.1B identified the right flank at coordinates 77670-34490 with an Azimuth of 98° 17' grid and a left flank at coordinates 77680-34610 with an Azimuth of 85° 40' grid.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms, M28 and M29 Rifle Grenades, WP Hand and Rifle Grenades, Pyrotechnics, and Demolitions.

Information Current as of: 1 February 2000

2.94.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None
Grenade, Rifle, HEAT, M28	Point Initiating Base Detonating
Grenade, Rifle, Practice, M29	None
Grenade, Rifle, WP, M19	Base Detonating
Pyrotechnics	Integral
Demolitions	Electric and Non-Electric Firing Systems

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1958 to approximately 1963

Locations within Range of Known Munitions Use: Firing Line and Impact Area

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
.30 Caliber, Ball, M1 (NOTE: Only complete rounds represent an explosive hazard and complete rounds are found on the surface)	1.3	1.7	2.6	0.1
M19 Rifle Grenade	0.1	0.2	0.2	1.7
M28/M31 HEAT Rifle Grenade	0.1	0.2	0.3	2.1
Pyrotechnics	Surface	Surface	Surface	n. a.
Demolitions (NOTE: May be buried to an unknown depth but would normally be near the surface.)	Unknown	Unknown	Unknown	n. a.

[1] Maximum detection depth using a magnetometer.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: Shaped charge munitions contain sensitive fuzing and present a significantly enlarged hazard area forward of the munition.

Types of Targets: 4 Tank Mockups, 1 Tank, 1 Bunker, and 1 Moving Tank Mockup

Other Past Uses: The "K" Area has been used as an impact area and as a fire and maneuver area in the past.

Anticipated Future Use: This range is where the current K-Series Range Complex are located.

Public Access: Area is located on a restricted access military reservation.

2.95 K-11, INFILTRATION COURSE

This range appears on a 1958 map and in Base Order 11102.1B, dated 5 May 1960. The range also appears on a 1962 map.

2.95.1 Range Identification

Common Name: K-11, Infiltration Course

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plates 10** and **12** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 37' 27" N Longitude: 77° 25' 33" W
Military Grid: 776 341

Base Order 11102.1B identifies the right flank at coordinates 77620-34165 with an Azimuth of 112° 15' grid and a left flank at coordinates 77650-34400 with an Azimuth of 83° 15' grid.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms, Demolitions (1/4 lb)

Information Current as of: 1 February 2000

2.95.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None
Demolitions	Electric Firing Systems

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1958 to approximately 1963

Locations within Range of Known Munitions Use: Range is set up so that machine guns are fired into bullet catchers and the demolitions are fired in fixed demolition pits.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Munitions would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: NA

Other Past Uses: The “K” Area has been used as an impact area and as a fire and maneuver area in the past.

Anticipated Future Use: This range is where the current K-Series Range Complex are located.

Public Access: Area is located on a restricted access military reservation.

2.96 K-14, CLOSE COMBAT COURSE

This range appears on 1958 and 1962 maps and in Base Order 11102.1B, dated 5 May 1960. The base order authorizes the firing of M1 rifles, BAR's, .45 Caliber pistols and submachine guns.

2.96.1 Range Identification

Common Name: K-14, Close Combat Course

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plates 10** and **12** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 37' 17" N Longitude: 77° 25' 37" W
Military Grid: 775 338

Base Order 11102.1B lists the right flank at coordinates 77500-33860 with an Azimuth of 114° 45' and a left flank at coordinates 77560-34050 with an Azimuth of 84° 02' grid.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms

Information Current as of: 1 February 2000

2.96.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1958 to approximately 1963

Locations within Range of Known Munitions Use: Firing Line

Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: 16 Electromechanical Targets

Other Past Uses: The “K” Area has been used as an impact area and as a fire and maneuver area in the past.

Anticipated Future Use: This range is where the current K-Series Range Complex are located.

Public Access: Area is located on a restricted access military reservation.

2.97 K-15, MACHINE GUN FIELD FIRING RANGE, 500" AND 1000"

This range appears on a 1958 map and in Base Order 11102.1B, dated 5 May 1960. The base order authorizes the firing of M1 rifles, shotguns, .30 and .50 Caliber machine guns all firing service ammunition.

2.97.1 Range Identification

Common Name: K-15, Machine Gun Field Firing Range, 500" and 1000"
Also Known as K-15, Landscape Target 1000-Inch Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 10** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 38' 03" N Longitude: 77° 25' 07" W
Military Grid: 783 352

Base Order 11102.1B lists the right flank at coordinates 7830-3525 with an Azimuth of 153° grid and a left flank at coordinates 7838-3532 with an Azimuth of 113° grid.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms

Information Current as of: 1 February 2000

2.97.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1958 to approximately 1961

Locations within Range of Known Munitions Use: Firing Line

Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: 14-500" and 1000" Targets

Other Past Uses: The “K” Area has been used as an impact area and as a fire and maneuver area in the past.

Anticipated Future Use: This range is where the current K-Series Range Complex are located.

Public Access: Area is located on a restricted access military reservation.

2.98 K-16, INFANTRY WEAPONS DEMONSTRATION RANGE

This range appears on a 1958 map and in Base Order 11102.1B, dated 5 May 1960. The base order authorizes the firing of all small arms, .30 and .50 Caliber machine guns, 3.5" rocket launchers, 75mm recoilless rifles, and flamethrowers. M48 trip flares, demolitions and pyrotechnics were used to simulate a combat environment.

2.98.1 Range Identification

Common Name: K-16, Infantry Weapons Demonstration Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 10** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 38' 41" N Longitude: 77° 12' 18" W
Military Grid: 979 359

BO 11102.1B lists the right flank at coordinates 79730-35990 with an Azimuth of 193° 17' grid and a left flank at coordinates 79940-35990 with an Azimuth of 163° 30' grid.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms, 3.5" Rockets, 75mm Recoilless Rifle, Pyrotechnics, and Demolitions

Information Current as of: 1 February 2000

2.98.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None
3.5" Rocket, AT	Base Detonating
75mm, HE	Point Detonating
75mm, HEAT	Base Detonating
Pyrotechnics	Integral
Demolitions	Electric and Non-Electric Firing Systems

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1958 to approximately 1961

Locations within Range of Known Munitions Use: Firing Line and Impact Area

Only complete rounds of small arms present an explosive hazard and complete rounds would be found at or near the firing line. Projected munitions would be found in the impact area.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
.30 Caliber, Ball, M1 (NOTE: Only complete rounds represent an explosive hazard and complete rounds are found on the surface)	1.3	1.7	2.6	0.1
.50 Caliber, Ball, M2 (NOTE: Only complete rounds represent an explosive hazard and complete rounds are found on the surface)	1.6	2.2	3.3	0.2
75mm M310	3.9	5.1	7.8	2.5
3.5" Rocket M28	0.8	1.1	1.7	3.2
Pyrotechnics	Surface	Surface	Surface	n. a.
Demolitions	Unknown	Unknown	Unknown	n. a.

(NOTE: May be buried to an unknown depth but would normally be near the surface.)				

[1] Maximum detection depth using a magnetometer.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: Shaped charge munitions contain sensitive fuzing and present a significantly enlarged hazard area forward of the munition.

Types of Targets: Tank Hulls at varying ranges (300 yards to 900 yards) three Bunkers, Fixed Type "E" Targets

Other Past Uses: The “K” Area has been used as an impact area and as a fire and maneuver area in the past.

Anticipated Future Use: This range is where the current K-Series Range Complex are located.

Public Access: Area is located on a restricted access military reservation.

2.99 K-19, 300 YARD BATTLESIGHT RANGE

This range appears on 1958 and 1962 range maps and in Base Order 11102.1B, dated 5 May 1960. The base order authorized the firing of M1 rifles, BAR's, and 81mm mortars with the mortars impacting only in the "K-2" Impact Area.

2.99.1 Range Identification

Common Name: K-19, 300 Yard Battlesight Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plates 10** and **12** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 38' 16" N Longitude: 77° 22' 38" W
Military Grid: 821 355

BO 11102.1B identified the right flank at coordinates 82150-35500 with an Azimuth of 230° 45' grid and a left flank at coordinates 82280-35390 with an Azimuth of 214° 15' grid.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms and 81mm Mortars

Information Current as of: 1 February 2000

2.99.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None
81mm, HE	Point Detonating
81mm WP	Point Detonating

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1958 to approximately 1963

Locations within Range of Known Munitions Use: Firing Line and Impact Area

Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line. 81mm mortar rounds would be fired into the impact area

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
.30 Caliber, Ball, M1 (NOTE: Only complete rounds represent an explosive hazard and complete rounds are found on the surface)	1.3	1.7	2.6	0.1
81mm M43	2.7	3.5	5.4	2.8
81mm, M56	2.0	2.7	4.1	2.8

[1] Maximum detection depth using a magnetometer.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: Munitions containing WP may have been fired on this range and WP burns upon contact with air.

Types of Targets: 25 A, B, and D Type Targets for .30 Caliber firing. 81mm Mortar

Firing will impact into "K-2" Impact Area.

Other Past Uses: The "K" Area has been used as an impact area and as a fire and maneuver area in the past.

Anticipated Future Use: This range is where the current K-Series Range Complex are located.

Public Access: Area is located on a restricted access military reservation.

2.100 K-20, HAND GRENADE RANGE

This range appears on a 1958 range map and in Base Order 11102.1B, dated 5 May 1960. The base order authorized the firing of WP and HE grenades (hand thrown) on this range.

2.100.1 Range Identification

Common Name: K-20, Hand Grenade Range
Also known as K-20, Live Hand Grenade Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 10** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 37' 53" N Longitude: 77° 25' 42" W
Military Grid: 774 349

BO 11102.1B identifies the right flank at coordinates 77484-34963 with an Azimuth of 317° grid and a left flank at coordinates 77454-34931 with an Azimuth of 307° grid.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: HE and WP Hand Grenades

Information Current as of: 1 February 2000

2.100.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
HE and WP Hand Grenades	Integral

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1958 to approximately 1961

Locations within Range of Known Munitions Use: Impact Area

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Hand grenades would normally be located upon the surface, but other explosions, erosion and construction may cause them to be buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: WP Munitions contain a filler which burns upon contact with air.

Types of Targets: Improvised Targets

Facilities consist of 6 throwing pits, 6 observer pits and barricades with 2 observation pits.

Other Past Uses: The “K” Area has been used as an impact area and as a fire and maneuver area in the past.

Anticipated Future Use: This range is where the current K-Series Range Complex is located.

Public Access: Area is located on a restricted access military reservation.

2.101 K-21, FLAME THROWER RANGE

This range appears on a 1958 range map and in Base Order 11102.1B, dated 5 May 1960. The base order did not identify any munitions for use in association with this range.

2.101.1 Range Identification

Common Name: K-21, Flame Thrower Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 10** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 38' 46" N Longitude: 77° 24' 21" W
Military Grid: Grid Square 7936

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Flame Throwers

Information Current as of: 1 February 2000

2.101.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Flame Throwers	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1958 to approximately 1961

Locations within Range of Known Munitions Use: None

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: NA

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: 1 Tank Turret

Other Past Uses: The "K" Area has been used as an impact area and as a fire and maneuver area in the past.

Anticipated Future Use: This range is where the current K-Series Range Complex is located.

Public Access: Area is located on a restricted access military reservation.

2.102 K-24, DEMOLITION RANGE

This range was identified in Base Order 11102.1B, dated 5 May 1960. The base order stated that demolitions of all types were authorized with a range limit of 20 pounds TNT equivalent per shot.

2.102.1 Range Identification

Common Name: K-24, Demolition Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location**: MCB Camp Lejeune** (See **Plate 15** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 38' 41" N Longitude: 77° 23' 37" W
Military Grid: 806 363

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Demolitions not to exceed 20 pounds TNT equivalent per shot.

Information Current as of: 1 February 2000

2.102.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Demolitions	Electric and Non-Electric Firing Systems

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1960

The only reference to this range is found in Base Order 11102.1B, dated 5 May 1960.

Locations within Range of Known Munitions Use: Entire Range

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
Demolitions (NOTE: May be buried to an unknown depth but would normally be near the surface.)	Unknown	Unknown	Unknown	n. a.

[1] Maximum detection depth using a magnetometer.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: NA

Other Past Uses: The "K" Area has been used as an impact area and as a fire and maneuver area in the past.

Anticipated Future Use: This range is where the current K-Series Range Complex is located.

Public Access: Area is located on a restricted access military reservation.

2.103 K-25, ASSAULT OF A FORTIFIED POSITION RANGE

Base Order 11102.1B, dated 5 May 1960, listed the weapons authorized on this range as M1 rifles, BAR, .30 Caliber machine guns, 3.5" rocket launchers, and flame throwers. The ammunition authorized was blanks, practice rockets, demolitions, WP grenades, and pyrotechnics.

2.103.1 Range Identification

Common Name: K-25, Assault of a Fortified Position Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 15** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 38' 16" N Longitude: 77° 22' 22" W
Military Grid: Grid Square 8235

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Blanks, Practice Rockets, Demolitions, WP Grenades, and Pyrotechnics

Information Current as of: 1 February 2000

2.103.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms (Blanks)	None
3.5" Rockets (Practice)	None
Hand Grenade, WP	Integral
Demolitions	Electric and Non-Electric Firing Systems
Pyrotechnics	Integral

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1960

The only reference uncovered on this range was BO 11102.1B, dated 5 May 1960.

Locations within Range of Known Munitions Use: Entire Range

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
Pyrotechnics	Surface	Surface	Surface	n. a.
Demolitions (NOTE: May be buried to an unknown depth but would normally be near the surface.)	Unknown	Unknown	Unknown	n. a.
3.5" Rocket M28	0.8	1.1	1.7	3.2
Hand Grenade	Surface	Surface	Surface	n. a.

[1] Maximum detection depth using a magnetometer.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: WP hand grenades contain a filler which burns upon contact with air.

Types of Targets: 2 Concrete Bunkers and Barbed Wire Entanglements

Other Past Uses: The "K" Area has been used as an impact area and as a fire and maneuver area in the past.

Anticipated Future Use: This range is where the current K-Series Range Complex is located.

Public Access: Area is located on a restricted access military reservation.

2.104 M-4, RIFLE GRENADE RANGE

This range appears in Base Order 11102.1B, dated 5 May 1960. The base order authorizes the firing of the following ammunition: .30 Caliber, M3 crimped cartridges, M28 rifle grenade, M29 rifle grenade, White Phosphorus hand and rifle grenade, pyrotechnics and demolitions.

2.104.1 Range Identification

Common Name: M-4, Rifle Grenade Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 15** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 41' 22" N Longitude: 77° 27' 10" W
Military Grid: 753 414

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: M28 and M29 Rifle Grenades, WP Hand and Rifle Grenades, Pyrotechnics, and Demolitions

Information Current as of: 1 February 2000

2.104.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Rifle Grenade, M28, HEAT	Point Initiating Base Detonating
Rifle Grenade, M29, Practice	None
Rifle Grenade, WP	Base Detonating
Hand Grenade, WP	Integral
Pyrotechnics	Integral
Demolitions	Electric and Non-Electric Firing Systems

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1960

The only reference uncovered on this range is Base Order 11102.1B, dated 5 May 1960.

Locations within Range of Known Munitions Use: Entire Range

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
Pyrotechnics	Surface	Surface	Surface	n. a.
Demolitions (NOTE: May be buried to an unknown depth but would normally be near the surface.)	Unknown	Unknown	Unknown	n. a.
Hand Grenade (NOTE: Hand grenades would normally be on the surface but site dynamics may cause the to become buried to an unknown depth)	Surface	Surface	Surface	1.7

M28/M31 HEAT Rifle Grenade	0.1	0.2	0.3	2.1
M19 Rifle Grenade	0.1	0.2	0.2	1.7

[1] Maximum detection depth using a magnetometer.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: Shaped charge munitions contain sensitive fuzing and have a increased danger area forward of the munition. WP munitions contain a filler which burns upon contact with air.

Types of Targets: 3 Tank Mockups and 1 Tank

Other Past Uses: The “M” Area has been used as an impact area and as a fire and maneuver area in the past.

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.105 M-5, PRACTICE RIFLE GRENADE RANGE

This range appears in Base Order 11102.1B, dated 5 May 1960. The base order authorizes the firing of M29 rifle grenades on this range.

2.105.1 Range Identification

Common Name: M-5, Practice Rifle Grenade Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 15** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 41' 06" N Longitude: 77° 27' 10" W
Military Grid: 753 409

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: M29 Practice Rifle Grenade

Information Current as of: 1 February 2000

2.105.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
M29 Practice Rifle Grenade	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1960

The only reference uncovered on this range is Base Order 11102.1B, dated 5 May 1960.

Locations within Range of Known Munitions Use: Impact Area

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
M29 Practice Rifle Grenade	0.1	0.2	0.3	2.1

[1] Maximum detection depth using a magnetometer.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: 3 Bunkers

Other Past Uses: The "M" Area has been used as an impact area and as a fire and maneuver area in the past.

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.106 M-6, INFILTRATION COURSE

This range appears on a 1958 range map and in Base Order 11102.1B, dated 5 May 1960.

2.106.1 Range Identification

Common Name: M-6, Infiltration Course

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 10** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 40' 56" N Longitude: 77° 27' 21" W
Military Grid: 750 406

BO 11102.1B identifies the right flank at coordinates 7500-40675 with an Azimuth of 195° grid and a left flank at coordinates 75270-40675 with an Azimuth of 164° grid.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms and Demolitions (1/4 lb)

Information Current as of: 1 February 2000

2.106.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None
Demolitions	Electric Firing Systems

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1958 to approximately 1961

Locations within Range of Known Munitions Use: Small arms are fired from fixed position and demolitions are located in pits on the range.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: NA

Other Past Uses: The "M" Area has been used as an impact area and as a fire and maneuver area in the past.

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.107 M-7, LANDSCAPE RANGE

Base Order 11102.1B, dated 5 May 1960, authorized the use of all types of .30 weapons, all types of pistols and revolvers, and riot guns on this range.

2.107.1 Range Identification

Common Name: M-7, Landscape Range
Also known as M-7, 1000-Inch Machine Gun Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 10** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 40' 59" N Longitude: 77° 27' 10" W
Military Grid: 753 407

BO 11102.1B identifies the right flank at coordinates 75350-40780 with an Azimuth of 118° grid and a left flank at coordinates 75400-40900 with an Azimuth of 91° grid.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms

Information Current as of: 1 February 2000

2.107.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1958 to approximately 1961

Locations within Range of Known Munitions Use: Firing Line

Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: 15 Firing Points and 15 Landscape Target Carriers

Other Past Uses: The “M” Area has been used as an impact area and as a fire and maneuver area in the past.

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.108 M-8, ASSAULT OF A FORTIFIED POSITION RANGE

Base Order 11102.1B, dated 5 May 1960, authorized the use of M1 rifles, flame throwers, and 3.5" rocket launchers

2.108.1 Range Identification

Common Name: M-8, Assault of a Fortified Position Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 10** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 40' 52" N Longitude: 77° 2' 41" W
Military Grid: Grid Square 7440

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Blank Ammunition, Practice Rockets, Demolitions, Practice Rifle Grenades, WP and Smoke Grenades.

Information Current as of: 1 February 2000

2.108.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
3.5" Rocket (Practice)	None
M29 Practice Rifle Grenade	None
M19 WP Rifle Grenade	Base Detonating
Demolitions	Electric and Non-Electric Firing Systems

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1958 to approximately 1961

Locations within Range of Known Munitions Use: Entire Range

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
M19 Rifle Grenade	0.1	0.2	0.2	1.7
M29 Rifle Grenade	0.1	0.2	0.3	2.1
3.5" Rocket M28	0.8	1.1	1.7	3.2
Demolitions (NOTE: May be buried to an unknown depth but would normally be near the surface.)	Unknown	Unknown	Unknown	n. a.

[1] Maximum detection depth using a magnetometer.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: Some munitions contain white phosphorus which burns upon contact with air.

Types of Targets: 2 Bunkers

Other Past Uses: The "M" Area has been used as an impact area and as a fire and maneuver area in the past.

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.109 M-10, HAND GRENADE RANGE

This range appears on a 1958 range map and in Base Order 11102.1B, dated 5 May 1960. The base order identified the facilities on this range as consisting of 6 throwing pits, 6 observation pits, and a barricade with 2 observation points and authorized the use of hand thrown HE and WP grenades.

2.109.1 Range Identification

Common Name: M-10, Hand Grenade Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 10** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 41' 12" N Longitude: 77° 26' 58" W
Military Grid: 756 411

BO 11102.1B identified the right flank at coordinates 75695-41120 with an Azimuth of 87° 02' grid and a left flank at coordinates 75650-41300 with an Azimuth of 78° 05' grid.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: WP and HE Hand Grenades

Information Current as of: 1 February 2000

2.109.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Hand Grenade, WP	Integral
Hand Grenade, HE	Integral

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1958 to approximately 1961

Locations within Range of Known Munitions Use: Impact Area

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Hand grenades would normally be located on the surface, but over the years explosions, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: WP Grenades contain a filler which burns upon contact with air.

Types of Targets: Improvised

Other Past Uses: The “M” Area has been used as an impact area and as a fire and maneuver area in the past.

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.110 K-17, PRACTICE HAND GRENADE COURSE

This range appears on a 1958 range map and in Base Order 11102.1B, dated 5 May 1960. The base order identified this range as consisting of 5 positions.

2.110.1 Range Identification

Common Name: K-17, Practice Hand Grenade Course

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 10** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 38' 41" N Longitude: 77° 23' 09" W
Military Grid: Grid Square 8133 3628

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Practice Hand Grenades

Information Current as of: 1 February 2000

2.110.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Practice Hand Grenades	Integral

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1960

The only reference uncovered on this range was Base Order 11102.1B, dated 5 May 1960.

Locations within Range of Known Munitions Use: Unknown

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Unknown, 5 Throwing Positions

Other Past Uses: The "K" Area has been used as an impact area and as a fire and maneuver area in the past.

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.111 K-22, PRACTICE HAND GRENADE COURSE

This range appears in Base Order 11102.1B, dated 5 May 1960. The base order lists the facilities on this range as consisting of one bunker and one foxhole. The location given in the regulation places the range in the "M" area and is therefore suspect.

2.111.1 Range Identification

Common Name: K-22, Practice Hand Grenade Course

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 15** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Military Grid: Grid Square 7541

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Practice Hand Grenades

Information Current as of: 1 February 2000

2.111.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Practice Hand Grenade	Integral

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1960

The only reference uncovered on this range was Base Order 11102.1B, dated 5 May 1960.

Locations within Range of Known Munitions Use: Unknown

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Unknown, facilities included one Bunker and one Foxhole.

Other Past Uses: The "K" Area has been used as an impact area and as a fire and maneuver area in the past.

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.112 K-23, GAS CHAMBER

This range appears in Base Order 11102.1B, dated 5 May 1960. The base order lists the facilities as a one room building at grid square 8036.

2.112.1 Range Identification

Common Name: K-23, Gas Chamber

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 15** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Military Grid: Grid Square 8036

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Chemical Warfare Training Agents

If this facility was used only as a gas chamber, only Chemical Warfare Training Agents (Tear Gas) would have been used. No CWM Munitions would be used. There is no evidence of other usage, however, the area surrounding gas chambers is often used for other chemical training. Thus, War Gas Identification Sets and Riot Control Hand Grenades may have been used in the area.

Information Current as of: 1 February 2000

2.112.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Unknown, Chemical Type	

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1960

The only reference uncovered on this range was Base Order 11102.1B, dated 5 May 1960.

Locations within Range of Known Munitions Use: NA

Estimated Density of Munitions: NA

Estimated Depth of Munitions: NA

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: Chemical Warfare Training Agents may require protective clothing and masks when handling.

Types of Targets: NA

Other Past Uses: The "K" Area has been used as an impact area and as a fire and maneuver area.

Anticipated Future Use: If this facility was used only as a gas chamber, only Chemical Warfare Training Agents (Tear Gas) would have been used. No CWM Munitions would be used. There is no evidence of other usage, however, the area surrounding gas chambers is often used for other chemical training. Thus, War Gas Identification Sets and Riot Control Hand Grenades may have been used in the area.

Public Access: Area is located on a restricted access military reservation.

2.113 M-4A, PRACTICE HAND GRENADE COURSE

This range appears in Base Order 11102.1B, dated 5 May 1960. The base order lists the facilities on this range as consisting of one bunker and two foxholes.

2.113.1 Range Identification

Common Name: M-4A, Practice Hand Grenade Course

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 15** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Military Grid: Grid Square 7541

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Practice Hand Grenades

Information Current as of: 1 February 2000

2.113.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Practice Hand Grenades	Integral

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1960

The only reference uncovered on this range was Base Order 11102.1B, dated 5 May 1960.

Locations within Range of Known Munitions Use: Unknown

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Unknown, facilities consisted of one Bunker and two Foxholes.

Other Past Uses: The "M" Area has been used as an impact area and as a fire and maneuver area in the past.

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.114 M-9, COMBAT VILLAGE AREA

This range appears on a 1958 range map and in Base Order 11102.1B, dated 5 May 1960. The base order lists the facilities on this range as consisting of seven buildings.

2.114.1 Range Identification

Common Name: M-9, Combat Village Area
Also Known as M-9, Combat Town

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 10** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 41' 03" N Longitude: 77° 27' 28" W
Military Grid: Grid Square 748 408

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Unknown

It is assumed because of the type of range that the following ammunition was used: Small Arms (Blanks), Boobytrap Devices, Practice Hand Grenades and Land Mines, Pyrotechnics, Smoke Grenades.

Information Current as of: 1 February 2000

2.114.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms (Blanks)	None
Pyrotechnics	Integral
Smoke Grenade	Integral
Hand Grenade, Practice	Integral
Land Mine, Practice	Integral

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1958 to approximately 1961

Locations within Range of Known Munitions Use: Entire Range

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: Pyrotechnic munitions contain a filler that is extremely sensitive to heat, shock, and friction.

Types of Targets: Unknown, facilities included 7 Buildings.

Other Past Uses: The “M” Area has been used as an impact area and as a fire and maneuver area in the past.

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.115 M-15, MINE, BOOBY TRAP DISPLAY AREA

This range appears on a 1958 range map and in Base Order 11102.1B, dated 5 May 1960. The base order states that the facilities on this range consist of two practice mine fields.

2.115.1 Range Identification

Common Name: M-15, Mine, Booby Trap Display Area
Also known as M-15, Mine Field Disposal Area

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 10** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 40' 49" N Longitude: 77° 27' 30" W
Military Grid: Grid Square 747 404

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Unknown

It is assumed based upon the name of the range, that Practice Mines, Improvised Mines, and Booby Trap Devices were used on this range.

Information Current as of: 1 February 2000

2.115.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Practice Mines	Integral and improvised

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1958 to approximately 1961

Locations within Range of Known Munitions Use: Entire Area

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Near Surface

Mine fields are normally buried less than six inches below the surface.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: Booby traps may have been employed with the land mines and signal charges may remain.

Types of Targets: NA

Two practice mine fields were in this area

Other Past Uses: The “M” Area has been used as an impact area and as a fire and maneuver area in the past.

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.116 D-29, 50-FOOT SMALL BORE RANGE

Base Order 11102.1B, dated 5 May 1960, stated that this range was for use of .22 Caliber rifles and pistols.

Base Order P11102.1G, dated 6 February 1970, authorized the use of rifles, automatic rifles, pistols and revolvers on this range.

Base Order P11102.1K, dated 1 December 1986, authorized the use of rifles, pistols, and shotguns on this range.

Base Order P3570.1, dated 2 June 1994, authorized the following ammunition for use on this range: .38 Caliber, .45 Caliber, 9mm, 5.56mm, and 12 Gauge.

2.116.1 Range Identification

Common Name: D-29, 50-Foot Small Bore Range
Also known as D-29, Rifle and Pistol Range
D-29, Rifle and Pistol BZO Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 10** for location, also see plates 13, 16, 18, and 20)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 39' 42" N Longitude: 77° 21' 29" W
Military Grid: 839 381

BO 11102.1B lists the right flank at coordinates 83972-38190 with an Azimuth of 290° 53' grid and a left flank at coordinates 83970-38110 with an Azimuth of 261° 00' grid.

BO P111002.1G listed the right flank at 839382 with an Azimuth of 261° grid and a left flank at 839381 with an Azimuth of 260° grid.

BO P11102.1K listed the primary direction of fire as 245°.

BO 3570.1 listed the primary direction of fire as 250°.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms

Information Current as of: 1 February 2000

2.116.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1958 to present

Locations within Range of Known Munitions Use: Firing Line

Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: 75 Firing Stations (1960). 50 Fixed Rifle Targets at 15 yards and 16 Pistol Targets at 15 and 25 yards (1970). 56 Rifle Targets at 15 yards and 16 Pistol Targets at 15 and 25 yards (1986). 16 Pistol Targets and 48 Rifle Targets (1994).

Other Past Uses: None

Anticipated Future Use: Continued present use.

Public Access: Area is located on a restricted access military reservation.

2.117 D-30, 50-FOOT SMALL BORE RANGE

Base Order 11102.1B, dated 5 May 1960, stated that this range was for use of .22 caliber rifles and pistols.

Base Order P11102.1G, dated 6 February 1970, authorized the use of rifles and pistols on this range.

Base Order P11102.1K, dated 1 December 1986, authorized the use of rifles and pistols on this range.

Base Order P3570.1, dated 2 June 1994, authorized the following ammunition for use on this range: .38 Caliber, .45 Caliber, 9mm, 5.56mm, and 12 Gauge.

2.117.1 Range Identification

Common Name: D-30, 50-Foot Small Bore Range
Also known as D-30, Rifle and Pistol Range
D-30, Rifle and Pistol BZO Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 10** for location, also see plates 13, 16, 18, and 20)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 38' 57" N Longitude: 77° 20' 45" W
Military Grid: 850 367

BO 11102.1B listed the right flank at 85042-36745 with an Azimuth of 226° 06' grid and a left flank at 85090-36712 with an Azimuth of 195° 35' grid.

BO P11102.1G listed the right flank at 850367 with an Azimuth of 215° grid and the left flank at 851367 with the same Azimuth.

BO P11102.1K listed the primary direction of fire as 217°.

BO P3570.1 lists the primary direction of fire as 195°.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms

Information Current as of: 1 February 2000

2.117.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1958 to present

Locations within Range of Known Munitions Use: Firing Line

Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: 75 Firing Stations (1960). 46 Rifle Targets at 15 yards and 15 Pistol Targets at 15 and 25 yards (1970). 46 Rifle Targets at 15 yards and 15 Pistol Targets at 15 and 25 yards (1986). 16 Pistol Targets and 25 Rifle Targets (1994).

Other Past Uses: None

Anticipated Future Use: Continued present use.

Public Access: Area is located on a restricted access military reservation.

2.118 L-6, MINE WARFARE AND DEMOLITION AREA

This range appears on a 1958 range map.

2.118.1 Range Identification

Common Name: L-6, Mine Warfare and Demolition Area

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 10** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 35' 43" N Longitude: 77° 28' 30" W
Military Grid: 730 310

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Unknown

Based upon the title of the range, it is assumed that Land Mines and Demolitions were used on this range but it is possible that only Practice Munitions were used. This is based upon the location of the range being on the border of the reservation.

Information Current as of: 1 February 2000

2.118.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Land Mines, types unknown	Integral
Demolitions	Electric and Non-electric firing systems

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1958

The only reference uncovered on this range is a 3 April 1958 map.

Locations within Range of Known Munitions Use: Unknown

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Unknown

Land mines are normally located near the surface and demolitions may be buried to any depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: NA

Other Past Uses: None

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.119 M-11, ASSAULT ON A FORTIFIED POSITION AREA

This range appears on a 1958 range map.

2.119.1 Range Identification

Common Name: M-11, Assault on a Fortified Position Area

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 10** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 39' 52" N Longitude: 77° 26' 41" W
Military Grid: 760 386

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Unknown

This range appears similar to Range M-8 and it is assumed that similar weapons were used on it: Small Arms, Practice Rifle Grenades, WP Hand and Rifle Grenades, Pyrotechnics and Demolitions.

Information Current as of: 1 February 2000

2.119.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
3.5" Rocket (Practice)	None
M29 Practice Rifle Grenade	None
M19 WP Rifle Grenade	Base Detonating
Demolitions	Electric and Non-Electric Firing Systems

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1958

The only reference uncovered on this range is a 3 April 1958 map.

Locations within Range of Known Munitions Use: Unknown

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
M19 Rifle Grenade	0.1	0.2	0.2	1.7
M29 Rifle Grenade	0.1	0.2	0.3	2.1
3.5" Rocket M28	0.8	1.1	1.7	3.2
Demolitions (NOTE: May be buried to an unknown depth but would normally be near the surface.)	Unknown	Unknown	Unknown	n. a.

[1] Maximum detection depth using a magnetometer.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Unknown

Other Past Uses: The "M" Area has been used as an impact area and as a fire and maneuver area in the past.

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.120 M-16, OUTDOOR CLASSROOM

This range appears on a 1958 range map.

2.120.1 Range Identification

Common Name: M-16, Outdoor Classroom

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 10** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 40' 23" N Longitude: 77° 27' 58" W
Military Grid: 741 396

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Blank Ammunition and Pyrotechnics

Information Current as of: 1 February 2000

2.120.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms (Blanks)	None
Pyrotechnics	Integral

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1958

The only reference uncovered on this range is a 3 April 1958 map.

Locations within Range of Known Munitions Use: Unknown

The description of the range on the map said "Outdoor Classroom, .30 Caliber Blanks and Pyrotechnics".

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: Pyrotechnic munitions contain a filler that is extremely sensitive to heat, shock, and friction.

Types of Targets: Unknown

Other Past Uses: The “M” Area has been used as an impact area and as a fire and maneuver area in the past.

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.121 M-17, PRACTICE HAND AND RIFLE GRENADE RANGE

This range appears on a 1958 range map.

2.121.1 Range Identification

Common Name: M-17, Practice Hand and Rifle Grenade Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location**: MCB Camp Lejeune** (See **Plate 10** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 41' 05" N Longitude: 77° 27' 14" W
Military Grid: 752 409

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Unknown

Based upon the title of the range it is assumed that only Practice Grenades are used on this range.

Information Current as of: 1 February 2000

2.121.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Hand Grenade, Practice	Integral
Rifle Grenade, Practice	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1958

The only reference uncovered on this range is a 3 April 1958 map.

Locations within Range of Known Munitions Use: Unknown

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
Hand Grenade	Surface	Surface	Surface	n.a.
M29 Rifle Grenade	0.1	0.2	0.3	2.1

[1] Maximum detection depth using a magnetometer.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Unknown

Other Past Uses: The “M” Area has been used as an impact area and as a fire and maneuver area in the past.

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.122 L-5, MULTIPURPOSE MACHINE GUN RANGE

Base Order 11102.1B, dated 5 May 1960, authorizes the use of .30 Caliber rifles on this range.

Base Order P11102.1G, dated 6 February 1970, authorizes the following ammunition for use on this range: Small arms (no armor piercing ammunition), WP hand grenades, and rifle grenades (Practice).

Base Order P11102.1K, dated 1 December 1986, authorizes the use of rifles, pistols, M60 machine guns, SAW, and shotgun but no armor piercing ammunition.

Base Order P3570.1, dated 2 June 1994, authorizes the following ammunition for this range: .38 Caliber, .45 Caliber, 5.56mm, 7.62mm, 9mm, .50 Caliber short range training ammunition.

2.122.1 Range Identification

Common Name: L-5, Multipurpose Machine Gun Range
Also known as L-5, .30 Caliber Electric Pop-Up Range
L-5, Squad Offense Range
L-5, Combat Rifleman Environmental Range
L-5, Advanced Tactics Range
L-5, Squad, Platoon, Company Fire and Maneuver Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 10** for location, also see plates 13, 16, 18, and 20)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 35' 20" N Longitude: 77° 28' 26" W
Military Grid: 731 303

BO 11102.1B lists the right flank at 73587-31158 with an Azimuth of 14° 18' grid and a left flank at 73287-31251 with an Azimuth of 3° 18' grid.

BO P11102.1G lists the right flank at 736309 with an Azimuth of 28° grid and a left flank at 731311 with an Azimuth of 22° grid.

BO P11102.1K listed the range at 735309 with phase one having a direction of fire of 9°, phase two firing 28°, and phase three firing 44°.

BO P3570.1 lists the primary direction of fire as 22°.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms, WP Hand Grenades, Rifle Grenades (Practice), Pyrotechnics.

Information Current as of: 1 February 2000

2.122.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None
WP Grenades	Integral
Rifle Grenades (Practice)	None
Pyrotechnics	Integral

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1957 to present

Locations within Range of Known Munitions Use: Firing Line and Range

Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line. Pyrotechnics and grenades would be located in the target area.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
Pyrotechnics	Surface	Surface	Surface	n. a.
.30 Caliber, Ball, M1 (NOTE: Only complete rounds represent an explosive hazard and complete rounds are found on the surface)	1.3	1.7	2.6	0.1
M28/M31 HEAT Rifle Grenade	0.1	0.2	0.3	2.1
Hand Grenade	Surface	Surface	Surface	1.7.

[1] Maximum detection depth using a magnetometer.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: Pyrotechnic munitions contain a filler that is extremely sensitive to heat, shock, and friction.

Types of Targets: 43 Electromechanical Targets (1960). 36 Electromechanical "Pop-Up" Targets (1970). 10 RETS "Pop-Up" Moving Targets and 239 RETS "Pop-Up" Stationary Targets (1994).

Other Past Uses: This range is located in the general area of the former L-3, Transition Range.

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.123 K-1, 81MM MORTAR FIELD FIRING RANGE

This range appears in Base Order 11102.1B, dated 5 May 1960. The base order states that service ammunition for 81mm mortars was authorized on this range.

2.123.1 Range Identification

Common Name: K-1, 81mm Mortar Field Firing Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 15** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Military Grid: Grid Square 8235

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: 81mm HE, WP, Illumination, and Practice

Information Current as of: 1 February 2000

2.123.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
81mm HE	Point Detonating
81mm WP	Point Detonating
81mm Illumination	Time
81mm Practice	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1960

Base Order 11102.1B, dated 5 May 1960, was the only reference uncovered on this range.

Locations within Range of Known Munitions Use: Impact Area

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
81mm M43	2.7	3.5	5.4	2.8
81mm, M56	2.0	2.7	4.1	2.8

[1] Maximum detection depth using a magnetometer.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: Some munitions may be filled with white phosphorus which burns upon contact with air.

Types of Targets: 55 Gal White Drums and Target Cloth Bunkers. Impact in the K-2 Impact Area.

Other Past Uses: The “K” Area has been used as an impact area and as a fire and maneuver area in the past.

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.124 I-1, 50-FOOT SMALL BORE RANGE

Base Order 11102.1B, dated 5 May 1960, listed this range as under construction and authorized the use of .22 Caliber rifles and pistols on this range.

Base Order P11102.1G, dated 6 February 1970, authorized the use of .22 Caliber rifles, pistols and revolvers.

Base Order P11102.1K, dated 1 December 1986, authorized the use of service pistols and shotguns on this range.

Base Order P3570.1, dated 2 June 1994, authorized the use of the following ammunition on this range: .38 Caliber, .45 Caliber, 9mm, and 12 Gauge.

2.124.1 Range Identification

Common Name: I-1, 50-Foot Small Bore Range
Also known as I-1, Rifle and Pistol Range
I-1, Pistol and Shotgun Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 13** for location, also see plates 16, 18, and 20)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 33' 58" N Longitude: 77° 21' 08" W
Military Grid: 842 275

BO P11102.1G listed the right flank at coordinates 842275 with an Azimuth of 108° grid and a left flank at 843277 with an Azimuth of 111° grid.

BO P11102.1K listed the primary direction of fire as 112°.

BO P3570.1 listed the direction of fire as 107°.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms

Information Current as of: 1 February 2000

2.124.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1960 to present

Locations within Range of Known Munitions Use: Firing Line

Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Targets to be provided by the using unit (1960). Sixteen (16) Fixed Targets with Firing Points at 15 and 25 yards (1970, 1986, & 1994).

Other Past Uses: None

Anticipated Future Use: Continued with current use.

Public Access: Area is located on a restricted access military reservation.

2.125 I-2, DEMOLITION AREA

Base Order 11102.1B, dated 5 May 1960, listed this range as occupying grid squares 8327, 8427, 8428, & 8528.

Base Order P11102.1G, dated 6 Feb 1970, authorized the use of demolitions and land mines on this range not to exceed 50 pounds net TNT equivalent per shot.

Base Order P11102.1K, dated 1 December 1986, authorized the use of M68A1 (inert) in addition to the above.

2.125.1 Range Identification

Common Name: I-2, Demolition Area

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 13** for location, also see plates 16 and 18)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 34' 21" N Longitude: 77° 20' 57" W (1986)
Military Grid: Grid Squares 8327, 8427, 8428, and 8528 (1960)
Grid Square 8327 (1970)
845 282 (1986)

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Demolitions and Land Mines

Information Current as of: 1 February 2000

2.125.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Demolitions	Electric and Non-Electric Firing Systems
Land Mines	Integral
M68A1	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1960 to approximately 1988

Locations within Range of Known Munitions Use: Unknown

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
Demolitions (NOTE: May be buried to an unknown depth but would normally be near the surface.)	Unknown	Unknown	Unknown	n. a.
Land Mines (NOTE: land mines are usually placed within 6" of the surface	Near Surface	Near Surface	Near Surface	n.a.
M68A1 (inert)	Surface	Surface	Surface	n.a.

[1] Maximum detection depth using a magnetometer.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: NA

Other Past Uses: None

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.126 F-10, MACHINE GUN QUALIFICATION RANGE

Base Order 11102.1B, dated 5 May 1960, listed this range as under construction and to be used of M1 rifles and .30 Caliber machine guns. The range has moved from the previous Range F-10 location.

Base Order P11102.1G, dated 6 February 1970, authorized all service ammunition for machine guns and shotguns on this range.

Base Order P11102.1K, dated 11 October 1985, authorized the firing of service ammunition from rifles, shotguns, pistols, SAW, and M60 machine gun.

2.126.1 Range Identification

Common Name: F-10, Machine Gun Qualification Range
Also known as F-10, 500-Inch, 1000-Inch, & Battlesight Range
F-10, Machine Gun and Shotgun Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 13** for location, also see plate 16)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 41' 15" N Longitude: 77° 19' 11" W
Military Grid: 875 409

BO P11102.1G identified the right flank at 875407 with an Azimuth of 112° grid and a left flank at 875409 with an Azimuth of 81° grid.

BO P11102.1K identified the primary direction of fire as 99°.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms

Information Current as of: 1 February 2000

2.126.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1960 to approximately 1985.

Locations within Range of Known Munitions Use: Firing Line

Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: 16 Fixed Targets at 500", 1000", and 75 yards

Other Past Uses: The “F” area has been used for ranges and for fire and maneuver training in the past.

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.127 CAMP DAVIS

According to Base Order 11102.1B, dated 5 May 1960, the former Camp Davis was owned by the International Paper Company and could be used with appropriate prior approval. Activities on this property were limited and ammunition limited included no ball ammunitions and no pyrotechnics. Only those portions of the former Camp Davis that were acquired in the **MCB Camp Lejeune** expansion are addressed in this report, the remainder of Camp Davis will be addressed under the Formerly Utilized Defense Sites (FUDS) program. A review of the records on Camp Davis indicates that all of the ranges associated with Camp Davis are located on the FUDS portions of the base.

2.127.1 Range Identification

Common Name: Camp Davis

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune**

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Blank Ammunition

Information Current as of: 1 February 2000

2.127.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms, Blank	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1960 to approximately 1971

Locations within Range of Known Munitions Use: Entire Area

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: NA

Other Past Uses: This property was previously Camp Davis, a US Army Anti-Aircraft Training Center. Not all of Camp Davis was available for use by the Marine Corps for training, only those portions owned by International Paper Company.

Anticipated Future Use: This property was acquired as part of the **MCB Camp Lejeune** expansion of training facilities. Not all of former Camp Davis was acquired. The remaining portions of Camp Davis are being addressed under the FUDS program.

Public Access: Area is located on a restricted access military reservation.

2.128 F-7, FLAME THROWER RANGE

Base Order 11102.1B, dated 5 May 1960, identified this range for the firing of service flame throwers.

2.128.1 Range Identification

Common Name: F-7, Flame Thrower Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 15** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 40' 16" N Longitude: 77° 19' 25" W
Military Grid: 871 391

BO 11102.1B identified the right flank at coordinates 871391 with an Azimuth of 96° 45' grid and a left flank at coordinates 870393 with an Azimuth of 60° grid.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Service Flame Thrower

Information Current as of: 1 February 2000

2.128.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
None	

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1960

The only reference uncovered on this range is in BO 11102.1B, dated 5 May 1960.

Locations within Range of Known Munitions Use: NA

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: A series of Earth Mounds to simulate Bunkers and Caves.

Other Past Uses: This range is located in the vicinity of the Range F-7 used for small arms firing.

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.129 F-9, 3.5" ROCKET AND RIFLE GRENADE RANGE

Base Order 11102.1B, dated 5 May 1960, identified this range as being under construction. The base order authorized the firing of all types of rifle grenades and 3.5" rockets. No other references to this range have been found.

2.129.1 Range Identification

Common Name: F-9, 3.5" Rocket and Rifle Grenade Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune (See Plate 13 for location, also Plate 16)**

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Military Grid: Unknown

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Proposed all types of Rifle Grenades and 3.5" Rockets.

Information Current as of: 1 February 2000

2.129.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Rifle Grenade, Smoke	Base Detonating
Rifle Grenade, HEAT	Point Initiating Base Detonating
3.5" Rocket	Base Detonating

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1960

BO 11102.1B, dated 5 May 1960, is the only reference to this range uncovered.

Locations within Range of Known Munitions Use: Unknown

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
M9 Rifle Grenade	0.1	0.2	0.2	1.7
M28/M31 HEAT Rifle Grenade	0.1	0.2	0.3	2.1
3.5" Rocket M28	0.8	1.1	1.7	3.2

[1] Maximum detection depth using a magnetometer.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: Shaped charge munitions contain sensitive fuzing and present a significantly enlarged hazard area forward of the munition. WP munitions contain a filler which burns upon contact with air.

Types of Targets: Unknown

Other Past Uses: The "F" area has been used for ranges and fire and maneuver training in the past.

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.130 F-5, SQUAD LIVE FIRE AND MANEUVER COURSE

Base Order 11102.1B, dated 5 May 1960, authorized firing small arms and 3.5" Rockets on this range, but stated that High Explosive rounds would not be impacted on this range, although demolition charges could be used to simulate enemy artillery rounds.

Base Order P11102.1G, dated 6 February 1970, authorized the firing of small arms, 3.5" practice rockets, practice rifle grenades, and WP hand grenades.

Base Order P11102.1K, dated 1 December 1986, identified this range for use with service rifles, pistols, and shotguns.

Base Order P3570.1, dated 2 June 1994, authorized the use of the following ammunition on this range: .38 Caliber, .45 Caliber, 5.56mm, 9mm, and smoke grenades.

2.130.1 Range Identification

Common Name: F-5, Squad Life Fire and Maneuver Course
Also known as F-5, Machine Gun Training and Battlesight Range
F-5, Field Firing and Battlesight Range
F-5, Military Police Pistol Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 13** for location, also see plates 16, 18, and 20)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 42' 16" N Longitude: 77° 17' 03" W
Military Grid: 909 426

BO 11102.1B identified the right flank at coordinates 909427 with an Azimuth of 228° grid and a left flank at 910426 with an Azimuth of 183° grid.

BO P11102.1G identified the right flank at 909427 with an Azimuth of 205° grid and a left flank at 911427 with an Azimuth of 197° grid.

BO P11102.1K identifies the primary direction of fire as 207°.

BO P3570.1 identifies the primary direction of fire as 215°.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms, Rifle Grenades (Practice), 3.5" Rockets (Practice), WP Hand Grenades, Smoke Grenades, Demolition Materials

Information Current as of: 1 February 2000

2.130.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None
Rifle Grenade, Practice	None
3.5" Rocket, Practice	None
WP Hand Grenade	Integral
Demolitions	Electric and Non-Electric Firing Systems

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1960 to present

Locations within Range of Known Munitions Use: Firing Line and Target Area

Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line. Other munitions would be found in the vicinity of the targets.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
.30 Caliber, Ball, M1 (NOTE: Only complete rounds represent an explosive hazard and complete rounds are found on the surface)	1.3	1.7	2.6	0.1
M28/M31 HEAT Rifle Grenade	0.1	0.2	0.3	2.1
3.5" Rocket M28	0.8	1.1	1.7	3.2
Demolitions (NOTE: May be buried to an unknown depth but would normally be near the surface.)	Unknown	Unknown	Unknown	n. a.
Hand Grenade	Surface	Surface	Surface	1.7

[1] Maximum detection depth using a magnetometer.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: WP munitions contain a filler which burns upon contact with air

Types of Targets: Targets supplied by using unit (1960). Two Earthen Bunkers, one Tank and Other Targets (1970). 43 RETS Pop-Up E-Silhouette Targets (1994).

Other Past Uses: The “F” area has been used for ranges and for fire and maneuver training in the past.

Anticipated Future Use: Continued present use.

Public Access: Area is located on a restricted access military reservation.

2.131 E-1, ANTI-AIRCRAFT ARTILLERY FIRING AREA

This range appears on an April 1953 range map but not on a February 1953 range map or on a September 1953 range map. This indicates that either the range was used for only a very limited time or the range as described on the April 1953 map is incorrect.

2.131.1 Range Identification

Common Name: E-1, Anti-Aircraft Artillery Firing Area

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 7** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 33' 27" N Longitude: 77° 17' 00" W
Military Grid: 905 264

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Unknown

The types of Anti-Aircraft Artillery known to have been used on **Camp Lejeune** include Small Arms up to .50 Caliber, 20mm, 37mm, 40mm, 90mm, and 120mm

Information Current as of: 1 February 2000

2.131.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None
20mm HE	Point Detonating
37mm HE	Point Detonating
40mm HE	Point Detonating
90mm HE	Point Detonating Variable Time Mechanical Time
120mm HE	Point Detonating Variable Time Mechanical Time

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1953

Various locations in the Onslow Beach area have been used for anti-aircraft firing since 1942 and is still used for anti-aircraft weapons firing. An April 1953 map located this range at this specific location.

Locations within Range of Known Munitions Use: Firing Line

This range fires into the Atlantic Ocean

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: It is impossible to determine the depth the munitions used on this range penetrated below the floor of the ocean. Munitions residue such as supplemental charges may be located on or near the surface near the firing points.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Towed and Remote Controlled Aerial Targets.

Other Past Uses: The Onslow/Hurst Beach area has been in use as a anti-aircraft artillery range since **Camp Lejeune** was established. Only the firing positions have changed.

Anticipated Future Use: Continued use as a firing range.

Public Access: Area is located on a restricted access military reservation.

2.132 E-1, OVER WATER, ANTI-BOAT, ANTI-AIR RANGE

Base Order 11102.1B, dated 5 May 1960, identified this range as authorized for firing all weapons firing service ammunition.

2.132.1 Range Identification

Common Name: E-1, Over Water, Anti-Boat, Anti-Air Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 16** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 32' 29" N Longitude: 77° 18' 34" W
to
Latitude: 34° 34' 47" N Longitude: 77° 15' 04" W

Military Grid: From 88060-24663 to 93500-28800

BO 11102.1B identified the right flank at 88060-24663 with an Azimuth of 180° grid and a left flank at 93500-28800 with an Azimuth of 98° grid.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Base Order 11102.1B, dated 5 May 1960, states that the allowed firing on this range is all weapons firing service ammunition. It is assumed that this includes small arms up to .50 Caliber, 20mm, 37mm, 40mm, 75mm, 90mm, 105mm, and 155mm.

Information Current as of: 1 February 2000

2.132.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None
20mm HE	Point Detonating
37mm HE	Point Detonating
40mm HE	Point Detonating
75mm HE	Point Detonating
90mm HE	Point Detonating Variable Time Mechanical Time
90mm AP	None
105mm HE	Point Detonating Variable Time Mechanical Time
120mm HE	Point Detonating Variable Time Mechanical Time
155mm HE	Point Detonating Variable Time Mechanical Time

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1960

This range is identified in BO 11102.1B, dated 5 May 1960. It has been located in different positions along the Onslow/Hurst Beach both before and after this time period.

Locations within Range of Known Munitions Use: Firing Line

This range fires over water and the only accessible area where munitions and explosive components may be found would be at the firing point.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Unknown

Munitions and explosive components at the firing line would be on the surface. No information has been uncovered to allow predicting the depth below the ocean bottom that ammunition may have penetrated.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Towed and Remote Controlled Aerial and Waterborne Targets.

Other Past Uses: The Onslow/Hurst Beach area has been used as a firing point since the establishment of **Camp Lejeune**.

Anticipated Future Use: This range area was divided into Ranges E-1A and E-1B in the 1970's and recombined into one range in approximately 1986. It is currently used for Air Defense Firing. It will continue to be used as firing point area.

Public Access: Area is located on a restricted access military reservation.

2.133 A-1, PISTOL AND SHOTGUN RANGE

This range appears on a 1958 range map and is listed in Base Order 11102.1B, dated 5 May 1960, as under construction. This base order authorized the firing of .32, .38, and .45 Caliber pistols.

Base Order P11102.1G, dated 6 February 1970 authorized the firing of pistols and revolvers on this range.

Base Order P11102.1K, dated 1 December 1986 authorized the firing of service pistols and shotguns on this range.

Base Order P3570.1, dated 2 June 1994 authorized the firing of .22, .38, & .45 Caliber, 9mm, and 12 Gauge weapons on this range.

2.133.1 Range Identification

Common Name: A-1, Pistol and Shotgun Range
Also known as A-1, Pistol Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 10** for location, also see plates 13, 16, 18, and 20)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 42' 52" N Longitude: 77° 24' 55" W
Military Grid: 788 441

BO P11102.1G identified the right flank at 788441 with an Azimuth of 165° grid and a left flank at 790441 with an Azimuth of 148° grid.

BO P11102.1K lists the primary direction of fire for this range as 152°

BO P3570.1 lists the primary direction of fire as 150°.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms

Base Order 3570.1, dated 2 June 1994, authorized .22 Caliber, .38 Caliber, .45 Caliber, 9mm, 12 Gauge, and MP-5 Ammunitions to be used on this range.

Information Current as of: 1 February 2000

2.133.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1958 to present

Locations within Range of Known Munitions Use: Firing Line

Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Ten Manually Operated Targets with firing lines at 15 and 25 yards and five Manually Operated Targets with firing lines at 50 yards (1970). Ten Manually Operated Targets at 15, 25, and 50 yards (1986). Ten Stationary Targets (1994).

Other Past Uses: None

Anticipated Future Use: Continued present use.

Public Access: Area is located on a restricted access military reservation.

2.134 B-12, BAFFLED PISTOL RANGE

Base Order P11102.1G, dated 6 February 1970, identified this range for firing .22 Caliber rifles and pistols.

Base Order P11102.1K, dated 1 December 1986, identified this range for firing service pistols and shotguns.

Base Order P3570.1, dated 2 June 1994, authorized the firing of .38 Caliber, .45 Caliber, and 9mm weapons on this range.

2.134.1 Range Identification

Common Name: B-12, Baffled Pistol Range
Also known as B-012, Rifle and Pistol Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 13** for location, also see plates 16, 18, and 20)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 43' 08" N Longitude: 77° 27' 49" W
Military Grid: 744 447

BO P11102.1G identified the right flank at coordinates 743449 with an Azimuth of 175° grid and a left flank at 744447 with an Azimuth of 170° grid.

BO P11102.1K listed the primary direction of fire as 170°.

BO P3570.1 listed the primary direction of fire as 167°.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms

Information Current as of: 1 February 2000

2.134.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1970 to present

Locations within Range of Known Munitions Use: Firing Line

Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Ten Manually Operated Targets with firing lines at 15 and 25 yards (1970 & 1986). Six Fixed Type E- Silhouettes (1994).

Other Past Uses: None

Anticipated Future Use: Continued present use.

Public Access: Area is located on a restricted access military reservation.

2.135 B-14, ASSAULT OF A FORTIFIED POSITION RANGE

Base Order P11102.1G, dated 6 February 1970, authorized the firing of blanks, 3.5" Rockets (practice only), rifle grenades (practice only), demolitions (1/2 lb blocks), WP hand grenades, 40mm grenades (practice only), and thickened and unthickened fuel.

Base Order P11102.1K, dated 1 December 1986, authorized the firing of blanks, M73 sub-caliber for the M72 Rocket, demolitions (no more than ¼ lb TNT equivalent), and smoke hand grenades.

Base Order P3570.1, dated 2 June 1994, authorized the firing of TNT demolition charges, smoke grenades, and blank ammunition.

Base Order P11102.1G, dated 6 February 1970, authorizes the use of service rifles, 3.5" rocket launchers, M79 grenade launchers, and flame throwers on this range.

Base Order P11102.1K, dated 1 December 1986, authorized the use of service rifles, M60 machine guns, M72 rocket launchers, and the SAW on this range.

Base Order P3570.1, dated 2 June 1994, authorized demolition charges, smoke grenades, and blank ammunition for use on this range.

2.135.1 Range Identification

Common Name: B-14, Assault of Fortified Position Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 13** for location, also see plates 16 and 18)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina

Latitude: 34° 32' 12" N Longitude: 77° 28' 09" W
Military Grid: 734 425

BO P11102.1G identified the right flank at coordinates 734423 with an Azimuth of 48° grid and a left flank at 733424 with the same Azimuth.

BO P11102.1K lists the primary direction of fire as 50° which is the same as what is listed in BO P3570.1.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms, 3.5" Rocket (Practice), Rifle Grenade (Practice), Demolitions (1/2 lb), WP Hand Grenade, 40mm Grenade (Practice), Thickened and Unthickened Fuel (1960). Blank Ammunition, M73 Sub-Caliber, Demolition Block (1/4 lb), and Hand Smoke Grenades (1986) & (1994)

Information Current as of: 1 February 2000

2.135.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms, Service and Blank	None
Rifle Grenade, Practice	None
3.5" Rocket, Practice	None
WP Hand Grenade	Integral
Smoke Hand Grenade	Integral
40mm Grenade, Practice	None
Demolitions	Electric and Non-Electric Firing Systems

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1970 to present

Locations within Range of Known Munitions Use: Entire Range

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
Demolitions (NOTE: May be buried to an unknown depth but would normally be near the surface.)	Unknown	Unknown	Unknown	n. a.
.30 Caliber, Ball, M1 (NOTE: Only complete rounds represent an explosive hazard and complete rounds are found on the surface)	1.3	1.7	2.6	0.1
40mm M381	0.2	0.3	0.4	1.1
M29 Rifle Grenade	0.1	0.2	0.3	2.1
3.5" Rocket M28	0.8	1.1	1.7	3.2
Hand Grenade	Surface	Surface	Surface	1.7

[1] Maximum detection depth using a magnetometer.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: WP munitions contain a filler which burns upon contact with air.

Types of Targets: Two Earthen Bunkers and 23 Demolition Pts (1970). Two Earthen Bunkers and 13 Demolition Pits (1986) & (1994).

Other Past Uses: This range is located in the general area of former Miniature Anti-Tank and Anti-Aircraft Ranges.

Anticipated Future Use: Continued current use.

Public Access: Area is located on a restricted access military reservation.

2.136 D-11A, FLAME TANK AND FLAME THROWER RANGE

This range appears in Base Order P11102.1G, dated 6 February 1970, and on a September 1976 range map.

2.136.1 Range Identification

Common Name: D-11A, Flame Tank and Flame Thrower Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 13** and **16** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 39' 02" N Longitude: 77° 18' 59" W
Military Grid: 877 368

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Flame Throwers and Small Arms Blank Ammunition.

Blank Ammunition used on tanks for demonstration purposes.

Information Current as of: 1 February 2000

2.136.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms, Blanks	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1970 to approximately 1977

Locations within Range of Known Munitions Use: Entire Range

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: One Simulated Concrete Bunker

Other Past Uses: No other ranges have been identified in this area in the past but the area has been used as a maneuver/training area.

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.137 F-4, FIRE CONTROL RANGE

Base Order 11102.1B, dated 5 May 1960, listed this range as under construction with a proposed firing of rifles and submachine guns firing service ammunition.

Base Order P11102.1G, dated 6 February 1970, authorized the use of the following ammunition on this range: Service small arms, WP hand grenades, rifle grenades (practice), and demolitions (1/2 lb blocks).

Base Order P11102.1K, dated 1 December 1986, authorized the use of service small arms and smoke grenades.

Base Order P3570.1, dated 2 June 1994, authorized the use of .38 Caliber, .45 Caliber, 5.56mm, 9mm, 12 Gauge, and smoke grenades.

2.137.1 Range Identification

Common Name: F-4, Fire Control Range
Also known as F-4, Individual, Fire Team, and Squad Fire Control Range
F-4, Squad Combat Patrol Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 13** for location, also see plates 16, 18, and 20)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 41' 57" N Longitude: 77° 16' 23" W
Military Grid: 918 421

BO P11102.1G identified the right flank at coordinates 919425 with an Azimuth of 191° grid and a left flank at 920425 with the same Azimuth.

BO P11102.1K lists the primary direction of fire as 200°.

BO P3570.1 listed three stations on this range. The primary direction of fire for station one is 220°, station two - 236°, and station three - 213°.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms, WP Hand Grenades, Smoke Hand Grenades, Rifle Grenades (Practice), and Demolitions (1/2 lb).

Information Current as of: 1 February 2000

2.137.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None
WP Hand Grenade	Integral
Smoke Hand Grenade	Integral
Rifle Grenade (Practice)	None
Demolitions	Electric and Non-Electric Firing Systems

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1960 to present

Locations within Range of Known Munitions Use: Firing Line

Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line. Rifle Grenades, Smoke Grenades, WP Grenades, and Demolitions may be located throughout the range.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
.30 Caliber, Ball, M1 (NOTE: Only complete rounds represent an explosive hazard and complete rounds are found on the surface)	1.3	1.7	2.6	0.1
Hand Grenades	Surface	Surface	Surface	1.7
M28/M31 HEAT Rifle Grenade	0.1	0.2	0.3	2.1
Demolitions (NOTE: May be buried to an unknown depth but would normally be near the surface.)	Unknown	Unknown	Unknown	n. a.

[1] Maximum detection depth using a magnetometer.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: WP munitions contain a filler which burns upon contact with air.

Types of Targets: Ten Electromechanical "Pop-Up" Targets (1970). Ten "Pop-Up" Targets, two Artillery and one Machine Gun Simulator (1986).

Other Past Uses: The “F” area has been used for ranges and fire and maneuver training in the past.

Anticipated Future Use: Continued present use.

Public Access: Area is located on a restricted access military reservation.

2.138 F-9, BATTLE SIGHT RANGE

Base Order P11102.1G, dated 6 February 1970, lists this range for use with rifles and automatic rifles. This range is also found on a 1976 range map.

Base Order P11102.1K, dated 11 October 1985, lists this range as a pistol range that is currently inactive. When change 1 to this BO was published on 1 December 1986, this range was deleted.

2.138.1 Range Identification

Common Name: F-9, Battle Sight Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 13** and **16** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 41' 02" N Longitude: 77° 19' 04" W
Military Grid: 8765 4050

BO P11102.1G lists the right flank at 8725405 (assumed to be 872405) with an Azimuth of 118° grid and a left flank at 875405 with an Azimuth of 92° grid.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms

Information Current as of: 1 February 2000

2.138.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1970 to approximately 1985

Locations within Range of Known Munitions Use: Firing Line

Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Fixed Target Frames at 15 yards for "E" and "C" Type Targets.

Other Past Uses: The “F” area has been used for range and fire and maneuver training in the past.

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.139 F-13, FLAME THROWER RANGE

Base Order P11102.1G, dated 6 February 1970, and a 1976 range map identify this range. The base order authorizes the use of light or heavy fuel in the flame throwers used on this range.

2.139.1 Range Identification

Common Name: F-13, Flame Thrower Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 13** and **16** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 39' 48" N Longitude: 77° 19' 04" W
Military Grid: 876 382

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: None (Only Flame Fuel)

Information Current as of: 1 February 2000

2.139.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
None	

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1970 to approximately 1977

Locations within Range of Known Munitions Use: NA

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: NA

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Simulated Bunker Target

Other Past Uses: The "F" area has been used for range and fire and maneuver training in the past.

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.140 F-18, MACHINE GUN FIELD FIRING RANGE

Base Order P11102.1G, dated 6 February 1970, identifies rifles and automatic rifles as the weapons authorized on this range.

Base Order P11102.1K, dated 1 December 1986, added the use of the 14.5 artillery sub-caliber to this range.

Base Order P3570.1, dated 2 June 1994, authorized the following ammunition to be used on this range: 9mm, .50 Caliber (sniper rifle), 5.56mm, and 7.62mm.

2.140.1 Range Identification

Common Name: F-18, Machine Gun Field Fire Range
Also known as F-18, Night Field Firing and Artillery Sub-Caliber Range
F-18, Night Field Firing Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 13** for location, Also see plates 16, 18, and 20)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 40' 20" N Longitude: 77° 19' 25" W
Military Grid: 871 392

BO P11102.1G identifies the right flank at 871391 with an Azimuth of 75° grid and a left flank at 871392 with an Azimuth of 68° grid.

BO P11102.1K lists the primary direction of fire as 78°.

BO P3570.1 lists the primary direction of fire as 80°.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms and 14.5mm Artillery Sub-Caliber

Information Current as of: 1 February 2000

2.140.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None
14.5mm Artillery Sub-Caliber	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1970 to present

Locations within Range of Known Munitions Use: Firing Line and Impact Area

Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line. The 14.5mm Artillery Sub-Caliber may be located anywhere on the range.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
.30 Caliber, Ball, M1 (NOTE: Only complete rounds represent an explosive hazard and complete rounds are found on the surface)	1.3	1.7	2.6	0.1

.50 Caliber, Ball, M2 (NOTE: Only complete rounds represent an explosive hazard and complete rounds are found on the surface)	1.6	2.2	3.3	0.2
14.5mm Trainer/Spotter M181-3A1	0.2	0.3	0.4	0.3

[1] Maximum detection depth using a magnetometer.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Twelve Electromechanical "Pop-Up" Targets positioned at 50, 75, and 100 yards (1970). Six Hard Targets plus targets emplaced by the using unit (1994).

Other Past Uses: The “F” area has been used for ranges and as a fire and maneuver area in the past.

Anticipated Future Use: Continued present use.

Public Access: Area is located on a restricted access military reservation.

2.141 G-2, INFILTRATION RANGE

This range appears in Base Order P11102.1G, dated 6 February 1970 and on a 1976 range map.

2.141.1 Range Identification

Common Name: G-2, Infiltration Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 13** and **16** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 36' 38" N Longitude: 77° 17' 05" W
Military Grid: 905 323

BO P11102.1G identified the right flank at coordinates 905323 with an Azimuth of 15° grid and a left flank at 904323 with an Azimuth of 10° grid.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms and Demolitions

Information Current as of: 1 February 2000

2.141.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None
Demolitions	Electric and Non-Electric Firing Systems

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1970 to approximately 1977

Locations within Range of Known Munitions Use: Machine guns fire from a fixed position. Demolitions are fired in pits on the range.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds of small arms and demolitions would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: NA

Other Past Uses: The "G" Area has been used as an impact area and for fire and maneuver training in the past.

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.142 G-8, GRENADE LAUNCHER RANGE

Base Order P11102.1G, dated 6 February 1970, authorizes the firing of 40mm HE and Practice on this range.

Base Order P11102.1K, dated 1 December 1986, authorizes the firing of M203 and MK 19 grenade launchers on this range.

Base Order P3570.1, dated 2 June 1994, authorizes the firing of HE and Practice from the M203, but only practice from the MK 19.

2.142.1 Range Identification

Common Name: G-8, Grenade Launcher Range
Also known as G-8, M203 Grenade Launcher Range
G-8, M79 Grenade Firing Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 13** for location, also see plates 16, 18, and 20)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 39' 20" N Longitude: 77° 17' 25" W
Military Grid: 901 373

BO P11102.1G lists the right flank at 901374 with an Azimuth of 164° grid and a left flank at 902374 with an Azimuth of 153° grid.

BO P11102.1K lists the primary direction of fire as 164°.

BO P3570.1 lists the primary direction of fire as 155°.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: 40mm Grenades HE & Practice

Information Current as of: 1 February 2000

2.142.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
40mm Grenade	Integral

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1970 to present

Locations within Range of Known Munitions Use: Target Area

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
40mm M381	0.2	0.3	0.4	1.1

[1] Maximum detection depth using a magnetometer.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: The 40mm grenade contains a very sensitive fuzing system.

Types of Targets: Vertical and Point Targets (used oil drums), Bunkers, varying level Window Frames (1970). Armor Hulls and Improvised Targets (1986). Three Firing Positions at various Hard Targets (1994).

Other Past Uses: The "G" Area has been used as an impact area and as a fire and maneuver area in the past.

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.143 G-9, LIGHT ANTIARMOR WEAPONS AND SHOULDER-LAUNCHED MULTIPURPOSE ASSAULT WEAPON RANGE

Base Order P11102.1G, dated 6 February 1970, identified this range for rifle grenades and 3.5" rocket launchers firing HE and WP munitions.

Base Order P11102.1K, dated 1 December 1986, authorized firing M72 LAW, M73 sub-caliber, and SMAW.

Base Order P3570.1, dated 2 June 1994, authorized firing M72 Law, M73 sub-caliber, AT-4 and SMAW.

2.143.1 Range Identification

Common Name: G-9, Light Anti-Armor Weapons and Shoulder-Launched Multipurpose Assault Weapon Range.
Also known as G-9, LAAW and SMAW Range
G-9, 3.5" Rocket and Rifle Grenade Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 13** for location, Also see plates 16, 18, and 20)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 39' 24" N Longitude: 77° 17' 18" W
Military Grid: 903 374

BO P11102.1G lists the right flank at 903374 with an Azimuth of 171° grid and a left flank at 904375 with an Azimuth of 155° grid.

BO P11102.1G lists a primary direction of fire of 161°.

BO P3570.1 lists a primary direction of fire of 155°.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: M72 Law, M73 Sub-Caliber, AT-4, and SMAW

Information Current as of: 1 February 2000

2.143.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
66mm M72 LAW	Integral
35mm M73 Sub-caliber	Integral
3.5 Inch Rocket	Integral
84mm AT-4	Integral
83mm SMAW	Integral

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1970 to present

Locations within Range of Known Munitions Use: Target Area

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
35mm Sub-Caliber M73	0.5	0.7	1.0	0.9
66mm M72	0.9	1.2	1.8	2.1
3.5" Rocket M28	0.8	1.1	1.7	3.2
83mm SMAW	2.8	3.6	5.6	2.9
84mm M136 (AT-4)	2.5	3.7	5.0	2.9

[1] Maximum detection depth using a magnetometer.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: Shaped charge munitions contain extremely sensitive fuzing and present a significantly enlarged hazard area forward of the munition.

Types of Targets: Tank Hulls (1970). Armor Hulls and Improvised Targets (1986). Three Firing Points at various Hard Targets (1994).

Other Past Uses: The "G" Area has been used as an impact area and as a fire and maneuver area in the past.

Anticipated Future Use: Continued present use

Public Access: Area is located on a restricted access military reservation.

2.144 K-211, M203 AND MK 19 GRENADE LAUNCHER RANGE

Base Order P11102.1G, dated 6 February 1970, authorized the firing of 40mm HE and practice from M79 grenade launchers.

Base Order P11102.1K, dated 1 December 1986, authorized the firing of service ammunition from M203 and MK 19 grenade launchers.

Base Order P3570.1, dated 2 June 1994, authorized the firing of M60 machine guns, M203 grenade launchers, MK 19 grenade machine guns, M249 squad automatic weapons, M16 rifles, and MP5's.

2.144.1 Range Identification

Common Name: K-211, M203 and MK 19 Grenade Launcher Range
Also known as K-211, M79 Grenade Launcher Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 14** for location, also see plates 17 and 19)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 38' 06" N Longitude: 77° 25' 07" W
Military Grid: 783 353

BO P11102.1G listed the range at Grid Square 7835 and identified the right flank at 784354 with an Azimuth of 149° grid and a left flank at 784353 with the same Azimuth.

BO P11102.1K listed the range at 781353 with a primary direction of fire of 153°.

BO P3570.1 listed the range at 783353 with a primary direction of fire of 144°.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: 40mm Grenade, HE & Practice

Information Current as of: 1 February 2000

2.144.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
40mm Grenade	Integral

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1970 to present

Locations within Range of Known Munitions Use: Target Area

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
.30 Caliber, Ball, M1 (NOTE: Only complete rounds represent an explosive hazard and complete rounds are found on the surface)	1.3	1.7	2.6	0.1
40mm M381	0.2	0.3	0.4	1.1

[1] Maximum detection depth using a magnetometer.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: 40mm grenades contain sensitive fuzing.

Types of Targets: Vehicle Hulls and Barrels (1970). Twelve Hard Targets (1994).

Other Past Uses: The "K" Area has been used for ranges, as an impact area, and as a fire and maneuver area in the past.

Anticipated Future Use: Continued present use.

Public Access: Area is located on a restricted access military reservation.

2.145 K-212, INFILTRATION AND INDIVIDUAL MOVEMENT RANGE

Base Order P11102.1G, dated 6 February 1970, authorizes the firing of service ammunition from machine guns, rifles, and automatic rifles .30 caliber, 7.62mm, 5.56mm, and .50 Caliber spotting rifle (M48).

Base Order P11102.1K, dated 1 December 1986 and Base Order P3570.1, dated 2 June 1994, identified this range as in infiltration and individual movement range where only blank ammunitions and 1/4 pound demolition charges are authorized.

2.145.1 Range Identification

Common Name: K-212, Infiltration and Individual Movement Range
Also known as Machine Gun Field Firing and Techniques of Night Fire Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 14** for location, also see plates 17 and 19)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 38' 06" N Longitude: 77° 25' 14" W
Military Grid: 781 353

BO P11102.1G lists the right flank at coordinates 780351 with an Azimuth of 133° grid and a left flank at 781353 with an Azimuth of 140° grid.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms

Information Current as of: 1 February 2000

2.145.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None
Demolitions	Electric and Non-Electric Firing Systems

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1970 to present

Locations within Range of Known Munitions Use: For small arms only complete rounds present an explosive hazard. This range was initially a machine gun range and complete rounds of small arms would be found at the firing line. Later, it became an infiltration range and small arms blanks and demolitions were used throughout the range.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth. Demolition charges were placed in pits but left uncovered, they too may have become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Thirty-two "E" Type Targets plus Improvised 55 Gal Drum Targets (1970). No targets used when range was in use as an Infiltration Range, but 32 Demolition Pits were used in conjunction with 1/4 pound Demolition Charges.

Other Past Uses: The "K" Area has been used for ranges, as an impact area, and as a fire and maneuver area in the past.

Anticipated Future Use: Continued present use.

Public Access: Area is located on a restricted access military reservation.

2.146 K-301, LIGHT ANTIARMOR WEAPONS AND SHOULDER-LAUNCHED MULTIPURPOSE ASSAULT WEAPON RANGE

Base Order P11102.1G, dated 6 February 1970, authorizes the firing of 3.5" rockets (HE & WP), M72 LAAW, 81mm mortars (Illumination), and XM-74 incendiary rounds.

Base Order P11102.1K, dated 1 December 1986, authorizes the firing of M72 LAW, M73 sub-caliber, 60mm & 81mm mortars (Illumination), and SMAW.

Base Order 3570.1, dated 2 June 1994, authorized the following ammunition for use on this range: 9mm Sub-caliber, 35mm sub-caliber, 66mm LAW, 60mm mortar (Practice and Illumination), 81mm mortar (Practice and Illumination), 83mm SMAW, and 84mm AT-4.

2.146.1 Range Identification

Common Name: K-301, Light Antiarmor Weapons and Shoulder-Launched Multipurpose Assault Weapon Range
Also known as K-301, LAAW and SMAW Range
F-301, Rocket Launcher Field Firing Range (F-301 is probably a printing error and should read K-301)

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 14** for location, also see plates 17 and 19)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 38' 26" N Longitude: 77° 24' 48" W
Military Grid: 788 359

BO P11102.1G listed the right flank at coordinates 787360 with an Azimuth of 153° grid and a left flank at coordinates 788361 with an Azimuth of 141° grid.

BO P11102.1K lists a primary direction of fire as 149°.

BO P3570.1 listed the primary direction of fire as 152°.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: 9mm Sub-Caliber, 35mm Sub-Caliber, 60mm Mortar (Illumination and Practice only), 66mm M72 LAW, 66mm M74 Incendiary Round, 81mm Mortar (Illumination and Practice only), 83mm SMAW, and 84mm AT-4

Information Current as of: 1 February 2000

2.146.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
9mm Sub Caliber	
35mm Sub-Caliber	Integral
60mm Mortar, Illumination	Powder Train Time
66mm LAW	Integral
81mm Mortar, Illumination	Powder Train Time
83mm SMAW	Integral
84mm AT-4	Integral
3.5" Rocket	Base Detonating

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1970 to present

Locations within Range of Known Munitions Use: Target Area

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
35mm Sub-Caliber M73	0.5	0.7	1.0	0.9
60mm M83	1.1	1.5	2.3	1.9
66mm M72	0.9	1.2	1.8	2.1
66mm TPA, M74	0.7	0.9	1.4	2.1
81mm, M301	2.0	2.7	4.1	2.8
83mm SMAW	2.8	3.6	5.6	2.9
84mm M136 (AT-4)	2.5	3.7	5.0	2.9
3.5" Rocket M28	0.8	1.1	1.7	3.2

[1] Maximum detection depth using a magnetometer.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: Shaped charge munitions contain sensitive fuzing and present a significantly enlarged hazard area forward of the munition. The M74 round contains a special incendiary material and fire fighting personnel need to be aware of its presence in the event of a fire.

Types of Targets: Tank and AMTRAC Hulls (1970). Armored Hulls and Improvised Targets (1986). Four Firing Points firing at Hard Targets (1994).

Other Past Uses: The “K” Area has been used for ranges, as an impact area, and as a fire and maneuver area in the past.

Anticipated Future Use: Continued present use.

Public Access: Area is located on a restricted access military reservation.

2.147 K-302, FIELD FIRING AND BATTLESIGHT RANGE

Base Order P11102.1G, dated 6 February 1970, authorizes the firing of service ammunition from rifles and auto-rifles on this range.

Base Order P11102.1K, dated 1 December 1986, also authorized the firing of service ammunition from service rifles.

Base Order P3570.1, dated 2 June 1994, authorized firing of M16 rifles on this range.

2.147.1 Range Identification

Common Name: K-302, Field Firing and Battlesight Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 14** for location, also see plates 17 and 19)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 38' 27" N Longitude: 77° 24' 28" W
Military Grid: 793 359

BO P11102.1G listed the right flank at 792359 with an Azimuth of 187° grid and a left flank at 793359 with an Azimuth of 170° grid.

BO P11102.1K listed the primary direction of fire as 184°.

BO P3570.1 listed the primary direction of fire as 180°.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms

Information Current as of: 1 February 2000

2.147.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1970 to present

Locations within Range of Known Munitions Use: Firing Line

Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Point and Area Type Targets with Targets at 1000" for battle sight zeroing (1970). Sixty-two Point and Area Targets, Type "E" Targets at 1000" for Battlesight Zeroing (1994).

Other Past Uses: The “K” Area has been used for ranges, as an impact area, and as a fire and maneuver area in the past.

Anticipated Future Use: Continued present use.

Public Access: Area is located on a restricted access military reservation.

2.148 K-303, BASIC TECHNIQUES OF FIRE AND MORTAR FIELD FIRING RANGE

Base Order P11102.1G, dated 6 February 1970, authorized firing the following ammunition on this range: Caliber .30, 7.62mm and 5.56mm service ammunition, WP hand grenades, 60mm and 81mm Mortar (HE, WP, and Illumination), and demolitions (1/2 lb blocks).

Base Order P11102.1K, dated 1 December 1986, authorized 40mm grenades to the above list and reduced the demolitions to 1/4 lb blocks.

Base Order P3570.1, dated 2 June 1994, authorized the following ammunition: .38 Caliber, .45 Caliber, 5.56mm, 7.62mm, 40mm HE & HEDP, 60mm (all types), 81mm (all types), 1/4 lb TNT blocks, 9mm, and 12 Gauge.

2.148.1 Range Identification

Common Name: K-303, Basic Technique of Fire and Mortar Field Firing Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 14** for location, also see plates 17 and 19)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 38' 27" N Longitude: 77° 24' 16" W
Military Grid: 796 359

BO P11102.1G listed the right flank at 796359 with an Azimuth of 181° grid and a left flank at 797359 with an Azimuth of 178° grid.

BO P11102.1K lists the primary direction of fire as 187°.

BO P3570.1 listed the primary direction of fire as 162°.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small arms, 40mm grenades, 60mm and 81mm mortars, and demolitions.

Information Current as of: 1 February 2000

2.148.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None
WP Hand Grenade	Integral
40mm Grenade	Integral
60mm Mortar	Point Detonating Variable Time Powder Train Time
81mm Mortar	Point Detonating Variable Time Powder Train Time
Demolitions	Electric and Non-Electric Firing System

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1970 to present

Locations within Range of Known Munitions Use: Entire Range. Small arms present an explosive hazard only as a complete round that would be found at the firing line. Other items would be found in the target area.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
.30 Caliber, Ball, M1 (NOTE: Only complete rounds represent an explosive hazard and complete rounds are found on the surface)	1.3	1.7	2.6	0.1
40mm M381	0.2	0.3	0.4	1.1
60mm M49	1.1	1.5	2.3	1.9
81mm M43	2.7	3.5	5.4	2.8
81mm, M56	2.0	2.7	4.1	2.8
Demolitions (NOTE: May be buried to an unknown depth but would normally be near the surface.)	Unknown	Unknown	Unknown	n. a.
Hand Grenades	Surface	Surface	Surface	1.7

[1] Maximum detection depth using a magnetometer.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: WP munitions contain a filler which burns upon contact with air.

Types of Targets: Point and Area Targets

Other Past Uses: The “K” Area has been used for ranges, as an impact area, and as a fire and maneuver area in the past.

Anticipated Future Use: Continued present use.

Public Access: Area is located on a restricted access military reservation.

2.149 K-305, INFANTRY WEAPONS DEMONSTRATION RANGE

Base Order P11102.1G, dated 6 February 1970, identified this range for firing of all infantry weapons using service ammunition, except for Caliber .50 machine gun, 106mm recoilless rifle, and HE hand grenades.

Base Order P11102.1K, dated 1 December 1986, identified this range for firing all infantry weapons except .50 Caliber machine gun, 106mm recoilless rifle, M40A1, TOW, and hand grenades. Appendix I identified the following weapons authorized on this range: 9mm, .38 Caliber, .45 Caliberf, M16, M60, SAW, MK19, M203, SMAW, M72, M73, 60mm & 81mm, & DRAGON.

Base Order P3570.1, dated 2 June 1994, listed the following ammunition authorized for use on this range: 9mm, .38 Caliber, .45 Caliber, 5.56mm, 7.62mm, 40mm, 35mm sub-caliber, 66mm LAW, DRAGON Missile, 83mm SMAW, 84mm AT-4, 60mm & 81mm mortar, 1/4 lb TNT, 12 gauge.

2.149.1 Range Identification

Common Name: K-305, Infantry Weapons Demonstration Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 14** for location, also see plates 17 and 19)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 38' 27" N Longitude: 77° 24' 04" W
Military Grid: 799 359

BO P11102.1G lists the right flank at 799359 with an Azimuth of 179° grid and left flank at 801359 with an Azimuth of 177° grid.

BO P11102.1K listed the primary direction of fire as 175°.

BO P3570.1 listed the primary direction of fire as 182°.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms; 3.5" Rocket (HE & WP); 57mm, 75mm, & 90mm Recoilless Rifle (all types); 60mm & 81mm Mortar (all types); M72 LAW; M73 35mm Sub-Caliber; AT-4; SMAW; 40mm Grenade; and DRAGON Missile.

Information Current as of: 1 February 2000

2.149.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None
35mm Sub-caliber	Integral
40mm Grenade	Integral
57mm Recoilless Rifle (HE, HEAT, WP)	Point Detonating
60mm Mortar (HE, WP, Illum)	Point Detonating Powder Train Time Variable Time
66mm M72 LAW	Integral
75mm Recoilless Rifle (HE, HEAT, WP)	Point Detonating
81mm Mortar (HE, WP, Illum)	Point Detonating Powder Train Time Variable Time
83mm SMAW	Integral
84mm AT-4	Integral
3.5" Rocket (HE & WP)	Base Detonating
90mm Recoilless Rifle (HEAT)	Point Initiating Base Detonating
DRAGON Missile	Integral
Demolitions	Electric and Non-Electric Firing Systems

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1970 to present

Locations within Range of Known Munitions Use: Target Area

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
.30 Caliber, Ball, M1 (NOTE: Only complete rounds represent an explosive hazard and complete rounds are found on the surface)	1.3	1.7	2.6	0.1
35mm Sub-Caliber M73	0.5	0.7	1.0	0.9
40mm M381	0.2	0.3	0.4	1.1
57mm M306	2.7	3.6	5.5	1.7
60mm M49	1.1	1.5	2.3	1.9
66mm M72	0.9	1.2	1.8	2.1
75mm M310	3.9	5.1	7.8	2.5
81mm M43	2.7	3.5	5.4	2.8
81mm, M56	2.0	2.7	4.1	2.8
83mm SMAW	2.8	3.6	5.6	2.9
84mm M136 (AT-4)	2.5	3.7	5.0	2.9
3.5" Rocket M28	0.8	1.1	1.7	3.2
90mm M371	2.0	2.7	4.1	3.2
Dragon Missile	0.9	1.1	1.7	4.3
Demolitions (NOTE: May be buried to an unknown depth but would normally be near the surface.)	Unknown	Unknown	Unknown	n. a.

[1] Maximum detection depth using a magnetometer.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: Shaped charge munitions contain sensitive fuzing and present a significantly enlarged hazard area forward of the munition. WP munitions contain a filler which burns upon contact with air.

Types of Targets: Tank and AMTRAC Hulls at varying ranges from 300 to 1000 yards, Concrete Bunkers, and Type "E" Targets.

Other Past Uses: The “K” Area has been used for ranges, as an impact area, and as a fire and maneuver area in the past.

Anticipated Future Use: Continued present use.

Public Access: Area is located on a restricted access military reservation.

2.150 K-309, MACHINE GUN AND LIGHT ANTIARMOR RANGE

Base Order P11102.1G, dated 6 February 1970, authorized the firing of rifles, auto-rifles and 3.5" rocket launchers (Practice only) plus the use of 1/2 lb demolition charges.

Base Order P11102.1K, dated 1 December 1986, authorizes firing service small arms, M73 sub-caliber, 60mm & 81mm Illumination rounds.

Base Order P3570.1, dated 2 June 1994, authorizes the use of the following ammunition on this range: 5.56mm, 7.62mm, M73 sub-caliber, 60mm Illumination, AT-4 sub-caliber, and 9mm.

2.150.1 Range Identification

Common Name: K-309, Machine Gun and Light Antiarmor Range
Also known as K-309, Machine Gun and LAAW Range
K-309, Fire and Movement Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 14** for location, also see plates 17 and 19)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 38' 28" N Longitude: 77° 23' 41" W
Military Grid: 805 359

BO P11102.1G lists the right flank at coordinates 805360 with an Azimuth of 207° grid and a left flank at 806359 with an Azimuth of 180° grid.

BO P11102.1K lists the primary direction of fire as 196°.

BO P3570.1 lists the primary direction of fire as 197°.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small arms, 35mm M73 Sub-caliber, 60mm & 81mm Illumination, AT-4 Sub-caliber, 3.5" Practice Rocket.

Information Current as of: 1 February 2000

2.150.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None
35mm M73 Sub-caliber	Integral
AT-4 Sub-Caliber	
3.5" Rocket (Practice	None
60mm Mortar (Illum)	Powder Train Time
81mm Mortar (Illum)	Powder Train Time
Demolitions	Electric and Non-Electric Firing System

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1970 to present

Locations within Range of Known Munitions Use: Target Area

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
Demolitions (NOTE: May be buried to an unknown depth but would normally be near the surface.)	Unknown	Unknown	Unknown	n. a.

.30 Caliber, Ball, M1 (NOTE: Only complete rounds represent an explosive hazard and complete rounds are found on the surface)	1.3	1.7	2.6	0.1
35mm Sub-Caliber M73	0.5	0.7	1.0	0.9
81mm, M56	2.0	2.7	4.1	2.8
3.5" Rocket	0.8	1.1	1.7	3.2

[1] Maximum detection depth using a magnetometer.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Twelve Type "E" Silhouette Targets

Other Past Uses: The “K” Area has been used for ranges, as an impact area, and as a fire and maneuver area in the past.

Anticipated Future Use: Continued present use.

Public Access: Area is located on a restricted access military reservation.

2.151 K-315, NIGHT AND COMBAT FIELD FIRING RANGE

Base Order P11102.1G, dated 6 February 1970, authorizes the firing of service ammunition from rifles and auto-rifles.

Base Order P11102.1K, dated 1 December 1986, authorizes the firing of service ammunition from rifles, pistols, and shotguns.

Base Order P3570.1, dated 2 June 1994, authorizes the firing of .38 Caliber, .45 Caliber, 5.56mm, 9mm, and 12 Gauge weapons.

2.151.1 Range Identification

Common Name: K-315, Night and Combat Field Firing Range
Also known as K-315, Combat Field Firing Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 14** for location, also see plates 17 and 19)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 38' 28" N Longitude: 77° 23' 25" W
Military Grid: 809 359

BO P11102.1G lists a right flank at 808359 with an Azimuth of 188° grid and a left flank at 809358 with an Azimuth of 168° grid.

BO P11102.1K lists a primary direction of fire of 180°.

BO P3570.1 lists the primary direction of fire of 175°.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms

Information Current as of: 1 February 2000

2.151.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1970 to present

Locations within Range of Known Munitions Use: Firing Line

Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Twelve Electromechanical "Pop-Up" Targets

Other Past Uses: The “K” Area has been used for ranges, as an impact area, and as a fire and maneuver area in the past.

Anticipated Future Use: Continued present use.

Public Access: Area is located on a restricted access military reservation.

2.152 K-317, CLOSE COMBAT RANGE

Base Order P11102.1G, dated 6 February 1970, authorizes the firing of service ammunition from rifles and auto-rifles.

Base Order P11102.1K, dated 1 December 1986, authorized the firing of rifles, shotguns, and pistols on this range.

Base Order P3570.1, dated 2 June 1994, authorized the firing of .38 Caliber, .45 Caliber, 5.56mm, 9mm, and 12 Gauge weapons on this range.

2.152.1 Range Identification

Common Name: K-317, Close Combat Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 14** for location, also see plates 17 and 19)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 38' 25" N Longitude: 77° 23' 17" W
Military Grid: 811 358

BO P11102.1G lists the right flank at coordinates 810358 with an Azimuth of 210° grid and a left flank at coordinates 811358 with an Azimuth of 197° grid.

BO P11102.1K lists the primary direction of fire as 207°.

BO P3570.1 lists the primary direction of fire as 201°.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms

Information Current as of: 1 February 2000

2.152.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1970 to present

Locations within Range of Known Munitions Use: Firing Line

Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Twelve Electromechanical "Pop-Up" Targets (1970 & 1986). Fourteen 3C52 "Pop-Up" E Silhouette Targets (1994).

Other Past Uses: The “K” Area has been used for ranges, as an impact area, and as a fire and maneuver area in the past.

Anticipated Future Use: Continued present use.

Public Access: Area is located on a restricted access military reservation.

2.153 K-319, FIELD FIRING RANGE

Base Order P11102.1G, dated 6 February 1970, authorized the use of .30 Caliber, 5.56mm, and 7.62mm ammunition on this range.

Base Order P11102.1K, dated 1 December 1986 added 60mm and 81mm mortar illumination rounds to the list of what could be fired.

Base Order P3570.1, dated 2 June 1994, authorized the following ammunition to be fired on this range: .38 Caliber, .45 Caliber, 5.56mm, 7.62mm, 9mm, 12 Gauge, 60mm mortar (illumination and practice) and 81mm mortar (illumination and practice).

2.153.1 Range Identification

Common Name: K-319, Field Firing Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 14** for location, also see plates 17 and 19)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 38' 25" N Longitude: 77° 23' 09" W
Military Grid: 813 358

BO P11102.1G lists the right flank at 813359 with an Azimuth of 177° grid and a left flank at 814358 and an Azimuth of 173° grid.

BO P11102.1K lists the primary direction of fire as 182°.

BO P3570.1 lists the primary direction of fire as 184°.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small arms , 60mm Illumination and Practice, 81mm Illumination and Practice.

Information Current as of: 1 February 2000

2.153.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None
60mm Mortar, Illumination	Powder Train Time
60mm, Mortar, Practice	None
81mm Mortar, Illumination	Powder Train Time
81mm Mortar, Practice	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1970 to present

Locations within Range of Known Munitions Use: Firing Line and Impact Area

Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line. Mortar ammunition may be found within the impact area of the range.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
.30 Caliber, Ball, M1 (NOTE: Only complete rounds represent an explosive hazard and complete rounds are found on the surface)	1.3	1.7	2.6	0.1
60mm M83	1.1	1.5	2.3	1.9

81mm M43	2.7	3.5	5.4	2.8
81mm, M301	2.0	2.7	4.1	2.8

[1] Maximum detection depth using a magnetometer.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Type "E" and Type "F" and Improvised Targets (1970). Troop "Tire" Silhouettes and Improvised Targets (1986).

Other Past Uses: The “K” Area has been used for ranges, as an impact area, and as a fire and maneuver area in the past.

Anticipated Future Use: Continued present use.

Public Access: Area is located on a restricted access military reservation.

2.154 K-321, TRANSITION RANGE

Base Order P11102.1G, dated 6 February 1986, authorized the firing of the following ammunition on this range: Caliber .30, 7.62mm, 5.56mm, and 81mm Mortar (Illumination only).

Base Order P11102.1K, dated 1 December 1986 added 60mm Mortar (Illumination only) to the types of ammunition authorized for this range.

Base Order P3570.1, dated 2 June 1994, authorized the following ammunition for use on this range: .38 Caliber, .45 Caliber, 5.56mm, 9mm, 12 Gauge, 60mm Illumination, 40mm Illumination.

2.154.1 Range Identification

Common Name: K-321, Transition Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 14** for location, also see plates 17 and 19)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 38' 09" N Longitude: 77° 22' 49" W
Military Grid: 818 353

BO P11102.1G identifies the right flank at coordinates 818359 with an Azimuth of 226° grid and a left flank at coordinates 819358 with an Azimuth of 222° grid.

BO P11102.1K lists the primary direction of fire as 222°.

BO P3570.1 lists the primary direction of fire as 217°.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms, 40mm Grenade (Illumination), 60mm Mortar (Illumination), and 81mm Mortar (Illumination).

Information Current as of: 1 February 2000

2.154.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None
40mm Grenade, Illumination	Integral
60mm Mortar, Illumination	Powder Train Time
81mm Mortar, Illumination	Powder Train Time

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1970 to present

Locations within Range of Known Munitions Use: Firing Line and Impact Area

Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line. Mortar and grenade illumination ammunition may be found within the impact area of the range.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
.30 Caliber, Ball, M1 (NOTE: Only complete rounds represent an explosive hazard and complete rounds are found on the surface)	1.3	1.7	2.6	0.1

40mm M381	0.2	0.3	0.4	1.1
60mm M83	1.1	1.5	2.3	1.9
81mm M43	2.7	3.5	5.4	2.8
81mm, M301	2.0	2.7	4.1	2.8

[1] Maximum detection depth using a magnetometer.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Eight Electromechanical Targets located at varied distances from a Fixed Firing Line (1970). Twenty-four 3C52 "Pop-Up" Type "E" Silhouette Targets.

Other Past Uses: The “K” Area has been used for ranges, as an impact area, and as a fire and maneuver area in the past.

Anticipated Future Use: Continued present use.

Public Access: Area is located on a restricted access military reservation.

2.155 K-322, MOVING REALISTIC TARGET RANGE

Base Order P11102.1G, dated 6 February 1970, authorized the firing of service ammunition from rifles and pistols.

Base Order P11102.1K, dated 1 December 1986, authorized the firing of rifles, pistols, and shotguns on this range.

Base Order P3570.1, dated 2 June 1994, authorized the firing of .38 Caliber, .45 Caliber, 5.56mm, 9mm, and 12 Gauge weapons on this range.

2.155.1 Range Identification

Common Name: K-322, Moving Realistic Target Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 14** for location, also see plates 17 and 19)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 38' 22" N Longitude: 77° 22' 46" W
Military Grid: 819 357

BO P11102.1G identified the right flank at coordinates 819356 with an Azimuth of 245° grid and a left flank at coordinates 820355 with an Azimuth of 215° grid.

BO P11102.1K lists the primary direction of fire as 230°.

BO P3570.1 lists the primary direction of fire as 233°.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms

Information Current as of: 1 February 2000

2.155.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1970 to present

Locations within Range of Known Munitions Use: Firing Line

Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: One Moving Target on fixed monorail.

Other Past Uses: The “K” Area has been used for ranges, as an impact area, and as a fire and maneuver area in the past.

Anticipated Future Use: Continued present use.

Public Access: Area is located on a restricted access military reservation.

2.156 K-323, GRENADE LAUNCHER RANGE

Base Order P11102.1G, dated 6 February 1970, states that 40mm HE and practice may be used at this range.

Base Order P11102.1K, dated 1 December 1986, lists this range as a Moving Target Range. K-322 is a Moving Target Range and it is believed that this description of K-323 is a printing error and the range is actually a 40mm Grenade Range.

Base Order P3570.1, dated 2 June 1994, lists the following ammunition as authorized for use on this range: .38 Caliber, .45 Caliber, 5.56mm, 9mm, 12 Gauge, and 40mm.

2.156.1 Range Identification

Common Name: K-323, Grenade Launcher Range
Also known as K323, M79 Grenade Firing Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 14** for location, also see plates 17 and 19)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 38' 22" N Longitude: 77° 22' 46" W
Military Grid: 819 357

BO P11102.1G identifies the right flank at coordinates 821356 with an Azimuth of 223° grid and a left flank at coordinates 821355 with an Azimuth of 218° grid.

BO P3570.1 lists the primary direction of fire as 217°.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms and 40mm Grenades (all types)

Information Current as of: 1 February 2000

2.156.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None
40mm Grenade	Integral

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1970 to present

Locations within Range of Known Munitions Use: Firing Line and Target area

Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line. 40mm grenades would be found in the vicinity of the targets.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
.30 Caliber, Ball, M1 (NOTE: Only complete rounds represent an explosive hazard and complete rounds are found on the surface)	1.3	1.7	2.6	0.1
40mm M381	0.2	0.3	0.4	1.1

[1] Maximum detection depth using a magnetometer.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: 40mm Grenades contain sensitive fuzing which may function upon movement of the munition.

Types of Targets: Improvised Targets at 100 yards (1970). Four Firing Points firing at various Hard Targets (1994).

Other Past Uses: The "K" Area has been used for ranges, as an impact area, and as a fire and maneuver area in the past.

Anticipated Future Use: Continued present use

Public Access: Area is located on a restricted access military reservation.

2.157 K-325, M72 LIGHT ANTIARMOR WEAPON AND M203 GRENADE LAUNCHER RANGE

Base Order P11102.1G, dated 6 February 1970, authorizes the firing of service and practice 3.5" Rockets and M72 LAAWs.

Base Order P11102.1K, dated 1 December 1986, authorizes the firing of M72 LAAW and M73 sub-caliber rounds.

Base Order P3570.1, dated 2 June 1994, authorizes the firing of 40mm Grenades, 35mm sub-caliber M73, 66mm M72, 83mm SMAW, and 84mm AT-4.

2.157.1 Range Identification

Common Name: K-325, M72 Light Anti-Armor Weapon and M203 Grenade Launcher Range
Also known as K-325, M72 LAAW Range
K-325, Rocket Launcher Field Firing Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 14** for location, also see plates 17 and 19)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 38' 16" N Longitude: 77° 22' 30" W
Military Grid: 823 355

BO P11102.1G identifies the right flank at coordinates 822355 with an Azimuth of 235° grid and a left flank at coordinates 823354 with the same Azimuth.

BO P11102.1K lists the primary direction of fire as 239°.

BO P3570.1 lists the primary direction of fire as 236°.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: 35mm Sub-Caliber M73, 40mm Grenade, 66mm M72 LAW, 83mm SMAW, 84mm AT-4, and 3.5" Rocket (HE & WP)

Information Current as of: 1 February 2000

2.157.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
35mm M73 Sub-caliber	Integral
40mm Grenade	Integral
66mm M72 LAW	Integral
83mm SMAW	Integral
84mm AT-4	Integral
3.5" Rocket	Base Detonating

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1970 to present

Locations within Range of Known Munitions Use: Target Area

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
35mm Sub-Caliber M73	0.5	0.7	1.0	0.9
40mm M381	0.2	0.3	0.4	1.1
66mm M72	0.9	1.2	1.8	2.1
83mm SMAW	2.8	3.6	5.6	2.9
84mm M136 (AT-4)	2.5	3.7	5.0	2.9
3.5" Rocket M28	0.8	1.1	1.7	3.2

[1] Maximum detection depth using a magnetometer.

Information on Past Range Clearances: None
The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: Shaped charge munitions and 40mm grenades contain sensitive fuzing which may cause the munition to detonate if it is moved. Shaped charge munitions have a significantly larger hazard area forward of the munition.

Types of Targets: Two Tank Targets (1970). Tanks and AAV Hulls plus Moving Target System for sub-caliber (1986). Twelve Hard Targets (1994).

Other Past Uses: The "K" Area has been used for ranges, as an impact area, and as a fire and maneuver area in the past.

Anticipated Future Use: Continue present use.

Public Access: Area is located on a restricted access military reservation.

2.158 EOD-2, EXPLOSIVE ORDNANCE DISPOSAL RANGE (VERONA LOOP)

Base Order P11102.1G, dated 6 February 1970, stated that this range was authorized for use by Base EOD Team for the disposal of unserviceable ammunition. High explosive charges will not exceed 25 pounds net TNT equivalent per shot.

Base Order P11102.1K, dated 1 December 1986, stated that this range was authorized for disposal of unserviceable ammunition, training, disassembly/inerting of ordnance, and testing of small arms ammunition.

Base Order P3570.1, dated 2 June 1994, listed the following weapons restriction/ caveat: "Maximum demolition charge determined and authorized by BRCO. EOD operations will cover a variety of US and Foreign munitions. Operations will include but are not limited to rendering ordnance safe, training with live ordnance items, destruction of small arms ammunition (.50 Caliber and smaller), inerting and/or disassembly of ordnance items and demolition of class V materials."

Range maps from 1976 and 1987 show this range as a circle with about an 800 yard radius.

2.158.1 Range Identification

Common Name: EOD-2, Explosive Ordnance Disposal Range (Verona Loop)
Also known as K-326 EOD Range
K-326 EOD Disposal Site

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 14** for location, also see plates 17 and 19)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina

Latitude: 34° 38' 48" N Longitude: 77° 22' 54" W
Military Grid: 817 365

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Demolitions and Unserviceable Ammunition up to 25 pounds net TNT equivalent per shot.

Information Current as of: 1 February 2000

2.158.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Demolitions	Electric and Non-Electric Firing Systems

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range or on the types of unserviceable ammunition destroyed.

Time Frame of Use: 1970 to present

Locations within Range of Known Munitions Use: Demolition Site.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Unknown

Standard procedure for disposal of ammunition calls for a four foot deep pit with two feet of soil placed over the shot. This procedure may be modified depending on local soil and weather conditions. Munitions may become buried to an unknown depth because of actions of repetitive demolition shots.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: Munitions unsuccessfully disposed of may be found in condition where the hazard cannot be determined.

Types of Targets: NA

Other Past Uses: The "K" Area has been used for ranges, as an impact area, and as a fire and maneuver area in the past.

Anticipated Future Use: Continued present use.

Public Access: Area is located on a restricted access military reservation.

2.159 K-402, FIRE AND MOVEMENT RANGE

Base Order P11102.1G, dated 6 February 1970, authorized the use of rifles, auto-rifles, and 3.5" Rocket Launchers (practice only), plus 1/2 pound demolition charges.

Base Order P11102.1K, dated 1 December 1986, identified the use of HE and practice hand grenades plus rifles, pistols, and revolvers.

Base Order P3570.1, dated 2 June 1994, authorized the use of the following ammunition on this range: .38 Caliber, .45 Caliber, 12 Gauge, 5.56mm, 7.62mm, 9mm, and 40mm grenade (Illumination only).

2.159.1 Range Identification

Common Name: K-402, Fire and Movement Range
Also known as K-402, Search and Kill Range (Michelin City)

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 14** for location, also see plates 17 and 19)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 37' 53" N Longitude: 77° 25' 30" W
Military Grid: 777 349

BO P11102.1G identifies the right flank at coordinates 777348 with an Azimuth of 123° grid and the left flank 777349 with an Azimuth of 124° grid.

BO P3570.1 lists the primary direction of fire as 119°.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms, Hand Grenades (HE and Practice), 40mm Grenade (Illumination only), 3.5" Rocket (Practice only), HE Hand Grenades are only to be used on the Michelin City part of the range. See Range K-402A.

Information Current as of: 1 February 2000

2.159.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None
Hand Grenade (HE or Practice)	Integral
40mm Grenade, Illumination	Integral
3.5" Rocket, Practice	None
Demolitions	Electric and Non-Electric Firing Systems

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1970 to present

Locations within Range of Known Munitions Use: Entire Range

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
.30 Caliber, Ball, M1 (NOTE: Only complete rounds represent an explosive hazard and complete rounds are found on the surface)	1.3	1.7	2.6	0.1
Hand Grenade	Surface	Surface	Surface	1.7
40mm M381	0.2	0.3	0.4	1.1
3.5" Rocket M28	0.8	1.1	1.7	3.2

[1] Maximum detection depth using a magnetometer.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Improvised Targets (1970). Michelin City is a target structure built on the Fire and Maneuver Range; apparently this is the area where the use of HE Hand Grenades was authorized (1986). Twelve 3D52 "Pop-Up" Targets (1994).

Other Past Uses: The “K” Area has been used for ranges, as an impact area, and as a fire and maneuver area in the past.

Anticipated Future Use: Continued present use.

Public Access: Area is located on a restricted access military reservation.

2.160 K-405, COMBAT PISTOL MARKSMANSHIP RANGE

Base Order P11102.1G, dated 6 February 1970, authorized the firing of service pistols on this range.

2.160.1 Range Identification

Common Name: K-405, Combat Pistol Marksmanship Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 14** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 37' 50" N Longitude: 77° 25' 38" W
Military Grid: Grid Square 775 348

BO P11102.1G identified the right flank of this range at 775349 with an Azimuth of 246° grid and a left flank at 775347 and an Azimuth of 240° grid.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms

Information Current as of: 1 February 2000

2.160.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1970 to approximately 1974

Locations within Range of Known Munitions Use: Firing Line

Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Seven Hand Operated "Pop-Up" Targets at ranges from 10 to 50 yards.

Other Past Uses: The "K" Area has been used for ranges, as an impact area, and as a fire and maneuver area in the past.

Anticipated Future Use: This range is in the approximate location of K-405 Hand Grenade Range.

Public Access: Area is located on a restricted access military reservation.

2.161 K-406, MACHINE GUN RANGE

Base Order P11102.1G, dated 6 February 1970, authorized the firing of rifles, auto-rifles, and machine guns in .30 Caliber, 7.62mm, and 5.56mm, plus the use of demolitions (1/2 lb blocks).

2.161.1 Range Identification

Common Name: K-406, Machine Gun Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 14** for location, also see plates 17 and 19)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 37' 37" N Longitude: 77° 25' 29" W
Military Grid: Grid Square 777 344

BO P11102.1G lists the right flank at coordinates 777343 with an Azimuth of 137° grid and a left flank at 777346 with an Azimuth of 95° grid.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms and Demolitions (1/2 lb)

Information Current as of: 1 February 2000

2.161.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None
Demolitions	Electric and Non-Electric Firing Systems

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1970 to approximately 1977

Locations within Range of Known Munitions Use: Firing Line and Target Area

Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line. Demolition pits are located in the target area

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth. Demolition charges are placed in pits but are not buried.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Improvised Targets at ranges of 500 to 1000 meters.

Other Past Uses: The “K” Area has been used for ranges, as an impact area, and as a fire and maneuver area in the past.

Anticipated Future Use: This range is located where ranges K-406A and K-406B are located.

Public Access: Area is located on a restricted access military reservation.

2.162 K-407, INDIVIDUAL QUICK REACTION RANGE

Base Order P11102.1G, dated 6 February 1970, authorized the firing of rifles and pistols on this range but stated that no automatic fire is permitted.

Base Order P11102.1K, dated 1 December 1986, authorized the firing of rifles, pistols, and shotguns on this range.

Base Order P3570.1, dated 2 June 1994, authorized the use of the following ammunition on this range: .38 Caliber, .45 Caliber, 5.56mm, 9mm, 12 Gauge, and 1/4 lb TNT blocks.

2.162.1 Range Identification

Common Name: K-407, Individual Quick Reaction Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 14** for location, also see plates 17 and 19)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 37' 30" N Longitude: 77° 25' 29" W
Military Grid: 777 342

BO P11102.1K and BO P3570.1 lists the primary direction of fire of 104°.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms and 1/2 lb Demolition Charges

Information Current as of: 1 February 2000

2.162.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None
Demolitions	Electric and Non-Electric Firing Systems

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1970 to present

Locations within Range of Known Munitions Use: Firing Line and Target area

Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line. Demolition charges are located in pits in the target area.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth. Demolition charges are placed uncovered in pits on the range.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Electromechanical "Pop-Up" Targets; Machine Gun, Artillery, and Demolitions Simulators (1970). Twenty-eight Stationary E Silhouettes (1994).

Other Past Uses: The “K” Area has been used for ranges, as an impact area, and as a fire and maneuver area in the past.

Anticipated Future Use: Continued present use.

Public Access: Area is located on a restricted access military reservation.

2.163 K-408, URBAN OBSTACLE COURSE

Base Order P11102.1G, dated 6 February 1970, authorized the firing of rifles and automatic rifles on this range.

Base Order P11102.1K, dated 1 December 1986, authorized the firing of M16 rifles on this range.

Base Order P3570.1, dated 2 June 1994, authorized the firing of .38 Caliber, .45 Caliber, 5.56mm, 9mm, and 12 Gauge on this range.

2.163.1 Range Identification

Common Name: K-408, Urban Obstacle Course
Also known as K-408, Close Combat Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 14** for location, also see plates 17 and 19)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 37' 20" N Longitude: 77° 25' 37" W
Military Grid: 775 339

BO P11102.1G identified the right flank at 775339 with an Azimuth of 111° grid and a left flank at 776341 with an Azimuth of 114° grid.

BO P3570.1 lists the primary direction of fire as 90°.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms

Information Current as of: 1 February 2000

2.163.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1970 to present

Locations within Range of Known Munitions Use: Firing Line

Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Nineteen Electromechanical "Pop-Up" Targets (1970). Artillery and Machine Gun Simulator and 18 3C52 "Pop-Up" Type E Silhouette Targets (1994).

Other Past Uses: The “K” Area has been used for ranges, as an impact area, and as a fire and maneuver area in the past.

Anticipated Future Use: Continued present use.

Public Access: Area is located on a restricted access military reservation.

2.164 M-104, DEMOLITION RANGE

Base Order P11102.1G, dated 6 February 1970, authorized the firing of demolition charges not exceeding five pound net TNT equivalent per shot.

2.164.1 Range Identification

Common Name: M-104, Demolition Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 15** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 41' 02" N Longitude: 77° 27' 45" W
Military Grid: 744 408

BO P11102.1G lists the right flank at 745409 and a left flank at 744408.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Demolition Charges not exceeding five pound net TNT equivalent per shot.

Information Current as of: 1 February 2000

2.164.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Demolitions	Electric and Non-Electric Firing Systems

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1970

The only reference uncovered on this range is Base Order P11102.1G, dated 6 February 1970.

Locations within Range of Known Munitions Use: Demolition Pits

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Unknown

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Three Demolition Pits

Other Past Uses: The “M” Area has been used as an impact area and as a fire and maneuver area in the past.

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.165 M-109, INFILTRATION RANGE

Base Order P11102.1G, dated 6 February 1970, states that conduct of training on this range will be IAW AR 385-63.

2.165.1 Range Identification

Common Name: M-109, Infiltration Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 15** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 41' 02" N Longitude: 77° 27' 17" W
Military Grid: 751 408

BO P11102.1G lists the right flank at coordinates 750408 with an Azimuth of 195° grid and a left flank at 752408 with an Azimuth of 164° grid.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms and Demolitions

Information Current as of: 1 February 2000

2.165.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None
Demolitions	Electric and Non-Electric Firing Systems

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1970 to approximately 1974

Locations within Range of Known Munitions Use: Firing Line and Demolition Pits

Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line. Demolition pits for the demolition charges.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth. Demolition charges were placed uncovered in pits. Again changes in the ground level may have caused items to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: None – Machine Guns are fired from fixed positions and the Demolition Pits were located on the training area part of the range.

Other Past Uses: The “M” Area has been used as an impact area and as a fire and maneuver area in the past.

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.166 M-110, DEMOLITIONS AND BOOBY TRAP RANGE

Base Order P11102.1G, dated 6 February 1970, authorized demolitions not exceeding 20 lbs net TNT equivalent, all types of land mine and booby trap simulators, and hand grenades (practice).

2.166.1 Range Identification

Common Name: M-110, Demolitions and Booby Trap Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 13** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Military Grid: Grid Square 7441

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Demolitions (not to exceed 20 pounds net TNT equivalent), all types of Land Mines and Booby Trap Simulators, Practice Hand Grenades

Information Current as of: 1 February 2000

2.166.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Demolitions	Electric and Non-Electric Firing Systems
Land mines (all types)	Integral
Booby Trap simulators	Integral
Hand Grenade, Practice	Integral

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1970 to approximately 1974

Locations within Range of Known Munitions Use: Entire Range

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface and near surface

It is assumed that this range is used to train personnel in breaching of mine fields in addition to general demolition operations. Land mines are normally buried just below the surface.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: Booby trap simulators were employed on this range. These devices present an increased hazard because of their method of employment.

Types of Targets: NA

Other Past Uses: The “M” Area has been used as an impact area and as a fire and maneuver area in the past.

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.167 M-113, HAND GRENADE RANGE (PRACTICE) DEMONSTRATOR

Base Order P11102.1G, dated 6 February 1970, authorized the firing of grenades on this range and specified the following types of grenades. Incendiary M14, Illumination MK 1, Smoke M18, WP M15 (for demonstration only), and Hand Grenade (Practice).

2.167.1 Range Identification

Common Name: M-113, Hand Grenade Range (Practice) Demonstrator

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plates 13** and **16** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 41' 03" N Longitude: 77° 27' 06" W
Military Grid: Grid Square 754 408

BO P11102.1G lists the right flank at 754408 with an Azimuth of 118° grid and a left flank at 754408 with an Azimuth of 91° grid.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Hand Grenade: Incendiary M14, Illumination MK 1, Smoke M18, WP M15 (for Demonstration only), and Hand Grenade (Practice)

Information Current as of: 1 February 2000

2.167.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Hand Grenade, M14	Integral
Hand Grenade, MK 1	Integral
Hand Grenade, M18	Integral
Hand Grenade, M15	Integral
Hand Grenade, Practice	Integral

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1970 to approximately 1977

Locations within Range of Known Munitions Use: Target Area

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Hand grenades would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: WP munitions contain a filler which burns upon contact with air.

Types of Targets: Unknown

Other Past Uses: The “M” Area has been used as an impact area and as a fire and maneuver area in the past.

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.168 M-115, HAND GRENADE RANGE

Base Order P11102.1G, dated 6 February 1970, describes this range as consisting of six throwing pits, six control pits, barricade with two observation ports, one for the Officer in Charge of Firing and one for five students. Only HE grenades were authorized.

2.168.1 Range Identification

Common Name: M-115, Hand Grenade Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plates 13** and **16** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 41' 13" N Longitude: 77° 26' 54" W
Military Grid: Grid Square 757 411

BO P11102.1G lists the right flank coordinates as 757411 with an Azimuth of 87° grid, the left flank coordinates are 757411 with an Azimuth of 78° grid.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: HE Hand Grenades

Information Current as of: 1 February 2000

2.168.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Hand Grenade, HE	Integral

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1970 to approximately 1977

Locations within Range of Known Munitions Use: Target Area

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Hand grenades would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Unknown

Other Past Uses: The “M” Area has been used as an impact area and as a fire and maneuver area in the past.

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.169 M-122, FLAME THROWER RANGE

2.169.1 Range Identification

Common Name: M-122, Flame Thrower Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plates 13** and **16** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Military Grid: Grid Square 7541

Base Order P11102.1G, dated 6 February 1970 stated that the range had a barbed wire fence around the firing areas.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: None, only Flame Fuels used in Flame Throwers

Information Current as of: 1 February 2000

2.169.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
None	

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.
Time Frame of Use: 1970 to approximately 1977

Locations within Range of Known Munitions Use: NA

Estimated Density of Munitions: NA

Estimated Depth of Munitions: NA

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: One Tank Turret

Other Past Uses: The "M" Area has been used as an impact area and as a fire and maneuver area in the past.

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.170 LIVE MINEFIELD SITE

Base Order P11102.1G, dated 6 February 1970, and Base Order P11102.1K, dated 1 December 1986, stated that portion of the area enclosed by a line connecting grid coordinates 936310 to 939306 to 943309 to 943313 is a hazardous area. No person will enter the confines of the outer fence without escort.

In 1964, the Marine Corps Engineer School, prepared plans for preparation and conduct of a test to determine the service life of mines and demolitions under sandy, saline conditions. This involved emplacing various anti-personnel and anti-mines and after a period of time the mines will be tested for functioning and dud mines further examined.

Although no document has been uncovered to indicate that this site has been completely cleared, a December 1978 document estimated time and cost for the clearance operation.

2.170.1 Range Identification

Common Name: Live Minefield Site

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 20** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 35' 58" N Longitude: 77° 15' 02" W
Military Grid: 936 310

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: M14 AP Mine, M16A1 AP Mine, M18A1 AP Mine, M15 AT Mine, M19 AT Mine, M21 AT Mine, M1 Pull Type Firing Device, M1 Release Type Firing Device, M1A1 Pressure Type Firing Device, and M3 Pull Release Type Firing Device

Information Current as of: 1 February 2000

2.170.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Land Mine, M14	Integral
Land Mine, M16	Integral
Land Mine, M18	Integral
Land Mine, M19	Integral
Land Mine, M15	Integral
Land Mine, M21	Integral

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1964 to approximately 1979

However, the area remains restricted.

Locations within Range of Known Munitions Use: Minefield

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface and near surface

Land mines are buried just below the surface.

Information on Past Range Clearances: None

As part of the test, mines were tested and removed from the minefield at various times. A December 1978 document contained a time and cost estimate for the clearance of this mine field. No document has been uncovered to state that the clearance had been successfully completed and no mines remain in the minefield.

Specific Munitions Safety Issues: None

Types of Targets: NA

Other Past Uses: This area has been used as a fire and maneuver area in the past.

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.171 E-1, AIR DEFENSE FIRING RANGE

Base Order P11102.1K, dated 1 December 1986, identified this range as a Surface to Air Missile Range which runs from grid square 8824 northeast along the beach to Riseley Pier.

Base Order P3570.1, dated 2 June 1994, added the 20mm VULCAN gun system to the list of weapons authorized on this range.

2.171.1 Range Identification

Common Name: E-1, Air Defense Firing Range
Also known as E-1, Hawk, Stinger, and Redeye SAM Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plates 18** and **20** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 32' 50" N Longitude: 77° 18' 06" W (1994)
Military Grid: Grid Square 8824 to Riseley Pier (1986)
888 253 (1994)

BO P11102.1K listed the right flank coordinates at 880246 with an Azimuth of 185° grid and left flank coordinates at 899260 with an Azimuth of 85° grid.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: 20mm, Redeye, Stinger, HAWK

Information Current as of: 1 February 2000

2.171.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
20mm HE	Point Detonating
Redeye	Integral
Stinger	Integral
HAWK	Integral

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1986 to present

Locations within Range of Known Munitions Use: Firing Line

Fire conducted against aerial targets over the ocean.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Unknown

No information is available to determine the depth munitions would penetrate into the floor of the ocean.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Towed and Remote Controlled Aerial Targets

Other Past Uses: The Onlsow/Hurst Beach area has been used as a firing area since **Camp Lejeune** was developed.

Anticipated Future Use: Continued present use.

Public Access: Area is located on a restricted access military reservation.

2.172 F-17, DRY NET TRAINING

Base Order P11102.1K, dated 1 December 1986, authorized the use of blank ammunition for all organic service weapons on this range.

2.172.1 Range Identification

Common Name: F-17, Dry Net Training

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 18** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 39' 58" N Longitude: 77° 18' 29" W
Military Grid: 885 385

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms Blanks

Information Current as of: 1 February 2000

2.172.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms, Blanks	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1986 to approximately 1988

The only references uncovered on this range are the Base Order P11102.1K, dated 1 December 1986 and a December 1987 map.

Locations within Range of Known Munitions Use: Firing Line

Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: NA

Other Past Uses: The "F" area has been used for firing ranges and as a training/maneuver area in the past.

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.173 G-3, INFANTRY WEAPONS RANGE

Base Order P11102.1K, dated 1 December 1986, authorizes the firing of all infantry weapons except .50 Caliber, 106mm Recoilless Rifle, and hand grenades. The following ammunition was authorized for firing on this range (from Table I-1): 9mm, .38 caliber, .45 Caliber, 5.56mm, 7.62mm, 40mm (MK 19 & M203), SMAW, M72, M73, 60mm & 81mm mortar, dragon, and TOW missiles.

Base Order P3570.1, dated 2 June 1994, authorizes the use of the following ammunition on this range: .38 Caliber, .45 Caliber, 5.56mm, 9mm, 25mm TP-T, 40mm (all), M72, SMAW, AT-4, 60mm mortar (all), 81mm mortar (all), TOW missile, DRAGON missile, .50 Caliber.

2.173.1 Range Identification

Common Name: G-3, Infantry Weapons Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plates 18** and **20** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 37' 46" N Longitude: 77° 17' 35" W
Military Grid: 898 344

BO P11102.1K listed the primary direction of fire for all weapons except TOW as 75° with the primary directions of fire for a TOW from 55° to 65°.

BO P3570.1 listed the primary direction of fire for the TOW as 65° and 76° for all other weapons.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms, 25mm TP-T, 35mm M73, 40mm Grenade, 66mm M72 LAW, 83mm SMAW, 84mm AT-4, 81mm Mortar (all types), 60mm Mortar (all types), TOW Missile, DRAGON Missile, .50 Caliber Sniper Rifle.

Information Current as of: 1 February 2000

2.173.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None
25mm TP-T	None
35mm M73	Integral
40mm Grenade	Integral
66mm M72 LAW	Integral
83mm SMAW	Integral
84mm AT-4	Integral
60mm Mortar	Point Detonating Variable Time Powder Train Time
81mm Mortar	Point Detonating Variable Time Powder Train Time
TOW Missile	Integral
Dragon Missile	Integral

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1986 to present

Locations within Range of Known Munitions Use: Firing Line and Target Area

Small arms present an explosive hazard only as a complete round. Complete rounds would be found at the firing line. All other munitions would be found around the target area.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
.30 Caliber, Ball, M1 (NOTE: Only complete rounds represent an explosive hazard and complete rounds are found on the surface)	1.3	1.7	2.6	0.1
.50 Caliber, Ball, M2 (NOTE: Only complete rounds represent an explosive hazard and complete rounds are found on the surface)	1.6	2.2	3.3	0.2
25mm, M792	3.1	4.1	6.2	0.6
35mm Sub-Caliber M73	0.5	0.7	1.0	0.9
40mm M381	0.2	0.3	0.4	1.1
60mm M49	1.1	1.5	2.3	1.9
66mm M72	0.9	1.2	1.8	2.1
81mm M43	2.7	3.5	5.4	2.8
81mm, M56	2.0	2.7	4.1	2.8
83mm SMAW	2.8	3.6	5.6	2.9
84mm M136 (AT-4)	2.5	3.7	5.0	2.9
Dragon Missile (penetration depths based upon missile remaining intact)	0.9	1.1	1.7	4.3
TOW Missile (penetration depths based upon missile remaining intact)	6.6	8.7	13.2	10.7

[1] Maximum detection depth using a magnetometer.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: Shaped charge munitions contain sensitive fuzing and present a significantly enlarged hazard area forward of the munition. WP munitions contain a filler which burns upon contact with air.

Types of Targets: Improvised Targets at varying distances (1986). Fifty-five Hard Targets at varying distances (1994).

Other Past Uses: The "G" Area has been used as an impact area, a range area, and a fire and maneuver area in the past.

Anticipated Future Use: Continued present use.

Public Access: Area is located on a restricted access military reservation.

2.174 G-3A, M257 SMOKE GRENADE LAUNCHER SYSTEM RANGE

Base Order P11102.1K, dated 1 December 1986, and Base Order P3570.1, dated 2 June 1994, authorize the use of the M257 Smoke Grenade Launcher System on this range.

2.174.1 Range Identification

Common Name: G-3A, M257 Smoke Grenade Launcher System Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plates 18** and **20** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 38' 08" N Longitude: 77° 17' 47" W
to
Latitude: 34° 38' 28" N Longitude: 77° 17' 59" W
Military Grid: Along road from 985 351 (should be 895 351) to 892 357

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: M257 Smoke Grenade Launcher

Information Current as of: 1 February 2000

2.174.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
M257 System Smoke Grenades	Integral

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1987 to present

Locations within Range of Known Munitions Use: Along Track Vehicle Trail

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: NA

Other Past Uses: The "G" Area has been used as an impact area, range area, and as a fire and maneuver area in the past.

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.175 G-4A, EOD RANGE

Base Order P11102.1K, dated 1 December 1986, authorizes the disposal of unserviceable ammunition, training, disassembly/inerting of ordnance, and testing of small arms ammunition by EOD personnel on this range. A 26 December 1987 range map shows this range as a circle with a radius of 800 yards.

2.175.1 Range Identification

Common Name: G-4A, EOD Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 18** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 37' 19" N Longitude: 77° 15' 16" W
Military Grid: 933 335

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Demolitions and Unserviceable Ammunition.

Information Current as of: 1 February 2000

2.175.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Demolitions	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1986 to approximately 1988

Locations within Range of Known Munitions Use: Demolition Pits

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Standard procedure for disposal of ammunition calls for a four foot deep pit with two feet of soil placed over the shot. This procedure may be modified depending on local soil and weather conditions. Munitions may become buried to an unknown depth because of actions of repetitive demolition shots.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: NA

Other Past Uses: The G Area has been used as an impact area, range area, and as a fire and maneuver area in the past.

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.176 G-6, TANK GUNNERY RANGE

Base Order P11102.1K, dated 1 December 1986, states that this range is for 105mm tank main gun, artillery (direct fire), machine guns (including vehicle mounted), M16, 25mm cannon, and TOW missiles.

Base Order P3570.1, dated 2 June 1994, authorizes the following ammunition to be used on this range: .50 Caliber, 5.56mm, 7.62mm, 20mm (Ball, inert, or TP), 30mm (Inert or TP), 25mm TP-T or APDS-T, 105mm, 155mm, 120mm, 40mm Grenade (Practice or Multiple Projectile Round).

2.176.1 Range Identification

Common Name: G-6, Tank Gunnery Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plates 18** and **20** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 37' 23" N Longitude: 77° 14' 41" W
Military Grid: 942 336

BO P11102.1K lists the primary direction of fire as 160° and BO P3570.1 lists it as 165°.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms, 20mm (Ball, Inert, or TP), 30mm (Inert or TP), 25mm (TP or APDS-T), 105mm, 155mm, 120mm, 40mm (Practice or Multiple Projectile), TOW Missile.

Information Current as of: 1 February 2000

2.176.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None
20mm TP	None
25mm TP-T	None
30mm TP	None
40mm Practice	None
105mm HEAT	Integral
105mm TP	None
120mm HEAT	Integral
120mm TP	None
155mm HE	Point Detonating
TOW Missile	Integral

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1986 to present.

Locations within Range of Known Munitions Use: Firing Line and Target Area

Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line. All other munitions around the target area.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
.30 Caliber, Ball, M1 (NOTE: Only complete rounds represent an explosive hazard and complete rounds are found on the surface)	1.3	1.7	2.6	0.1

.50 Caliber, Ball, M2 (NOTE: Only complete rounds represent an explosive hazard and complete rounds are found on the surface)	1.6	2.2	3.3	0.2
20mm, AP-T, M95	2.4	3.1	4.7	0.4
25mm, M792	3.1	4.1	6.2	0.6
30mm, M789	2.8	3.7	5.6	0.7
40mm M381	0.2	0.3	0.4	1.1
105mm, M456	13.4	17.6	26.8	4.0
120mm, M469	12.6	16.5	25.2	4.7
155mm, M101	15.8	20.7	31.6	6.7
TOW Missile (penetration depths based upon missile remaining intact)	6.6	8.7	13.2	10.7

[1] Maximum detection depth using a magnetometer.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: Shaped charge munitions contain sensitive fuzing and present a significantly enlarged hazard area forward of the munition.

Types of Targets: Mechanized-operated Tank Targets, SARTS, and Improvised Hulls (1986). Eight Hard Targets, one Mechanized Tank Target, and twenty-six Tank Automatic "Pop-Up" Targets (1994).

Other Past Uses: This range is located approximately where G-6 Artillery Range was located.

Anticipated Future Use: Continued present use.

Public Access: Area is located on a restricted access military reservation.

2.177 G-10A, EOD DISPOSAL AREA

The only reference uncovered on this range is Base Order P11102.1K, dated 1 December 1986. This disposal area is located within the G-10 Impact Area.

2.177.1 Range Identification

Common Name: G-10A, EOD Disposal Area

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 18** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Military Grid: Grid Square 9135

This area is located within the "G-10" Impact Area.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Demolitions and Unserviceable Ammunition

Information Current as of: 1 February 2000

2.177.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Demolitions	Electric and Non-Electric Firing System

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1986

The only reference uncovered on this range was Base Order P11102.1K, dated 1 December 1986.

Locations within Range of Known Munitions Use: Demolition Pits

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Standard procedure for disposal of ammunition calls for a four foot deep pit with two feet of soil placed over the shot. This procedure may be modified depending on local soil and weather conditions. Munitions may become buried to an unknown depth because of actions of repetitive demolition shots.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: NA

Other Past Uses: The “G” Area has been used as in impact area, range area, and as a fire and maneuver area in the past.

Anticipated Future Use: Located within the “G-10” Impact Area which is expected to remain as an impact area.

Public Access: Area is located on a restricted access military reservation.

2.178 K-304, HELICOPTER DOOR GUNNERY RANGE

The only reference uncovered on this range is Base Order P11102.1K, dated 1 December 1986. This base order authorized the firing of M60 machine guns (helo only).

2.178.1 Range Identification

Common Name: K-304, Helicopter Door Gunnery Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (Located within Range K-304 (Infantry Weapons Range) see **Plate 18 & 19**)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 38' 27" N Longitude: 77° 24' 08" W
Military Grid: 798 359

The primary direction of fire was 173°.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms

Information Current as of: 1 February 2000

2.178.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1986 to approximately 1988

The only documents uncovered that deal with this range are Base Order P11102.1K, dated 1 December 1986 and a 26 December 1987 map.

Locations within Range of Known Munitions Use: Firing Line

Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Tank and AAV Hulls; Tire Targets

Other Past Uses: The “K” Area has been used as an impact area, a range area, and as a fire and maneuver area in the past.

Anticipated Future Use: Range K-304 Infantry Weapons Range is currently at the location of this range.

Public Access: Area is located on a restricted access military reservation.

2.179 K-405, HAND GRENADE RANGE

Base Order P11102.1K, dated 1 December 1986, authorizes the use of HE and WP hand grenades on this range.

Base Order P3570.1, dated 2 June 1994, authorizes the use of HE/frag and practice hand grenades on this range.

2.179.1 Range Identification

Common Name: K-405, Hand Grenade Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 19** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 37' 50" N Longitude: 77° 25' 38" W
Military Grid: 775 348

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Hand Grenades (HE ,WP, and Practice)

Information Current as of: 1 February 2000

2.179.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Hand Grenade, HE	Integral
Hand Grenade, practice	Integral
Hand Grenade, WP	Integral

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1986 to present

Locations within Range of Known Munitions Use: Throwing Pits and Target Area

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Hand grenades would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Six Throwing Pits and one Practice Area.

Other Past Uses: K-405 Helicopter Door Gunnery Range

Anticipated Future Use: Continue present use.

Public Access: Area is located on a restricted access military reservation.

2.180 K-406A, COVER AND CLEAR RANGE

Base Order P11102.1K, dated 11 October 1985, listed the range as a 1000-Inch Immovable Target Range and authorized the use of rifles, pistols, and shotguns firing service ammunition.

Change 1 to Base Order P11102.1K, dated 1 December 1986, identified this range as a Cover and Clear Range and authorized the firing of 5.56mm Ball and Blank.

Base Order P3570.1, dated 2 June 1994, authorized the firing of .38 Caliber, 9mm, 5.56mm, 12 Gauge and blank ammunition on this range.

2.180.1 Range Identification

Common Name: K-406A, Cover and Clear Range
Also known as K-406A, 1000-Inch Immovable Target Range (Battlesight Range)

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 19** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 43' 04" N Longitude: 77° 25' 55" W (1994)
Military Grid: 777 345 (11 Oct 85)
77345 (1 Dec 86)
773 445 (2 Jun 94)
(777345 appears correct based upon location printed on maps dated 1997 and 1993)

In 1985 the primary direction of fire was 93° grid and in 1994 was listed as 98.4°.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms

Information Current as of: 1 February 2000

2.180.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1985 to present

Locations within Range of Known Munitions Use: Entire Range

Small arms ammunition explosive hazards exist only with complete rounds. This is a fire and movement type of a range. Complete rounds may be found throughout the range.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Eight SARTS

Other Past Uses: The “K” Area has been used as an impact area, a range area, and as a fire and maneuver area in the past.

Anticipated Future Use: Continued present use.

Public Access: Area is located on a restricted access military reservation.

2.181 K-406B, FRIEND/FOE REACTION RANGE

Base Order P11102.1K, dated 11 October 1985, listed this range as a Demolition Range with a 5 lb TNT equivalent limit and authorized the firing of M18 Claymore Mines.

Change 1 to Base Order P11102.1K, dated 1 December 1986, authorized the firing of 5.56mm, .45 Caliber, .38 Caliber, and 9mm on this range.

Base Order P3570.1, dated 2 June 1994, authorized the firing of .38 Caliber, 9mm, 5.56mm, and 12 Gauge plus blank ammunition on this range.

The grid coordinates given in these regulations are suspect because the location is outside of the "K" range area.

2.181.1 Range Identification

Common Name: K-406B, Friend/Foe Reaction Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune**

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 43' 04" N Longitude: 77° 25' 55" W
Military Grid: 773 445

In 1985 the primary direction of fire was 96° and in 1994 was listed as 94.5°.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms

Information Current as of: 1 February 2000

2.181.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None
Demolitions	Electric and Non-Electric Firing Systems
M18 Claymore mine	Electric and Non-Electric Firing Systems

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1985 to present

Locations within Range of Known Munitions Use: Firing Line

Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line. It is unknown where demolition operation occurred.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds and demolition materials would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Thirteen 3C52 Type "E" "Pop-Up" Silhouette Targets.

Other Past Uses: The K Area has been used for ranges, as an impact area, and as a fire and maneuver area in the past.

Anticipated Future Use: Continued present use.

Public Access: Area is located on a restricted access military reservation.

2.182 BASE CS CHAMBER AND NBC TRAINING TRAIL

Base Order P11102.1K, dated 11 October 1985, with change 1, dated 1 December 1986, list this range area as consisting of Buildings 934 and 935, and the CBT training area/trails behind Building 935.

2.182.1 Range Identification

Common Name: Base CS Chamber and NBC Training Trail

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: Buildings 934 and 935, **MCB Camp Lejeune** (See **Plate 22** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: CS Chemical Agent plus any of the following standard available simulants and munitions:

1) Simulants Chemical Agent PEG 200
2) Training Set, Chemical Agent M72A1/A2
3) Blister Agent Simulant, Molasses Residuum
4) Training Ammunitions (i.e. Tear Gas Grenades, etc.)
5) Atomic Explosion Simulator, DVC 39-1
6) Atomic Simulator (locally fabricated IAW FM 30-101)
7) Artillery Simulator, M110

Information Current as of: 1 February 2000

2.182.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Chemical Training Ammunition	Integral

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1985 to at least 1987

The only specific reference to this are that has been uncovered is Base Order P11102.1K, dated 11 October 1985, and Change 1, dated 1 December 1986.

Locations within Range of Known Munitions Use: NA

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Munitions would normally be employed on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: Chemical Agents may require personnel protective equipment when working in the vicinity of the agents.

Types of Targets: NA

Other Past Uses: None

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.183 COMBAT TOWN

Base Order P11102.1K, dated 11 October 1985, authorized the use of blank small arms, practice and smoke hand grenades, practice land mines, various signals, pyrotechnics, and simulators, and boobytrap devices at this site.

Base Order P3570.1, dated 2 June 1994, authorized the use of practice anti-personnel mines, practice hand grenades, smoke grenades, pyrotechnics, flares, and blank ammunition.

2.183.1 Range Identification

Common Name: Combat Town

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 20** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 36' 24" N Longitude: 77° 18' 08" W
Military Grid: 889 319

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Blank Ammunitions, Anti-Personnel Mines (Practice), Hand Grenades (Practice), Smoke Grenades, and Pyrotechnics

Information Current as of: 1 February 2000

2.183.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None
Anti-Personnel Mines (Practice)	Integral
Hand Grenade (Practice)	Integral
Hand Grenade, Smoke	Integral
Pyrotechnics	Integral

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1976 to present

Locations within Range of Known Munitions Use: Entire Range

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface and near surface

All of the munitions except the practice land mines would be found on the surface. The practice land mines would be buried just below the surface.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: Pyrotechnic munitions contain a filler that is extremely sensitive to heat, shock, and friction.

Types of Targets: NA

Other Past Uses: This area has been used as a fire and maneuver area in the past.

Anticipated Future Use: Continued present use.

Public Access: Area is located on a restricted access military reservation.

2.184 EOD-1, EXPLOSIVE ORDNANCE DISPOSAL RANGE (MAINSIDE)

Base Order P3570.1, dated 2 June 1994, states that, "EOD operations will cover a variety of U. S. and Foreign munitions. Operations will include but are not limited to rendering ordnance safe, training with live ordnance items, destruction of small arms ammunition (.50 Caliber and smaller), inerting and/or disassembly of ordnance items and demolition of class V materials."

2.184.1 Range Identification

Common Name: EOD-1, Explosive Ordnance Disposal Range (Mainside)

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 20** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 37' 12" N Longitude: 77° 15' 55" W
Military Grid: 932 333

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Demolitions and Unserviceable Ammunition

Information Current as of: 1 February 2000

2.184.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Demolitions	Electric and Non-Electric Firing Systems

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1994 to present

Locations within Range of Known Munitions Use: Demolition Pits

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Unknown

Standard procedure for disposal of ammunition calls for a four foot deep pit with two feet of soil placed over the shot. This procedure may be modified depending on local soil and weather conditions. Munitions may become buried to an unknown depth because of actions of repetitive demolition shots.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: Munitions unsuccessfully disposed of may be found in condition where the hazard cannot be determined.

Types of Targets: NA

Other Past Uses: The “G” Area has been used for ranges, as an impact area, and as a fire and maneuver area in the past.

Anticipated Future Use: Continued present use

Public Access: Area is located on a restricted access military reservation.

2.185 ETA-1, ENGINEERING TRAINING AREA (MCES)

Base Order P3570.1, dated 2 June 1994, authorized the following: "Charges are not to exceed 50 lbs net TNT equivalency per shot. Live land mines authorized only for demonstration purposes. Must be controlled fired. Bangalore Torpedoes require a 500M safety fan for personnel in the open."

2.185.1 Range Identification

Common Name: ETA-1, Engineering Training Area (MCES)

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 20** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 34' 21" N Longitude: 77° 20' 57" W
Military Grid: 845 282

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Demolitions, Claymore mines, Bangalore Torpedoes, and Antitank Mines. Shots limited to 50 pound net TNT equivalency per shot.

Information Current as of: 1 February 2000

2.185.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Demolitions	Electric and Non-Electric Firing Systems
Antitank mines	Electric and Non-Electric Firing Systems
Claymore mine	Electric and Non-Electric Firing Systems
Bangalore Torpedo	Electric and Non-Electric Firing Systems

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1994 to present

Locations within Range of Known Munitions Use: Demolition Pits

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Unknown

Demolition operations may involve burying the charges to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: Land mines are for demonstrations only and will be control fired.

Types of Targets: NA

Other Past Uses: This range is in the general area of the former I-2 Demolition Area.

Anticipated Future Use: Continued present use.

Public Access: Area is located on a restricted access military reservation.

2.186 ETA-2, ENGINEERING TRAINING AREA (MECHANIZED ASSAULT COURSE)

Base Order P3570.1, dated 2 June 1994, authorized the following: "Charge not to exceed 27 lbs net TNT equivalency per shot. Only M68A1 inert line charge authorized. Live land mines authorized only for demonstration purposes. Must be controlled fired. Bangalore torpedoes require a 500M safety fan for personnel in the open."

2.186.1 Range Identification

Common Name: ETA-2, Engineering Training Area (Mechanized Assault Course)

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 20** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 33' 47" N Longitude: 77° 19' 37" W
Military Grid: 865 271

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Demolitions, Line Charges, Claymore Mines, Bangalore Torpedoes, and Antitank Mines. Shots limited to 27 pound net TNT equivalency per shot.

Information Current as of: 1 February 2000

2.186.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Demolitions	Electric and Non-Electric Firing Systems
Antitank mines	Electric and Non-Electric Firing Systems
Claymore mine	Electric and Non-Electric Firing Systems
Bangalore Torpedo	Electric and Non-Electric Firing Systems
Line Charges, M68A1, Inert	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1994 to present

Locations within Range of Known Munitions Use: Demolition Pits

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Unknown

Demolition operations may involve burying the charges to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: Land mines are for demonstrations only and will be control fired.

Types of Targets: NA

Other Past Uses: This area has been previously used as a fire and maneuver area.

Anticipated Future Use: Continued present use.

Public Access: Area is located on a restricted access military reservation.

2.187 ETA-3, ENGINEERING TRAINING AREA

Base Order P3570.1, dated 2 June 1994, authorized the following: "The maximum demolition charge is 15 lbs net TNT equivalency per shot. Live land mines authorized only for demonstration purposes. Bangalore torpedoes require a 500M safety fan for personnel in the open."

2.187.1 Range Identification

Common Name: ETA-3, Engineering Training Area

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 20** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 41' 12" N Longitude: 77° 18' 59" W
Military Grid: 878 408

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Demolitions, Claymore Mines, Bangalore Torpedoes, and Antitank Mines. Shots limited to 15 pound net TNT equivalency per shot.

Information Current as of: 1 February 2000

2.187.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Demolitions	Electric and Non-Electric Firing Systems
Antitank mines	Electric and Non-Electric Firing Systems
Claymore mine	Electric and Non-Electric Firing Systems
Bangalore Torpedo	Electric and Non-Electric Firing Systems

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1994 to present

Locations within Range of Known Munitions Use: Demolition Pits

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Unknown

Demolition operations may involve burying the charges to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: Land mines are for demonstrations only and will be control fired.

Types of Targets: NA

Other Past Uses: This range is located in the “F” Area. The “F” Area has been used for ranges and as a fire and maneuver area in the past.

Anticipated Future Use: Continued present use.

Public Access: Area is located on a restricted access military reservation.

2.188 ETA-4, ENGINEERING TRAINING AREA

Base Order P3570.1, dated 2 June 1994, authorized the following: "Charges are not to exceed 50 lbs net TNT equivalency per shot. Live land mines authorized only for demonstration purposes. Must be controlled fired. Bangalore torpedoes require a 500M safety fan for personnel in the open."

2.188.1 Range Identification

Common Name: ETA-4, Engineering Training Area

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 20** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 36' 42" N Longitude: 77° 16' 46" W
Military Grid: 910 324

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Demolitions, Line Charges, Claymore Mines, Bangalore Torpedoes, and Antitank Mines, M68 MICLIC (Inert only). Shots limited to 50 pound net TNT equivalency per shot.

Information Current as of: 1 February 2000

2.188.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Demolitions	Electric and Non-Electric Firing Systems
Antitank mines	Electric and Non-Electric Firing Systems
Claymore mine	Electric and Non-Electric Firing Systems
Bangalore Torpedo	Electric and Non-Electric Firing Systems
Line Charges, M68, Inert	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1994 to present

Locations within Range of Known Munitions Use: Demolition Pits

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Unknown

Demolition operations may involve burying the charges to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: Land mines are for demonstrations only and will be control fired.

Types of Targets: NA

Other Past Uses: This range is located in the “G” Area. The “G” Area has been used for ranges, as an impact area, and as a fire and maneuver area in the past.

Anticipated Future Use: Continued present use.

Public Access: Area is located on a restricted access military reservation.

2.189 ETA-5, ENGINEERING TRAINING AREA (VERONA LOOP COMPLEX)

Base Order P3570.1, dated 2 June 1994, authorized the following: "Maximum charge 20 lbs net TNT equivalency per shot. Bangalore torpedoes require a 500M safety fan for personnel in the open."

2.189.1 Range Identification

Common Name: ETA-5, Engineering Training Area (Verona Loop Complex)

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 20** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 38' 29" N Longitude: 77° 22' 26" W
Military Grid: 824 359

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Demolitions, Claymore Mines, Bangalore Torpedoes, and Antitank Mines. Shots limited to 20 pound net TNT equivalency per shot.

Information Current as of: 1 February 2000

2.189.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Demolitions	Electric and Non-Electric Firing Systems
Antitank mines	Integral
Claymore mine	Electric and Non-Electric Firing Systems
Bangalore Torpedo	Electric and Non-Electric Firing Systems

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1994 to present

Locations within Range of Known Munitions Use: Demolition Pits

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Unknown

Demolition operations may involve burying the charges to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: Land mines are for demonstrations only and will be control fired.

Types of Targets: NA

Other Past Uses: This range is located within the “K” Area. The “K” Area has been used for ranges, as an impact area, and as a fire and maneuver area in the past.

Anticipated Future Use: Continued present use.

Public Access: Area is located on a restricted access military reservation.

2.190 G-4, CLOSE QUARTER BATTLE RANGE

Base Order P3570.1, dated 2 June 1994, authorized the firing of .38 Caliber, .45 Caliber, 9mm, smoke grenade, Pyrotechnics, flares, and 12 Gauge on this range. Facilities on the range consist of four old buildings.

2.190.1 Range Identification

Common Name: G-4, Close Quarter Battle Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 20** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 36' 53" N Longitude: 77° 15" 43" W
Military Grid: 926 327

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms, Smoke Grenades, and Pyrotechnics

Information Current as of: 1 February 2000

2.190.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None
Smoke Grenade	Integral
Pyrotechnics	Integral

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1994 to present

Locations within Range of Known Munitions Use: Entire Range

Small arms ammunition explosive hazards exist only with complete rounds. Small arms, smoke grenades, and pyrotechnics would have been used anywhere within the range.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds of small arms, smoke grenades, and pyrotechnics would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: Pyrotechnic munitions contain a filler that is sensitive to heat, shock, and friction.

Types of Targets: Type "E" Silhouettes

Other Past Uses: Located on the former G-4 Demolition Range.

Anticipated Future Use: Continued present use.

Public Access: Area is located on a restricted access military reservation.

2.191 K-304, INFANTRY WEAPONS RANGE

Base Order P3570.1, dated 2 June 1994, authorized the firing of the following on this range: DRAGON missile, .38 Caliber, .45 Caliber, 5.56mm, 7.62mm, 40mm HE/HEDP, 35mm sub caliber LAW, 66mm LAW, 83mm SMAW, 81mm mortar (all types of ammo), 84mm AT-4, 60mm mortar (all types of ammo), 12 Gauge.

2.191.1 Range Identification

Common Name: K-304, Infantry Weapons Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 19** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 38' 27" N Longitude: 77° 24' 08" W
Military Grid: 798 359

The primary direction of fire is 173°.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms, 40mm (HE & HEDP), 35mm M73 Sub-Caliber, 66mm M72 LAW, 83mm SMAW, 84mm AT-4, 60mm (all), and 81mm (all), DRAGON Missile

Information Current as of: 1 February 2000

2.191.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None
40mm Grenade	Integral
35mm Sub-caliber	Integral
66mm LAW	Integral
83mm SMAW	Integral
84mm AT-4	Integral
60mm (all types)	Point Detonating Variable Time Powder Train Time
81mm (all types)	Point Detonating Variable Time Powder Train Time
DRAGON Missile	Integral

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1994 to present

Locations within Range of Known Munitions Use: Firing Line and Target Area

Only complete rounds of small arms present an explosive hazard. Complete rounds of small arms would be found in and around firing points. All other munitions would be found in and around the targets.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
.30 Caliber, Ball, M1 (NOTE: Only complete rounds represent an explosive hazard and complete rounds are found on the surface)	1.3	1.7	2.6	0.1

35mm Sub-Caliber M73	0.5	0.7	1.0	0.9
40mm M381	0.2	0.3	0.4	1.1
60mm M49	1.1	1.5	2.3	1.9
66mm M72	0.9	1.2	1.8	2.1
81mm M43	2.7	3.5	5.4	2.8
81mm, M56	2.0	2.7	4.1	2.8
83mm SMAW	2.8	3.6	5.6	2.9
84mm M136 (AT-4)	2.5	3.7	5.0	2.9
Dragon Missile	0.9	1.1	1.7	4.3

[1] Maximum detection depth using a magnetometer.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: Shaped charge munitions contain sensitive fuzing and present a significantly enlarged hazard area forward of the munition. WP munitions contain a filler which burns upon contact with air.

Types of Targets: Hard Tire Targets

40mm HE/HEDP, and all 60mm and 81mm Mortars must be fired from the down range side of the 80M "no-fire zone".

Other Past Uses: K-304 Helicopter Door Gunnery Range

Anticipated Future Use: Continued present use.

Public Access: Area is located on a restricted access military reservation.

2.192 K-402A, SEARCH AND KILL RANGE

Base Order P3570.1, dated 2 June 1994, authorizes the use of .38 Caliber, 5.56mm, 9mm, practice hand grenades, and HE/frag hand grenades. The primary use of the range is for military operations in an urbanized terrain (grenade house) with an alternate use as a live-fire shooting house.

2.192.1 Range Identification

Common Name: K-402A, Search and Kill Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (This range is located within Range K-402, see **Plate 19** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 37' 53" N Longitude: 77° 25' 30" W
Military Grid: 777 349

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms and Hand Grenades (HE and Practice)

Information Current as of: 1 February 2000

2.192.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None
Hand Grenade (HE & Practice)	Integral

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1994 to present

Locations within Range of Known Munitions Use: In and Around Grenade House.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: NA

Types of Targets: Type E Silhouettes and Grenade House.

Other Past Uses: Formerly part of K-406 Range

Anticipated Future Use: Continued present use.

Public Access: Area is located on a restricted access military reservation.

2.193 MOUT ASSAULT COURSE (MAC)

Base Order P3570.1, dated 2 June 1994, authorized the firing of 5.56mm and 9mm weapons on this range.

2.193.1 Range Identification

Common Name: MOUT Assault Course (MAC)

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 15** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 39' 55" N Longitude: 77° 15' 05" W
Military Grid: 937 383

The primary direction of fire is 317°.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms. A Grenade House is listed as planned of this range in 1994, and Grenades may have been used if this facility has been completed.

Information Current as of: 1 February 2000

2.193.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1994 to present

Locations within Range of Known Munitions Use: Firing Line

Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Twenty-eight 3C52 Type "E" "Pop-Up" Targets

The range consists of six stations. Station one is "Urban Quick Kill". Station two is "Search and Kill". Station three is an Obstacle Course. Station four is a "Cover and Clear". Station five is known as Dodge City. Station six is planned to be a Grenade House.

Other Past Uses: The range is located in an area that has been used as a range and as a maneuver area.

Anticipated Future Use: Continued present use.

Public Access: Area is located on a restricted access military reservation.

2.194 MOUT TRAINING FACILITY

Base Order P3570.1, dated 2 June 1994, authorized "Blank ammunition only. All blank ammunition, practice and smoke grenades (including riot control), pop-up/signal flares, artillery, and booby trap simulators are authorized."

2.194.1 Range Identification

Common Name: MOUT Training Facility

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (Located within the MOUT Assault Course, see **Plate 15** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 39' 55" N Longitude: 77° 15' 05" W
Military Grid: 937 383

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Blank Small Arms, Smoke, Riot, and Practice Hand Grenades, Pyrotechnics

Information Current as of: 1 February 2000

2.194.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms, Blank	None
Hand Grenades, Smoke, Riot, Practice	Integral
Pyrotechnics	Integral

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1994 to present

Locations within Range of Known Munitions Use: Entire Range

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: Pyrotechnic munitions contain a filler that is sensitive to heat, shock, and friction. Riot control munitions contain a filler which may require personnel protective equipment.

Types of Targets: As established by using unit. Site contains thirty (30) cinder block buildings, one administration building, and concrete/gravel roads.

Other Past Uses: This range is located in an area that has been used as a range and as a maneuver area.

Anticipated Future Use: Continued present use.

Public Access: Area is located on a restricted access military reservation.

2.195 K-406G - UNKNOWN RANGE

This range appears on a 1987 range map but is not in the associated range regulation. This range may be Range K-406A (Para 2.181) which shows location. It cannot be confirmed that this is K-406A and is therefore listed as a separate range.

2.195.1 Range Identification

Common Name: K-406G

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune**

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 37' 42" N Longitude: 77° 25' 24" W
Military Grid: 7785 3455

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Unknown

Information Current as of: 1 February 2000

2.195.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Unknown	

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1987

The only reference uncovered on this range is a 26 December 1987 map.

Locations within Range of Known Munitions Use: Unknown

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Unknown

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Unknown

Other Past Uses: The "K" Area has been used for ranges, as an impact area, and as a fire and maneuver area in the past.

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.196 I-2, DEMOLITION AREA

This range appears on an August 1951 range map and is in a different location from the I-2 Demolition range in paragraph 2.125. The range is grid square 8828 north of Highway 172. Because of a change in mapping datum the boundary of the grid square has changed slightly.

2.196.1 Range Identification

Common Name: I-2, Demolition Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 5** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Military Grid Square: 8828

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Demolitions

Information Current as of: 1 February 2000

2.196.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Demolitions	Electric and Non-Eletric Blasting Caps

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1951

Locations within Range of Known Munitions Use: Entire Range

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Demolitions are normally on the surface but some operations may cause them to be buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: NA

Other Past Uses: Maneuver and live fire training area.

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.197 F-5, 1000" RANGE

This range appears on an April 1953 range map. It is identified as a 1000" Range which indicates that it is used for small arms training.

2.197.1 Range Identification

Common Name: F-5, 1000" Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 7** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 39' 29" N Longitude: 77° 17' 33" W
Military Grid: 8992 3756

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms

Information Current as of: 1 February 2000

2.197.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1953

Locations within Range of Known Munitions Use: Firing Line

Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Complete rounds would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Unknown

Other Past Uses: This range is located within the "F" Range area.

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.198 B-14, ABC WARFARE AREA

A list of training facilities in Annex Z-1 to Base Order 11102.1B, dated 5 May 1960, lists this area as an ABC facility in grid square 7444.

2.198.1 Range Identification

Common Name: B-14, ABC Warfare Area

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 15** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Military Grid: Grid Square 7444

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Unknown

It is assumed that Chemical Warfare Training Materials such as Riot Control Grenades and Chemical Agent Identification Kits were used in this area. The 1960 base order does not list authorized Chemical Warfare Training Materials. The following items are listed in the 1970 version of the base order, and it can be assumed that they may have been used in Chemical Training in 1960: Detonation War Gas Identification Set, M2 HD Toxic Gas Set, and Biological Agent Simulant BG-1.

Information Current as of: 1 February 2000

2.198.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Unknown	

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1960

The only reference uncovered on this area is Base Order 11102.1B, dated 5 May 1960.

Locations within Range of Known Munitions Use: Unknown

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Normal operations would result in munitions on the surface.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: Chemical Warfare Training Materials may require personnel protective equipment.

Types of Targets: Unknown

Other Past Uses: This general area has been used for ranges and as a maneuver area in the past.

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.199 INDOOR PISTOL RANGE (RIFLE RANGE AREA)

This range (Building RR-53) appears on 1950 through 1996 base maps.

2.199.1 Range Identification

Common Name: Indoor Pistol Range (Rifle Range Area)

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: Building RR-53, **MCB Camp Lejeune** (See **Plate 21** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Small Arms

Information Current as of: 1 February 2000

2.199.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1950 to present

The only references uncovered on this range are base maps 1950 through 1996.

Locations within Range of Known Munitions Use: Firing Line

Small arms ammunition explosive hazards exist only with complete rounds. Complete rounds of small arms would only be found at or near firing line.

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Fixed Target

Other Past Uses: None, although the building is located within the Rifle Range Complex.

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.200 GAS CHAMBER (RIFLE RANGE AREA)

This building (Building RR-63) appears on 1950 through 1954 base maps.

2.200.1 Range Identification

Common Name: Gas Chamber (Rifle Range Area)

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: Building RR-63, **MCB Camp Lejeune** (See **Plate 21** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Unknown

It is assumed that tear gas was used with this facility.

Information Current as of: 1 February 2000

2.200.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Unknown, chemical related	

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1950 - 1954

The only references uncovered on this training activity are base maps form 1950 to 1954.

Locations within Range of Known Munitions Use: Unknown

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Unknown

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: Chemical Warfare Training Munitions may require wearing personnel protective equipment.

Types of Targets: NA

Other Past Uses: None, although the building is located within the Rifle Range Complex.

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.201 UNNAMED EXPLOSIVE CONTAMINATED RANGE

This area appears on a 1973 map as an explosive contaminated area with no explanation of the source of the contamination. The area continues to exist on range maps with slight changes in boundaries to present. Aerial Photographic analysis indicates that this area may have been used as a dump which may have been in use since 1960.

2.201.1 Range Identification

Common Name: Unnamed Explosive Contaminated Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plates 18** and **20** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina

Military Grid: Grid Squares 7728 & 7828

This range appears on a 1973 map, a September 1976 map, and a December 1987 map. The size and shape is different on each map, but in general, consists of the land in grid squares 7728 and 7828.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Unknown

Information Current as of: 1 February 2000

2.201.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Unknown	

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1973 to present

Locations within Range of Known Munitions Use: Unknown

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Unknown

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: NA

Other Past Uses: None

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.202 K-206 - UNKNOWN RANGE

This range appears on a range map circa 1973 and no information has been found to describe its use.

2.202.1 Range Identification

Common Name: K-206

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 14** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 39' 28" N Longitude: 77° 25' 42" W
Military Grid: 7745 3785

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Unknown

Information Current as of: 1 February 2000

2.202.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Unknown	

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1973

The only reference to this range was on a range map associated with BO P11102.1H dated circa 1973.

Locations within Range of Known Munitions Use: Unknown

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Unknown

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Unknown

Other Past Uses: The "K" Area has been used for ranges, as an impact area, and as a fire and maneuver area in the past.

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.203 K-17, PRACTICE HAND GRENADE RANGE

This range appears on a 1958 range map and is labeled as a practice hand grenade range.

2.203.1 Range Identification

Common Name: K-17, Practice Hand Grenade Range

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 10** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Latitude: 34° 38' 41" N Longitude: 77° 23' 09" W
Military Grid: 813 363

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Practice Hand Grenades.

Information Current as of: 1 February 2000

2.203.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Hand Grenade, Practice	Integral

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1958

The only reference uncovered on this range is a 3 April 1958 map.

Locations within Range of Known Munitions Use: Target Area

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Hand grenades would normally be located on the surface, but over the years, construction and other ground movement may have caused the rounds to become buried to an unknown depth.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Unknown

Other Past Uses: The “K” Area has been used for ranges, as an impact area, and as a fire and maneuver area in the past.

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.204 GAS CHAMBER (2D MAR DIV)

Base Order P11102.1G, dated 6 February 1970, lists this facility as located in grid square 8738 and being scheduled by CG, 2d Mar Div.

2.204.1 Range Identification

Common Name: Gas Chamber (2d Mar Div)

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 15** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Military Grid: Grid Square 8738

Specific location of Gas Chamber was not given in the range regulation.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Unknown

It is assumed that tear gas was used in this facility.

Information Current as of: 1 February 2000

2.204.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Unknown, chemical type	

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1970

The only reference uncovered on this facility is Base Order P11102.1G, dated 6 February 1970.

Locations within Range of Known Munitions Use: Unknown

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Unknown

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: Chemical Warfare Training Materials may require the wearing of personnel protective equipment.

Types of Targets: NA

Other Past Uses: None

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.205 GAS CHAMBER (K-312)

Base Order P11102.1G, dated 6 February 1970, lists this facility as located in grid square 8036 and it is scheduled by the CO, 1st ITR.

2.205.1 Range Identification

Common Name: Gas Chamber (K-312)

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 15** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina
Military Grid: Grid Square 8036

The specific location of the Gas Chamber was not given in the range regulation.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Unknown

It is assumed that tear gas was used in this facility.

Information Current as of: 1 February 2000

2.205.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Unknown, chemical type	

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1970

The only reference uncovered on this range is Base Order P11102.1G, dated 6 February 1970.

Locations within Range of Known Munitions Use: Unknown

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Unknown

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: Chemical Warfare Training Materials may require the wearing of personnel protective equipment.

Types of Targets: NA

Other Past Uses: The "K" Area has been used for ranges, as an impact area, and as a fire and maneuver area in the past.

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.206 GAS TRAINING AREA

An article in the 11 April 1945 edition of the **Camp Lejeune** Globe, identified "A wooded point of land on the south shore of Duck Creek pits into New River. The article goes on to describe the use of this area as for training in "field impregnation, decontamination, incendiaries and flame throwers, a decontamination center, mustard passages, first aid and meteorological stations. A 6 June 1945 issue of the **Camp Lejeune** Globe showed pictures and described a "mustard walk" where personnel in training encountered an area contaminated by exploding mustard mines.

2.206.1 Range Identification

Common Name: Gas Training Area

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 15** for location)

Range fan information is extracted from range maps and one or more of the following documents: Training Regulation 140-5, dated 20 November 1931; AR 750-10, dated 22 May 1939; AR 750-10, dated 14 February 1942; AR 750-10, dated 22 January 1944; TM 9-855, dated 17 August 1944; TM 9-855, dated November 1951; Training Circular 25-1, dated 4 August 1978; Training Circular 25-8, dated 25 February 1992; MCO P3570.1A, dated 15 November 1983; and MCO P3570.2, dated 5 January 1977, w/Change 1, dated 1 June 1983.

County: Onslow
State: North Carolina

Military Grid: 8534 (approximate location based upon description in newspaper)

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Unknown

It is assumed that the munitions used consist primarily of Chemical Munitions which include Smoke, Flame and Toxics. The news articles describing this site show photographs of the filling and detonating of M1 1 gallon Mustard Mines.

Information Current as of: 1 February 2000

2.206.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Unknown	

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1945

Locations within Range of Known Munitions Use: Unknown

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Unknown

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: Some chemical agents require personal protective equipment.

Types of Targets: Unknown

Other Past Uses: This area has been used as a maneuver area in the past.

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.207 IMPACT AREA "N-1"

Camp Training Order Number 5-1946, dated 19 March 1946, lists the following weapons as authorized to fire into the "N" Impact Area: Artillery rockets, 37mm, 57mm 75mm, 90mm, and 105mm artillery weapons. Rocket Range #1 (RR-1), Straffing Target #2 (ST-2) and Bombing Target # 5 (BT-5) are located in the approximate location of the "N" Impact Area. These ranges were used for aerial rockets and bombs, plus straffing using 75mm cannon fired from an aircraft.

In 1944, the pre-Bomb Disposal School conducted at **Camp Lejeune** dropped seven 500 lb GP bombs in Browns Island ("N" Impact Area) as part of a training exercise where some of the bombs were rigged not to explode on impact.

Base Order 11102.1B, dated 5 May 1960, states that Artillery. Mortars, Tank and Anti-Tank Guns, may be fired to impact in the "N-1" Impact Area. Artillery rockets and 106mm Recoilless Rifles will only impact in this area. The "N-1" Impact Area is described in this base order: "Extends east from the junction of NS grid line 94 and Onslow Beach along the beach line to Bear Creek Inlet, then along Bear Creak to a point 500 yards north of the Intracoastal Waterway, and thence on a line five hundred (500) yards north of and paralleling the Intracoastal Waterway to NS grid line 94."

Base Order P11102.1K, dated 11 October 1985, states that Bombing Target 3 (BT-3) and the "N-1" Impact Area are the same area. BT-3 is authorized for aircraft ordnance less than 250 lbs of TNT equivalency, all types of artillery, all types of mortars, all ground weapons authorized for Ranges G-7/6/5 and TOW Missiles fired from rotary-wing aircraft.

Base Order P3570.1, dated 2 June 1994, authorized the firing of the following ammunition into BT-3/N-1: .50 Caliber, 5.56mm, 7.62mm, 20mm TP-T, 25mm TP-T/APDS-T, 30mm TP-T, 2.75 in rockets, 105mm, 120mm, 155mm, MK 76 practice bombs, MK 80 series inert filled bombs, 40mm practice grenades.

2.207.1 Range Identification

Common Name: Impact Area "N-1"
Also known as "N" Impact Area, BT-3, RR-1, ST-2, and BT-5

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 6** for location, also see plates 8, 10, 13, 16, 18, 20)

County: Onslow
State: North Carolina

The Danger Area established for BT-5, RR-1, and ST-2 in 1945 and it consisted of an area 3 miles by 6 miles with the corners at:

Lat 34° 36' 33" N Long 77° 13' 18" W
Lat 34° 38' 03" N Long 77° 10' 06" W
Lat 34° 31' 15" N Long 77° 09' 41" W
Lat 34° 32' 53" N Long 77° 06' 30" W

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Artillery, Mortar, Tank and Anti-Tank Guns, Recoilless Rifles, Aerial Guns, Rockets, and Bombs

Information Current as of: 1 February 2000

2.207.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
60mm Mortar (All Types)	Point Detonating Powder Train Time Variable Time
81mm Mortar (All Types)	Point Detonating Powder Train Time Variable Time
4.2 Inch Mortar (All Types)	Point Detonating Mechanical Time Variable Time
57mm Recoilless Rifle (All Types)	Point Detonating
75mm Recoilless Rifle (All Types)	Base Detonating
90mm Recoilless Rifle (All Types)	Point Initiating Base Detonating
105mm Recoilless Rifle (HEP-T)	Base Detonating
106mm Recoilless Rifle (All Types)	Point Initiating Base Detonating Mechanical Time Base Detonating
37mm AA Gun (All Types)	Point Detonating
40mm AA Gun (All Types)	Point Detonating

90mm AA Gun (All Types)	Point Detonating Mechanical Time
120mm AA Gun (All Types)	Point Detonating Mechanical Time Variable Time
90mm Tank Gun (All Types)	Point Detonating Point Initiating Base Detonating Mechanical Time Base Detonating
105mm Tank Gun (All types except toxics)	Point Initiating Base Detonating Mechanical Time Base Detonating
120mm Tank Gun (All Types)	Point Initiating Base Detonating
40mm Grenades	Integral
75mm Howitzer (All types except toxics)	Point Detonating
105mm Howitzer (All types except toxics)	Point Detonating Mechanical Time Base Detonating Variable Time
155mm Howitzer/Gun (All types except toxics)	Point Detonating Mechanical Time Variable Time
8 Inch Howitzer (All types except toxics)	Point Detonating Mechanical Time Variable Time
TOW Missile	Integral
2.75 Inch Rocket	Point Detonating Variable Time
3.5 Inch Rocket	Integral
4.5 Inch Rocket	Point Detonating
5 Inch Rocket	Point Detonating Variable Time
11.75 Inch Rocket	Point Detonating Base Detonating
100 lb HE Bomb (Old style)	Point Detonating Base Detonating
250 lb HE Bomb (Old style)	Point Detonating Base Detonating
500 lb HE Bomb (Old style)	Point Detonating Base Detonating
250 lb HE Bomb (Low drag)	Point Detonating Base Detonating

500 lb HE Bomb (Low drag)	Point Detonating Base Detonating
Practice Bomb (various types)	Point Detonating

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1945 to Present

Locations within Range of Known Munitions Use: Entire Impact Area

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
20mm, AP-T, M95	2.4	3.1	4.7	0.4
25mm, M792	3.1	4.1	6.2	0.6
30mm, M789	2.8	3.7	5.6	0.7
37mm MK I & MK II	2.0	2.7	4.1	1.0
37mm M54	3.9	5.2	7.9	1.0
37mm M63	3.9	5.2	7.9	1.0
40mm, MK II	4.4	5.8	8.9	1.1
40mm, M822	2.3	3.0	4.5	1.1
40mm, M677	0.2	0.3	0.4	1.1
40mm M381	0.2	0.3	0.4	1.1
57mm M306	2.7	3.6	5.5	1.7
2.25" Rocket, MK 4	4.0	5.2	8.0	1.7
60mm M49	1.1	1.5	2.3	1.9
2.75" Rocket, MK 2	7.1	9.3	14.2	2.3
75mm M48	4.9	6.4	9.8	2.5
75mm M310	3.9	5.1	7.8	2.5
76mm M496	8.9	11.7	17.9	2.6
81mm M43	2.7	3.5	5.4	2.8
81mm, M56	2.0	2.7	4.1	2.8
3.5" Rocket M28	0.8	1.1	1.7	3.2
90mm, M71	9.7	12.7	19.4	3.2
90mm M371	2.0	2.7	4.1	3.2
105mm M1 (charge 7)	7.7	10.1	15.4	4.0

105mm, M456	13.4	17.6	26.8	4.0
106mm M244	6.5	8.5	13.0	4.0
4.5" Fin Stabilized Rocket M8	4.7	6.1	9.3	4.4
4.5" Spin Stabilized Rocket M16	4.7	6.3	9.6	4.4
4.5" Barrage Rocket	0.5	0.7	1.0	4.4
4.2" M3 (max charge)	4.1	5.4	8.3	4.1
120mm M73	12.0	15.7	24.0	4.7
120mm, M469	12.6	16.5	25.2	4.7
5" Rocket, MK 28	10.2	13.4	20.4	5.1
155mm, M101	15.8	20.7	31.6	6.7
155mm M107	14.0	18.4	28.0	6.7
175mm, M437	18.9	24.8	37.9	7.9
8" M106 (charge 8)	18.4	24.2	36.9	9.7
TOW Missile (penetration depths based upon missile remaining intact)	6.6	8.7	13.2	10.7
11.75" Rocket, MK 3	13.8	18.2	27.7	16.3
Bomb, 3 lb, Practice, MK 3, 4, & 5[2]	1.0	1.4	2.1	2.1
Bomb, 25 lb Frag[2]	2.1	2.8	4.3	3.2
Bomb, 25 lb, Prac, BDU-33/MK 76[2]	2.1	2.8	4.2	3.8
Bomb, 30 lb, Frag, MK 5	2.4	3.1	4.7	4.0
Bomb, 100 lb GP, M30[2]	3.4	4.5	6.8	10.0
Bomb, 100 lb GP, M30[3]	6.1	8.0	12.2	10.0
Bomb, 100 lb GP, M30[4]	8.4	11.0	16.8	10.0
Bomb, 100 lb Prac, MK 15[2] (This is a light case munition which normally breaks up on impact, penetration depth is for intact round)	3.2	4.2	6.4	9.7
Bomb, 220 lb, Frag, M88[2]	4.4	5.8	8.8	9.7
Bomb, 220 lb, Frag, M88[3]	7.9	10.4	15.8	9.7
Bomb, 220 lb, Frag, M88[4]	10.8	14.2	21.7	9.7
Bomb, 250 lb GP, M57[2]	4.6	6.0	9.3	14.7
Bomb, 250 lb GP, M57[3]	8.3	10.9	16.6	14.7
Bomb, 250 lb GP, M57[4]	11.4	14.9	22.7	14.7
Bomb, 260 lb, Frag, M81[2]	4.7	6.2	9.4	9.7
Bomb, 260 lb, Frag, M81[3]	8.4	11.0	16.8	9.7
Bomb, 260 lb, Frag, M81[4]	11.5	15.1	23.0	9.7

Bomb, 350 lb, Depth, MK 47[2]	5.2	6.8	10.4	22.4
Bomb, 350 lb, Depth, MK 47[3]	9.3	12.2	18.6	22.4
Bomb, 350 lb, Depth, MK 47[4]	12.7	16.7	25.4	22.4
Bomb, 350 lb, Depth, MK 17[2]	5.2	6.8	10.4	22.7
Bomb, 350 lb, Depth, MK 17[3]	9.3	12.2	18.6	22.7
Bomb, 350 lb, Depth, MK 17[4]	12.7	16.7	25.4	22.7
Bomb, 500 lb, GP, MK 12[2]	5.9	7.7	11.7	20.6
Bomb, 500 lb, GP, MK 12[3]	10.5	13.8	21.0	20.6
Bomb, 500 lb, GP, MK 12[4]	14.3	18.9	28.8	20.6
Bomb, 500 lb GP, M64[2]	5.9	7.8	11.9	20.6
Bomb, 500 lb GP, M64[3]	10.6	13.9	21.2	20.6
Bomb, 500 lb GP, M64[4]	14.5	19.0	29.1	20.6
Bomb, 500 lb Prac, MK 21[2] (This is a light case munition which normally breaks up on impact, penetration depth is for intact round)	5.8	7.6	11.6	22.7
Bomb, 500 lb, SAP, M58[2]	5.8	7.6	11.6	16.4
Bomb, 500 lb, SAP, M58[3]	10.4	13.7	20.8	16.4
Bomb, 500 lb, SAP, M58[4]	14.2	18.7	28.5	16.4
Bomb, 1000 lb Prac, MK 22[2] (This is a light case munition which normally breaks up on impact, penetration depth is for intact round)	7.4	9.7	14.8	31.2
Bomb, 250 lb, GP, MK 81[2]	4.6	6.1	9.3	11.4
Bomb, 250 lb, GP, MK 81[3]	8.3	10.9	16.6	11.4
Bomb, 250 lb, GP, MK 81[4]	11.4	14.9	22.7	11.4
Bomb, 500 lb, GP, MK 82[2]	5.8	7.7	11.7	14.5
Bomb, 500 lb, GP, MK 82[3]	10.4	13.7	20.9	14.5
Bomb, 500 lb, GP, MK 82[4]	14.3	18.8	28.7	14.5

[1] Maximum detection depth using a magnetometer.
[2] Maximum depth of penetration assuming a velocity of 500 fps (5000 ft altitude, level flight).
[3] Maximum depth of penetration assuming a velocity of 800 fps (10000 ft altitude, level flight).
[4] Maximum depth of penetration assuming a velocity of 1100 fps (20000 ft altitude, level flight).

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: Shaped charge munitions contain sensitive fuzing and present a significantly enlarged hazard area forward of the munition.

Types of Targets: Unknown

Other Past Uses: None

Anticipated Future Use: Continued present use

Public Access: Area is located on a restricted access military reservation.

2.208 IMPACT AREA "G-10"

A letter to the Commandant, Subject: Target and Fire Support Areas for practice firing of ships engaged in Naval Gun Fire Support, dated 31 October 1941 stated that "all graves in Area "G" will have been removed by 15 December 1941, at which time the proposed firing may be executed."

Camp Training Order Number 5-1946, dated 19 March 1946, identified this area as an Engineer Firing Area for use with anti-tank and rocket grenades, demolitions and flame throwers. It further stated the Field Artillery Maneuvering & Firing, Area "G", has been disestablished effective with this order.

The "G-10" Impact Area first appears on an August 1951 map. Base Order P11102.1G, dated 6 February 1970, stated that Impact Area "G-10" normally will not be used for impacting aircraft ordnance. This indicates that on some occasions air ordnance may have been used on this area.

Base Order P11102.1K, dated 11 October 1985, with Change 1 dated 1 December 1986, stated that the "G-10" Impact Area was authorized for "All Indirect Fire/Close Air Support (L) up to 250 lb TNT equivalent.

2.208.1 Range Identification

Common Name: Impact Area "G-10"

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 5** for location, also see plates 6, 8, 10, 11, 13, 16, 18, and 20)

County: Onslow
State: North Carolina

Base Order 11102.1B, dated 5 May 1960, identified this area as the area within the lines connecting the following points: 90703365, 89203685, 91053705, 92183650, 94703650, 94003490, 94003415, and 91903415. Base Orders P11102.1K , dated 11 October 1985 and P3570.1, dated 2 June 1994 also address the use of this impact area.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Artillery (less artillery rockets), Mortars, Recoilless Rifles (less 106mm), and possibly air delivered ordnance. (BO P11102.1G) Artillery (All Types), Mortars (all types), TOW Missiles, Aircraft Ordnance (not to exceed 250 lb TNT equivalent). (BO P11102.1K) Fixed Wing Ordnance – MK 6 and MK 80 Series Inert Bombs, 2.75 in rockets, 20mm, 25mm, 30mm; Rotary Wing Ordnance – 2.75 in rocket, 7.62mm, 20 mm; Artillery – all; Mortar – all; Ground Weapons – 5.56mm, 7.62mm, 25mm, 40mm. (Change 1 to BO P11102.1K) BO P3570.1 - .50 Caliber, 9mm, 5.56mm, 7.62mm, 20mm, 25mm (TP-T), 30mm (TP-T), 40mm, 83mm, 84mm, 2.75 in, 105mm, 155mm, 81mm, 60mm, MK 76 Bomb, MK 80 Series (inert), TOW, DRAGON.

Information Current as of: 1 February 2000

2.208.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None
20mm (all)	Point Detonating
25mm TP-T	None
30mm TP-T	None
60mm Mortar (All Types)	Point Detonating Powder Train Time Variable Time
81mm Mortar (All Types)	Point Detonating Powder Train Time Variable Time
4.2 Inch Mortar (All Types)	Point Detonating Mechanical Time Variable Time
57mm Recoilless Rifle (All Types)	Point Detonating
75mm Recoilless Rifle (All Types)	Base Detonating
90mm Recoilless Rifle (All Types)	Point Initiating Base Detonating
105mm Recoilless Rifle (HEP-T)	Base Detonating
Rifle Grenade	Integral
2.36 Inch Rocket	Integral
66mm LAW	Integral
83mm SMAW	Integral
84mm AT-4	Integral
40mm Grenades	Integral

3 Inch Naval Gun	Point Detonating Variable Time
5 Inch Naval Gun	Point Detonating Variable Time
6 Inch Naval Gun	Point Detonating Base Detonating
8 Inch Naval Gun	Point Detonating Base Detonating
75mm Howitzer (All types except toxics)	Point Detonating
105mm Howitzer (All types except toxics)	Point Detonating Mechanical Time Base Detonating Variable Time
155mm Howitzer/Gun (All types except toxics)	Point Detonating Mechanical Time Variable Time
8 Inch Howitzer (All types except toxics)	Point Detonating Mechanical Time Variable Time
TOW Missile	Integral
2.75 Inch Rocket	Point Detonating Variable Time
4.5 In Rocket	Point Detonating
5 Inch Rocket	Point Detonating Variable Time
11.75 Inch Rocket	Point Detonating Base Detonating
100 lb HE Bomb (Old style)	Point Detonating Base Detonating
250 lb HE Bomb (Old style)	Point Detonating Base Detonating
500 lb HE Bomb (Old style)	Point Detonating Base Detonating
250 lb HE Bomb (Low drag)	Point Detonating Base Detonating
500 lb HE Bomb (Low drag)	Point Detonating Base Detonating
Practice Bomb (various types)	Point Detonating

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1941 to present

Locations within Range of Known Munitions Use: Entire Impact Area

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
.30 Caliber, Ball, M1 (NOTE: Only complete rounds represent an explosive hazard and complete rounds are found on the surface)	1.3	1.7	2.6	0.1
.50 Caliber, Ball, M2 (NOTE: Only complete rounds represent an explosive hazard and complete rounds are found on the surface)	1.6	2.2	3.3	0.2
20mm, AP-T, M95	2.4	3.1	4.7	0.4
22mm Sub-caliber for 81mm mortar	1.4	1.9	2.8	0.5
25mm, M792	3.1	4.1	6.2	0.6
30mm, M789	2.8	3.7	5.6	0.7
35mm Sub-Caliber M73	0.5	0.7	1.0	0.9
40mm M381	0.2	0.3	0.4	1.1
57mm M306	2.7	3.6	5.5	1.7
2.25" Rocket, MK 4	4.0	5.2	8.0	1.7
M28/M31 HEAT Rifle Grenade	0.1	0.2	0.3	2.1
M9 Rifle Grenade	0.1	0.2	0.2	1.7
2.36" Rocket, M6	0.4	0.5	0.8	1.9
60mm M49	1.1	1.5	2.3	1.9
66mm M72	0.9	1.2	1.8	2.1
2.75" Rocket, MK 2	7.1	9.3	14.2	2.3
75mm M48	4.9	6.4	9.8	2.5
81mm M43	2.7	3.5	5.4	2.8
81mm, M56	2.0	2.7	4.1	2.8
83mm SMAW	2.8	3.6	5.6	2.9
84mm M136 (AT-4)	2.5	3.7	5.0	2.9
3.5" Rocket M28	0.8	1.1	1.7	3.2

105mm M1 (charge 7)	7.7	10.1	15.4	4.0
4.5" Fin Stabilized Rocket M8	4.7	6.1	9.3	4.4
4.5" Spin Stabilized Rocket M16	4.7	6.3	9.6	4.4
4.5" Barrage Rocket	0.5	0.7	1.0	4.4
Dragon Missile	0.9	1.1	1.7	4.3
4.2" M3 (max charge)	4.1	5.4	8.3	4.1
5" Rocket, MK 28	10.2	13.4	20.4	5.1
155mm, M101	15.8	20.7	31.6	6.7
155mm M107	14.0	18.4	28.0	6.7
175mm, M437	18.9	24.8	37.9	7.9
8" M106 (charge 8)	18.4	24.2	36.9	9.7
TOW Missile (penetration depths based upon missile remaining intact)	6.6	8.7	13.2	10.7
11.75" Rocket, MK 3	13.8	18.2	27.7	16.3
Bomb, 3 lb, Practice, MK 3, 4, & 5[2]	1.0	1.4	2.1	2.1
Bomb, 25 lb Frag[2]	2.1	2.8	4.3	3.2
Bomb, 25 lb, Prac, BDU-33/MK 76[2]	2.1	2.8	4.2	3.8
Bomb, 30 lb, Frag, MK 5	2.4	3.1	4.7	4.0
Bomb, 100 lb GP, M30[2]	3.4	4.5	6.8	10.0
Bomb, 100 lb GP, M30[3]	6.1	8.0	12.2	10.0
Bomb, 100 lb GP, M30[4]	8.4	11.0	16.8	10.0
Bomb, 100 lb Prac, MK 15[2] (This is a light case munition which normally breaks up on impact, penetration depth is for intact round)	3.2	4.2	6.4	9.7
Bomb, 220 lb, Frag, M88[2]	4.4	5.8	8.8	9.7
Bomb, 220 lb, Frag, M88[3]	7.9	10.4	15.8	9.7
Bomb, 220 lb, Frag, M88[4]	10.8	14.2	21.7	9.7
Bomb, 250 lb GP, M57[2]	4.6	6.0	9.3	14.7
Bomb, 250 lb GP, M57[3]	8.3	10.9	16.6	14.7
Bomb, 250 lb GP, M57[4]	11.4	14.9	22.7	14.7
Bomb, 260 lb, Frag, M81[2]	4.7	6.2	9.4	9.7
Bomb, 260 lb, Frag, M81[3]	8.4	11.0	16.8	9.7
Bomb, 260 lb, Frag, M81[4]	11.5	15.1	23.0	9.7
Bomb, 350 lb, Depth, MK 47[2]	5.2	6.8	10.4	22.4
Bomb, 350 lb, Depth, MK 47[3]	9.3	12.2	18.6	22.4

Bomb, 350 lb, Depth, MK 47[4]	12.7	16.7	25.4	22.4
Bomb, 350 lb, Depth, MK 17[2]	5.2	6.8	10.4	22.7
Bomb, 350 lb, Depth, MK 17[3]	9.3	12.2	18.6	22.7
Bomb, 350 lb, Depth, MK 17[4]	12.7	16.7	25.4	22.7
Bomb, 500 lb, GP, MK 12[2]	5.9	7.7	11.7	20.6
Bomb, 500 lb, GP, MK 12[3]	10.5	13.8	21.0	20.6
Bomb, 500 lb, GP, MK 12[4]	14.3	18.9	28.8	20.6
Bomb, 500 lb GP, M64[2]	5.9	7.8	11.9	20.6
Bomb, 500 lb GP, M64[3]	10.6	13.9	21.2	20.6
Bomb, 500 lb GP, M64[4]	14.5	19.0	29.1	20.6
Bomb, 500 lb Prac, MK 21[2] (This is a light case munition which normally breaks up on impact, penetration depth is for intact round)	5.8	7.6	11.6	22.7
Bomb, 500 lb, SAP, M58[2]	5.8	7.6	11.6	16.4
Bomb, 500 lb, SAP, M58[3]	10.4	13.7	20.8	16.4
Bomb, 500 lb, SAP, M58[4]	14.2	18.7	28.5	16.4
Bomb, 1000 lb Prac, MK 22[2] (This is a light case munition which normally breaks up on impact, penetration depth is for intact round)	7.4	9.7	14.8	31.2
Bomb, 250 lb, GP, MK 81[2]	4.6	6.1	9.3	11.4
Bomb, 250 lb, GP, MK 81[3]	8.3	10.9	16.6	11.4
Bomb, 250 lb, GP, MK 81[4]	11.4	14.9	22.7	11.4
Bomb, 500 lb, GP, MK 82[2]	5.8	7.7	11.7	14.5
Bomb, 500 lb, GP, MK 82[3]	10.4	13.7	20.9	14.5
Bomb, 500 lb, GP, MK 82[4]	14.3	18.8	28.7	14.5

[1] Maximum detection depth using a magnetometer.
[2] Maximum depth of penetration assuming a velocity of 500 fps (5000 ft altitude, level flight).
[3] Maximum depth of penetration assuming a velocity of 800 fps (10000 ft altitude, level flight).
[4] Maximum depth of penetration assuming a velocity of 1100 fps (20000 ft altitude, level flight).

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: Shaped charge munitions contain sensitive fuzing and present a significantly enlarged hazard area forward of the munition. White Phosphorus filled munitions contain a filler which burns upon contact with air.

Types of Targets: Improvised Targets and Vehicle Hulls (1985). 55 Hard Targets (1994).

Other Past Uses: None

Anticipated Future Use: Continued use as an impact area.

Public Access: Area is located on a restricted access military reservation.

2.209 IMPACT AREA "K-2"

The "K" Area was part of the original impact area which also included most of the "M" Area. It was initially established in 1941 (20 Aug 41 map) and identified in the Construction Completion Report dated September 1942.

Camp Training Order Number 5-1946, dated 19 March 1946, identified three firing points, firing 37mm, 75mm, 90mm, 105mm, and 155mm weapons firing into the "K" Impact Area. Musketry Range "D" and Machine Gun Range "D" also used the "K" Impact Area.

Modification 1 to Camp Training Order Number 78-1946, dated 8 March 1947, confirmed the use of Area "K" as an Artillery Impact Area.

Base Order P11102.1K, dated 11 October 1985, identified the following as authorized for use on this impact area: Aircraft Ordnance – all not to exceed 250 lbs TNT equivalent, Artillery – All Types, Mortars – All Types, and ground weapons authorized on "K" Series Ranges. Change 1 to this base order limited air ordnance to practice bombs and 7.62mm machine guns.

Base Order P3570.1, dated 2 June 1994, authorized the following ammunition: 5.56mm, 7.62mm, 40mm grenade, 105mm, 83mm, 84mm, 155mm, 81mm, 60mm, DRAGON, MK-76 practice bombs, and MK 80 series inert bombs.

2.209.1 Range Identification

Common Name: Impact Area "K-2"

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 6** for location, also see plates 8, 10, 12, 13, 16, 18, and 20)

County: Onslow
State: North Carolina

Camp Training Order Number 5-1946, defined the "K" Impact Area as " bounded on the west by Lewis Creek, Verona Loop Road to USMC Bench Mark 46, from USMC Bench Mark 46 by road to Bench Mark Hines, and New River Inlet to mouth of Lewis Creek."

Base Order 11102.1B, dated 5 May 1960, defined the impact area as "Extends north from the intersection of NS Grid Line 7820 and the shoreline of Stone Bay on a line bearing 31° to its intersection with EW Grid Line 35, along that line to its junction with New River thence south and west along the banks of New River and Stone Bay until the point of beginning is again reached."

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Air Ordnance up to 250 lbs TNT equivalent, all Artillery, Mortar, and those Ground Weapons authorized on K Series Ranges

Information Current as of: 1 February 2000

2.209.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None
20mm (all)	Point Detonating
25mm TP-T	None
30mm TP-T	None
60mm Mortar (All Types)	Point Detonating Powder Train Time Variable Time
81mm Mortar (All Types)	Point Detonating Powder Train Time Variable Time
4.2 Inch Mortar (All Types)	Point Detonating Mechanical Time Variable Time
57mm Recoilless Rifle (All Types)	Point Detonating
75mm Recoilless Rifle (All Types)	Base Detonating
90mm Recoilless Rifle (All Types)	Point Initiating Base Detonating
105mm Recoilless Rifle (HEP-T)	Base Detonating
66mm LAW	Integral
83mm SMAW	Integral
84mm AT-4	Integral
40mm Grenades	Integral

75mm Howitzer (All types except toxics)	Point Detonating
105mm Howitzer (All types except toxics)	Point Detonating Mechanical Time Base Detonating Variable Time
155mm Howitzer/Gun (All types except toxics)	Point Detonating Mechanical Time Variable Time
2.75 Inch Rocket	Point Detonating Variable Time
4.5 In Rocket	Point Detonating
5 Inch Rocket	Point Detonating Variable Time
11.75 Inch Rocket	Point Detonating Base Detonating
100 lb HE Bomb (Old style)	Point Detonating Base Detonating
250 lb HE Bomb (Old style)	Point Detonating Base Detonating
500 lb HE Bomb (Old style)	Point Detonating Base Detonating
250 lb HE Bomb (Low drag)	Point Detonating Base Detonating
500 lb HE Bomb (Low drag)	Point Detonating Base Detonating
Practice Bomb (various types)	Point Detonating

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1941 to present

Locations within Range of Known Munitions Use: Entire Impact Area

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
.30 Caliber, Ball, M1 (NOTE: Only complete rounds represent an explosive hazard and complete rounds are found on the surface)	1.3	1.7	2.6	0.1
.50 Caliber, Ball, M2 (NOTE: Only complete rounds represent an explosive hazard and complete rounds are found on the surface)	1.6	2.2	3.3	0.2
20mm, AP-T, M95	2.4	3.1	4.7	0.4
22mm Sub-caliber for 81mm mortar	1.4	1.9	2.8	0.5
25mm, M792	3.1	4.1	6.2	0.6
30mm, M789	2.8	3.7	5.6	0.7
35mm Sub-Caliber M73	0.5	0.7	1.0	0.9
37mm MK I & MK II	2.0	2.7	4.1	1.0
37mm M54	3.9	5.2	7.9	1.0
37mm M63	3.9	5.2	7.9	1.0
40mm M381	0.2	0.3	0.4	1.1
57mm M306	2.7	3.6	5.5	1.7
2.25" Rocket, MK 4	4.0	5.2	8.0	1.7
60mm M49	1.1	1.5	2.3	1.9
66mm M72	0.9	1.2	1.8	2.1
2.75" Rocket, MK 2	7.1	9.3	14.2	2.3
75mm M48	4.9	6.4	9.8	2.5
81mm M43	2.7	3.5	5.4	2.8
81mm, M56	2.0	2.7	4.1	2.8
83mm SMAW	2.8	3.6	5.6	2.9
84mm M136 (AT-4)	2.5	3.7	5.0	2.9
3.5" Rocket M28	0.8	1.1	1.7	3.2
105mm M1 (charge 7)	7.7	10.1	15.4	4.0
4.5" Fin Stabilized Rocket M8	4.7	6.1	9.3	4.4
4.5" Spin Stabilized Rocket M16	4.7	6.3	9.6	4.4
4.5" Barrage Rocket	0.5	0.7	1.0	4.4
Dragon Missile	0.9	1.1	1.7	4.3
4.2" M3 (max charge)	4.1	5.4	8.3	4.1

5" Rocket, MK 28	10.2	13.4	20.4	5.1
155mm, M101	15.8	20.7	31.6	6.7
155mm M107	14.0	18.4	28.0	6.7
11.75" Rocket, MK 3	13.8	18.2	27.7	16.3
Bomb, 3 lb, Practice, MK 3, 4, & 5[2]	1.0	1.4	2.1	2.1
Bomb, 25 lb Frag[2]	2.1	2.8	4.3	3.2
Bomb, 25 lb, Prac, BDU-33/MK 76[2]	2.1	2.8	4.2	3.8
Bomb, 30 lb, Frag, MK 5	2.4	3.1	4.7	4.0
Bomb, 100 lb GP, M30[2]	3.4	4.5	6.8	10.0
Bomb, 100 lb GP, M30[3]	6.1	8.0	12.2	10.0
Bomb, 100 lb GP, M30[4]	8.4	11.0	16.8	10.0
Bomb, 100 lb Prac, MK 15[2] (This is a light case munition which normally breaks up on impact, penetration depth is for intact round)	3.2	4.2	6.4	9.7
Bomb, 220 lb, Frag, M88[2]	4.4	5.8	8.8	9.7
Bomb, 220 lb, Frag, M88[3]	7.9	10.4	15.8	9.7
Bomb, 220 lb, Frag, M88[4]	10.8	14.2	21.7	9.7
Bomb, 250 lb GP, M57[2]	4.6	6.0	9.3	14.7
Bomb, 250 lb GP, M57[3]	8.3	10.9	16.6	14.7
Bomb, 250 lb GP, M57[4]	11.4	14.9	22.7	14.7
Bomb, 260 lb, Frag, M81[2]	4.7	6.2	9.4	9.7
Bomb, 260 lb, Frag, M81[3]	8.4	11.0	16.8	9.7
Bomb, 260 lb, Frag, M81[4]	11.5	15.1	23.0	9.7
Bomb, 350 lb, Depth, MK 47[2]	5.2	6.8	10.4	22.4
Bomb, 350 lb, Depth, MK 47[3]	9.3	12.2	18.6	22.4
Bomb, 350 lb, Depth, MK 47[4]	12.7	16.7	25.4	22.4
Bomb, 350 lb, Depth, MK 17[2]	5.2	6.8	10.4	22.7
Bomb, 350 lb, Depth, MK 17[3]	9.3	12.2	18.6	22.7
Bomb, 350 lb, Depth, MK 17[4]	12.7	16.7	25.4	22.7
Bomb, 500 lb, GP, MK 12[2]	5.9	7.7	11.7	20.6
Bomb, 500 lb, GP, MK 12[3]	10.5	13.8	21.0	20.6
Bomb, 500 lb, GP, MK 12[4]	14.3	18.9	28.8	20.6
Bomb, 500 lb GP, M64[2]	5.9	7.8	11.9	20.6
Bomb, 500 lb GP, M64[3]	10.6	13.9	21.2	20.6
Bomb, 500 lb GP, M64[4]	14.5	19.0	29.1	20.6

Bomb, 500 lb Prac, MK 21[2] (This is a light case munition which normally breaks up on impact, penetration depth is for intact round)	5.8	7.6	11.6	22.7
Bomb, 500 lb, SAP, M58[2]	5.8	7.6	11.6	16.4
Bomb, 500 lb, SAP, M58[3]	10.4	13.7	20.8	16.4
Bomb, 500 lb, SAP, M58[4]	14.2	18.7	28.5	16.4
Bomb, 1000 lb Prac, MK 22[2] (This is a light case munition which normally breaks up on impact, penetration depth is for intact round)	7.4	9.7	14.8	31.2
Bomb, 250 lb, GP, MK 81[2]	4.6	6.1	9.3	11.4
Bomb, 250 lb, GP, MK 81[3]	8.3	10.9	16.6	11.4
Bomb, 250 lb, GP, MK 81[4]	11.4	14.9	22.7	11.4
Bomb, 500 lb, GP, MK 82[2]	5.8	7.7	11.7	14.5
Bomb, 500 lb, GP, MK 82[3]	10.4	13.7	20.9	14.5
Bomb, 500 lb, GP, MK 82[4]	14.3	18.8	28.7	14.5

[1] Maximum detection depth using a magnetometer.
[2] Maximum depth of penetration assuming a velocity of 500 fps (5000 ft altitude, level flight).
[3] Maximum depth of penetration assuming a velocity of 800 fps (10000 ft altitude, level flight).
[4] Maximum depth of penetration assuming a velocity of 1100 fps (20000 ft altitude, level flight).

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: Shaped charge munitions contain sensitive fuzing and present a significantly enlarged hazard area forward of the munition. White Phosphorus filled munitions contain a filler which burns upon contact with air.

Types of Targets: Improvised Targets and Vehicle Hulls (1985)

Other Past Uses: None

Anticipated Future Use: Continued use as an impact area.

Public Access: Area is located on a restricted access military reservation.

2.210 IMPACT AREA "L-2"

The "L-2" Impact Area is located in the general vicinity of the Rifle Range Impact Area. It appears on an August 1951 map and is defined in Base Order 11102.1B, dated 5 May 1960. This base order identifies this impact area as authorized for artillery in one paragraph, but does not list it as an authorized Artillery Impact Area in another paragraph.

2.210.1 Range Identification

Common Name: Impact Area "L-2"

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 6** for location, also see plates 8, 10 and 12)

County: Onslow
State: North Carolina

BO 11102.1B identified this impact area as a circle with a radius of 960 meters centered at coordinates 7627033920.

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Unknown

Information Current as of: 1 February 2000

2.210.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Unknown	

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1951 to approximately 1962

Locations within Range of Known Munitions Use: Entire Range

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Unknown

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: Unknown

Other Past Uses: None

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.211 IMPACT AREA "M"

This range appears on a map dated 20 August 1941. Camp Training Order 5-1946, dated 19 March 1946, states that this Artillery Impact Area is disestablished and will no longer be used for firing of live ammunition.

2.211.1 Range Identification

Common Name: Impact Area "M"

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune** (See **Plate 2** for location)

County: Onslow
State: North Carolina

Camp Training Order Number 5-1946, identified this range as the "General area bounded by U. S. Route #17, Stone Creek, New River, Mill Creek, Verona Look Road, Lewis Creek, New River & Southwest Creek."

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Artillery – all types

Documents have been uncovered that indicate that Live Fire and Maneuver Exercises were conducted in this area and the use of Mortars, Recoilless Rifles, 2.36 in Rockets, and Hand and Rifle Grenades in this area is possible.

Information Current as of: 1 February 2000

2.211.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms	None
Hand Grenades, all types	Integral
Rifle Grenades, all types	Integral

60mm Mortar, all types	Point Detonating Powder Train Time
81mm Mortar, all types	Point Detonating Powder Train Time
37mm Gun, all types	Point Detonating
40mm Gun, all types	Point Detonating
75mm Howitzer, all types	Point Detonating Mechanical Time
105mm Howitzer	Point Detonating Mechanical Time
155mm Howitzer and Gun, all types	Point Detonating Mechanical Time
57mm Recoilless Rifle, all types	Point Detonating
75mm Recoilless Rifle, all types	Point Detonating
90mm Recoilless Rifle, all types	Base Detonating
2.36 Inch Rocket, HEAT & Practice	Base Detonating

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1941 to approximately 1945

Locations within Range of Known Munitions Use: Unknown

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: The following table gives the estimated maximum penetration depth based upon types of soil.

Munition	Maximum Penetration in sand (ft)	Maximum penetration in loam (ft)	Maximum penetration in clay (ft)	Maximum Detection Depth (ft)[1]
.30 Caliber, Ball, M1 (NOTE: Only complete rounds represent an explosive hazard and complete rounds are found on the surface)	1.3	1.7	2.6	0.1
.50 Caliber, Ball, M2 (NOTE: Only complete rounds represent an explosive hazard and complete rounds are found on the surface)	1.6	2.2	3.3	0.2

37mm MK I & MK II	2.0	2.7	4.1	1.0
37mm M54	3.9	5.2	7.9	1.0
37mm M63	3.9	5.2	7.9	1.0
40mm, MK II	4.4	5.8	8.9	1.1
57mm M306	2.7	3.6	5.5	1.7
M9 Rifle Grenade	0.1	0.2	0.2	1.7
60mm M49	1.1	1.5	2.3	1.9
2.36" Rocket, M6	0.4	0.5	0.8	1.9
M28/M31 HEAT Rifle Grenade	0.1	0.2	0.3	2.1
75mm M48	4.9	6.4	9.8	2.5
81mm M43	2.7	3.5	5.4	2.8
81mm, M56	2.0	2.7	4.1	2.8
90mm M371	2.0	2.7	4.1	3.2
105mm M1 (charge 7)	7.7	10.1	15.4	4.0
4.2" M3 (max charge)	4.1	5.4	8.3	4.1
155mm, M101	15.8	20.7	31.6	6.7
155mm M107	14.0	18.4	28.0	6.7

[1] Maximum detection depth using a magnetometer.

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: Shaped charge munitions contain sensitive fuzing and present a significantly enlarged hazard area forward of the munition.

Types of Targets: Unknown

Other Past Uses: None

Anticipated Future Use: Continued use as military maneuver and training area.

Public Access: Area is located on a restricted access military reservation.

2.212 ARTILLERY FIRING POINTS

The following artillery firing points have been identified on **Camp Lejeune**. This table gives the name of the firing point, location, date of document that identified the point, and types of weapons fired from the position, if known.

Firing Position Name	Source and Date	Location	Weapons Used and Direction of Fire
Gun Position 11B	1 Dec 86 Doc BO P11102.1K	8956-3421	
Demonstration Firing Point 1	18 Mar 46 Doc (deleted) Camp Training Order 7-1945	8374-3837	Direction of Fire Est. 215° Grid
Beach Artillery Firing Point	18 Mar 46 Doc (deleted) Camp Training Order 7-1945	9715-3424	
Artillery Demonstration Firing Point	18 Mar 46 Doc (deleted) Camp Training Order 7-1945	7587-3525	
Gun Position 13A	1 Dec 86 Doc BO P11102.1K	9612-3528	
Gun Position 13B	1 Dec 86 Doc BO P11102.1K	9611-3534	
Gun Position 14A	1 Dec 86 Doc BO P11102.1K	9701-3490	
Gun Position 14B	1 Dec 86 Doc BO P11102.1K	9694-3491	
Gun Position 21A	1 Dec 86 Doc BO P11102.1K	8862-3076	
Gun Position 21B	1 Dec 86 Doc BO P11102.1K	8865-3079	
Gun Position 23A	1 Dec 86 Doc BO P11102.1K	9184-3085	
Gun Position 23B	1 Dec 86 Doc BO P11102.1K	9205-3079	
Gun Position 24A	1 Dec 86 Doc BO P11102.1K	8507-2836	
Gun Position 24B	1 Dec 86 Doc BO P11102.1K	8522-2838	

Gun Position 25A	1 Dec 86 Doc BO P11102.1K	8618-2919	
Gun Position 25B	1 Dec 86 Doc BO P11102.1K	8638-2919	
Gun Position 26	1 Dec 86 Doc BO P11102.1K	9014-2946	
Gun Position 27A	1 Dec 86 Doc BO P11102.1K	9069-2810	
Gun Position 27B	1 Dec 86 Doc BO P11102.1K	9051-2811	
Gun Position 28A	1 Dec 86 Doc BO P11102.1K	9120-2935	
Gun Position 28B	1 Dec 86 Doc BO P11102.1K	9147-2898	
Gun Position 29A	1 Dec 86 Doc BO P11102.1K	8695-2586	
Gun Position 29B	1 Dec 86 Doc BO P11102.1K	8693-2594	
Gun Position 30A	1 Dec 86 Doc BO P11102.1K	8958-2715	
Gun Position 30B	1 Dec 86 Doc BO P11102.1K	8973-2716	
Gun Position 31A	1 Dec 86 Doc BO P11102.1K	8922-2670	
Gun Position 31B	1 Dec 86 Doc BO P11102.1K	8925-2668	
Gun Position 32	1 Dec 86 Doc BO P11102.1K	9276-2990	
Gun Position 33	1 Dec 86 Doc BO P11102.1K	8140-3040	
Gun Position 34	1 Dec 86 Doc BO P11102.1K	8070-3110	
Gun Position 39A	1 Dec 86 Doc BO P11102.1K	8519-3078	
Gun Position 39B	1 Dec 86 Doc BO P11102.1K	8512-3079	
Gun Position 40A	1 Dec 86 Doc BO P11102.1K	8645-3381	
Gun Position 40B	1 Dec 86 Doc BO P11102.1K	8650-3379	
Gun Position 41A	1 Dec 86 Doc BO P11102.1K	7533-2924	

Gun Position 41B	1 Dec 86 Doc BO P11102.1K	7535-2919	
Gun Position 42	1 Dec 86 Doc BO P11102.1K	8542-3227	
Gun Position Dove	1 Dec 86 Doc BO P11102.1K	8591-3065	
Gun Position 51	1 Dec 86 Doc BO P11102.1K	7869-4088	
Gun Position 52	1 Dec 86 Doc BO P11102.1K	7852-3685	
Gun Position 54	1 Dec 86 Doc BO P11102.1K	7574-3514	
Gun Position 55	1 Dec 86 Doc BO P11102.1K	7598-3470	
Gun Position Owl	1 Dec 86 Doc BO P11102.1K	7652-2857	
Firing Position 20	25 Sep 76 map	952-324	
Firing Position 21	25 Sep 76 map	887-308	
Firing Position 22	25 Sep 76 map	908-308	
Firing Position 23	25 Sep 76 map	916-308	
Firing Position 24	25 Sep 76 map	847-283	
Firing Position 25	25 Sep 76 map	868-294	
Firing Position 26	25 Sep 76 map	898-302	
Firing Position 27	25 Sep 76 map	904-282	
Firing Position 28	25 Sep 76 map	912-294	
Firing Position 29	25 Sep 76 map	872-260	
Firing Position 30	25 Sep 76 map	895-272	
Firing Position 31	25 Sep 76 map	892-266	
Firing Position 32	25 Sep 76 map	925-301	

Firing Position 33	25 Sep 76 map	809-298	
Gun Position D100	2 Jun 94 doc	8664-3377	
Gun Position D101	2 Jun 94 doc	8479-3280	
Gun Position D102	2 Jun 94 doc	8529-3210	
Gun Position D103	2 Jun 94 doc	8869-3075	
Gun Position D104	2 Jun 94 Doc	8759-3117	
Gun Position D105	2 Jun 94 doc	8645-3123	
Gun Position D106	2 Jun 94 doc	8576-3071	
Gun Position D107	2 Jun 94 doc	8459-3026	
Gun Position D108	2 Jun 94 doc	8136-3003	
Gun Position D109	2 Jun 94 doc	8055-3099	
Gun Position D110	2 Jun 94 doc	9012-2930	
Gun Position D111	2 Jun 94 doc	8929-2890	
Gun Position D112	2 Jun 94 doc	8583-2904	
Gun Position D113	2 Jun 94 doc	8518-2834	
Gun Position D114	2 Jun 94 doc	9042-2816	
Gun Position D115	2 Jun 94 doc	8947-2737	
Gun Position D116	2 Jun 94 doc	8926-2679	
Gun Position D117	2 Jun 94 doc	8715-2859	
Gun Position D118	2 Jun 94 doc	8860-2524	
Gun Position D119	2 Jun 94 doc	8268-3068	

Gun Position F100	2 Jun 94 doc	9387-3721	
Gun Position F101	2 Jun 94 doc	9510-3682	
Gun Position F102	2 Jun 94 Doc	9621-3525	
Gun Position F103	2 Jun 94 doc	9537-3514	
Gun Position F104	2 Jun 94 doc	9690-3492	
Gun Position F105	2 Jun 94 doc	9162-3074	
Gun Position F106	2 Jun 94 doc	9250-3170	
Gun Position F107	2 Jun 94 doc	9270-2995	
Gun Position F108	2 Jun 94 doc	9164-2860	
Gun Position J100	2 Jun 94 doc	9031-3771	
Gun Position S100	2 Jun 94 doc	9123-4107	
Gun Position S101	2 Jun 94 doc	9274-4062	
Gun Position W100	2 Jun 94 doc	8977-4198	
Mortar Position 1	2 Jun 94 doc	9031-3771	Direction of Fire 150°
Mortar Position 2	2 Jun 94 doc	9128-3734	Direction of Fire 175°
Mortar Position 3	2 Jun 94 doc	9248-3693	Direction of Fire 180°
Mortar Position 4	2 Jun 94 doc	9387-3721	Direction of Fire 200°
Mortar Position 5	2 Jun 94 doc	9510-3682	Direction of Fire 239°
Mortar Position 6	2 Jun 94 doc	8977-3437	Direction of Fire 70°
Mortar Position 7	2 Jun 94 doc	9537-3514	Direction of Fire 265°

Artillery Firing Point 1	18 Mar 46 Doc Camp Training Order 5-1946	8772-4213	90mm
Artillery Firing Point 2	18 Mar 46 Doc Camp Training Order 5-1946	9461-3926	90mm, 105mm
Artillery Firing Point 3	18 Mar 46 Doc Camp Training Order 5-1946	9665-3376	37mm, 57mm 75mm, 105mm (M7B1), Rocket (?4.5in?)
Artillery Firing Point 4	18 Mar 46 Doc Camp Training Order 5-1946	9057-3090	90mm, 105mm, 155mm
Artillery Firing Point 5	18 Mar 46 Doc Camp Training Order 5-1946	9113-2719	90mm, 40mm, .50 Caliber, .30 Caliber
Artillery Firing Point 6	18 Mar 46 Doc Camp Training Order 5-1946	8240-3146	37mm 75mm, 105mm (M7B1)
Artillery Firing Point 7	18 Mar 46 Doc Camp Training Order 5-1946	7304-4272	105mm
Firing Point 5	18 Mar 46 Doc (deleted) Camp Training Order 7-1945	8468-3730	Direction of Fire Est. 230° Grid
Artillery Firing Point 2 (1945)	18 Mar 46 Doc (deleted) Camp Training Order 7-1945	8683-2544 to 8764-2539	Direction of Fire Est. 135° Grid
Artillery Firing Point 8 (1945)	18 Mar 46 Doc (deleted) Camp Training Order 7-1945	9051-4249 to 9089-4270	Direction of Fire Est. 165° Grid
Artillery Firing Point 10 (1945)	18 Mar 46 Doc (deleted) Camp Training Order 7-1945	8409-3367	Direction of Fire Est. 295° Grid
Artillery Firing Point 12 (1945)	18 Mar 46 Doc (deleted) Camp Training Order 7-1945	8160-3105	Direction of Fire Est. 295° Grid

Artillery Firing Point 14 (1945)	18 Mar 46 Doc (deleted) Camp Training Order 7-1945	9084-3937 to 9094-3928 to 9095-3965 to 9110-3961	Direction of Fire Est. 295° Grid
Firing Position 1	25 Sep 76 map	912-417	
Firing Position 2	25 Sep 76 map	876-414	
Gun Position 1	1 Dec 86 Doc BO P11102.1K	9119-4107	
Gun Position 3	1 Dec 86 Doc BO P11102.1K	9223-4157	
Firing Position 3	25 Sep 76 map	923-416	
Firing Position 4	25 Sep 76 map	928-407	
Gun Position 4A	1 Dec 86 Doc BO P11102.1K	9270-4066	
Gun Position 4B	1 Dec 86 Doc BO P11102.1K	9287-4067	
Firing Position 5	25 Sep 76 map	881-383	
Firing Position 6	25 Sep 76 map	903-378	
Firing Position 7	25 Sep 76 map	914-374	
Firing Position 8	25 Sep 76 map	937-381	
Gun Position 6	1 Dec 86 Doc BO P11102.1K	9005-3760	
Firing Position 9	25 Sep 76 map	939-371	
Firing Position 10	25 Sep 76 map	952-368	
Firing Position 11	25 Sep 76 map	897-344	
Firing Position 12	25 Sep 76 map	955-350	
Firing Position 13	25 Sep 76 map	962-353	
Firing Position 14	25 Sep 76 map	970-348	
Firing Position 15	25 Sep 76 map	947-331	
Firing Position 16	25 Sep 76 map	902-332	
Artillery Position 1	6 Feb 70 Doc & map	915-414	105, 155H

Artillery Position 2	6 Feb 70 Doc & map	919-425	105, 155H, 155G, 8"H
Artillery Position 3	6 Feb 70 Doc & map	936-427	105, 155H, 155G, 8"H
Artillery Position 4	6 Feb 70 Doc & map	950-427	105
Artillery Position 5	6 Feb 70 Doc & map	883-387	105, 4.2
Artillery Position 6	6 Feb 70 Doc & map	906-379	105, 4.2
Artillery Position 7	6 Feb 70 Doc & map	917-372	105, 4.2
Artillery Position 8	6 Feb 70 Doc & map	945-387	105, 155H, 8"H
Artillery Position 9	6 Feb 70 Doc & map	940-372	105, 4.2
Artillery Position 10	6 Feb 70 Doc & map	370-952	105, 4.2
Artillery Position 11	6 Feb 70 Doc & map	897-343	4.2, 105
Artillery Position 12	6 Feb 70 Doc & map	953-350	105, 4.2
Artillery Position 13	6 Feb 70 Doc & map	962-353	105
Artillery Position 14	6 Feb 70 Doc & map	967-349	105
Artillery Position 15	6 Feb 70 Doc & map	947-333	105, 4.2
Artillery Position 16	6 Feb 70 Doc & map	903-325	105, 4.2
Artillery Position 17	6 Feb 70 Doc & map	913-326	105, 4.2
Artillery Position 18	6 Feb 70 Doc & map	936-326	105, 4.2
Artillery Position 19	6 Feb 70 Doc & map	947-325	105
Artillery Position 20	6 Feb 70 Doc & map	955-323	105
Artillery Position 21	6 Feb 70 Doc & map	887-310	105, 155H, 8"H
Artillery Position 22	6 Feb 70 Doc & map	909-310	105

Artillery Position 23	6 Feb 70 Doc & map	920-310	105, 155H, 8"H
Artillery Position 24	6 Feb 70 Doc & map	853-286	105, 155H, 155G, 8"H
Artillery Position 25	6 Feb 70 Doc & map	860-295	105, 155H, 155G, 8"H
Artillery Position 26	6 Feb 70 Doc & map	903-300	105, 155H, 8"H
Artillery Position 27	6 Feb 70 Doc & map	906-286	105, 155H, 8"H
Artillery Position 28	6 Feb 70 Doc & map	911-294	105, 155H, 8"H
Artillery Position 29	6 Feb 70 Doc & map	875-262	105, 155H, 155G, 8"H
Artillery Position 30	6 Feb 70 Doc & map	897-274	105, 155H, 8"H
Artillery Position 31	6 Feb 70 Doc & map	894-271	105, 155H, 155G, 8"H
Artillery Position 32	6 Feb 70 Doc & map	926-303	105, 155H, 155G, 8"H
Firing Position 17	25 Sep 76 map	912-323	
Firing Position 18	25 Sep 76 map	933-322	
Firing Position 19	25 Sep 76 map	942-322	
Gun Position 7	1 Dec 86 Doc BO P11102.1K	9147-3730	
Gun Position 8A	1 Dec 86 Doc BO P11102.1K	9372-3808	
Gun Position 8B	1 Dec 86 Doc BO P11102.1K	9353-3818	
Gun Position 9	1 Dec 86 Doc BO P11102.1K	9383-3715	
Gun Position 10A	1 Dec 86 Doc BO P11102.1K	9503-3694	
Gun Position 10B	1 Dec 86 Doc BO P11102.1K	9506-3685	
Gun Position 11A	1 Dec 86 Doc BO P11102.1K	8948-3433	

2.212.1 Range Identification

Common Name: Firing Point

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune**

County: Onslow
State: North Carolina
See Table Above

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Artillery and Mortar

At a firing point only items like unused propellant charges and supplemental charges would be found.

Information Current as of: 1 February 2000

2.212.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Artillery (propellant and supplemental)	NA
Mortar (propellant)	NA

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1941 to present

Locations within Range of Known Munitions Use: NA

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: NA

Other Past Uses: Firing points are located within the maneuver areas.

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

2.213 MANEUVER AND TRAINING AREAS

Virtually all available land areas on **Camp Lejeune** have been used as either maneuver or training areas. No information has been uncovered that specifies the exact training conducted, but normal training operations involve the use of blank ammunition, pyrotechnics and simulators. Each range map and range regulation uncovered identified maneuver and training areas available for use on the station.

2.213.1 Range Identification

Common Name: Maneuver and Training Areas

Range Identification Number: To Be Determined

Current Range Status: To Be Determined

DoD Point of Contact: To Be Determined

Location: **MCB Camp Lejeune**

County: Onslow
State: North Carolina

Ownership Interests: Department of Defense, US Navy, US Marine Corps

Known Deed Restrictions: None

General Types of Munitions Used: Blank Small Arms, Pyrotechnics, and Simulators

Information Current as of: 1 February 2000

2.213.2 Preliminary Range Assessment

Types of Munitions Employed	Fuzing
Small Arms, Blank	None
Pyrotechnics	Integral
Simulators	Integrals

NOTE: No information has been uncovered to provide an estimated quantity of munitions used on this range.

Time Frame of Use: 1941 to present

Locations within Range of Known Munitions Use: Unknown

Estimated Density of Munitions: Unknown

Estimated Depth of Munitions: Surface

Information on Past Range Clearances: None

The Marine Corps conducts periodic range clearances and dredging operations, but no specific information has been uncovered to indicate that this specific range has been cleared.

Specific Munitions Safety Issues: None

Types of Targets: NA

Other Past Uses: None

Anticipated Future Use: Continued use as a military training area.

Public Access: Area is located on a restricted access military reservation.

3.0 GENERAL MUNITIONS SAFETY ISSUES

In addition to the general safety guidance provided by OP-5 Volume 1, the following provides safety guidelines. These guidelines are extracted from an SOP entitled *Site Safety and Health Plans* developed by the Huntsville Engineering and Support Center, U.S. Army Corps of Engineers, dated 26 May 1994.

3.1 GENERAL

Observe the "cardinal principle" when exposed to explosives, ammunition, severe fire hazards or toxic materials. This principle states to limit the exposure to a minimum number of personnel, for a minimum amount of time, to a minimum amount of hazardous material consistent with a safe and efficient operation.

The age or condition of an ordnance item does not decrease its effectiveness. UXO exposed to the elements for extended periods of time can become more sensitive to shock, movement, and friction.

When the possibility of chemical agents exists, further precautions are necessary. Munitions with green markings may indicate a chemical filler. Personnel should leave the area immediately.

Consider ordnance exposed to fire as extremely hazardous. Chemical and physical changes may occur to the contents, rendering it more sensitive than in its original state.

3.2 ON-SITE GUIDANCE

- DO NOT TOUCH or MOVE any ordnance items regardless of the markings or apparent condition.
- DO NOT conduct a site visit during an electrical storm or an approaching electrical storm. If a storm approaches during the site visit, leave the site immediately and seek shelter.
- DO NOT use a radio or cellular phone in the vicinity of a suspect ordnance item.
- DO NOT walk across an area where the ground cannot be seen.
- DO NOT drive a vehicle into a suspected OE area; use clearly marked lanes.
- DO NOT carry matches, cigarettes, lighters or other flame producing devices into a OE site.
- DO NOT rely on color codes for positive identification of ordnance items or their contents.

Approach ordnance items from the side, avoid approaching from the front or rear. Always assume ordnance items contain a live charge until it can be determined otherwise. Dead vegetation and animals may indicate potential chemical contamination.

If a suspect area is encountered, personnel should leave the immediate area and evaluate the situation.

3.3 SPECIFIC ACTION UPON LOCATING ORDNANCE

- DO NOT touch, move or jar any ordnance item, regardless of its apparent condition.
- DO NOT be misled by markings on the ordnance item stating “practice”, “dummy”, or “inert”. Practice munitions may contain an explosive charge used for spotting the point of impact. The item may also be mismarked.
- DO NOT roll the item over or scrape the item to read the markings.

Clearly mark the location of any ordnance items found. Report UXO to the proper authorities on the installation or to local law enforcement. Only Military EOD personnel should render safe UXO.

APPENDICES

A ORDNANCE TECHNICAL DATA SHEETS

B REPORT DISTRIBUTION LIST

APPENDIX A

ORDNANCE TECHNICAL DATA SHEETS

APPENDIX A - ORDNANCE TECHNICAL DATA SHEETS

A-1 Small-Arms Ammunition

A-2 Grenade, Hand, Irritant, CN-DM, M6

A-3 Grenade, Hand, Tear, NC, M7 and M7A1

A-4 Grenade, Smoke, WP, M15

A-5 Grenade, Smoke, M18, with Fuze, M201, M201A1

A-6 Grenade, Hand, Fragmentation, MK II, MK IIA1

A-7 Grenade, Hand, Fragmentation, Delay, M26A1 and M26

A-8 Grenade, Hand, Fragmentation, Delay, M26A1 and M26

A-9 Grenade, Hand, Fragmentation, Delay, M33

A-10 Grenade, Hand, Fragmentation, Delay, M67

A-11 Grenade, Hand, Incendiary, TH3, AN-M14

A-12 Rifle Grenade, Anti-Tank, M9A1

A-13 Rifle Grenade, Heat, M31

A-14 Rifle Grenade, Anti-Tank, Practice, M29

A-15 Rifle Grenade, Smoke, WP, M19A1

A-16 Gas Identification Set, Detonation, M1, K951/K952

A-17 Gas Identification Set, Instructional, M1, (Navy Set), K955

A-18 Gas Identification Set, Instructional, M1, (Navy Set), K955

A-19 Toxic Gas Set, M1, K941

A-20 Toxic Gas Set, M2, K942

A-21 Rocket, 11.75 Inch, (Tiny Tim), w/Inert Head, Mk 3 Mod 0, 1, & 2

A-22 Rocket, 2.25-Inch Practice

A-23 Rocket, 2.36-Inch Antitank, M6A1

A-24 Rocket, 2.36-Inch Antitank, M6A3

A-25 2.75-Inch Rockets

A-26 Rockets, 5 Inch (HVAR)

A-27 Rocket, 5 Inch, (Zuni)

A-28 Rocket, Barrage, HE 4.5 Inch

A-29 Bomb, GP, 500-Pound, MK 82 Mod 1

A-30 Bomb, Low Drag, General Purpose, MK 81, 250 Pound; MK 82,500 Pound; MK 83, 1000 Pound; MK 84, 2000 Pound

A-31 Bomb, General Purpose, 2,000 Lb, AN-M66, AN-M66A1, & AN-M66A2

A-32 Bomb, General Purpose, 1,000 Lb, AN-M65 & AN-M65A1

A-33 Bomb, General Purpose, 500 Lb, AN-M64 & AN-M64A1

A-34 Bomb, General Purpose, 250 Lb, AN-M57 and AN-M57A1

A-35 Bomb, Practice, 100-Pound, MK15

A-36 Bomb, GP, 100-Pound, AN-M30

A-37 Bomb, Practice, 500-Pound, MK 5, MK15 and MK 21

A-38 Miniature Practice Bombs, AN-Mk 5 Mod 1, AN-Mk 23, AN-Mk 43

A-39 Bomb, Practice, 100 Pound, M38A2

A-40 Bomb, Practice, 5-Lbs, MK 106 Mod 0

A-41 Practice Bomb, 25-Pound, MK 76

A-42 Bomb, Practice, MK 89

A-43 Bomb, Practice, 500-Pound, MK 65

A-44 Bomb, Fragmentation, 20-Lbs, AN-M41 & AN-M41A1

A-45 Bomb, Fragmentation, 90 Lbs, M 82

A-46 Rocket, Heat, 3.5 Inch, M28A2

A-47 Bomb, Semi-Armor Piercing, 500 Lb, AN-M58 & AN-M58A1

A-48 Bomb, Armor Piercing, 1000 Lbs, AN-MK 33

A-49 Bomb, Fragmentation, 220-Lbs, AN-M 88 & 260-Lbs, AN-M 81

A-50 Bomb, Semi-Armor Piercing, 1000 Lb, AN-M59 & AN-M59A1

A-51 BGM-71, Tow Missile

A-51 Guided Missile, Dragon

A-52 AIM-9, Sidewinder Missile

A-53 Missile, AIM-7E3, AIM-7F/M, Sparrow

A-54 AGM-114, Hellfire Missile

A-55 Simulator, Projectile, Ground Burst, M115A2

A-56 Simulator, Hand Grenade, M116A1

A-57 Simulator, Flash, Artillery, M110

A-58 Simulator, Bobbytrap, Flash, M117; Illuminating, M118; Whistling, M119

A-59 Signals, Illumination, Ground, Parachute, White Star, M17A1; Green Star, M19A2; Amber Star, M21A1; Red Star, M51A1

A-60 Signals, Illum, Ground, Parachute, Red Star, M126A1; White Star, M127A1; Green Star, M195

A-61 Signals, Illumination, Ground, Star Clusters, Green, M125A1; Red, M158; White, M159

A-62 Signal, Illumination, Marine, AN-M75

A-63 Mortar, 4.2-Inch, Smoke, WP, M328

A-64 Mortar, 4.2-Inch, Smoke, PWP or WP, M2A1 and M2

A-65 Mortar, 4.2-Inch, Illum, M335A2

A-66 Mortar, 4.2-Inch, HE, M3A1 & M3

A-67 Mortar, 81mm, Smoke, WP, M370

A-68 Mortar, 81mm, Illuminating, M301A3

A-69 Mortar, 81mm, Illuminating, M301A2 and M301A1

A-70 Mortar, 81mm, HE and Practice, M43A1

A-71 Mortar, 81mm, Chemical, M57

A-72 Mortar, 81mm, Cartridge, Sabor, M1, 22-MM Sub-Caliber Practice Cartridge, M744, M745, M746 and M747

A-73 Mortar, 60mm Training, M69

A-74 Mortar, 60mm, Illuminating, M83A3, M83A2, & M83A1

A-75 Mortar, 60mm, HE, M49A2, Practice, M50A2

A-76 Mortar, 60mm, Cartridge, Sabor M3, 22-MM Sub-Caliber Practice Cartridge, M744, M745, M746 and M747

A-77 Projectile, 8-Inch, HE, M106

A-78 Projectile, 90mm, Recoilless Rifle, Practice, M371

A-79 Projectile, 155mm, Smoke, WP, M110 and M110E1

A-80 Projectile, 155mm, Illuminating, M118 Series

A-81 Projectile, 155mm, HE, M102, MK I, MK IA1

A-82 Projectile, 155mm, HE, M107

A-83 Cartridge, 106mm, Recoilless Rifle, HEP-T, M346A1

A-84 Cartridge, 106mm, Recoilless Rifle, Heat, M344A1 and M344

A-85 Cartridge, 105mm, TP-T, M67

A-86 Cartridge, 105mm, Smoke, HC & Colored, M84

A-87 Cartridge, 105mm, Illuminating, M314A3

A-88 Cartridge, 105mm, Smoke, WP, M60, M60A1, M60A2

A-89 Cartridge, 105mm, Heat-T, M622

A-90 Cartridge, 105mm, HE, M1

A-91 Cartridge, 90mm, Recoilless Rifle, Heat, M371A1

A-92 Shell, 90mm, Fixed, Practice, M58

A-93 Cartridge, 90mm, HE, M71; HE-T, M71A1

A-94 Shell, 90mm, Fixed, APC-T, M82

A-95 Shell, 90mm, AP, M77

A-96 Cartridge, 75mm, Recoilless Rifle, HE, M309A1

A-97 Shell, 75mm Howitzer, HE, M48

A-98 Shell, 75mm, HE, M41A1

A-99 Shell, 75mm, GUN, HE, M48

A-100 Shell, Fixed, 3-Inch, HE, M42 and M42A1

A-101 Shell, 3-Inch, Fixed, Armor Piercing, M79

A-102 Cartridge, 57mm, Recoilless Rifle, Heat, M307 & M307A1

A-103 Cartridge, 57mm, Recoilless Rifle, HE, M306A1

A-104 Cartridge, 57mm, Canister, T25E5, Recoilless Rifle

A-105 Cartridge, 40mm, AP-T, M 81

A-106 Projectile, 40mm, HE, HE-I, Mk 2

A-107 Cartridge, 37mm, APC, Fixed, M59

A-108 Cartridge, 37mm, HE, Fixed, M54 with Self Destruct Tracer

A-109 AR 750-10, 14 Feb 42

A-110 TM 9-855, 17 Aug 44

A-111 Memorandum from Commanding General, HQ, Camp Lejeune, to Commandant of the Marine Corps, dated 18 March 1946, Subject: Range Facilities, report of

A-112 Camp General Order Number 78 1946 and Modification No. 1, dated 9 December 1946 and 6 March 1947

A-113 Base Order 11102.1B, dated 5 May 1960

A-114 Base Order P11102.1G

A-115 Base Order P11102.1

A-116 Base Order P3570.1

SMALL-ARMS AMMUNITION

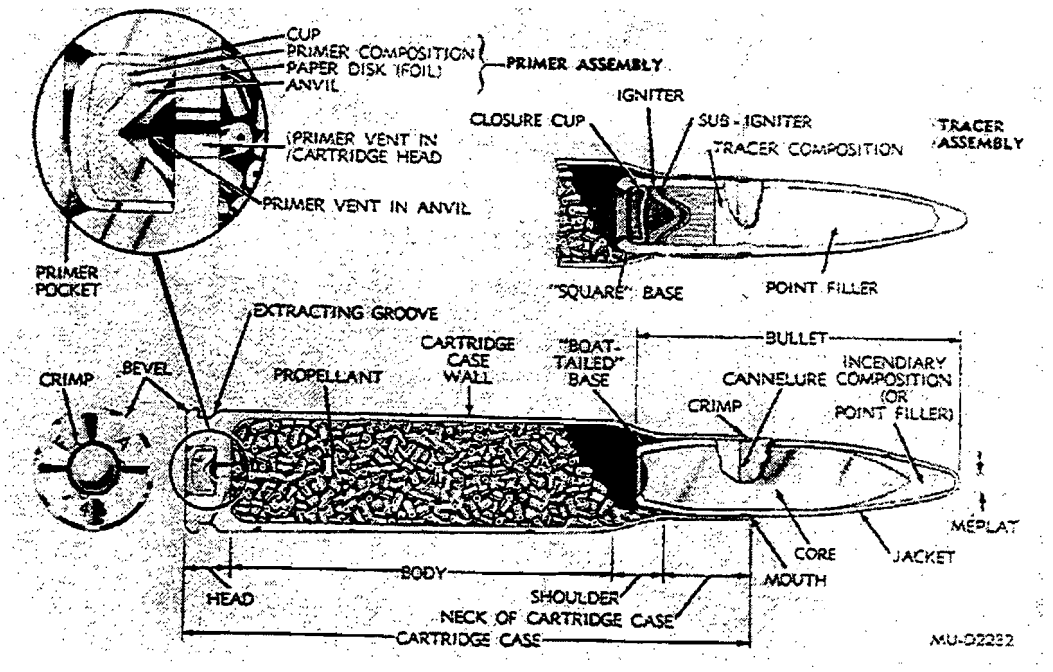


Figure 1. Typical cartridge (sectional)

General. Small-arms ammunition, as used herein, describes a cartridge or families of cartridges intended for use in various types of hand-held or mounted weapons through 30 millimeter. Within a caliber designation, these weapons may include one or more of the following: rifles (except recoilless), carbines, pistols, revolvers, machineguns and shotguns. For purposes of this publication, small-arms ammunition may be grouped as cartridges intended primarily for combat or training purposes (API, HEI, tracer or ball); for training purposes only (blank or dummy); or for special purposes (rifle grenade or spotter-tracer). Refer to TM 9-1306-200 for more detailed information on small-arms ammunition.

Cartridges. In general, a small-arms cartridge is identified as an assembly of a cartridge case, primer, a quantity of propellant within the cartridge case, and a bullet or projectile. Blank and rifle grenade cartridges are sealed with paper closure disks in lieu of bullets. Dummy cartridges are composed of a cartridge case and a bullet. Some dummy cartridges contain inert granular materials to simulate the weight and balance of live cartridges. A typical cartridge and the terminology of its components are shown in figure 1.

Case. Although steel, aluminum, zinc and plastic materials have been used experimentally, brass, a composition of 70 percent copper and 30 percent zinc, is the most commonly used material for cartridge cases. Steel, as well as brass, is an approved material for caliber .45 cartridge cases. Brass, paper and plastic are used for 12 gage shotshell bodies and aluminum is used for military-type .410 gage shotshell bodies.

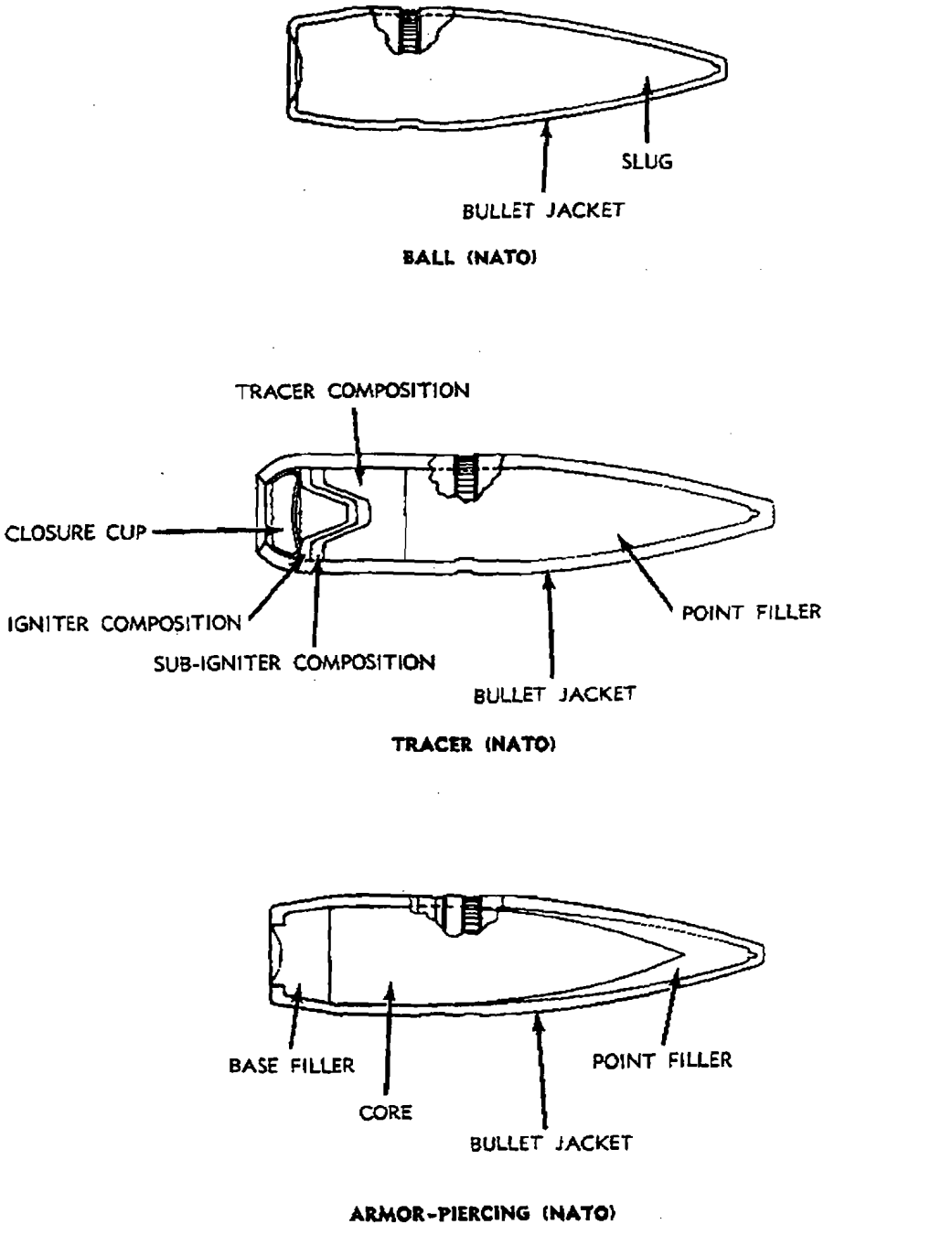


Figure 2. 7.62 mm bullets (sectional)

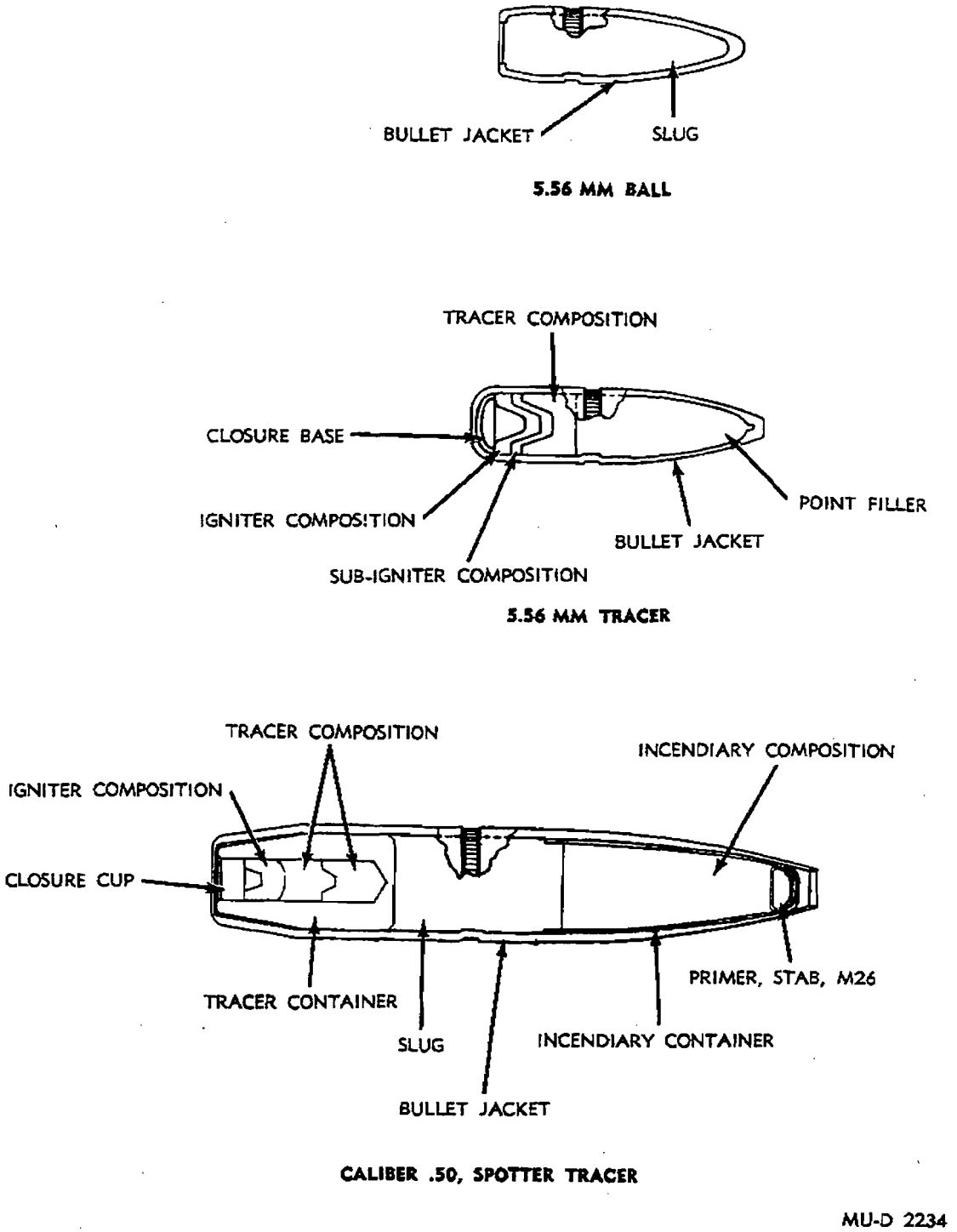


Figure 3. 5.56mm and caliber .50 spotter tracer bullets (sectioned).

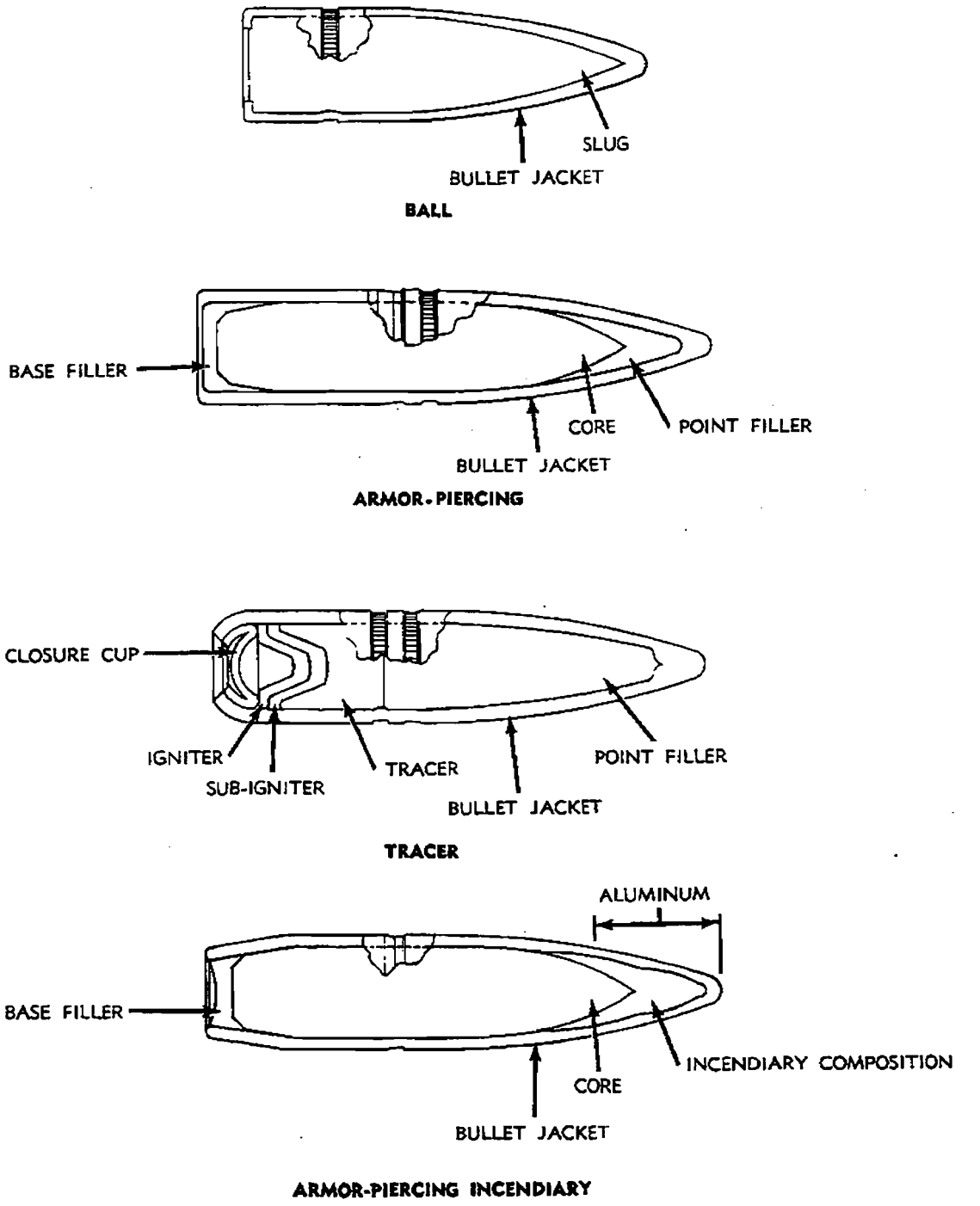


Figure 4. Caliber .30 bullets (sectional).

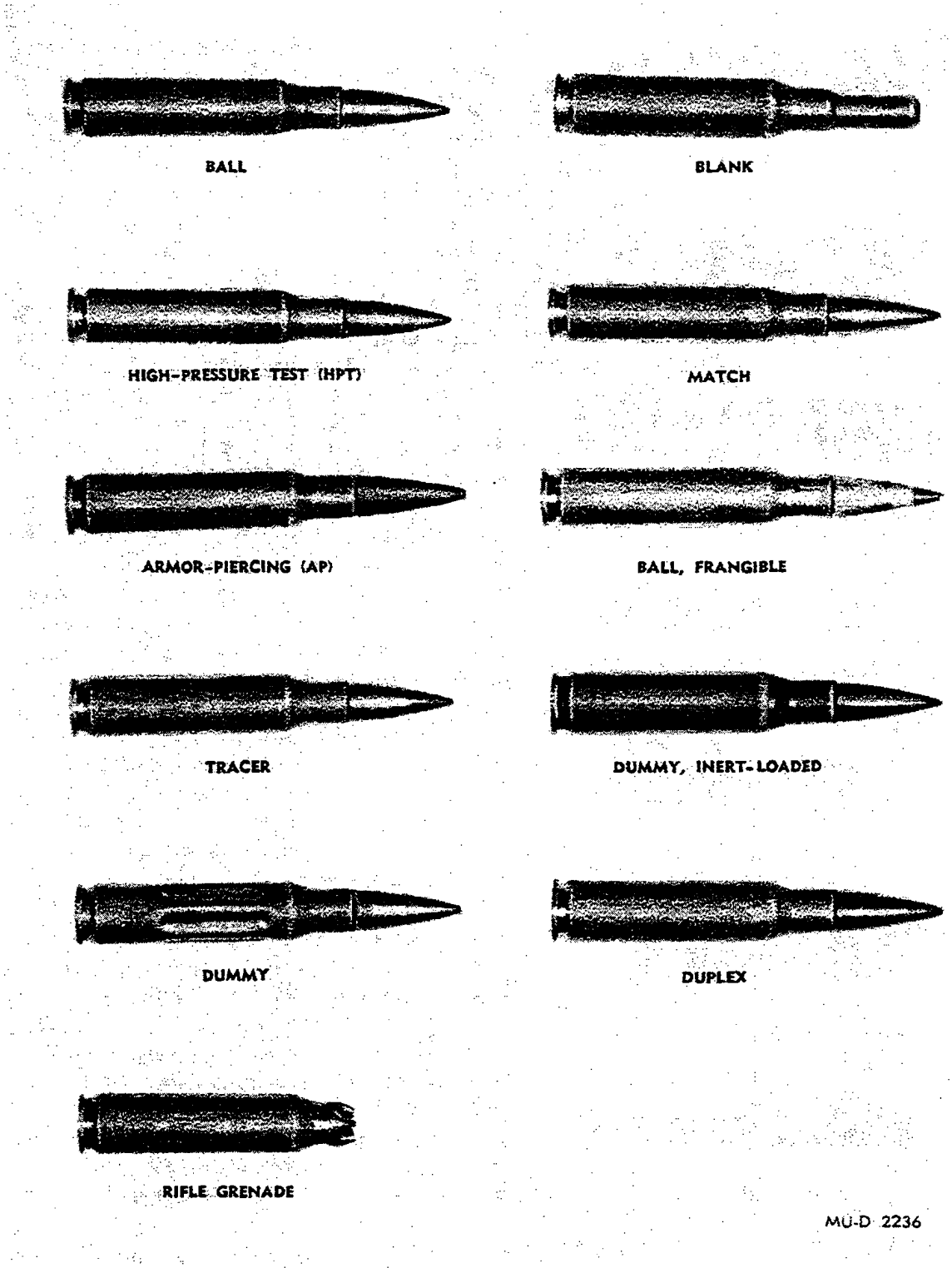


Figure 5. 7.62mm cartridges

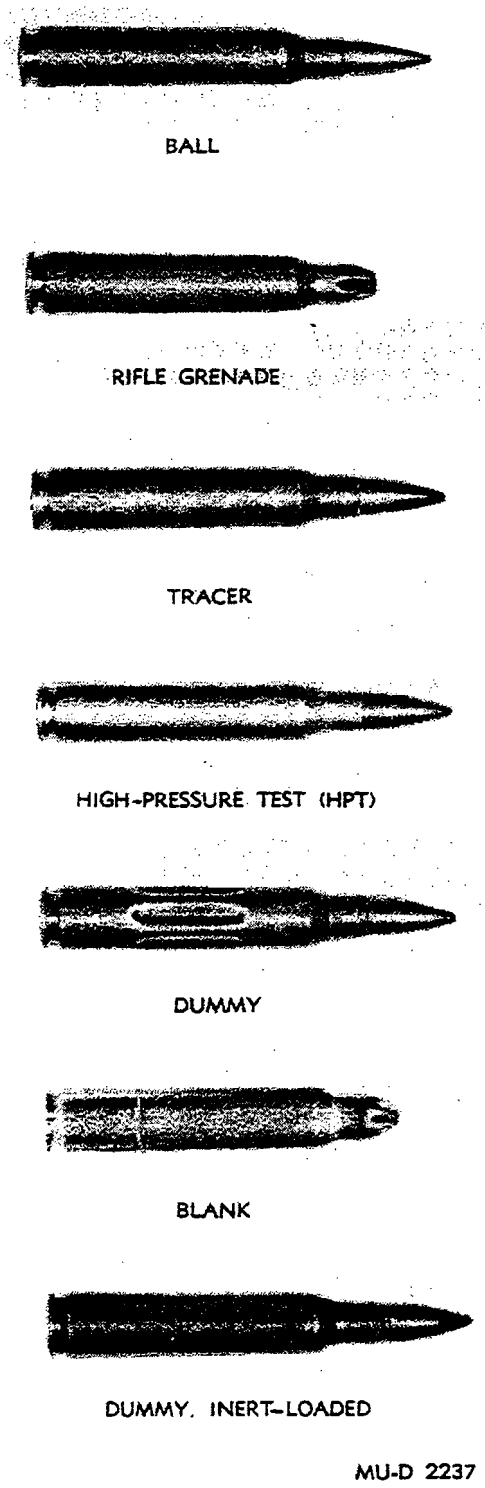


Figure 6. 5.56mm cartridges

Propellant. Cartridges are loaded with varying weights of propellant. This is to impart sufficient velocity (within safe pressures) to the projectile to obtain the required ballistic performance. These propellants are either of the single-base (nitrocellulose) or double-base (nitrocellulose and nitroglycerine) type. The propellant grain configuration may be cylindrical with a single, lengthwise perforation, spheroid (ball) or flake. Most propellants are coated with a deterrent (to assist in controlling the rate of combustion) and with a final coating of graphite (to facilitate flow of propellant and eliminate static electricity in loading cartridges).

Primer. Small-arms cartridges contain either a percussion or electric primer. The percussion primer consists of a brass or gilding metal cup that contains a pellet of sensitive explosive material secured by a paper disk and a brass anvil. The electric primer consists of an electrode button in contact with the priming composition, a primer cup assembly and insulator. A blow from the firing pin of the weapon on the center of the percussion primer cup base compresses the primer composition between the cup and the anvil. This causes the composition to explode. The function of the electric primer is accomplished by a firing pin with electrical potential, which contacts the electrode button. This allows current to flow through the energy-sensitive priming composition to the grounded primer cup and cartridge case, exploding the priming composition. Holes or vents in the anvil or closure cup allow the flame to pass through the primer vent in the cartridge case and ignite the propellant. Rimfire ammunition, such as the caliber .22 cartridge, does not contain a primer assembly. Instead, the primer composition is spun into the rim of the cartridge case and the propellant is in intimate contact with the composition. On firing, the firing pin strikes the rim of the cartridge case, compressing the primer composition and initiating its explosion.

Bullet. With few exceptions, bullets through caliber .50 are assemblies of a jacket and a lead or

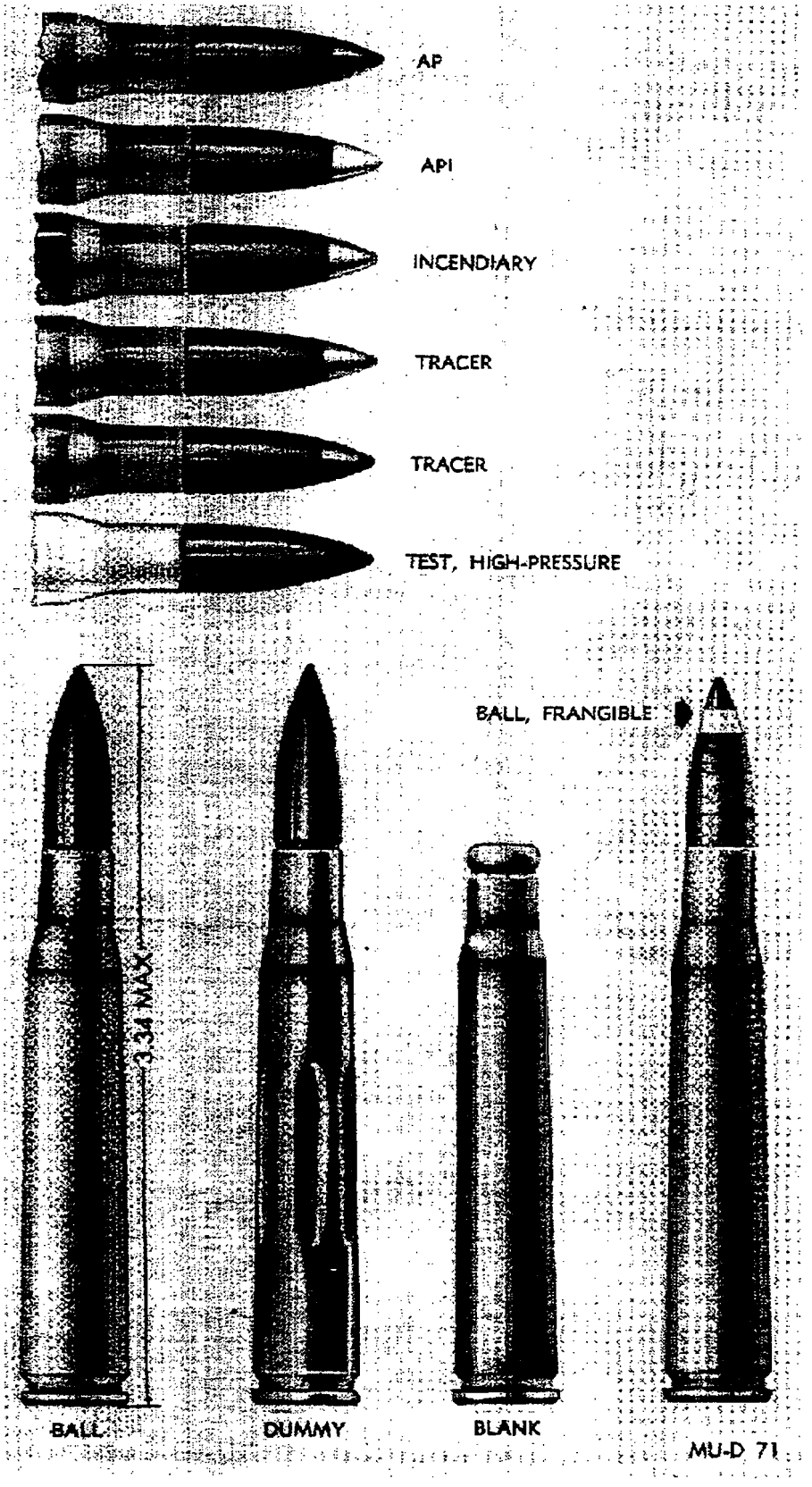


Figure 7. Caliber .30 cartridges

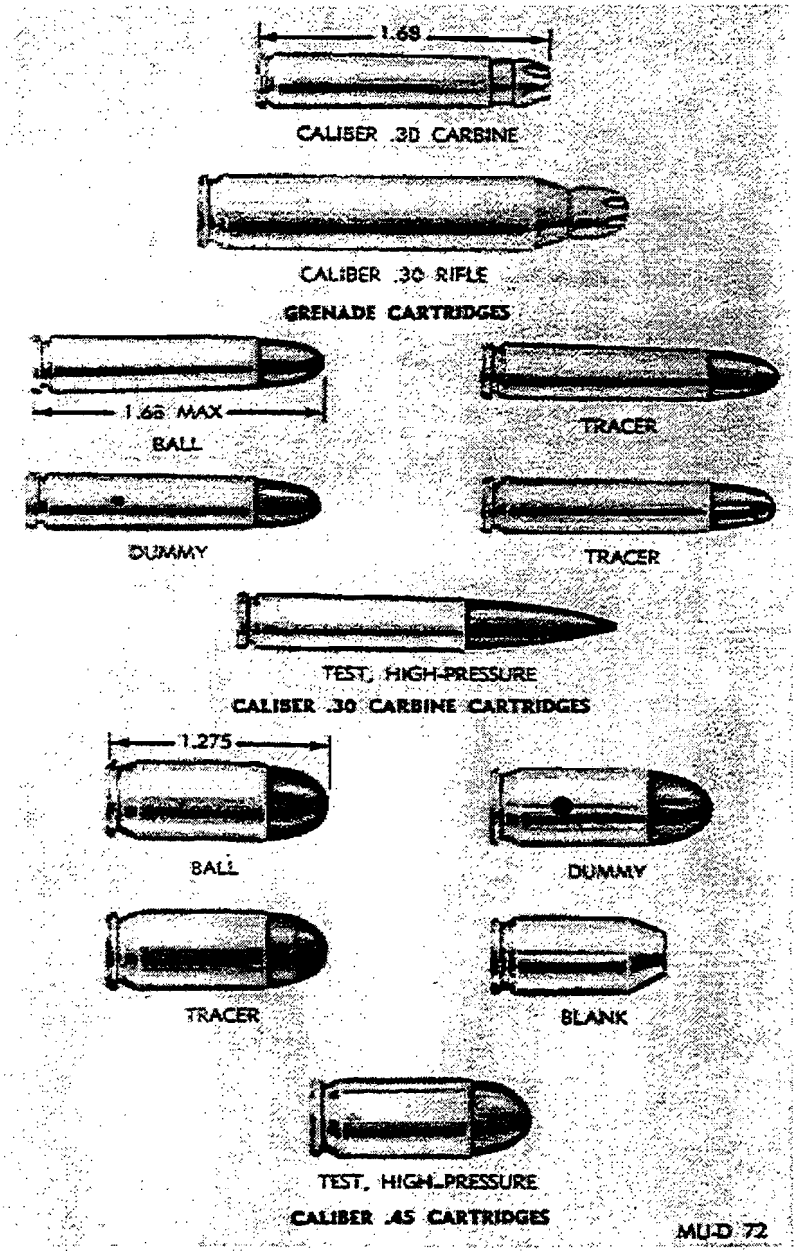


Figure 8. Caliber .30 carbine and caliber .45 cartridges

steel core. They may contain other components or chemicals which provide the terminal ballistic characteristics of the bullet type. The bullet jacket may be either gliding metal, gliding-metal clad steel, or copper plated steel. Caliber .30 and 7.62mm frangible bullets are molded of powdered lead and a friable plastic which pulverizes into dust upon impact with the target. The pellets used in the shotgun shells are spheres of lead alloys varying from 0.08 inch to 0.33 inch in diameter

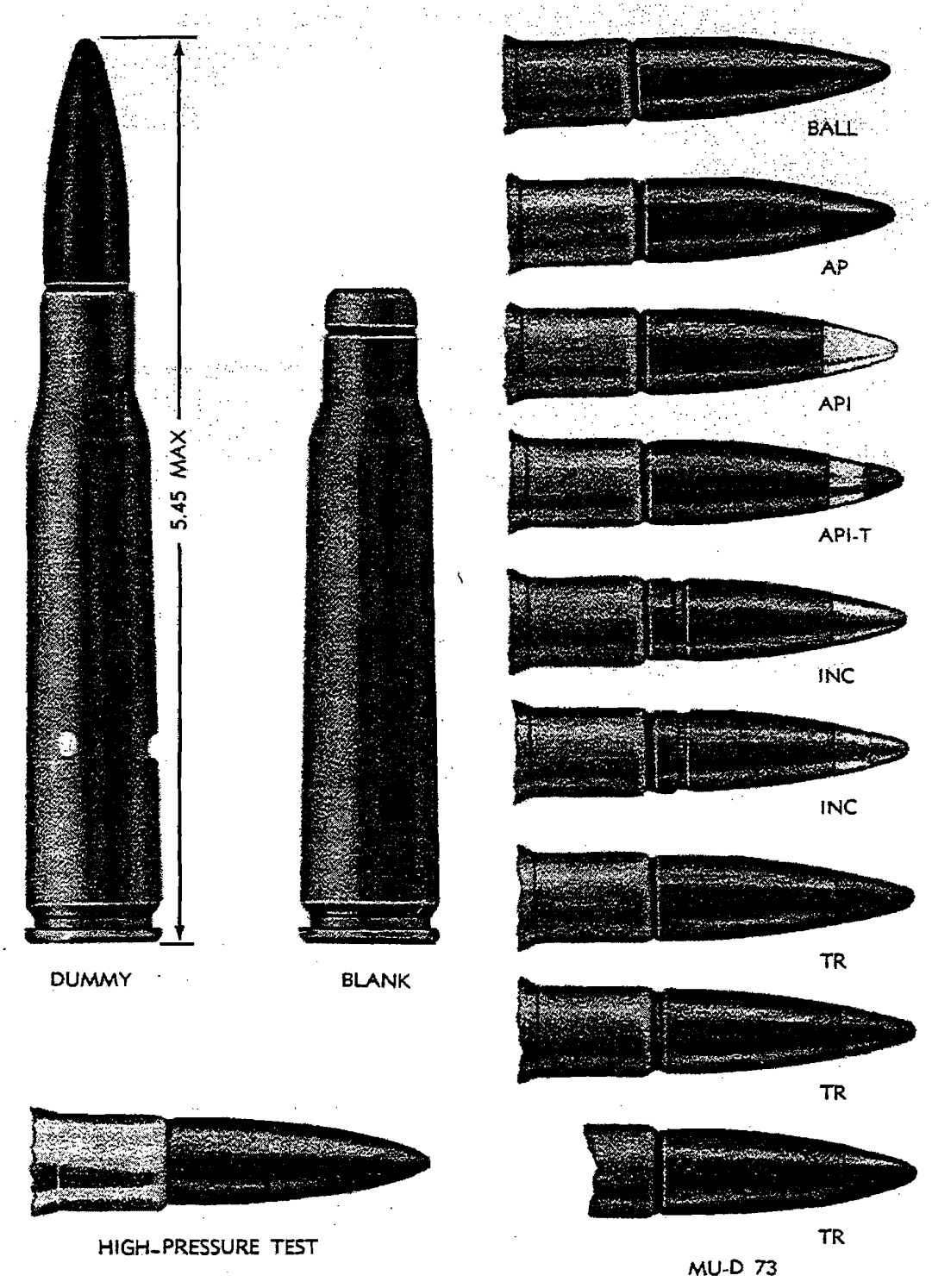


Figure 9. Caliber .50 cartridges

Ball Cartridge. The ball cartridge is intended for use in rifles, carbines, pistols, revolvers and/or machineguns against personnel and unarmored targets. The bullet, as designed for general purpose combat and training requirements, normally consists of a metal jacket and a lead slug. Caliber .60 ball bullet and 7.62-mm, ball M59 bullet contain soft steel cores.

Tracer Cartridge. By means of a trail of flame and smoke, the tracer cartridge is intended to permit visible observation of the bullet's in-flight path or trajectory and the point of impact. It is used primarily to observe the line of fire. It may also be used to pinpoint enemy targets to ignite flammable materials and for signaling purposes. The tracer element consists of a compressed, flammable, pyrotechnic composition in the base of the bullet. This composition is ignited by the propellant when the cartridge is fired. In flight, the bullet emits a bright flame which is visible to the gunner. Trace burnout occurs at a range between 400 and 1,600 yards, depending upon the caliber of ammunition.

Match Cartridge. The match cartridge is used in National and International Match Shooting competitions. The bullet consists of a gliding-metal jacket over a lead slug. The cartridges are identified on the head face with the designation NM (National Match) or Match.

Armor-Piercing Cartridges. The armor-piercing cartridge is intended for use in machine-guns or rifles against personnel and light armored and unarmored targets, concrete shelters, and similar bullet-resisting targets. The bullet consists of a metal jacket and a hardened steel-alloy core. In addition, it may have a base filler and/or a point filler of lead.

Armor-Piercing-Incendiary Cartridge. The armor-piercing-incendiary cartridge is used in rifles or machineguns as a single combination cartridge in lieu of separate armor-piercing and incendiary cartridges. The bullet is similar to the armor-piercing bullet, except that the point filler is incendiary mixture instead of lead. Upon impact with the target, the incendiary mixture burst into flame and ignites flammable material.

Armor-Piercing-Incendiary Tracer Cartridge. The bullet of the armor-piercing- incendiary-tracer cartridge combines the features of the armor-piercing, incendiary, and tracer bullets and may be used to replace those cartridges. The bullet consists of a hard steel core with compressed pyrotechnic mixture in the cavity in the base of the core. The core is covered by a gilding-metal jacket with incendiary mixture between the core point and jacket. This cartridge is for use in caliber .50 weapons only.

Duplex Cartridge. The duplex cartridge contains two special ball type bullets in tandem. The front bullet is positioned partially in the case neck, similarly to a standard ball bullet. The rear bullet, positioned completely within the case, is held in position by a compressed propellant charge. The base of the rear bullet is angled so that in flight, it follows a path slightly dispersed from that of the front bullet

Spotter-Tracer Cartridge. The spotter-tracer cartridge is intended for use in coaxially mounted caliber .50 spotting rifles. The bullet trajectory closely approximates that of 106mm projectiles. Thus, this cartridge serves as a fire control device to verify weapon sight settings before firing 106mm weapons. The bullet contains an impact detonator and incendiary composition which identify the point of impact by flash and smoke.

Blank Cartridge. The blank cartridge is distinguished by absence of a bullet. It is used for simulated fire, in training maneuvers, and for saluting purposes. It is fired in rifles and machineguns equipped with blank firing attachments.

Grenade Cartridge. The grenade cartridge is used to propel rifle grenades and ground signals from launchers attached to rifles or carbines. All rifle grenade cartridges are distinguished by the rose petal (rosette crimp) closure of the case mouth.

Frangible Cartridge. The caliber .30 frangible cartridge, designed for aerial target training purposes, is also used in rifles and machineguns for target shooting. Caliber .30 and 7.62mm frangible cartridges are used in tank machineguns, firing single shot, for training in tank gunnery. At its normal velocity, the bullet, which is composed of powdered lead and friable plastic, will completely disintegrate upon striking a 3/16-inch aluminum alloy plate at 100 yards from the muzzle of the gun. These cartridges are not to be used on any but well ventilated indoor ranges to preclude buildup of toxic bullet dust. Inhalation of bullet dust may be injurious to health

Incendiary Cartridge. The incendiary cartridge was designed for aircraft and ground weapon use to ignite combustible targets (e.g., vehicular and aircraft fuel tanks). The bullet contains a compressed incendiary mixture which ignites upon impact with the target. The incendiary cartridge has been superseded by the API and APIT cartridges because of their improved terminal ballistic effects

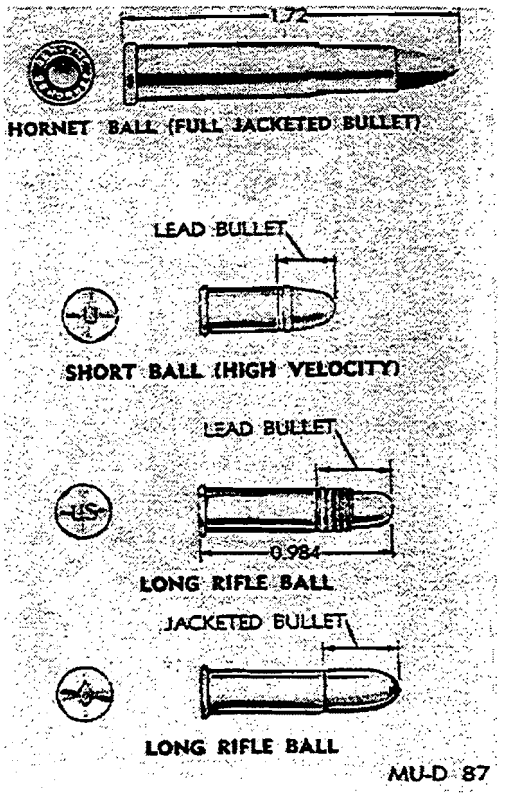


Figure 11. Caliber .22 cartridges

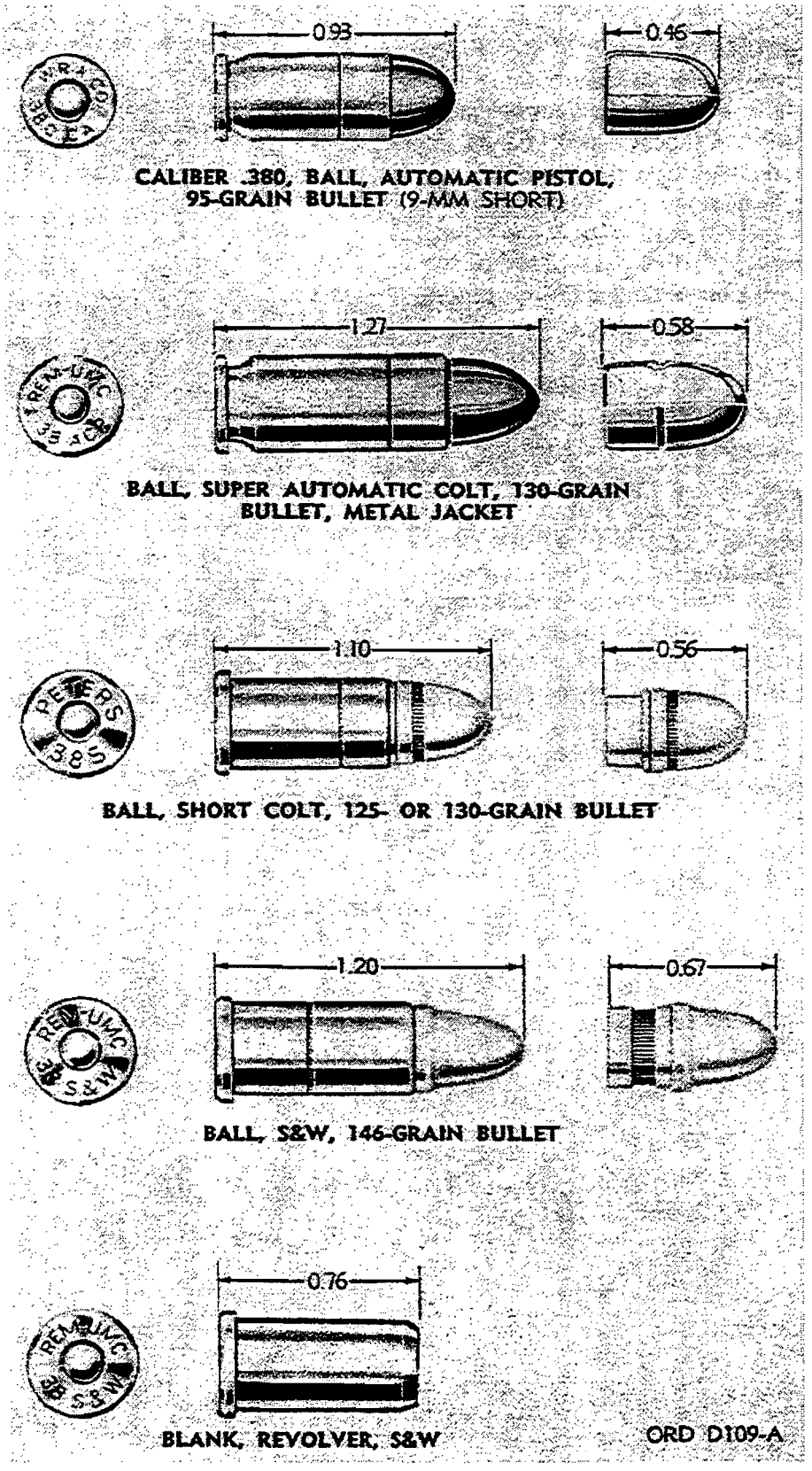


Figure 12. Caliber .38 cartridges.

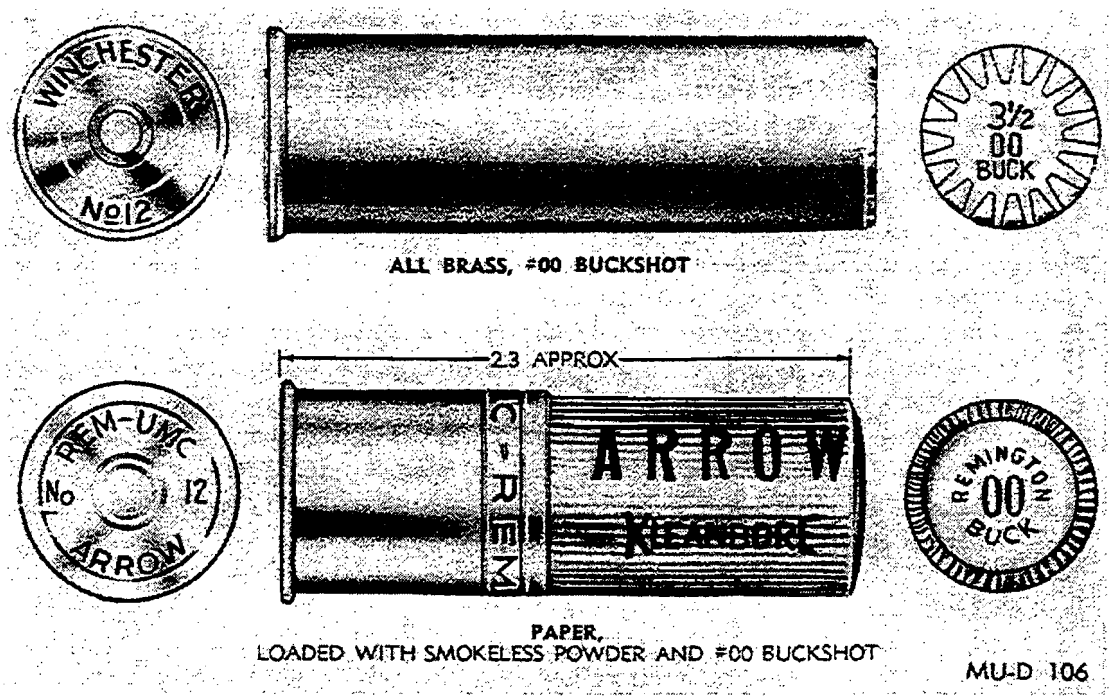


Figure 13. 12 gage shotgun shells.

Target-Practice Cartridge. The 20mm target-practice cartridge is the conventional steel shell with steel nose plug. It is used primarily for training purposes. This is not a combat cartridge; hence, no fuze is used in the assembly.

Special Purpose Cartridge.

Cartridges of various calibers. (fig. 11 through 13), which consist of different types of projectiles and bullets, are used for training and special purposes. They include the following:

(1) Caliber .22 long rifle and caliber .38 and .45 wad-cutter cartridge for target shooting.

(2) Caliber .45 blank cartridges fired in exercises to condition dogs to gun fire.

(3) Caliber .22 hornet and .410 shotgun cartridges for firing in Air Force combination (survival) weapons for hunting purposes.

(4) Caliber.45 line-throwing cartridges for firing in caliber .45 line-throwing rifles. The Navy uses these for throwing lines from ship-to-ship. The Army Signal Corps uses these for projecting signal wires over elevated terrain

(5) Shotshells containing the designated shot sizes as required for the following:

(a) 12 gage #00 Buck for guard duty

(b) 12 gage #4 Buck for guerrilla purposes.

(c) 12 gage #6, 7½ and 8 shot for clay target shooting for training purposes.

(d) .410 gage #7 shot for caliber .22/.410 survival weapons maintained by aircraft.

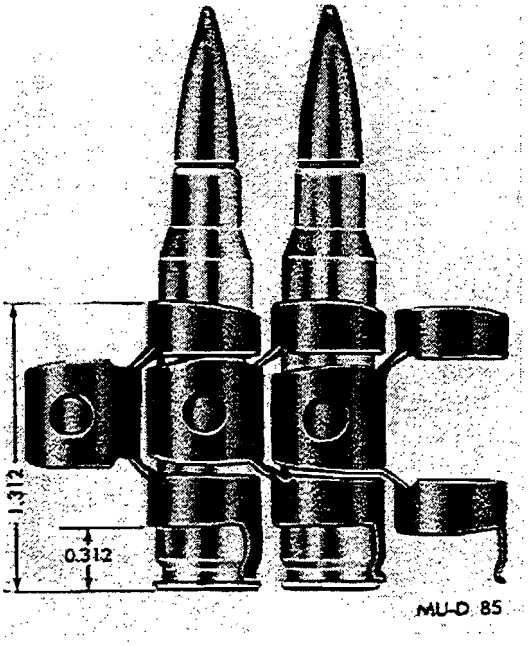


Figure 14. Linked 7.62-mm cartridge

Special purpose cartridges. These also include the following types of military cartridges:
(1) Dummy. The dummy cartridge is used for practice in loading weapons and simulated firing to detect flinching of personnel when firing weapons. It consists of a cartridge case and a ball bullet. Cartridge identification is by means of holes through the side of the case or longitudinal corrugations in the case and by the empty primer pocket.
(2) Dummy inert-loaded. This cartridge consists of a cartridge case, a ball bullet and inert granular material in the case simulating the weight and balance of a live cartridge. The exterior of the cartridge is identified by a black chemical finish and by the absence of a primer. This cartridge is used by installations for testing weapon function, linkage and feed chutes.
(3) High-pressure test. High-pressure test ammunition is specially loaded to produce pressures substantially in excess of the maximum average or individual pressures of the corresponding service cartridge. This cartridge is not for field issue. It is used only by armorers and weapons mechanics for proof firing of weapons (rifles, pistols, machine guns) at place of manufacture, test and repair. Because of excessive pressures developed by this type of ammunition, and the potential danger involved in firing, proofing of weapons is conducted only by authorized personnel from fixed and shielded rests by means of a lanyard or other remote control methods.

Metallic Links and Clip.

Metallic links. (fig. 14 and 15) are used with caliber .30, caliber .50, 5.56mm, 7.62mm and 20mm cartridges in machine guns. The links are made of steel, surface treated for rust prevention. They are used to assemble cartridges into linked belts of 100 to 750 cartridges per belt. The links must meet specific test and dimension requirements to assure satisfactory ammunition feed and functioning in the machine gun under all training and combat service conditions.

Different configurations of cartridge clips. These permit unitized packages of ammunition. This facilitates transfer of cartridges to appropriate magazines for caliber .30, 7.62mm and 5.56mm rifles. The caliber .30 eight-round clip feeds eight cartridges as a unit into the receiver of the rifle. The caliber .45 clip feeds three cartridges as a unit into the revolver cylinder. Five-round and eight-round clips are used with caliber .30 cartridges; five-round clips with 7.62mm cartridges; ten- round clips with caliber .30 carbine and 5.56-mm cartridges; and three-round clips with caliber .45 cartridges

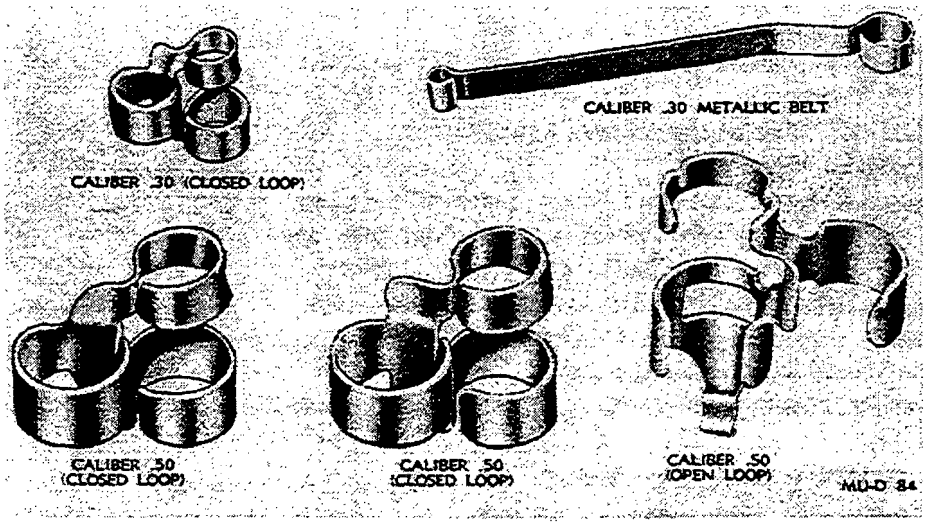


Figure 15. Links for caliber .30 and caliber .50 ammunition

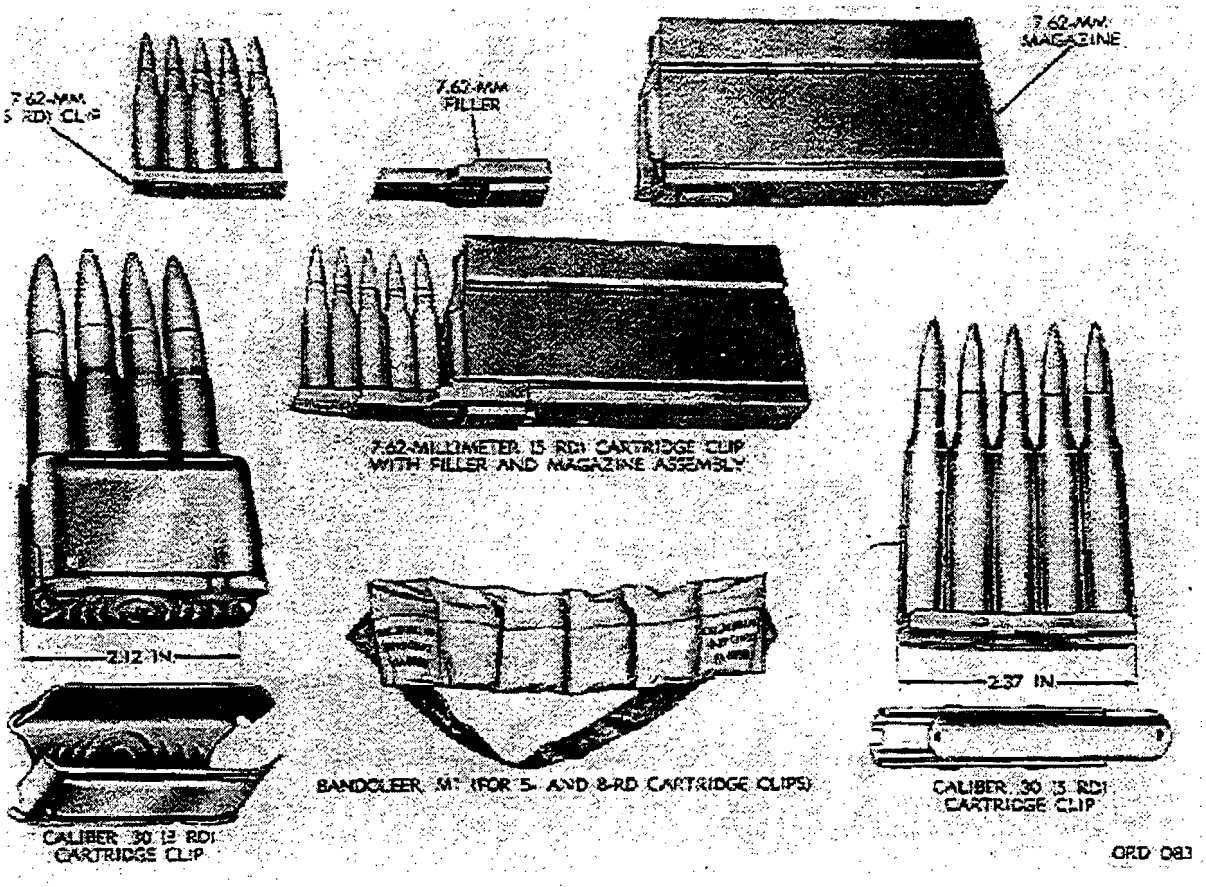


Figure 16. Cartridges in 20-round cartons in ammunition box

Packing and Identification Marking.

Packing. These containers and methods for packing military small-arms ammunition are specified in drawings, specifications or, as required, in the procurement contract. Military containers presently being manufactured have been limited to a few standard types designed to withstand all conditions commonly encountered in handling, storage and transportation of ammunition. Military cartridges, except 20mm, are packed in metallic ammunition boxes, over- packed in wooden wire-bound crates. Twenty millimeter cartridges are packed in ammunition boxes only. When commercial cartridges are not packed in a military pack, they are packed in accordance with standard commercial practices.

Identification Markings. Each outer shipping container and all inner containers are fully marked to identify the ammunition. Wire- bound boxes are marked in black and ammunition boxes are painted olive drab, with markings in yellow. When linked ammunition is functionally packed, component lot numbers are replaced by a functional lot number. Typical packing and identification markings are illustrated in figures 17 and 18.

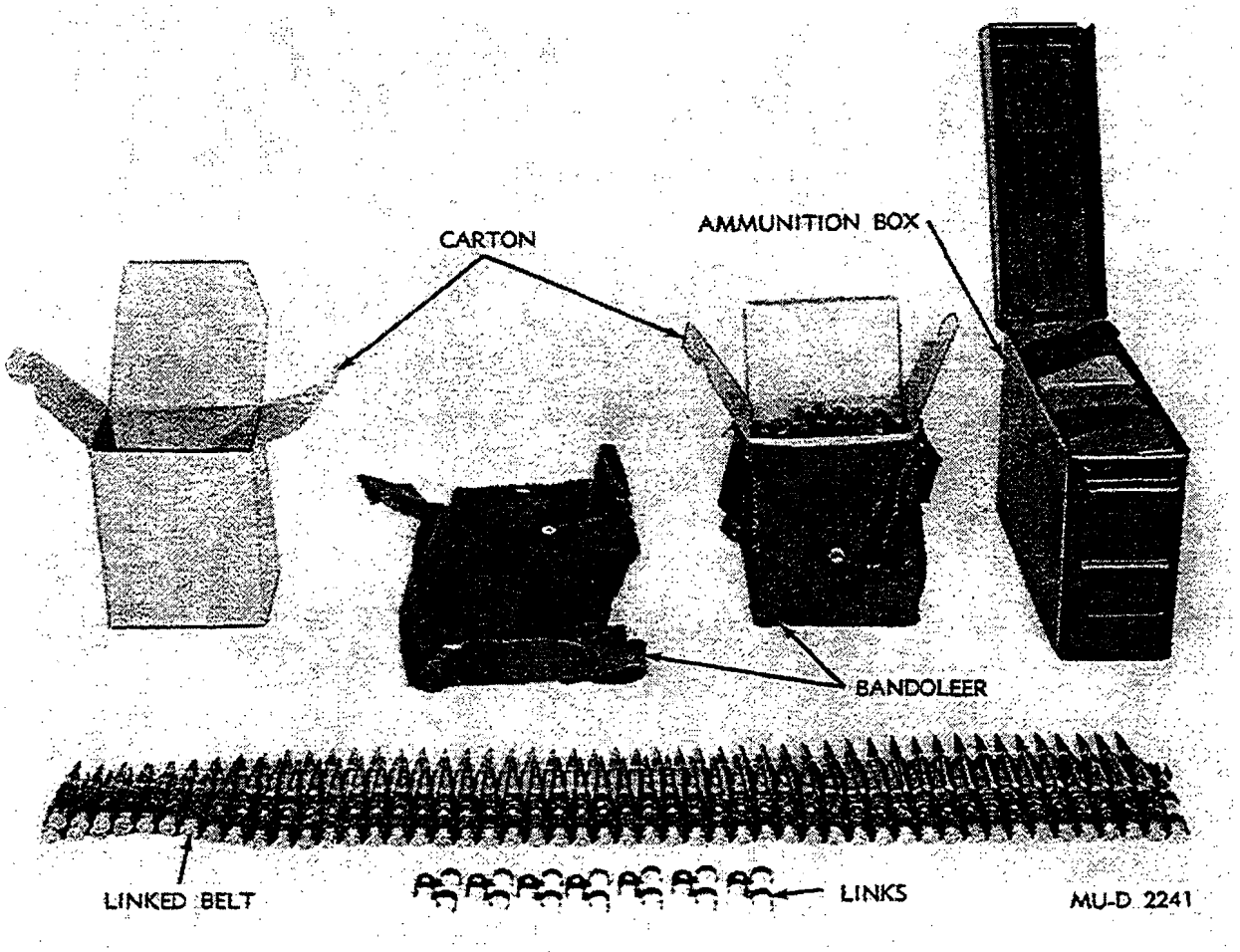
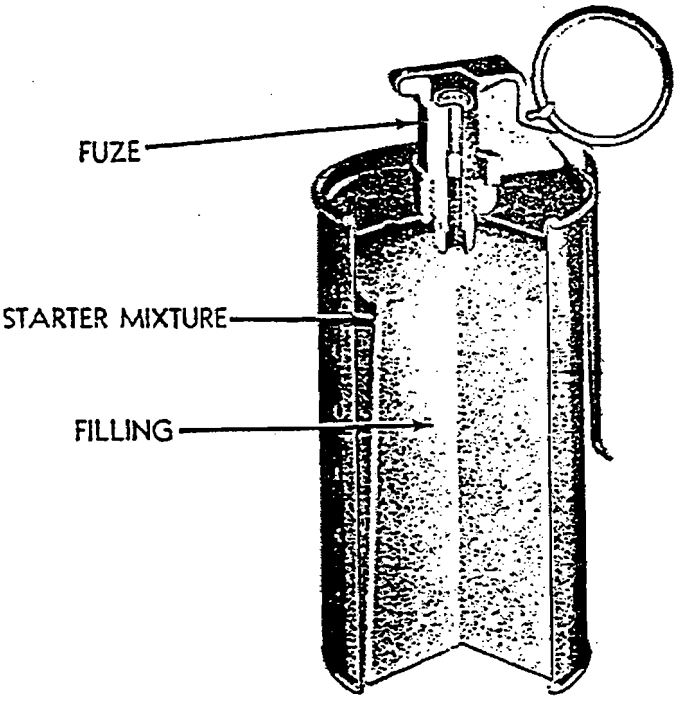


Figure 17. Cartridges, link belt, cartons, bandoleers and ammunition box.

Care, Handling and Preservation.
Small-arms ammunition is comparatively safe to handle. It is packed to withstand transportation, handling and storage conditions normally encountered in the field. However, consideration should be given to general handling precautions pertaining to ammunition and explosives.

Reference: This data is a reprint of Chapter 3, TM 9-1300-200, *Ammunition General, October 1969,* excluding information on 20mm and 30mm ammunition.

GRENADE, HAND, IRRITANT, CN-DM, M6

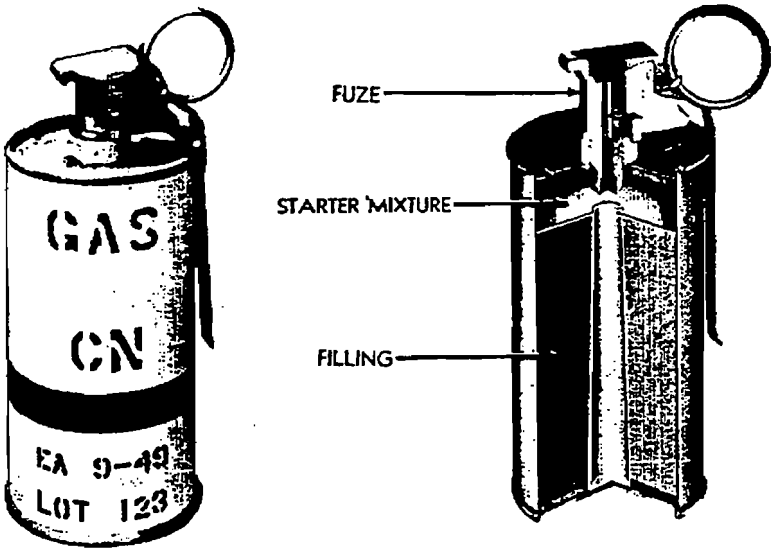


Description. The body of the M6 grenade is about 2½ inches in diameter and approximately 4½ inches high, made of 28 gage rolled steel. In the top of the body is a fuze adapter to receive the fuze assembly. Evenly spaced around the fuze adapter are emission holes covered with waterproof adhesive tape. In addition, it has three rows of 6 emission holes each in its body walls. The filling for this grenade consists of about 10 ounces of a mixture of chloroacetophenone (CN), adamsite (DM), and EC smokeless powder. A starter mixture, with binder, is contained in a zinc or plastic cup attached inside the top of the container. A fuze of the Bouchon type (M201) is positioned over the starter mixture through a threaded adapter in the top of the grenade. The fuze lever is held in an unarmed position by a ringed safety pin to prevent accidental ignition.

Length (body)	4.5 inches
Diameter	2.5 inches
Color	Blue gray or gray with 1 red band & red markings
Filler	chloroacetophenone (CN), adamsite (DM) and EC smokeless powder.
Weight of filler	10 ounces
Fuze	M201

Reference: TM 3-300, *Miscellaneous Chemical Munitions*, March 1950

GRENADE, HAND, TEAR, CN, M7 and M7A1



Description.

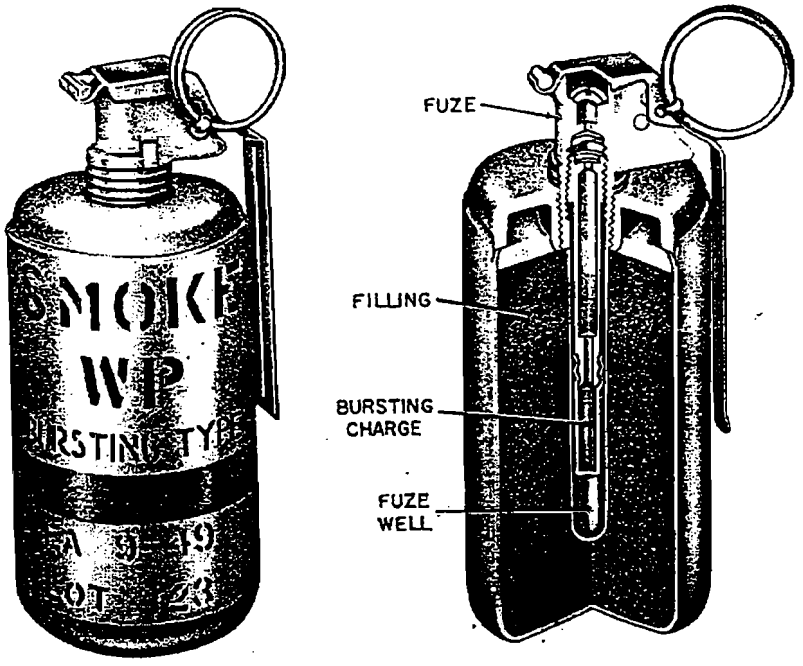
M7A1. This grenade is a cylindrical thin sheet metal container with four emission holes in the top and one in the bottom. The filler is a mixture of CN, sugar, potassium chlorate, potassium bicarbonate, and a finely divided inert substance (diatomaceous earth). The emission holes are covered with adhesive tape to protect the filling from moisture. filled with CN. The Fuze M201A1 is a pyrotechnic-igniting fuze.

M7. This grenade is similar to the M7A1 grenade, except that the M7 grenade has 18 emission holes in the sides and none in the bottom. It also contains less filler and produces about half as much effective CN gas as the M7A1. The grenade operates and functions in the same manner as the M7A1.

DODAC 1330-G960
Length ..... 5.7 inches
Diameter ..... 2.5 inches
Color ..... Blue gray or gray with 1 red band & red markings
Weight
  M7 ..... 17 ounces
  M7A1 ..... 18.5 ounces
Filler ..... CN- Pyrotechnic composition
Weight of filler
  M7 ..... 10.25 ounces
  M7A1 ..... 12.5 ounces
Fuze M201A1

Reference: TM 43-0001-29 w/change 11, *Ammunition Data Sheets for Grenades*, October 1977; TM 3-300, *Miscellaneous Chemical Munitions*, Mar 50

GRENADE, HAND, SMOKE, WP, M15



Use. White Phosphorous (WP) smoke, M15 is a bursting type grenade used for signaling, screening and incendiary purpose. The screening effect of the smoke is limited because WP burns with such intense heat, the smoke tends to rise rapidly. Pieces of WP will burn for about 60 seconds, igniting any flammable substance contacted.

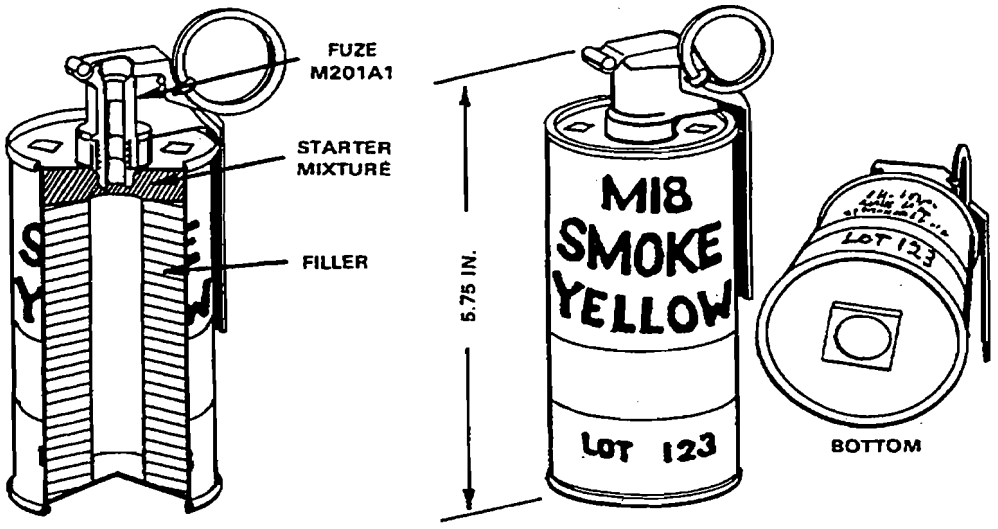
Description. The grenade body is of sheet steel and is cylindrical in shape. The body has a fuze well liner and is filled with WP.

Fuze. The Fuze M206A1 and M206A2 are pyrotechnic delay-detonating fuzes. They differ only in body construction. The body contains a primer and a pyrotechnic delay column. Assembled to the body are a striker, striker spring, safety lever, safety pin with pull ring, and a detonator assembly. The split end of the safety pin has an angular spread or a diamond crimp.

DODAC	1330-G935
Length	4.5 inches
Diameter	2.38 inches
Color	Grey with 1 yellow band and yellow markings
Weight	31 ounces
Filler	White Phosphorous (WP)
Weight of filler	15 ounces
Fuze	M206A1, M206A2

Reference: TM 43-0001-29 w/change 11, *Ammunition Data Sheets for Grenades*, October 1977

GRENADE, HAND, SMOKE, M18, WITH FUZE, M201, M201A1



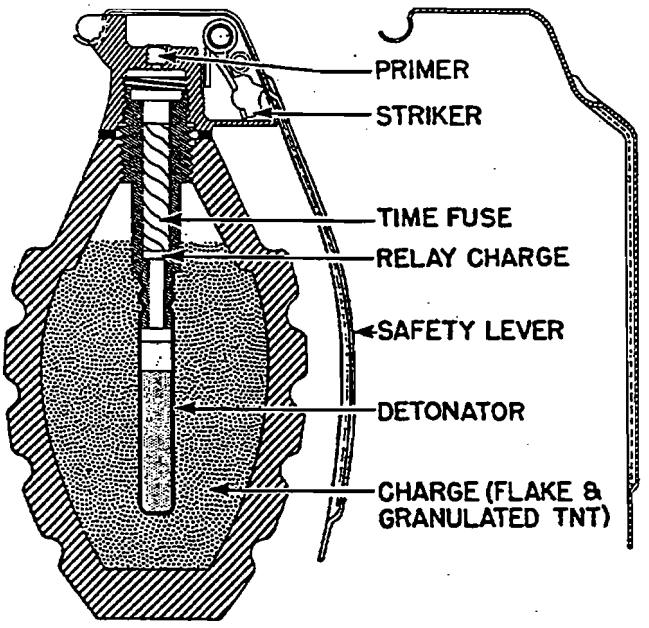
Description. These grenades may be filled with any one of seven smoke colors; red, orange, blue, green, black, violet, and yellow. The grenade body is of thin sheet metal and filled with a smoke composition. Emission ports are covered with small squares of adhesive tape and vary in quantity and location depending on the year of manufacturing.

The Fuze M201 and M201A1 is a pyrotechnic delay-igniting fuze. The body contains a primer, first fire mixture, pyrotechnic delay column, and ignition mixture

Length ..... 5.75 inch
Diameter ..... 2.5 inch
Color ..... Blue gray or light green with black markings
Weight ..... 19 ounces
Filler ..... Smoke composition
Weight of filler ..... 11.5 ounces
Fuze M201A1

Reference: TM 43-0001-29 w/change 11, *Ammunition Data Sheets for Grenades*, October 1977; NAVSEA OP 1664, *U.S. Explosive Ordnance*, May 47

GRENADE, HAND, FRAGMENTATION
MK II, MK IIA1



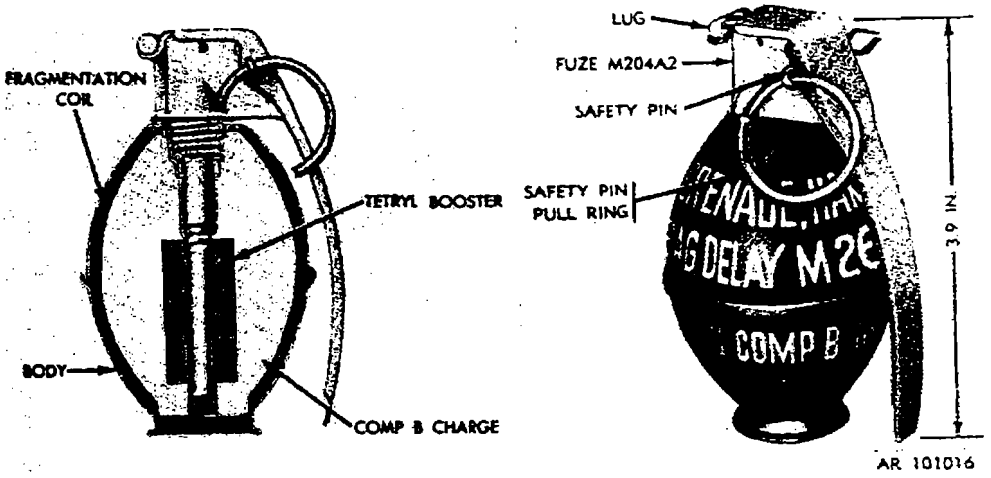
Description.
Mk II. The grenade has a serrated cast-iron body of the familiar "pineapple" design. The groves run both horizontally and vertically to assist in the formation of uniform fragments of effective size. The grenade is issued with Igniting Fuze M204.

Mk IIA1. Identical to the Mk II except for the Fuze M10A3. The only external difference is that the safety lever fits over rather than under the lip of the fuze body.

DODAC	1330-G890
Length	4.5 inches
Diameter	2.25 inches
Color	Olive Drab, with or without yellow band
Weight	21 ounces
Filling	TNT, Flaked or granular, older models used E.C. Blank Smokeless Powder
Weight of filling	2 ounces
Fuze	M204A1, M204A2

References: TM 43-0001-29, *Ammunition Data Sheets for Grenades,* October 1977; TM 9-1904, *Ammunition Inspection Guide*, March 1944; NAVSEA OP 1664 Volume 1&2 w/change 1, *U.S. Explosive Ordnance*, February 1954

GRENADE, HAND, FRAGMENTATION, DELAY, M26A1 AND M26



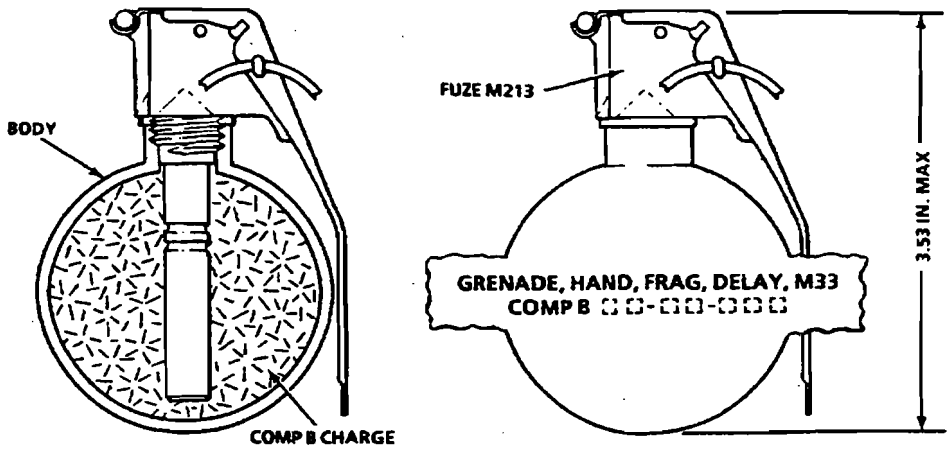
Use. The M26A1 and M26 fragmentation hand grenade is used to supplement small arms fire against the enemy in close combat. The grenade produces casualties by high velocity projection of fragments.

Description. The M26A1 is the M26 with preformed tetryl pellets around the fuze well line. Each grenade is assembled with a fuze that initiates the explosive charge. These grenades detonate 4 to 5 seconds after release of the safety lever. Bodies of the M26A1 and M26 are identical. The body is constructed of two pieces of thin-wall sheet steel and has a notched fragmentation coil liner. The fuzes M204A1 and M204A2 are pyrotechnic delay-detonating fuzes. They differ only in body construction. The body contains a primer and a pyrotechnic delay column. Assembled to the body are a striker, striker spring, safety lever, safety pin with pull ring, and a detonator assembly. The split end of the safety pin has an angular spread or diamond crimp.

Length ..... 3.9 inches
Diameter ..... 2.25 inches
Weight ..... 16 ounces
Color ..... Olive Drab, with yellow markings
Filler ..... Comp B
Weight ..... 5.8 ounces
Fuze M204A1, M204A2

Reference: TM 43-0001-29, *Ammunition Data Sheets for Grenades,* October 1977

GRENADE, HAND, FRAGMENTATION, DELAY, M33



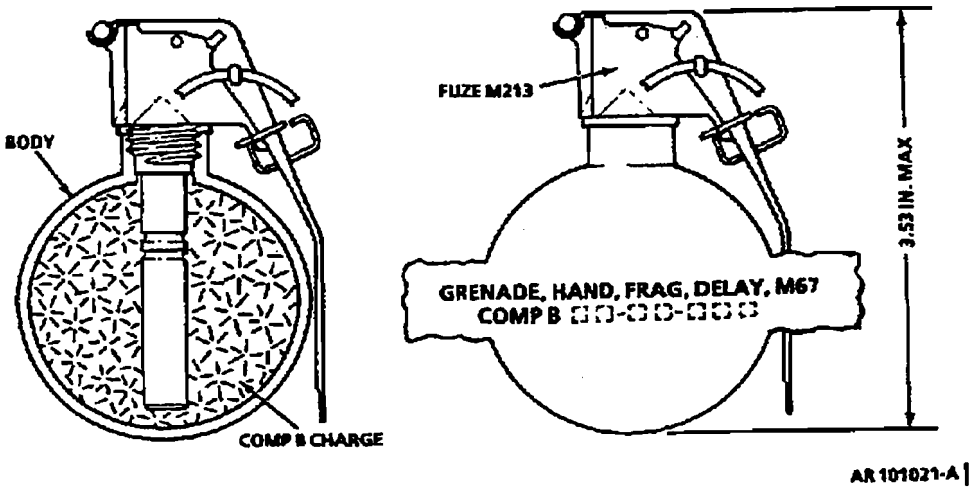
Use. The M33 fragmentation hand grenade is used to supplement small arms fire against the enemy in close combat. The grenade produces casualties by high velocity projection of fragments.

Description. The grenade body is a 2.5-inch diameter steel sphere which is designed to burst into numerous fragments when detonated. The grenade body contains 6.5 ounces of high explosive, Composition B. Each grenade is fitted with a fuze that initiates the explosive charge.
The M33 grenade uses the M213 fuze which is a pyrotechnic delay-detonating fuze. It will function the grenade 4 to 5 seconds after release of the safety lever. The body of the fuze contains a primer and a pyrotechnic delay column. Assembled to the body are a striker, striker spring, safety lever, safety pin, pull ring, and a detonator assembly. The M213 fuze is equipped with a steel safety pin and pull ring. The split end of the safety pin is either spread approximately 40 degrees or diamond-shaped to prevent accidental removal and arming during shipping and handling. The pull ring is provided to facilitate easy removal of the safety pin.

Length ..... 3.53 inches
Diameter ..... 2.5 inches
Weight ..... 14 ounces
Color ..... Olive Drab, with yellow markings
Filler ..... Comp B
Weight ..... 6.5 ounces
Fuze ..... M213 Pyrotechnic delay

Reference: TM 43-0001-29, *Ammunition Data Sheets for Grenades*, October 1977

GRENADE, HAND, FRAGMENTATION, DELAY, M67



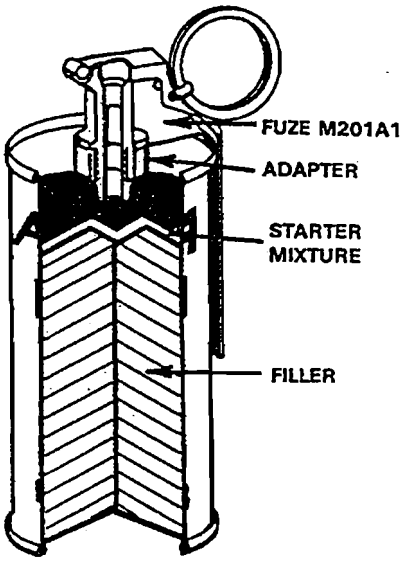
Use. The M67 fragmentation hand grenade is used to supplement small arms fire against the enemy in close combat. The grenade produces casualties by high velocity projection of fragments in a uniform distribution pattern..

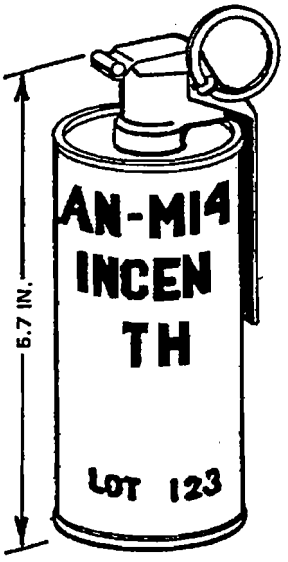
Description. The grenade body is a 2.5-inch diameter steel sphere which is designed to burst into numerous fragments when detonated. The grenade body contains 6.5 ounces of high explosive, Composition B. Each grenade is fitted with a fuze that initiates the explosive charge.
The M67 grenade uses the M213 fuze which is a pyrotechnic delay-detonating fuze. It will function the grenade 4 to 5 seconds after release of the safety lever. The body of the fuze contains a primer and a pyrotechnic delay column. Assembled to the body are a striker, striker spring, safety lever, safety pin, pull ring, and a detonator assembly. The M213 fuze is equipped with a steel safety pin and pull ring. The split end of the safety pin is either spread approximately 40 degrees or diamond-shaped to prevent accidental removal and arming during shipping and handling. The pull ring is provided to facilitate easy removal of the safety pin. A second safety feature is the steel safety clip.

Length ..... 3.53 inches
Diameter ..... 2.5 inches
Weight ..... 14 ounces
Color ..... Olive Drab, with yellow markings
Filler ..... Comp B
Weight ..... 6.5 ounces
Fuze ..... M213 Pyrotechnic delay

Reference: TM 43-0001-29, *Ammunition Data Sheets for Grenades,* October 1977

GRENADE, HAND, INCENDIARY, TH3, AN-M14





Use. The TH3 incendiary hand grenade AN-M14 is used primarily to provide a source of intense heat to destroy equipment.

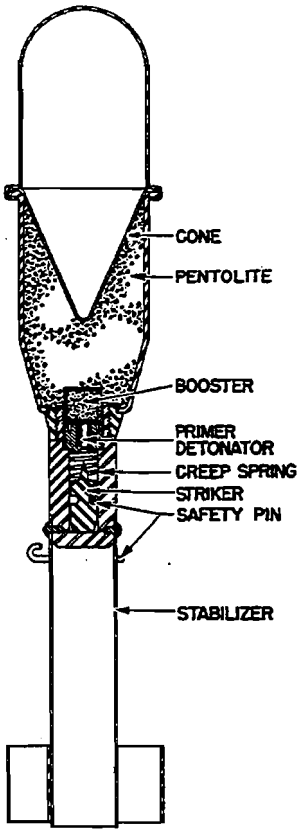
Description. The TH3 incendiary hand grenades generates heat to 4000• F. The grenade filler will burn from 30 - 45 seconds. The grenade body is of thin sheet metal and is cylindrical in shape. It is filled with an incendiary mixture, Thermite TH3 and First Fire Mixture VII.

The Fuze M201A1 is a pyrotechnic delay-igniting fuze. The body contains a primer, first fire mixture, pyrotechnic delay column, and ignition mixture. Assembled to the body are a striker, striker spring, safety lever and safety pin with pull ring. The split end of the safety pin has an angular spread.

Length ..... 5.7 inch
Diameter ..... 2.5 inch
Color ..... Light red w/black markings
Weight ..... 32 ounces
Filler ..... Igniter mixture III, delay mixture V, FF mixture VII, incendiary mixture, Thermite, TH3 and thermite, plain
Weight of filler ..... 26 ½ ounces
Fuze M201A1

Reference: TM 43-0001-29 w/change 11, *Ammunition Data Sheets for Grenades*, October 1977

RIFLE GRENADE, ANTI-TANK, M9A1



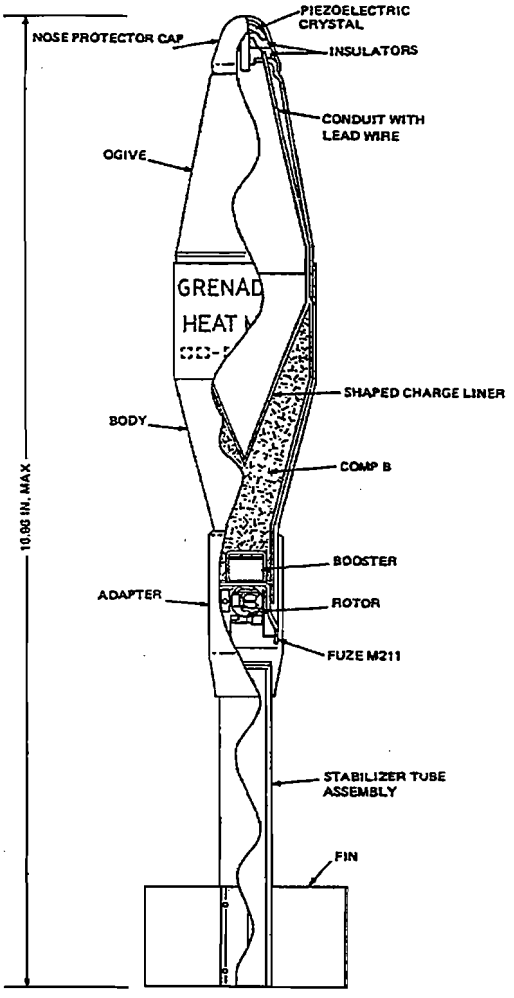
Description. Anti-Tank Grenade M9A1 consists of a body, a stabilizer assembly, and a fin. The body is cylindrical, the two pieces joined in the middle with rounded ends. The stabilizer is a hollow tube which screws into the base of the body and fits over the launcher. The body is made of cast metal. The impact fuze, which consists of a striker held away from the detonator by a creep spring and a safety pin, is assembled integrally with the stabilizer assembly. The safety pin projects through the fuze body and clamps around the stabilizer tube. When the pin is withdrawn, a drop of two feet, nose first, to a hard surface will cause the fuze to function.

Length ..... 11.24 inches
Diameter ..... 2.25 inches
Color ..... Olive drab
Weight ..... 1.23 pounds
Filler ..... Pentolite or TNT
Weight of filler ..... 4 ounces

Reference: NAVSEA OP 1664 Volume 1&2, *U.S. Explosive Ordnance*, February 1954

RIFLE GRENADE, HEAT, M31

Use. To defeat armored targets, against personnel, for screening, signaling or for incendiary effect against flammable targets.



Description. The rifle grenade HEAT, M31 is a point initiated, base-detonated (PIBD), high-explosive, anti-tank (HEAT) grenade. It employs a shaped charge to defeat armor plate or concrete, and will function against targets at all angles of obliquity up to 65°. The grenade uses a piezoelectric assembly, which generates an electric current when crushed on impact with the target. This action initiates the explosive train. Only rifle grenades M31, which are assembled with a modified nose assemblies, are authorized for use. The modified nose assembly has a positive ground between the piezoelectric crystal and the metal nose protector cap.

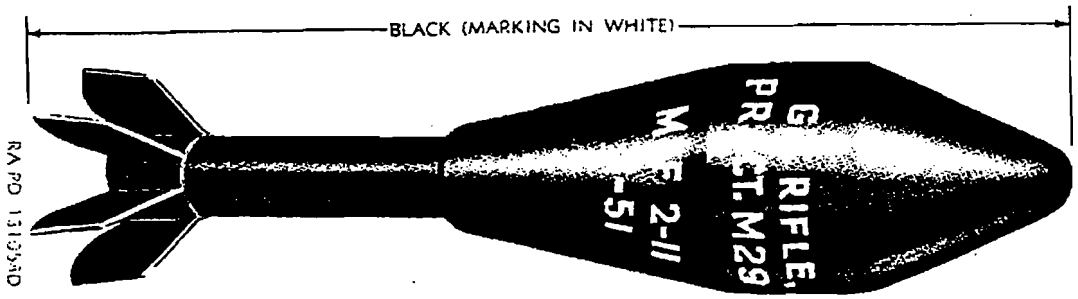
The grenade consists of three basic parts; the cylindrical body with conical ogive and conical rear section; the fuze; and the stabilizer. The ogive contains a piezoelectric assembly in the nose. A lead wire connects this assembly to the fuze, in the base of the body. The body contains Comb B molded against a copper shaped charge liner. A booster is contained in the fuze at the base of the body.

The fuze, M211 consists of a base, spring-driven detonator rotor and a cover. The detonator rotor contains an electric detonator. The base contains a setback leaf assembly. The cover contains a booster pellet. The aluminum stabilizer consists of a stabilizer tube, with an adapter at its forward end (for connection to the body), and a fin assembly at the other end. When assembled, the fuze is held within the adapter.

Length ..... 16.96 inches
Diameter ..... 2.61 inches
Filler ..... Comp B, 9.92 ounces
Fuze ..... M211, PIBD
Body ..... Steel
Color ..... Olive drab with yellow markings

Reference: TM 43-0001-29, *Army Ammunition Data Sheets for Grenades*, October 1977

RIFLE GRENADE, ANTI-TANK, PRACTICE, M29



Description and Use. Practice Anti-Tank Rifle Grenade M29 consists of two parts: a body and a stabilizer tube-fin assembly of steel. A separate issued stabilizer tube-fin assembly is available for replacement purposes.

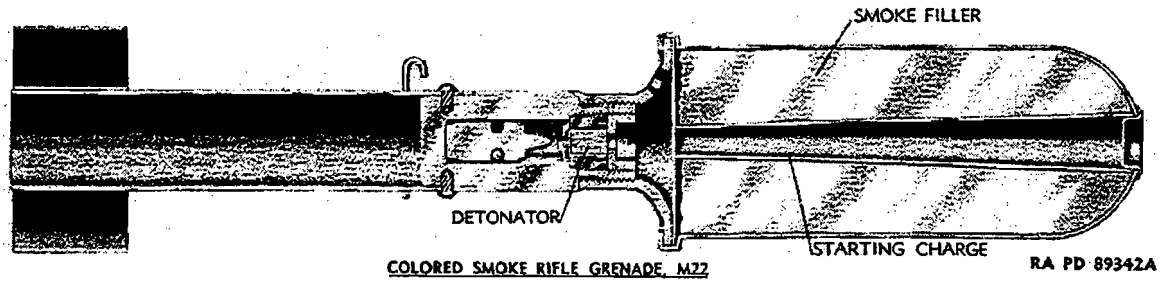
The M29 grenade may be fired at a target without danger to the target other than impact

The grenade has a maximum range of approximately 150 meters.

Length ..... 14.5 inches
Diameter ..... 3.0 inches
Filler ..... INERT
Color ..... Black with white markings, or blue with white markings

Reference: TM 43-0001-29, *Army Ammunition Data Sheets for Grenades*, October 1977

RIFLE GRENADE, SMOKE, WP, M19A1

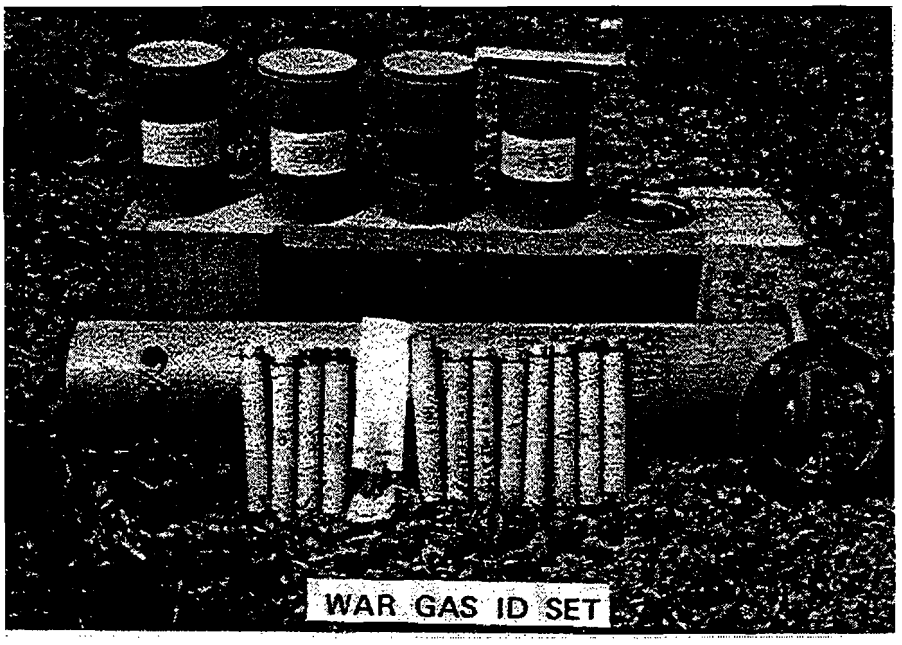


Description and Use. The grenade consists of a body, a stabilizer assembly, and a fin. The body is in one piece, cylindrical, with rounded ends. The stabilizer is a hollow tube, which screws into the base of the body and fits over the launcher. The impact fuze of the Anti-Tank Grenade M9A1 has been modified so that a long detonator which extends into the body of the grenade acts as a burster when the fuze operates. The fuze is an impact type, with the striker held off the detonator by a safety pin and a creep spring. The safety pin projects through the fuze body and clamps around the stabilizer tube. The explosion of the burster tube breaks the grenade and scatters burning white phosphorous over an area of 25 square yards.

Length ..... 11.31 inches
Diameter ..... 2.0 inches
Color ..... Blue Grey
Weight ..... 1.57 pounds
Filler ..... White Phosphorous

Reference: NAVSEA OP 1664, *U.S. Explosive Ordnance*, May 1947

GAS IDENTIFICATION SET, DETONATION, M1 K951/K952



Use. Designed to be used outdoors. The gas tubes would be detonated, creating an agent cloud. Soldiers would then try to identify the agent based on its odor and other characteristics.

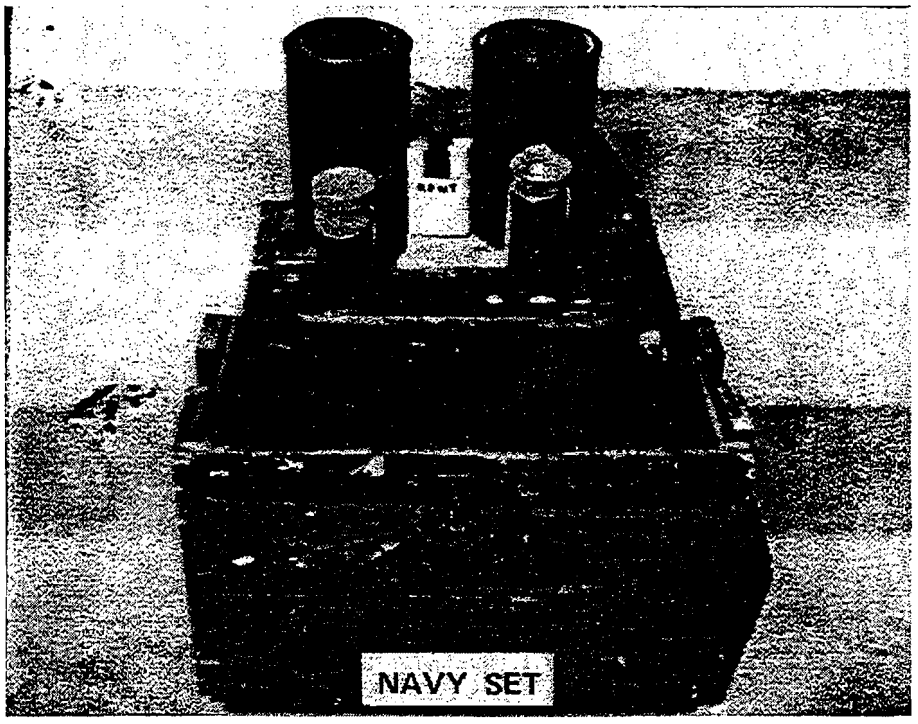
Description. The K951/952 Chemical Agent Identification Set (CAIS) contained 48 Pyrex, flame sealed ampules, 12 each containing 1.4 ounce solution of Mustard (H, 5% in chloroform) Lewisite (L, 5% in chloroform), Chloropicrin (PS, 50% in chloroform), and Phosgene (CG) for a total of 26 fluid ounces (0.768 liters) of agent, less the chloroform, per set. Each ampoule is 1 inch in diameter and 7½ inches long. Each ampoule is packed in a cardboard screw cap container (mailing tube type) with agent type indicated by letters on the cardboard container. Twelve (12) cardboard containers each are packaged into 4 press fit metal cans which are 9¼ inches high. The cans are packed into a steel cylinder 6⅝ inches in diameter, approximately 38 inches long and 0.145 inches thick. The open end of the cylinder is closed by a flanged end cover which is secured by eight bolts. The only difference between the K951 and K952 is that the K951 was issued with blasting caps that were packed and shipped in a separate container.

Time frame of use Korean Era

Old Stock Number..... FSN 1365-025-3273 (K951)
FSN 1365-025-3783 (K952)

Reference: *Chemical Agent Identification Set Information Package*, date unknown, U.S.A. Chemical Material Destruction Agency, Aberdeen Proving Ground, Md.

GAS IDENTIFICATION SET, INSTRUCTIONAL M1, (NAVY SET), K955



Use. Designed to be used indoors to instruct military personnel in recognizing the odors of chemical agent. This type of set contains only a small amount of chemical agent.

Description. The K955 Chemical Agent Identification Set (CAIS) contains seven glass bottles with a total of 3.5 fluid ounces (0.103 liters) of agent per CAIS. Four of the bottles contain 3 ounces (90cc) of activated charcoal on which agent is absorbed. One bottle contains Lewisite (L), one Chloropicrin (PS), and two Mustard (HS), one contains 6 grams of Triphosgene (a simulant for Phosgene (CG), one 15 grams of Chloroacetophenone (CN), and one with 15 grams of Adamsite (DM). These sets are packed in a hinged-covered wood box that resembles a foot locker and measures 30⅜ inches wide, 15½ inches long and 11¾ inches high. The inside of the box is divided into eight sections. Seven of the sections contain sealed cans in sawdust and the eighth has instructions. The cans are 4 inches in diameter and 7 inches high and have a paint can type lid. Inside each can is one round bottle with a large screw top or glass stopper which is usually wax coated. The bottles are frequently filled with charcoal.

Old Stock Number..... FSN 1365-368-6154

Time Frame of Us:..... Late 1930's to World War II

Reference: *Chemical Agent Identification Set Information Package*, date unknown, U.S.A. Chemical Material Destruction Agency, Aberdeen Proving Ground, Md.

GAS IDENTIFICATION SET, INSTRUCTIONAL M1, (NAVY SET), K955

Use. Designed to be used indoors to instruct military personnel in recognizing the odors of chemical agent. This type of set contains only a small amount of chemical agent.

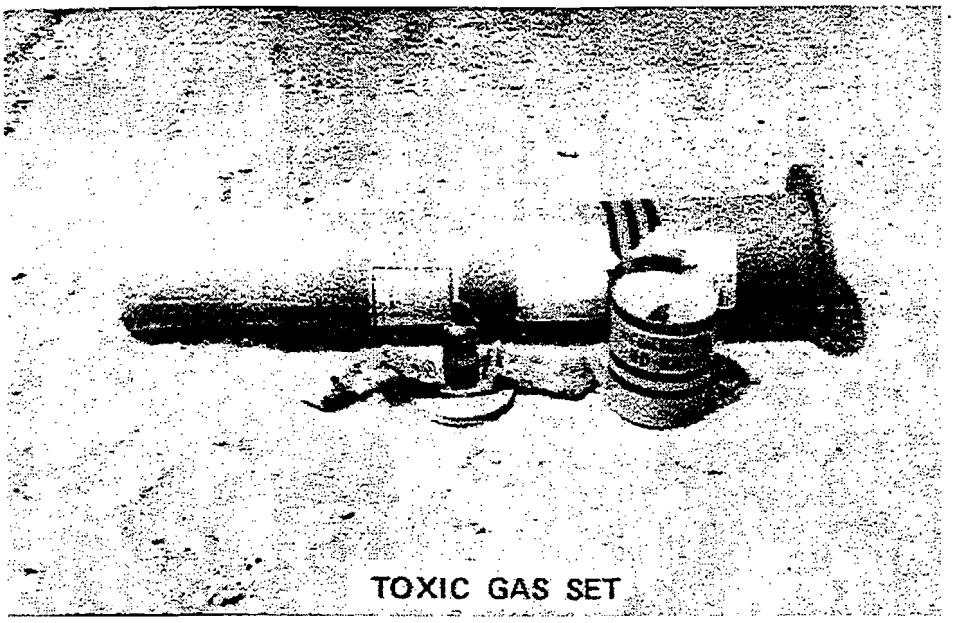
Description. The K955 Chemical Agent Identification Set (CAIS) contains seven glass bottles with a total of 3.5 fluid ounces (0.103 liters) of agent per CAIS. Four of the bottles contain 3 ounces (90cc) of activated charcoal on which agent is absorbed. One bottle contains Lewisite (L), one Chloropicrin (PS), and two Mustard (HS), one contains 6 grams of Triphosgene (a simulant for Phosgene (CG), one 15 grams of Chloroacetophenone (CN), and one with 15 grams of Adamsite (DM). These sets are packed in a hinged-covered wood box that resembles a foot locker and measures 30⅜ inches wide, 15½ inches long and 11¾ inches high. The inside of the box is divided into eight sections. Seven of the sections contain sealed cans in sawdust and the eighth has instructions. The cans are 4 inches in diameter and 7 inches high and have a paint can type lid. Inside each can is one round bottle with a large screw top or glass stopper which is usually wax coated. The bottles are frequently filled with charcoal.

Old Stock Number ..... FSN 1365-368-6154

Time Frame of Us: ..... Late 1930's to World War II

Reference: *Chemical Agent Identification Set Information Package*, date unknown, U.S.A. Chemical Material Destruction Agency, Aberdeen Proving Ground, Md.

TOXIC GAS SET, M1
K941



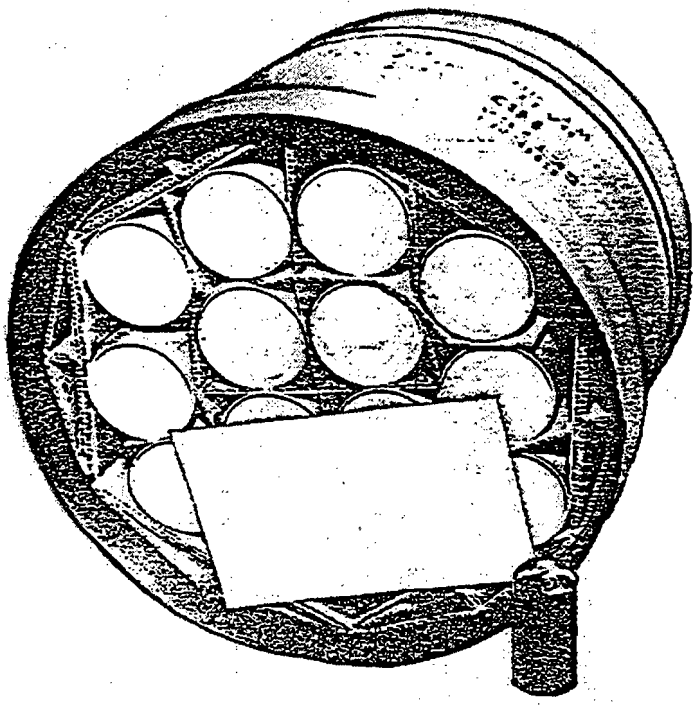
Description. The K941 CAIS contains 24 glass bottles, each containing 3½ ounces of Mustard (H) or Distilled Mustard (HD) for a total of 84 ounces (2.48 L) per set.
Bottles are round and have a small screw top. Heat resistant paint on the bottles indicates "H", "HS", or "HD", "TOXIC GAS SET, M1". Four bottles are packed in ½ inch layers of sawdust within a sealed metal can. The cans are pressure sealed, 6¼ inches high, and have a sardine-type key on the bottom. Six of these metal cans are fitted into a steel shipping cylinder that is 6⅝ inches in diameter, approximately 38 inches long, and 0.145 inches thick. The open end of this container is closed by a flanged end cover which is secured by eight bolts tightened over a ⅛ inch thick lead gasket.

Time frame of use. World War II through the late 1950s.

Old Stock Number..... FSN 1365-219-8574

Reference: *Chemical Agent Identification Set Information Package*, date unknown, U.S.A. Chemical Material Destruction Agency, Aberdeen Proving Ground, Md.

TOXIC GAS SET, M2
K942



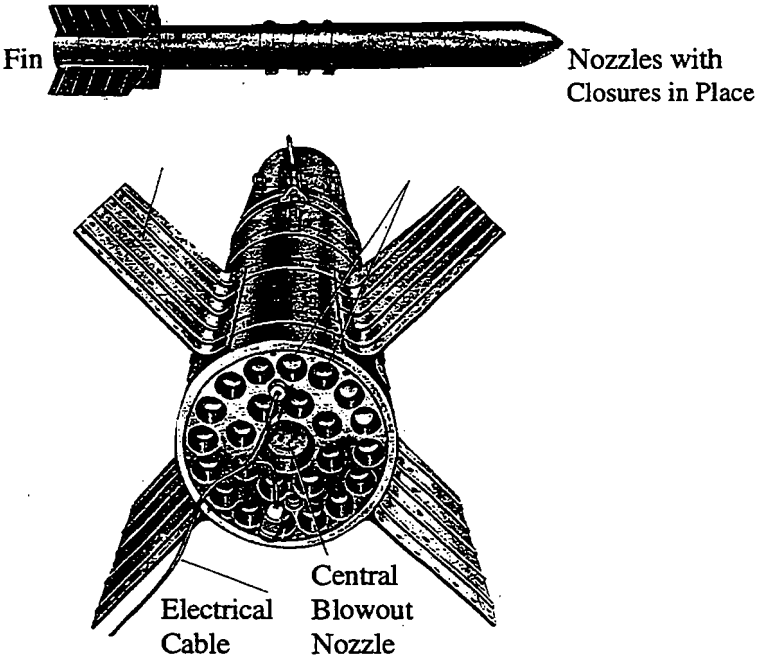
Description. The K942 Chemical Agent Identification Set (CAIS) contains 28 heat-sealed ampoules, each containing 3.8 ounces of Mustard (H, HD, or HS) for a total of 106.4 ounces (3.15 Liters) per set. Each ampoule is 1⅞ inches in diameter and 4⅝ inches in length and packed in its own can. Twenty eight(28) cans are packed in a cold-rolled carbon steel drum 14 inches in diameter, 14 inches high and 0.0375 inches thick (20 gauge) in 2 layers (14 cans per layer). The cans are separated into individual compartments by fiberboard packaging.

Time frame of use. Korean Era.

Old Stock Number..... FSN 1365-563-4146

Reference: *Chemical Agent Identification Set Information Package*, date unknown, U.S.A. Chemical Material Destruction Agency, Aberdeen Proving Ground, Md.

ROCKET, 11.75 INCH, (TINY TIM) w/INERT HEAD, Mk 3 Mod 0, 1, & 2



11.75-inch rocket--rear view

General. These rockets are used in forward firing from aircraft against shipping and large ground targets. The assembled rocket consists of head, motor, and tail fin. Total weight is 1,255 to 1,283 pounds depending upon the particular model and modification.

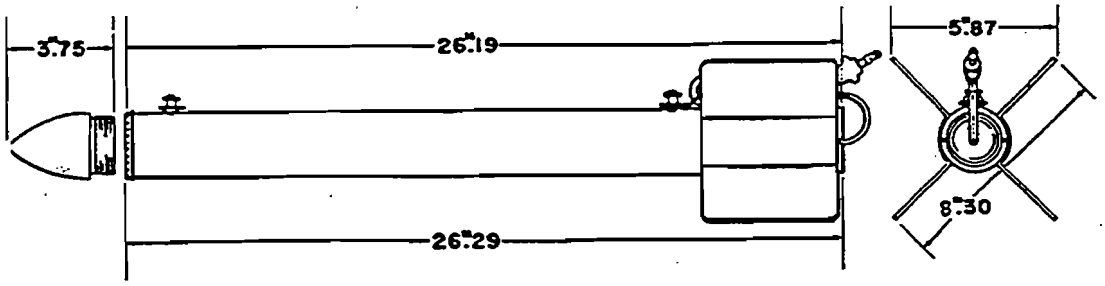
Head. The Practice Head Mk 3 Mod 0 or 1 and head Mk 3 Mod 2 simulates the Mk 2 Mod 0. The heads have no fuzes. The shell body is filled with plaster.

Motor. The motor Mk 1 Mod 0 & 1, 2, 3 and Mk2 Mod 0 is a steel tube, 11.75-inch outside diameter. A nozzle plate having 25 nozzles is at the rear end. The motor contains 4 cruciform inhibited grains of Mk 19 Mod 0 propellant with a total weigh of 150 pounds and 4 black powder charges of about 0.5 pounds each, contained in plastic cases provide the ignition for the propellant.

Over-all length..... 126 inches
Diameter..... 11.75 inches
Weight..... 1255 pounds
Filler..... Inert (Plaster)
Propellant..... Mk 19 Mod 0
Propellant weight..... 150 pounds
Igniter..... Black Powder 0.5 pound w/two electric squibs

Reference: TM 9-1950, *Rockets*, July 1945

ROCKET, 2.25-INCH PRACTICE



Use. These rockets were used for practice firing against surface targets. The rocket is forward fired from aircraft and simulated the trajectories of the 5 inch rockets.

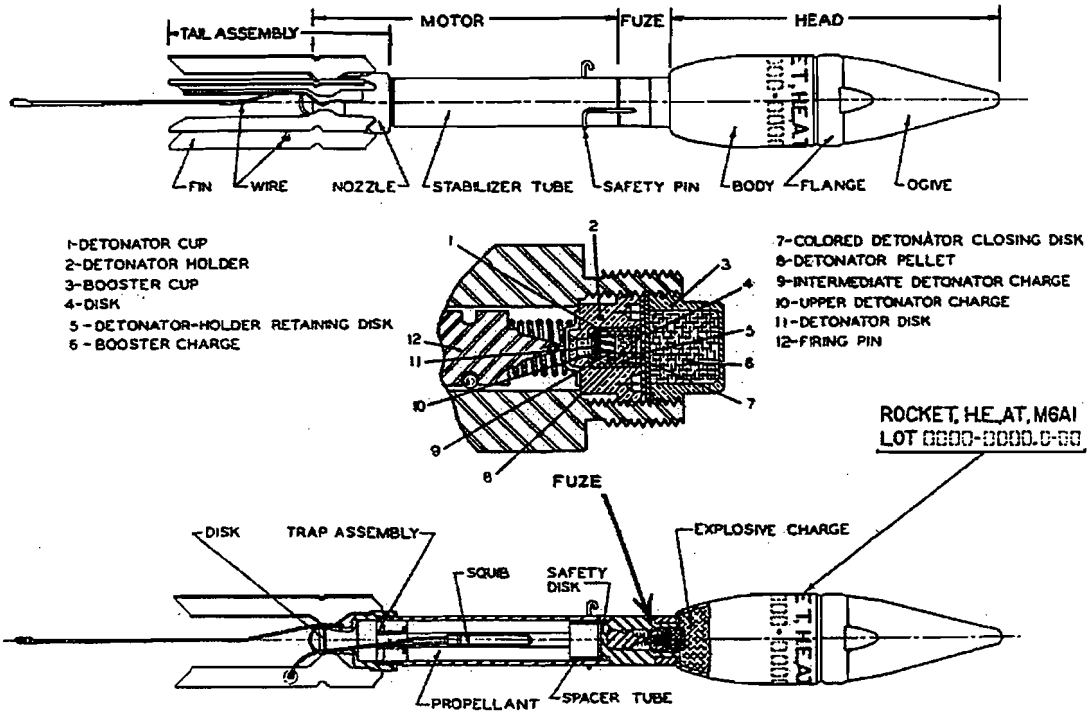
Description. The 2.25 inch practice rockets originally came in two different Marks (Mk) or models, the Mk II and Mk III. The acronym associated with them was SCAR, or sub-caliber aerial rocket. Other models followed. They consisted of a head, rocket motor, fins, igniter, and an electrical cable. The heads are solid steel, zinc die cast, or cast iron and contain no fuzes,

Motor. Mk 15 Mod 0,2, is 26.18 inches long and weighs to 10.90 pounds (max). The item's explosive hazard is the propellant (Mk 16 Mod 0,1) in the rocket motor and the igniter (Mk 112 Mod 0,1,2).

Weight..... 12.47 pounds
Diameter of Body..... 2.25 inches
Length..... 29.07 inches

Reference: NAVSEA OP 1415, *Rocket Assemblies*, May 1955

ROCKET, 2.36-INCH ANTITANK, M6A1



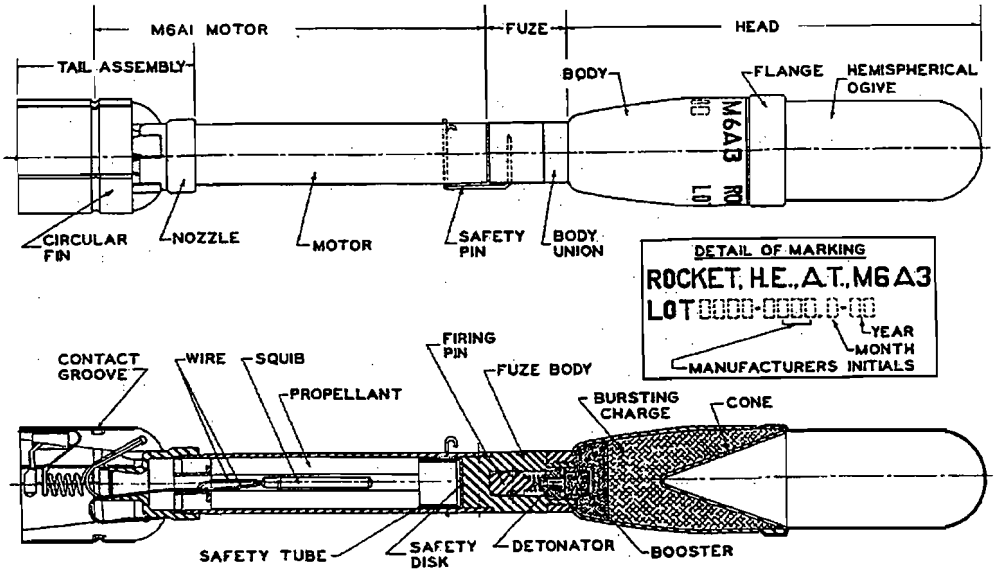
Use. Pill boxes, tanks, and armored vehicles are prime targets. The rocket can also be used in a stationary emplacement for demolition or as an anti-tank mine or booby trap.

Description. The Rocket is 21½ inches long and weighs 3½ pounds. The rocket consists of the high-explosive head, the stabilizer tube and the fin assembly. The head contains a shape-charge containing a composition, which is mainly 50/50 pentolite with a 10/90 pentolite booster surround. The stabilizer tube consists of the fuze body, which contains the fuze mechanism, and the powder tube contains the propellant charge. The fuze consists of a steel firing pin, which slips into the central cavity of the fuze body, where it is held in a rearward position by the firing-pin spring. When the safety pin is removed, the firing pin will overcome the spring and detonate the rocket if dropped over four feet. The fin assembly consists of the nozzle, the trap and six metal fins. The rocket is painted lusterless olive drab and stenciled in yellow.

Over-all Length ..... 21.6 inches
Diameter (body) ..... 2.23 inches
Total Weight ..... 3.5 pounds
Filler ..... Pentolite
Propellant ..... ballistite
Fuze M400
Painting and markings ..... M6A1- olive drab w/ yellow markings, M7A1- black w/ white markings

References: TM 9-1904, *Ammunition Inspection Guide*, March 1944; OS 9-69, *Ordnance School Text, Rockets & Launchers*, February 1944

ROCKET, 2.36-INCH ANTITANK, M6A3



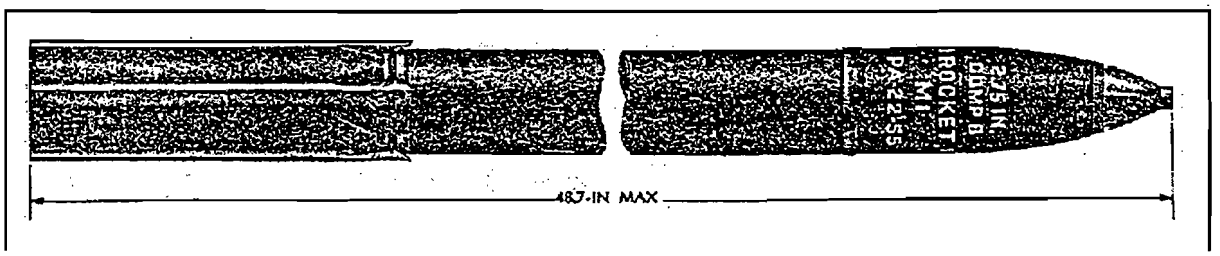
Use. Pill boxes, tanks, and armored vehicles are prime targets. The rocket can also be used in a stationary emplacement for demolition or as an anti-tank mine or booby trap. The M6A3 is a replacement for the M6A1 rocket.

Description. The rocket consists of the high-explosive head, the stabilizer tube and the fin assembly. The head contains a shape-charge containing a composition, which is mainly 50/50 pentolite with a 10/90 pentolite booster surround. The stabilizer tube consists of the fuze body, which contains the fuze mechanism, and the powder tube contains the propellant charge. The fuze consists of a steel firing pin, which slips into the central cavity of the fuze body, where it is held in a rearward position by the firing-pin spring. When the safety pin is removed, the firing pin will overcome the spring and detonate the rocket if dropped from as little as 4 feet. The fin assembly consists of the nozzle, the trap and six metal fins. The rocket is painted lusterless olive drab and stenciled in yellow.

Over-all Length ..... 21.6 inches (approx.)
Diameter (body) ..... 2.245 inches
Total Weight ..... 3.5 pounds (approx.)
Filler ..... Pentolite
Propellant ..... Ballistite
Fuze M400
Painting and markings ..... Olive drab w/ yellow markings,

References: TM 9-1904, *Ammunition Inspection Guide*, March 1944; OS 9-69, *Ordnance School Text, Rockets & Launchers*, February 1944

2.75-INCH ROCKETS



Rocket, high-explosive, 2.75-inch: FFAR, AT, M1

General. The 2.75-inch fin-stabilized aircraft rocket is a Navy type used by the United States Air Force for forward-firing from an aircraft rocket launcher. A 2.75-inch HE, AT head has been provided by the Department of the Army for use with the Navy motor. Stabilization in flight is accomplished by four pivoted fins folded within the cross section of the rocket during packing and shipping. The pressure of the propellant gases actuates a piston and crosshead which pushes against the heels of the fins extending them at a 45° angle during flight. The rockets are fired from a launcher consisting of multiple nested tubes arranged in various configurations. Electrical energy to fire the rocket is derived from the electrical system of the aircraft. A rocket consists of a nose fuze, head, and motor.

Head. Dependent upon the head, the rockets are high-explosive; high-explosive, antitank (AT); or practice (inert). The head M1, Mk 1 and Mods or Mk 5 Mod 0 is a steel casing internally threaded at the nose to receive the fuze and externally threaded at the base to engage the motor. A threaded cup-shaped cavity liner is screwed in the nose.

Motor. The motors Mk 1 and Mods, Mk 2 and Mods, or Mk 3 and Mods are internally threaded to receive the head. They consist essentially of an aluminum alloy motor tube containing propellant and an igniter and having a nozzle-fin assembly attached to the aft end.

Propellant. The propellant is one inhibited grain of ballistite.

Igniter. The igniter is a tin case containing a mixture of black powder and magnesium powder and an electric squib and is located in the forward end of the motor. Two lead wires from the squib extend from the igniter passing through the perforation in the propellant grain to the nozzle-fin assembly where one lead wire is grounded to the nozzle plate. The other lead wire passes through a nozzle and is connected to the contact disk at the aft end of the rocket as the live contact.

Nozzle-fin assembly. The nozzle-fin assembly consists essentially of a nozzle plate, four nozzle inserts, a fin-actuating mechanism, four fins, a. fin retainer and a contact disk. The aluminum alloy fins are rectangular and pivoted on the nozzle plate. As packed and shipped, the fins are within the 2.75-inch diameter of the rocket. When the rocket is fired, the propellant gas pressure acting on the fin-actuating mechanism causes the fins to extend from the motor at a 45° angle. The contact disk, which is insulated from the rocket, serves as live contact during firing.

Fuze. Fuzes used with the 2.75-inch rocket heads Mk 1 and Mods are point detonating (PD) type Mk 176 with a delay element and Mk 178 instantaneous. Heads Mk 5 use (PD) type Mk 181 fuzes and the point initiating (PI) type M406. Practice and inert rocket heads are fuzed with inert fuzes.

Rocket, High-Explosive, 2.75-Inch: FFAR (Motor, Mk 1 Mod 3 or 4). The rocket is intended for air-to-air use. The delay element in the fuze permits the rocket to enter an aircraft structure before detonating. The rocket consists of the HBX-1 loaded head Mk 1 and Mods fuzed with PD fuze Mk 176 and the motor Mk 1 Mod 3 or 4. The rocket is packed and shipped with fuzed head and motor unassembled in the same packing or in separate packing.

Rocket, High-Explosive, 2.75-Inch: FFAR, AT, M1. The rocket (figure) is provided for air-to-ground use against tanks and other armored vehicles. It consists of the Army 2.75-inch head M1 fuzed with PI fuze M406 and the Navy motor. Contained in the head is a copper cone, apex to the rear, which acts to shape the high-explosive charge of 0.89 pounds of composition B. The penetration effect is derived from the shaped charge.

Rocket, High-Explosive, 2.75-Inch: FFAR (Motor Mk 2 and Mods). The rocket is similar to that of the FFAR, AT, M 1 except for the motor Mk 2 and Mods.

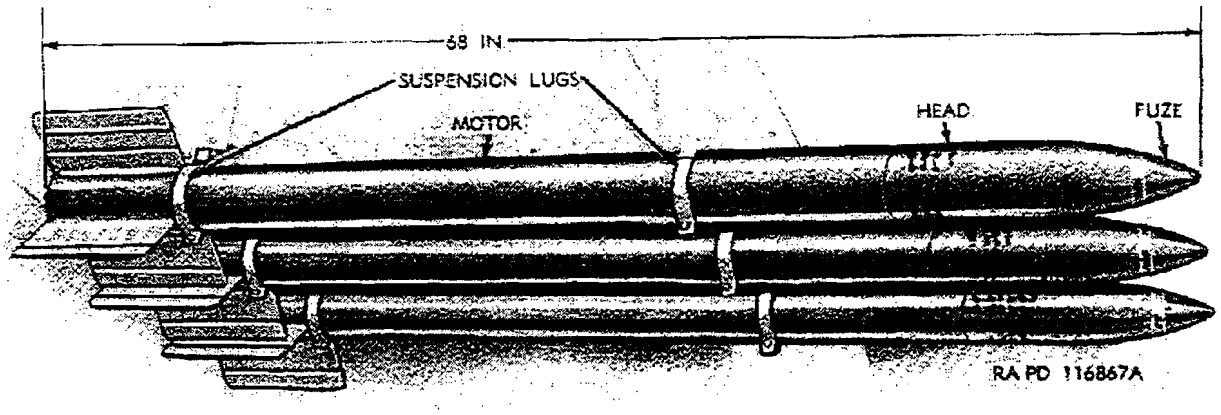
Rocket, High-Explosive, 2.75-Inch: FFAR, AT. The rocket is intended for use against armored targets. It consists of the head Mk 5 Mod 0 fuzed with PD fuze Mk 181. The penetration effect is derived from the shaped charge of composition B. The rocket is shipped and packed as an unassembled rocket, head and motor either together or in separate packing containers.

Rocket, Practice, 2.75-Inch: FFAR (Motor Mk 1 Mod 3, Mk 2 and Mods, Mk 3 and Mods). The rocket is intended for use as practice ammunition. The rocket consists of the inert loaded head Mk 1 and Mods with inert fuze and the motor Mk 1 Mod 3. The rocket is shipped and packed as an unassembled rocket, head and motor either together or in separate packing containers.

Size of rocket	2.75-Inch						
Army Complete Round Nomenclature.	ROCKET, HIGH-EXPLOSIVE, 2.75-INCH: FFAR, AT M1.	ROCKET, HIGH-EXPLOSIVE, 2.75-INCH: FFAR.	ROCKET, HIGH-EXPLOSIVE, 2.75-INCH: FFAR.	ROCKET, HIGH-EXPLOSIVE, 2.75-INCH: FFAR, AT.	ROCKET, PRACTICE, 2.75-INCH: FFAR.	ROCKET, PRACTICE, 2.75-INCH: FFAR.	ROCKET, INERT, 2.75-INCH: FFAR.
Navy Complete Round Nomenclature.	————	Mk 2 Mod 0	Mk 4 Mod 0	Mk 5 Mod 0			
HEAD—Mark and Mod	M1	Mk 1 Mods	Mk 1 Mods	Mk 5 Mod 0	Mk 1 (inert)	Mk 1 (inert)	Mk 1 (inert)
Length (in.)	13.1						
Diameter (in.)	2.75						
Weight (lb)	8.47						
Type of filler.	COMP B	HBX-1	HBX-1	COMP B	Inert loaded	Inert loaded	Inert loaded
MOTOR—Mark and Mod	Mk 1 or Mk 2	Mk 1 Mod 3 or 4	Mk 2 Mods	Mk 2 Mods	Mk 1 Mod 3 or 4	Mk 2 Mods	
Length (in.)	32	32	32	32	32	32	
Diameter (in.)	2.75	2.75	2.75	2.75	2.75	2.75	
Weight (lb)	12.13	12.13	————	12.13	12.13	————	
Model of propellant	M31 or M48	Mk 31	Mk 43 Mods	Mk 43 Mods	Mk 31	Mk 43 Mods	
Weight of propellant (lb)	————	6.6	6.4	6.4	6.6	6.4	Inert loaded
FUZE—type, Mark and Mod.	Nose PI M406	PD Mk 176	PD Mk 176	PD Mk 181	PD Mk 176	PD Mk 176	Inert

Reference: TM 9-1950, *Rockets*, February 1958

ROCKETS, 5 INCH (HVAR)



General. The 5.0-inch fin stabilized, high-velocity aircraft rocket is a Navy type used by the Air Force for forward firing from aircraft. The 5.0-inch rocket is fired from retractable jettisoning launcher using suspension bands. Electrical energy to fire the rocket is derived from the electrical system of the aircraft. The rocket consists of a fuzed head and a motor.

Rocket Heads. Listed below are the various HVAR heads, which are assembled with 5.0-inch rocket motors to form HAVR complete rounds. Complete round data and nomenclature are given in tables. The TNT loaded heads Mk 6 and Mods are shipped with permanently installed base fuze Mk 159 Mod 1 or Mk 164 and Mods and a shipping cap which is replaced by nose fuze Mk 149. The head Mk 6 Mod 4 is specially deep cavitized to receive a VT fuze. The head Mk 25 Mod 1 is a shaped charge type (having an internal copper cone) loaded with composition B. As shipped, the head Mk 25 Mod 1 has a nose shipping plug, which is replaced by nose fuze Mk 149, and a shipping cap to protect the base threads.
HEAD, HIGH EXPLOSIVE, 5.0-inch ROCKET: HVAR, Mk 6 Mod 0, 1, 2, and 3, TNT loaded, with fuze, rocket base AN-Mk 159 (Mk 159 Mod 1) or AN-Mk 164 (Mk 164) and Mods installed.
HEAD, HIGH EXPLOSIVE, 5.0-inch ROCKET: HVAR, Mk 6 Mod 4, TNT loaded, adapted for fuze, VT, M403, with fuze, rocket, base AN-Mk 159 (Mk 159 Mod 1) and Mods or AN-Mk 164 (Mk 164) and Mods installed.
HEAD, INERT, 5.0-inch ROCKET: Mk 6 and Mods.

Fuze. The 5.0-inch HVAR head Mk 6 Mods is permanently fuzed with base fuze Mk 159 Mod 1 or Mk 164 and Mods. The heads Mk 6 and Mods and Mk 25 Mod 1 receive nose fuze Mk 149 Mod 0 or 1 after removal of the nose shipping cap. The Mk 6 Mod 4 receives VT fuze M403 or M403E2 (Mk 172 Mod 2).

Motor. Listed below are various similar 5.0-inch rocket motors which are assembled with 5.0-inch HVAR heads to form complete rockets as indicated in tables. The motor Mk 10 differs from the motor Mk 2 principally in having an Army igniter plug instead of a Navy (bayonet-type) plug. The 5.0-inch motor is externally threaded at the forward end to engage the head. It consists of the motor tube, front closure disk, igniter, propellant, nozzle plate, suspension lugs and fin assembly and suspension lugs.
MOTOR, 5.0-INCH ROCKET: Mk 2 Mod 3
MOTOR, 5.0-INCH ROCKET: Mk 2 Mod 3 (with bayonet-type connector plug)
MOTOR, 5.0-INCH ROCKET: Mk 10 Mods 4 and 5

MOTOR, 5.0-INCH ROCKET: Mk 10 Mods 4 and 5 (with electrical connector Mk 11 Mod 5 or M3)
MOTOR, 5.0-INCH ROCKET: Mk 10 Mod 7 (without fin)
MOTOR, 5.0-INCH ROCKET, EMPTY: Mk 2 Mod 3
MOTOR, 5.0-INCH ROCKET, INERT: Mk 2 Mod 3

Fin Assembly. The fin assembly, which is clamped to the rear end of the motor, is a sleeve with four equally spaced rectangular fins extending radially.

Propellant. The propellant is a single grain Mk 18 Mod 0 of ballistite.

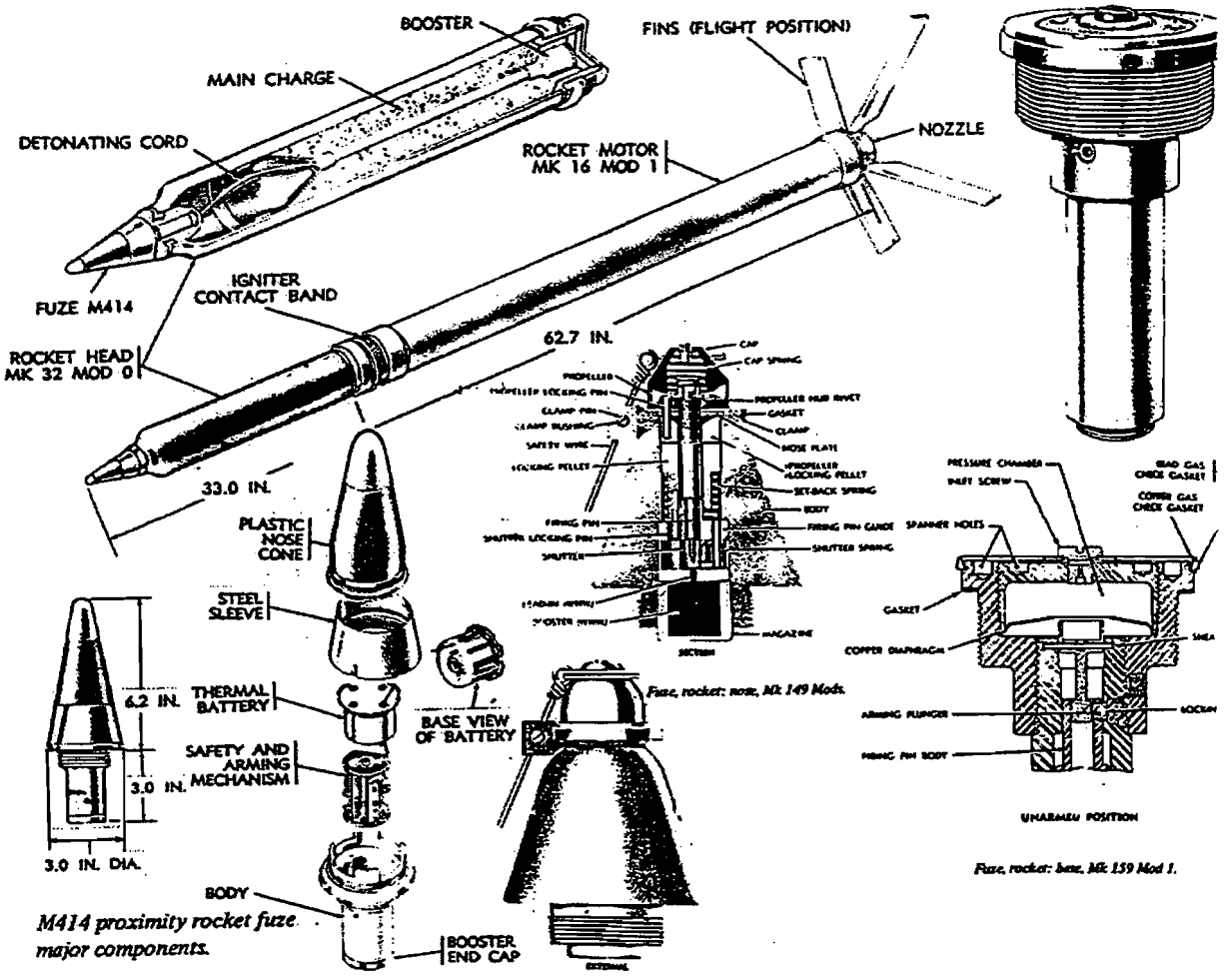
Igniter. The igniter is a metal can containing 55 grains of black powder and an electric squib. Two lead wires from the squib extend from the igniter passing through the perforation in the propellant grain to the nozzle where they are connected to the electrical cable and igniter plug (connector).

Head			Motor			Fuze		Velocity (fps)	Use
Dia. (in)	Mark & Mod	Fillers	Dia. (in)	Mark & Mods	Propellant grain	Nose	Base		
5.0	Mk 6 Mods	TNT	5.0	Mk 10 Mods	Mk 18 Mod 0	Mk 149 Mod 0 or 1	Mk 164 Mod 0	1,325	Service
5.0	Mk 6 Mod 4	TNT	5.0	Mk 10 Mods	Mk 18 Mod 0	Mk 149 Mod 0	Mk 164 Mod 0	1,325	Service
5.0	Mk 6 Mod	Plaster	5.0	Mk 10 Mods	Mk 18 Mod 0	None	None	1,325	Practice
5.0	Mk 6 Mods	Plaster	5.0	Mk 2 Mod 3	None	None	None	None	Drill
5.0	Mk 25 Mod 1	Comp B	5.0	Mk 10 Mods	Mk 18 Mod 0	Mk 149 Mod 0	None	1,325	Service (AP)

Army Complete Round Nomenclature	Rocket, HE, 5.", HVAR	Rocket, HE, 5", HVAR	Rocket, HE, 5", HVAR, AT	Rocket, Practice, 5", HVAR	Rocket, Dummy, 5,", HVAR
Navy Complete Round Nomenclature	5" Rocket, Mk 4 Mod 0 (aircraft general purpose)	5" Rocket, Mk 28 Mod 4 (aircraft general purpose)	5" Rocket, Mk 32 Mod 1 (aircraft, HEAT)	5" Rocket, Mk 5 Mod 0 (aircraft practice)	5" Rocket, Mk 6 Mod 0 (aircraft dummy)
HEAD- Mark & Mod	Mk 6 Mod 4	Mk 6 Mods	Mk 25 Mod 1	Mk 6 Mods	Mk 6 Mods
Length (in.	16.73	16.73	———	16.73	16.73
Diameter (in.)	5.0	5.0	———	5.0	5.0
Weight (lb.)	45.5	45.5	———	45.5	45.5
Filler Weight (lb.)	7.5 TNT	7.5 TNT	7.5 COMP B	7.5 Plaster	7.5 plaster
MOTOR-Mark & Mod	Mk 10 Mod 6	Mk 10 Mod 6	Mk 10 Mods	Mk 10 Mod 6	Mk 10 Mod 6
Length (in.)	———	52.0	52.0	52.0	52.0
Diameter (in.)	5.0	5.0	5.0	5.0	5.0
Weight (lb.)	———	89.3	89.3	89.3	89.3
Model of Propellant	Mk 18 Mod 0	Mk 18 Mod 0	Mk 18 Mod 0	Mk 18 Mod 0	Mk 18 Mod 0
Propellant weight (lb.)	23.9	23.9	23.9	23.9	23.9
FUZE-type, Mark and Mod	Nose: VT, M403 or M403E2 Base: Mk 164 Mods	Nose: Mk 149 Mod 0 or 1 Base: Mk 164 Mod 0	Nose: Mk 149 Mod 0 Base: None	None	None
ROCKET (assembled)					
Length (in.)	68.6	68.6	68.6	68.6	68.6
Weight (lb.)	———	134.0	134.0	134.0	109.0
Velocity (max((fps)	1360	1,325	1,325	1,325	

Reference: TM 9-1950, *Rockets*, July 1945

ROCKET, 5 INCH, (ZUNI)



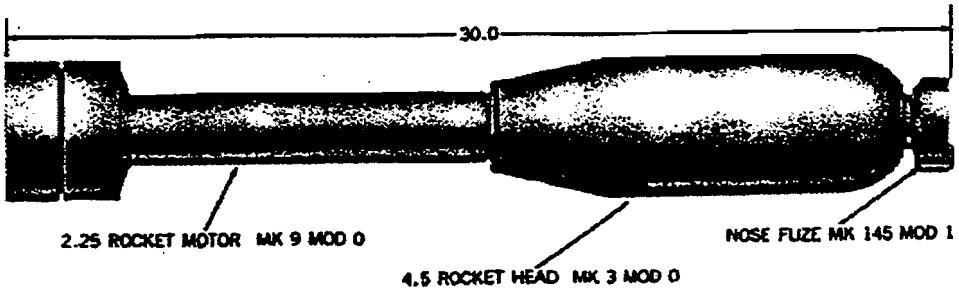
M414 proximity rocket fuze major components.

Description. The Zuni rocket is a 5-inch solid propellant rocket, fired from aircraft. Zuni rockets are used primarily against surface targets, but maybe used against aerial targets when appropriately fuzed.

Total Weight..... 72.5 pounds
Diameter of Body..... 4.97 inches
Filler..... Composition B
Fuze..... M414, proximity, MK159, BD, MK149, PDSQ
Overall length..... 95.7 inches
Propellant..... double-base, solid propellant
Propellant Weight..... 35.5 pounds

Reference: *MMS Subcourse # 661 Ammunition Identification*, USAMMCS

ROCKET, BARRAGE, HE 4.5 INCH



4.5-Inch Rocket Mk 1 Mod 0 (Surface, HE), External View

General. The 4.5-inch barrage rocket is a light demolition rocket intended for launching from landing boats, from amphibious trucks, or from portable launchers of one or more rails.

Head. The head and motor are coupled by means of a threaded adapter. The fuze screws into the nose of the head. The head is cylindrical, the forward is hemispherical and the rear end reduced. Two high explosive heads are available, the Mk 3, and Mk 11. About 6.5 pounds of high explosive can be loaded through a 2¾-inch hole in the rear, which is sealed later with a motor adapter. The fuze liner, in the nose of the head, contains a booster charge of granular TNT. Other fillers include FS (chlorsulfonic acid), WP (white phosphorous), PWP (plasticized white phosphorous).

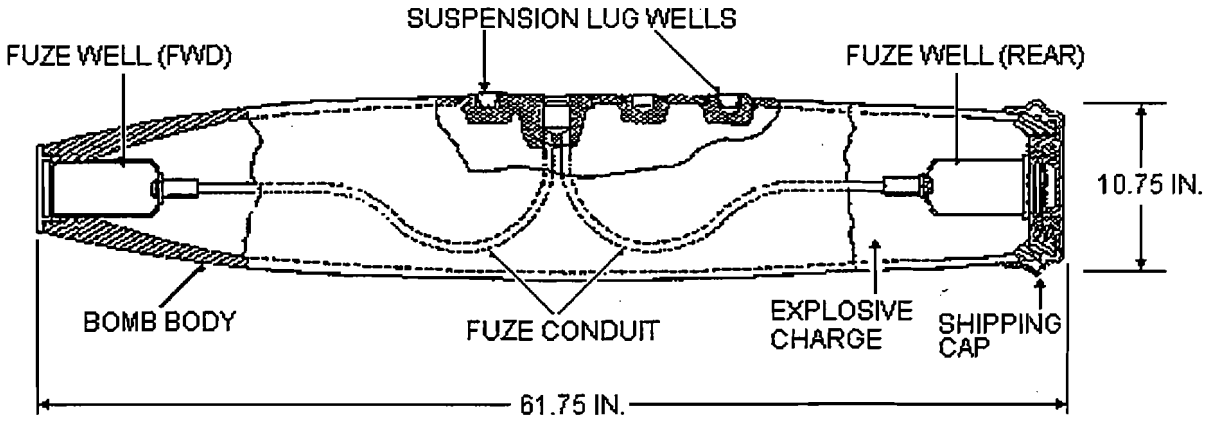
Tail Assembly. Two circular shrouds, the same diameter as the body, are attached to supporting fins at the rear of the motor. Two wires brought out through the powder grain and the nozzle connect to the two shrouds. The forward shroud is insulated from the rest of the rocket to prevent a short circuit to the after grounded shroud.

Propellant. The propellant consists of a single cylindrical grain of ballistite 11 inches long, with a 1.7-inch outer diameter.

Over-all length ..... 30.0 inches
Diameter ..... 4.5 inches
Weight 28.17pounds
Head
  Mk 3 & Mk 11 ..... TNT/6.5 pounds
  Mk 5 & Mk 7 ..... FS, WP
  Mk 10 ..... PWP
Fuzes
  Mk 3 ..... Mk 137, Mk 145
  Mk 5, 7 ..... Mk 137, Mk 154 Mod 3
  Mk 10 ..... Mk 154 Mod 3
  Mk 11 ..... Mk 137
Motor diameter ..... 2.25 inches
Propellant ..... Double-base powder
Propellant weight ..... 4.65 pounds
Fuzes ..... Mk 137 or Mk 145

Reference: NAVSEA OP 1664 Volume 1 with change 1, *U.S. Explosive Ordnance*, May 1947

BOMB, GP, 500-POUND, MK 82 MOD 1



(NOTE: PRESENCE OF SUSPENSION LUGS DETERMINED BY NSN)

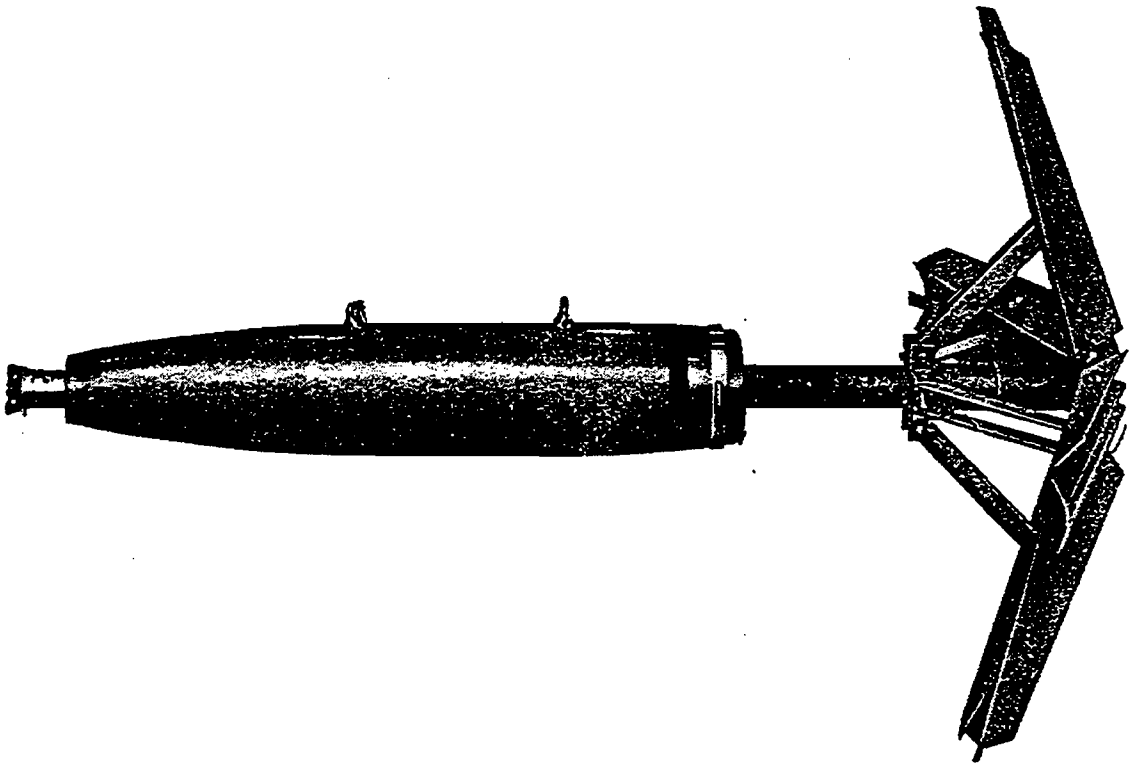
General. The Mk82 is a free-fall, nonguided general purpose (GP) 500-pound bomb. The bomb is usually equipped with the mechanical, proximity electric (nose and/or tail) fuzes.

The Mk-80 series was developed in the 1950s in response to the need for bombs producing less aerodynamic drag. All Mk80 series bombs are similar in construction. Mk80 series bombs are cylindrical in shape and are equipped with conical fins or retarding for external high speed carriage. They are fitted for both nose and tail fuzes to ensure reliability and produce effects of blast, cratering, or fragmentation.

Over-all length..... 61.75 inches
Diameter..... 10.75 inches
Weight..... 517 pounds
Filler..... Tritonal Mix 80/20
Explosive Weight..... 192.0 pounds
Fuzes..... Impact Inertia, Mechanical Time, Proximity, Electric

Reference: TM 9-1325-200, *Bombs and Bomb Components*, April 1966; *MIDAS Data Base*

BOMB, LOW DRAG, GENERAL PURPOSE
MK 81, 250 POUND
MK 82, 500 POUND
MK 83, 1000 POUND
MK 84, 2000 POUND



Description. The Mk 80 series bombs were designed as replacements for the old stype GP bombs which had difficulties when used on high speed aircraft. These bombs consist of a steel casing with three inch diameter fuze wells nose and tail. These fuze wells are connected by internal plumbing to a charging well located between the lugs of the bomb. Bomb lenght given is for bomb body without fins. Various fin assemblies have been designed for this series of bombs depending on mission. This bomb may be fuzed with any three inch bomb fuze or with adapter any other bomb fuze designed for old series GP bombs.

	MK 81	MK 82	MK 83	MK 84
Length	74.1 in	86.9 in	118.42 in	151.5 in
Diameter	9 in	10.75 in	14 in	18 in
Weight	260 lbs	531 lbs	985 lbs	1,970 lbs
Filler	Tritonal or H6 for all bombs			
Filler Weight	100 lbs	192 lbs	445 lbs	945 lbs

Reference: TM 9-1325-200, *Bombs and Bomb Components*, dated April 1966

BOMB, GENERAL PURPOSE, 2,000 LB
AN-M66, AN-M66A1, & AN-M66A2

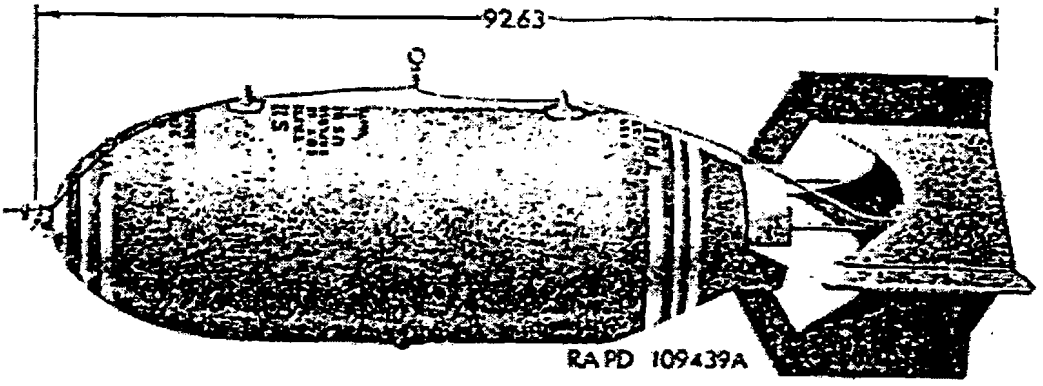


Figure 86. Bomb, GP, tritonal, 2,000-lb, AN-M66A2.

Description. This bomb is of cylindrical construction and may be charged with Tritonal, TNT, Comp B, or 50-50 Amatol. If the bomb is used by the Navy, it may be fitted with a trunnion band, M7. This bomb may be fitted with conical or box fins. These will effect the overall length of the bomb, the length of bomb listed below is for the bomb without a tail assembly. The bomb is painted Olive Drab with Yellow bands around the nose and Tail indicating the filler: one for Amatol or TNT, two for Comp B, and three for Tritonal.

Body Length ..... 70 inches
Body Diameter ..... 23.3 inches

	50-50 Amatol	TNT	Comp B	Tritonal
Total Weight	2,011.4 lbs	2,047.7 lbs	2,095.3 lbs	2,113.9 lbs
Filler Weight	1,060.5 lbs	1,097.2 lbs	1,144.8 lbs	1,155.7 lbs

	Nose	Tail
Fuze	M103, M103A1	M102, M102A1, M102A2
	M135, M135A1	M162
	M136, M136A1	M114, M114A1
	M139, M139A1	M117
	M140, M140A1	M125, M125A1
	M149	M134
	M163, M164, M165	Mk 238 Mod 0
	Mk 239	Mk 230
	Mk 243, Mk 244	Mk 240
	T50E4, M166, T82	

References: *NAVSEA OP 1664*, dated 28 May 1947, with change 1, dated 15 January 1969; *TM 9-1980*, dated December 1950

BOMB, GENERAL PURPOSE, 1,000 LB, AN-M65 & AN-M65A1

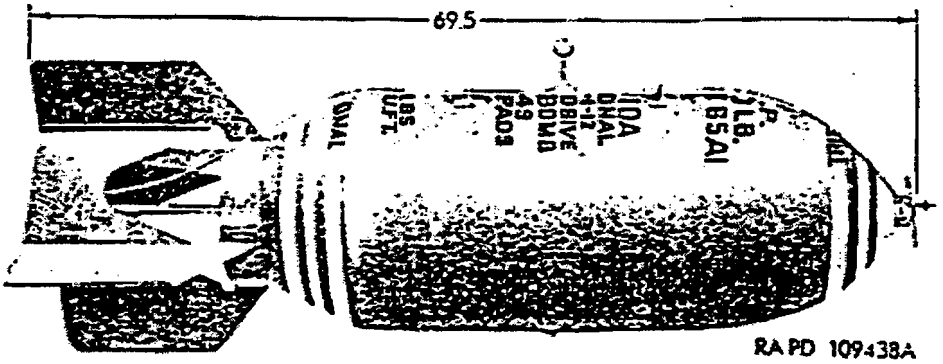


Figure 85. Bomb, GP, tritonal, 1,000-lb, AN-M65A1.

Description. This bomb is of cylindrical construction and may be charged with Tritonal, TNT, Comp B, or 50-50 Amatol. The primary difference between the M65 and M65A1 is that the M65A1 is fitted with a single lifting lug located opposite of the standard dual lifting lugs. If the bomb is used by the Navy, it may be fitted with a trunnion band, M2A1. This bomb may be fitted with conical or box fins or with a parachute retarding unit. These will effect the overall length of the bomb, the length of bomb listed below is for the bomb without a tail assembly. The bomb is painted Olive Drab with Yellow bands around the nose and Tail indicating the filler: one for Amatol or TNT, two for Comp B, and three for Tritonal.

Body Length ..... 67 inches
Body Diameter ..... 19 inches

	50-50 Amatol	TNT	Comp B	Tritonal
Total Weight	970 lbs	1,015 lbs	1,013 lbs	1,016 lbs
Filler Weight	529.8 lbs	545.2 lbs	572.2 lbs	575.7 lbs

	Nose	Tail
Fuze	M103, M103A1	M102, M102A1, M102A2
	M135, M135A1	M162
	M136, M136A1	M114, M114A1
	M139, M139A1	M117
	M140, M140A1	M125, M125A1
	M149	M134
	M163, M164, M165	Mk 238 Mod 0
	Mk 239	Mk 230
	Mk 243, Mk 244	Mk 240
	T50E4, M166, T82	

References: *NAVSEA OP 1664*, dated 28 May 1947, with change 1, dated 15 January 1969; *TM 9-1980*, dated December 1950

BOMB, GENERAL PURPOSE, 500 LB, AN-M64 & AN-M64A1

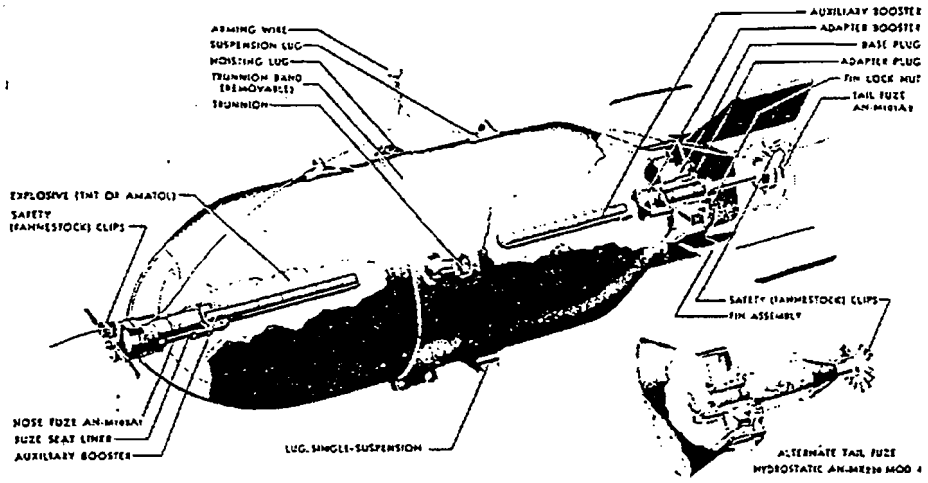


Figure 283. 500-pound G.P. Bomb AN-M64

Description. This bomb is of cylindrical construction and may be charged with 50-50 Amatol, TNT, Comp B, or Tritonal. The bomb is painted Olive Drab with black markings. Yellow bands around the nose and tail are used to distinguish which explosive is loaded in the bomb. One band for TNT and Amatol, two for Comp B, and three bands for Tritonal. This bomb may be fitted with box, conical, or parachute retarding tail assemblies which effect the overall length. Only the length of the main body is given here.

Body Length ..... 36 inches
Body Diameter ..... 10.9 inches

	50-50 Amatol	TNT	Comp B	Tritonal
Total Weight	516.3 lbs	523.1 lbs	529.8 lbs	535.4 lbs
Filler Weight	258.5 lbs	266 lbs	272.7 lbs	278.3 lbs

	Nose	Tail
Fuze	M103, M103A1	M101,M101A1, M100A2
	M135, M135A1	M113, M113A1
	M136, M136A1	M116
	M139, M139A1	M161
	M140, M140A1	M124, M124A1
	M149	M133
	M163, M164, M165	M151
	M166, M168	
	Mk243, Mk244	
	Mk 239	
	Mk219	

References: *NAVSEA OP 1664*, dated 28 May 1947, with change 1, dated 15 January 1969; *TM 9-1980*, dated December 1950

BOMB, GENERAL PURPOSE, 250 LB, AN-M57 AND AN-M57A1

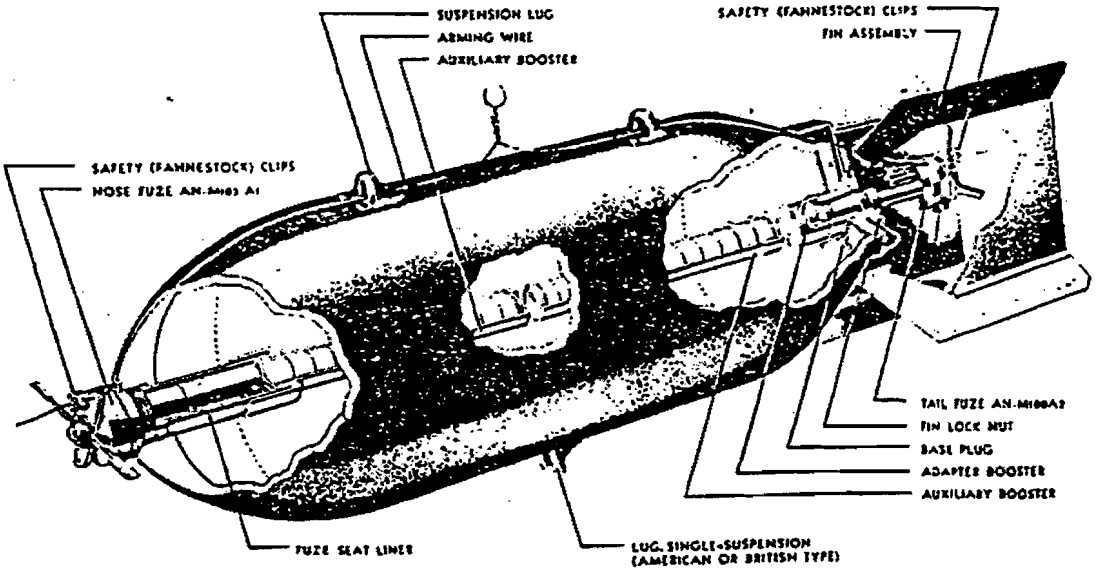


Figure 282. 250-pound G.P. Bomb AN-M57

Description. This bomb is of cylindrical construction and may be charged with 50-50 Amatol, TNT, or Tritonal. The bomb is painted Olive Drab with black markings. Yellow bands around the nose and tail are used to distinguish which explosive is loaded in the bomb. One band for TNT and Amatol, and three bands for Tritonal. This bomb may be fitted with box, conical, or parachute retarding tail assemblies which effect the overall length. Only the length of the main body is given here.

Body Length ..... 36 inches
Body Diameter ..... 10.9 inches

	50-50 Amatol	TNT	Tritonal
Total Weight	243 lbs	247.2 lbs	253.7 lbs
Filler Weight	119.7 lbs	124.6 lbs	131.1 lbs

	Nose	Tail
Fuze	M103, M103A1	M100A1, M100A2
	M139, M139A1	M112, M112A1
	M140, M140A1	M115
	M163, M164, M165	M123 series
	M166, M168	M132
		M151

References: *NAVSEA OP 1664*, dated 28 May 1947, with change 1, dated 15 January 1969; *TM 9-1980*, dated December 1950

BOMB, PRACTICE, 100-POUND, MK15

TM 9-1325-200/NAVWEPS OP 3530/TO 11-1-28, April 1966

2-52. Bomb, Practice: 100-Pound, MK15 Mods 2, 3 and 4

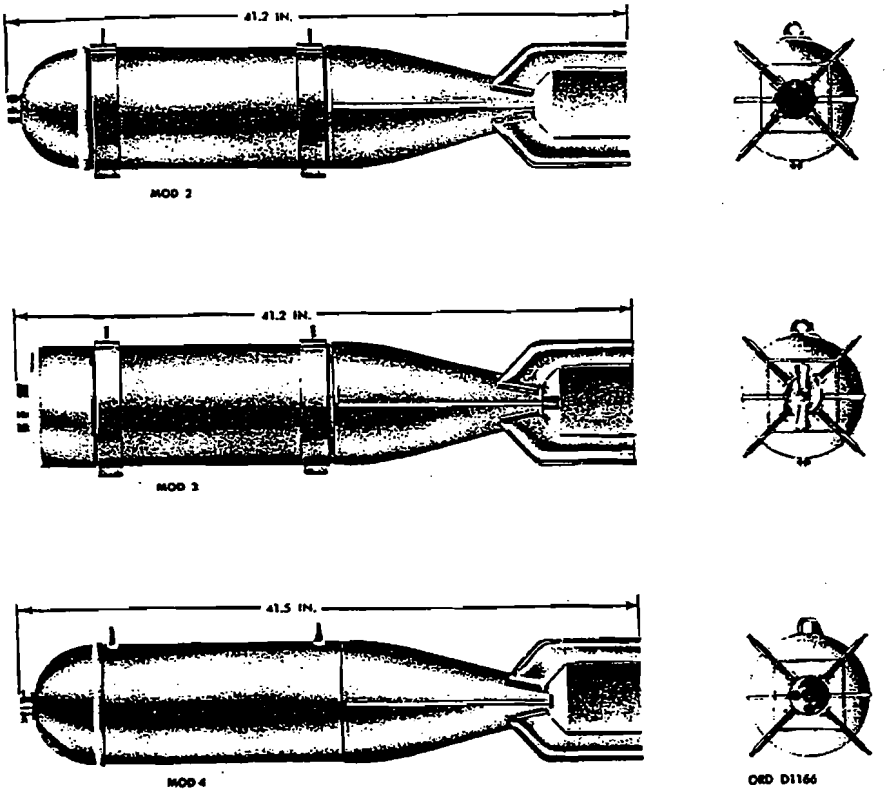


Figure 2-62. Bomb, practice: 100-pound, MK15 Mods 2, 3, and 4.

Table 2-50. Bomb, Practice: 100 pound, MK15 Mods 2, 3, and 4

Mark Mod	15 2	15 3	15 4
Length of Assembled bomb (in)...	41.2	41.2	41.5
Diameter of Body (in)	8.0	8.0	8.0
Fin Span (in)	11.24	11.24	11.24
Weight of Assembled Bomb (lb):			
Loaded with Wet Sand	100.0	100.0	97.0
Loaded with Water	56.0	67.0	60.0

Table 2-50. Bomb, Practice: 100 pound MK15 Mods 2, 3, and 4 - Continued

Mark Mod	15 2	15 3	15 4
Wet Sand Filler lb).....	76.0.....	77.4.....	76.0
Water Filler (lb).....	39.0.....	40.0.....	39.0
Water Filler (gal).....	4.6.....	4.7.....	4.6
Signal.....	None.....	MK 7 Mod 0.....	MK 4 Mods 0,1,2,3,4
Fuze.....	None.....	MK 247 Mod 0.....	None
Firing-Pin Assembly.....	None.....	None.....	MK 1 Mod 0
Arming-Wire Assembly.....	MK 1 or AN-M6A2	MK 1 or AN-M6A2	No Arming Wire

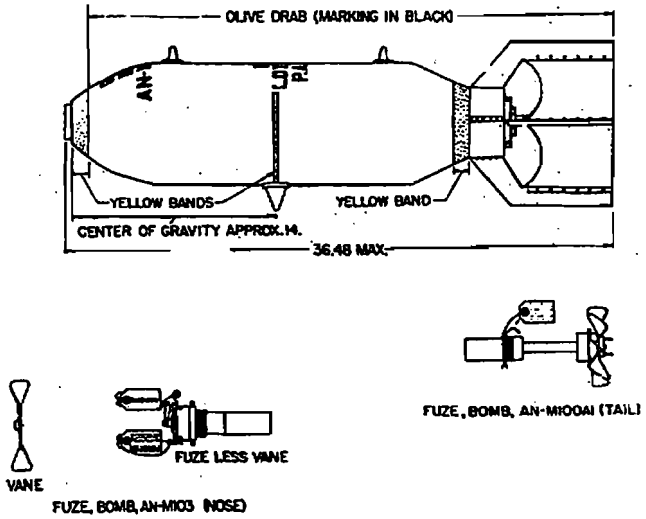
a. Description. Practice bomb MK15 Mod 2 (fig. 2-62 and table 2-50) is identical to the Mod 3 except that it is not adapted for the use of a fuze and signal. It is filled with water or a mixture of sand and water (fig. 2-63) for spotting purposes. For training purposes, a small washer may be soldered to the nose of the bomb to simulate a fuze. The end of an arming wire (which is normally inserted in the fuze of service type bombs) is then secured to the washer. For armed releases, the washer is torn free of the bomb by the arming wire; for safe releases, the arming wire remains secured to the washer. When used against armored-deck target boats, it is filled with water and released from an altitude of less than 7,000 feet.

b. Bomb, Practice: MK 15 Mod 3. Practice bomb MK15 Mod 3 has a light cased, cylindrical body with a threaded filling hole in its rounded nose. A box-fin assembly consisting of four metal vanes attached to a cone is welded to the aft end of the body. The bomb has two metal suspension band assemblies (each consisting of a circular clamp, a suspension lug, and two cap screws) for tightening the band to the bomb. The bands may be adjusted for double suspension of the bomb by orienting to suit the rack or shackle to which the bomb is to be attached. A flat nose attachment that reduces ricochet of the bomb at entrance angles as low as 90 degrees is used during antisubmarine practice. The attachment is secured in place by a cap which threads onto the filling hose. The bomb is used with practice bomb signal MK7 Mod 0 and inert fuze MK247 Mod 0, both of which are secured to the aft end of the bomb.

c. Bomb, Practice, 100-pound: MK15 Mod 4. The practice bomb MK15 Mod 4 is a light-cased, cylindrical bomb with a round nose and an integral box fin and cone. A flash tube, extending throughout its transverse axis, housed a pyrotechnic signal and firing-pin assembly. Two suspension lugs are welded to the bomb body 14 inches apart. A filling hole is located off center on the bomb nose and is sealed by a filler cap similar to those used on automobile gas tanks. The firing-pin assembly consists of two shallow metal cups, separated by a spacer which housed the firing pin. A cotter-pin through the nose end of the flash tube and two recesses in the lip of the forward cup locks the firing-pin assembly and signal in place.

d. Functioning. Upon impact of the bomb with the target, the signal is detonated, producing a flash and a large puff of smoke, which permits observation of the bombing accuracy.

BOMB, GP, 100-POUND, AN-M30



Description. The GP and M series bombs of 100-pound weight have the same dimensions. The GP is distinguishable from the M-series by the fact that it has a base plug in the tail and a single suspension lug in addition to two Army lugs. The old GP bombs is a relatively thin-cased bomb with an ogival nose, parallel side walls, and a tapered aft section. It uses both the box type and conical type fin assembly. The box-type fin assembly is secured to the aft end of the bomb with a fin locknut, while the conical-type fin assembly is secured to the bomb body by means of a support tube. The two Army lugs are 14 inches apart, each 7 inches from the center of gravity. The single suspension lug is on the center of gravity 14 inches behind the nose. The weight of the case is 42.1 pounds and the fins weigh between 5.6 to 17.5 pounds. The filler is either 50/50 amatol, TNT, or Tritonal. Percentage of filler is approximately 49 percent. The AN-M30 Bomb is fuzed in the nose with the AN-M103 Fuze and in the tail with the AN-M100A2 Fuze. Alternate fuzes that may be used as substitutes or for special purposes are the M103, M118, or M119 Nose Fuzes, and the M112, M100, M106, or its modifications, or the AN-M100A1 Tail Fuzes.

Length, assembled bomb
- **fin assembly AN-M103A1** ..... 40.26 inch
- **fin assembly M135** ..... 54.2 inch

Diameter ..... 8.18 inch

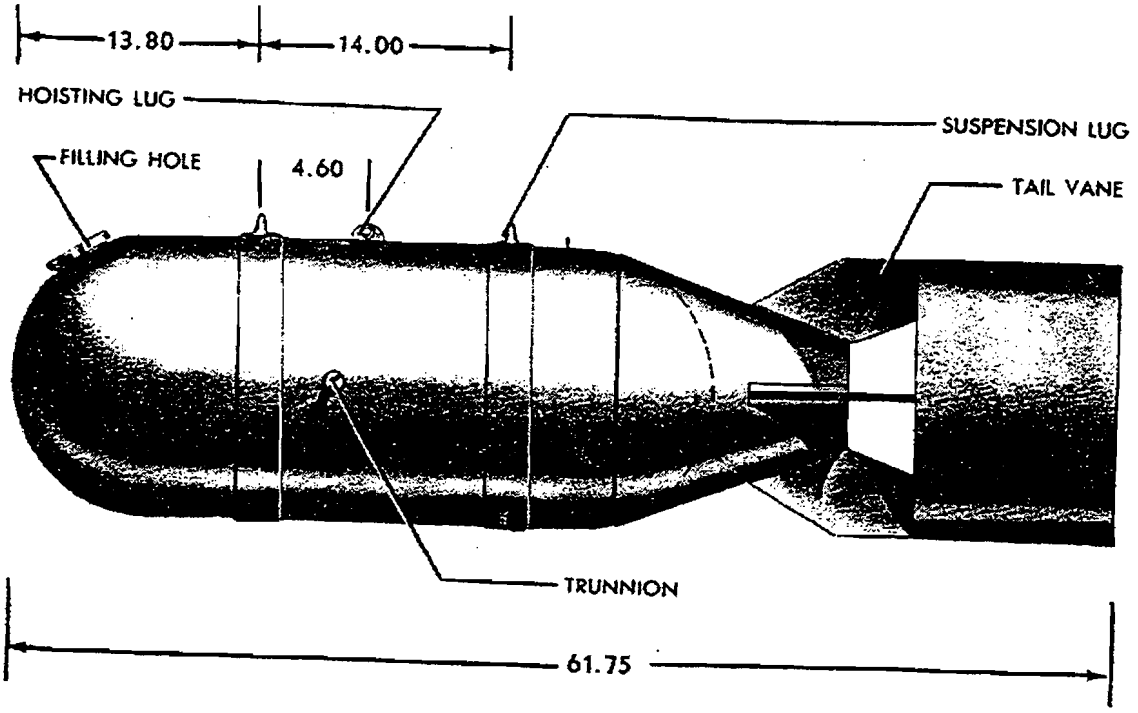
Weight of Filler
- **TNT** ..... 57 pound
- **Amatol** ..... 54 pound
- **Tritonal** ..... 62 pound

Fuze:
- **Nose** AN--M103, M103, M118, M119
- **Tail** AN-M103, M112, M100, M106, AN-M100A1

Painting and Markings ..... Olive drab with black stencil, 2 yellow bands (1aft, 1 center)

References: TM 9-1904, *Ammunition Inspection Guide*, 2 March 1944, TM 9-1325-200, *Bombs and Bomb Components*, April 1966

BOMB, PRACTICE, 500-POUND, MK 5, MK15 AND MK 21



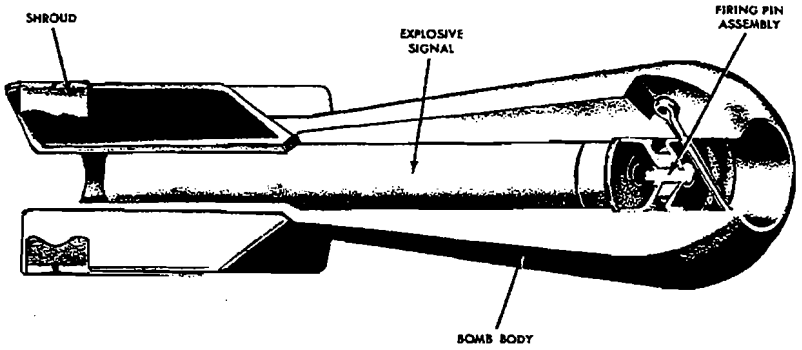
Use. This bomb is used for all types of bombing practice, except that it may not be used against armored deck target boats.

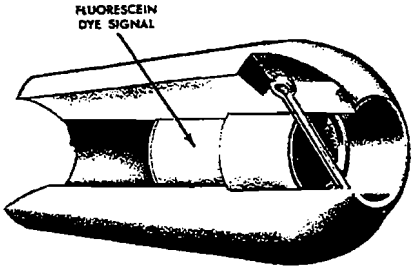
Description. The bomb body is made of welded steel sheet metal. Bomb are complete as shipped, except for the loading of the inert charge of water or wet sand. Anti-freeze could be added to prevent freezing. A filler hole is provided at or near the nose for loading. Neither fuzes or spotting charges are provided for this bomb. If an arming wire was desired for use with the bomb for training purposes, a small washer could be soldered to the bomb nose. The bomb is equipped with trunnions for dive bombing and may be suspended only from double-hook bomb racks or shackles, or in slings. The Mark 11 and 21 bombs are nearly identical, while the Mark 5 is longer and slightly larger in diameter.

Over-all length ..... 61.75 inches
Body diameter ..... 15.0 inches
Fin dimension ..... 15.0 inches
Weight
- **Empty** ..... 58.0 pounds
- **Water filled** ..... 273 pounds
- **Wet-Sand filled** ..... 500 pounds

Reference: OP 1280, *Aircraft Bombs*, February 1945

MINIATURE PRACTICE BOMBS
AN-Mk 5 Mod 1, AN-Mk 23, AN-Mk 43





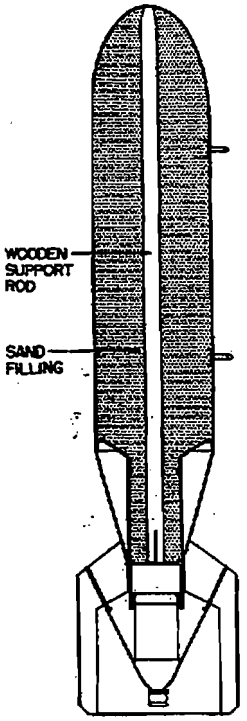
ORD D1160

Description. These bombs are used for low-altitude horizontal, or dive bombing practice. The three bombs are similar in physical appearance, but differ basically in the metal used to cast the body. Bombs are used with the AN-Mk 4 practice bomb signal which is a blank 10 gauge shotgun shell (extended length). Signals contain a black powder expelling charge and a red phosphorous pyrotechnic mixture. These bombs also are used with the MK5 signal which contains a fluorescein dye and is actuated by impact on water. When the Mk5 signal is installed, the firing pin assembly is not used.

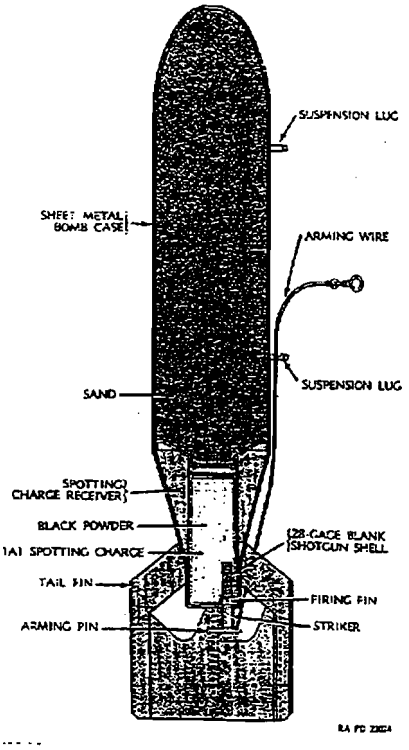
Over-all length	8.25 inches
Body Diameter	2.18 inches
Fin Dimension	2.5 inches
Weight	AN-Mk 5 Mod 1 - 2 lb. 11 oz. ± 1 oz AN-Mk 23 -3 lb. ± 2 oz AN-Mk 43 - 4 lb. 7 oz. ± 2 oz.
Signal	AN-Mk 4, Black powder/pyrotechnic charge Mk 5, Fluorescein dye

Reference: OP 1280, *Aircraft Bombs*, February 1945; TM 9-1325-200, *Bombs and Bomb Components*, April 1966

BOMB, PRACTICE, 100 POUND, M38A2



with M5 spotting charge



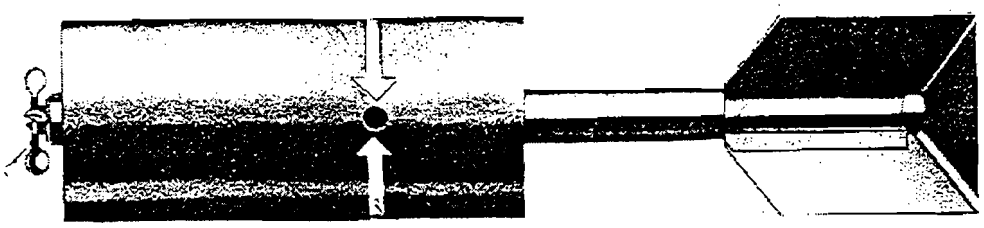
with M1A1 spotting charge

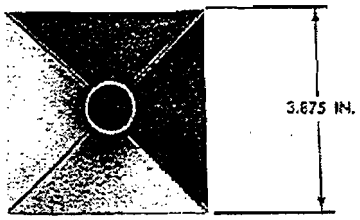
Description. This bomb simulates a General Purpose bomb of the same size. It is constructed of light sheet metal, approximately 22 gage, formed by rolling a rectangular sheet of metal into the form of a cylinder approximately 8 inches in diameter, and spot-welding the seam. The rounded nose is pressed from the same metal, as is the tail which is formed in the shape of a cone. The tail portion ends in a box type fins which is welded to the cone. Inside of the smaller end of the conical tail section is welded the spotting charge receiver. The spotting charge is assembled in a sleeve at the base of the bomb, within the fin box. Authorized spotting charges are the M1A1, M3, and M5. When using the M5 spotting charge a wooden support rod is installed in the bomb. Two suspension lugs are bolted to the bomb body during fabrication. The Suspension Band M1 is provided for single suspension. The band is a separate component. The over-all length of the bomb body is 472 inches. When empty, the bomb body weighs approximately 14 pounds. When completely loaded with sand and spotting charge, the weight of the bomb is approximately 100 pounds.

Over-all length..... 47.5 inches
Diameter ..... 8.13 inches
Weight empty ..... 15.7 pounds
Weight sand loaded & spotting charge ..... 100 pounds

Reference: TM 9-1904, *Ammunition Inspection Guide*, March 1944; NAVSEA OP 1664 Volume 2, *U.S. Explosive Ordnance*, February 1954; *Complete Round Chart #5981*, October 1944

BOMB, PRACTICE, 5-LBS, MK 106 MOD 0



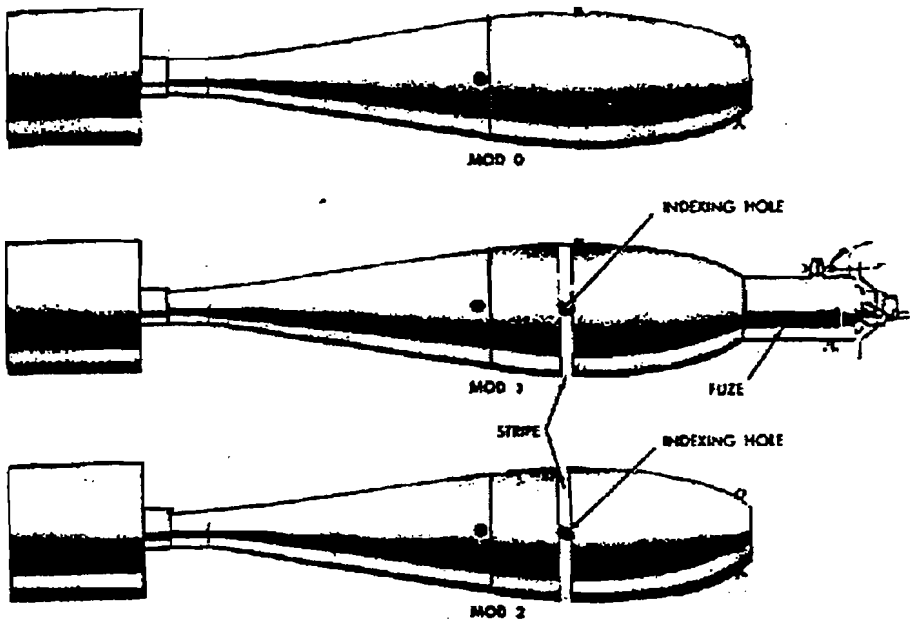


Description. Practice bomb MK106 Mod 0 is a thin-cased, cylindrical bomb. It is composed of a bomb body assembly, a practice bomb signal MK4 mod 3, and a modified fuze assembly M173. The bomb is composed of an inner cylinder, and outer cylinder, and a fin assembly. The bomb is designed for low altitude drops. Modified fuze assembly M173, consisting of an adapter and the fuze M173 less booster, is installed in the nose of the bomb. The fuze is armed by anemometer vanes after completing 220 feet of air travel. When the bomb impacts with the target, the fuze functions and causes instantaneous detonation of the signal, MK4 Mod 3. Smoke produced from the detonated signal is discharged rearward through an inner cylinder in the bomb body.

Over-all length..... 18.75 inches
Body Diameter ..... 3.875 inches
Weight..... 4.56 pounds
Signal..... MK4 Mod 3
Filler..... Smokeless powder/stabilized red phosphorus
Fuze..... M173 modified

Reference: TM 9-1325-200, *Bombs and Bomb Components*, April 1966

PRACTICE BOMB, 25-POUND, MK 76

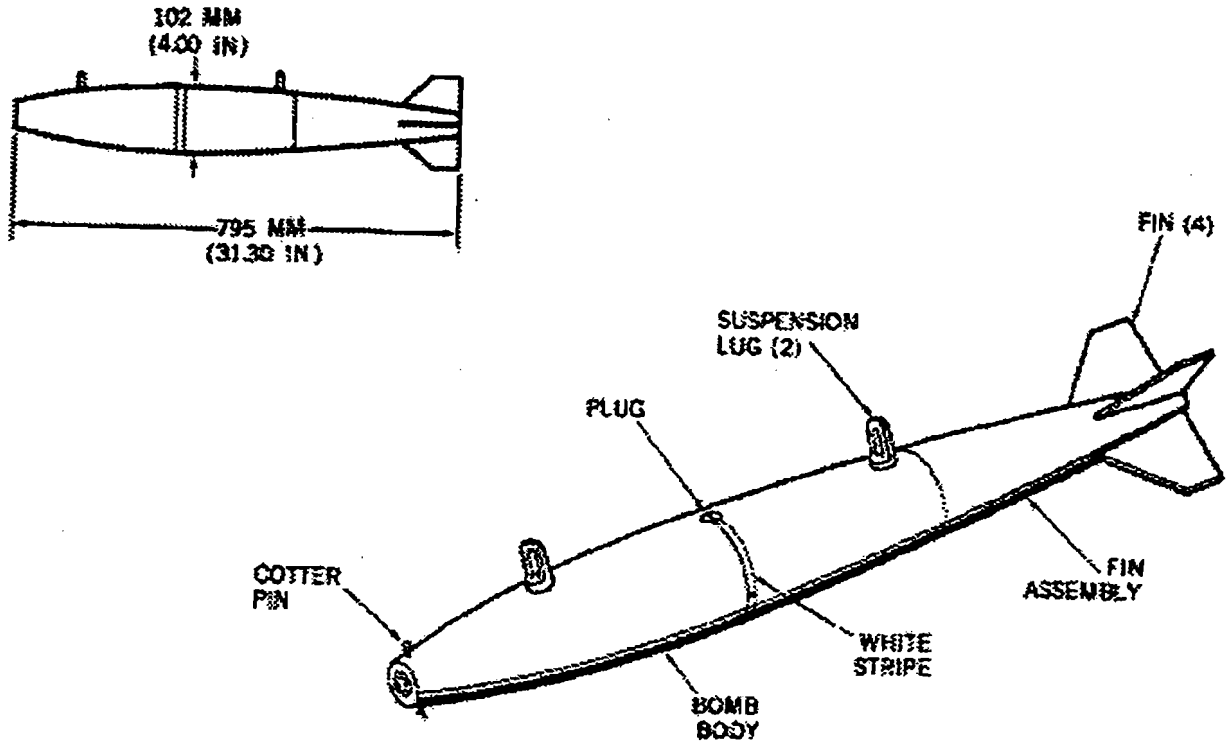


Description. Practice bomb MK 76 has a tear shaped, cast metal body which is centrally bored. The tail-tube assembly fits into the end of the bore. The conical after-body covers the tail-tube assembly and is threaded to the body. The two sections are staked together to prevent unscrewing. The fin assembly is welded to the tail tube. Firing pin assembly MK1 Mod 0 and the signal are assembled into the bore of the body and secured in place by a safety (cotter) pin. The firing pin assembly fires the signal, discharging smoke reward through the central tube.

Over-all length	8.25 inches
Body Diameter	2.18 inches
Fin Dimension	2.5 inches
Weight	AN-MK 5 Mod 1 - 2 lb. 11 oz. ± 1 oz
	AN-MK 23 -3 lb. ± 2 oz
	AN-MK 43 - 4 lb. 7 oz. ± 2 oz.
Signal	MK 4 Mod 3 & 4
Filler	
Mod 3	Smokeless powder /Red Phosphorous
Mod 4	Smokeless powder / Zinc Oxide

Reference: TM 9-1325-200, *Bombs and Bomb Components*, April 1966

BOMB, PRACTICE, MK 89

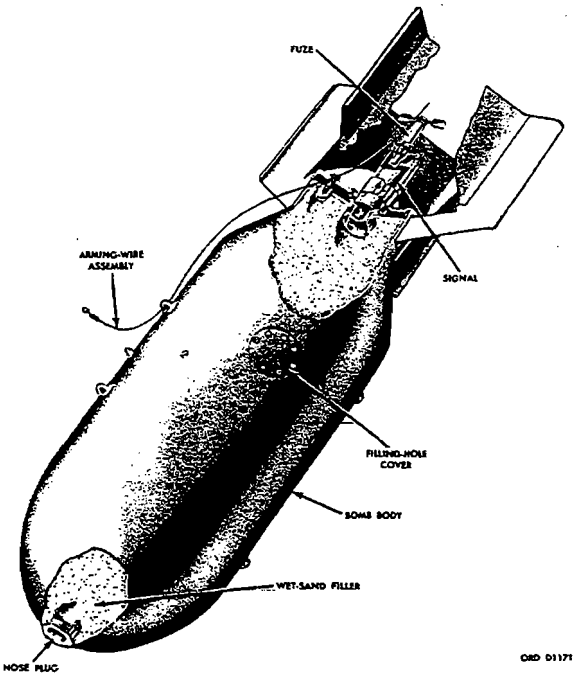


Description. This is a miniature practice bomb (56 lbs) and uses either a MK 4 or MK 5 signal to mark the impact point for scoring purposes.

Over-all length..... 31.3 inches
Diameter (body)..... 4 inches
Weight..... 56 pounds
Signal..... Mk 4 or Mk 5

Reference: Department of Defense, *ORDATA*, Version 1.0

BOMB, PRACTICE, 500-POUND, MK 65



General. Practice bomb Mk65 Mod 0 has a light-cased, cylindrical body and is constructed of welded sheet-steel sections. It has an ogival nose and a tapered aft end to which a box-fin assembly is bolted. A threaded filling hole is located in the nose of the bomb and is sealed by a nose plug and gasket. The nose plug is wired to a small bracket welded to the nose. Two suspension lugs 14 inches apart are welded to the bomb body and seven threaded recesses are located on the periphery of the bomb at the approxmate center of gravity. One or two hoisting lugs, screwed into these recesses, permit hoisting. The bomb is filled with wither water or wet sand.

Use. This bomb is authorized for many types of service usage, including catapult and jet-assisted takeoffs and arrested landings. It is used with the Mk6 signal and inert fuze Mk247 Mod 0. The signal is seated in a recess in the tail of the bomb body and is secured to the fin assembly by a clamp provided with the signal.

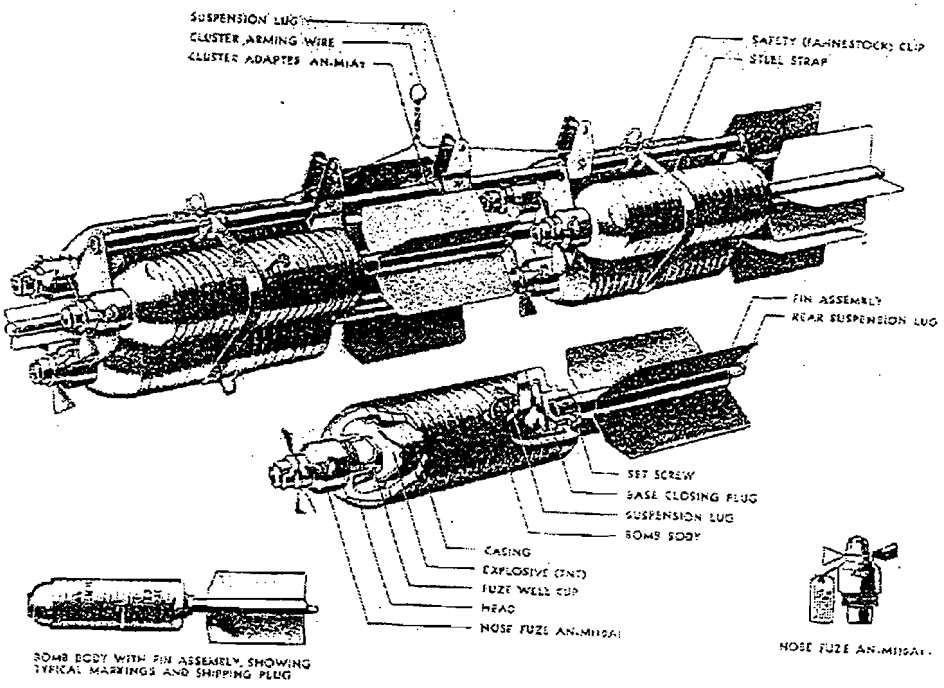
Functioning. Upon impact of the bomb, the fuze firing pin initiates a blank .38-caliber cartridge which, in turn, ignites the signal to produce a flash and a large puff of gray smoke.

Over-all length ..... 56.61 in
Body diameter ..... 14.0 in
Fin span ..... 18.94 in
Weight
- **Empty** ..... 48.2 lbs
- **Water filled** ..... 248.8 lbs
- **Wet-Sand filled** ..... 443.2 lbs

Signal ..... Mk 6 Mod 0
Fuze ..... Mk 247 Mod 0 (inert)

Reference: TM 9-1325-200, *Bombs and Bomb Components*, April 1966

BOMB, FRAGMENTATION, 20-LBS, AN-M41 & AN-M41A1



Body. This bomb is constructed of cast-steel nose and tail pieces, a seamless steel inner tube, and a helically-wrapped drawn steel wire wrapping around the inner tube. The tube is threaded to hold the nose and tail section

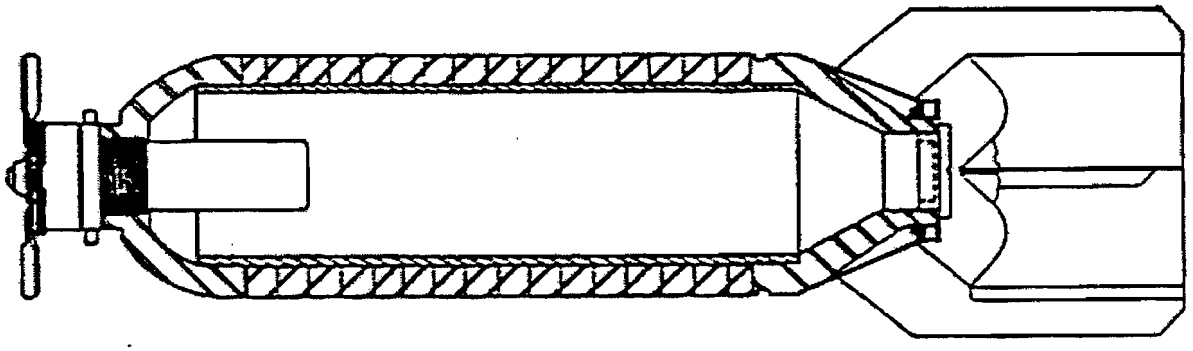
Suspension. For individual suspension of this bomb, a U-shaped eyebolt of steel is welded to the body at the center of gravity for horizontal suspension, and an eyebolt is welded to the tail for vertical suspension. The bomb may be dropped in a cluster of six bombs in the *Cluster Adapter AN-M1A2 or M1*, forming the *Cluster AN-M1A1 or M1.* The cluster adapter is made of sheet steel, and does not use eyebolts of bombs for suspension.

Tail. Four rectangular sheet-steel vanes are welded to a length of one-inch cast-iron pipe which screws into the base filling plug.

Over-all length..... 19.5 inches
Body length..... 11.3 inches
Diameter..... 3.6 inches
Over-all weight..... 20.3 pounds
Filler..... TNT
Filler weight..... 2.7 pounds
Fuzing..... M158, AN-M110A1, M110, M109

Reference: NAVSEA OP 1664, *U.S. Explosive Ordnance*, May, 1947

BOMB, FRAGMENTATION, 90 LBS, M 82

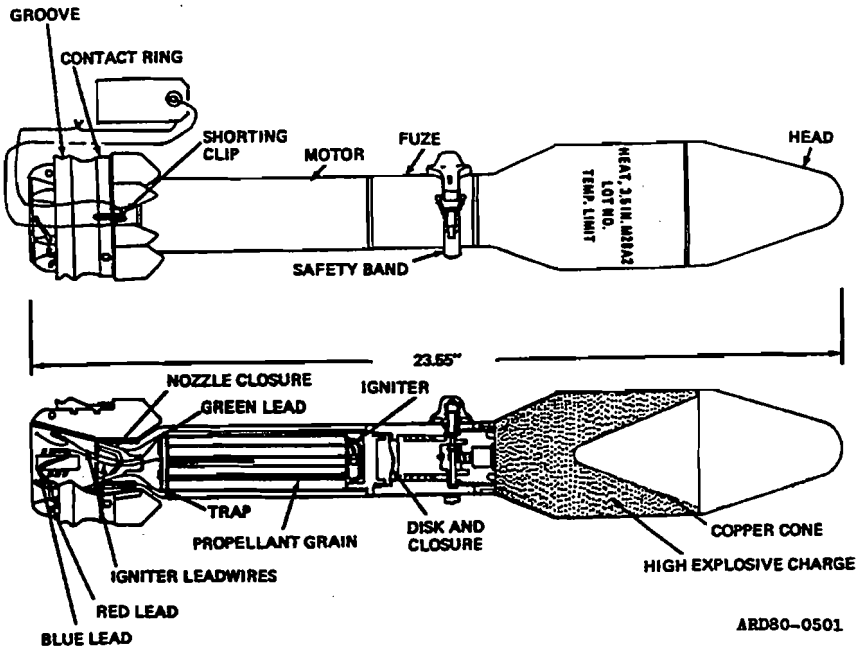


Description. This bomb is constructed of nose and tail pieces of cast steel which screw onto a central section of seamless steel tubing. A square helical steel spring is wound around the steel tubing. The nose and tail pieces are partially cut through, to afford greater fragmentation. The bomb is suspended by single lug or in a cluster, M27, which contains six bombs. The tail is normal U.S. box construction and is secured to the bomb by a locking ring.

Overall Length ..... 28 inches
Body Length ..... 19.8 inches
Body Diameter ..... 6 inches
Total Weight ..... 91.6 lbs
Filler Weight ..... 12 lbs Composition B
Fuze, Nose M103, M103A1, M135, M135A1, M136, M136A1, M139, M139A1, M140, M140A1 M149, M163, M164, M165, M166, T82

References: NAVSEA OP 1664, *U.S. Explosive Ordnance,* May 1947; TM 9-1980, *Bombs for Aircraft,* December 1950

ROCKET, HEAT, 3.5 INCH, M28A2



Description. This is a high-explosive antitank rocket. The complete round is an assembly consisting of a head, fuze, motor, nozzle and fin assembly.

Head. The head, which contains the explosive charge (composition B, 1.82 lb.), is of light steel construction. It is cylindrical in shape, 3.5 inches in diameter, with a conically shaped ogive, and tapers to 2 inches in diameter at the rear. It contains an internal cone, which provides for shaping the explosive charge. The rear of the head is threaded internally for attachment of base detonating fuze.

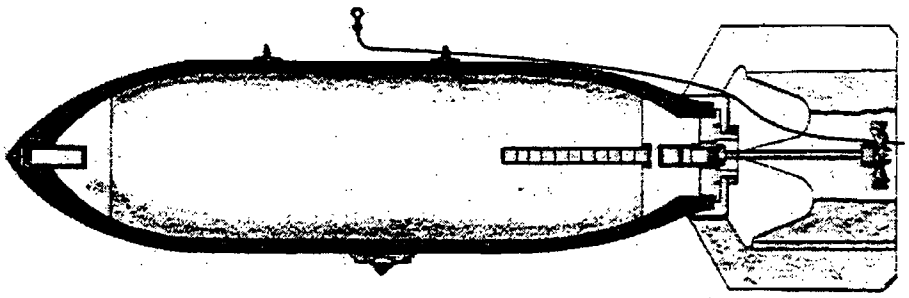
Fuze. The base-detonating fuze is of the simple inertia type which functions with non-delay action upon impact. The explosive train includes a detonator and a booster. An ejection pin, which passes through the fuze body and prevents movement of the internal parts, is provided to preclude accidental functioning during shipment, handling, and firing. The safety band covers the head of the ejection pin and prevents it from moving shipping and handling.

Motor. The motor consists of a body, closure, trap and spacer assembly, propellant, igniter with electric squib and leads, nozzle closure, and nozzle and fin assembly.

Over-all length ..... 23.67 inches
Diameter ..... 3.5 inches
Weight ..... 8.61 pounds
Filler ..... Comp B
Filler weight ..... 1.82 pound
Propellant ..... M7 propellant powder
Propellant weight ..... 12 grains
Igniter M20

Reference: TM 9-1950, *Rockets*, July 1950, TM 43-0001-30, *Army Data Sheets, Rockets, Rockets Systems, Rocket fuzes, Rocket Motors,* December 1981

BOMB, SEMI-ARMOR PIERCING, 500 LB, AN-M58 & AN-M58A1



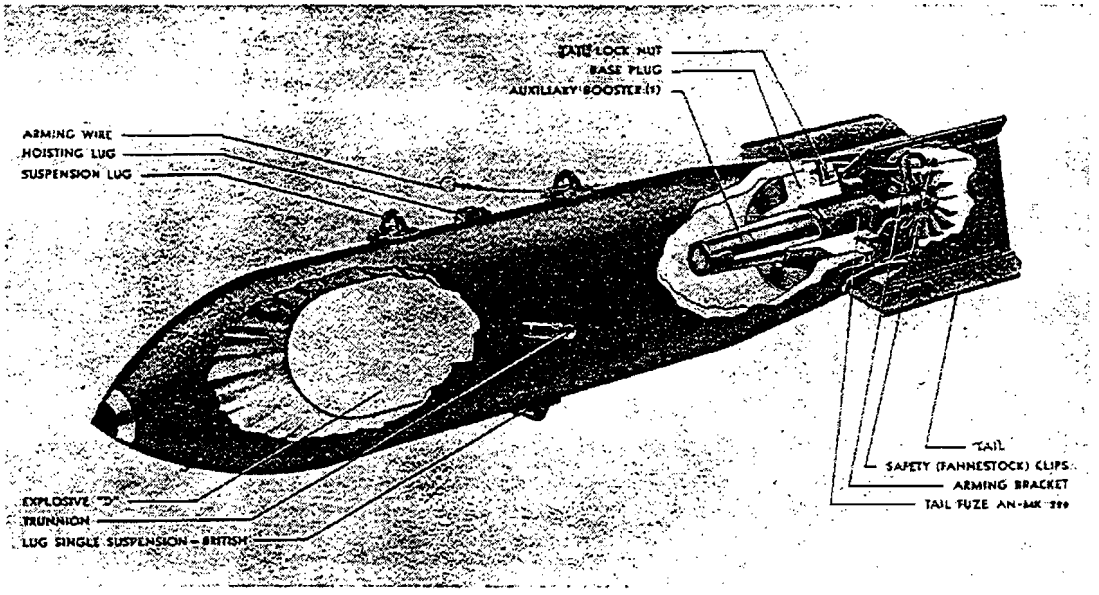
Description. This bomb is of a single-piece construction, either cast or spun, slightly streamlined in shape, with a semi-pointed nose. The threaded nose opening receives a fuze-seat liner and a steel plug, which can be removed, allowing an instantaneous nose fuze to be inserted when fragmentation effect is desired. Suspension lugs are welded to the case; for dive bombing, trunnions on a band may be installed. The filler is cast TNT with a wax pad employed in the nose to cushion the explosive against premature detonation on impact with an armored target. One Auxiliary Booster M104 is used, positioned just before the Adapter Booster M102. In the AN-M58A1, 9.5 pounds of Amatol are removed and replaced by 31.5 pounds of steel to increase the penetration of the bomb. To enable the S.A.P. bomb to be used with anti-withdrawel fuzes, the bomb incorporates base plate locking pins and the Adapter Booster M102A1. Newer models eliminate the Auxiliary BoosterM104, and utilize Picratol for the main charge.

Body Length ..... 46.8 inches
Body Diameter ..... 11.8 inches
Total Weight ..... 494 lbs
Filler Weight ..... 162 lbs
Filler Type ..... Explosive D, cast TNT, Amatol, or Picratol

Fuze	**Nose**	**Tail**
	M103, M103A1	M102, M102A1
	M135, M135A1	M162
	M136, M136A1	M114, M114A1
	M139, M139A1	M125, M125A1
	M140, M140A1	M117
	M149	M134
	M163, M164, M165	
	M166, M168	

References: NAVSEA OP 1664, *U.S. Explosive Ordnance,* May 1947; TM 9-1980, *Bombs for Aircraft,* December 1950, TM 9-1984, *Disposal of American and Allied Bombs and Fuzes*, November 1942

BOMB, ARMOR PIERCING, 1000 LBS, AN-MK 33



Use. The 1,000 pound A.P. Bomb AN-Mk 33 is designed to provide, in this weight, a bomb of effective armor-piercing ability. It is furnished with fittings to accommodate all types of Army, Navy, and British suspension.

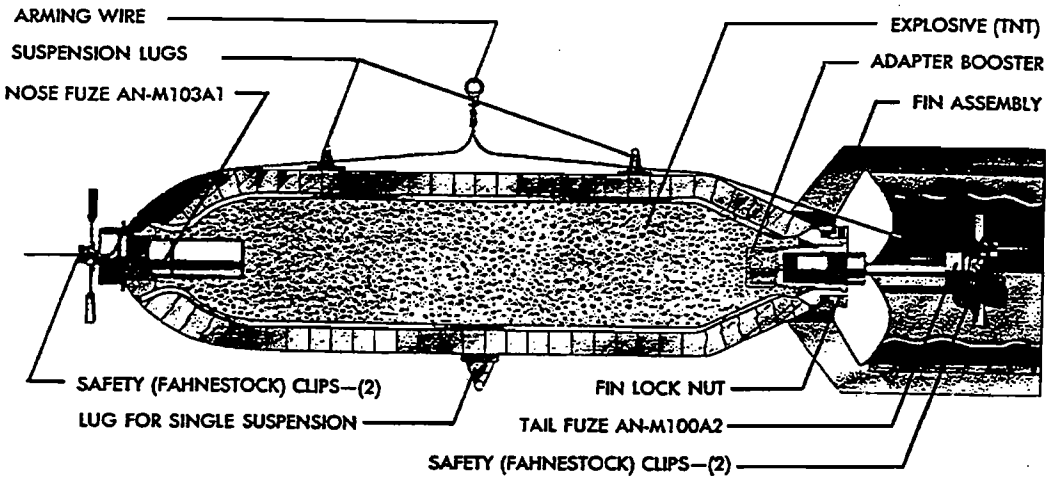
Description. This bomb is of a single-piece forged, machined construction, with a pointed nose, parallel sides, and slightly boat tailing. The bombs are suspended by fittings which screw into holes drilled into the bomb case and secured by bolts. Box type tail assembly is used on these bombs. The main filling of these bombs is pressed Explosive "D" or cast TNT. The tail fuze pocket requires the use of the granular TNT Auxiliary Booster Mk 1.

Fuze. The fixed delay (0.08 seconds) of the Fuze AN-Mk 228 used with this bomb will cause detonation to occur after the bomb has penetrated an armored deck.

Overall Length ..... 73 inches
Body Length ..... 58 inches
Body Diameter ..... 12 inches
Total Weight ..... 1,025 pounds
Filler Weight ..... 140 pounds
Filler Type ..... TNT or Explosive "D"
Fuze ..... Tail Mk 228

References: NAVSEA OP 1664, *U.S. Explosive Ordnance,* May 1947; OP 1280, *Aircraft Bombs,* February 1945

BOMB, FRAGMENTATION
220-LBS, AN-M 88 & 260-LBS, AN-M 81



260–pound Frag. Bomb AN–M81

Description. The bombs, AN-M88, (220-lbs), and AN-M81 (260-lbs) are constructed of nose and tail pieces of cast steel which screw onto a central section of seamless steel tubing. A square helical steel spring is wound around the steel tubing. The nose and tail pieces are partially cut through to afford greater fragmentation. The AN-M88 differs from AN-M81 only in that it has a 0.75-inch steel coil around the body instead of the one-inch coil.

Fuzing

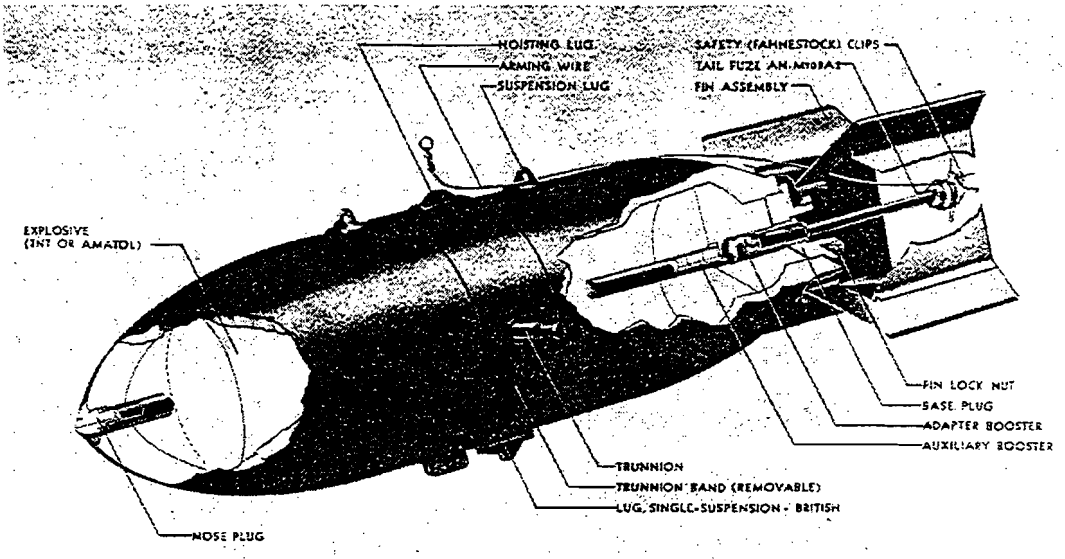
Nose: AN-M103, AN-M103A1, M139, AN-M139A1, M140, AN-M140A1 (All instantaneous settings), M135, M135A1, M136, M136A1, M163, M164, M165, M166, T82, M149, T50E1, T89, T91

Tail: AN-M100A2, or AN-M100A1, M160. (A non-delay Primer Detonator M14 must be used)

Overall Length ..... 43.7 inches
Body Length ..... 32.8 inches
Body Diameter ..... 8 inches
Total Weight ..... 216.17 lbs (AN-M88), 260 lbs (AN-M81)
Filler ..... Composition B
Filler Weight ..... 46.69 lbs (AN-M88), 34.1 lbs (AN-M81)

References: NAVSEA OP 1664, *U.S. Explosive Ordnance,* May 1947

BOMB, SEMI-ARMOR PIERCING, 1000 LB
AN-M59 & AN-M59A1



Use. The 1000-pound S.A.P. Bomb AN-M59 is designed to provide a bomb of greater penetration ability than general purpose bombs of comparable weight.

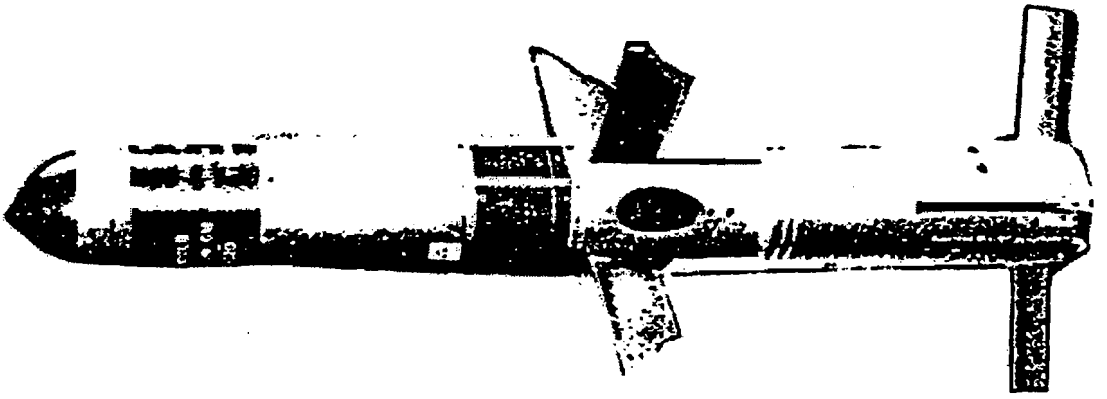
Description. This bomb is of a single-piece construction, with a semi-pointed nose. In the SAP mode the nose is filled with a steel plug. However, as an option this plug can be removed and an instantaneous nose fuze can be installed. This will prevent penetration and primarily for fragmentation effect. The bomb contains either 318 pounds of TNT or 308 pounds of 50-50 Amatol.

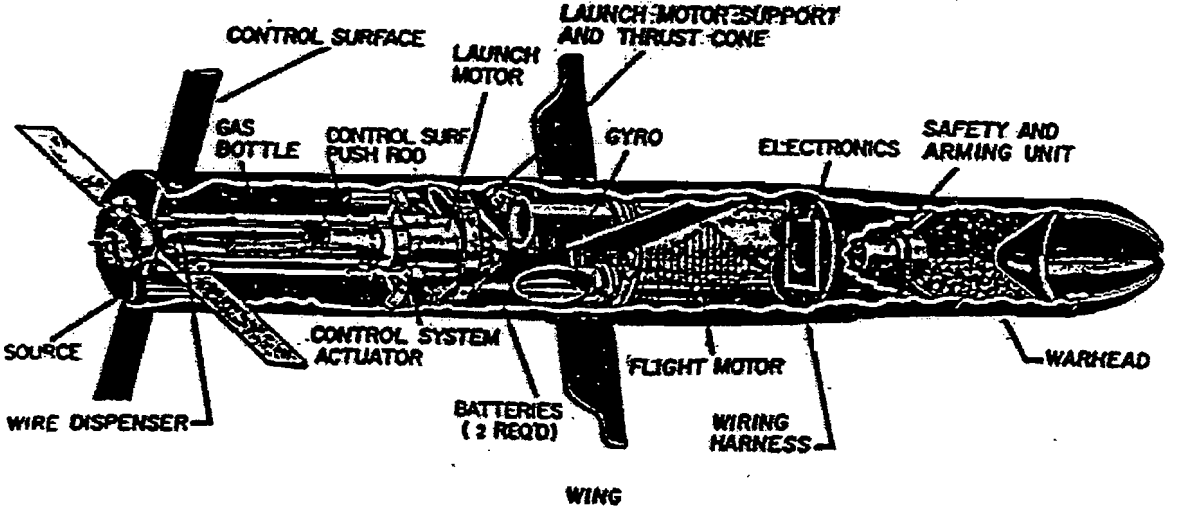
Body Length ..... 57.3 in
Overall Length ..... 70.3 in
Body Diameter ..... 15.1 in
Total Weight ..... 1,000.3lbs./990 lbs (TNT/Amatol loaded),
Filler & Filler Weight ..... TNT, 318 lbs or Amatol, 308 lbs

Fuzes	**Nose**	**Tail**
	M103, M103A1	M102, M102A1
	M135, M135A1	M162
	M136, M136A1	M114, M114A1
	M139, M139A1	M125, M125A1
	M140, M140A1	M117
	M149	M134
	M163, M164, M165	
	M166, M168	

References: OP 1280, *Aircraft Bombs,* February 1945; NAVSEA OP 1664, *U.S. Explosive Ordnance,* May 1947

BGM-71, TOW MISSILE



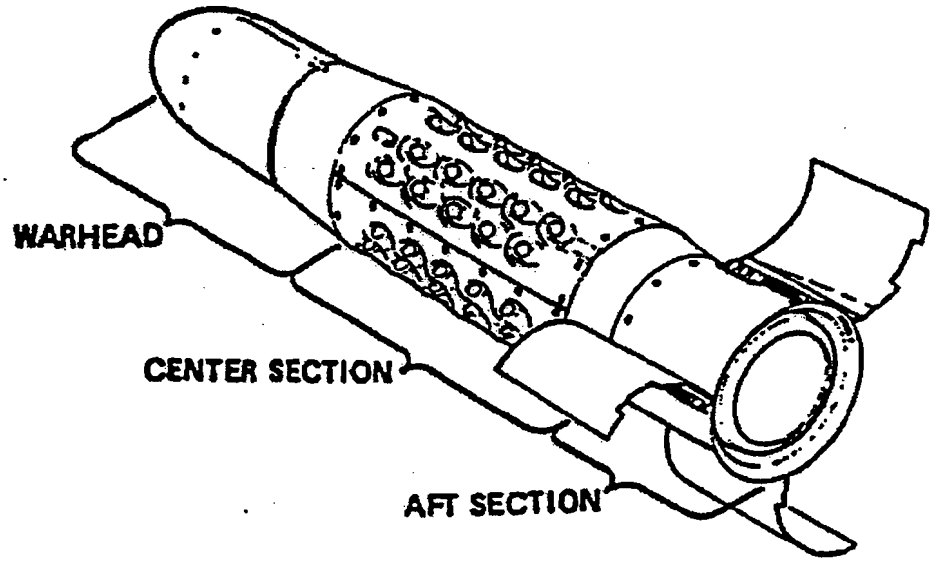


Description: The TOW missile is a long-range, heavy anti-tank system designed to attack and defeat enemy armor, bunkers, and other targets. The TOW Weapons System was initially fielded in 1970, and since that time has underwent five missile modifications, and two system modifications.

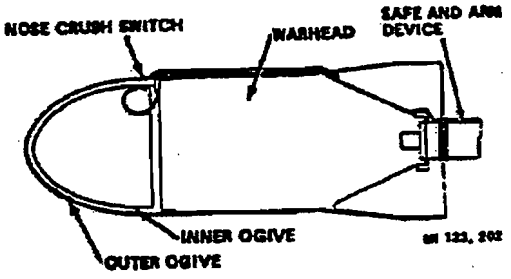
Over-all length..... 50.6 inches
Diameter ..... 8.6 inches
Weight..... 54.2 to 64.1 pounds
Filler..... LX-14 (BGM-71D)
Explosive Weight of Warhead ..... 5.3 to 7.0 pounds

Reference: *TM 9-1425-472-12* and Defense Ammunition Center course handout *AMMO-C-44*

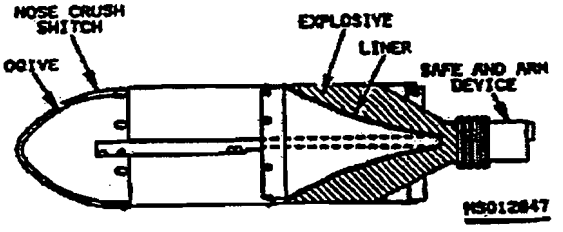
GUIDED MISSILE, DRAGON



Description. The DRAGON is a man-portable, recoilless, tube-launched medium antitank/assault weapon. It is shoulder fired and has a warhead effective enough to defeat most armor targets. The DRAGON is a command guided missile that is directed to the target by electrical commands sent through a wire which is dispensed from the missile during flight. The missile comprises three major section: Warhead section contains the explosive charge and fuze system. The center body section contains the rocket motors and the fire control signals circuit card assemblies. The aft body section contains the missile thermal battery, displacement gyro, squib actuated time delay switch, control signals computer, infrared transmitter, and the fin and bobbin assembly.

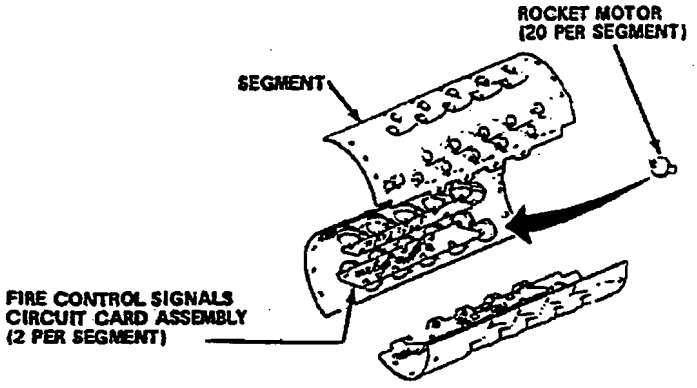


M222



MK 1 MOD 0

Warhead Section. This has two main parts: the warhead and the fuzing section. The fuzing section consists of two major components: the nose crush switch and the safe and arm device. The nose crush switch consists of two concentric ogives, one mounted within the other. Contact of the outer ogive with the inner ogive, after the safe and arm device has armed, initiates detonation. The safe and arm device is connected to the charge holder. The safe and arm device function is started by the missile thermal battery when it comes up to power.



Center body section. This serves as a missile airframe and provides the structural mounts for sixty small rocket motors. Twenty rocket motors are mounted to each of three segments. Each rocket motor is composed of a case, an exhaust nozzle, an igniter, the propellant grain, grain retainer and a rupturable disk.

Aft body section. This houses the missile thermal battery, the squib-actuated time delay switch, the displacement gyro, the control signals computer, the control bobbin, the infrared transmitter, and the fins.

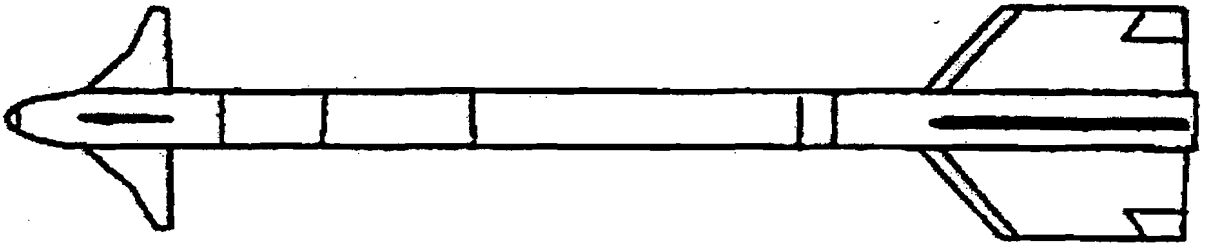
Difference between Models.
- Guided Missile and Launcher, Surface Attack: M222 mounts an armor defeating HEAT warhead. The warhead is painted black; aft section is unpainted; data markings are yellow.
- Guided Missile and Launcher, Surface Attack: Mk 1 MOD 0 mounts a more powerful HEAT warhead. The warhead is painted black; aft section is unpainted; data markings are yellow.
- Guided Missile and Launcher, Surface Attack, Practice: M223 mounts an inert warhead. The warhead is painted blue; aft section is unpainted; data markings are white.

Explosive Data

Thermal Battery Squid (M100 & M200)	Lead Mononitrorescorcinate, Potassium Chlorate, Binder
Squib Actuated Time Delay Switch	Lead Mononitrorescorcinate, Potassium Dinitrobenzfuroxan
Gyro Squib	Potassium Dinitrobenzfuroxan
Rocket Motor Igniter	Prime Mix: Lead Styphnate, Potassium Perchlorate, Nitro Cellulose, Acetone Booster Mix: Zirconium, Potassium Perchlorate, Nitro Cellulose, Barium Nitrate
Rocket Motor Propellant Grain	High Energy Double Base M36 Embossed Sheet Propellant
Gas Pressure Generator Igniter	Igniter: Boron/Calcium Chromate, Boron/Potassium Perchlorate Output: Zirconium/Potassium Perchlorate, Nitrocellulose, Butyl Acetate
Propellant Stick Assembly	M36
Bias Escapement Actuator	Potassium Dinitrobenzfuroxan
Safe and Arm Device	Primer: Lead Azide, PETN Lead Charge: RDX
Warhead (HEAT M225 and Mk 128 Mod 0	Octol Shaped Charge, PBX Booster

References: TM 9-1410-480-34, *DS and GS Maintenance Manual: Surveillance of Guided Missile and Launcher, Surface Attack, M222, and MK1 MOD 0; and Guided Missile and Launcher, Surface Attack, Practice, M233, including Repair Parts and Special Tool Lists*, dated June 1989

AIM-9, SIDEWINDER MISSILE

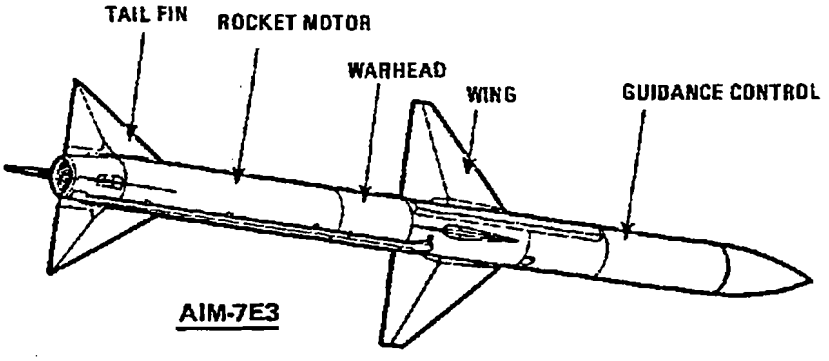


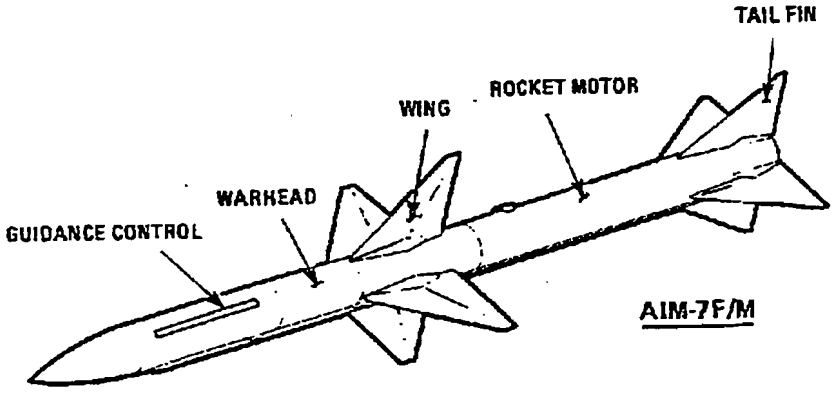
Description. This missile is a supersonic, heat-seeking, air-to-air missile. This missile has gone through several configurations. Currently the AIM-9L, M, & P models are in use.

Over-all length ..... 113 inches
Diameter ..... 5 inches
Weight ..... 178.2 pounds (AIM-9L)
Filler ..... HBX or PBX
Explosive Weight of Warhead ..... 10.25 pounds (AIM-9L)

Reference: *US Air Force 1997 Weapons File*, dated 1 May 1997

MISSILE, AIM-7E3, AIM-7F/M, SPARROW





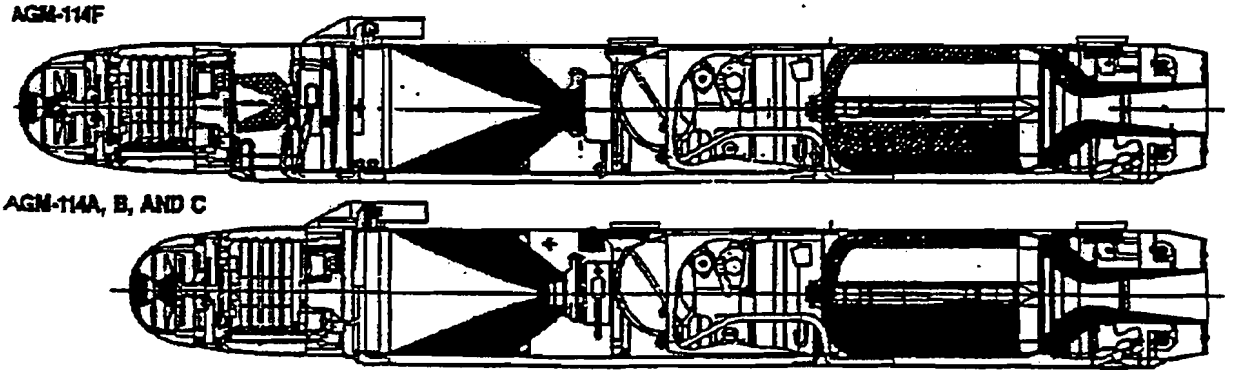
Description. The AIM-7 is a supersonic, air-to-air guided missile designed for ejection launch. The missile can intercept and destroy targets in adverse weather conditions. The AIM-7 is a semiactive missile which is guided on either continuous wave or pulse Doppler radio frequency energy radiated by the launching aircraft and reflected by the target. The missile is guided, controlled, and detonated by the target seeker and flight control sections. The warhead is of continuous-rod design which expands upon detonation of its explosive charge to produce target destruction. The solid propellant rocket motor provides the thrust.

Rocket Motor. The AIM-7 rocket motors are solid propellant motors providing thrust (all-boost, AIM-7E3 and boost-sustain, AIM-7F/M) for the missile. The motor is attached to the aft end of the missile warhead (AIM-7E3) or the control section (AIM-&F/M) and consists of three major subassemblies: a case propellant grain, a safe and arm igniter assembly, and a nozzle weather seal assembly. The motor case consists of a cylindrical tube section with an integral forward dome and an aft boattail section. The boattail incorporates four fin support brackets Z(dovetails) and an antenna mount

	AIM-7E3	AIM-7F	AIM-7M
Length	12 ft 1 in	12 ft	12 ft
Diameter	8 in	8 in	8 in
Wingspan	40 in	40 in	40 in
Tailspan	32 in	32 in	32 in
Rocket motor	Boost	Boost-Sustain	Boost-sustain

Reference: TO 1-1M-34, Section IV, *Air-to-Surface Munitions*, date unknown

AGM-114, HELLFIRE MISSILE

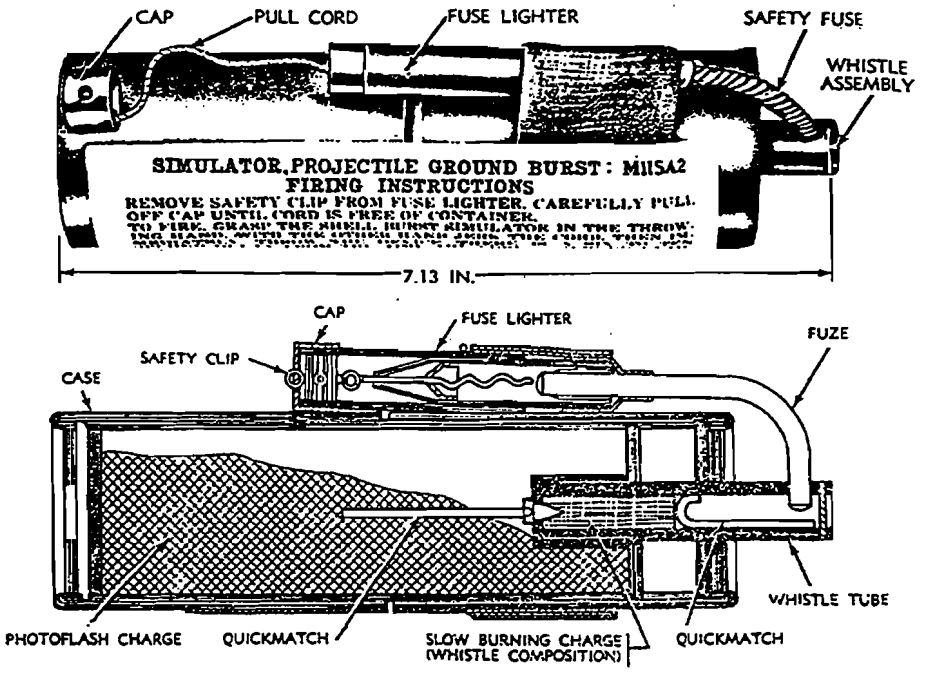


Description. This weapons system is a modular terminal homing missile system designed for helicopter launch against hard point targets found on the mid-intensity battlefield.

Over-all length..... 64 to 71 inches
Diameter..... 7 inches
Weight..... 100 to 108 pounds
Filler..... LX-14
Explosive Weight of Warhead..... 13.7 pounds

Reference: *Defense Ammunition Center course handout AMMO-C-44*

SIMULATOR, PROJECTILE, GROUND BURST, M115A2

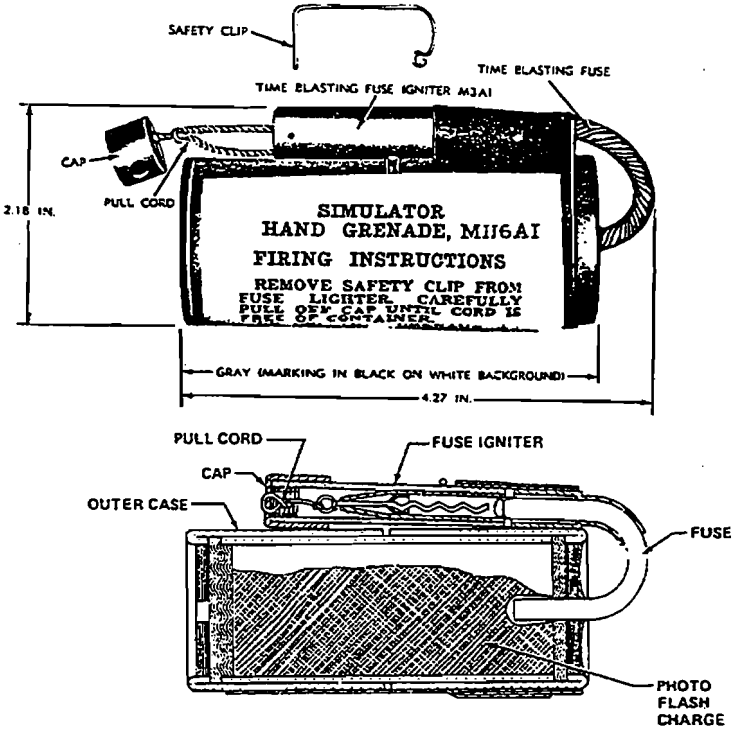


General. This simulator is a pyrotechnic device used to provide battle noises and effects during troop maneuvers. The simulator is ignited by the action of time blasting fuse igniter M3A1. Following a delay of 6 to 10 seconds after ignition, the simulator produces a high pitch whistle which lasts two to four seconds. After a fraction of a second, the simulator explodes, producing a flash and loud report.

Description. The body of the simulator consists of a cylindrical paper tube (closed at both ends) containing approximately 2 ounces of photoflash powder and whistle assembly which extends from one end of the tube. The simulator is 2.38 inches in diameter (including fuse lighter) and 7.13 inches long. The whistle assembly is a paper tube containing a pressed, slow burning powder charge, (2.0 grams). Extending from the side of this assembly is a length of safety fuse which, after a 90° bend, is inserted in a fuse lighter M3A1 taped to the side of the simulator. The fuse lighter contains a double pull cord and a cellulose nitrate coating on the phosphorous-coated friction wire and ignition composition.

References: TM 43-0001-37, *Military Pyrotechnics*, February 1977; TM 9-1370-200, *Military Pyrotechnics*, September 1966

SIMULATOR, HAND GRENADE, M116A1



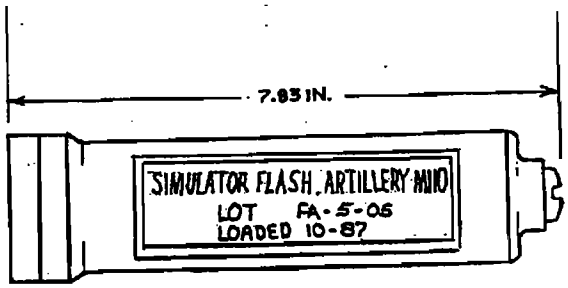
General. This simulator is used to provide battle noises and effects during troop maneuvers. This simulator is ignited by the action of a time blasting fuse igniter (fuse lighter) M3A1 and is thrown like a hand grenade. The time blasting fuse (safety fuse) burns for 5 to 10 seconds after ignition, followed by a flash and accompanying loud report.

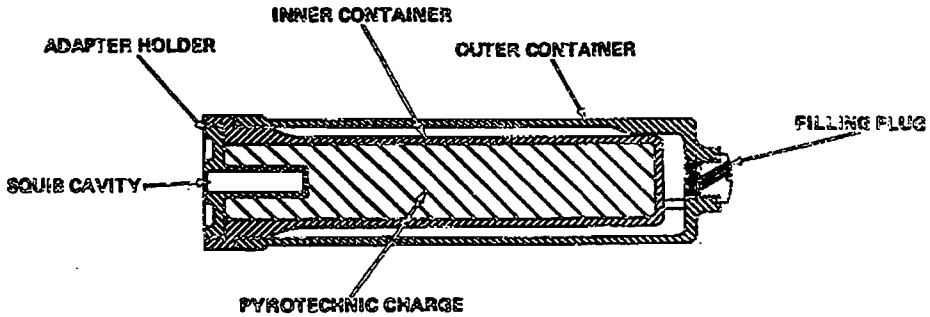
Description. The body of the hand grenade simulator consists of a cylindrical paper tube (closed at both ends), containing one and one quarter ounces of photoflash powder. The simulator body is 1.6 inches in diameter (2.18 inches across time blasting fuse igniter) and 3.75 inches long (4.27 inches with time blasting fuse). A length of time blasting fuse extends from the center of one end of the body and, after a 180° bend, is inserted into time blasting fuse igniter M3A1 taped to the side of the simulator. The time blasting fuse igniter contains a double pull coed, a ripple wire coated with a phosphorous friction composition, a small metal cup filled with ignition composition. There is a cellulose nitrate coating on the phosphorous coating and on the ignition composition. The sealing cap is held in place during shipment and handling by a spring type wire safety clip.

M116 Simulator. This simulator is similar to the M116A1, except that the time blasting fuse igniter M3, which has a single pull cord and no cellulose nitrate coating on the phosphorous coated friction wire and ignition composition, is used in place of the time blasting fuse igniter M3A1.

References: TM 43-0001-37, *Military Pyrotechnics*, February 1977; TM 91370-200, *Military Pyrotechnics*, September 1966

SIMULATOR, FLASH, ARTILLERY, M110





General. To effect battle conditions in artillery maneuvers and as a decoy in forward combat areas. Its flash closely resembles those of the 90-mm Gun M2 series and the 155-mm Howitzer M1 series.

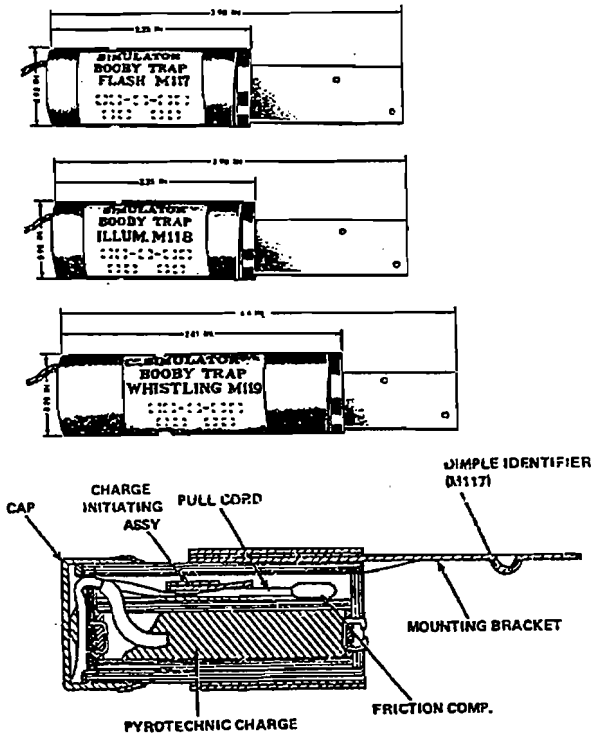
Description. The simulator consists of an inner container and an outer container, both of black plastic. The inner container, containing the pyrotechnic charge, is closed at one end and internally threaded at the base to receive the adapter holder. The outer container seats upon the shoulder of the inner container at the base and is internally threaded to accept a filling plug at the other end. A commercial squib S93 is shipped with each round. Preparation for firing includes installation of the squib into the adapter holder, and pouring 70 cubic centimeters of gasoline through the filler hole into the space between the inner and outer containers.

Functioning. The simulator is electrically activated and discharged in a locally fabricated steel firing tube.. A minimum current of 2 ampere is required for actuation of the squib and the current source may be a battery or a blasting machine. The electric squib ignites the pyrotechnic charge and the gasoline. The simulator flash lasts slightly longer than that of the actual weapon. Its report is loud, but not comparable to the actual weapon report.

Weight.....0.76 pounds
Length.....7.81 inches
Diameter.....1.88 inches
Pyrotechnic charge.....3.0 ounce Flash Composition
Body Material.....Plastic
Color.....Black with white label

Reference: TM 43-0001-37, *Military Pyrotechnics*, February 1977

SIMULATOR, BOOBYTRAP, FLASH, M117; ILLUMINATING, M118; WHISTLING, M119

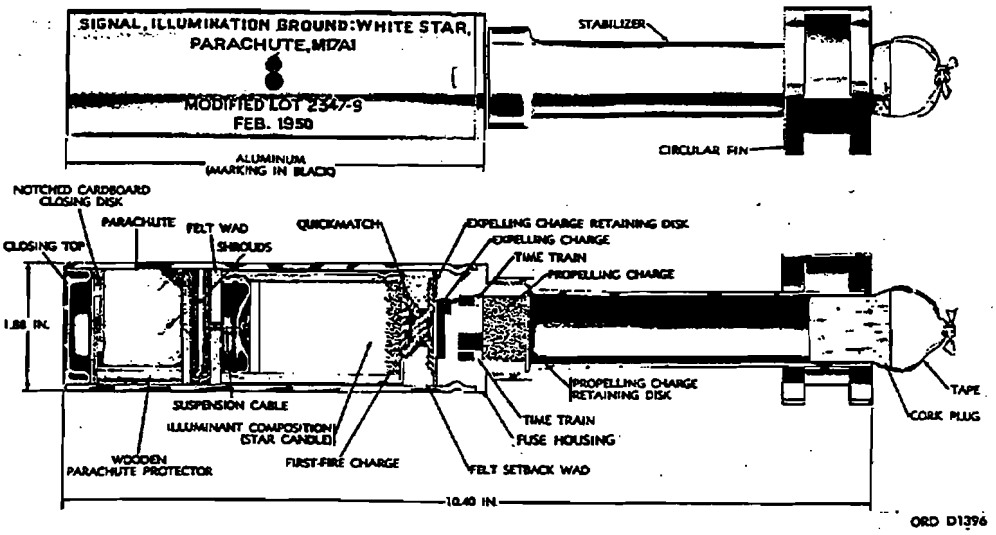


Description. The flash simulator M117 consists of a cylindrical outer tube (kraft paper) and a flat, metal nailing bracket which extends from one end of the tube. The body is 0.98 inch in diameter and, without nailing bracket, 2.25 inches long. The nailing bracket increases the length to 3.90 inches. Located within the outer tube is a charge initiating assembly and an inner tube containing a pyrotechnic charge. The assembly used for initiating the charge is located in the space between the inner and outer tubes. This assembly consists of a strip of paper coated with a friction-sensitive composition and folded into a pad so that the coated surfaces are face to face. The pad is attached to the inner tube. Over the top of the pad is a strip of felt held in place, under light pressure, by adhesive tape wrapped around the inner tube. A length of pull cord runs between the coated surfaces of the pad. One end of the pull cord is covered with friction composition; the other end is coiled and placed in the end of the body opposite the nailing bracket. A paper cap, held on by a strip of tape, covers this end of the simulator.

M117 ..... Flash composition, (0.09 ounces)
M118 ..... Illumination composition, (0.18 ounces)
M119 ..... Whistle composition, (0.12 ounces)

References: TM 43-0001-37, *Military Pyrotechnics*, February 1977; TM 9-1370-200, *Military Pyrotechnics*, September 1966

SIGNALS, ILLUMINATION, GROUND, PARACHUTE, WHITE STAR, M17A1; GREEN STAR, M19A2; AMBER STAR, M21A1; RED STAR, M51A1



Use: This signal produces a single parachute-supported star. It is fired from a rifle grenade launcher of the M7 series attached to a rifle firing a caliber .30 grenade cartridge M3.

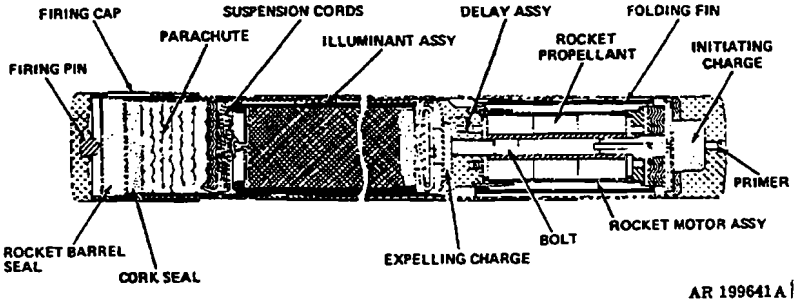
Description: The signal case is a drawn aluminum body (steel for A1B2 and A2B2 signals) secured at one end to an aluminum fuse housing (time train block) by four crimps. This fuse housing is chambered to hold smokeless powder propelling charge. A retaining disk holds the charge in place. The stabilizer is located at this end. It is a hollow tube with a circular fin at one end and threaded to the fuze housing at the other end. A cork plug with tape for removing it closes the finned end of the stabilizer. The fuse housing contains a circular time train groove housing filled with black powder and covered with an aluminum ring seal, except for the expelling charge connected to the fuse powder train by means of a flash hole in the fuse housing. The candle case is of cardboard with the end nearest the expelling charge colored by a perforated aluminum cap. A strip of quickmatch is inserted into the cap. The ignition charge follows the quickmatch and is followed by the first-fire charge and the illumination composition. All models are similar except for the different color star.

Length ..... 10.40 inches
Diameter (body) ..... 1.88 inches
Pyrotechnic charge ..... Illumination composition
Expelling charge ..... Black powder, 1.03 grams
Propelling charge ..... M9 1.69 grams
Color ..... Black markings, with the color of the signal on the top

References: TM 9-1370-200, *Military Pyrotechnics*, September 1966; TM 43-0001-37, *Army Ammunition Data Sheets Military Pyrotechnics*, April 1977

SIGNALS, ILLUM, GROUND, PARACHUTE, RED STAR, M126A1; WHITE STAR, M127A1; GREEN STAR, M195

AR199642



AR 199641A

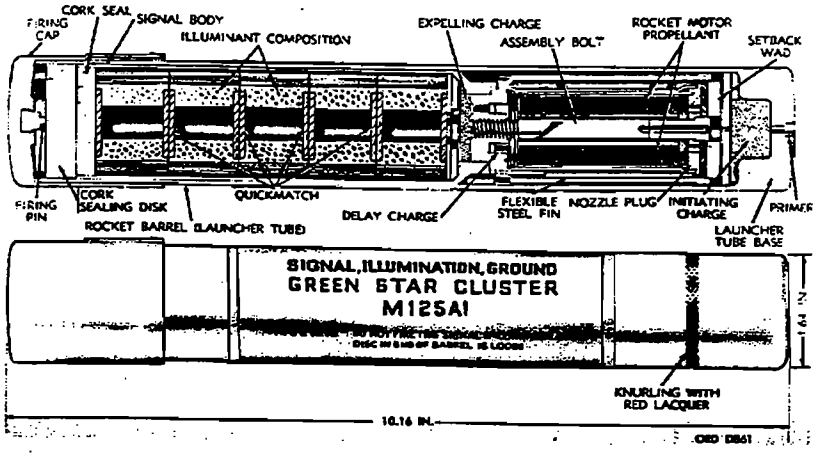
Use. For day or night signaling, and nighttime illumination in the case of the M127.

Description. These signal consists of a parachute-suspended illuminant assembly and a rocket motor propulsion assembly contained in a hand-held aluminum launching tube. The base of the launching tube contains a primer and an initiating charge. As shipped, the firing pin cap is assembled to the forward end and must be reversed for firing. Stabilizing fins on the rocket are folded parallel to the axis of the signal. A bolt, which transfers the initiating charge flash to the propellant, extends into the center of the solid propellant filling the propulsion assembly. The parachute/illuminant assembly is mounted on top of the propulsion assembly with a delay assembly and an expelling charge between them. The parachute with suspension cords is packed on top of the illuminant and the tube end is sealed with a cork disk (rocket barrel seal). A label specifying firing procedure is secured to the body of the signal.

Length ..... 10.16 inches
Diameter (body) ..... 1.67 inches
Weight
  M126A1 & M127A1 ..... 3.0 ounces
  M195 ..... 3.2 ounces
Pyrotechnic charge ..... Illuminant composition
Initiating charge ..... Black powder, 0.725 grams
Expelling charge ..... Black powder, 0.75 grams
Propelling charge ..... Black powder, 39.0 grams
Color ..... White label with black markings
Each signal has a rocket barrel seal with the color of the signal

Reference: TM 43-0001-37, *Army Ammunition Data Sheets Military Pyrotechnics*, April 1977

SIGNALS, ILLUMINATION, GROUND, STAR CLUSTERS, GREEN, M125A1; RED, M158; WHITE, M159



Use. For day or night signaling.

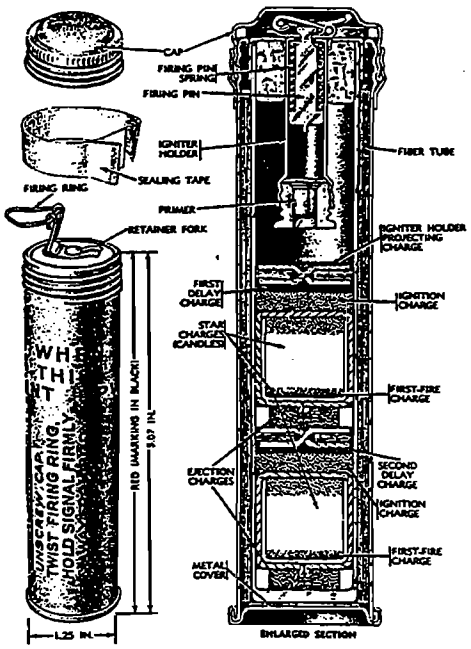
Description. Star cluster signals consist of five-star illumination assemblies and a rocket motor propulsion assembly contained in a hand-held aluminum launching tube. The base of the launching tube contains a primer and an initiating charge. As shipped, the firing pin cap is assembled to the forward end and must be reversed for firing. Stabilizing fins on the tail assembly of rocket are folded parallel to the axis of the signal. A bolt, which also transfers the initiating charge flash to the propellant, extends into the center of the solid propellant which fills the propulsion assembly. The illumination assembly is mounted on top of the propulsion with a delay assembly and an expelling charge between. A label specifying firing procedures is secured to the body of the signal.

Functioning. Striking the primer with the firing pin fires the initiating charge to ignite the rocket propellant. As the rocket emerges from the launching tube, the fins extend for flight stability. Before rocket motor burnout the black powder expelling charge is ignited performing the two fold function of expelling and igniting the 5-star illuminant assemblies.

Length	10.16 inches
Diameter (body)	1.67 inches
Weight	1.3 pounds
Pyrotechnic charge	Illuminant composition 2.5 to 3.75 oz
Initiating charge	Black powder, 0.725 grams
Expelling charge	Black powder, 0.75 grams
Propelling charge	91% Black powder, 9% calcium carbonate, 39.0 grams
Color	White label with black markings Each signal has a cork seal the color of the signal

Reference: TM 43-0001-37, *Army Ammunition Data Sheets Military Pyrotechnics*, April 1977

SIGNAL, ILLUMINATION, MARINE, AN-M75



Use. this signal is a hand held night distress signal for use by aircraft personnel if forced down over water.

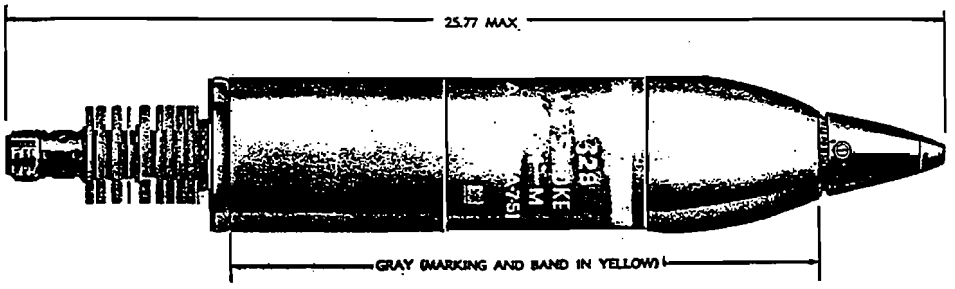
Description. This signal ejects two red stars, in succession, to a height of about 175 feet. It consists of an igniter holder assembly and two star charges of illuminant composition, each with its own delay charge, black powder ejection charge, and first-fire charge. The igniter end is closed by a screw-on sealing cap. Upon removing the sealing cap, the retainer fork is pulled or twisted, releasing the firing pin, which initiates a primer. This action ignites the first ejection charge, which projects the igniter holder assembly about ten feet. Then, in sequence, delay charges ignite and launch the two star charges.

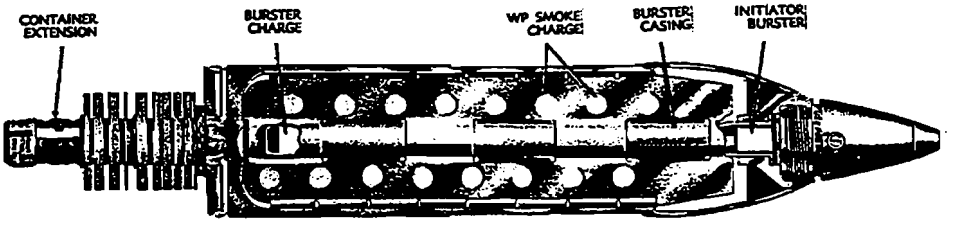
Functioning. When the retainer fork is pulled or twisted, releasing the firing pin under the force of the firing pin spring, the primer is initiated by the blow of the firing pin. This ignites the igniter holder projecting charge which projects the igniter holder assembly (firing pin mechanism, holder tube, and primer) about 10 feet from the signal, which is being hand held by the firer. This projecting charge ignites the first delay charge which burns 2 - 4 seconds before igniting the ignition charge, the quickmatch, and the first star charge which ejects and ignites the first star charge and ignites the second delay charge. This burns for 2 - 4 seconds and then ignites a similar series of elements to eject the second star charge.

Length ..... 5.07 inches
Diameter ..... 1.25 inches
Initiating charge ..... Black powder ejection charge, illuminant composition, first-fire charge, delay charges and ignition charges
Color ..... Red with black markings

Reference: TM 9-1370-200, *Military Pyrotechnics*, September 1966

MORTAR, 4.2-INCH, SMOKE, WP, M328





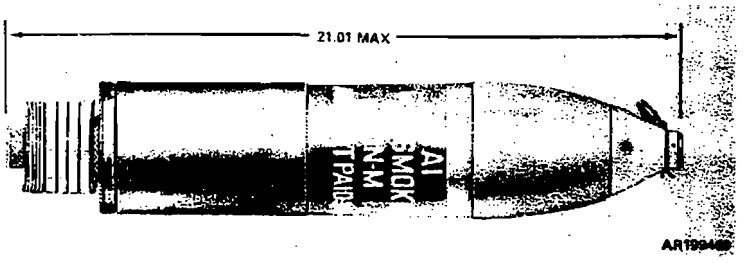
Use. This shell is provided for use in the 4.2-inch mortar. It is intended for screening, incendiary, or casualty producing purposes.

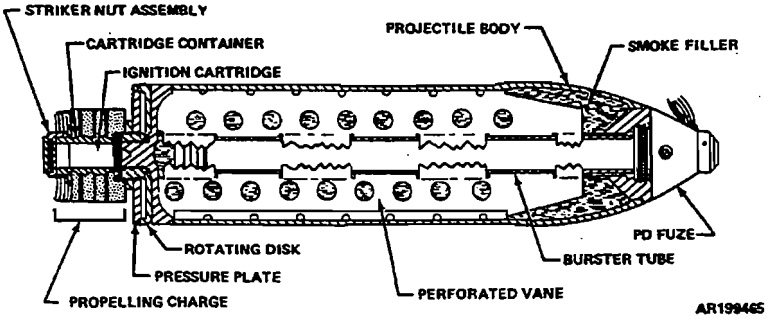
Description. The cartridge is 4.19 inch and has a maximum overall length of 25.77 inches. Weight of the complete round is 28.66 pounds. A "rotating disk" on the base of the projectile expands upon firing to engage the rifling of the mortar, there by imparting rotation to the projectile. On the base of the projectile is an externally threaded stud to which an ignition cartridge (with container extension) is secured. This cartridge utilizes the M36 propelling charge consisting of 41 increments, made up of seven 5-increment bundles. When the mortar is fired with less than 25 1/2 increments the cartridge container extension is removed.

Over-all Length	25.77 inch
Diameter (body)	4.19 inch
Total Weight	28.66 pound
Filler	White Phosphorus (WP)
Fuze	M521, Point Detonating (PD)
Painting and markings	Grey, yellow markings and yellow band

Reference: TM 9-1300-205, *Ammunition for Mortars*, September 1960

MORTAR, 4.2-INCH, SMOKE, PWP OR WP, M2A1 AND M2





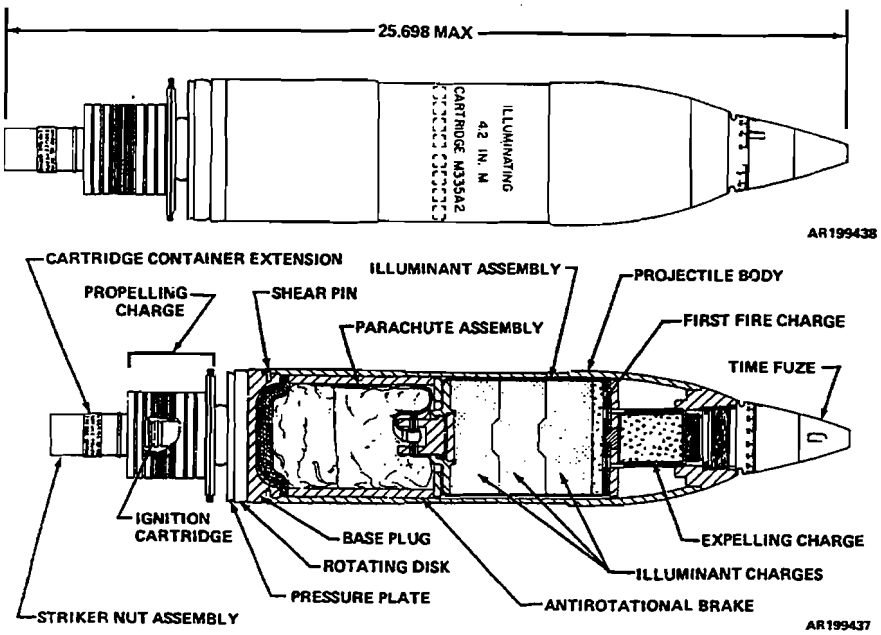
Use. This cartridge is used against personnel and material as an incendiary device, and to produce a screening smoke.

Description. The complete round consists of a projectile body, a point detonating (PD) fuze with an integral burster, and a tail assembly. The body contains a perforated vane assembly welded to the inside of the body and designed to accommodate the burster tube that extends from the fuze. The tail assembly consists of a pressure plate and rotating disc, a propelling charge, a cartridge container and ignition cartridge, and a striker nut assembly. Cartridge M2 differs slightly from the Cartridge M2A1 in the design of the obturating mechanism.

Over-all Length	21.01 inches
Diameter (body)	4.2 inches
Total Weight	24.91 pounds
Filler	(WP) White Phosphorous or (PWP) Plasticized White Phosphorous
Filler weight	7.50 pounds
Propellant	M6
Fuze	PD, M8 (with M14 burster)
Painting and markings	Gray w/ yellow band and yellow markings

Reference: TM 43-0001-28, *Army Ammunition Data Sheets, Artillery Ammunition*, April 1977

MORTAR, 4.2-INCH, ILLUM, M335A2



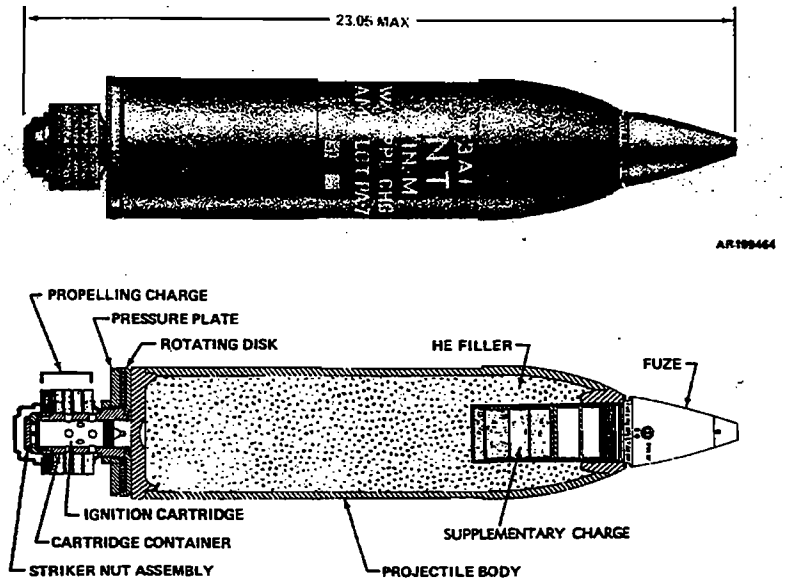
Use. This cartridge is used for target and battlefield illumination at night and during other periods of low visibility.

Description. The complete round consists of a projectile body with a detachable base plug, a time fuze, an illuminant assembly attached to a parachute assembly, and a tail assembly. The steel tube body is designed to accommodate an expelling charge immediately below the fuze, and the base plug is attached with four equally spaced shear pins. The illuminant assembly consists of a first-fire charge and an illuminant charge, contained in a canister fitted with anti-rotational brakes to reduce canister spin at the time of ejection and prevent twisting of the parachute suspension lines. The tail assembly includes a pressure plate and rotating disc, a propelling charge, a cartridge container and ignition cartridge, and a striker nut assembly.

Over-all Length ..... 25.698 inches
Diameter (body) ..... 4.2 inches
Total Weight ..... 26.00 pounds
Filler ..... illuminating
Filler weight ..... 3.31 pounds
Expelling Charge ..... Black Powder, 0.18 pounds
Propellant M6
Fuze ..... MT, M556; MTSQ, M577
Color ..... White with black markings

Reference: TM 43-0001-28, *Army Ammunition Data Sheets, Artillery Ammunition*, April 1977

MORTAR, 4.2-INCH, HE, M3A1 & M3



Use. This cartridge is used against personnel and material, providing both fragmentation and blast effect.

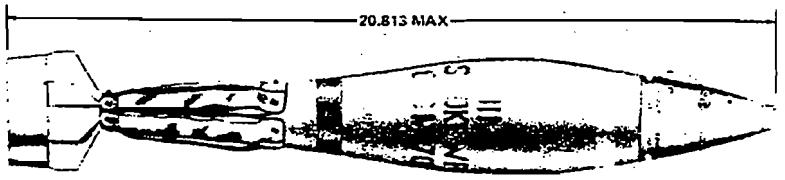
Description. The complete round consists of a projectile body, a fuze, and a tail assembly. The steel body is designed to accommodate an impact, delay, or proximity fuze. A deep fuze well in the nose, is fitted with a supplementary charge of TNT. This charge is removed to accommodate certain proximity fuzes. The tail assembly consists of a pressure plate and rotating disc, a propelling charge, a cartridge container and ignition cartridge, and a striker nut assembly.

Difference between Models. The fuze well on the M3 cartridge is designed to accommodate the burster tube of the M9 fuze. In addition, the physical dimensions of the two models are slightly different.

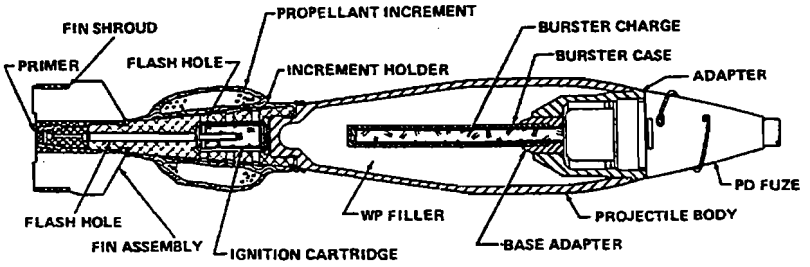
Over-all Length ..... 23.05 inches
Diameter (body) ..... 4.2 inches
Total Weight ..... 26.20 pounds
Filler ..... TNT
Filler weight ..... 7.80 pounds
Supplementary Charge ..... 0.365 pounds
Propellant M6
Fuze ..... PD, M557; MTSQ M520 series; Proximity, M513 series
Color ..... Olive Drab w/ yellow markings

Reference: TM 43-0001-28, *Army Ammunition Data Sheets, Artillery Ammunition*, April 1977

MORTAR, 81mm, SMOKE, WP, M370



AR199488



AR199487

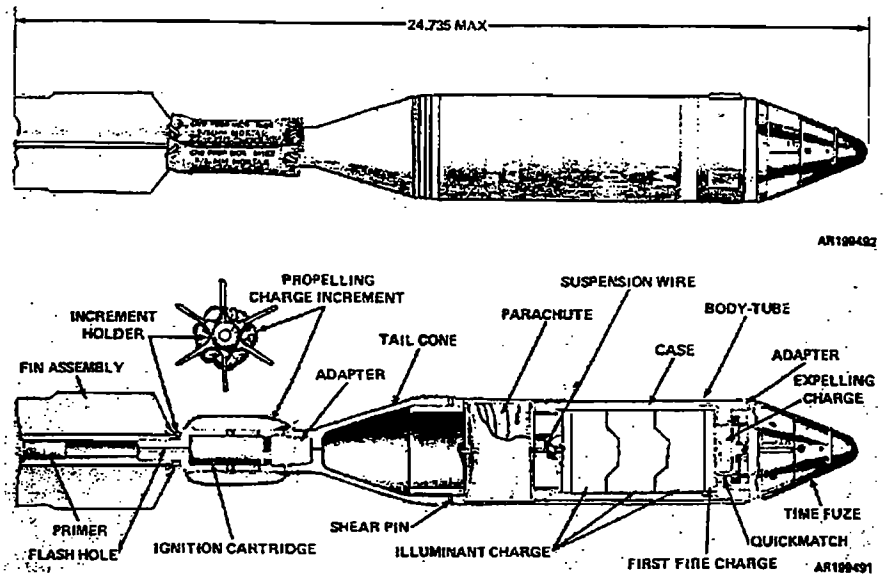
Use. This cartridge is used to produce a smoke screen.

Description. The complete round consists of a projectile body with a burster assembly, a point-detonating (PD) fuze, a fin assembly that includes a cartridge housing, a propellant charge, an ignition charge, and a percussion primer. The projectile body is of relatively thin walled steel, and is filled with white phosphorous (WP). The base of the projectile is externally threaded to accept the cartridge housing of the fin assembly. The nose of the projectile is fitted with a steel adapter designed to hold the burster casing, and internally threaded to accept the fuze. The burster casing is a thin walled steel cylinder press fitted into the adapter and containing a burster charge of RDX

Length ..... 20.813 inches
Diameter (body) ..... 81 mm
Weight ..... 9.34 pounds
Filler ..... White Phosphorous
Filler weight ..... 1.60 pounds
Propellant ..... Ballistite
Fuze ..... PD M524A4, M526 series
Painting and markings
  Old ..... Gray w/ yellow band, yellow markings
  New ..... Light green with yellow band and light red markings

Reference: TM 43-0001-28, *Army Ammunition Data Sheets, Artillery Ammunition*, April 1977

MORTAR, 81mm, ILLUMINATING, M301A3



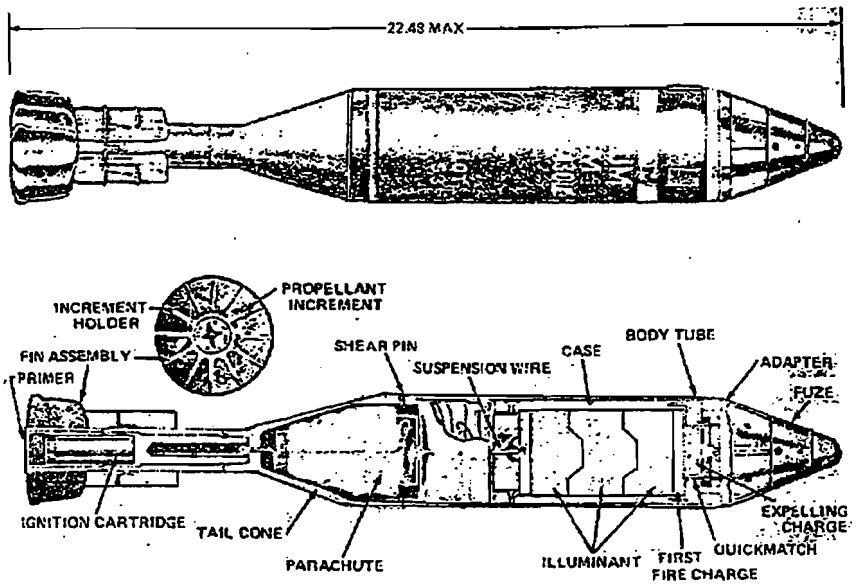
Use. This cartridge is used illuminating a desired point or area.

Description. The complete round consists of a body tube and tail cone assembly, an illuminant candle and parachute assembly, a time fuze with a built in expelling charge, a fin assembly with propellant charge, and an ignition cartridge with percussion primer. The nose of the thin-walled steel tubing body is fitted with a steel adapter and internally threaded to accept the fuze. The tail cone may be internally or externally threaded, depending on the model. Models that are internally threaded require an adapter for attaching the fin assembly. The tail cone is attached to the body with four equally spaced shear pins. The illuminant assembly, consisting of a first-fire charge and an illuminant charge, is contained in a boxboard case and attached to the parachute with a 30-inch suspension line. Fin assembly attaches with or without adapter, depending upon design of the tail cone.

Length ..... 24.735 inches
Diameter (body) ..... 81 mm
Weight ..... 10.1 pounds
Filler ..... Illuminating
Filler weight ..... 1.37 pounds
Propellant M185
Fuze ..... Time, powder, M84A1
Painting and markings ..... White with black markings
Fin assembly M158

Reference: TM 43-0001-28, *Army Ammunition Data Sheets, Artillery Ammunition*, April 1977

MORTAR, 81mm, ILLUMINATING, M301A2 AND M301A1



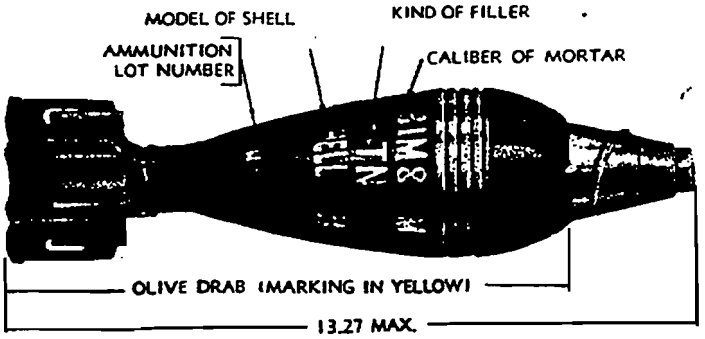
Use. This cartridge is used illuminating a desired point or area.

Description. The complete round consists of a body tube and tail cone assembly, an illuminant candle and parachute assembly, a time fuze with a built in expelling charge, a fin assembly with propellant charge, and an ignition cartridge with percussion primer. The nose of the thin-walled steel tubing body is fitted with a steel adapter and internally threaded to accept the fuze. The tail cone is internally threaded to accept the fin assembly, and is attached to the body tube with four equally spaced shear pins. The illuminant assembly, consisting of a first-fire charge and an illuminant charge is contained in a boxboard case and attached to the parachute with a 30-inch suspension line.

Length ..... 22.48 inches
Diameter (body) ..... 81 mm
Weight ..... 10.7 pounds
Filler ..... Illuminating
Filler weight ..... 1.37 pounds
Propellant M2A1
Fuze ..... Time, powder, M84
Painting and markings
  Old ..... Grey w/ white band, white markings
  New ..... White with black markings
Fin assembly M4A1

Reference: TM 43-0001-28, *Army Ammunition Data Sheets, Artillery Ammunition*, April 1977

MORTAR, 81mm, HE AND PRACTICE, M43A1



Shell, HE, M43A1, Shell Body. It is constructed of forged steel. It is tear-dropped in shape; that is, blunt nose and tapered tail. It has a bourrelet machined near the nose of the shell consisting of several annular grooves which serves to act as a forward bearing surface and a gas check The nose is machined and threaded to receive an adapter. The adapter is threaded and acts as a bushing for a bakelite fuze well cup and the fuze. The fuze used is the Point-detonating Fuze M45. This fuze has a selective element and can be set for either superquick or delay action. The shell filler is 1.22 pounds of TNT. The total weight of the completely assembled round is 7.05 pounds. Entire length of the fuzed shell is 13 1/4 inches.

Fin assembly. The fin assembly consists of a machined cartridge container to which are attached six stationary fins. One end is threaded and screwed on to the body of the shell. The other end is machined and hollow inside so as to receive the ignition cartridge. Several holes leading from the interior to the exterior periphery of the cartridge container serve to conduct the flames from the ignition cartridge to the propellant increments which are seated in the fins.

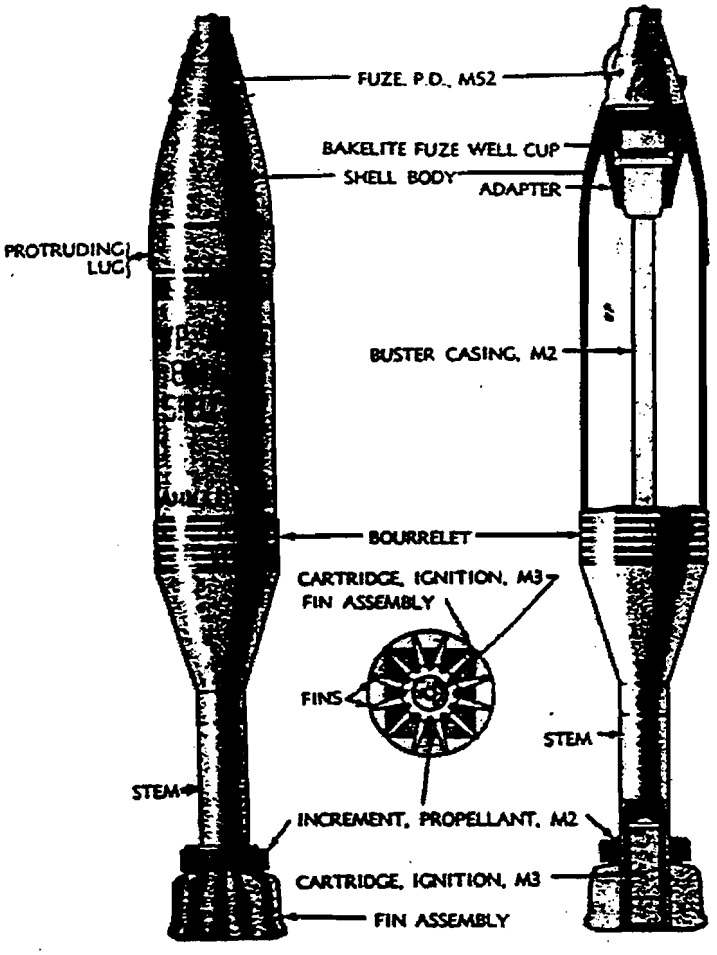
Shell, Practice, M43A1. The shell body, components used, and packing are identical to the shell previously described. It differs in that the filler consists of 0.16 pound of black powder to act as a spotting charge, and 1.06 pounds of inert filler such as wax, talcum, or rosin. The body is painted blue with white stencil to indicate a practice shell.

Over-all Length ..... 13.25 inch
Diameter (body) ..... 3.16 inch
Total Weight ..... 7.05 pounds
Filler
- **HE** ..... TNT, 1.22 pound
- **Practice** ..... Black powder, 0.16 pound

Propellant ..... Ballistite
Fuze ..... M45, point-detonating
Painting and markings
- **HE** ..... Olive drab, yellow markings
- **Practice** ..... Blue, white markings

Reference: TM 9-1904, *Ammunition Inspection Guide*, March 1944

MORTAR, 81 mm, CHEMICAL, M57



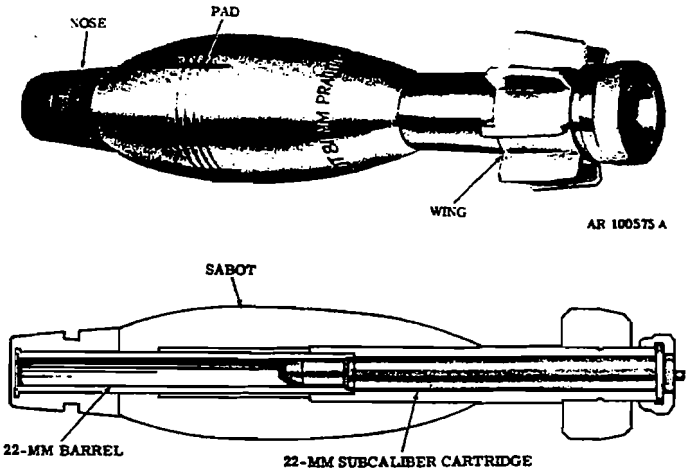
Description. Three chemical fillers were used in these shells. The mortar was used for the placing of smoke screens or gas clouds with a secondary incendiary effect when white phosphorus was used as its chemical filler.

Filler	Weight of filler (lbs)	Weight of Round (lbs)	Color Code
WP	4.04	11.50	blue-gray base with yellow stencil and yellow band
FS	4.59	12.00	blue-gray base with yellow stencil and one yellow band
H	3.15	10.45	blue-gray base with green stencil and two green bands

Fuze ..... M52, Point Detonating
Burster ..... M1, Tetryl
Propellant Increments M2

Reference: TM 9-1904, *Ammunition Inspection Guide*, March 1944

MORTAR, 81mm, CARTRIDGE, SABOT, M1
22-MM SUB-CALIBER PRACTICE CARTRIDGE
M744, M745, M746 AND M747



Use. The cartridge is a training device for all 81mm mortars. The cartridge provides realistic mortar firing training at distances which corresponds to range fire distances in the ratio of 1 to 10.

22mm sub-caliber practice cartridges, M744 (charge 1), M745 (charge 2), M746 (charge 3), and M747 (charge 4). This is comprised of a steel bodied projectile which is assembled to a cartridge case containing a propelling and ejection charge. The projectile is flattened at the tip and contains a percussion piece assembly and smoke charge. A wingshaft assembly containing stabilizer fins is pressed fitted into the body of the projectile. The propelling and ejection charges are contained in two separate chambers located in a jet housing assembly, which is threaded into the base of the cartridge case. The cartridges are manufactured in a variety of four propellant charges. Each charge can be identified by notches on the jet screw assembly

81mm M1 Sabot (INERT). This is designed to fire the 22mm sub-caliber practice cartridge. The sabot (aluminum alloy body) has similar bordering dimensions and configuration of a 81mm mortar. It contains an insert 22mm barrel placed longitudinally to receive the 22mm sub-caliber cartridge which is loaded in the barrel just prior to firing.

81-mm Sabot

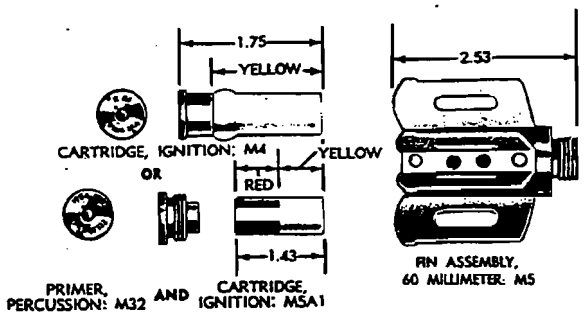
Weight ..... 8.5 pounds
Length ..... 15.618 inches

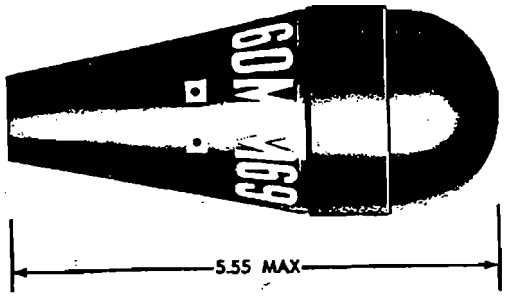
22-mm Sub-caliber

Length ..... 9.697 inches
Weight ..... 1.097 pounds
Propelling Charge ..... Black Powder
Weight ..... 0.03-0.08 ounce.

Reference: TM 43-0001-28, *Army Ammunition Data Sheets, Artillery Ammunition*, April 1977

MORTAR, 60mm, TRAINING, M69





Use. This cartridge is used for training in the loading and firing of 60-mm Mortars M2 and M19.

Description. Unlike other mortar ammunition, the components of this round are issued separately. This facilitates replacement of damaged, worn, or expended parts. The body of the shell is cast iron. It is tear-dropped with a blunt nose and tapered tail. It has a bourrelet on the body near the nose to act as a forward bearing surface and gas check. At the tail end is a recess which is threaded to receive a stabilizer assembly. The nose end is closed and rounded with no provisions made to receive a fuze. Its weight varies depending on its weight zone. Seven weight zones are possible with a minimum of 3.83 pounds for weight zones one and a maximum of 4.07 pounds for weight zone seven *without* fin assembly and ignition cartridge.

Fin assembly and propelling charge. The fin assembly consists of a machined cartridge container closed at one end with a threaded protrusion to screw into the shell body. It is hollow, with the other end threaded to receive an ignition cartridge and a percussion primer. Attached to the cartridge container are eight stationary fins. The shell can be fired more than one time. There are no propellant increments used, for the shell is designed to be fired in the first zone only.

Complete Round

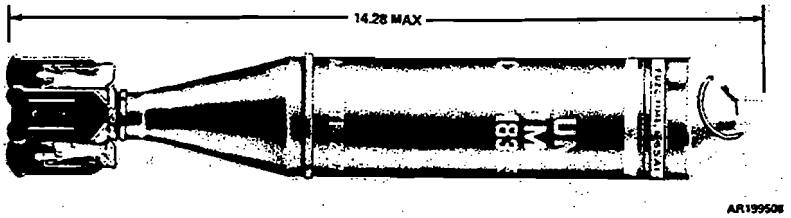
Weight assembled	4.43 pounds
Length assembled	7.72 inches
Filler	INERT
Ignition Cartridge	M5A1 or M4
Propellant	None
Percussion Primer	M32
Fuze	None

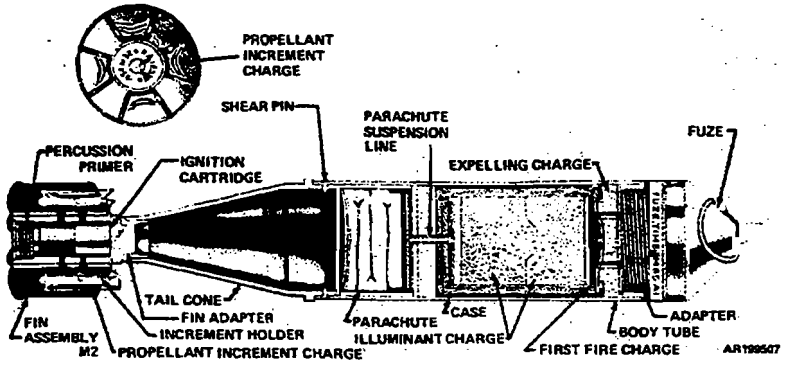
Color

Old manufacture	Black or blue w/White markings
New manufacture	Bronze w/ White markings

Reference: TM 9-1904, *Ammunition Inspection Guide*, March 1944; TM 9-1300-205, *Ammunition for mortars*, September 1960; TM 43-0001-28, *Army Ammunition Data Sheets, Artillery Ammunition*, April 1977

MORTAR, 60mm, ILLUMINATING, M83A3, M83A2, & M83A1





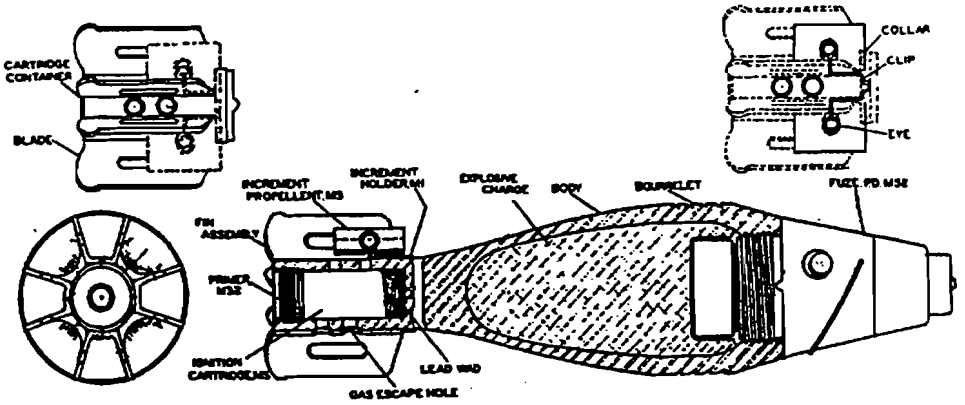
Use. This cartridge provides illumination for observation during night missions.

Description. The complete round consists of a body tube, a tail cone assembly, an illuminant charge, a parachute assembly, a time fuze, a fin assembly with four increments of propellant charge, an ignition cartridge, and a percussion primer. The nose of the thin-walled steel tubing body is fitted with a steel adapter and internally threaded to accept the fuze. The cone is fitted with an internally threaded adapter to accept the fin assembly, and is attached to the body tube with four equally spaced shear pins. The illuminant assembly, which consists of a first-fire charge and an illuminant charge, is contained in a boxboard casing which is attached to the parachute with a suspension line. An expelling charge directly below the fuze, ejects the illuminant and parachute assembly.

Length ..... 14.28 inches
Diameter (body) ..... 81 mm
Weight ..... 4.15 pounds
Filler ..... Illuminating
Filler weight ..... 0.49 pounds
Propellant
  M83A3 ..... M182
  M83A2 & M38A1 ..... M3A1
Fuze ..... Time, M65A1
Painting and markings ..... White with black markings
Fin assembly M2

Reference: TM 43-0001-28, *Army Ammunition Data Sheets, Artillery Ammunition*, April 1977

MORTAR, 60mm, HE, M49A2, PRACTICE, M50A2



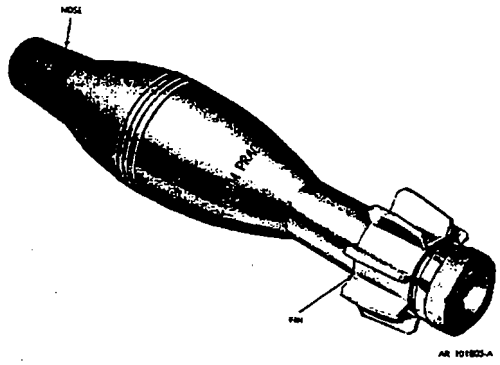
Description. The body of this shell may be constructed of forged steel, cupped-rolled, plate-welded longitudinally, or a machined casting. It is tear-dropped in shape, having a blunt nose and tapered tail. Near the nose end of the shell is a machined bourrelet which acts as a forward bearing surface and as a gas check. The nose is threaded to receive the fuze directly. The fuze used is the Point-detonating Fuze M525A2 which has a superquick action. The tail end is closed and internally threaded to receive the stabilizer assembly. The shell filler is 0.34 pounds of flake TNT. The ignition cartridge M5A1, contains 40 grains of double base powder. The propellant increments, M3, consists of square strips of double base powder sewn together. Each increment has 35 grains of finely granulated double base powder. The shell body is painted olive drab and stenciled in yellow.

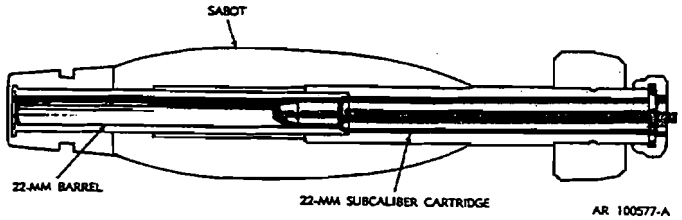
Shell, Practice, M50A2. This shell is identical to the service round. It differs in that the filler consists of 0.05 pounds of black powder to act as a spotting charge, and 0.29 pounds of inert filler. The body is painted blue with white stenciling.

Over-all Length	9.5 inch
Diameter (body)	2.34 inch
Total Weight	2.94 pound
Filler	TNT (flaked)
Filler weight	0.34 pounds
Propellant	ballistite
Fuze	M52 PD M525A1 PD
Painting and markings	Olive drab w/ yellow markings

Reference: TM 9-1904, *Ammunition Inspection Guide*, March 1944, TM 9-1300-205, *Ammunition for Mortars*, September 1960

MORTAR, 60mm, CARTRIDGE, SABOT M3 22-MM SUB-CALIBER PRACTICE CARTRIDGE M744, M745, M746 AND M747





Use. The cartridge is a training device for all 60mm mortars. The cartridge provides realistic mortar firing training at distances which corresponds to range fire distances in the ratio of 1 to 10.

22mm sub-caliber practice cartridges, M744 (charge 1), M745 (charge 2), M746 (charge 3), and M747 (charge 4). They are comprised of a steel bodied projectile which is assembled to a cartridge case containing a propelling and ejection charge. The projectile is flattened at the tip and contains a percussion piece assembly and smoke charge. A wingshaft assembly containing stabilizer fins is pressed fitted into the body of the projectile. The propelling and ejection charges are contained in two separate chambers located in a jet housing assembly, which is threaded into the base of the cartridge case. The cartridges are manufactured in a variety of four propellant charges. Each charge can be identified by notches on the jet screw assembly

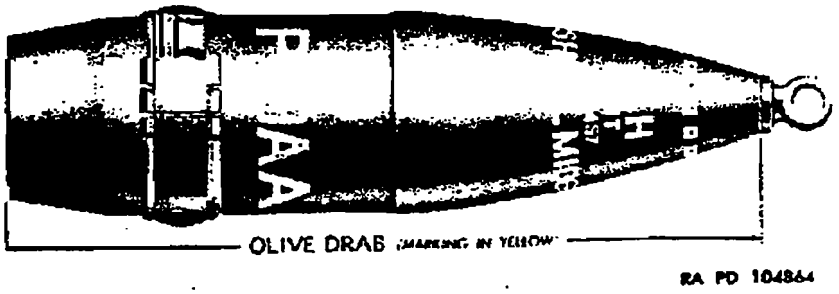
*60mm M3 Sabot (INERT).*This is designed to fire the 22mm sub-caliber practice cartridge. The sabot (aluminum alloy body) has similar bordering dimensions and configuration of a 60mm mortar. It contains an insert 22mm barrel placed longitudinally to receive the 22mm sub-caliber cartridge which is loaded in the barrel just prior to firing.

60-mm Sabot
- **Weight** ..... 6.25 lbs
- **Length** ..... 16.181 in.

22-mm Sub-caliber
- **Length** ..... 9.697 in.
- **Weight** ..... 1.097 lbs.
- **Ejection charge** ..... Black Powder 0.05-0.06 oz.

Reference: TM 43-0001-28, *Army Ammunition Data Sheets*, April 1977

PROJECTILE, 8-INCH, HE, M106



Shell, HE, M106, for 8-inch Howitzer

Shell, HE, M106. This shell has a normal cavity in which an aluminum fuze well cup is assembled. The rotating band, made of copper or gilding metal, is located 6.06 inches from the base end and has two cannelures or grooves. The shell is adapted to receive the following fuzes: CP (concrete piercing) M78 or M78Al; MTSQ M500; M51A5 or PD M5lA4; or mechanical time M67A3. The projectile is fitted with a base cover which may consist either of a steel cup assembly, secured to the base by means of a lead caulking strip, or of a steel plate which is welded to the base. This base cover prevents the hot gases from the propelling charge from reaching the bursting charge of the projectile through possible defects or flaws in the base. The bursting charge consists of 36.75 pounds of TNT. The projectile is painted lusterless olive drab and is stenciled in yellow with the designation of weapon (8H), the designation of filler (TNT), and the complete round designation (Shell M106).

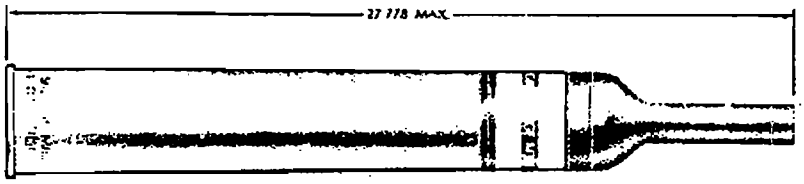
Shell, HE, M106, w/Supplemental Charge. This shell is similar to the shell M106 described, except that it has a deep fuze cavity so that it can be used with VT fuzes. The shell, as issued with a supplementary bursting charge is adapted for use with standard, mechanical time superquick, time and superquick, impact, or concrete-piercing fuzes.

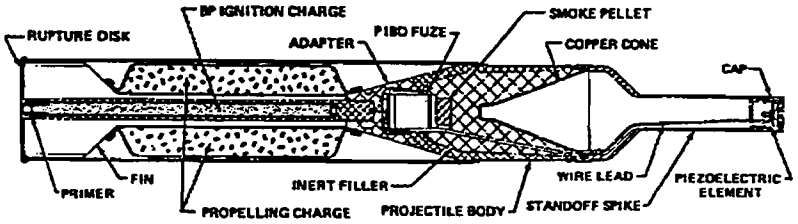
Propelling Charge. Two types of charge are provided, the green bag M1 and white bag M2. A flash reducer M3 (T3) is provided for optional use with the M2 charge.

Weight of Projectile as fired..... 240.37 pounds
Length of Projectile..... 40.95 inches
Width of rotating band..... 3.33 inches
Filler and Weight..... TNT (36.75 pounds)
Fuzes..... MTSQ,M500; PD, M51A5; MT, M67A3; CP, M78, M78A1; VT, M96
Propelling charges..... M1, M2,
Color..... Olive drab w / yellow markings

Reference: TM 9-1901, *Artillery Ammunition*, September 1950

PROJECTILE, 90mm, RECOILLESS RIFLE, PRACTICE, M371





Use. This cartridge is used to train personnel armed with the 90-mm recoilless rifles in handling and use of HEAT rounds.

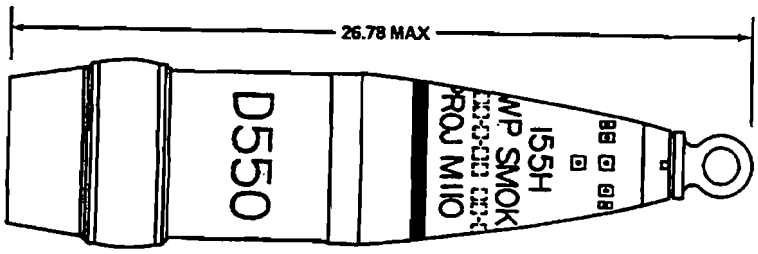
Description. The cartridge resembles 90-mm HEAT round M371A1 and has similar ballistic characteristics, except that the high-explosive filler is replaced with inert material of the same weight. A standoff spike with piezoelectric element in the nose cap is threaded to the nose of the projectile, and an adapter and fin are threaded to the base. The point initiating, base detonating fuze is housed in the adapter and a smoke pellet is installed immediately ahead of the fuze. A copper cone in the projectile shapes the inert filler to maintain a ballistic match with the service round. The bagged propellant in the cartridge case surrounds the fin. The base of the cartridge case holds a percussion primer and a rupture disk. The black powder ignition charge of the primer is contained within the fin.

Functioning. When the firing pin of the weapon strikes the primer, it ignites the propelling charge. The burning propellant generates rapidly expanding gases to propel the projectile out of the barrel and to the target. The fin stabilizes the projectile in flight. On impact, distortion of the piezoelectric element induces an electric current to function the PIBD fuze and ignite the smoke pellet for marking.

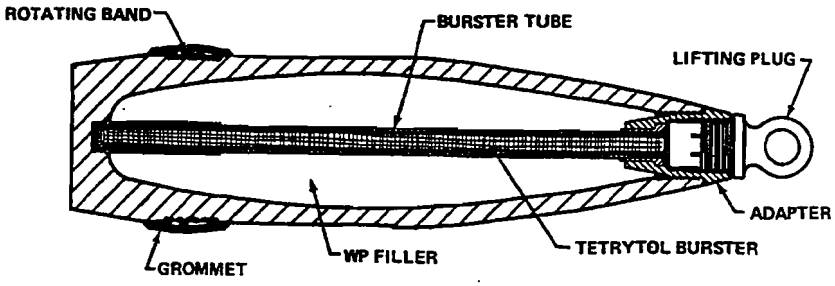
Over-all Length (Max).....27.778 in.
Weight with fuze.....9.25 lb.
Filler and weight.....Inert, 1.79 lb.
Pellet Max 2B
Propelling charge.....XM82
Fuze.....PIBD, M530
Color.....Blue or Black with white markings

Reference: TM 43-0001-28, *Army Ammunition Data Sheets, Artillery Ammunition*, April 1977

PROJECTILE, 155mm, SMOKE, WP, M110 AND M110E1



AR 199679-A



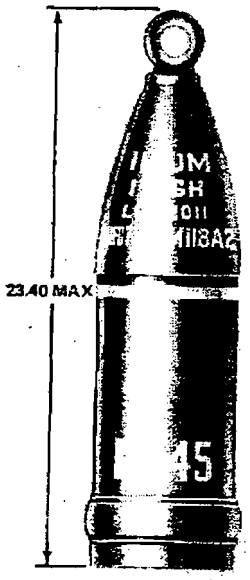
Use. These projectiles are fired from 155mm howitzers to produce screening smoke. The projectiles also have a slight incendiary effect.

Description. The 155mm Smoke White Phosphorous (WP), M110, and M110E1 projectiles consists essentially of a steel shell (casing) containing an M6 burster loaded with tetryl running through the center of the shell, and 15.6 pounds of White Phosphorous. An adapter in the nose of the projectile is threaded to receive the fuze. A rotating band encircles the projectile case near the base and is protected by a grommet for shipment and handling. A PD fuze is normally used with these projectiles. Except for the WP contents, these projectiles are exactly the same as the projectile H/HD. The ballistics and configuration are the same as the HE, M107 projectile.

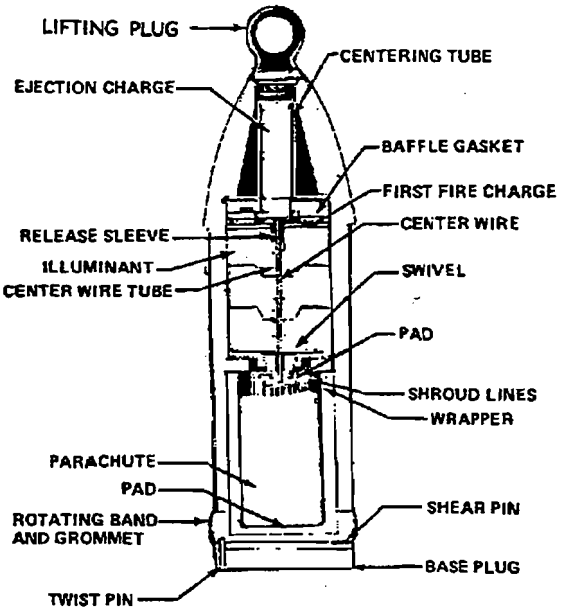
Weight with lifting lug	98.49 pounds
Length (w/ lifting lug)	26.78 inches
Filler	White Phosphorous
Filler weight	15.6 pounds
Fuzes	PD: M557, M739 MTSQ: M564
Propelling charges	M3 / M4 series, M119, M119A1
Color	Light Green w / yellow band and light red markings

Reference: TM 43-0001-28, *Army Ammunition Data Sheets, Artillery Ammunition*, April 1977

PROJECTILE, 155mm, ILLUMINATING, M118 SERIES



AR199673



AR199672

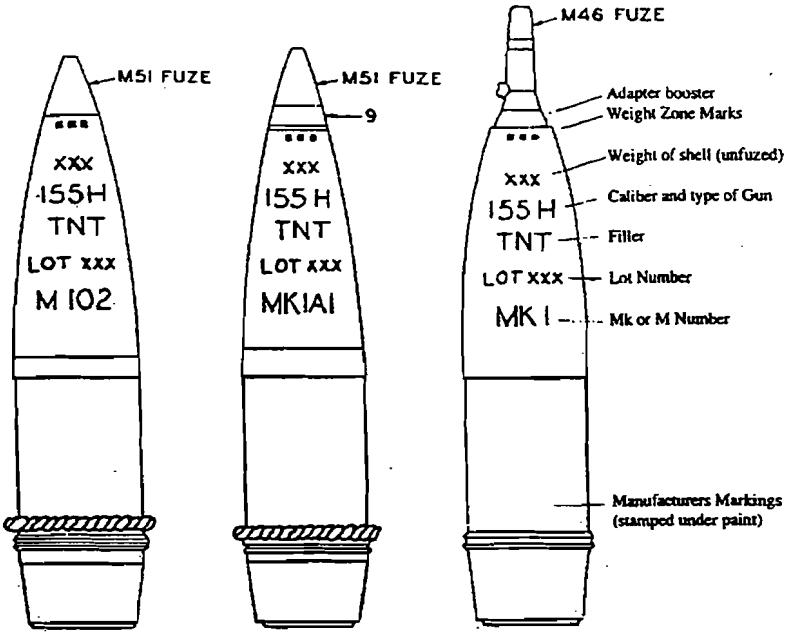
Use. This projectile is fired from 155mm howitzer for battlefield illumination at night or during other conditions of reduced visibility.

Description. The projectile is a hollow steel shell containing an illuminant canister, an ejection charge in the nose, and a parachute in the base. A threaded nose cavity is provided for an Mechanical Time Super Quick (MTSQ) fuze, and a lifting plug installed in the fuze cavity for shipment and handling. The base of the projectile is closed with a steel plug retained by twist and shear pins. A center wire connecting the parachute suspension lines and the illuminant canister runs through the illuminant charge within a tube and is secured at the forward end by solder attachment to a release sleeves. The release sleeve is imbedded in the forward end of the illuminant assembly behind a first fire charge. A rotating band encircles the projectile near the base and is protected by a grommet for shipment and handling.

Weight..... 102 pounds
Length (with lifting lug)..... 23.40 inches
Filler..... illuminant composition
Filler weight..... 4.30 pounds
Fuze..... MTSQ, M501 series
Propelling charge..... M3, M4 series
Color..... Gray w / white markings
(later manufacture - Olive Drab
w/ white markings and a white band)

Reference: TM 43-0001-28, *Army Ammunition Data Sheets, Artillery Ammunition*, April 1977

PROJECTILE, 155mm, HE, M102, MK I, MK IA1

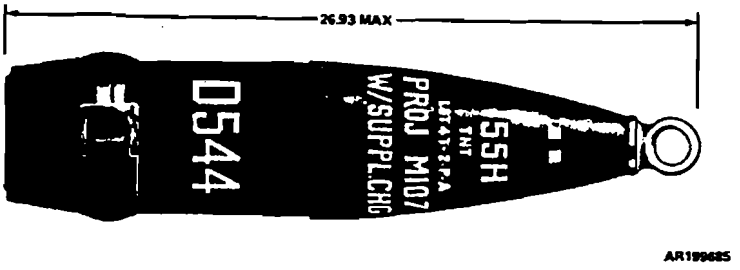


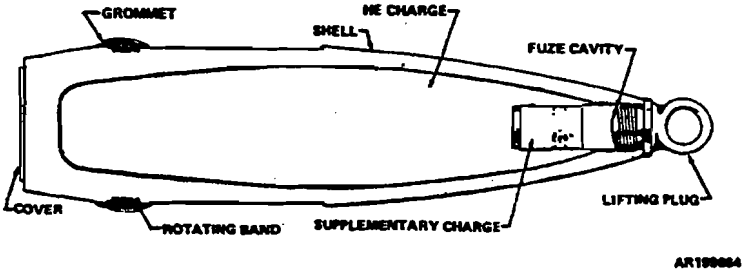
Description. The bodies of all 155-mm H.E. projectiles are very similar in construction. They range in length from 22.84 inches to 23.80 inches, have tapered bases, are manufactured from forged steel, and are hollowed out to nearly their entire length to receive the TNT filler. The recesses for rotating bands machined into the bodies vary in size depending on the weapon in which it is used. The Mk, and modified Mk series gun shells have two rotating bands, each 0.602 inch in width and separated by a space of 0.5625 inch. The M-series gun projectiles are provided with a single rotating band 2.02 inches wide. The old Mk. series H.E. shells are threaded in the nose to take the Mk IIIA adapter booster. These adapter boosters take the old M46 and M47 fuzes. The modified Mk. and M-series H.E. shell are threaded in the nose to take the M21 and M21A1 booster directly. Fuzes include Point-detonating M46, M47, M54, M51, and M51A1. Also included is the Time/Superquick Fuze M55 and M55A1, and Mechanical Time Fuze M67. The projectile is painted Olive drab with yellow stencil.

Length	22.84 - 23.80 inches
Diameter	155 mm
Weight, loaded & fuzed	94.71-95.33 pounds
Filler	TNT
Weight of filler	.15.17 - 15.56 pounds
Fuze	Point Detonating M46, M47, M54, M51, M51A1 Time/Superquick M55, M55A1 Mechanical Time M67
Color	Olive Drab with yellow stencil

Reference: TM 9-1904, *Ammunition Inspection Guide*, 2 March 1944, *Complete Round Chart, No. 5981*, January 1940

PROJECTILE, 155mm, HE, M107





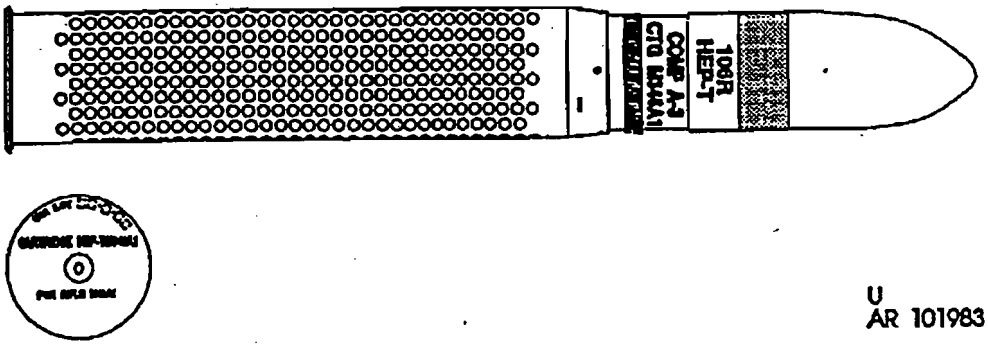
Use. This projectile is fired from 155mm howitzers and is used for blast effect, fragmentation, and mining.

Description. The projectile is a hollow steel shell filled with 14.6 pounds of TNT or 15.4 pounds of Composition B. The shape is ogival with a boattail for aerodynamic efficiency. A supplementary charge of 0.3 pounds. TNT is contained in an aluminum liner in the deep fuze cavity. A threaded lifting plug closes the fuze cavity at the nose of the projectile for handling and storage. Point detonating, time or proximity (deep cavity only) fuzes may be used with this projectile. When a proximity fuze is fitted, the supplementary charge is removed. A rotating band encircles the shell casing near the base and is protected by a grommet before loading. A steel plate (base cover) is welded over the base to prevent entry of hot propellant gases into the projectile interior.

Weight	94.36 pounds
Length (w/o lifting lug)	23.89 inches
Filler and Weight	
Comp B	15.4 pounds
TNT	14.6 pounds
Fuzes	PD: M557, M78 series, M739 series MTSQ: M564, M582 series Prox: M728, M732
Propelling charge	M3, M3A1, M4A1, M4A2, M119, M119A1
Color	Olive drab w / yellow markings

Reference: TM 43-0001-28, *Army Ammunition Data Sheets, Artillery Ammunition*, April 1977

CARTRIDGE, 106mm, RECOILLESS RIFLE, HEP-T, M346A1



U
AR 101983

Use. This cartridge is intended for use against armored targets and is also effective against personnel and light material.

Description. The projectile is a thin-walled steel cylinder with a short ogive and flat base. There are two indexing buttons, spaced 180E apart on the forward barreled. A pre-engraved rotating band encircles the projectile just forward of the base. The base is fitted with a base detonating fuze with integral tracer. The projectile body is loaded with 7.72 pounds of Composition A3. The perforated steel cartridge case, crimped to the projectile contains a propelling charge in a rayon and plastic liner. A percussion primer is press fitted to the base.

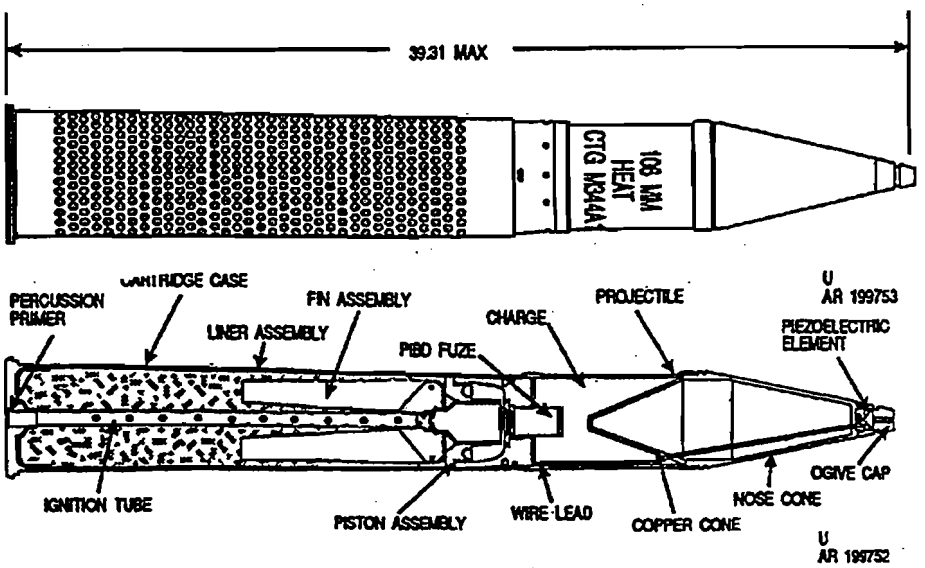
Functioning. When the weapon is fired, the firing pin strikes the primer and a flash from the primer ignites the tracer (which burns during the early stages of flight) and creates gases which force the projectile out of the gun tube and propel it to the target. On impact, the functioning of the fuze detonates the explosive.

Complete round

Length ..... 38.1 inches
Weight ..... 37.37 pounds
Filler and weight ..... Comp A3, 7.72 pounds
Propelling charge M26
Fuze ..... BD M91A2
Color ..... Olive Drab with yellow markings with black band

Reference: TM 43-0001-28, *Army Ammunition Data Sheets, Artillery Ammunition*, April 1977

CARTRIDGE, 106mm, RECOILLESS RIFLE, HEAT, M344A1 and M344



Use. This cartridge is used in 106mm recoilless rifles against armored targets.

Description. The cartridge consists of a perforated, plastic-lined steel cartridge case crimped to a steel projectile containing a shaped charge. The nose cone adapter of the projectile carries a cap with a piezoelectric element to initiate the PIBD fuze in the base. A copper cone within the projectile shapes the charge. The hollow space within the cone and the adapter provides the appropriate standoff distance between target and shaped charge. An aluminum chamber threaded to the base of the projectile supports the fuze, six folding fins, and a piston assembly for opening the fins. The cartridge case is loosely filled with propellant, and the base is fitted with a percussion primer. The ignition tube of the primer extends through the propelling charge.

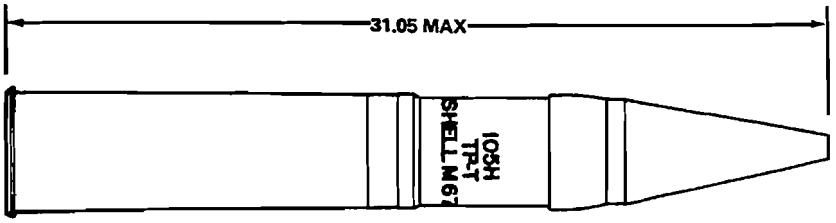
Functioning. The primer ignites the propelling charge when struck by the firing pin. The burning propellant generates rapidly expanding gases to propel the projectile through the barrel and to the target. Recoil is eliminated by controlled escape of propellant gases to the rear through openings in the breech block. When the projectile leaves the muzzle, the piston moves rearward to extend the fins for stability in flight. On impact, the distortion of the piezoelectric element generates an electrical charge and initiates fuze functioning to detonate the projectile. Explosion of the shaped charge collapses the copper cone and focuses a high velocity shock wave and a jet of metal particles that penetrates the target

Complete round

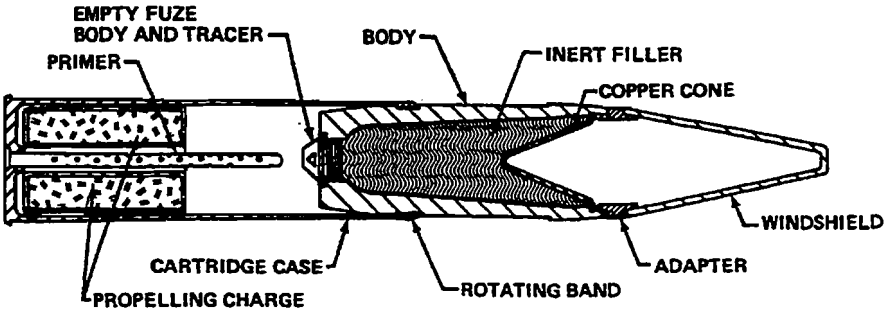
Length ..... 39.31 inches
Weight ..... 37.23 pounds
Filler and weight ..... Comp B, 2.79 pounds
Propelling charge M26, M10
Fuze ..... PIBD M509A1
Color
- **Old manufacture** ..... Olive Drab with yellow markings
- **New manufacture** ..... Black with yellow markings

Reference: TM 43-0001-28, *Army Ammunition Data Sheets, Artillery Ammunition*, April 1977

CARTRIDGE, 105mm, TP-T, M67



AR199715



AR199714

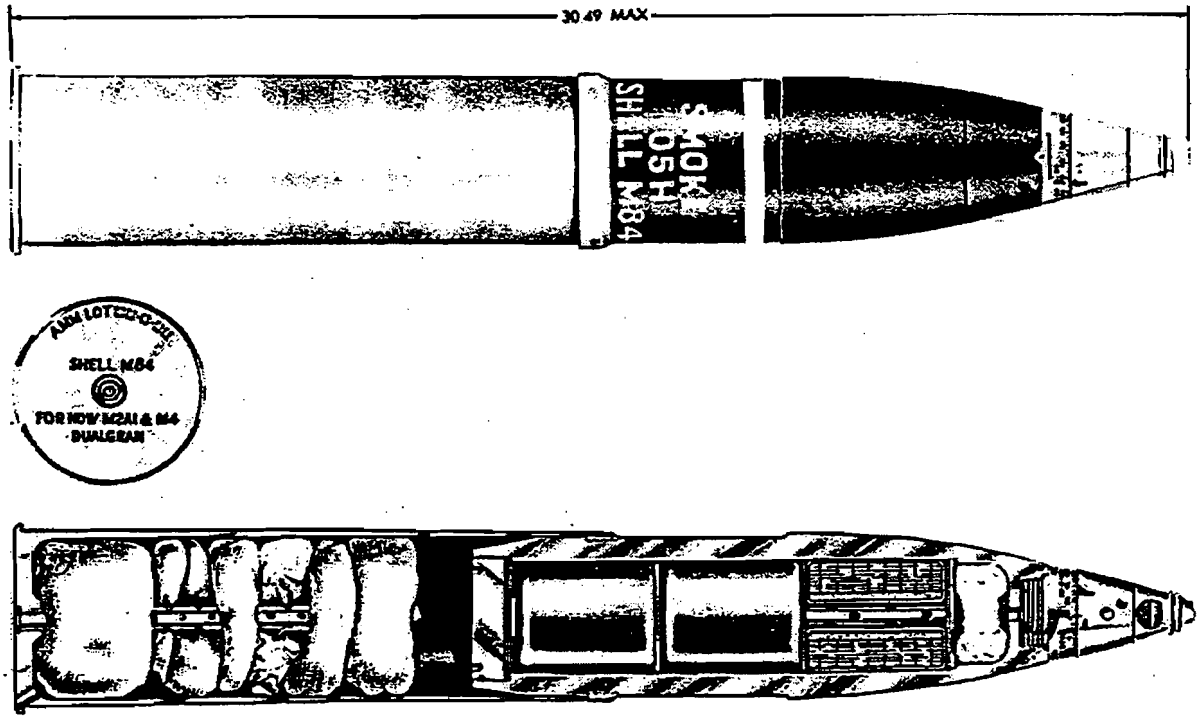
Use. This cartridge is used for training in marksmanship.

Description. The projectile consists of a boattailed steel body fitted with a steel windshield and gliding metal rotating band. The windshield is a hollow steel cone fitted to the front of a steel adapter. The adapter is threaded into the front end of the projectile, and retains a copper conical liner in the projectile cavity. The projectile cavity contains an inert filler. An empty fuze body with a live tracer is threaded into the base of the projectile. The complete projectile assembly is a free fit in the cartridge case. The cartridge case contains a percussion primer assembly and a single propelling charge increment. The base of the cartridge case is drilled and the primer assembly is pressed into the base. The percussion primer assembly consists of a percussion ignition element and a perforated flash tube containing black powder. The single increment bag is assembled into the cartridge case around the primer assembly..

Weight ..... 37.06 pounds
Length ..... 31.05 inches
Filler ..... Inert
Propellant ..... 1.54 pounds
Color ..... Blue or Black w / white markings

Reference: TM 43-0001-28, *Army Ammunition Data Sheets, Artillery Ammunition,* April 1977

CARTRIDGE, 105mm, SMOKE, HC & COLORED, M84



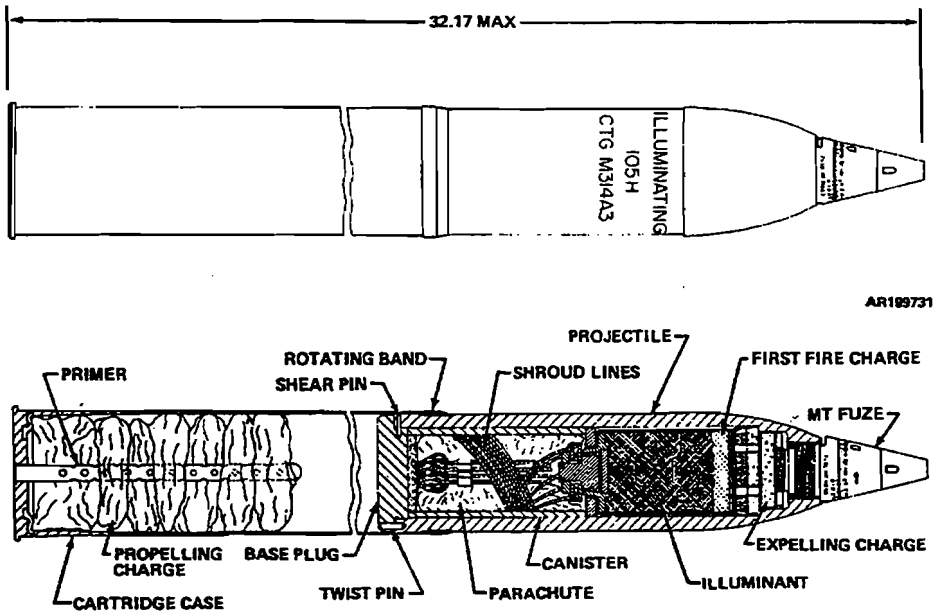
Use. These cartridges are fired from the 105mm Howitzer and are intended for screening, spotting and signaling purposes.

Description. These cartridges are of the base-ejecting type and contain three smoke canisters. The canisters may be filled with either white (HC), green, yellow, red or violet smoke mixtures. The projectile is a hollow steel forging which contains a black powder expelling charge, which is contained in a cloth bag or plastic container. While in flight, the fuze ignites the expelling charge, which concurrently ignites the smoke canisters. The gases produced blow out the base plug and eject the smoke canisters. The gases produced blow out the base plug and eject the smoke canisters. The canisters emit smoke for 40 to 90 seconds.

Length (projectile)	18.75 inches
Diameter	105mm (4.13 inches)
Weight (projectile)	32.86 pounds
Filler	4.96 pounds HC or colored smoke mixture
Expelling charge	0.14 pounds Black Powder
Fuze	M54 point detonating

Reference: TM 9-1904, *Ammunition Inspection Guide*, March 1944; *Complete Round Charts, No. 5981*, Revised May 1945; TM9-1901, *Artillery Ammunition*, September 1950; USAMMCS Subcourse No. 661, *Ammunition Identification*, June 1973; TM 43-0001-28, *Army Ammunition Data Sheets for Artillery Ammunition*, April 1994

CARTRIDGE, 105mm, ILLUMINATING, M314A3



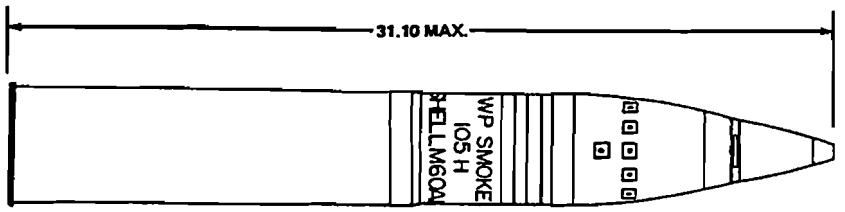
Use. This cartridge is intended for signaling or for illuminating a designated area.

Description. The projectile is a hollow steel forging with a streamlined ogive, a gliding metal rotating band, and a pinned base plug. The projectile is assembled with an MT fuze screwed into the nose. The projectile cavity contains and expelling charge, illuminating canister, and a parachute assembly. The expelling charge consists of 0.18 pounds of black powder contained in a sealed plastic holder. The illuminating canister body contains the illuminant and 0.15 pounds of first fire composition. The illuminating canister body is fitted with anti-rotational brakes. The parachute assembly is attached to the illuminating canister body. The base plug is inserted into the opening at the base of the projectile and held in place by three shear pins and three twist pins. The complete projectile assembly is free fitted to a cartridge case. The cartridge case contains a percussion primer assembly and seven individually bagged and numbered propelling charge increments. The base of the cartridge case is drilled and the primer assembly is pressed into the base. The percussion primer assembly consists of a percussion ignition element and a perforated flash tube containing black powder. The seven numbered increment bags are tied together and assembled into the cartridge case, around the primer flash tube.

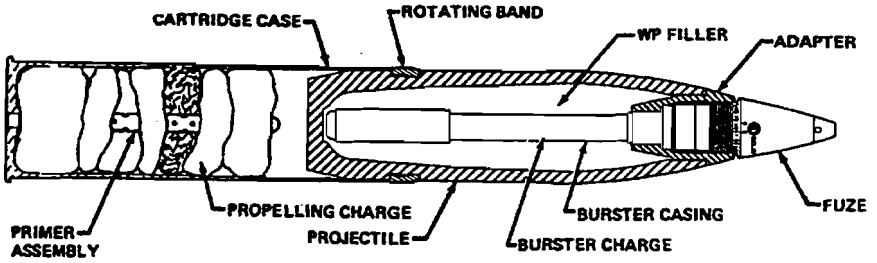
Weight ..... 46.43 pounds
Length ..... 32.17 inches
Filler ..... Illuminating, 1.97 pounds
Expelling Charge ..... Black powder, 0.18 pounds
Fuze ..... MT M565 or M548
Propellant ..... 4.7 to 5.9 pounds
Color ..... White w / black markings

Reference: TM 43-0001-28, *Army Ammunition Data Sheets, Artillery Ammunition*, April 1977

CARTRIDGE, 105mm, SMOKE, WP, M60, M60A1, M60A2



AR199721



AR199720

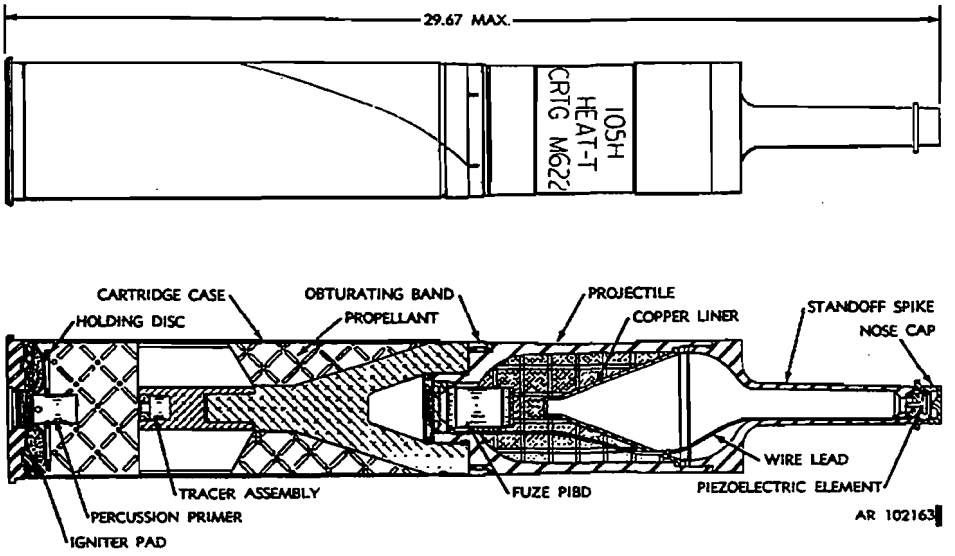
Use. The projectile of this cartridge contains white phosphorous (WP which is dispersed over the target area for screening purposes. The WP also has a limited incendiary effect.

Description. The projectile consists of a hollow steel forging with a boattail base, a streamlined ogive, and gliding metal rotating band, The projectile cavity is filled with cast White Phosphorous (WP). A steel nose adapter, having a female fuze thread, with a press fitted burster casing, is threaded into the nose of the projectile providing a seal for the filler. A burster charge is placed inside the burster casing and a fuze is threaded into the adapter. The cartridge case contains a percussion primer assembly and seven individually bagged and numbered propelling charge increments. The base of the cartridge case is drilled and the primer assembly pressed into the base. The percussion primer assembly consists of a percussion ignition element and a perforated flash tube containing black powder. The seven numbered increment bags are tied together. These are assembled into the cartridge case around the primer.

Weight ..... 42.92 pound
Length ..... 31.10 inches
Filler ..... White Phosphorous
Filler Weight ..... 3.86 pounds
Propellant (max weight) ..... 2.83 pounds
Fuze ..... PD, M557; MTSQ, M564
Color
- **Old manufacture** ..... gray w / yellow markings
- **New manufacture** ..... Light green w/ yellow bands with light red markings

Reference: TM 43-0001-28, *Army Ammunition Data Sheets, Artillery Ammunition*, April 1977

CARTRIDGE, 105mm, HEAT-T, M622



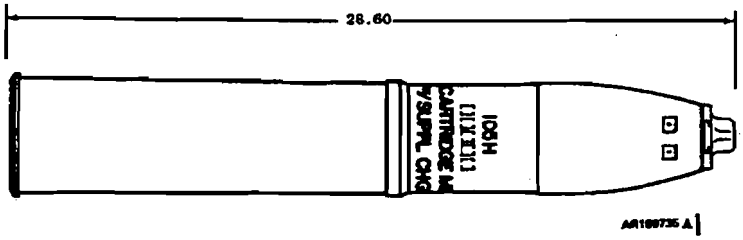
Use. This cartridge is a fixed high explosive antitank round utilization with 105mm howitzers for expanded capability in a direct-fire mode against armor and hard targets.

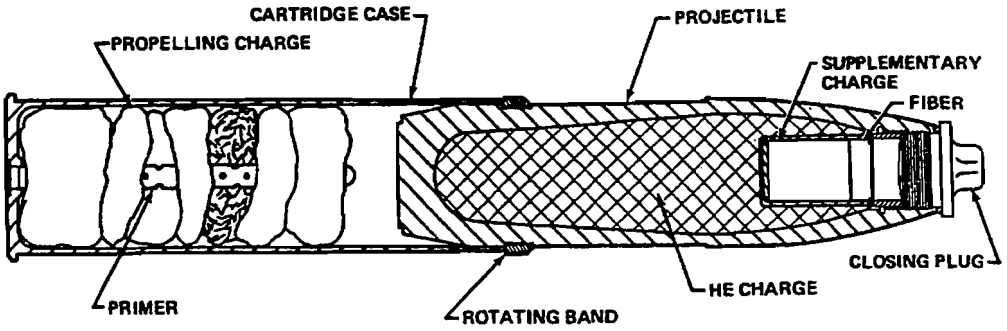
Description. The projectile configuration is that of a steel body cylinder having a plastic obturating band and M509A1 point initiating base detonating (PIBD) fuze with a standoff spike assembly threaded to the front and a fin and boom assembly threaded to the rear. The loading of the projectile consists of a Comp B shaped charge formed by a funnel-shaped copper liner within the body. A piezoelectric element is fitted to the spike assembly and connected to the M509A1 PIBD fuze in the body. The fin assembly is threaded to receive an M13 tracer assembly. The cartridge is of the fixed type, i.e., the M201 cartridge case is crimped to the projectile. The case is a two-piece spiral design and contains an M100 Mod percussion primer, and igniter pad and 57 ounces of M30 propellant.

Weight.....32.1 pounds
Length.....29.67 inches
Filler.....Comp B
Filler Weight.....2.14 pounds
Fuze.....PIBD M509A1
Propellant.....57 ounces
Color.....Black w / yellow markings

Reference: TM 43-0001-28, *Army Ammunition Data Sheets, Artillery Ammunition*, April 1977

CARTRIDGE, 105mm, HE, M1





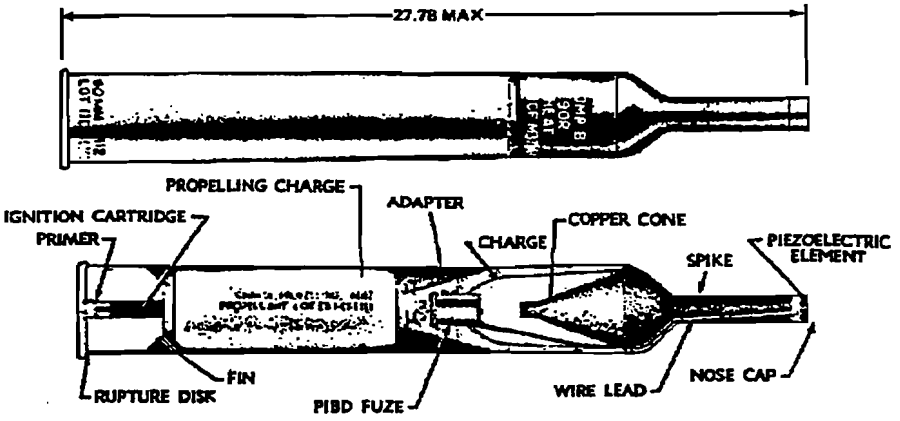
Use. The projectile of this cartridge contains high explosive and is used for fragmentation, blast, and mining in support of ground troops and armored columns.

Description. The projectile consists of a hollow steel forging with a boattail base, a streamlined ogive, and gliding metal rotating band. A base cover is welded to the base of the projectile for added protection against the entrance of hot gases from the propelling charge during firing. The high explosive filler within the projectile may be either cast TNT or Composition B. A fuze cavity is either drilled or formed in the filler at the nose end of the projectile. This cavity may be either shallow or deep. A cavity liner, to preclude dusting of HE during transportation and handling, is seated in the cavity and expanded into the lower projectile fuze threads. A supplementary charge is placed in the fuze cavity of projectiles having deep cavities. Projectiles with shallow cavities or deep cavities containing a supplementary charge use only short intrusion fuzes, PD, or MT. Those with deep cavities will accept the long intrusion proximity fuse after removing the supplementary charge. The cartridge case contains a percussion primer assembly and seven individually bagged and numbered propelling charge increments. The percussion primer assembly consists of a percussion ignition element and a perforated flash tube containing black powder. The seven numbered increment bags are tied together. These are assembled into the cartridge case, around the primer flash tube.

Weight	39.92 pounds
Length with Closing Plug	28.60 inches
Filler and Weight	
Normal Cavity	Comp B, 5.08 pounds
	TNT, 4.80 pounds
Deep Cavity	Comp B, 4.60 pounds
	TNT, 4.25 pounds
Propellant Charge (max weight)	2.83 pounds
Color	Olive drab w / yellow markings

Reference: TM 43-0001-28, *Army Ammunition Data Sheets, Artillery Ammunition*, April 1977

CARTRIDGE, 90mm, RECOILLESS RIFLE, HEAT, M371A1



Use. This cartridge is used in 90-mm recoilless rifles and is intended primarily for defeat of armor. There is also some limited effectiveness against fixed targets and personnel through blast and fragmentation.

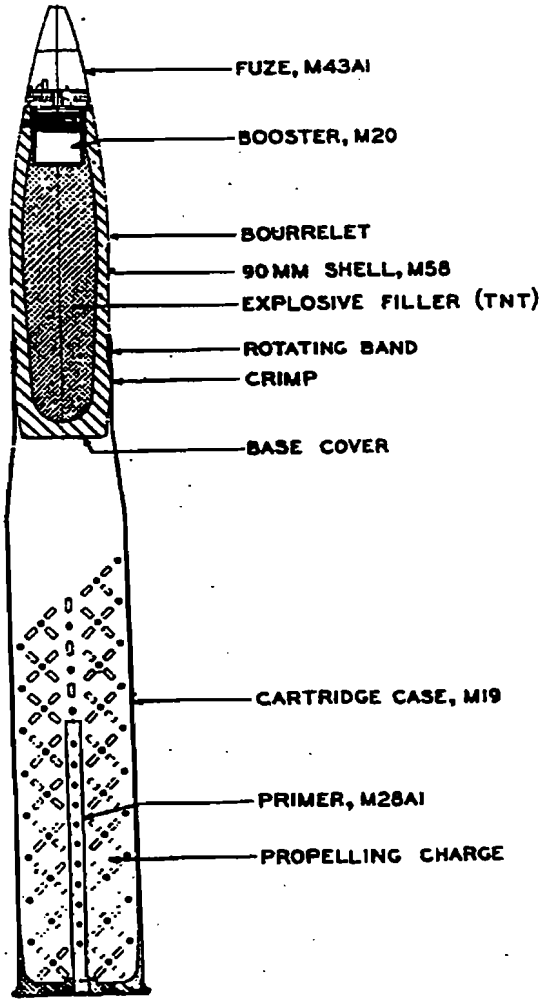
Description. The cartridge consists of an aluminum an aluminum cartridge case and a steel projectile containing shaped charge of high explosive. A percussion primer with a black powder ignition cartridge is assembled to the base of the round. A rupture disk is held in place in the base of the cartridge case by the primer. the propelling charge is contained in a bag installed around the fin assembly which contains the primer ignition cartridge. The projectile has a standoff spike, containing a piezoelectric element and a paper insulating cup, which is threaded to the body. An internal copper cone shapes the charge. The point initiating, base detonating fuze is contained in an adapter threaded to the base. The adapter is threaded to the fin assembly. The fins provide in-flight stability.

Functioning. The primer ignites the propelling charge when struck by the firing pin of the weapon. The burning propellant generates rapidly expanding gases to propel the projectile out of the barrel and to the required velocity. Recoil is minimized by blowout of the rupture disk and controlled pressure relief through apertures in the breechblock. The projectile is stabilized in flight by the tail fins. On impact, crushing of the piezoelectric unit triggers the fuze. The standoff spike provides the optimum distance from the target surface for explosion of the shaped charge. The detonation collapses the copper cones and creates a focussed, high velocity shock wave. The intensity of the shock wave causes failure of the target armor, and a jet of metal particles penetrates the interior.

Over-all Length (Max).....27.78 inches
Weight with fuze.....9.25 pounds
Filler and weight.....Comp B, 1.72 pounds
Propelling charge.....M82
Fuze.....PIBD M530A1, M530
Color
- **Old manufacture**.....Olive Drab with yellow markings
- **New manufacture**.....Black with yellow markings

Reference: TM 43-0001-28, *Army Ammunition Data Sheets, Artillery Ammunition*, April 1977

SHELL, 90mm, FIXED, PRACTICE, M58



General. This complete round was originally developed as the High-explosive Round M58. Due to the thin body walls, prematures resulted. As a result, the filler was washed out and a substitute filler of sand and a black powder spotting charge was substituted. The round, thus, has been designated a practice round.

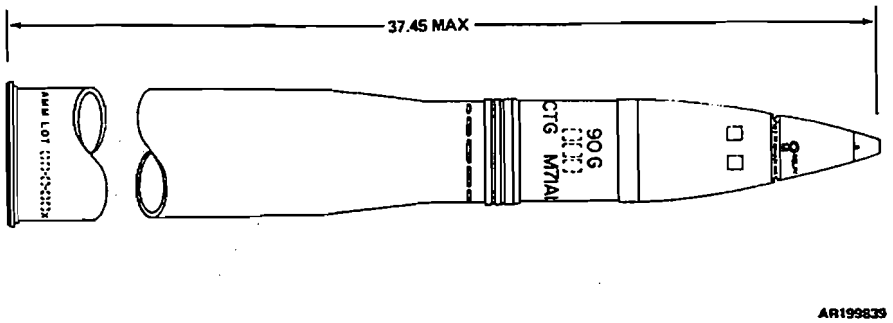
Projectile. The projectile is of steel construction. It is streamlined, with a boat-tail base. The fuze continues the exterior streamline of the projectile. The shell has a base plate welded to its base.

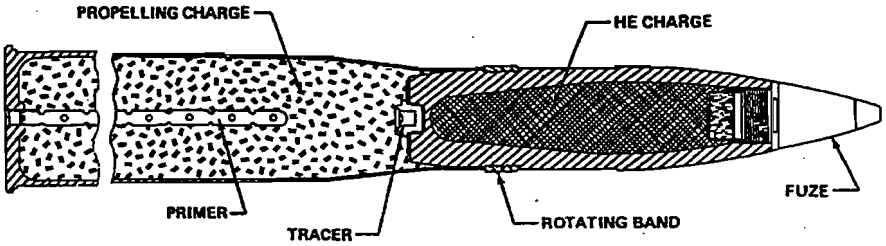
Components. A complete round of M58 Practice Ammunition consists of the following: An M58 Projectile with 2.11 pounds of inert filler and 0.56 pound black powder spotting charge in pellet form; an M20 Booster and an M43A2 Fuze; and an M19 cartridge Case with a propellant charge of NH smokeless powder.

Length of complete round ..... 37.45 inches
Diameter ..... 3.62 inches
Filler
  Sand ..... 2.11 pounds
  Black Powder Spotting Charge ..... 0.56 pounds
Weight of propellant ..... 7.31 pounds
Fuze ..... M43A2 Mechanical Time
Color ..... Blue, or Black with white markings

References: TM 9-1904, *Ammunition Inspection Guide*, March 1944; *Department of Ordnance, Complete Round Chart No. 5981*, March 1945

CARTRIDGE, 90mm, HE, M71; HE-T, M71A1





Projectile. The hollow steel forged projectile has a boat-tailed base and a streamlined ogive. The fuze continues the streamline of the projectile. Fuze cavity may be normal or deep cavity type.

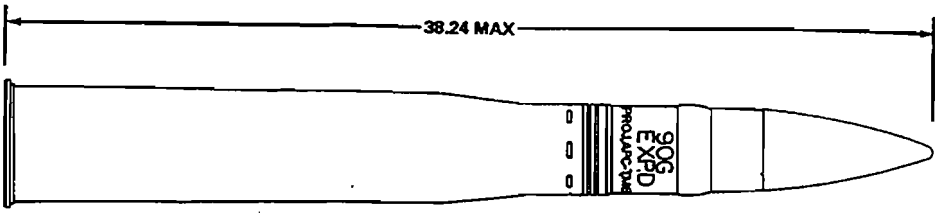
Components. The filler for this round is 2.15 pounds (1.86 pounds, deep cavity) of Composition B or TNT. A tracer is threaded into the projectile base (M71A1). A point-detonating fuze is assembled to the projectile. Loaded projectile weights fall into one of three weight zones. The loaded and fuzed projectile is assembled to an M19 or M19B1 Cartridge Case containing M1, M6, or M15 propellant.

Difference Between Models. M7A1 has a tracer; M7 does not. M7A1 has M1 propellant resulting in lower velocity; M71 has M6 or M15 propellant.

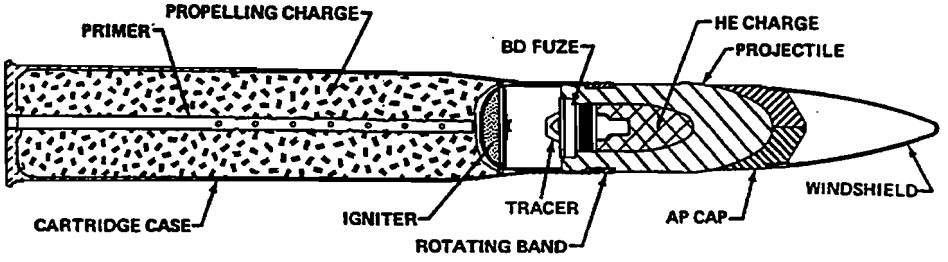
Length	37.45 inches
Diameter	3.62 inches
Weight	M7, 141.19 - 41.93 pound
	M7A1, 38.80 - 39.54 pound
Filler	TNT or Composition B
Weight of filler	
Normal Fuze well	2.15 pound
Deep Cavity fuze well	1.68 pounds
Fuze	PD M48, M48A1, M51A5, M557;
	MT M43A3;
	MTSQ M520 series, M564
Propelling Charge	M1, 5.33 pounds
	M6 & M15, 7.31 pounds
Color	Olive Drab with yellow markings

Reference: TM 9-1300-203, *Artillery Ammunition*, April 1977

SHELL, 90mm, FIXED, APC-T, M82



AR199835



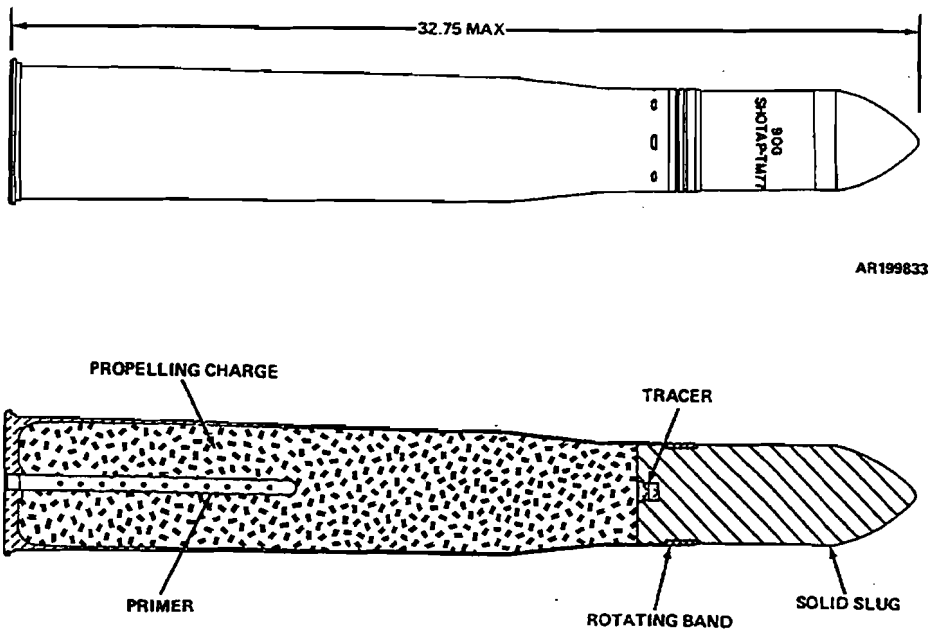
Projectile. This round consists of a heat-treated solid steel shot with an Armor Piercing Cap sweated on, and a false ogive or windshield screwed to this cap. Provisions are made for an explosive filler and base-detonating fuze.

Components. The complete round consists of the APC Projectile M82, with an explosive D filler and a Base Detonating (BD) Fuze M68. The M68 is similar to the BD M66. The fuze has a tracer composition in a boat-tail shaped portion that protrudes from the base of the projectile. The loaded and fuzed projectile is firmly crimped to the M19 Cartridge Case with its NH smokeless powder propellant and the M28A1 or A2 Primer.

Weight ..... 42.75 - 43.87 pounds
Length ..... 38.24 inches
Filler ..... Explosive D
Net Explosive Weight ..... 0.31 pound
Primer ..... Percussion
Propellant ..... M6 or NH Smokeless powder
Propellant Weight ..... 7.31 - 8.06 pounds
Color ..... Olive Drab, black band, & yellow markings

References: TM 9-1904, *Ammunition Inspection Guide*, Mar 44; TM 43-0001-28, *Artillery Ammunition*, April 1977

SHELL, 90mm, AP, M77

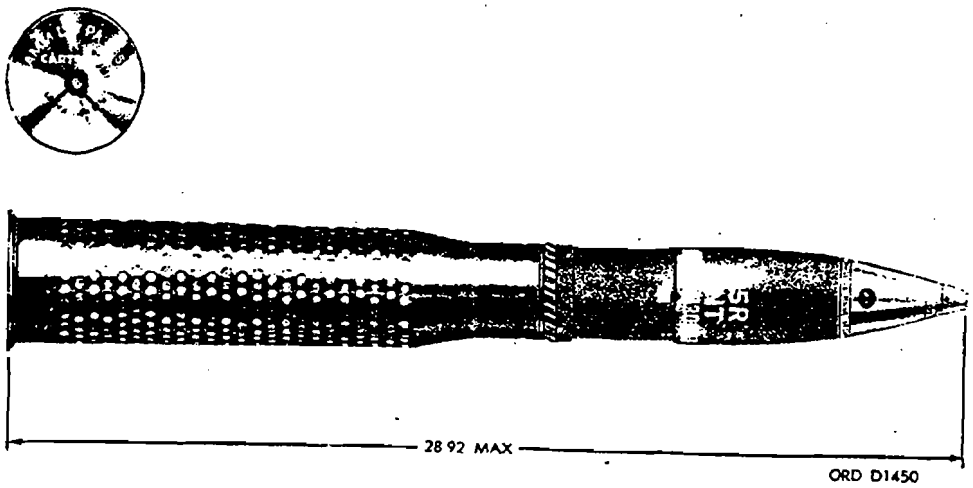


Description. The 90-mm gun M1 can be used either against aircraft or tanks, the ammunition is adapted to both targets. The Shot M77 is provided for antitank use. The projectile consists of a heat-treated solid steel shot with a tracer; no provision made for booster or fuze. The complete round consists of a Shot, armor-piercing, M77, firmly attached to an M19 Cartridge Case containing NH smokeless powder and an M28A1 or A2 Primer.

Length (complete round) ..... 32.75 inches
Length (projectile) ..... 10 inches
Diameter ..... 3.537 inches
Weight ..... 42.04 pound
Filler ..... None
Weight of propellant ..... 7.31 pound
Fuze ..... None
Color ..... Black with white marking

Reference: TM 9-1904, *Ammunition Inspection Guide*, dated March 1944, TM 9-1901, *Artillery Ammunition*, dated September 1950, *Complete Round Chart No. 5981*, dated March 1945

CARTRIDGE, 75mm, RECOILLESS RIFLE, HE, M309A1



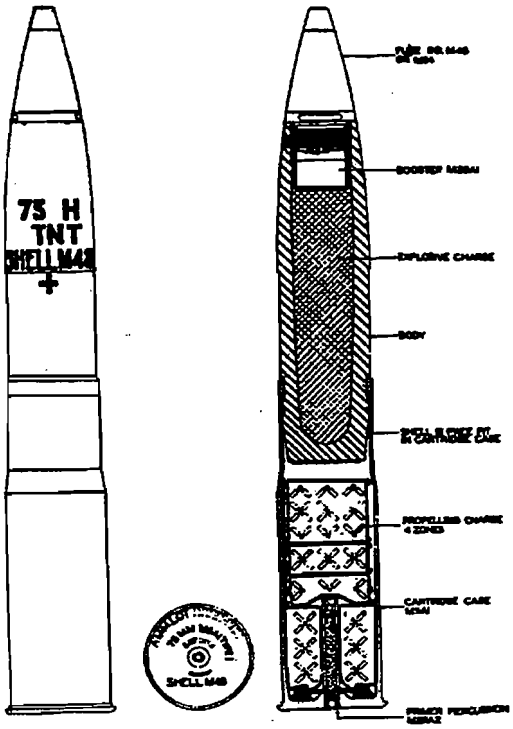
Use. Recoilless rifles are air-cooled, single-loading weapons designed for direct fire from a tripod mount. High Explosive cartridges M309A1 is used for blast, fragmentation and mining.

Description. This cartridge, issued with either a PD or a MTSQ fuze, consists of plastic lined cartridge case M31A1 crimped to a high-explosive projectile with a filler of 1.49 pounds of TNT. The projectile has a thin-walled, steel body with a boat-tailed base, a long, internally threaded ogive and an integral, pre-engraved rotating band.

Over-all Length (Max) ..... 28.92 inches
Diameter (body) ..... 75 mm
Total Weight ..... 22.37 pounds
Filler & weight ..... TNT, 1.49 pounds
Fuze ..... Point detonating or Mechanical time
Cartridge Case ..... M31 or M31A1
Propellant M10
Propellant Weight ..... 3.30 pounds

Reference: TM 9-1300-202, *Artillery Ammunition*, April 1967

SHELL, 75mm HOWITZER, HE, M48



Shell, Semifixed, H.E., M48

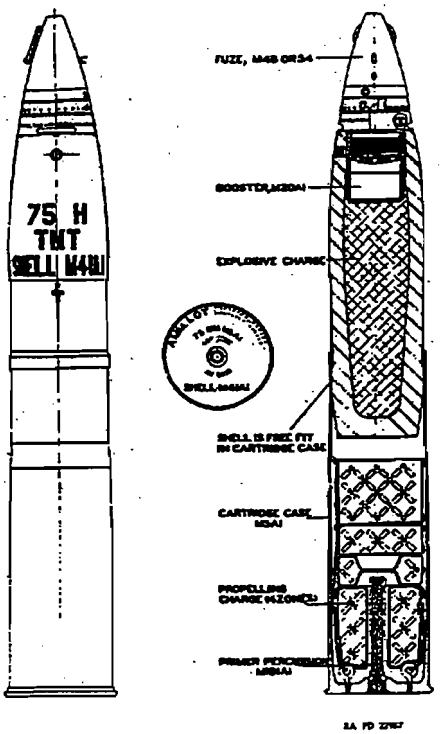
General. The complete round with the exception of cartridge case, primer, propelling charge, and markings is similar to the gun Round M48.

Description. This projectile is streamlined with a 9° tapered or boat-tailed base and a 7.5-caliber radius of ogive. The projectile is made of forged steel; it has a rotating band of gilding metal, a fringing groove; and a steel base cover spot welded to its base. It is also provided with a single groove, between the fringing grove and the boat-tail, for stab crimping of the cartridge case. The booster and fuze assemble directly to the nose of the shell, the booster being tightened in place by a set screw, and the fuze by staking into notches cut in the rim of the nose. The standard bursting charge consists of 1.49 pounds of TNT. The projectile is painted lusterless olive drab and is stenciled in yellow with the designation of weapon (75H), the designation of filler (TNT), and the complete round designation (Shell M48).

Filler ..... TNT
Filler weight ..... 1.49 pounds
Cartridge Case M5, M5A1B1
Propellant ..... FNH (15.55 oz. max)
Primer M1B1A2
Fuze M48, M48A1, M54
Painting and markings ..... Olive drab w/ yellow markings

Reference: TM 9-1904, *Ammunition Inspection Guide*, March 1944

SHELL, 75mm, HE, M41A1



Shell, Semifixed, H.E., M41A1

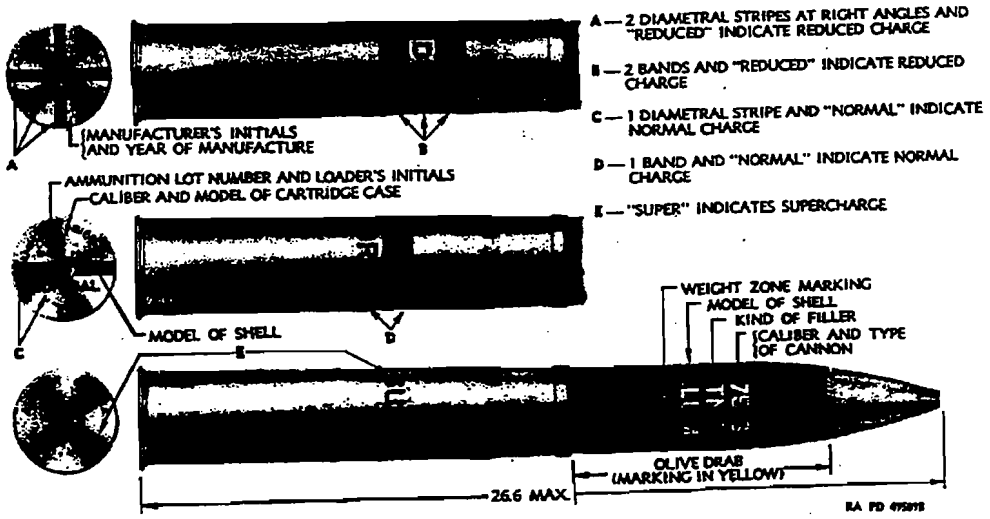
General. This round is a substitute for the M48 H.E. Shell in the 75-mm howitzer. This projectile is made by cutting off the nose of the Mk. IV, H.E. Shell and rethreading it to take the M48, M48A1, M54 fuzes, and the M20 Booster.

Description. This projectile has an 11-caliber radius of ogive and a boat-tail base with a 9° taper. The rotating band is of copper and a steel base plate is soldered to the base. It is a low-capacity shell, having a bursting charge in the howitzer of 1.11 pounds of TNT. There are only two weight zones in this projectile. The markings of the projectile will be in yellow on an olive-drab base coat, and will include the designation of weapon (75 H), filler (TNT), complete round (Shell M41A1), and weight zone (+).

Filler ..... TNT
Filler weight ..... 1.11 pounds
Cartridge Case M5A1, M5A1B1
Propellant ..... FNH powder
Primer M1B1A2
Fuze M48, M48A1,M54
Painting and markings ..... Olive drab w/ yellow markings

Reference: TM 9-1904, *Ammunition Inspection Guide*, March 1944

SHELL, 75mm, GUN, HE, M48



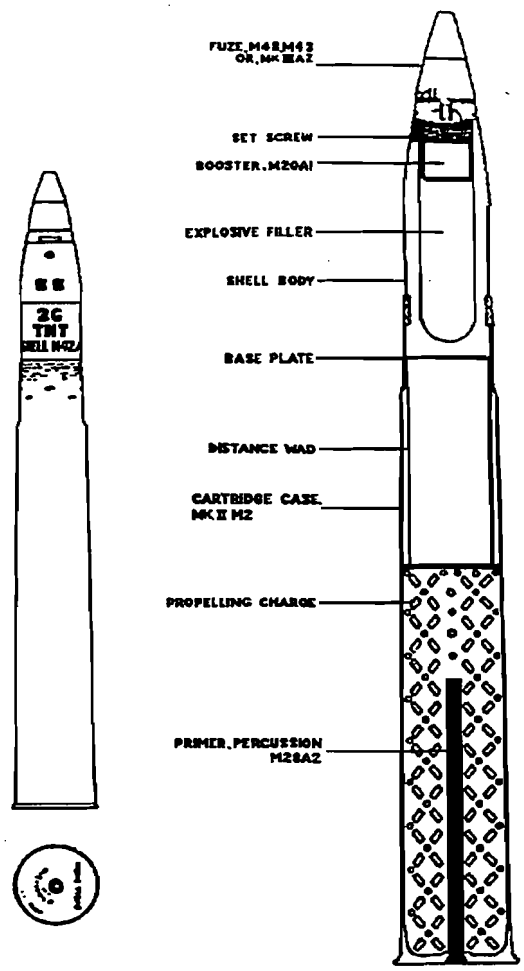
SHELL, H.E., M48, for 75-mm Guns

Description This projectile is streamlined with a 9° tapered or boat-tailed base and a 7.5-caliber radius of ogive. The projectile is made of forged steel; it has a rotating band of gilding metal, a fringing groove; and a steel base cover spot welded to its base. It is also provided with a single groove, between the fringing grove and the boat-tail, for stab crimping of the cartridge case. The booster and fuze assemble directly to the nose of the shell, the booster being tightened in place by a set screw, and the fuze by staking into notches cut in the rim of the nose. The standard bursting charge consists of 1.49 pounds of TNT. The actual weights, for uniformity of ballistics, are classified into weight zones which are indicated by yellow crosses (+++) stenciled below the bourrelet of the shell. The propelling charge M18 and M18B1 provides three charges; normal, super, and reduced. The mean weight of the complete round are: for the supercharge, 19.3 pounds; for the normal charge, 18.5 pounds; and for the reduced charge, 18.0 pounds. The projectile is painted lusterless olive drab and is stenciled in yellow with the designation of weapon (75G), the designation of filler (TNT), and the complete round designation (Shell M48).

Over-all Length (Max)	26.6 inch
Diameter (body)	2.925 inch
Total Weight	(+) 18.0 pound
	(++) 18.5 pound
	(+++) 19.3
Filler	TNT
Filler weight	1.49 pounds
Cartridge Case	M18, M18B1
Propellant	FNH powder
Primer	M22A3, M22-series and M31
Fuze	M48A2, M54, M51A4, M21A4
Painting and markings	Olive drab w/ yellow markings

Reference: TM 9-1904, *Ammunition Inspection Guide*, March 1944

SHELL, FIXED, 3-INCH, HE, M42 AND M42A1



General. this shell is essentially designed to replace the SHELL, HE, Mk IX, to take the M20 booster directly without use of an adapter.

Projectile. is of one piece steel construction and has the same length and contour as the Mk IX combined with its adapter. The nose is threaded to receive the M20 Booster. The radius of ogive, rotating band, and base plate are also identical to that of the Mk IX Shell. The filler is 0.86 pound of TNT. The variation in shell weights gives three zone weights. The M42 Projectile has been modified to the M42A1, and will be manufactured as such in the future. The modification consists of changing the inside cavity at the base of the projectile from flat to a hemispherical contour.

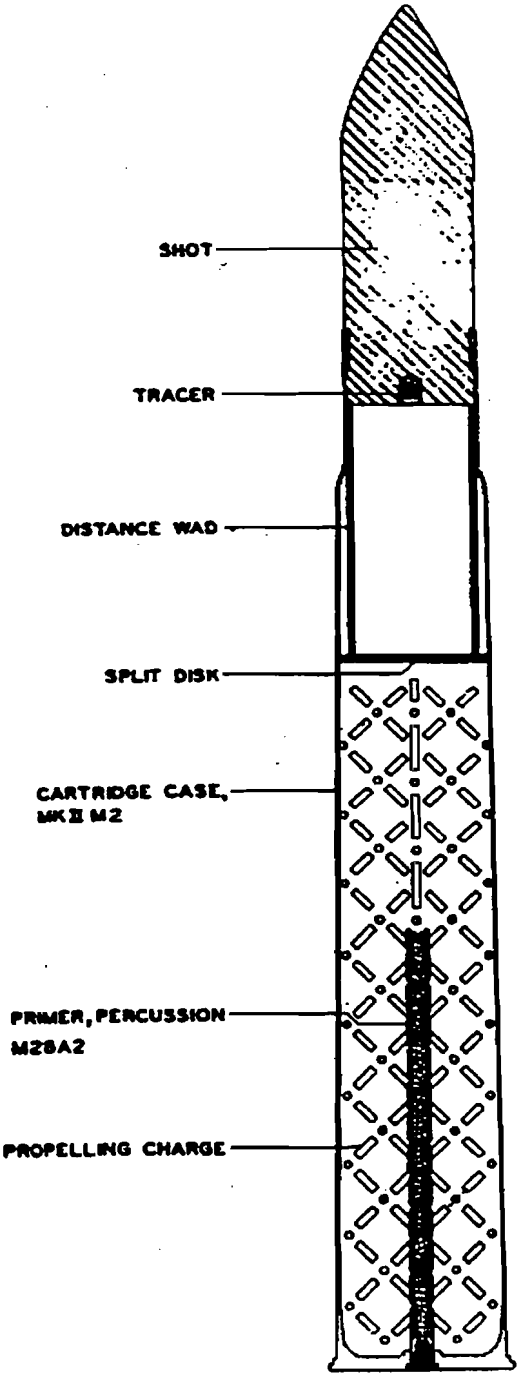
Components. The complete round consists of the M42 Projectile loaded with TNT, having a bakelite cup in the nose to receive the M20-series Booster, and fuzed with the Mechanical Time, M43 fuze (all models) or the 21-second Powder Time-train Fuze Mk IIIA2. The above projectile is crimped to the Mk IM2 or Mk IIM2 cartridge Case with its propelling charge of NH smokeless powder, distance wad, and the M28A2 Primer.

Guns. The M42 HE Round can be used in all models of fixed or mobile mounted guns, providing the cartridge case corresponds with the proper weapon.

Length (projectile)..... 12.4 inches
Diameter ..... 3.04 inches
Weight..... 12.81 pounds
Filler..... TNT
Weight of filler ..... 0.86 pounds
Fuze..... Mechanical Time M48, M43 , or Powder Time Mk IIIA2
Propellant ..... NH Powder, 5 pounds (approx.)

Reference: TM 9 -1904, *Ammunition Inspection Guide*, March 1944

SHELL, 3-INCH, FIXED, ARMOR PIERCING, M79



General. As a direct outcome of World War II, some of the weapons designed originally for AA work entirely have been converted into dual-purpose weapons simply by adding rounds that serve an entirely different purpose. This is the case with regard to this armor-piercing round. The AA weapon can, with this type of ammunition, be used against tanks and armored vehicles as well as against aircraft. These new AP rounds are provided only for weapons on the mobile mount.

Projectile. The projectile consists of a heat-treated, hardened steel, solid shot which has a cavity in its base to hold the tracer element which is ignited by the propellant charge. The rotating band is of gliding metal, and is approximately 1 inch wide.

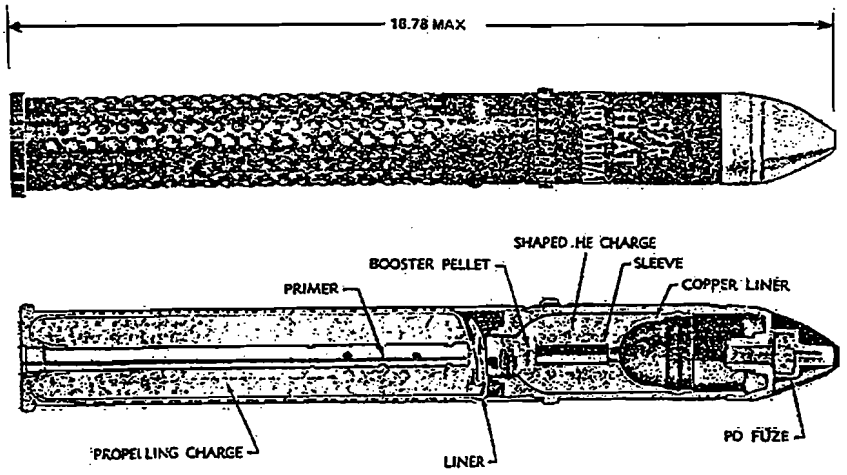
Components. The complete round consists of the Shot M79, with its tracer composition in the base, crimped firmly to the Mk. IIM2 Cartridge Case containing 4.38 pounds of flashless FNH smokeless powder, a distance wad, and the Primer M28A2.

Guns. The Shot, AP, M79, can be used only in models of guns on the mobile mount.

Reference: TM 9 -1904, *Ammunition Inspection Guide*, March 1944

RA PD 22963

CARTRIDGE, 57mm, RECOILLESS RIFLE, HEAT, M307 & M307A1



Use. This cartridge is employed against armored targets and used with 57-mm rifles M18 and M18A1.

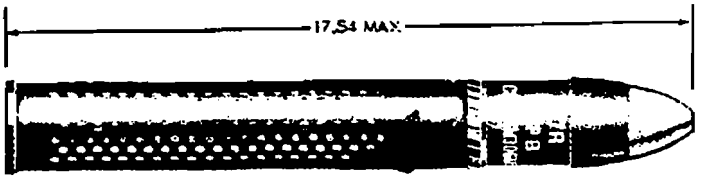
Description. HEAT cartridge M307A1 includes a perforated metal cartridge case containing a plastic liner and a percussion primer and is crimped to the projectile just behind the pre-engraved rotating band of the projectile. The projectile forward cap is threaded to receive a point detonating fuze. A hemispherical copper liner crimped to the interior of the projectile forms a shaped charge to the rear and space forward to provide the standoff necessary for penetration. A steel sleeve brazed to the neck of the copper liner provides a passage from the fuze to a booster pellet in the base of the projectile. The booster pellet extends into the high explosive charge.

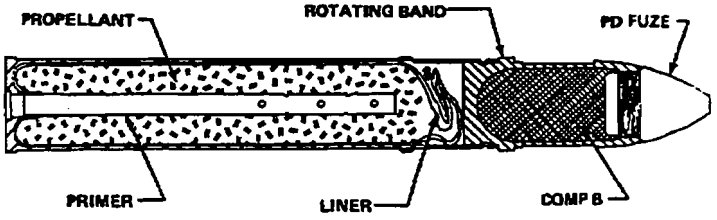
Functioning. The primer ignites the propellant when struck by the weapon firing pin, and the burning propellant generates gases to propel the projectile through the barrel. Recoil is eliminated because the design of the cartridge case permits controlled escape of some gas pressure through apertures in the rifle breechblock. The rotating band engages the rifling in the barrel to spin the projectile for stability in flight. The fuze functions on impact and fires through the steel sleeve to the booster pellet. Detonation of the explosive charge collapses the copper liner and creates a focussed, high velocity shock wave containing a jet of metal particles that penetrates the interior of the target.

Over-all Length (Max)..... 18.78 inch
Weight of complete round..... 5.43 pound
Filler and weight..... Comp B or 50-50 Pentolite, 0.40 pound
Propelling charge..... M10
Color..... Olive Drab with yellow markings

Reference: TM 43-0001-28, *Army Ammunition Data Sheets, Artillery Ammunition*, April 1977

CARTRIDGE, 57mm, RECOILLESS RIFLE, HE, M306A1





Use. High Explosive Cartridge M306A1 is designed for blast, fragmentation and mining. This cartridge is used with rifles M18A1 and M18.

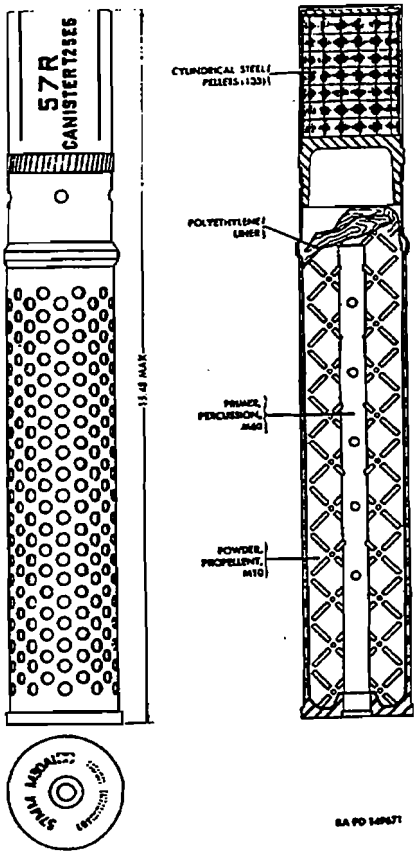
Description. HE cartridge M306A1 consists of a perforated cartridge case, containing a plastic liner and a percussion primer. The propelling charge is loosely loaded into the liner. The cartridge case is crimped to a high-explosive projectile with a square base, a short inernally threaded ogive and integral, pre-engraved rotating band. The projectile contain an explosive charge of Composition B or TNT. Projectiles are fuzed with point-detonating (PD) Fuze M503A2, M503A1 or M503 which function on direct impact or graze. There is a bourrelet on the rear of the ogive and another immediately in front of the rotating band. The cartridge is spin-stabilized in flight.

Functioning. The primer ignites the propellant when struck by the weapon firing pin, and the burning propellant generates gases to propel the projectile through the barrel. Recoil is eliminated because the design of the cartridge case permits controlled escape of some gas pressure through apertures in the rifle breechblock. The rotating band engages the rifling in the barrel to spin the projectile for stability in flight. The PD fuze functions either on direct impact or graze. When the fuze functions, the firing pin strikes a detonator to initiate the explosive train in the fuze, and subsequently detonates the explosive charge producing blast and fragmentation.

Over-all Length (Max).....17.54 inch
Weight of complete round.....5.46 pound
Filler and weight.....M306A1, Comp B, 0.55 pound
M306, TNT, 0.55 pound
Propelling charge.....M10
Color.....Olive Drab with yellow markings

Reference: TM 43-0001-28, *Army Ammunition Data Sheets, Artillery Ammunition*, April 1977

CARTRIDGE, 57mm, CANISTER, T25E5, RECOILLESS RIFLE



General. Canister, cartridge T25E5 is designed for antipersonnel use at close range.

Description. This cartridge consists of a cartridge case M30A1B1 or M30A1B2 crimped to a thin steel canister projectile. The projectile is brazed at the rear to a heavy steel base and closed at the forward end by a closing disk which is crimped and welded to the body of the canister. Four equally spaced, longitudinal slits extend from the front end of the projectile to within 1/4 inch of the pre-engraved rotating band. The payload consists of 154 stacked, cylindrical, steel slugs.

Functioning. Immediately after the projectile leaves the muzzle of the rifle, air pressure on the closing disk and centrifugal force acting on the body of the projectile and on the slugs cause the body to burst open at the longitudinal slits, dispersing the slugs.

Over-all Length (Max)..... 15.48 inches
Weight of complete round..... 5.43 pounds
Weight of propelling charge..... 1.0 pounds

Reference: TM 9-1901, *Artillery Ammunition*, March 1954; TM 9-1300-203, *Artillery Ammunition*, April 1967

CARTRIDGE, 40mm, AP-T, M 81

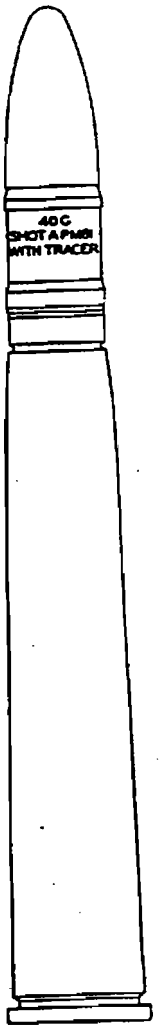
General. This complete round was designed for use against armored targets. It is peculiar as an armor-piercing projectile in that it has a windshield but no armor cap.

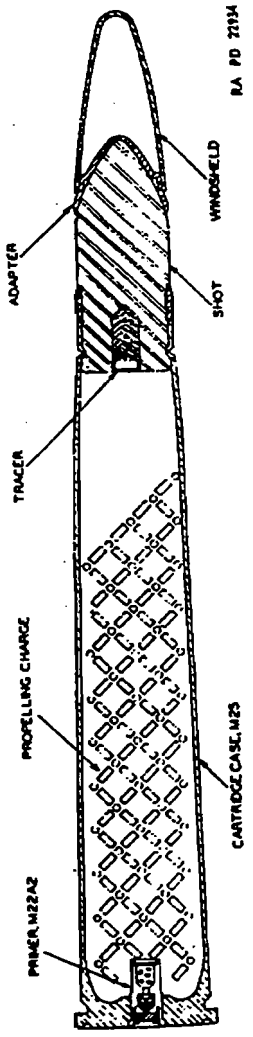
Cartridge Case. The M25 Case is "Standard"; the M25B1 Case is "Substitute Standard".

Propelling Charge. The propelling charge consists of 10.4 ounces of FNH powder held loosely in the cartridge case.

Primer. The M23A2, 20 grain, Percussion Primer is a standard component of the M81 Round.

Projectile. The body of the projectile is machined from bar steel and is hardened to produce armor-piercing qualities. The ogive has a small radius and is continued to a point. A recess for a copper rotating band and a cannelure to receive the cartridge case crimps are machined into the body. The projectile is streamlined by the addition of a windshield which has a rounded nose. The windshield is soldered to a sheet metal adapter which is soldered and crimped to the nose of the body. A cavity is machined into the base of the body to receive the tracer assembly. The tracer assembly is made up of tracer composition, igniting composition, and a clear celluloid cup. The cup is cemented and press-fit into the base of the projectile.

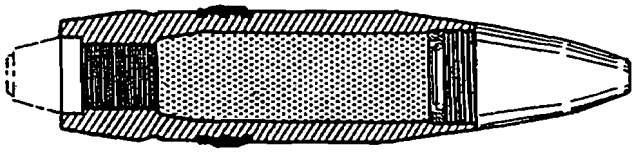




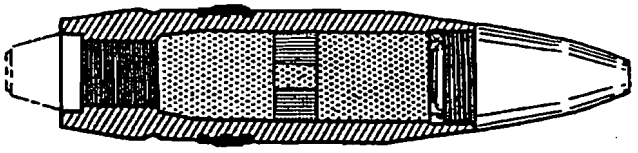
Length ..... 17.62 inch
Diameter ..... 1.56 inch
Weight ..... 4.53 pound
Color ..... Black with white marking
Filler ..... None
Fuze ..... None

Reference: TM 9-1904, *Ammunition Inspection Guide*, March 1944

PROJECTILE, 40mm, HE, HE-I, Mk 2



MK 2 HE



MK 2 HE-I

Description. This projectile loaded HE in three increments. It also may be loaded HE-I, with the central increment an incendiary composition. The Mk 2 HE-I round may be issued plugged instead of tracered. The projectile may be issued B.L. & P, or B.L. & T, for target practice or deicing.

Over-all length of Projectile
With nose fuze ..... 7.1 inch
Without nose fuze ..... 5.2 inch
Diameter of bourrelet ..... 1.57 inch
Filler ..... H.E.: Cast TNT
H.E.-I.: Cast TNT and Incendiary
Weight of filler ..... H.E.: 0.148 pound
H.E.-I.: 0.150 pound
Weight of loaded round ..... 1.985 pound
Fuze ..... Mk 27, PD
Primer ..... Percussion

Markings and Painting

Type	Body	Bands	Tip	Remarks
HE-P	Green	Black/Green	Green	Plug in tracer
HE-T /SD	Green	Black/White	Green	
HE/SD	Green	Black/Black	Green	Non-luminous tracer
HE-I-T/SD	Green	Black/White	Red	
HE-I-P	Green	Black/Red	Red	Plug in base
HE-I/SD	Green	Black/Black	Red	Non-luminous tracer
HE-I-T	Green	Black/White	Red	SD relay not loaded
B.L. & T	Red	White	Red	Dummy fuze
B.L. & P	Red	Red	Red	Dummy fuze and plug in base

Reference: NAVSEA OP 1664, *Vol 1, U.S. Explosive Ordnance*, May 1947

CARTRIDGE, 37mm, APC, FIXED, M59

Complete round. This round is"Standard" for use against any type of armor plate. It is very similar to the SHOT, APC, M51, used in the 37-mm Antitank and Tank Guns M3, M3A1, M5, and M6. The main differences are in the cartridge cases and in the fact that the M59 Shot does not have a windshield to extend the ogive.

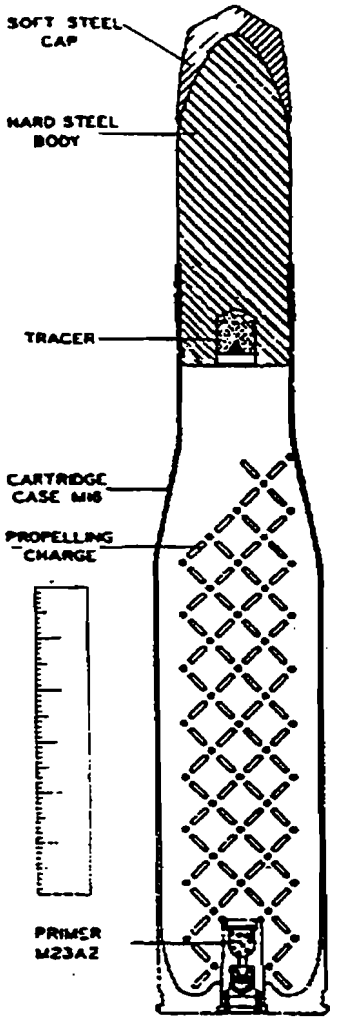
Cartridge cases. M17 is "Standard", M17B1 is "Substitute Standard".

Primer. M23A2, 20-grain, Percussion Primer is "Standard". Some rounds may incorporate the M23A1 Primer.

Propelling charge. A propelling charge of 0.31 pounds of FNH powder gives the projectile a muzzle velocity of 2,050 feet per second.

Projectile. Aside from the following differences, the projectile is the same as the SHOT, APC, M51, used in the Tank and Antitank Guns M3, M3A1, M5, and M6. The chambering of the Antiaircraft Gun M1A2 does not permit the use of a windshield. The M59 Antiaircraft round contains more tracer composition in the base than does the M51 Antitank round. The M59 projectile is a trifle lighter than the M51.

Identification. The complete round may be identical for the antiaircraft group by the size and extracting groove of the cartridge case. The black painting with white stencil and the armor-piercing cap distinguishes it as SHOT, APC, M59. The complete round is 12.76 inches long and weighs 3.12 pounds.

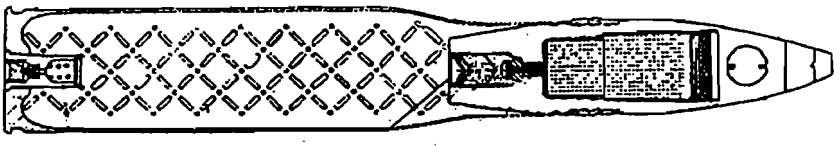


SHOT, A.P.C., M59.

Length ..... 12.76 inch
Diameter ..... 1.44 inch
Weight ..... 3.12 pound
Color ..... Black with white markings
Filler ..... None
Fuze ..... None

Reference: TM 9-1904, *Ammunition Inspection Guide*, March 1944

CARTRIDGE, 37mm, HE, FIXED, M54 WITH SELF DESTRUCT TRACER



Cartridge case. The M17 Case is "standard", the M17B1 is "Substitute Standard".

Primer. The M23A2 is "Standard",. Some rounds on hand may be primed with the M23A1.

Propelling charge. A muzzle velocity of 2,600 feet per second is imparted to the projectile by 6 ounces of FNH powder.

Projectile. The projectile M54, as fired, weighs 1.34 pounds and is about 5.9 inches long. It is the same projectile as the M54 fired from the M4 Antiaircraft Gun. The projectile consists of three components: the body itself protrudes from the cartridge case. The base of the projectile is very thick (over 1 1/2 inches) and is tapered for streamlining purposes. The cavity for the shell-destroying tracer is machined into this heavy base. The bursting charge of 0.10 pound of tetryl is pressed into the body in two increments: a base pellet and a main charge. The shell destroying tracer assembly consists of a quantity of tracer composition, an ignited charge, a celluloid closing cup, a relay igniting charge and a relay pellet. When the tracer composition is almost completely burned, it initiates the relay pellet and in turn detonates the tetryl base pellet of the bursting charge , and finally the main bursting charge itself.

Fuze. Point Detonating, M56. Since the High-explosive Round M54 is required to function on impact with light materials such as those used in planes, a supersensitive fuze is needed. A super- sensitive fuze is one which will detonate on very slight impact such as with a double thickness of airplane fabric. The M56 is both supersensitive and superquick because the firing pin is protected only by a very thin aluminum closing cup and rests, at the time of impact, right on the detonator which initiates an almost uninterrupted train of detonating explosives. The body of the fuze is divided into three parts; the body loading assembly, the head assembly, and cap. The booster of tetryl is pressed into a cavity in the lower part of the body. The complete round of M54, HE Shell can be identified by the presence of the M56 Fuze.

Reference: TM 9-1904, *Ammunition Inspection Guide*, March 1944

APPENDIX A-109

AR 750-10, 14 Feb 42

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ARMY REGULATIONS
No. 750-10

WAR DEPARTMENT,
WASHINGTON, February 14, 1942.

FILE

RANGE REGULATIONS FOR FIRING AMMUNITION FOR TRAINING AND TARGET PRACTICE

		Paragraphs
SECTION I.	Introduction	1-2
II.	Ranges; towed targets	3-7
III.	Precautions for firing	8-15
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SECTION I
INTRODUCTION

	Paragraph
Purpose and scope	1
General	2

1. Purpose and scope.—These regulations prescribe the general safety measures necessary in the firing or other use of live ammunition by troops in time of peace. The purpose is to minimize the possibility of accidents. Safety precautions covering specific types of material are given in the training publications pertaining thereto. These regulations do not apply to proving grounds of the Ordnance Department or the Chemical Warfare Service nor to test firings directed and supervised by arm and service boards and the Matériel Division, Air Corps; however, the necessary precautions will be taken to insure the safety of life and property.

2. General.—*a*. The danger areas prescribed in these regulations do not of themselves insure safety from accidental discharges of small arms, accidental release of bombs, or from shots from cannon fired or bombs dropped with erroneous sighting or instrument setting. Danger due to these causes must be eliminated by thorough preliminary instruction of all personnel and by the maintenance of high standards in all duties connected with firing. It is obviously impossible for any general range regulations to cover each local situation completely. Such additional regulations as may be necessary to meet local conditions will, therefore, be prepared and enforced by the post, camp, or station commander.

b. In all firing in training, reasonable precautions to prevent accidents will be taken. Safety in firing is the responsibility of the officer in charge of the firing at a particular point or locality, except for those features prescribed by the orders or regulations of higher authority. When several units are firing independently in the same general area, there will be an officer in charge of each

*This pamphlet supersedes AR 750-10, May 22, 1939, including section III, Circular No. 75, War Department, 1939; section II, Circular No. 4, section I, Circular No. 12, section I, Circular No. 41, section III, Circular No. 60, section II, Circular No. 82, section I, Circular No. 106, and section IV, Circular No. 139, War Department, 1940; section IV, Circular No. 15, section II, Circular No. 110, section II, Circular No. 115, and section III, Circular No. 171, War Department, 1941; and paragraph 2, section IV, Circular No. 40, War Department, 1942.

firing point. The officer in charge is assisted when necessary by a range officer who keeps the danger area clear, and in all artillery firing by the safety officer who verifies that the guns are laid safely before firing. There will be a safety officer for each artillery unit firing and he will have no other duty than that of safety officer.

c. Any individual in the military service who observes a condition which makes firing dangerous will immediately command *Cease firing,* and if at a distance from the unit firing will make the prescribed signal therefor.

d. Any alteration of loaded ammunition except in accordance with specific instructions from the chief of the supply service concerned is hazardous and is therefore prohibited.

e. Firing over the heads of any personnel from tanks or other automotive vehicles is prohibited.

f. General precautions to be observed in firing cannon and precautions to be observed in firing seacoast or railway cannon are covered in Field Manuals on the service of the piece. They will be followed carefully in addition to the precautions covered herein.

g. In all cases where firing is to be conducted, a warning order will be published to the entire garrison at least 24 hours prior to the time of firing, showing the nature of the firing, the place where the firing is to be conducted, the hour firing is to begin and cease each day, the number of days firing will continue, the boundaries of the danger area, and the officer responsible for the firing.

h. All ammunition at the firing point must be placed so as to minimize the possibility of ignition, explosion, or detonation in case of an accident at the gun position. It should be in a dry place and protected from the direct rays of the sun by a tarpaulin or other covering. Erratic shots and possibly dangerously high powder pressures may result because of overheated ammunition. White phosphorous shell must be piled well away from personnel shelter and in a space cleared of all combustible material.

i. After firing on a range has been completed and before free access to it is allowed to personnel in general, the range will be thoroughly policed and all duds will be destroyed by competent personnel as prescribed in TM 9-1900.

j. The use of grade 3 small-arms ammunition is prohibited, and it will not be issued by the Ordnance Department. Since small-arms ammunition is being tested continuously and changes in grades are being made as a result of these tests, it sometimes happens that ammunition in the hands of using organizations will be placed in grade 3. Therefore, before any firing with this type of ammunition is conducted, the local ordnance officer, who has a complete list of the gradings of all lots of ammunition, should be consulted.

k. Photo-flash bombs and aircraft flares.—When photo-flash bombs or aircraft flares are released during flight over land areas other than military reservations and fail to function, the following appropriate action will be taken to locate the duds and safeguard civilian population, animals, and private property.

(1) Upon occurrence of the dud, the officer in command of the airplane will immediately report to his organization commander, who will relay the information to the nearest post or, when engaged in maneuvers, to field headquarters.

(2) If the dud occurs while the airplane is performing a mission for services other than the Air Corps, an immediate report will be rendered by the airplane commander to the commanding officer of the unit for which the duty is being performed.

(3) The commanding officer of the post or higher headquarters receiving the report will immediately initiate action to locate the dud and arrange for its destruction or removal. Upon location and until destruction or removal, a suitable guard will be provided for the dud.

(4) In case the dud cannot be located, report the facts to higher headquarters and The Adjutant General. Arrange for local publicity, warning the civilian population of the hazards involved in handling or moving such duds, and requesting prompt report if and where found.

SECTION II

RANGES; TOWED TARGETS

	Paragraph
Land ranges	3
Water ranges	4
Towed targets	5
Safety limits	6
Danger areas	7

3. Land ranges.—*a. General.*—Before firing, the danger area of land ranges as set forth in this section will be examined and all persons and livestock will be excluded. Local newspapers will be requested in the interest of safety to publish warnings against trespassing on the range.

b. Range guards.—Range guards properly instructed as to their duties will be posted so as to cover all normal approaches to the danger area.

c. Warning signals and signs.

(1) The scarlet danger flags and, when deemed necessary, warning signs will be displayed at appropriate points to warn persons approaching a firing area which is being used.

(2) The scarlet streamer will be displayed from a prominent point on all ranges and at all times during firing. No firing will take place unless the scarlet streamer is displayed, and all firing will cease at once in case the streamer is hauled down during firing.

(3) At night red lights may be used in lieu of danger flags, and to supplement the scarlet streamer.

(4) Signs warning persons of the danger from duds will be posted in the vicinity of the firing area at all times. For the disposal of duds, see TM 9-1900.

4. Water ranges.—*a.* Prior to firing over water areas or planting or firing submarine mines in water areas which are used by shipping of any kind, the harbor defense, post, regimental, or similar commander of the firing unit will warn local naval officials and, subject to current instructions regarding secrecy, inform the public of the contemplated firings or submarine mine plantings through one or more of the following agencies: Public press, public radio, Coast Guard, or interested public officials.

b. Proper observation of the field of fire will be provided to insure that the range is clear during firing. In some cases this may be satisfactorily accomplished by land observers alone, while in others observation from the water and from the air may be necessary. Effective means of communication between safety observers and the firing point will be provided so as to insure prompt notification to the observers when firing is to commence and to the firing point when the field of fire is unsafe. Commanding officers will insure the fact that persons detailed as safety observers have such knowledge of the ballistic and

other conditions connected with the firings as to render them fully capable of judging when the field of fire is safe.

c. For firing at night, searchlights will be employed as barrier lights to enable safety observers to detect shipping which may attempt to enter the danger zone.

d. In firing over water areas, projectiles or bombs containing phosphorus or other substances of presumptive danger to wildlife (bird, animal, or fish) will not be used without permission of authorities responsible for conservation.

5. Towed targets.—*a. General.*

(1) In general, no piece will be fired when it is pointing at or ahead of the towing vessel or airplane.

(2) Effective intercommunication between the towing vessel or airplane and the firing point will be maintained.

(3) For firing at night the towing vessel or airplane will carry such lights as will indicate its position to safety observers. Firing on the target will be permitted only when both the target and the towing vessel or airplane are visible from the battery.

b. Water.—In firing at towed water targets the following precautions will be observed:

(1) Firing will be prohibited when the angle between the path of the target and the line joining the target and battery is less than 40°.

(2) In firing upon targets towed on the surface of the water, the direction of ricochet is in general dependent upon the direction of the rotation of the projectile, the magnitude of the wave masses, and the actual angle of impact. In smooth water with moderate angles of impact, the direction of ricochet will be the same as the direction of rotation of the projectile, but in rough water, particularly when firing small caliber guns, the deflecting effect of the waves may cause the ricochet to be in the opposite sense from the direction of rotation. In general, when the water is smooth and the angle of fall is not great enough to preclude the danger of ricochet, targets should be towed from right to left, as seen from the firing point, when firing from guns having a right-handed twist to the rifling. Under similar conditions, targets should be towed from left to right, as seen from the firing point, when firing from guns having a left-handed twist to the rifling. These factors will be given serious consideration by local commanders who will be responsible for determining the manner and direction in which targets are to be towed.

(3) When direction is given to the piece by aiming the sight at the target, the length of towline will be at least 3 percent of the range to the target and in no case less than 300 yards in length.

(4) When direction is given to the piece by use of an azimuth circle or by directing the sight at an aiming point other than the target, the length of towline will be at least 3 percent of the range to the target and in no case less than 500 yards in length.

c. Air.

(1) In order that the provisions of *a*(1) above may be complied with, the length of the towline for all practices should exceed the travel of the target during the time of flight of the projectile. When, in firing at towed air targets, compliance with these regulations will

require a towline in excess of the length of the towline available on the towing airplane, special requirements will be laid down to insure the safety of the towing airplane. For firing with guns or small arms at towed air targets the towline will at all times exceed 600 yards in length. These limits refer to rectilinear flight. When firing at a target which is being maneuvered, the length of towline should be increased by an amount which will depend upon the extent of the maneuver. When high-explosive ammunition is being fired, the minimum lengths of towline indicated above will be increased by at least 200 yards.

(2) In addition to the foregoing, to provide for the safety of the towing aircraft, firing at targets towed by aircraft when the slant range to the target is less than 3,000 yards will be permitted only when the angle target-gun-aircraft exceeds 300 mils or 17°. When the slant range exceeds 3,000 yards, firing at such targets will be permitted only when the smaller angle in space between the gun-target line and the towline is greater than 45°.

6. Safety limits.—Safety limits based upon prescribed danger areas will be determined prior to firing. Safety limits for cannon positions will apply to individual cannon except in the case of a battery, where they will be measured from the flank cannon or machine gun only.

7. Danger areas.—*a. For all cannon firing except antiaircraft firing at towed targets.*—The boundaries for the danger area for cannon of the various calibers are graphically illustrated in figure 1.

(1) The danger area (fig. 1) consists of the impact area and areas A, B, C, and D. The danger area will not be occupied except as authorized in (2) below. The sizes of areas A, B, and C vary for different calibers according to the following tabulation:

Danger areas

Calibers	Width of areas		
	A	B	C
	Yards	*Yards*	*Yards*
37-mm or less	600	2,000	200
40-mm to 75-mm incl	600	2,000	400
90-mm to 155-mm incl	800	2,000	600
7-inch to 240-mm incl	1,000	[1] 3,000	1,000

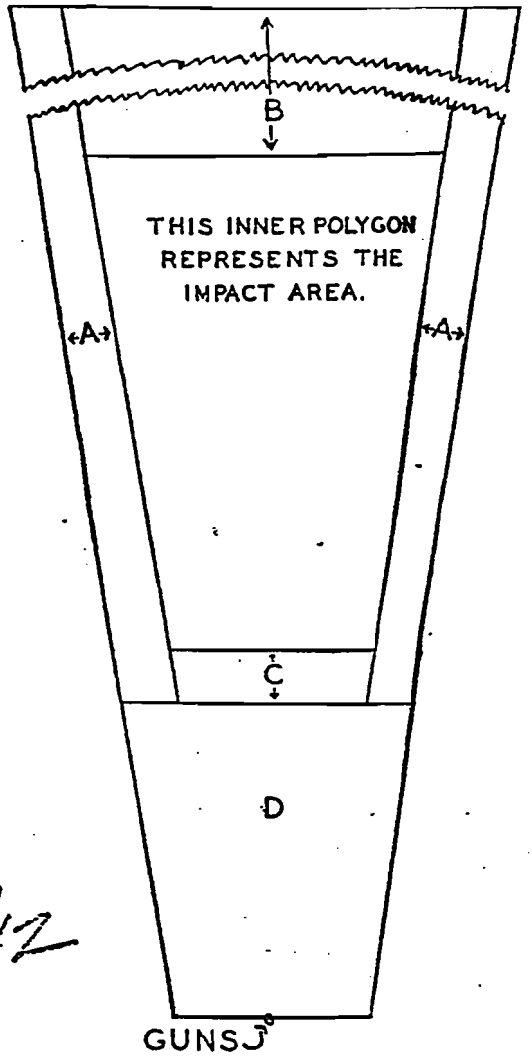
[1] 2,000 yards if firing at more than 12° elevation.

(2) Area D may be occupied under the following conditions:

(*a*) If any part of area D is to be occupied, the trajectory must clear any personnel or material objects in this area by 5 yards plus 2 forks. This will require the calculation of a minimum range line which will become the short limit of the impact area.

(*b*) No overhead cover is required for personnel in area D except when firing time fuze set for other than burst on impact. When firing time fuze set for other than burst on impact, all personnel in area D will be protected by splinterproof cover as described in paragraph 51*a*(1), FM 5-15; personnel in a tank with the turret closed have sufficient protection for this purpose.

(c) All personnel in area D are subject to the restrictions of paragraph 14*a*.



See Cir. 122, 1942

FIGURE 1.—Danger area for all cannon firing, except antiaircraft firing at towed targets.

b. For chemical mortars and Livens projectors.—For chemical mortars and Livens projectors the danger areas will consist of a trapezoid with the shorter base passing through the position of the weapon and perpendicular to the line of fire, the line of fire bisecting the trapezoid. (See fig. 2.) The dimensions of the trapezoids will be as follows:

(1) *4-inch chemical mortar.*—1,500 yards long, 200 yards wide at the mortar position, and 500 yards at the farther end.

(2) *4.2-inch chemical mortar.*—3,000 yards long, 200 yards wide at the mortar position, and 600 yards at the farther end.

(3) *Livens projector.*—1,800 yards long, 300 yards wide at the emplacement, and 600 yards at the farther end.

c. For antiaircraft cannon firing at towed targets.—Safe limits of fire for antiaircraft cannon when firing at towed targets obviously cannot be classed under any general set of safety regulations. Determination of the safe limits of fire can only be made after each local situation and local condition have been thoroughly studied. However, in addition to the detailed safety regula-

tions required for individual locations, conditions, and limits of fire, the danger area beyond the limits of fire will be as follows: In determining the safe field of fire of antiaircraft cannon of any caliber, regardless of the elevation at which the firing is conducted, the maximum ground impact range of the piece will always be considered. In addition to the limits of fire, the danger area will include areas 1,000 yards in width, flanking both the right and left limits of fire and extending 1,000 yards beyond the maximum ground impact range.

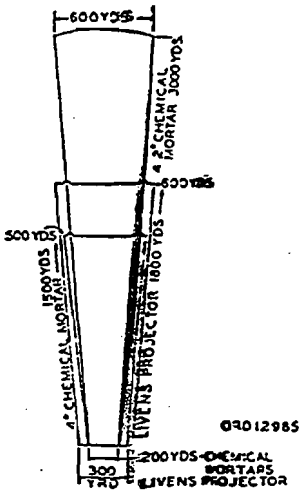


FIGURE 2.—Danger areas for chemical mortars and Livens projectors.

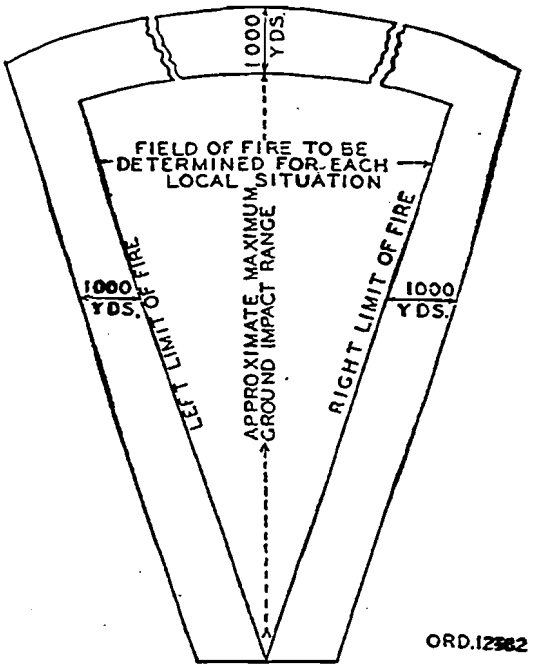


FIGURE 3.—Danger areas for antiaircraft cannon firing at towed targets.

The danger area will also include an area, adjoining and lying beyond the maximum ground impact range, 1,000 yards in depth and extending between the two flanking areas as shown in figure 3.

d. For small arms and ground machine guns firing at terrestrial targets.

(1) The danger area for small arms and ground machine guns is prescribed as a sector (fig. 4) which extends 5° to the right of the line of fire and 5° to the left of the line of fire with its vertex at the firing point. The minimum radius of the sector will be the range of the bullet when fired from a weapon aimed over the raised sight leaf, subject to the following:

	Yards
(*a*) Caliber .22 long rifle	1,300
(*b*) Caliber .30, M1, except armor piercing	3,900
(*c*) Caliber .30, armor piercing (all models)	3,400
(*d*) Caliber .45, M1911.	
1. Open ranges, no backstop	1,600
2. Suitable backstop, radius determined locally.	
(*e*) Caliber .50, M2.	
1. For targets of 3,000 yards or less	3,900
2. For targets greater than 3,000 yards, add 1,000 yards to the target distance.	

(2) Add to this sector the areas necessary to provide safety from ricochet bullets as determined by actual examination of the terrain by local authorities.

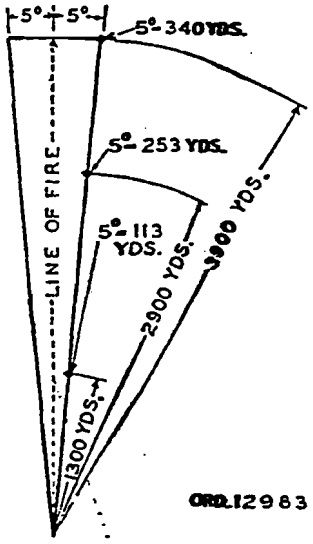


FIGURE 4.—Danger areas for small arms and ground machine guns firing at terrestrial targets.

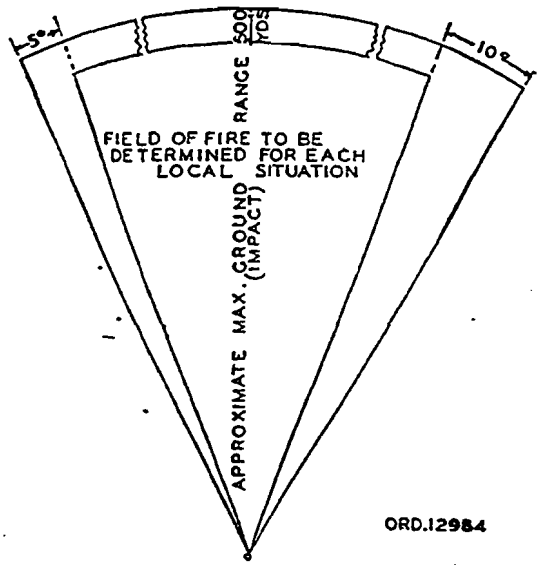


FIGURE 5.—Danger areas for small arms and ground machine guns firing at aerial targets.

(3) It will be noted that the minimum radii prescribed in (1) above are less than the maximum ranges. For ground targets it is desirable that danger areas be based on the maximum ranges for the ammunition given in section V.

(4) However, these danger areas may be modified by local authorities with the approval of the corps area commander when the nature of the terrain or artificial barriers make smaller areas safe.

e. For small arms and ground machine guns firing at aerial targets.—Safe limits of fire for small arms and ground machine guns when firing at aerial targets obviously cannot be classed under any general set of safety regulations. Determination of the safe limits of fire can only be made after each local situation and local condition have been thoroughly studied. However, in addition to the detailed safety regulations required for individual locations, conditions, and limits of fire, the danger area beyond the limits of fire will be as follows: In determining the safe field of fire for small arms and ground machine guns firing at aerial targets, regardless of the elevation at which the firing is conducted, the maximum ground impact range of the weapon will always be considered. In addition to the limits of fire, the danger area will include sectors of 10° and 5° flanking, respectively, the right and left limits of fire and extending 500 yards beyond the maximum ground impact range. The danger area will also include an area, adjoining and lying beyond the maximum ground impact range, 500 yards in depth and extending between the two flanking areas as shown in figure 5.

f. For firing at moving terrestrial targets with ground machine guns and cannon up to and including 3-inch guns, firing solid shot, low explosive shell, and shrapnel set for graze burst.—In addition to such special safety requirements

as may be prescribed elsewhere in these regulations, the danger area for firing will be taken as the range equal to an elevation of 15° and will include an area extending 300 mils outside the right and left limits of fire as shown in figure 6. For targets at a distance equal to or greater than a range represented by an elevation of 15°, 1,000 yards will be added to the target distance. Firing tables should be consulted for the ranges equal to an angle of elevation of 15°. In case of areas with limited maximum ranges removal of the windshield from projectiles having those windshields will materially reduce the range. See section V, paragraph 22*f* for ranges at elevation of 15° with and without windshields.

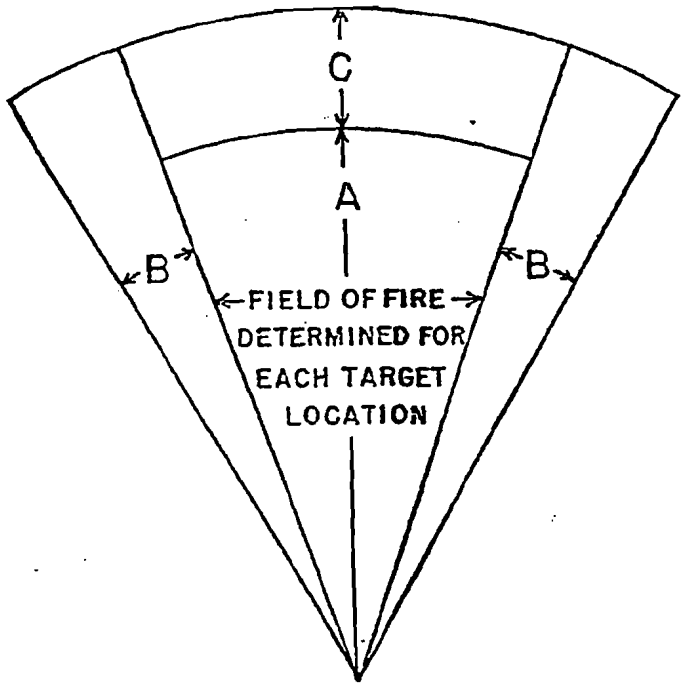


FIGURE 6.—Danger areas for ground machine guns and cannon up to and including 3-inch guns firing at moving terrestrial targets.

Area A, Range at elevation of 15° where range to target requires an elevation less than 15°.

Area B, 300 mils.

Area C, 1,000 yards in range, to be added to range to target where range to target requires an elevation of 15° or greater.

g. For 60-mm and 81-mm mortars.

(1) The danger areas (see fig. 1) for the mortars are as follows:

Danger areas

Symbols	Types of ammunition	
	High explosive	White phosphorous, 81-mm practice shell, all 60-mm ammunition
	Yards	*Yards*
A	600	300
B	600	300
C	600	300

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(2) No part of area C or D will be occupied by any personnel unless positive protection as prescribed in paragraph 14*a*(4) is provided.

SECTION III

PRECAUTIONS FOR FIRING

	Paragraph
Small arms and ground machine guns	8
Aircraft machine guns	9
Chemical warfare ammunition	10
Grenades	11
Burning type munitions	12
Smoke screens	13
Cannon	14
Bombs	15

8. Small arms and ground machine guns.—*a*. Firing small arms and ground machine guns against terrestrial and aerial targets over personnel at ranges greater than 1,000 yards is permitted only when adequate overhead cover is provided. Firing at terrestrial targets at ranges of 1,000 yards or less will be permitted when the personnel is placed in pits without overhead cover, provided nothing is placed immediately in front of the pit which may deflect the bullets downward. The following table shows the thickness of various kinds of cover that is required for maximum protection against bullets fired by these weapons. FM 5-15 tabulates the minimum thickness.

Nature of cover	Thickness in inches	
	Caliber .30	Caliber .50
Undisturbed compact earth	52	66
Earth packed or tamped	48	60
Earth freshly turned	56	72
Sandstone or granite soil	6	10
Logs wired together (oak)	40	60
Broken stone	20	30
Dry sand	24	32
Wet sand	36	48
Concrete	4	8

b. No demonstration, combat practice problem, or other form of field firing that involves the firing of ball cartridges past the flank of participating troops will be carried out if such troops are located within the danger area defined in paragraph 7*d*.

c. When the officer in charge of the firing has decided that it is safe to fire past the flank of troops in a given direction, a traversing stop for each machine gun to be engaged in the firing will be placed so as to preclude machine-gun fire in a direction closer to the flank.

d. Officers in charge of field firing will be responsible for keeping the fire within the limits prescribed by the range officer.

e. Special care must be taken when troops are engaged in free firing with individual weapons against aerial targets to see that the direction of fire for each individual is within the safety limits prescribed in paragraph 7*e*.

f. When armor-piercing ammunition is fired against armor plate, the core of the bullet may rebound if the plate is not penetrated. The radius of rebound will vary depending upon conditions, but the maximum may be taken as 100

yards for caliber .30 armor piercing and 200 yards for caliber .50 armor piercing. Precautions will be taken to protect personnel, including gun crews, from rebounding armor piercing cores. For such protection a shelter of 1-inch pine boards will provide adequate cover if the range is not less than 100 yards.

g. Precautions to be taken in connection with various forms of training that involve the firing of small arms and ground machine guns are specified in the Technical Manuals and Field Manuals that govern the use of such weapons.

9. Aircraft machine guns.—*a. General.*

(1) The operating slide of a synchronized aircraft machine gun will be locked in rear position until the pilot is ready to commence firing. Wing mounted remote controlled machine guns will not be charged until the pilot is ready to commence firing. Flexible mounted machine guns will not be loaded until the gunner is about to fire.

(2) Immediately after firing is completed, the operating slide of a synchronized aircraft machine gun will be locked in the rear position. The solenoid control of remote controlled machine guns will be cut off. The gunner will unload flexible mounted machine guns.

(3) Upon observing anything that might cause the range to be unsafe, personnel firing will immediately cease firing until it becomes safe.

b. Ground targets.

(1) The range will be properly safeguarded as provided in paragraph 3.

(2) Suitable ground signals such as flags, panels, etc., will be provided so that firing by airplane in the air may be stopped at any time should the range become unsafe.

c. Towed targets.

(1) *Land range.*—The range will be kept clear of people and livestock during firing by necessary guards, publicity, etc., as provided in paragraph 3.

(2) *Water range.*—In addition to the safeguards required by paragraph 4, and due to the impracticability of closing water ranges and the ability of personnel firing to observe boats, etc., readily in line of fire, the personnel firing is directly charged with the responsibility of firing only when the range is clear.

(3) *Safety precautions for towing airplanes.*—With reference to firing on towed targets, TR 440-40 will be strictly complied with.

10. Chemical warfare ammunition.—In order to prevent accidents from the use of lethal or toxic chemical warfare ammunition, no live chemical warfare ammunition other than nontoxic smoke and nontoxic lachrymatory gas will be used for training purposes, either for target practice or demonstrations and tactical exercises, except at the service schools or in the oversea garrisons under special direction of the department or expeditionary force commander, or in experimental tests conducted by the Chemical Warfare Service and Ordnance Department in developing chemical warfare ammunition.

11. Grenades.—*a. General.*

(1) The safety and other precautions and the policing of ranges published in Technical Manuals and FM 23-30 will be strictly enforced in handling grenades.

(2) Fragmentation grenades will be thrown or fired only from a trench or from behind a wall or other adequate protection, as provided in Field Manuals.

(3) Unfuzed grenades will not be fuzed in ammunition dumps or their storage magazine, within 100 yards of adjacent buildings, or in greater quantities than are needed for immediate use. Detonating fuzes and grenades containing phosphorus will be stored and transported separately from other explosives.

b. Rifle.

(1) In general no rifle grenades are now authorized for training. Where supplied, the provisions of *a* above apply.

(2) The U. S. rifle, caliber .30, M1903, of Springfield Armory manufacture having serial number 800,000 or less or those of Rock Island Arsenal manufacture having serial number 285,507 or less, and the U. S. rifle, caliber .30, M1917, or U. S. rifle, caliber .30, M1, will under no circumstances be used for firing rifle grenades.

12. Burning type munitions.—*a. General.*—Munitions of this type are of three classes: Burning type grenades, smoke pots, and two-compartment candles. These munitions should be stored in a cool, dry place. They must not be ignited within 5 feet of dry grass or other inflammable material.

b. Burning type grenades.—Grenades of this type are filled with a solid chemical intimately mixed with smokeless powder. They are ignited by a standard firing mechanism, modified to flash instead of explode. The grenade body is made of a No. 1 standard can with three rows of six holes each drilled in the side and six holes on top. Each hole is sealed with a small piece of adhesive tape which is blown away when the grenade begins to burn. The grenade is made to function very rapidly. There are three fillings: M6, HC smoke; M7, tear gas; and M8, tear gas and vomiting gas mixed. These munitions should not be fired closer than 20 feet from personnel, due to an occasional flashing grenade.

c. Smoke pots.—The smoke pot is filled with HC smoke mixture. It burns for about 6 minutes, producing a large volume of white smoke. It can be fired by an electric squib or by a scratch block which ignites a match head. A safety match box will serve as a scratch block. In firing these munitions, care should be taken not to have the face directly above the smoke pot when set on fire.

d. Irritant candles, Mk. I (DM).

(1) DM candles must not be used except under the direction of a chemical officer.

(2) Have a gas mask ready to adjust in case it is necessary.

(3) Do not remove the tape covering the firing wire until ready to use the candle.

(4) When firing, point the orifice down wind, the operator in rear.

13. Smoke screens.—*a.* Due to the corrosive nature of smoke-producing materials, their use for producing smoke screens from airplanes in peacetime must be attended with special precautions. When FS smoke material (sulfur trioxide-chlorsulfonic acid mixture) is released from an airplane, a considerable portion of the material will eventually fall to the ground in the form of small drops of sulfuric acid. Depending on the altitude of discharge and weather conditions, some of the material may also fall to the ground in the form of small drops of undecomposed FS and of hydrochloric acid. All these acids are injurious to most materials. These drops do not fall vertically but, depending on the altitude of release and the velocity of the wind, may drift unpredictable distances and in unpredictable directions before reaching the

earth. Similar corrosive agents are present in the smoke produced by FM (titanium tetrachloride). The following restrictions will be observed in the laying of smoke from airplanes in peacetime operations:

(1) Smoke-producing material will not be released at altitudes greater than 300 feet above the ground.

(2) Smoke-producing material will not be released in the vicinity of or within a horizontal distance upwind or twelve times the height of discharge from personnel, livestock, buildings or other structures, equipment, conveyances, cultivated areas, or other objects whose damage might result in expense to the Government, except personnel or Government equipment involved in a tactical exercise when suitably protected.

(3) Smoke-producing material will not be released when the wind velocity is greater than 20 miles per hour.

b. Artillery shell, mortar shell, Livens projector shell, land mines, and chemical cylinders, when filled with liquid smoke-producing agents such as FM or FS, produce a cloud composed of minute particles of strong acids. This cloud moves and looks much like a natural fog. If heavy concentrations of this smoke come in contact with cotton fabrics, leather goods, painted surfaces, or unprotected metal, especially in the presence of moist air, a certain amount of deterioration of these materials is to be expected. In order to prevent such an occurrence, the following instructions will be observed in firing smoke from the above-mentioned weapons:

(1) Smoke-producing materials will not be released in the vicinity of or within a horizontal distance of less than 300 yards from personnel, livestock, buildings or other structures, equipment, conveyances, cultivated areas, or other objects where damage might result in expense to the Government, except personnel or Government equipment involved in a tactical exercise when suitably protected.

(2) Government equipment contaminated with the corrosive acids produced by liquid smokes will be washed with water immediately after the conclusion of the exercise, except when other methods of protection and/or cleaning are prescribed in appropriate Technical Regulations those methods will be followed.

Change #9, 1943

14. Cannon.—*a. Protection of persons in vicinity of firing point.*

(1) When high-explosive ammunition with fuzes not classified as bore-safe (see *i* below) is fired, cover sufficient to provide positive protection against premature bursts in or out of the bore will be afforded all persons up to the following distances from the cannon firing:

(*a*) 200 yards for all calibers up to and including the 3-inch.

(*b*) 300 yards for all calibers from 3-inch, exclusive, to 105-mm, inclusive.

(*c*) 400 yards for all other calibers.

(2) When shrapnel or high-explosive ammunition with bore-safe fuzes is fired, no cover is necessary. However, no person will be allowed between the line of cannon firing and a line 200 yards forward of that line.

(3) When chemical ammunition other than smoke is fired, all persons will be provided with serviceable gas masks.

(*a*) When chemical ammunition is fired, no cover is necessary.

(*b*) When vesicant gas is fired, protective clothing in addition to serviceable gas masks will be provided.

(*c*) When chemical mortars are fired, no person will be allowed directly in the rear of the piece. Observers should be to windward of the line of fire.

(*d*) When white phosphorus or toxic chemical ammunition is fired from chemical mortars, no person except the man handling the lanyard will be allowed within 50 yards of the mortar.

(4) Positive protection will take one of the following forms:

(*a*) Two thicknesses of filled sandbags for all calibers up to and including the 3-inch; four thicknesses for all other calibers; height sufficient for proper cover.

(*b*) *Trench.*—To be narrow, of sufficient depth for proper cover, and for cannon detachments, perpendicular to the plane of fire and in rear of the cannon.

(*c*) *Concrete walls.*—To be at least 1 foot thick and of sufficient height.

(*d*) *Tractors.*—To be grouped so as to afford proper protection.

(*e*) Other forms equivalent to the foregoing.

b. Protection of persons authorized to be on the range.

(1) No person will be permitted within the danger area as specified in paragraph 7 except as indicated in that paragraph and as authorized in *c* below. However, to permit forward movement of troops, the short limit of the impact area may be moved in the direction of range by definite prearrangement.

(2) When chemical ammunition, except smoke, is being fired, persons within area D (fig. 1) will be provided with serviceable gas masks.

c. Firing antiaircraft guns over the heads of personnel.

(1) The guns of an antiaircraft battery will generally be sited in a square or diamond formation, about 50 yards on a side and protected by a sandbag parapet.

(2) Except in those firings conducted with the director in an offset position outside the danger area, the director and height finder will be located in a pit, or protected by a sandbag parapet, within the 50-yard square and approximately on the intersection of the diagonals of the square.

(3) Under conditions stated in (1) and (2) above, firing is authorized without overhead cover, over the heads of such personnel as are necessary for the service of the guns and the conduct of the practice, provided the quadrant angle of elevation is greater than 400 mils. Such personnel include—

(*a*) Battery officers.

(*b*) Gun crews.

(*c*) Range sections.

(*d*) Safety personnel.

(*e*) Recorders.

(*f*) Others authorized by the chief safety officer.

(4) Personnel required to be in the danger area at points other than at the battery positions will be protected by the minimum overhead cover as prescribed in table XXVI, FM 5-15. Such personnel will include battery spotters and spotters in searchlight positions only.

(5) No personnel other than that specifically listed above will be permitted in the danger area during firing.

(6) No firing will be permitted over personnel, not protected by overhead cover, when the gun is laid at a quadrant angle of elevation of less than 400 mils.

(7) The assistant safety officer at each gun emplaced to fire over personnel not protected by overhead cover will check to see that a 400-mil elevation stop as provided by the Ordnance Department is installed and functioning properly.

(8) The chief safety officer will be responsible that no firing is conducted except when personnel, other than that at the battery position, is under cover.

d. General precautions to be observed in firing cannon.

(1) Before firing, firing mechanism will be inspected and tested to insure proper operation of the safety features.

(2) With cannon using separate loading ammunition—

(*a*) Primers must not be inserted until after the breechblock is completely closed and locked in its recess.

(*b*) The powder chamber will be sponged after each shot.

1. On cannon not equipped with gas ejectors the powder chamber will be sponged with a wet sponge after each shot.

2. On cannon equipped with gas ejectors the use of a wet sponge is not required, but a new projectile will not be inserted until the bore has been inspected and announced clear. The cannoneer detailed to make this inspection will not pronounce the bore clear unless the chamber is clear of smoldering fragments, and in addition—

(a) By day, until he can see daylight through the bore.

(b) By night, until he sees the entire bore clear from flame or luminous gas.

(*c*) The powder charge for any given round will not be brought near the breech until the preceding round has been fired, and—

1. On cannon not equipped with gas ejectors, until the wet chamber sponge has been withdrawn from the breech.

2. On cannon equipped with gas ejectors, until the bore has been announced clear.

(*d*) When the lanyard is used, except in the case of disappearing guns, the lanyard will not be attached until the piece has been given sufficient elevation to clear any mask in front of it.

e. Misfires.

(1) *With cannon using fixed or semifixed ammunition.*—The breechblock will not be opened until 2 minutes have elapsed after the last attempt to fire the piece.

(2) *With cannon using separate loading ammunition.*—The following procedure will be observed:

(*a*) *In case discharge of primer is heard but powder charge has failed to ignite.*—At least 10 minutes must elapse after the firing of the primer before the old primer is removed or the breechblock is opened. During this period all persons will stand clear of the breech. The piece will be kept directed on the target or on a safe place in the field of fire.

(*b*) *In case discharge of primer is not heard.*

1. If a special device is available which permits removal of the primer by a person entirely clear of the path of recoil, the primer may be removed after 2 minutes have elapsed since the last attempt to fire. If, after removal, it is found that the primer actually failed to fire, no further wait is necessary before inserting a new primer or opening the breech. If, on the other hand, examination shows that the primer has fired, the precautions prescribed in (*a*) above will be observed.

2. If no special device can be employed for removal of the primer, the precautions prescribed in (*a*) above will be observed.

(*c*) Any primer removed, after an attempt to fire, should be handled with great care, due to the possibility of a primer hangfire.

(3) When misfires occur with the chemical mortar or the 3-inch trench mortar, 81-mm or 60-mm mortar, the mortar will not be touched until at least 1 minute has elapsed from the time of misfire. When the projectile is being removed, care should be taken that all persons are at the sides of the mortar.

f. Fuzes.

(1) The alteration of fuzes is forbidden except when specifically authorized by the Chief of Ordnance.

(2) Do not subject the point of a powder train time or time-and-percussion fuze to a heavy blow, as the closing cap may be crushed in sufficiently to fire the concussion primer and ignite the time train. If the fuze is not set safe at the time, a shrapnel projectile will burst at the end of the time for which the fuze is set. This is particularly dangerous with shrapnel when the fuze has been set for a short time of flight. With high-explosive projectiles this condition will probably cause a dud. The member of the gun crew who inserts a round of fixed ammunition in the gun will be particularly cautioned to keep each round to be loaded well out of the path of recoil of the gun until recoil from the previous round has taken place. See paragraph 19*b*.

(3) Previous to placing a round or projectile requiring a point detonating fuze in the gun, the designated fuze should be inserted, being

careful to note that it is fitted with its felt or rubber washer and screwed home by hand. The fuze wrench should then be used to seat the fuze.

(4) The Mk. III and Mk. IIIA fuzes must be handled with the greatest care. Never screw a fuze into a shell if the tarred tape and lead oil cap are not in their proper places. After the fuze is screwed into the shell, remove the tape and waterproof cap by pulling on the loose end of the tape which is exposed. Then examine the spiral (brass ribbon) and safety pin to see that they are in their proper places. If the spiral is not in place, there is danger of a premature explosion in the cannon and the fuze must be removed and destroyed. These fuzes are now in reserve and will not be used in target practice in time of peace.

g. Excessive pressures in firing seacoast or railway cannon.

(1) The attention of all concerned is directed to the fact that, in firing seacoast or railway cannon, excessive pressures, which may be dangerous, are likely to develop if the diameter of the propelling charge or any section thereof is so large as seriously to interfere with the projection of the flame from the igniter to the front of the powder chamber by restricting or eliminating the space between the top surface of the charge and the top of the chamber wall. Such a condition can occur if—

(*a*) The diameter of the charge as made up is too great.

(*b*) The sections of the charge are not laced or wrapped tightly enough to prevent bulging of the sections when rammed.

(*c*) Excessive force is used in ramming, especially when the bag material has been weakened due to age.

(2) In addition to the present requirement that the total length of charge, when firing maximum service charge, will be at least nine-tenths of the distance from mushroom head to base of projectile, the following precautions will hereafter be observed in firing seacoast or railway cannon of 6-inch or larger caliber:

(*a*) Each section of the charge will be examined to insure that it is tightly wrapped or laced.

(*b*) The powder charge will be inserted in the powder chamber so that it will be pushed into place by the mushroom head when the breech is closed.

(*c*) No charge, or section thereof, of the base igniter type will be fired which exceeds the maximum allowable diameter as determined by gages furnished by the Ordnance Department for this purpose. In the core igniter type of charge the flame is projected through the center of the charge. With this method of ignition the space between the surface of the charge and the chamber is not of such great importance as with the base igniter type. Core igniter type charges need not, therefore, be gaged. All other precautions as listed above must, however, be taken.

(3) Reduced charges will be of the same diameter as the full charge, but will not be remade to comply with requirements as to length referred to above.

(4) The attention of all concerned is further directed to the following additional possible causes of excessive pressures in firing seacoast and railway artillery:

(*a*) One or more sections cocking in powder chamber in ramming.

(*b*) Damp igniter.

(*c*) Hangfire due to wet igniter or charge.

(*d*) Improper placing of igniter or use of two or more igniters where one is prescribed.

(*e*) Omission of igniter where required.

(*f*) Loss of volatiles by powder, usually due to high storage temperatures and leaky cartridge storage cases.

(*g*) Projectile slipping back on powder charge due to faulty ramming.

(*h*) Projectile overweight. See range tables for limiting percentages and corrections therefor.

(*i*) Wrong type of projectile where increased density of loading results.

(*j*) Charge overweight.

h. Flarebacks in firing seacoast or railway cannon.—Flarebacks are caused by hot gases coming in contact with the air, which affords sufficient oxygen to permit combustion. When the breechblock is withdrawn, the gases remaining in the bore sometimes pass to the rear and ignite upon striking the air, regardless of the direction of the wind. Flames of varying length and intensity may result. Precautions must be taken to prevent the flame from reaching a new propelling charge, as well as to prevent serious burns to the breech detail. Furthermore the new propelling charge may be ignited by burning residue or gases in the bore or chamber of the cannon. In cannon equipped with gas ejectors, the bore must be inspected after each round to determine whether it is clear, before a new projectile is inserted. In cannon not now equipped with gas ejectors, the new propelling charge must not be brought near the breech until the wet chamber sponge has been withdrawn from the breech. See *d*(2)(*b*) and (*c*) above.

i. Fuzes permitted for use with high explosive shell without requirement for positive protection to personnel.

(1) A bore-safe (detonator-safe) fuze is one in which the explosive train is so interrupted that prior to firing, and subsequent to firing, while the projectile is still in the bore of the cannon, premature action of the bursting charge is prevented should any of the more sensitive elements, primer and/or detonator, malfunction.

(2) The following fuzes come within the above definition of "detonator-safe" (no positive protection for personnel prescribed):

Fuze, B. D., Mk. V.	Fuze, P. D., M51.
Fuze, B. D., Mk. X.	Fuze, P. D., M52.
Fuze, B. D., Mk. X.	Fuze, P. D., M53.
Fuze, B. D., M60.	Fuze, P. D., M54.
Fuze, P. D., M45.	Fuze, P. D., M55.
Fuze, P. D., M48.	Fuze, P. D., M56.

* Fuze, time, 21-second, AA, Mk. III, w/booster, Mk. X, AA.

* Fuze, time, 21-second, AA Mk. IIIA1, w/booster, Mk. X, AA.

* Fuze, time, 21-second, AA, Mk. IIIA2, w/booster, Mk. X, or M20, AA.

Fuze, time, mechanical, M2.
* Fuze, time, mechanical, M43, w/booster, M20.
* Fuze, time, mechanical, M43A1, w/booster, M20.

(3) Fuzes, P. D., M35, M46, and M47, do not come within the definition of bore-safe (detonator-safe) fuzes as defined in (1) above but may be fired under the same conditions.

(4) Of the fuzes listed in (2) and (3) above, the following are for use in field artillery high-explosive shell: P. D., M35, M46, M47, M48, M51, M54, and M55. The use of any other fuzes in these shell is prohibited.

(5) The object of these instructions is to provide for the use of only those fuzes which the War Department considers safe to fire without the use of emplacements as safety measures, and thus to preclude the necessity of a great amount of labor and material apparently being devoted to the construction of emplacements by some troop units.

15. Bombs.—*a.* During bombing, ranges will be kept clear of people and livestock by necessary guards and publicity. See section I.

b. Suitable ground signals, such as panels, flags, and radio, will be provided so that bombing by airplane in the air may be stopped at any time should range become unsafe.

c. Upon observing anything that might cause range to be unsafe, personnel who are bombing will immediately cease until range becomes safe.

d. Bomb racks and release mechanisms will be adjusted and inspected in accordance with Air Corps Technical Orders for each type of bomb rack (Technical Orders 11-5 series).

e. Loading of bombs will be in accordance with Air Corps Technical Orders (Technical Orders 11-5 series).

f. Handling and fuzing of bombs will be in accordance with TM 9-980.

g. All live bombs will be carried safe and will not be armed until immediately prior to release.

h. Airplanes carrying bombs will not fly over cities, towns, nor any area where the accidental dropping of a bomb might cause damage to Government or private property or endanger life.

i. Racks will be cleared over designated areas prior to airplanes landing.

j. Signs warning persons of the danger of duds will be posted in vicinity of bombing ranges at all times. For the removal of duds see TM 9-1900.

k. Safe distances for the dropping of fragmentation, practice types, and demolition bombs are shown below. Safe distance is defined as "the altitude or horizontal distance at which the distribution of fragments is so infrequent that the possibility of serious injury to personnel is negligible."

l. Safe wartime minimum altitude for dropping 300, 500, and 1,000 pound bombs with the M103 nose fuzes is approximately 1,500 feet when set for instantaneous action and 1,000 feet when set for delay action. For bombs of 2,000 pounds or over, the height should not be below 2,000 feet if the fuze is set for instantaneous action and below 1,000 feet if set for delay action. These distances are based on arming time of fuze and are considered as safe wartime altitudes of release. The M105 fuze will arm in less than 1,000 feet and the same altitudes as above may be considered as safe wartime altitudes of release.

* Booster contains detonator.

These distances are somewhat less than those listed in *k* above. Fragmentation bombs should not be released at less than 500 feet. It is considered safe to release flares at any altitude.

Bombs	Safe altitude	Safe distance
	Feet	*Feet*
30-pound, chemical, M1	300	800
17-pound, fragmentation, Mk. II	800	2,000
25-pound, fragmentation, Mk. III	800	2,000
30-pound, fragmentation, M5	800	2,000
100-pound, demolition, all types	1,500	2,000
300-pound, demolition, all types	2,000	3,000
600-pound, demolition, all types	2,500	3,500
1,100-pound, demolition, all types	3,000	4,500
2,000-pound, demolition, all types	3,000	5,000
Practice, all types	500	1,000

For formation bombing with instantaneous fuze, 500 feet should be added to each of the above altitudes. The above altitudes will not operate to impose any restriction on the use of parachute bombs.

SECTION IV

LIST OF TYPICAL ACCIDENTS

	Paragraph
General	16
Saluting cannon	17
Mobile cannon	18
Railway and fixed cannon	19
Small arms	20
Duds	21

16. General.—As stated in paragraph 2, it is impossible to prescribe complete safety precautions which if followed will preclude the possibility of accidents. Live ammunition is inherently dangerous, but if handled properly the percentage of accidents to all rounds fired is indeed very small. The following listed accidents have been selected from the files of the Chief of Ordnance to illustrate typical accidents which have occurred through violation of regulations or through carelessness. Nearly every one of these accidents has been duplicated several times in its main characteristics. As small arms and saluting cannon are in more constant use than other weapons, a preponderance of text in regard to these items is natural.

17. Saluting cannon.—*a. Accidents with 75-mm blank ammunition.*

(1) The battery was testing blank ammunition for size and one round became lodged in the breech of one of the guns. In forcing this round out of the bore, the wad became dislodged and black powder was spilled in the breech. Although an attempt was made to clean out the spilled powder, some had evidently lodged between the face of the tube and the breechblock. The gun was reloaded and upon opening the breech to eject the second round a flare occurred. This accident was caused primarily by ramming out a blank cartridge from the muzzle.

(2) While firing a salute with blank 75-mm ammunition, a round was ignited prior to the closing of the breechblock, the flash burning three men, one severely. The ignition of this round was probably

due to fragments remaining in the bore from previous rounds fired. This accident shows the necessity for instruction relative to sponging the bore.

(3) An enlisted man was injured by the explosion of a 75-mm blank cartridge. This cartridge case was thought to be empty and was placed on a bench in order to fire the primer by means of a hammer and iron rod. The primary cause of the accident was carelessness in storing loaded and unloaded cartridge cases together and also failure of the firer to examine the round before firing the primer. Incidentally, a battery supply room was not a suitable place in which to fire primers.

b. Accident with 3-inch field gun, using blank ammunition.—A misfire occurred during firing of the morning gun. The case could not be extracted easily, and an unsuccessful attempt was made to remove it by ramming from the muzzle. The man at the breech started to close the block again and an explosion occurred before the block had started to rotate. Rammer and stave were blown some distance in front of the gun, the breechblock was blown off, and the firing mechanism was never recovered. Three casualties resulted. The most probable explanation of the explosion appears to be that ramming had loosened the primer, moving it to the rear, and that the subsequent closing of the block squeezed it sufficiently to cause ignition. This accident was due to noncompliance with the instructions and precautions which prescribe that only resized cartridge cases should be used; that they should be tried in two positions in the chamber of the gun before firing is started; that the cases should be clean; that in case of misfires no attempt should be made to extract the charge for at least 10 minutes; and if the case sticks in the chamber, no attempt should be made to remove it by ramming from the muzzle.

c. Accident with 155-mm howitzer, using improvised saluting charges of black powder.—While firing a salute with a 155-mm howitzer, using improvised charges of black powder tied in muslin, a flareback occurred on opening the breechblock. This flareback ignited a charge in the hands of a member of the gun crew, and the resulting explosion was transmitted to the main supply of 19 charges in a nearby box, which also exploded. One man was killed and several others severely injured. This firing took place, although it was apparently understood by all concerned that the 155-mm howitzer was not a proper weapon with which to fire salutes.

18. Mobile cannon.—*a. Accident due to premature burst, 75-mm gun, high-explosive shell.*—During firing of high-explosive shell by a 75-mm battery, a premature burst occurred in the barrel of a gun. The gun was destroyed, but no fatalities occurred as the gun crew were under cover. The evidence is conclusive that the accident was caused by some member of the gun crew detaching the safety spiral from the Mk. III fuze before the round was loaded into the gun (par. 14*f*(4)).

b. Accident due to heavy blow on point of time fuze.—See paragraph 19*b*.

19. Railway and fixed cannon.—*a. Accident with 6-inch gun using wrong model propelling charge.*—A 6-inch gun, M1897–08, using 108-pound target practice projectile was fired, resulting in excess pressure and damage to the breech mechanism. A serious accident was narrowly averted and fortunately no one was injured. This accident was caused by the use of a powder charge for the M1900–03–05 gun. The primary cause was failure to check carefully the powder charges.

b. Accident due to heavy blow on point of time fuze.—While firing shrapnel, fixed, Mk. I, 3-inch antiaircraft gun, with which the fuze, time, 21-second, antiaircraft, Mk. III, was used, the recoiling gun knocked a round from the gunner's hand, crushing in the base of the fuze and firing the concussion primer, thus starting the time train. The shrapnel exploded shortly thereafter, probably at about the set time of the fuze, and several enlisted men were injured. Paragraph 14*f*(2) cautions members of gun crews to keep all rounds well out of the way of the recoiling gun.

20. Small arms.—*a. Accidents with caliber .30 rifle, M1903.*

(1) *Ammunition heated by exposure to the rays of the sun.*—During target practice with the caliber .30 rifle, an accident occurred which badly shattered the receiver, splintered the stock, and broke the bolt of a rifle. During rapid fire, the firer had placed cartridge clips on the ground in the direct rays of the sun in order that they might be near at hand. All the evidence indicates that a high pressure was developed as a result of prolonged exposure to direct sunlight.

(2) *Obstruction in barrel.*—During target practice the barrel of a rifle burst and was broken into a number of pieces. The stock was also badly shattered. The damage to this weapon was caused by an obstruction in the bore, which the evidence indicated to be a cleaning patch.

(3) *Oil in the chamber.*—While firing rifle practice, a rifle was badly damaged, the stock shattered, and the magazine well bulged. The accident resulted in minor injuries to the firer. The exterior of the fired case was covered with oil when removed from the chamber, and undoubtedly the basic cause of the accident was the presence of an undue amount of oil in the chamber at the time of firing, indicating that the chamber of the rifle had not been properly cleaned before firing.

(4) *Nonstandard ammunition.*—During target practice a rifle was badly damaged, the receiver shattered, and the stock broken and splintered. The firer was seriously injured. Examination of the fired cartridge case showed that the damage was caused by a round of German 8-mm ball ammunition. This accident was caused by firing loose rounds, among which were several German cartridges.

b. Accident with caliber .45 automatic pistol, M1911.—A caliber .45 ball cartridge was accidently discharged while being removed from the magazine clip. It is believed that the accident was caused by careless removal of the cartridge from the magazine, using some tool like a screw driver or possibly another magazine clip.

21. Duds.—A 37-mm dud exploded, seriously injuring four enlisted men. A battery of artillery had gone into position, and limbers with animals and drivers were formed in the rear of the position. A driver discovered a 37-mm dud, which he picked up, whereupon it exploded. Four men were injured.

SECTION V

GROUND IMPACT RANGES

Paragraph
Approximate maximum ground impact ranges 22

22. Approximate maximum ground impact ranges.—For convenience in delimiting safety zones, the following data are furnished:

a. Caliber .22, .30, .45, and .50 weapons.

Weapon	Ammunition	Elevation		Muzzle velocity	Approximate maximum range
		°	′	f/s	Yards
Cal. .22	Cartridge, ball, cal. .22, long rifle	30	00	1,100	1,500
Field artillery trainer, M2.[1]	Cartridge, blank, cal. .22, field artillery trainer, M2 and 1-inch steel ball.	42	11	100	90
	Cartridge, blank, cal. .22, short and 1-inch steel ball.	42	11	100	90
Cal. .30	Cartridge, armor piercing, cal. .30, M2.	31	45	2,800	4,000
	Cartridge, ball, cal. .30, M1	34	10	2,600	5,500
	Cartridge, ball, cal. .30, M2	31	45	2,800	4,000
	Cartridge, tracer, cal. .30, M1	31	45	2,700	3,500
Cal. .45	Cartridge, ball, cal. .45, M1911	30	00	802	1,600
Cal. .50	Cartridge, armor piercing, cal. .50, M2.	32	00	2,900	7,600
	Cartridge, ball, cal. .50, M2	32	00	2,900	7,600
	Cartridge, tracer, cal. .50, M1	32	00	2,800	7,125

[1] Data shown are for simulation of 75-mm gun, M1897. A range of 150 yards, however, is practicable. See Supplement SNL L-4, Part 1.

b. Light mortars.

Weapon	Ammunition	Elevation		Muzzle velocity	Approximate maximum range
		°	′	f/s	Yards
3-inch trench mortars, Mk. I and Mk. IA1.	Shell, practice, Mk. I, 3-inch trench mortar.	45	00	372	750
	Shell, H. E., M43, 81-mm mortar	45	00	564	2,550
	Shell, H. E., M45, 81-mm mortar	45	00	377	1,300
	Shell, H. E., M56, 81-mm mortar	45	00	585	2,655
	Shell, chemical, M57, 81-mm mortar	45	00	560	2,470
	Projectile, training, M68	45	00	--------	350
	Shell, practice, M44, 81-mm mortar	45	00	564	2,550
60-mm mortar, M1.	Shell, H. E., M49A2	45	00	518	1,935
	Shell, practice, M50A2	45	00	518	1,935
	Projectile, training, M69	45	00	--------	350
81-mm mortar, M1.	Shell, practice, Mk. I, 3-inch trench mortar.	45	00	372	750
	Shell, H. E., M43, 81-mm mortar	45	00	637	3,300
	Shell, H. E., M45, 81-mm mortar	45	00	377	1,300
	Shell, H. E., M56, 81-mm mortar	45	00	585	2,655
	Shell, chemical, M57, 81-mm mortar	45	00	560	2,470
	Projectile, training, M68	45	00	--------	350
	Shell, practice, M44, 81-mm mortar	45	00	637	3,300

c. Pack, light, and medium field artillery.

Weapon	Ammunition	Elevation		Muzzle velocity	Approximate maximum range
		°	′	f/s	Yards
37-mm gun, M1916.	Shell, fixed, H. E., Mk. II, 37-mm gun, M1916.	22	10	1,276	4,300
	Shell, fixed, practice, Mk. II, 37-mm gun, M1916.	22	10	1,276	4,300
2.95-inch mountain gun.	Shell, fixed, H. E., Mk. I, 2.95-inch mountain gun.	27	00	920	4,850
	Shrapnel, fixed, Mk. I, 2.95-inch mountain gun.	27	00	820	4,600
	Shrapnel, fixed, 12½-lb., 2.95-inch mountain gun.	27	00	920	4,900
75-mm gun, M1897.	Shell, fixed, chemical, Mk. II, 75-mm gun.	42	52	1,805	8,800
	Shell, fixed, H. E., Mk. I, 75-mm gun	43	04	1,805	9,000
	Shell, fixed, H. E., Mk. I, reduced charge, 75-mm gun	43	00	1,130	7,050
	Shell, fixed, H. E., M48, supercharge	44	00	1,950	13,595
	Shell, fixed, H. E., M48, normal charge.	44	00	1,500	11,195
	Shell, fixed, H. E., M48, reduced charge.	44	00	950	6,960
	Shot, fixed, armor piercing, M61	44	00	2,000	13,650
	Shrapnel, fixed, Mk. I, 75-mm gun	43	40	1,755	9,750
	Shrapnel, fixed, Mk. I, antiaircraft, 75-mm gun.	42	27	1,890	10,700
75-mm guns, M1916 and M1917.	Shell, fixed, chemical, Mk. II, 75-mm gun.	42	52	1,742	8,600
	Shell, fixed, H. E., Mk. I, 75-mm gun	43	04	1,742	8,800
	Shell, fixed, H. E., Mk. I, reduced charge, 75-mm gun	43	00	1,089	6,700
	Shell, fixed, H. E., M48, supercharge	44	00	1,870	13,250
	Shell, fixed, H. E., M48, normal charge.	44	00	------	10,875
	Shell, fixed, H. E., M48, reduced charge.	44	00	------	6,735
	Shot, fixed, armor piercing, M61	44	00	1,850	13,300
	Shrapnel, fixed, Mk. I, 75-mm gun	43	08	1,693	9,650
	Shrapnel, fixed, Mk. I, antiaircraft, 75-mm gun.	42	32	1,825	10,450
75-mm gun, M2.	Shell, fixed, H. E., M48, normal charge.	44	00	1,450	10,875
	Shot, fixed, armor piercing, M61	44	00	1,850	13,320
75-mm pack howitzer, M1.	Shell, semifixed, H. E., M41, 75-mm pack howitzer, M1.	43	38	1,270	9,500
	Shell, semifixed, H. E., M48	44	00	1,250	9,800
	Shell, semifixed, H. E., M41A1	44	00	1,270	9,500
	Shell, semifixed, chemical, M64	44	00	1,250	9,800
105-mm howitzer, M2.	Shell, semifixed, H. E., M1, 105-mm howitzer, M2.	44	10	1,550	12,150
	Shell, semifixed, chemical, M60	44	00	1,550	12,150

Weapon	Ammunition	Elevation		Muzzle velocity	Approximate maximum range
		°	′	f/s	Yards
155-mm howitzer, M1917–18.	Shell, chemical, Mk. II, 155-mm howitzer.	44	23	1,479	12,300
	Shell, H. E., Mk. I, 155-mm howitzer	44	23	1,479	12,300
	Shell, H. E., Mk. IA1	44	2	1,476	12,405
	Shell, H. E., M102	44	16	1,476	12,775
	Shell, chemical, Mk. IIA1	44	2	1,476	12,405
	Shell, chemical, M105	44	16	1,476	12,775
	Shell, sand loaded, 95-lb., Mk. I, 155-mm howitzer.	44	23	1,479	12,300
	Shrapnel, Mk. I, 155-mm gun or howitzer.	47	26	1,434	10,850
155-mm howitzer, M1.	Shell, H. E., M107	44	00	1,850	16,000
4.5-inch, gun, M1.	Shell, H. E., M65	45	00	2,275	20,500

d. Heavy field artillery.

Weapon	Ammunition	Elevation		Muzzle velocity	Approximate maximum range
		°	′	f/s	Yards
155-mm guns, M1917–17A1–18MI.	Shell, H. E., Mk. III, 155-mm gun	35	11	2,410	17,400
	Shell, H. E., Mk. IIIA1	35	22	2,410	19,100
	Shell, H. E., M101	35	19	2,410	20,100
	Shell, chemical, Mk. VIIA1	35	22	2,410	19,100
	Shell, chemical, M104	35	19	2,410	20,100
	Shell, sand loaded, 95-lb., Mk. III, 155-mm gun.	35	11	2,410	17,400
	Shrapnel, Mk. I, 155-mm gun or howitzer.	43	40	2,411	15,900
155-mm gun, M1.	Shell, H. E., M101	47	00	2,800	25,400
8-inch howitzer, M1.	Shell, H. E., M106	46	00	1,950	18,500
8-inch howitzer, Mk. VI.	Shell, H. E., 200-lb., Mk. I, 8-inch gun or howitzer.	42	30	1,305	10,900
	Shell, sand loaded, 200-lb., Mk. I, 8-inch gun or howitzer.	42	30	1,305	10,900
8-inch howitzers, Mk. VII and Mk. VIII½.	Shell, H. E., 200-lb., Mk. I, 8-inch gun or howitzer.	43	45	1,525	12,700
	Shell, sand loaded, 200-lb., Mk. I, 8-inch gun or howitzer.	43	45	1,525	12,700
240-mm howitzer, M1918MIA1	Shell, H. E., Mk. III, 240-mm howitzer.	45	10	1,700	16,400
	Shell, sand loaded, 345-lb., Mk. III, 240-mm howitzer.	45	10	1,700	16,400

e. Antiaircraft artillery.

Weapon	Ammunition	Elevation		Muzzle velocity	Approximate maximum range
		°	′	*f/s*	*Yards*
75-mm gun, M1916 (when used as antiaircraft gun).	Shrapnel, fixed, Mk. I, antiaircraft 75-mm gun.	42	32	1,825	10,450
3-inch antiaircraft guns, M1917, M1917MI, M1917A1, and M1917MIA1 (fixed mount).	Shell, fixed, H. E., Mk. IX, 3-inch antiaircraft guns, M1917, M1925-MI, M2, and M4.	45	00	2,800	11,800
	Shell, fixed, H. E., M42, 3-inch antiaircraft guns, M1917, M1925MI, M2, and M4.	45	00	2,800	11,800
3-inch antiaircraft guns, M1917A2, M1917A3, M1917MIA2, M1917MIA3, M1917MII, M1925MI, M2, and M4 (fixed mount).	Shell, fixed, H. E., Mk. IX, 3-inch antiaircraft guns, M1917, M1925-MI, M2, and M4.	45	00	2,800	11,800
	Shell, fixed, H. E., M42 (with 21-second fuze, Mk. IIIA2), 3-inch antiaircraft guns, M1917, M1925-MI, M2, and M4.	45	00	2,800	11,800
	Shell, fixed, H. E., M42 (with mechanical time fuze, M43) 3-inch antiaircraft guns, M1917, M1925-MI, M2, and M4.	45	00	2,800	14,200
	Shrapnel, fixed, Mk. I, 3-inch antiaircraft guns, M1918, M1, and M3.	45	00	2,600	12,600
3-inch antiaircraft guns, M1918A2, and M1918MIA2 (mobile mount).	Shell, fixed, H. E., Mk. IX, 3-inch antiaircraft guns, M1918, M1, and M3.	45	00	2,600	11,000
	Shell, fixed, H. E., M42 (with 21-second fuze, Mk. IIIA2), 3-inch antiaircraft guns, M1918, M1, and M3.	45	00	2,600	11,000
	Shell, fixed, H. E., M42 (with mechanical time fuze), M43, 3-inch antiaircrat guns, M1918, M1, and M3.	45	00	2,600	13,800
	Shrapnel, fixed, Mk. I, 3-inch antiaircraft guns, M1918, M1, and M3.	45	00	2,400	11,800
	Shot, fixed, armor piercing, M62	45	00	2,400	15,300
3-inch antiaircraft guns, M1 and M3 (mobile mount).	Shell, fixed, H. E., Mk. IX, 3-inch antiaircraft guns, M1918, M1, and M3.	45	00	2,800	11,800
	Shell, fixed, H. E., M42 (with 21-second fuze, Mk. IIIA2), 3-inch antiaircraft guns, M1918, M1, and M3.	45	00	2,800	11,800
	Shell, fixed, H. E., M42 (with mechanical time fuze, M43), 3-inch antiaircraft guns, M1918, M1, and M3.	45	00	2,800	14,200

Weapon	Ammunition	Elevation		Muzzle velocity	Approximate maximum range
		°	′	f/s	Yards
	Shrapnel, fixed, Mk. I, 3-inch antiaircraft guns, M1918, M1, and M3.	45	00	2,600	12,600
	Shot, fixed, armor piercing, M62	45	00	2,600	16,200
90-mm antiaircraft gun, M1.	Shell, fixed, H. E., M71	45	00	2,700	18,000
	Shell, fixed, H. E., M58	45	00	2,700	17,850
105-mm antiaircraft gun, M3.	Shell, fixed, H. E., M38, 105-mm antiaircraft gun.	45	00	2,800	20,000
	Shell, fixed, M38, 105-mm antiaircraft gun, practice loaded.	45	00	2,800	20,000

f. Ranges at an elevation of 15° for shot, armor piercing, and shrapnel set for graze burst.

Gun	Projectile	Range yds. at 15°
37-mm	M51 A. P	8,770
	M51 A. P. w/o windshield	4,980
	M59 A. P	4,980
	M74 S. A. P	6,290
75-mm	M61 A. P	8,740
	M61 A. P. w/o windshield	5,800
	M72 S. A. P	7,060
	Shrapnel	6,500
3-inch	M62 A. P	10,720
	M62 A. P. w/o windshield	6,810
	M79 S. A. P	8,790
	Shrapnel	8,500
.30 caliber	A. P	4,000
.50 caliber	A. P	5,000

g. Chemical warfare weapons.

Weapon	Ammunition	Elevation		Muzzle velocity	Approximate maximum range
		°	′	f/s	Yards
4-inch chemical mortar.	Shell M1	45	00	4 rings, 9 bundles.	1,050
4.2-inch chemical mortar.	Shell (all types)	45	00		2,350

h. Small caliber cannon.

Weapon	Ammunition	Elevation		Muzzle velocity	Approximate maximum range
		°	′	*f/s*	*Yards*
37-mm antitank gun, M3, and 37-mm tank guns, M5 and M6.	Shot, fixed, armor piercing, M51; and practice, M51.	15	00	2,600	8,500
		45	00	2,600	12,750
	Shell, fixed, H. E., antitank M63	45	00	2,700	12,000
	Shell, fixed, H. E., Mk. II (range estimated).	15	00	2,750	5,300
		45	00	2,750	8,000
37-mm antiaircraft guns M1A1 and M1A2.	Shell, fixed, H. E., M54; and shell, fixed, practice, M55.	45	00	2,600	9,300
	Shot, fixed, armor piercing, M59	45	00	2,050	6,000

[A. G. 353 (6–23–41).]

BY ORDER OF THE SECRETARY OF WAR:

G. C. MARSHALL,
Chief of Staff.

OFFICIAL:
E. S. ADAMS,
Major General,
The Adjutant General.

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RANGE REGULATIONS FOR FIRING AMMUNITION FOR TRAINING AND TARGET PRACTICE

CHANGES No. 1

WAR DEPARTMENT,
WASHINGTON, August 17, 1942.

AR 750-10, February 14, 1942, is changed as follows:

1. Purpose and scope.—These regulations prescribe the general safety measures necessary in the firing or other use of live ammunition by troops for training and target practice. The purpose is to minimize the possibility of accidents. Safety precautions covering specific types of material are given in the training publications pertaining thereto. These regulations do not apply to proving grounds of the Ordnance Department, the Chemical Warfare Service, or the Army Air Forces nor to test firings directed and supervised by arm and service boards and the Matériel Command, Army Air Forces; however, the necessary precautions will be taken to insure the safety of life and property.

[A. G. 353 (5-21-42).] (C 1, Aug. 17, 1942.)

2. General.

* * * * * * *

e. Firing over the heads of any personnel from moving tanks or other moving automotive vehicles is prohibited.

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[A. G. 353 (6-13-42).] (C 1, Aug. 17, 1942.)

7. Danger areas.—*a. For all cannon firing except antiaircraft firing at towed targets.*—The boundaries for the danger area for cannon of the various calibers are graphically illustrated in figure 1.

(1) *(a)* The danger area (fig. 1) consists of the impact area and areas A, B, C, and D. The danger area will not be occupied except as authorized in (2) below. The size of areas A, B, and C vary for different calibers according to the following tabulation:

Danger areas

Calibers	Width of areas		
	A	B	C
	Yards	*Yards*	*Yards*
37-mm or less	600	1,000	200
40-mm to 75-mm, incl	600	1,000	400
90-mm to 155-mm, incl	800	1,000	600
7-inch to 240-mm, incl	1,000	[1] 3,000	1,000

[1] 2,000 yards if firing at more than 15° elevation.

[A. G. 353 (6-13-42).] (C 1, Aug. 17, 1942.)

(b) The impact area (fig. 1) comprises all the terrain on which firing is to be directed. The lateral limits of the impact area are arbitrarily determined for each firing

*These changes supersede section I, Circular No. 151; section II, Circular No. 160; section III, Circular No. 204; and section II, Circular No. 242, War Department, 1942.

position. The minimum distance from the guns to the near limit of area B (that is, area D plus area C plus the depth of the impact area) is that distance which is equal to a range based on the charge used for the particular weapon when firing at an elevation of 15°, even though the actual elevation at firing is less than 15°. Responsible commanders may authorize for specific positions or areas minimum distances of less than those based on an elevation of 15° when in their judgment, based on terrain, weapons, and other pertinent factors, no undue hazards are created thereby. When firing above 15° elevation, the distance between the guns and the near limit of area B will be based on the range indicated in the pertinent firing table. This applies to all weapons whether using fixed, semifixed, or separate loading ammunition.

* * * * * * *

[A. G. 353 (8-15-42).] (C 1, Aug. 17, 1942.)

10. Chemical warfare ammunition.—In order to prevent accidents from the use of lethal or toxic chemical warfare ammunition, no live chemical warfare ammunition other than nontoxic smoke and nontoxic lachrymatory gas will be used for training purposes, either for target practice or demonstrations and tactical exercises, except under the personal and direct supervision of a commissioned officer of the Chemical Warfare Service, or in experimental tests conducted by the Chemical Warfare Service and Ordnance Department in developing chemical warfare ammunition. This limitation does not apply to the use of instructional gas identification sets or detonation gas identification sets.

[A. G. 353 (7-21-42).] (C 1, Aug. 17, 1942.)

15. Bombs.

* * * * * * *

k. (1) Safe distances for the dropping of fragmentation, practice types, and demolition bombs are shown below. Safe distance is defined as "the altitude or horizontal distance at which the distribution of fragments is so infrequent that the possibility of serious injury to personnel is negligible."

Bombs	Safe altitude	Safe distance
	Feet	*Feet*
* * * * *	*	*
2,000-pound, demolition, all types	3,000	5,000
4,000-pound, demolition, all types	4,000	6,000
Practice, all types	500	1,000

(2) For formation bombing with instantaneous fuze, 500 feet should be added to each of the above altitudes. The above altitudes will not operate to impose any restriction on the use of parachute bombs.

l. (1) Combat minimum altitude for dropping 300-, 500-, and 1,000-pound bombs equipped with the M103 nose bomb fuze is approximately 2,000 feet when set for instantaneous action and 1,250 feet when set for delay action. For 2,000-pound bombs, the height should not be below 3,000 feet if the fuze is set for instantaneous action and not below 2,000 feet if set for delay action. For bombs of over 2,000 pounds, the height should not be below 3,000 feet if the fuze is set for instantaneous action (no tactical requirement for fuze with delay action). These distances are based on arming time of the fuze. The same altitudes as above will be used when bombs are equipped with the M105 nose bomb fuze.

(2) Combat minimum altitude for dropping 300-, 500-, and 1,000-pound bombs with the AN-M103 nose fuze is approximately 1,500 feet when set for instantaneous action and 1,000 feet when set for delay action. For 2,000-pound bombs, the height should not be below 2,000 feet if the fuze is set for instantaneous action and below 1,000 feet if set for delay action. For bombs of over 2,000 pounds, the height should not be below 2,500 feet if the fuze is set for instantaneous action and 1,500 feet if set for delay action.

(3) These distances are somewhat less than listed in *k* above. The safe dropping altitudes given in *k* are those known to give safety to both airplane and personnel. At lower altitudes there is a progressive increase in hazard.

(4) In case bombs are dropped against impenetrable targets the minimum altitudes should be those specified for instantaneous action, regardless as to whether the fuze is set for delay or instantaneous.

(5) Combat minimum altitude for dropping fragmentation bombs is 500 feet.

(6) It is considered safe to release flares from any altitude.

[A. G. 353 (4-20-42).] (C 1, Aug. 17, 1942.)

BY ORDER OF THE SECRETARY OF WAR:

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Chief of Staff.

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RANGE REGULATIONS FOR FIRING AMMUNITION FOR TRAINING AND TARGET PRACTICE

CHANGES No. 2

WAR DEPARTMENT,
WASHINGTON, November 17, 1942.

AR 750-10, February 14, 1942, is changed as follows:

1. Purpose and scope.—*a.* These regulations prescribe the general safety measures necessary in the firing or other use of live ammunition by troops for training and target practice. The purpose is to minimize the possibility of accidents. Training restrictions produced by precautionary measures will be kept to the minimum consistent with reasonable and practical safety. Troops who are advanced in training and are engaged in combat firing exercises or on special courses designed for mental conditioning of individuals for actual battle may fire with reasonable safety under less restrictive measures than those required for troops who are less advanced.

b. (1) Safety precautions covering specific types of material are given in the training publications pertaining thereto. Troops using small arms or infantry mortar ammunition in the conduct of exercises involving the use of overhead fire or maneuver will observe carefully the safety precautions prescribed for the respective weapon in the following paragraphs of Field Manuals:

Field Manual	Paragraphs
23-5	30, 108.
23-10	14, 56, 75.
23-15	143.
23-20	144, 149.
23-35	25, 101.
23-40	20.
23-45	162, 203, 204.
23-55	164, 210.
23-60	159, 184.
23-85	12 to 15, 75.
23-90	7, 43, 45, 61.

(2) These regulations do not apply to proving grounds of the Ordnance Department, the Chemical Warfare Service, or the Army Air Forces, nor to test firing directed and supervised by arm and service boards and the Matériel Command, Army Air Forces; however, the necessary precautions will be taken to insure the safety of life and property.

[A. G. 353 (10-23-42).]

*These changes supersede C 1, August 17, 1942, and paragraph 1, section IV, Circular No. 40, War Department, 1942.

495446°—42

2. General.

* * * * * * *

e. (As changed by C 1, Aug. 17, 1942.) Firing over the heads of any personnel from moving tanks or other moving automotive vehicles is prohibited.

* * * * * * *

[A. G. 353 (6-13-42).]

7. Danger areas.—*a. For all cannon firing except antiaircraft firing at towed targets.*—The boundaries for the danger area for cannon of the various calibers are graphically illustrated in figure 1.

(1) (*a*) The danger area (fig. 1) consists of the impact area and areas A, B, C, and D. The danger area will not be occupied except as authorized in (2) below. The size of areas A, B, and C vary for different calibers according to the following tabulation:

Danger areas

Calibers	Width of areas		
	A	B	C
	Yards	*Yards*	*Yards*
37-mm or less	600	1,000	100
40-mm to 75-mm, incl	600	1,000	200
90-mm to 155-mm, incl	800	1,000	300
7-inch to 240-mm, incl	1,000	[1] 3,000	1,000

[1] 2,000 yards if firing at more than 15° elevation.

* * * * * * *

[A. G. 353 (6-13-42).]

(*b*) (As changed by C 1, Aug. 17, 1942.) The impact area (fig. 1) comprises all the terrain on which firing is to be directed. The lateral limits of the impact area are arbitrarily determined for each firing position. The minimum distance from the guns to the near limit of area B (that is, area D plus area C plus the depth of the impact area) is that distance which is equal to a range based on the charge used for the particular weapon when firing at an elevation of 15°, even though the actual elevation at firing is less than 15°. Responsible commanders may authorize for specific positions or areas minimum distances of less than those based on an elevation of 15° when in their judgment, based on terrain, weapons, and other pertinent factors, no undue hazards are created thereby. When firing above 15° elevation, the distance between the guns and the near limit of area B will be based on the range indicated in the pertinent firing table. This applies to all weapons whether using fixed, semifixed, or separate loading ammunition.

* * * * * * *

[A. G. 353 (8-15-42).]

g. For 60-mm and 81-mm mortars.

(1) Overhead fire is not authorized for the 60-mm mortar.

(2) Troops using the 81-mm mortar in overhead fire will observe the safety precautions prescribed in paragraph 1*b*(1).

[A. G. 353 (10-23-42).]

8. Small arms and ground machine guns.—*a*. Firing small arms and ground machine guns against terrestrial and aerial targets over personnel is permitted under the restrictions in *b* and *c* below. In other cases overhead cover will be provided. The following table shows the thickness of various kinds of cover that is required for maximum protection against bullets fired by these weapons. FM 5-15 tabulates the minimum thickness.

Nature of cover	Thickness in inches	
	Caliber .30	Caliber .50
Undisturbed compact earth	52	66
Earth packed or tamped	48	60
Earth freshly turned	56	72
Sandstone or granite soil	6	10
Logs wired together (oak)	40	60
Broken stone	20	30
Dry sand	24	32
Wet sand	36	48
Concrete	4	8

b. Such paragraphs in the Field Manuals listed in paragraph 1*b* (1) as are in conflict with *c* below are suspended for the period of the emergency.

c. The following firing and clearance are authorized:

(1) Individual weapons may be fired at low angles of elevation provided there is an angle of 30° or more between the line of fire and the line to the near flank of another individual or unit. Means must be taken to enable the firing unit to know the location of the flank of the forward unit, and to assure that no personnel are within the 30° sector. It is sufficient that the angle be estimated by an individual competent to do so.

(2) Individual weapons may be fired over unprotected individuals in combat firing exercises or on special courses designed for mental conditioning of individuals for actual battle, if the troops involved are advanced in their training and safety is otherwise reasonably assured.

(3) Light and heavy machine guns with free traverse may be fired at low angles of elevation provided there is an angle of 30° or more between the line of fire and the line to the near flank of another individual or unit. The angle may be reduced to 15° if traversing stops are used. Means must be taken to enable the firing unit to know the location of the flank of the forward unit and be assured that no personnel are within the 30° or 15° sector.

(4) Clearance for light and heavy machine guns firing over unprotected personnel in special battle courses where troops are within

100 yards of machine gun positions and guns are provided with depression stops may be reduced to 3 feet.

* * * * * * *

[A. G. 353 (10-23-42).]

10. Chemical warfare ammunition.—(As changed by C 1, Aug. 17, 1942.) In order to prevent accidents from the use of lethal or toxic chemical warfare ammunition, no live chemical warfare ammunition other than nontoxic smoke and nontoxic lachrymatory gas will be used for training purposes, either for target practice or demonstrations and tactical exercises, except under the personal and direct supervision of a commissioned officer of the Chemical Warfare Service, or in experimental tests conducted by the Chemical Warfare Service and Ordnance Department in developing chemical warfare ammunition. This limitation does not apply to the use of instructional gas identification sets or detonation gas identification sets.

[A. G. 353 (7-21-42).]

15. Bombs.

* * * * * * *

k. (As changed by C 1, Aug. 17, 1942.)

(1) Safe distances for the dropping of fragmentation, practice types, and demolition bombs are shown below. Safe distance is defined as "the altitude or horizontal distance at which the distribution of fragments is so infrequent that the possibility of serious injury to personnel is negligible."

Bombs	Safe altitude	Safe distance
	Feet	*Feet*
* * * * *	*	*
2,000-pound, demolition, all types	3,000	5,000
4,000-pound, demolition, all types	4,000	6,000
Practice, all types	500	1,000

(2) For formation bombing with instantaneous fuze, 500 feet should be added to each of the above altitudes. The above altitudes will not operate to impose any restriction on the use of parachute bombs.

l. (As changed by C 1, Aug. 17, 1942.)

(1) Combat minimum altitude for dropping 300-, 500-, and 1,000-pound bombs equipped with the M103 nose bomb fuze is approximately 2,000 feet when set for instantaneous action and 1,250 feet when set for delay action. For 2,000-pound bombs, the height should not be below 3,000 feet if the fuze is set for instantaneous action and not below 2,000 feet if set for delay action. For bombs of over 2,000 pounds, the height should not be below 3,000 feet if the fuze is set for instantaneous action (no tactical requirement for fuze with delay action). These distances are based on arming time of the fuze. The same altitudes as above will be used when bombs are equipped with the M105 nose bomb fuze.

(2) Combat minimum altitude for dropping 300-, 500-, and 1,000-pound bombs with the AN–M103 nose fuze is approximately 1,500 feet when set for instantaneous action and 1,000 feet when set for delay action. For 2,000-pound bombs, the height should not be below 2,000 feet if the fuze is set for instantaneous action and below 1,000 feet if set for delay action. For bombs of over 2,000 pounds, the height should not be below 2,500 feet if the fuze is set for instantaneous action and 1,500 feet if set for delay action.

(3) These distances are somewhat less than listed in *k* above. The safe dropping altitudes given in *k* are those known to give safety to both airplane and personnel. At lower altitudes there is a progressive increase in hazard.

(4) In case bombs are dropped against impenetrable targets the minimum altitudes should be those specified for instantaneous action, regardless as to whether the fuze is set for delay or instantaneous.

(5) Combat minimum altitude for dropping fragmentation bombs is 500 feet.

(6) It is considered safe to release flares from any altitude.

[A. G. 353 (4–20–42).]

BY ORDER OF THE SECRETARY OF WAR:

G. C. MARSHALL,
Chief of Staff.

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U. S. GOVERNMENT PRINTING OFFICE: 1942

RANGE REGULATIONS FOR FIRING AMMUNITION FOR TRAINING AND TARGET PRACTICE

CHANGES No. 3

WAR DEPARTMENT,
WASHINGTON, December 7, 1942.

AR 750-10, February 14, 1942, is changed as follows:

Section VII

REPORTS OF MALFUNCTIONS AND ACCIDENTS

	Paragraph
General	23
Preliminary report	24
Detailed written report	25
Suspension of ammunition involved in accidents and malfunctions	26
Disposition of matériel involved	27
Accident prevention	28
Use of oil or grease on cartridges	29
Destruction of explosives	30
Ammunition malfunctions in combat	31

23. General.—When an accident involving the use of ammunition occurs during training practice, the procedure prescribed below will be observed by the ordnance officer under whose supervision the ammunition is maintained or issued.

24. Preliminary report.—An immediate preliminary report will be made by telephone, teletype, telegraph, or radio to the Chief of Ordnance, Attention: Ammunition Supply Branch, Renovation and Surveillance Section. This report may be dispensed with in the case of accidents or malfunctions involving small-arms ammunition. The report will include the main facts, such as—

a. Lot numbers (for example, the complete round lot number, fuze lot number, etc.).

b. Type.

c. Mark or model.

d. Caliber or shell.

e. If a premature, whether of high or low order.

f. Extent of injury to personnel or damage to property.

g. Action taken regarding withdrawal of ammunition from use.

25. Detailed written report.—A detailed written report, in triplicate, will follow the preliminary report and will be forwarded to the Chief of Ordnance, Attention: Ammunition Supply Branch, Renovation and Surveillance Section, through appropriate departments or service commands, who detach one copy for their records. It will include the points specified below as far as they are applicable, together with any other available pertinent information.

a. Weapon.

(1) Caliber, type, and model.

(2) Name of manufacturer (plant or arsenal).

(3) Serial number.

(4) Type of fire (slow, rapid, etc.).

(5) Elevation.

(6) Length of recoil.

(7) Range to target.

(8) Condition of weapon before malfunction.
(9) Description of weapon after malfunction (including any photographs, sketches, and measurements of important features). For such data on small-arms weapons, see TM 9-2210.
(10) Number of rounds fired in weapon just prior to malfunction.
(11) Total number of rounds fired in weapon.
(12) Such other pertinent information as may be available.

b. Fixed ammunition.
(1) Caliber, type, and model.
(2) Name of manufacturer (plant, depot, or arsenal).
(3) Ammunition lot number (complete).
(4) Type, model, manufacturer, and lot number of fuze.
(5) Any available information concerning condition of ammunition prior to firing, and record of previous rounds.

c. Separate-loading ammunition.
(1) *Projectile.*
(*a*) Caliber, type, and model.
(*b*) Name of loading plant, arsenal, or depot.
(*c*) Ammunition lot number.
(*d*) Kind of filler.
(*e*) Type and lot number of booster.
(2) *Propelling charge.*
(*a*) Caliber, type, and model.
(*b*) Name of manufacturer (plant, arsenal, or depot).
(*c*) Powder lot number.
(*d*) Weight and type of charge.
(*e*) Physical condition of bag and wrappings.
(*f*) Pressure and velocity of round which malfunctioned, if available.
(*g*) Pressure and velocity of rounds fired immediately prior to malfunctioning, if available.
(3) *Fuze.*
(*a*) Type and model.
(*b*) Name of manufacturer (plant or arsenal).
(*c*) Lot number.
(4) *Primer.*
(*a*) Type and model.
(*b*) Name of manufacturer (plant or arsenal).
(*c*) Lot number.

d. For bombs, grenades, black powder saluting charges, or other hazardous matériel, the name of the manufacturer and lot number will be reported. If fuzed, the name of the fuze manufacturer and lot number also will be reported.

e. If the accident involves other ordnance matériel besides ammunition, both the serial number and the name of the manufacturer of such matériel must be reported.

26. Suspension of ammunition involved in accidents and malfunctions.—If ammunition is the possible cause of an accident, or if any lot of ammunition or component thereof has malfunctoned in such a way that its further use can be expected to result in injury to personnel or damage to property, the

particular lot involved will be suspended from use. This suspension will be made by the battery commander immediately, as soon as such malfunction or accident is encountered, and will be subject to substantiation or withdrawal by the local ordnance officer. In any case where a suspension has been substantiated by the local ordnance officer upon review of the circumstances, the suspension will not be withdrawn until the Chief of Ordnance authorizes reissue of the matériel or otherwise directs its disposal. If ammunition is suspended from issue, such suspension will be noted in the written report.

27. Disposition of matériel involved.—The matériel involved in the accident or malfunction and any evidence such as fragments of shell, fuze, etc., will be carefully preserved until disposed of as directed by the Chief of Ordnance unless, in the opinion of the ordnance officer, the preservation or shipment of such matériel may endanger life or property.

28. Accident prevention.—Commanding officers, ordnance officers, and all others concerned in the use, storage, or handling of ammunition will take every precaution to prevent accident.

29. Use of oil or grease on cartridges.—Greasing or oiling cartridges used in machine guns and other automatic guns causes the collection of dust and other abrasives which are injurious. Grease or oil on cartridges used in the service rifles or on the walls of the rifle chambers creates excessive and hazardous pressure on the rifle bolts and will result in damage like that described in TM 9–2210. The use of oil or grease on cartridges is therefore prohibited.

30. Destruction of explosives.—For the destruction of explosives, see TM 9–1900. A commissioned officer will supervise the destruction of explosives, and will be responsible for seeing that the provisions of TM 9–1900 are complied with.

31. Ammunition malfunctions in combat.—While these instructions specifically apply to malfunctions and accidents occurring during training, it is to be noted that any reports covering malfunctions of ammunition in combat will be of especial value to the Chief of Ordnance. Where practical, these reports will give the type of malfunction, type of ammunition, the lot number of the complete rounds or separate loading components, and conditions under which fired.

[A. G. 353 (11–26–42).] (C 3, Dec. 7, 1942.)

BY ORDER OF THE SECRETARY OF WAR:

G. C. MARSHALL,
Chief of Staff.

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C 4

RANGE REGULATIONS FOR FIRING AMMUNITION FOR TRAINING AND TARGET PRACTICE

CHANGES No. 4

WAR DEPARTMENT,
WASHINGTON, January 21, 1943.

AR 750-10, February 14, 1942, is changed as follows:

7. Danger areas.—*a. For all cannon firing except antiaircraft firing at towed targets.*—The boundaries for the danger area for cannon of the various calibers are graphically illustrated in figure 1.

* * * * * * *

(2) Area D may be occupied under the following conditions:

* * * * * * *

(b) No overhead cover is required in area D. When light or medium artillery is firing time fuzed shell set for other than impact burst the width of area C will be increased by 50 percent; area C is increased to 2,000 yards when heavy artillery is firing time fuzed shell set for other than impact burst. When splinterproof cover as described in paragraph 51*a*(1), FM 5-15, is provided, the width of area C as indicated in (1) above will govern. Personnel in a tank with the turret closed have the equivalent of splinterproof protection.

* * * * * * *

[A. G. 353 (1-16-43).] (C 4, Jan. 21, 1943.)

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RANGE REGULATIONS FOR FIRING AMMUNITION FOR TRAINING AND TARGET PRACTICE

CHANGES No. 5

WAR DEPARTMENT,
WASHINGTON, March 10, 1943.

AR 750-10, February 14, 1942, is changed as follows:

1. Purpose and scope.

* * * * * * *

b. (1) Safety precautions covering specific types of material are given in the training publications pertaining thereto. Troops using small arms or infantry mortar ammunition in the conduct of exercises involving the use of overhead fire or maneuver will observe carefully the safety precautions prescribed for the respective weapon in the following paragraphs of Field and Technical Manuals:

Field Manual	Paragraphs
23-5	30, 108.
* * * *	* * *
23-90	7, 43, 45, 61.
Technical Manual	**Paragraphs**
3-320	12, 13, 14, 15, 19.

* * * * * * *

[A. G. 353 (3-1-43).] (C 5, Mar. 10, 1943.)

7. Danger areas.

* * * * * * *

g. For 60-mm and 81-mm mortars.

* * * * * * *

(2) Troops using the 81-mm or 4.2-inch chemical mortar in overhead fire will observe the safety precautions prescribed in paragraph 1*b*(1).

[A. G. 353 (3-1-43).] (C 5, Mar. 10, 1943.)

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C 6

RANGE REGULATIONS FOR FIRING AMMUNITION FOR TRAINING AND TARGET PRACTICE

CHANGES No. 6

WAR DEPARTMENT,
WASHINGTON, 9 June 1943.

AR 750-10, 14 February 1942, is changed as follows:

4. Water ranges.

* * * * * * *

c. Suspended for the duration of the war.

* * * * * * *

[A. G. 353 (21-4-43).] (C 6, 9 June 1943.)

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AR 750-10
C 7

RANGE REGULATIONS FOR FIRING AMMUNITION FOR TRAINING AND TARGET PRACTICE

CHANGES No. 7

WAR DEPARTMENT,
WASHINGTON 25, D. C., 2 August 1943.

AR 750-10, 14 February 1942, is changed as follows

11. Grenades.—*a. General.*

* * * * * * *

(2) Rescinded.

* * * * * * *

[A. G. 353 (30 Jul 43).] (C 7, 2 Aug 43.)

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RANGE REGULATIONS FOR FIRING AMMUNITION FOR TRAINING AND TARGET PRACTICE

CHANGES No. 8

WAR DEPARTMENT,
WASHINGTON 25, D. C., 15 October 1943.

AR 750-10, 14 February 1942, is changed as follows:

15. Bombs.

* * * * * * *

k. Safe altitudes and distances for the release of aerial bombs for training purposes will be prescribed by the Commanding General, Army Air Forces. The Commanding General, Army Air Forces, will be responsible that altitudes and distances so prescribed will not involve undue danger to aircraft or personnel.

l. It is considered safe to release flares from any altitude.

[A. G. 353 (12 Oct 43).] (C 8, 15 Oct 43.)

BY ORDER OF THE SECRETARY OF WAR:

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AR 750-10
C 9

RANGE REGULATIONS FOR FIRING AMMUNITION FOR TRAINING AND TARGET PRACTICE

RECORD

CHANGES No. 9

WAR DEPARTMENT
WASHINGTON 25, D. C., 1 November 1943.

AR 750-10, 14 February 1942, is changed as follows:

14. **Cannon.**

* * * * * * *

e. Misfires.

(1) *Cannon using fixed or semifixed ammunition.*—Two attempts will be made to fire the piece before the breech is opened and the round removed. For guns which cannot be recocked without opening the breech, wait 30 seconds from the time of the occurrence of the misfire. Then remove the round.

(2) *Cannon using separate loading ammunition.*—Two attempts will be made to fire the primer before it may be removed. If upon examination it is found that the primer is not fired, a new primer will be inserted and fire continued. If the primer has fired, a minimum of 30 seconds will be allowed before the breech may be opened and the faulty charge removed. The faulty charge must be stored separately from other charges.

(3) *Mortars, 3-inch, 4.2-inch, 81-mm, and 60-mm.*—The mortar will not be touched until at least 1 minute has elapsed from the time of misfire.

(4) All personnel must keep clear of the line of fire and the path of recoil at all times during these misfire procedures.

[A. G. 353 (30 Sep 43).] (C 9, 1 Nov 43.)

BY ORDER OF THE SECRETARY OF WAR:

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APPENDIX A-110

TM 9-855, 17 Aug 44

WAR DEPARTMENT TECHNICAL MANUAL

TM 9-855

This Technical Manual supersedes TM 9-855, dated 19 June 1941, and Changes No. 1, dated 5 August 1942; and TB 9-855-1, dated 21 March 1944.

TARGETS, TARGET MATERIAL, AND TRAINING COURSE LAY-OUTS

WAR DEPARTMENT • *17 AUGUST 1944*

RESTRICTED *DISSEMINATION OF RESTRICTED MATTER*—The information contained in restricted documents and the essential characteristics of restricted material may be given to any person known to be in the service of the United States and to persons of undoubted loyalty and discretion who are cooperating in Government work, but will not be communicated to the public or to the press except by authorized military public relations agencies. (See also paragraph 23*b*, AR 380-5, 15 March 1944.)

probable erosion. Appendix II in FM 5-15 includes table on page 17.

(c) The type and spacing of pedestals for target frames will be revised as required for target frames furnished.

(d) Where butts are to be located along a transverse slope, attention is directed to savings which may be accomplished by stepping elevation of parapet at intervals of not less than 5 targets. Study should be made to establish comparative cost of constructing groups of 25 targets with a 200-yard interval (300-yd adjacent to 500-yd range) between adjacent groups with cost of providing a protective embankment between adjacent groups for the portion not clear of the danger zone. Height of protective embankment must be sufficient to protect adjacent firing points from all firing positions. A wood bench may be provided to assist marking and posting of targets.

(e) Where local conditions will require excessive expenditure to place combined storage house and latrine facilities (figs. 9, 10, 11, and 12) adjacent to parapet extended, target storage house may be placed back of target frames. Latrines must be placed adjacent to parapets extended for protection of personnel, and target storage house *will not be entered or occupied while firing is in progress.*

(2) PISTOL RANGE (figs. 13, 14, and 15). Requirements for this range are such as to permit of extremely economical construction. Salvage embankment, designed to permit salvage of material in bullets as well as to reduce ricochets, may be provided along the rear of the targets when terrain conditions are particularly favorable; otherwise, value of material that can be recovered will not justify expenditure.

(3) LANDSCAPE TARGET RANGE (figs. 16 and 20). The necessity of providing safety space between adjacent targets to permit independent operation of each target will extend this range over a considerable lateral distance. Adjustment in distance between adjacent targets to take full advantage of topography will be reflected by savings in construction costs.

(4) MACHINE GUN 1,000-INCH RANGE (fig. 21). Total usage of this range is second only to the known-distance range. A location along cut slope or hillside will simplify construction of salvage wall (fig. 17).

(5) SUBMACHINE GUN RANGE (figs. 18, 19, and 22). Alternate methods shown for actuating targets fired upon from point "B" may be predicated upon local terrain or the desires of Range Officer. Effective use of this range is predicated on proper instructions and proper policing to control time and direction of fire.

(6) ANTIAIRCRAFT RANGE, MINIATURE (figs. 23 to 29 incl.). The wide angle of fire and limited range of cal. .22 weapons justify

locating this range away from the area assigned to other ranges in cases where desirable and where an alternate location utilizing adverse terrain for danger area is available.

(7) MOVING VEHICLE RANGES (figs. 30 and 31). Moving vehicle range for submachine gun (fig. 31) is typical only. This range should be located along a ridge or on topography which will permit wide angle of vision. The arrangement of the road is subject to modification as required to meet local terrain and to reduce danger area. Each of the three target groupings and the portion of the road from which firing occurs for each should be located on a tangent. Road construction will be held to a minimum, consisting primarily of clearing and sufficient work with a blade machine to provide for satisfactory passage of vehicles. The cal. .30 machine gun moving vehicle range (fig. 30) may be located adjacent to or within the limits of the submachine gun moving vehicle range where the size of the danger area can be materially reduced by such a location. Log-type obstacles are desirable to permit ready removal other than at locations where habitual use by tank traffic is contemplated.

(8) FIELD TARGET OR COMBAT RANGE (figs. 32 to 36; 38, 39). The field target range is designed to provide training simulating actual combat. Assistance of the Range Officer or the Training Aid Section of the Service Command in details of lay-out of this type range is desirable. Full advantage of local topography and controlled direction of fire is essential to avoid excessive danger area. These ranges require largest danger area of the small arms group, and accordingly careful design, even at some increases in construction cost, is warranted where danger area can be materially reduced. The following notes apply to figures 32 to 36 and 38, 39:

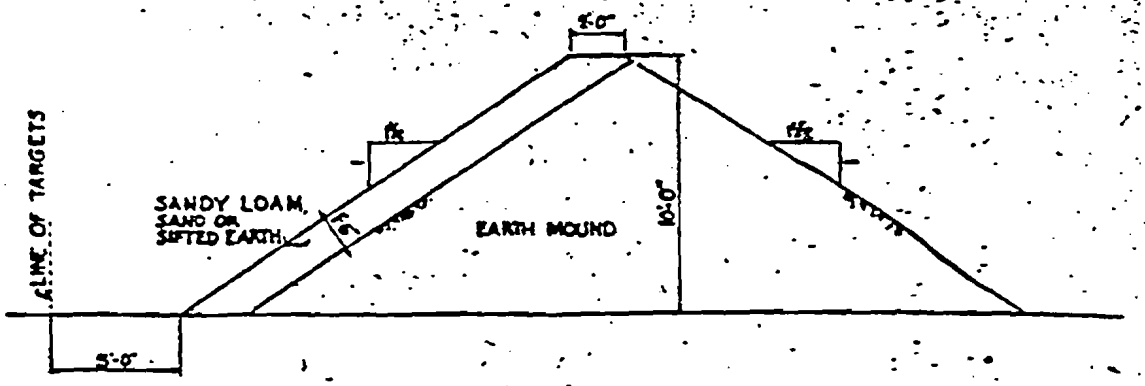
(a) The number, location on target bar, and type (prone kneeling, or standing) of target may be varied to meet individual problems.

(b) The "Typical Combat Range" shown is only one condition. The location of the various component parts of the range should be determined by the plans and training officer after the range area is selected and danger areas established.

(c) The method of dropping the targets shown is by use of extension springs. Should springs not be available, the targets may be dropped by use of a counter weight.

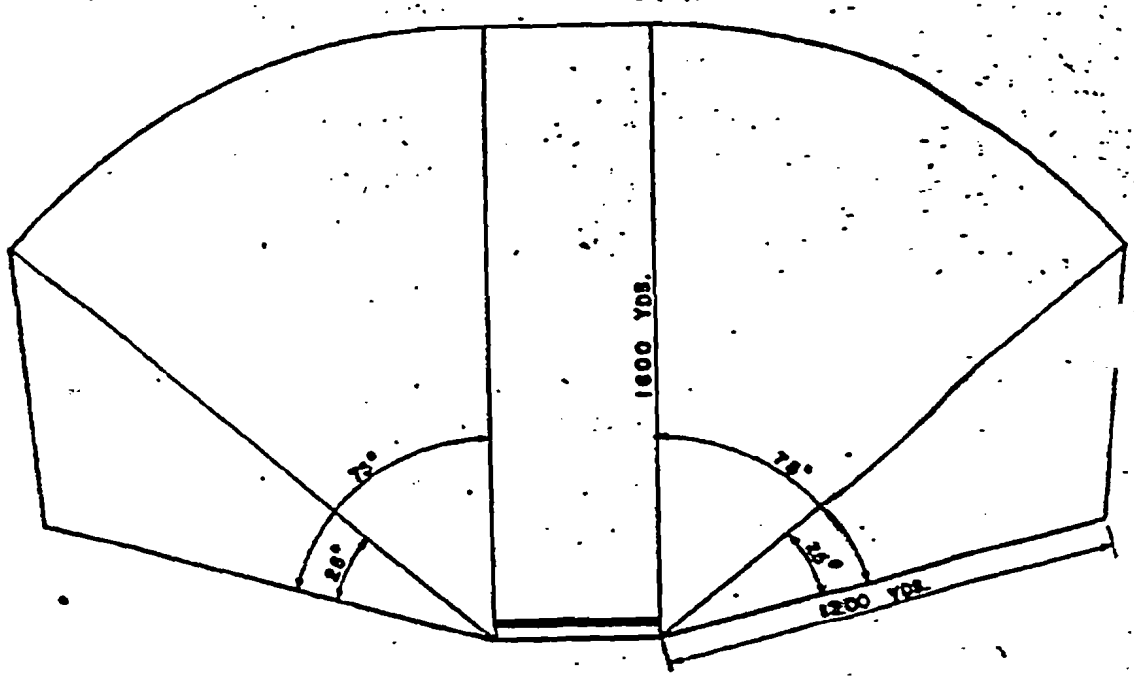
(d) When practicable, target units should be placed on reverse slopes and approximately 1 foot below the crown of a rise. Where units are placed on level or on the forward slope of the rise, each unit should be recessed into the ground approximately 1 foot below plane of fire. The wire leading from the unit for a distance of approximately 15 feet should be placed in a trench 6 inches wide and 1 foot to 0 inch deep with one or more sand bags placed to prevent

CONSTRUCTION OF TARGET RANGES AND LAY-OUT OF VARIOUS OTHER RANGES AND COURSES



OCE 1600-125 RA PD 60945

Figure 17 — Salvage Wall for 1,000-inch Ranges When Required



OCE 1600-101 RA PD 60946

Figure 18 — Submachine Gun Range

enfilade fire into wire trench. Targets should not be visible when in a down position. Location of trenches and wires should be hidden or camouflaged as practicable.

(e) Wires leading off the main line to the unit should be placed so that the wire will not be noticed at a distance greater than 100 yards. This can be accomplished by:

1. Keeping wire on the ground and on the reverse side of any ridge or unevenness of the ground.

2. Placing all supports flush or just below the level of the ground and providing a small trench for the wire about 10 feet on each side of the recessed supports.

CONSTRUCTION OF TARGET RANGES AND LAY-OUT OF VARIOUS OTHER RANGES AND COURSES

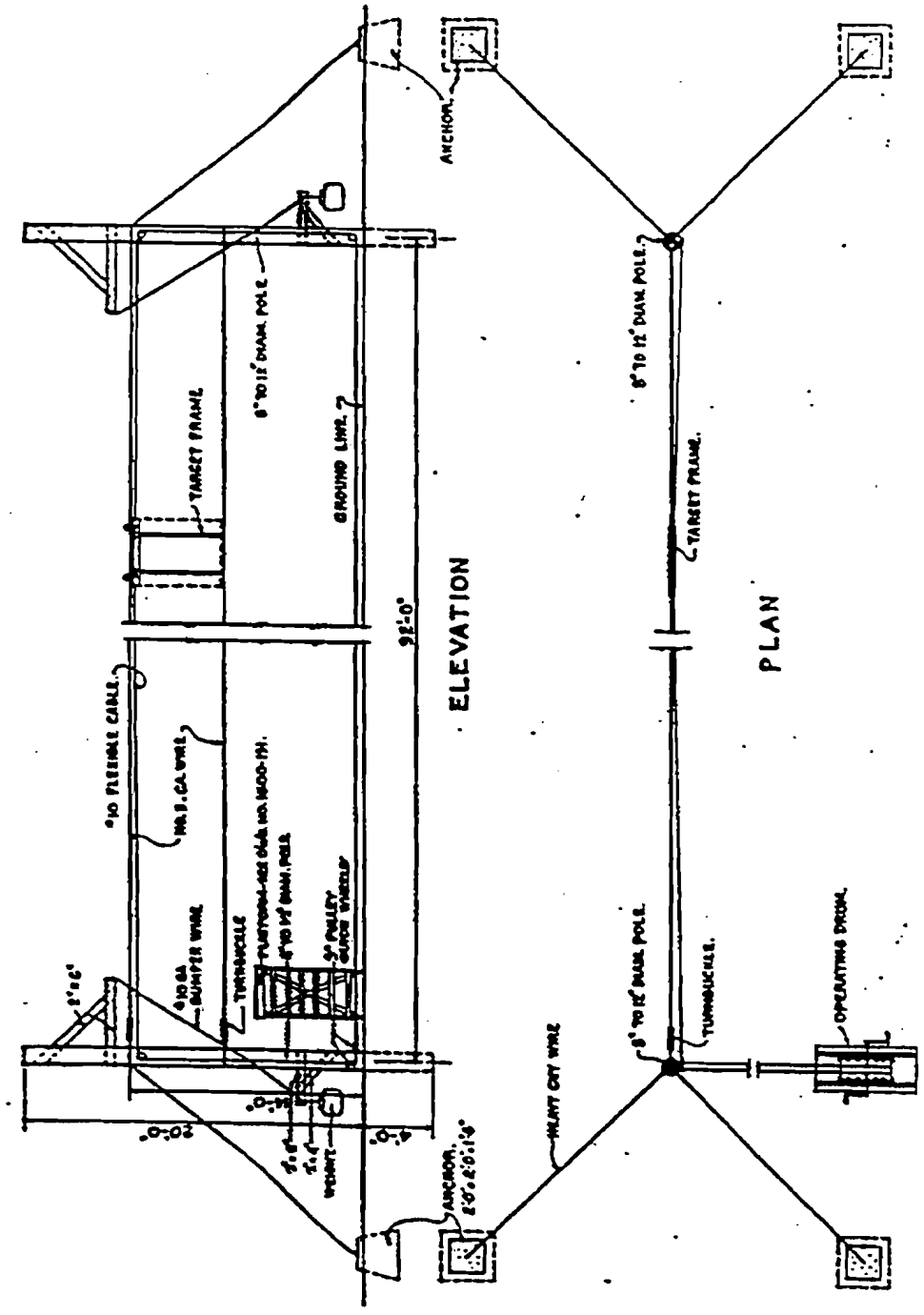
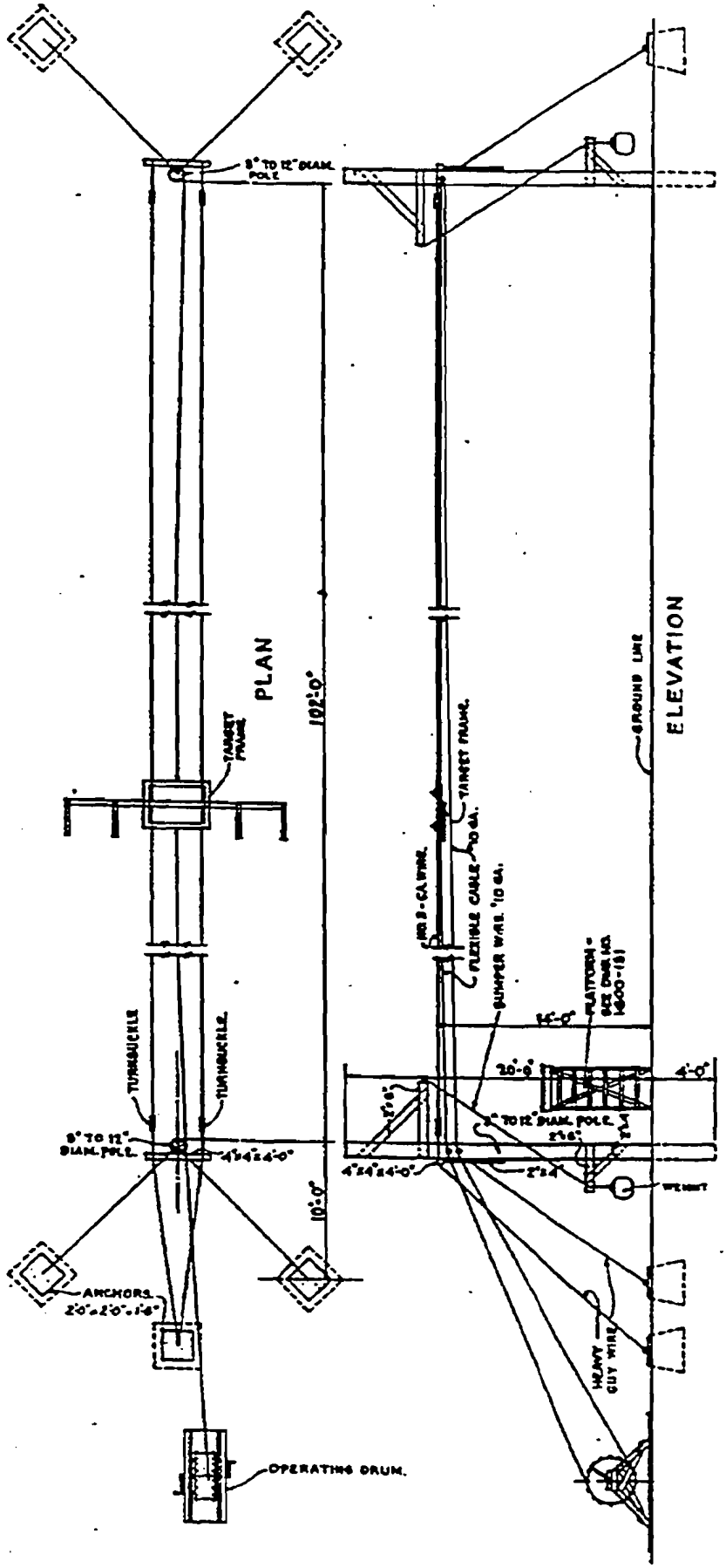


Figure 24 — Antiaircraft — Miniature — Horizontal Target

RA PD 60930

OCE 1600-131

TARGETS, TARGET MATERIAL, AND TRAINING COURSE LAY-OUT



RA PD 40951

Figure 25 — Antiaircraft Range — Miniature — Overhead Targets

OCE 1600-130

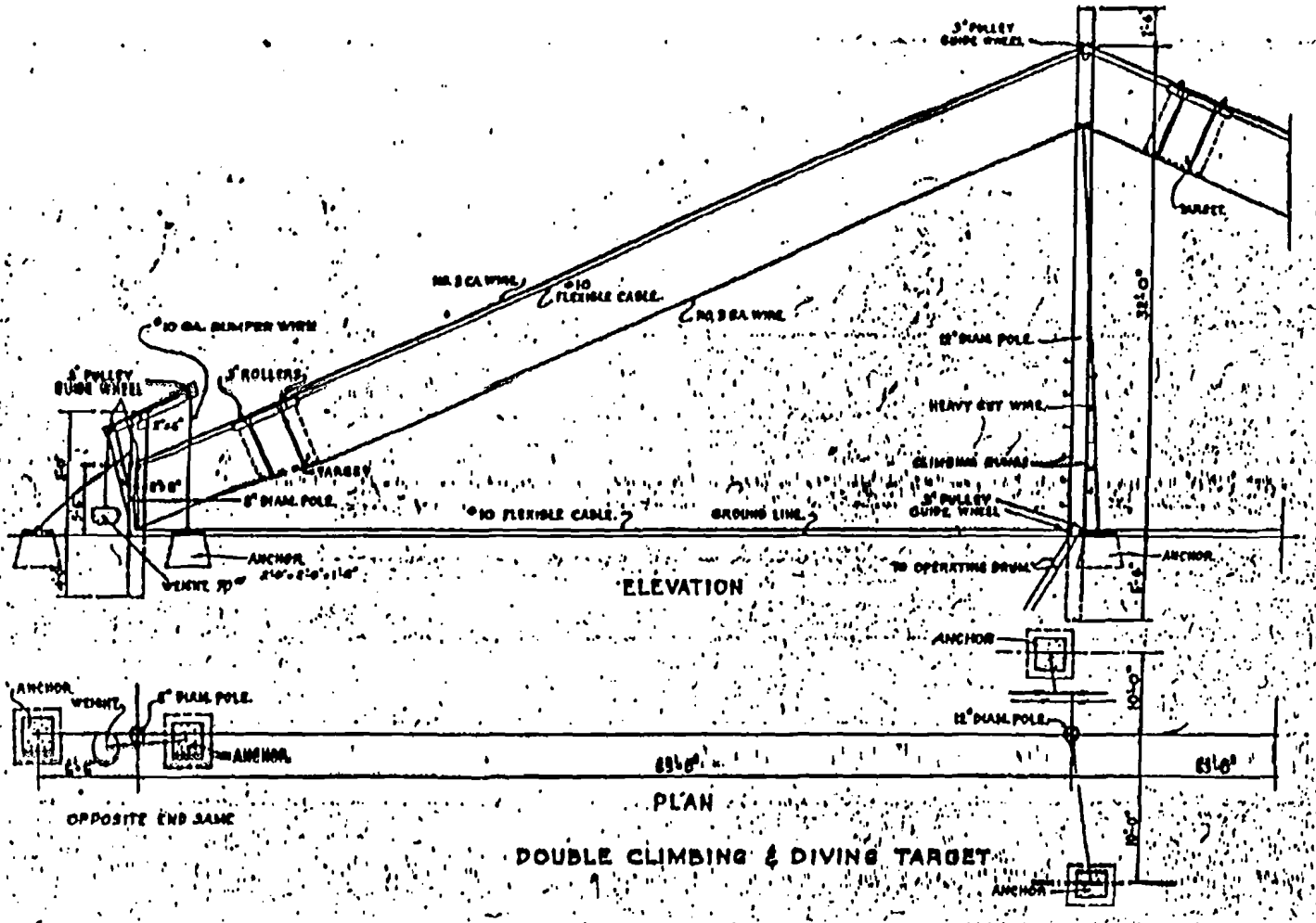
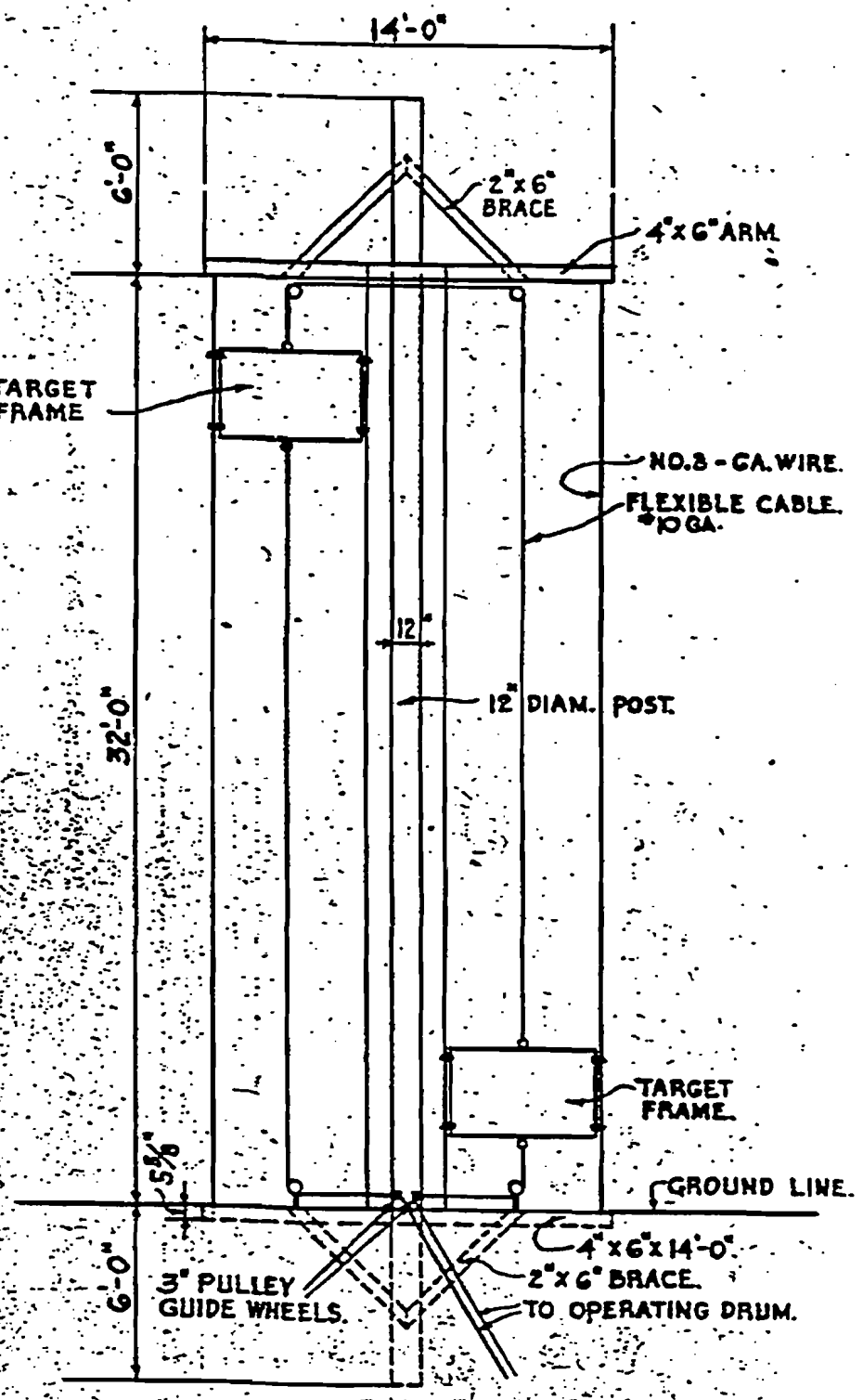


Figure 26 — Antiaircraft Range — Miniature — Double Climbing and Diving Target



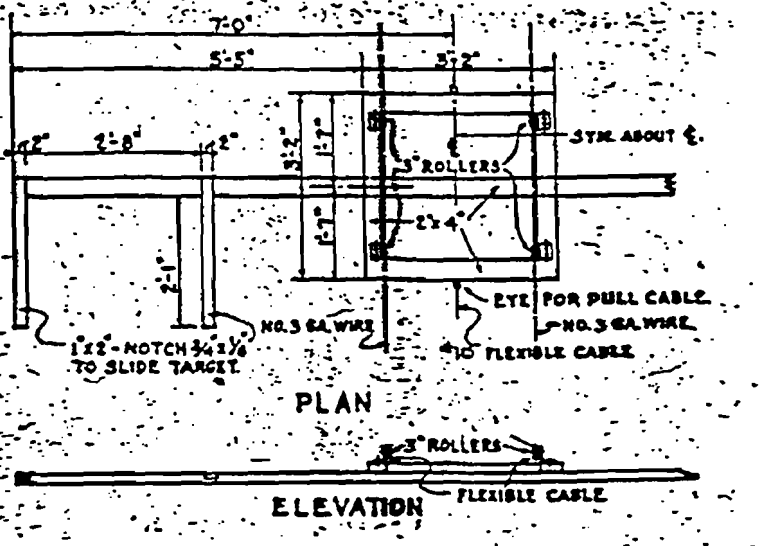
PARACHUTE TARGET

OCE 1600-130

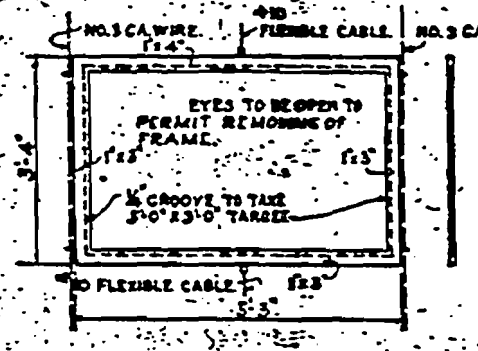
RA PD 60952

Figure 27 — Antiaircraft Range — Miniature — Parachute Target

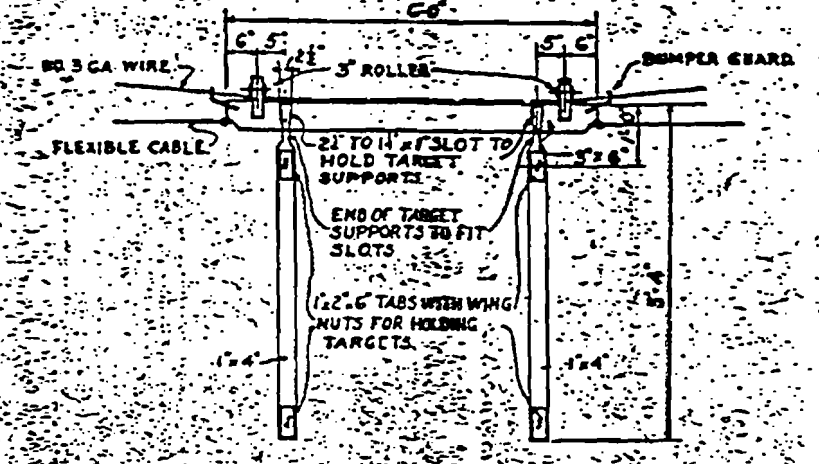
TARGETS, TARGET MATERIAL, AND TRAINING COURSE LAY-OUT



TARGET FRAME-OVERHEAD



TARGET FRAME FOR PARACHUTE



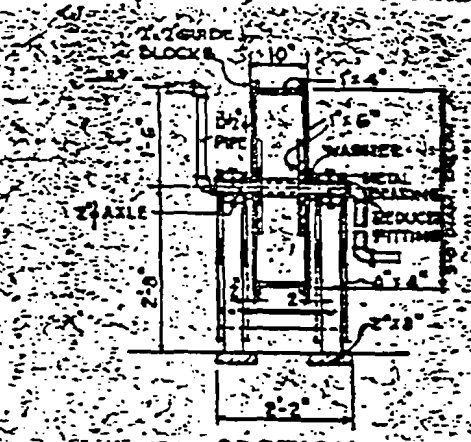
CARRIER FOR CLIMBING & HORIZONTAL TARGETS

OCE 1600-131

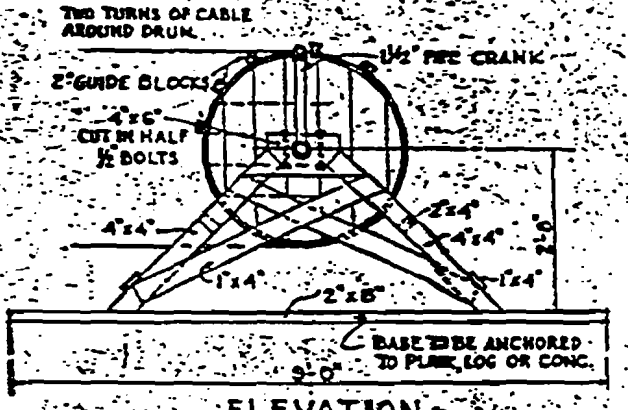
RA PD 60954

Figure 29—Antiaircraft Range—Miniature—Miscellaneous Details

CONSTRUCTION OF TARGET RANGES AND LAY-OUT OF VARIOUS OTHER RANGES AND COURSES

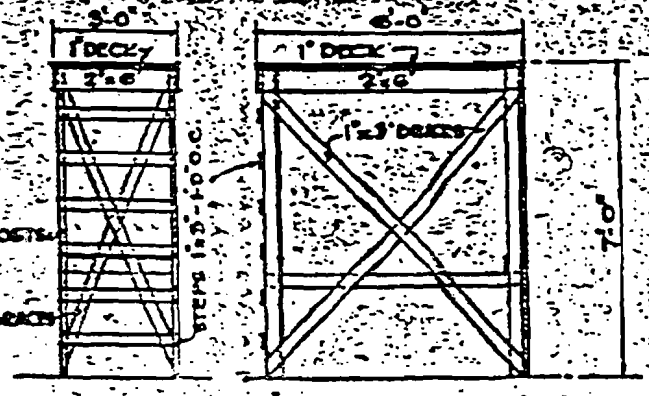


SECTION



ELEVATION

OPERATING DRUM FOR MOVING TARGETS



END VIEW SIDE VIEW

TARGET SCORING PLATFORM

OCE 1600-131 RA PD 60933

Figure 28 — Antiaircraft Range — Miniature — Miscellaneous Details

CONSTRUCTION OF TARGET RANGES AND LAY-OUT OF VARIOUS OTHER RANGES AND COURSES

(f) The individual target should be located so that the beaten zone of fire directed at it will not fall on the main line of wires. Where this condition cannot be avoided, the main line wires should be placed in a trench for protection.

(g) All wires should be kept as close to the ground as possible and the ground under wires should be disturbed only as necessary to allow the wires to move freely.

(h) All wood should be painted for preservation and to tone down the installation. All wires are to be kept greased near pulleys. All moving metal parts are to be oiled. Wires should be adjusted before using if range is not in continual operation.

(i) The order of procedure for setting up a combat range is as follows:

1. Establish from local terrain, cover and available danger area, probable advance through area, and general location of target groups.

2. Locate control points and main wire courses to provide maximum protection to installation and minimum interference with troop advance.

3. Establish exact location of individual targets.

4. Determine location of points for wire supports.

5. Determine number and type of supports needed.

6. Install target units, wire supports, and control units.

7. Lay wire, insert flexible cable at pulleys where needed, connect target units, and make proper adjustments at the control racks.

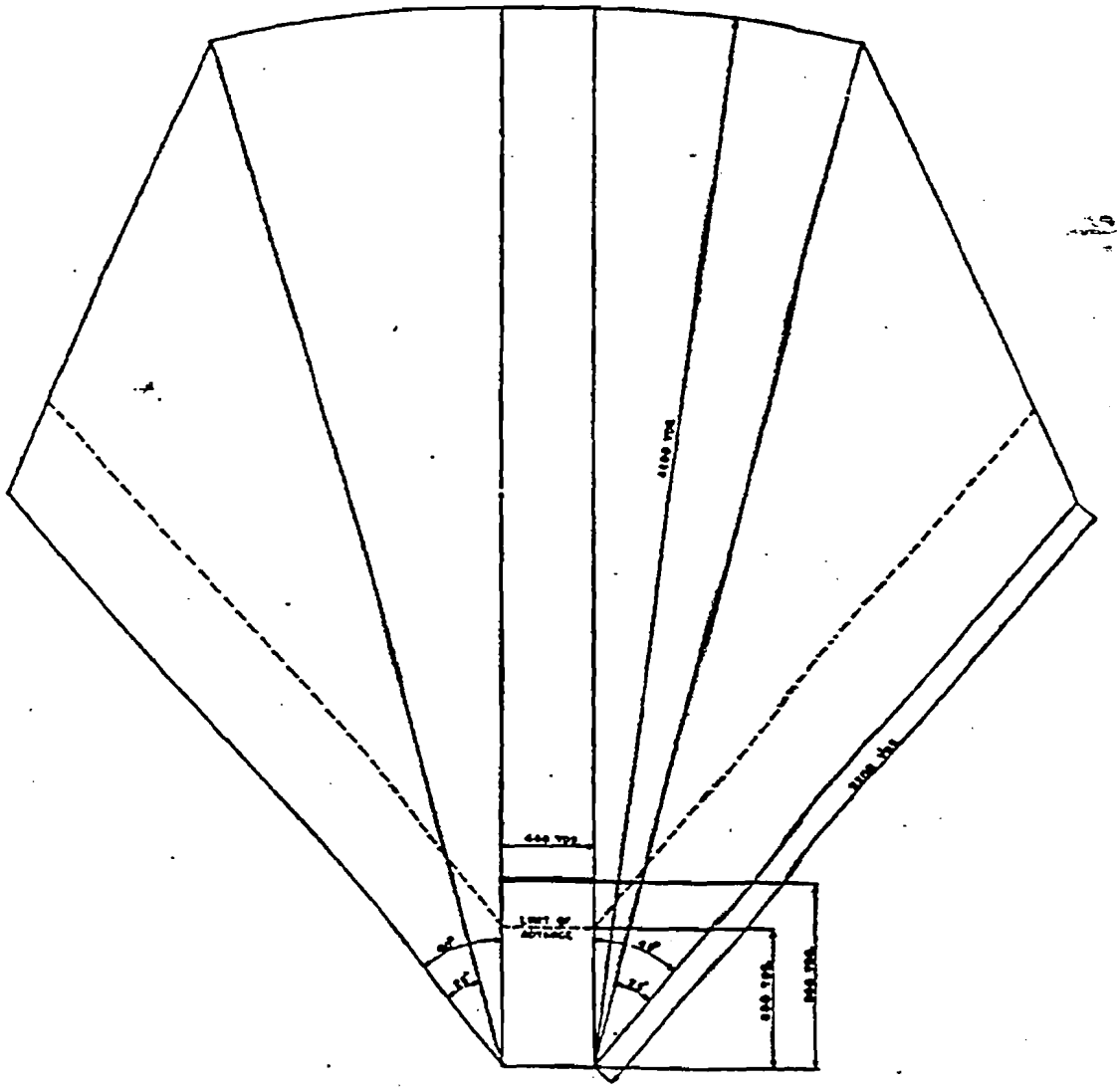
8. Grease, oil, and make minor adjustments where required.

9. Excavate small hidden trenches to drain wire trenches and target recesses where practicable.

(9) ANTIAIRCRAFT TOWED TARGET RANGE (fig. 37). Details of this range must be established locally. Construction consists only of necessary clearing to provide firing point and required visibility within the limits of fire and adjacent safety area. Height of posts marking limit of fire and character of markings must insure ready visibility.

(10) 1,000-INCH ANTITANK RANGE, MINIATURE (figs. 40 to 42). Smooth operation of target car over the transverse track is essential. To establish satisfactory operation, construction should include necessary adjustments of target car and truck under operating conditions.

TARGETS, TARGET MATERIAL, AND TRAINING COURSE LAY-OUT

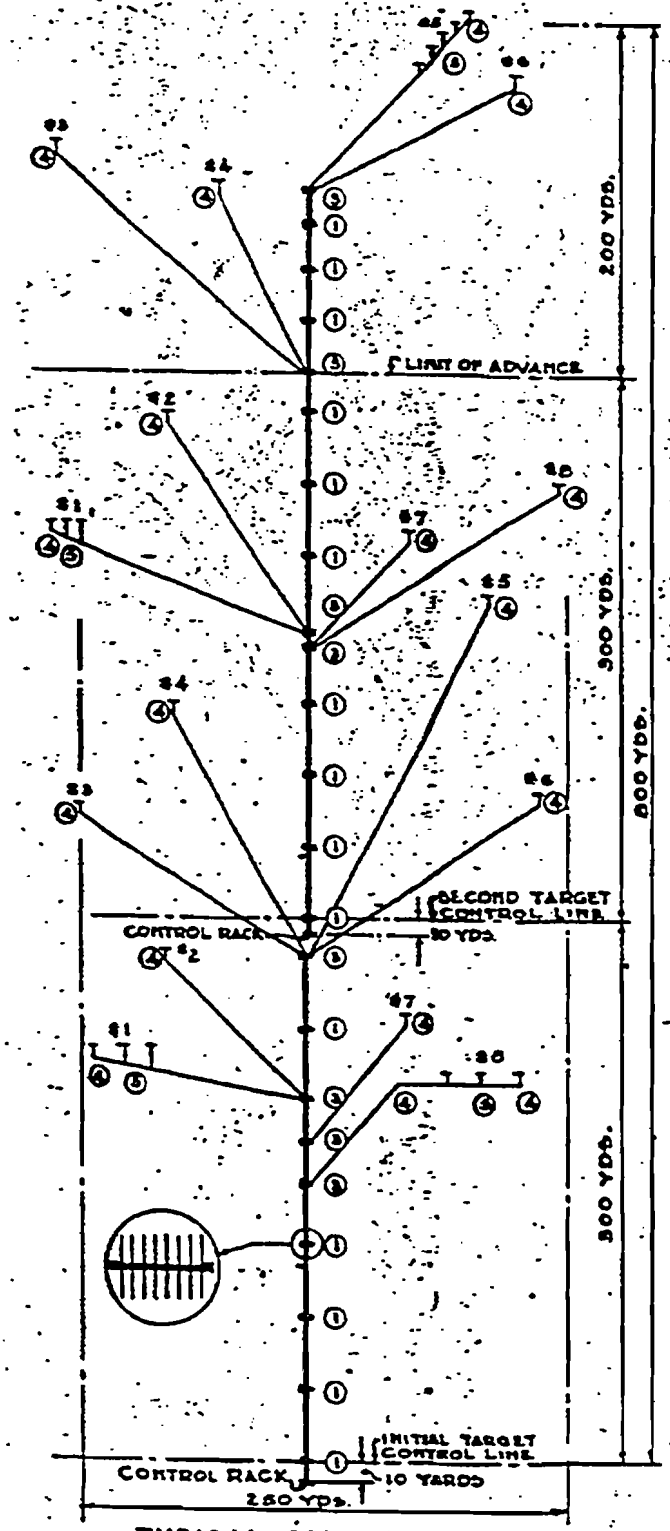


OCE 1600-100

RA PD 60956

Figure 32 — Field Target or Combat Range

CONSTRUCTION OF TARGET RANGES AND LAY-OUT OF VARIOUS OTHER RANGES AND COURSES



TYPICAL COMBAT RANGE

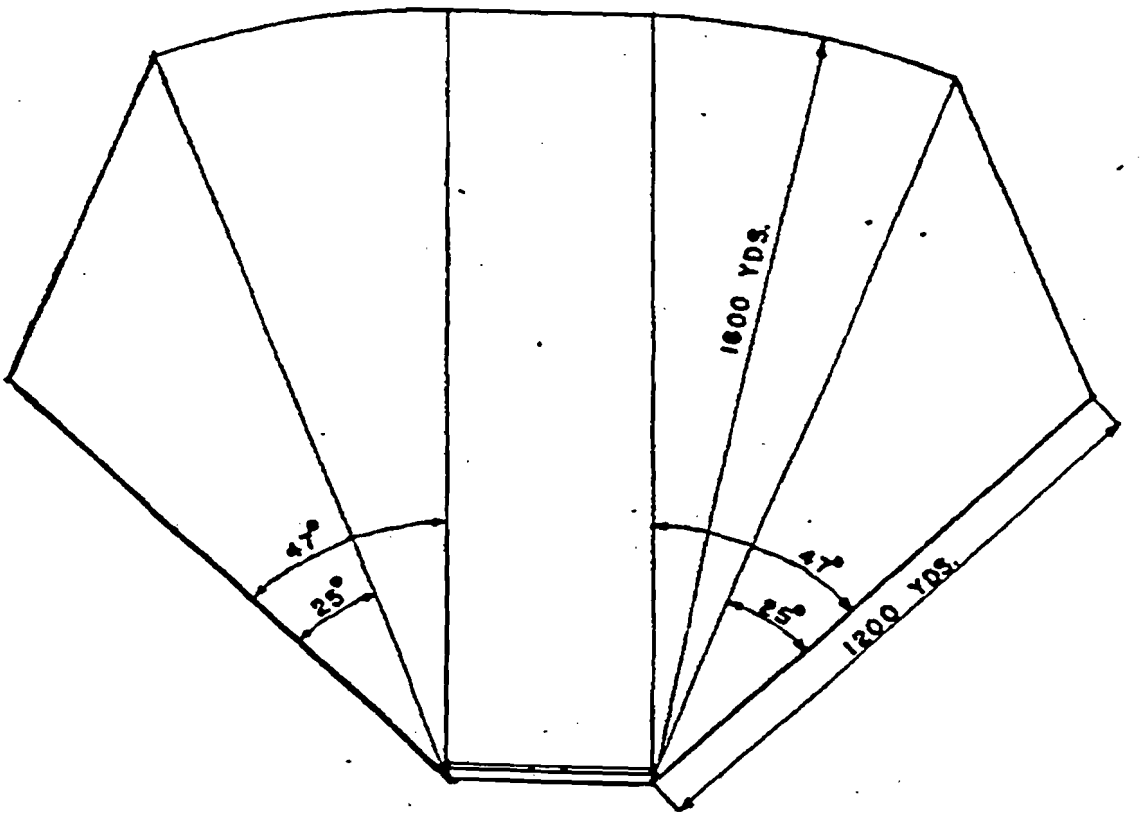
NOTE: NUMBERS MARKED #1, #2, ETC. INDICATES TARGET GROUPS CONTROLLED BY CORRESPONDING NUMBERS ON THE CONTROL UNIT. NUMBERS MARKED ①, ②, ETC. INDICATES TYPE OF WIRE SUPPORT.

OCE 1600-160

RA PD 68957

Figure 33 — Field Target or Combat Range — Typical Remote-control Target Lay-out

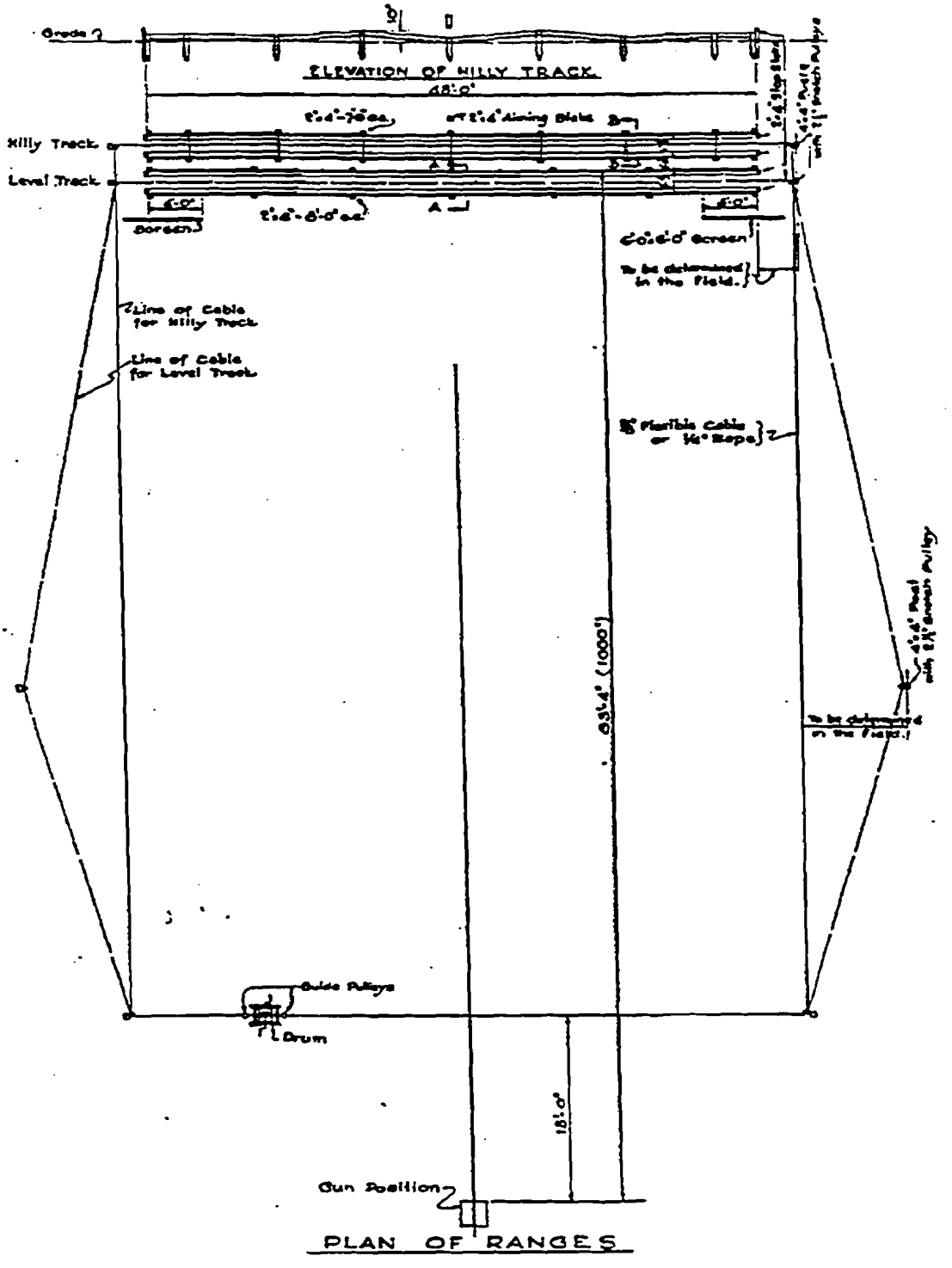
CONSTRUCTION OF TARGET RANGES AND LAY-OUT OF VARIOUS OTHER RANGES AND COURSES



OCE 1600-100

RA PD 60964

Figure 40 — 1,000-inch Antitank Range — Miniature



OCE 1600-175 RA PD 60965

Figure 41 — 1,000-inch Antitank Range — Miniature — Detail Lay-out

APPENDIX A-111

Memorandum from Commanding General, HQ, Camp Lejeune, to Commandant of the Marine Corps, dated 18 March 1946, Subject: Range Facilities, report of

1275-65

IN REPLYING REFER TO No.

HFN/jhs

ARCH II
RG 127
ENTRY: GEN CORR 1939-50
BOX 211
FILE 1275-65

UNITED STATES MARINE CORPS
HEADQUARTERS, CAMP LEJEUNE,
NORTH CAROLINA.

18 March, 1946.

Serial No. 059228

From: The Commanding General.
To: Commandant of the Marine Corps.

Subject: Range Facilities, report of.

Reference: (a) CMC ltr MC-730213, dtd 5Mar46.

Enclosures: (A) General Area Map, Camp Lejeune, N.C., Bu Y&D Drawing #162050.
(B) Proposed Range Regulations.

MAY 28 1946 FILE

1. Enclosures (A) and (B) with tabulations listed in paragraph 2 below are submitted in accordance with provisions of reference (a).

2. (Paragraph 8 of reference (a)).

(a) (See enclosure (A)).
(b) Points and Areas as indicated on enclosure (A)):

FIRING POINT	IMPACT AREA	WEAPONS	PRIORITY I	PRIORITY II	(AS REQUESTED)
1	N	90mm	AAA Bn	(none)	(none)
2	N	105mm, 90mm	Fd Arty Bn	AAA Bn	(none)
3	N	Rockets, 37mm, 57mm, 75mm, 105M7B1	Tank Bn	Rocket Pl	105M7B1, LVT(A), Infantry Bns
4	K	90mm, 105mm,	AAA Bn	Fd Arty Bn	(none)
5	(Sea)	90mm, 40mm, AA MG	AAA Bn	(none)	(all others)
6	K	37mm, 75mm, 105M7B1	LVT(A)	105M7B1	(none)
7	K	105mm	Fd Arty Bns	(none)	(none)
MG, Musk Ranges		.30cal MG, M-1 Rifle, 60&81mm Mortars	Infantry Bn	(none)	(none)
Mortar Range	L	60&81mm Mortars	Infantry Bns	(none)	(none)
Inf Wpns Dem Range		Rockets, 57mm; 81&60mm Mortars	Infantry Bns	(none)	(none)
Engr Firing Area		Demo, Flame Throwers	Engr Bn	Infantry Bns	(others)

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Subject: Range Facilities, report of.

2. (c) Areas as indicated on enclosure (A)).

AREA	TYPE	PRIORITY I	PRIORITY II
Infantry Maneuvering	Infantry	Infantry Bns	(none)
LVT(A) Training	LVT(A), Light Mobile Wpns	LVT(A) Co	AAA Bns (Field Problems)
Tank Training	Tanks, Half-Tracks	Tank Bn	105M7B1

(d) Firing Areas.

FIRING POINT	IMPACT AREA	MAXIMUM ORDINATE ANTICIPATED
1	N	12,000 ft.
2	N	20,000 ft.
3	N	3,000 ft.
4	K	19,000 ft.
5	(Sea)	35,000 ft.
6	K	3,000 ft.
7	K	20,000 ft.
MG, Musk & Mortar Ranges		4,500 ft.
Mortar Range	L	4,500 ft.

(e) Danger limits on seaward firing ranges.
1) Firing Points #1, 2 & 3. Impact Area N 4000 yds
2) Firing Point #5 - AA Range.
25,000 yards from Latitude 34°34'15", Longitude 77°16'10", on all bearings between 85°T and 000°T.

(f) Enclosure (B).

3. Training and firing areas as noted above and on enclosure (A) are considered adequate for requirements of organizations noted in reference (a) but modifications may be made and additional areas and ranges established should circumstances make them desirable. There are several inactive mortar ranges and 1000 inch ranges which can be utilized but it is believed they will not be required.

4. The mechanized antitank range which appears on enclosure (A) is not mentioned above but is available to any unit without priority for weapons no larger than 37mm or 40mmAP.

5. Enclosure (B) is in effect at present, and, subject to minor modifications, is believed to cover all contingencies.

W. A. WACHTLER,
Colonel, USMC,
Chief of Staff.

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HEADQUARTERS, CAMP LEJEUNE,
NORTH CAROLINA.

19 March, 1946.

CAMP TRAINING ORDER) : Training Facilities, Live Ammunition
NUMBER 5 1946) Demolition Areas.

References: (a) Camp Training Order #7-1945.
(b) Army Regulations #750-10.
(c) Camp Regulations, September, 1944.
(d) Camp Lejeune General Area Map, 1:20,000.
(e) Camp Special Order #5-1945 & Modif #1, re Commercial fishing in New River & tributaries.
(f) Camp General Order #16-1945, Camp Fire Bill.
(g) Camp Training Memorandum #4-1945.

1. Reference (a) is cancelled.

2. The following ranges and demolition areas established in reference (a) are disestablished and will be no longer used for firing live ammunition or for demolitions:

a) Demonstration Firing Point #1 (1364.8-1298.2)
b) Firing Point #5 (1365.90-1297.1)
c) Musketry Range "E" (1359.4-1295.6)
(1359.45-1295.7)
d) Artillery Firing Point #2 (1369.0-1284.3)
(1369.9-1284.5)
e) Artillery Firing Point #8 (1371.9-1303.15)
(1372.3-1303.4)
f) Artillery Firing Point #10 (1365.50-1293.11)
g) Artillery Firing Point #12 (1362.95-1290.10)
h) Artillery Firing Point #14 (1372.5-1299.8)
(1372.6-1299.7)
(1372.6-1300.1)
(1372.75-1300.05)
i) 1000" Range, .30 cal (1363.2-1289.3)
j) 1000" Range, .30 cal (1353.9-1306.5)
k) 1000" Range "D", .22 cal (1371.2-1295.0)
l) Area "F", 1000" Range, (1375.2-1304.5)
m) Live Ammunition Indoctrination Course, (1356.6-1305.6)
n) Live Hand Grenade Course (1365.7-1305.7)
o) Beach Artillery Firing Point (1379.7-1294.6)
p) Artillery Demonstration Firing Point (1356.4-1294.3)
q) Field Artillery Maneuvering & Firing, Area G.
r) Artillery Impact Areas - General area bounded by U.S. Route #17, Stone Creek, New River, Mill Creek, Verona Loop Road, Lewis Creek, New River & Southwest Creek.
s) L-2 Mortar Range (1358.3-1287.15)
(1358.5-1287.15)
t) M-1 Mortar Range (1354.6-1300.6)
u) OC Battalion Field Firing Range (1372.35-1296.41)

3. The currently established ranges and other facilities for use in firing live ammunition and for the use of demolitions at Camp Lejeune are listed in paragraphs 10, 11 and 12 according to the specific organization to which the facility is assigned.

4. Any organization desiring the use of any training facility or area will submit a written request to the headquarters to which such facility or area has been assigned. In case any such request cannot be granted, the matter will be

referred to G-3, Camp Headquarters, for assignment of some similar area. Requests for the use of areas for live ammunition firing or explosives, other than those listed in paragraphs 10, 11 or 12, will be submitted to G-3, Camp Headquarters.

5. Organizations desiring the use of facilities for the firing of small arms or demolitions (except [illegible]) will submit a request in writing forty-eight (48) hours [illegible] vance of the date of firing to the headquarters [illegible] range is assigned.

6. [illegible] weapon 60mm mortars, [illegible] will submit a request [illegible] date of firing to the G-3 Office, Camp Headquarters.

7. The requests for firing will include:
Name of organization
Place of firing
Date of firing
Time of firing
Type of firing
Maximum ordinate of trajectory in case of artillery or mortar firing.

8. a. Any unit firing live ammunition will take such local measures and post such guards as are necessary to safeguard life and property and to prevent entry of personnel into the immediate danger area.

b. Regulations published in reference (b) and all Camp Lejeune and Marine Corps regulations governing firing will be observed.

c. Special care will be exercised by officers in charge to cease firing high trajectory weapons when aircraft approach and enter the danger area.

d. Special precaution will be observed by artillery units using time firing. Personnel will be barred from areas directly forward of guns, and roads over which the trajectory passes will be closed.

e. At no time will traffic on the Intracoastal Waterway be interrupted by firing without specific authority from Camp Headquarters. Reference (e), paragraphs 2 and 3, is called to attention for special observance.

f. Duds will be handled in accordance with reference (c): "Anyone finding a dud will leave it alone, mark the position and immediately notify Camp Ordnance Officer...Units firing high explosive shells on the Reservation will report duds that occur during the firing if their location can be determined." In lots in which an unusual number of duds or misfires occur, the number of the lot will be reported to the Camp Ordnance Officer.

g. The Magazine Area (that area bounded by French Creek, Jumping Run, Cow Head Creek and Onslow Beach Road) will not be included in the line of fire or on the danger area for any live ammunition firing.

h. Special precaution must be observed to prevent starting forest fires by units firing tracers, high explosive shells, and demolitions. Reference (f), section 11, paragraph (e), states: "All unit engaged in training requiring the use of tracers, high explosives, white phosphorus or other material which creates a fire hazard, will organize and assemble at the training site one (1) sixteen (16) man detail as set forth in Appendix 1. That detail may be composed of men engaged in the training. When CLASS FOUR or FIVE danger condition exists, this detail will be doubled." This headquarters will issue a warning when a CLASS FOUR or FIVE condition exists. If conditions demand it, this headquarters will order cessation of firing.

The fire detail will be organized and equipped with the necessary equipment, transportation and communications and so posted to be ready available to extinguish fires before they get out of hand. At the conclusion of firing a search will be made of the impact area for any smoldering firings which may have started.

The responsibility of preventing fires and of extinguishing fires is that of the unit conducting the firing until the fire reaches such a condition that the Fire Marshal must be called.

9. a. The ranges for the firing of .30 cal and .50 cal ammunition will be so constructed to allow a distance of 4,000 yards from the firing point (or the most forward point of fire) to the end of the range.

b. The boundaries set down by this order will be observed and no firing will be permitted outside the limits of the ranges without the permission of this headquarters.

10. The following facilities for live ammunition and demolitions are reserved by Headquarters, Camp Lejeune (coordinates refer to reference (d)):

a. Dedicated Anti-Tank Range
Anti-tank and rocket grenades, .30 cal & .50 cal, 20mm, 37mm, 40mm.
Coordinates of firing point (1376.5-1292.5)
Danger area to coordinates (1381.0-1292.1)
(1377.4-1289.6) and
10,000 yards seaward of firing point.
Browns' Island, ocean area.
Remarks: Electrically driven target carrs, remote control from towers. 3½ miles of track.

b. Rocket Range #1 (BT-5) (Aviation)
Rocket firing only
Danger area to coordinates (1382.7-1293.2)
and radius of 7500 yards from point.

c. SR-2, Browns' Island (Aviation)
20mm strafing
Danger Area: Browns' Island [illegible]
(1379.1-1291.1) (1380.6-1294.4) (1383.0-1292.5)
Danger Area: Impact Area plus 10,000 yards seaward.

d. Range [illegible]
105 mm, 60mm and 81mm mortars
Coordinates of firing point (1375.9-1290.7)
Danger Area to Coordinates (1372.2-1300.3)
(1372.2-1293.2)
General direction of fire - 271 grid azimuth
Maximum Ordinate of trajectory - 1800 yards.

e. [illegible]
[illegible]
Coordinates of firing point [illegible]
Danger Area to coordinates [illegible]
[illegible]
Maximum Ordinate of trajectory [illegible]

f. [illegible]
and [illegible]
Coordinates of firing point (1376.4-1297.0)
[illegible]
Danger Area to coordinates [illegible]
[illegible]
General direction of fire - [illegible] grid azimuth
[illegible]

g. Musketry Range "G-1"
.30 cal
Coordinates of firing point [illegible]
Danger area to coordinates [illegible]
[illegible]
General direction of fire - [illegible] Grid Azimuth

h. L-1 Mortar Range
60mm & 81mm mortars
Coordinates of firing point [illegible]
[illegible]
Danger area to coordinates [illegible]
[illegible]
[illegible]

[illegible]
[illegible]
Coordinates of firing point [illegible]
Danger area to coordinates [illegible]
[illegible]
Maximum Ordinate of Trajectory - [illegible] Yards

11. The following ranges are assigned to Headquarters 1st Special Marine Brigade:

a. Machine Gun Range "A"
.30 cal
Coordinates of firing point [illegible]
[illegible]
Danger area to coordinates [illegible]
[illegible]
General direction of fire - 181° Grid Azimuth

b. Machine Gun Range "B"
.30 cal
Coordinates of firing point (1368.3-1299.8)
(1368.4-1299.6)
Danger area to coordinates (1372.3-1301.0)
(1372.5-1301.1)
General direction of fire - 78° Grid Azimuth
Remarks: 1000" Range adjacent

c. Musketry Range "A"
Field Firing Stationary Targets .30 cal & .30 cal
Field Firing Surprise Targets .30 cal
Demonstrative Firing Stationary Targets 81mm & 60mm mortars
Coordinates of firing point (1372.0-1303.8)
(1372.5-1303.7)
Danger Area to coordinates (1370.8-1306.0)
(1371.9-1303.7)
General direction of fire - 195° Grid Azimuth
Maximum Ordinate of Trajectory - [illegible] Yards

d. Musketry Range "B"
.30 cal
Coordinates of firing point (1368.6-1301.0)
Danger Area to coordinates (1372.4-1302.3)
(1371.5-1298.4)
General direction of fire - 105° Grid Azimuth

12. The following training facilities for live ammunition and demolitions are assigned to the Range Detachment:

a. "1000" Machine Gun Range
.30 cal
Firing Point - adjacent to mechanical pistol range
Remarks: 12 targets

b. 1000 yard Machine Gun Range
.50 cal MG and Rifles, 60mm mortars, 37mm canister shot, flame throwers, anti-tank rockets.
Coordinates of firing point (1357.1-1289.53)
(1357.16-1289.53)
Adjacent to Rifle Range "C"
Danger Area - Area within limits of rifle range impact area.

c. Individual Field Firing Rifle Range #1
.30 cal
Firing Point - Adjacent to Rifle Range "A"
Danger Area - Area within limits of rifle range impact area.

d. Individual Field Firing Rifle Range #2
.30 cal
Firing Point - Adjacent to Rifle Range "A"
Danger Area - within limits of rifle range impact area.

e. Technical Pistol Range
Firing Point - adjacent to rifle range
Danger Area - area within limits of rifle range.

f. Rifles Ranges "B", "A", "C"
.30 cal
Coordinates of firing point (1356.6-1289.5)
Danger area to coordinates (1356.8-1293.8)
(1357.7-1293.8)

13. The following training facilities for live ammunition and demolitions are assigned to Specialist Training Regiment:

a. Engineer Firing Range
Anti-tank and rocket grenades demolitions.
Coordinates of firing point (1374.31-1293.30)
Danger area to coordinates (1374.05-1294.55)
(1374.2-1295.75)
(1376.1-1295.0)
(1376.05-1295.1)
(1376.85-1295.8)
(1376.4-1294.1)

b. Engineer Beach demolitions - Training area
[illegible] right Extended front a trench in line the beach (1374.15-1287.85) to
(1375.[illegible]) to ([illegible]) and a line northward to inland waterway. Line extends from the inland waterway which bisects
(1370.80-1288.30)

c. [illegible]
Coordinates of firing point (1376.6-1289.8)
Danger area to coordinates (1377.75-1290.90)
(1380.2-1294.3)
(1382.6-1292.0)
(1378.8-1288.7)

c. Artillery Firing Point #6
37mm, 57mm, 75mm, 105mm, Rockets
Coordinates of firing point (1379.70-1294.04)
Danger area to coordinates (1377.75-1290.90)
[illegible]

e. Artillery Firing Point #5.
[illegible]
Coordinates of firing point [illegible]
Direction of fire in area bounded from [illegible] to 215° [illegible] to [illegible] yards.

f. Artillery Firing Point #6
37mm, 75mm, 105mm
Impact area - Area K, bounded on the West by Lewis Creek, Verona Loop Road to USC&GS Bench mark 45, from USC&GS Bench mark 45 [illegible] Bench mark [illegible], and New River Inlet [illegible] Lewis Creek.

g. Artillery Firing Point #7
[illegible]
Coordinates of firing point [illegible]
Impact area - Area K, bounded on the West by Lewis Creek, Verona Loop Road to USC&GS Bench mark 45, from USC&GS Bench mark 45 by road to Bench mark [illegible], [illegible] New River Inlet to North of Lewis Creek.

15. The following facility for live ammunition firing is assigned to Montford Point Camp:

a. 1000 yd Range ([illegible]-1506.0)
.50 cal BAR familiarization
Danger Area: Fire into Butts
General direction of fire - 240° Grid Azimuth

16. Refer to (g) is modified to the extent that units assigned ranges will take necessary steps to comply with paragraph (g) prior to 15 April, 1946.

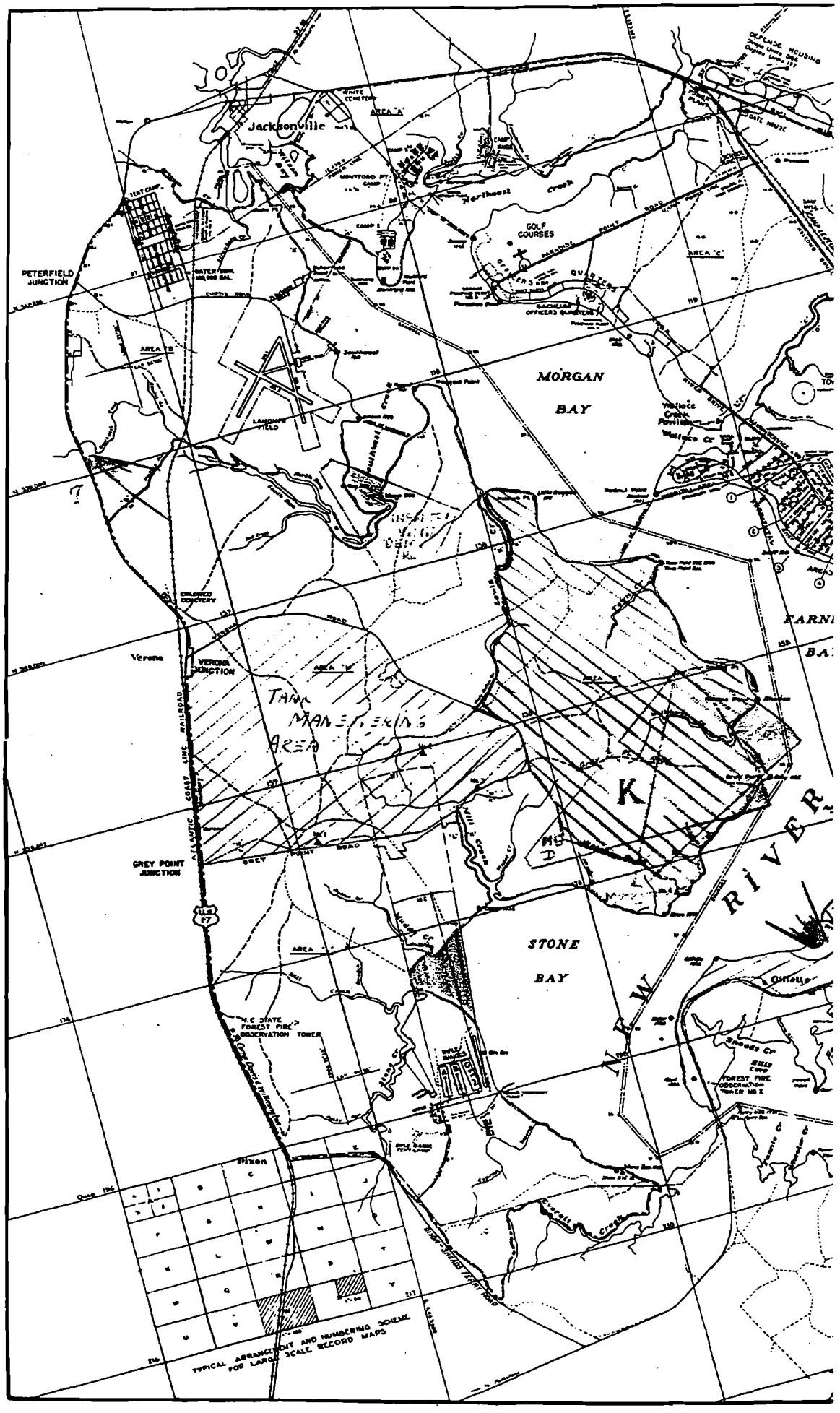
BY COMMAND OF LIEUTENANT GENERAL [illegible]

[illegible] W. [illegible]
Colonel, USMC
Chief of Staff

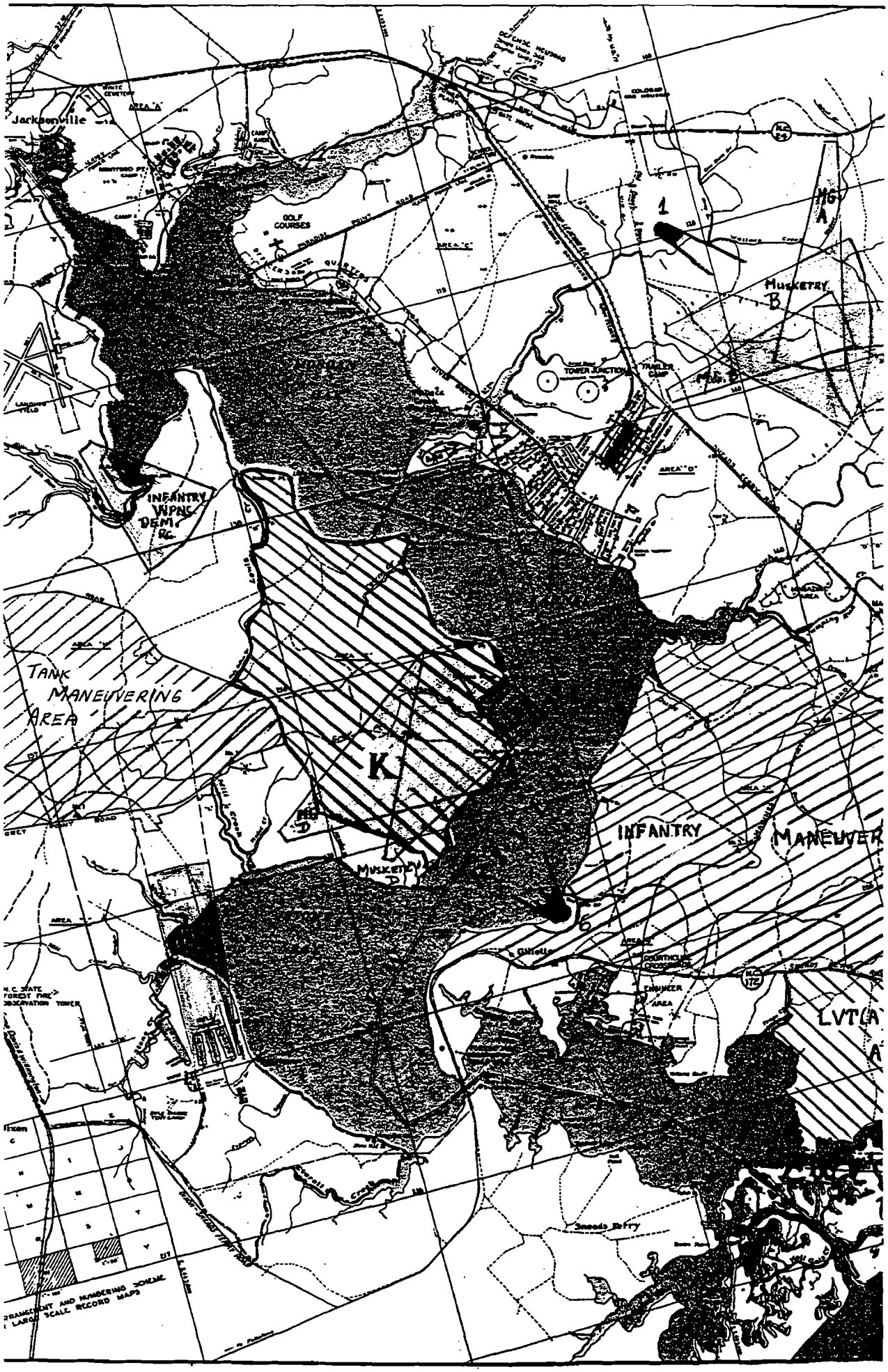
DISTRIBUTION:

C E R T I F Y A B [illegible]

Harry E. Hayes
[illegible]
Lt Col, USMC
S-3.



TYPICAL ARRANGEMENT AND NUMBERING SCHEME FOR LARGE SCALE RECORD MAPS


Jacksonville
GOLF COURSES
MUSKETRY
B
TOWER JUNCTION
TRAILER CAMP
INFANTRY
WPNS
DEM
RC
TANK
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AREA
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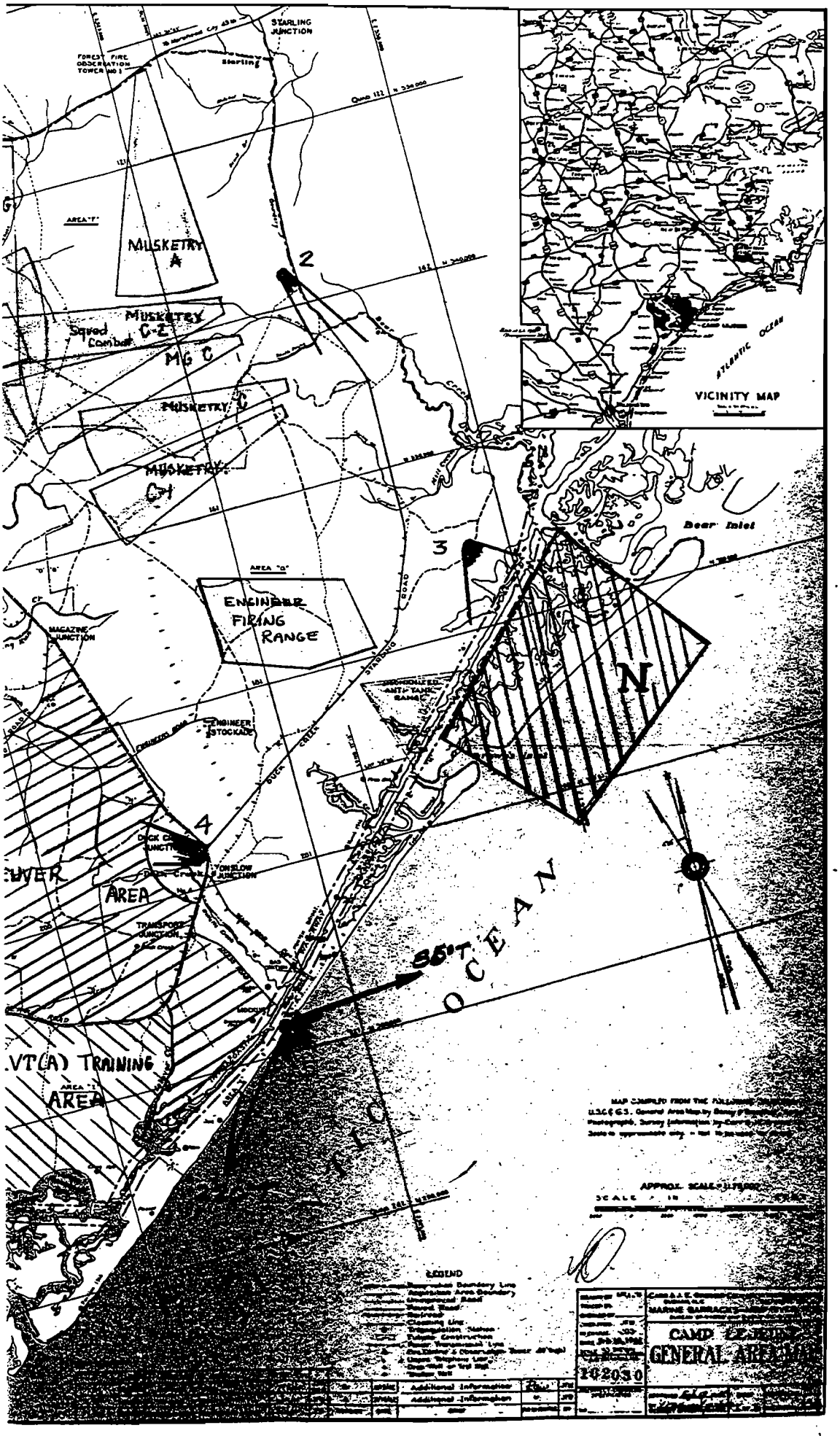
MUSKETRY
D
ENGINEER
AREA
LVTA
A
Seeds Ferry


STARLING JUNCTION
FOREST FIRE COORDINATION TOWER NO 1
AREA "F"
MUSKETRY A
MUSKETRY C-2
Squad Combat
MG C
MUSKETRY C
MUSKETRY C-1
AREA "G"
ENGINEER FIRING RANGE
MAGAZINE JUNCTION
ENGINEER STOCKADE
DUCK CREEK
DUCK CREEK JUNCTION
JACKSONVILLE JUNCTION
TRANSPORT JUNCTION
AREA
VT(A) TRAINING
AREA
Bear Inlet
VICINITY MAP
ATLANTIC OCEAN
35°T
OCEAN
APPROX. SCALE
LEGEND
CAMP LEJEUNE
GENERAL AREA MAP
102030

APPENDIX A-112

Camp General Order Number 78 1946 and Modification No. 1, dated 9 December 1946 and 6 March 1947

REPRODUCED AT THE NATIONAL ARCHIVES

1990-20/DEA/agg

HEADQUARTERS, MARINE BARRACKS,
CAMP LEJEUNE, NORTH CAROLINA

6 March 1947.

MODIFICATION NO. 1
TO
CAMP GENERAL ORDER)
: Training Facilities, Regulations
NUMBER 78 1946) Governing Use of.

1. The following changes to Camp General Order Number 78-1946 are hereby published:

(a) To paragraph 3 (1) add: "and (1366-1287)(1368-1286)"

(b) Change paragraph 5 (a) (9) to read: "Engineer Firing Range, coordinate squares (1374-1292)(1374-1293) (1374-1294) (1375-1293) (1375-1294). (Para. 3 (b) above)"

(c) Change paragraph 5 (b) (1) to read: "Engineer Firing Range, coordinate squares (1366-1287) (1368-1286). (Para. 3 (1) above)"

BY COMMAND OF BRIGADIER GENERAL NIMMER

R. H. RIDGELY, JR.,
Colonel, U. S. Marine Corps,
Chief of Staff,
Acting.

DISTRIBUTION: "B"

O F F I C I A L

B. W. GIEBLER
Captain, USMC
Camp Adjutant.

Enclosure (A).

ARCH II
RG 127
[illegible]
Box 3
[illegible]

REPRODUCED AT THE NATIONAL ARCHIVES

1990-20
DEA/ggg

HEADQUARTERS, MARINE BARRACKS,
CAMP LEJEUNE, NORTH CAROLINA.

9 December, 1946.

CAMP GENERAL ORDER)
NUMBER 78 1946) : Training Facilities, Regulations Governing Use of.

References: (a) Camp Training Order No. 5-1946.
(b) Army Regulations No. 750-10.
(c) Camp Regulations.
(d) Camp Lejeune General Area Map 1:20,000.
(e) Camp Fire Bill, CGO No. 73-1946.

1. Reference (a) is hereby revoked. All previous assignments of training facilities, except the Rifle Range, are revoked.

2. (a) The Rifle Range will be operated in accordance with Special Order No. 90-1946.

(b) The Rifle Range consists of three 50-Target Ranges, "A", "B", and "C", a Mechanical Pistol Range, a 1000" Range, a 1000 yard Machine Gun Range, and an Individual Field Firing Range.

(c) The area confined by the coordinates (1355.25-1289.5) (1357.3-1289.5) (1357.4-1293.5) (1354.8-1293) is designated a Danger Area. No one will enter this Danger Area without prior clearance from the Officer-in-Charge of the Rifle Range.

3. The following is a list of approved training facilities:

(a) Musketry Range "A".

Field firing, .30 and .50 cal., 60 and 81mm mortars
Coordinates of firing point (1372.03-1303.75) (1372.5-1303.7
Danger area to coordinates (1370.9-1300.6) (1371.9-1300.25)
General direction of fire - 195° Grid azimuth
Maximum ordinate - 1899 yards

(b) Musketry Range "B".

Field firing .30 cal.
Coordinates of firing point (1368.6-1301.0)
Danger area to coordinates (1371.9-1302.1) (1371.2-1298.7)
General direction of fire - 105° Grid azimuth

(c) Musketry Range "C".

Field firing .30 cal.
Coordinates of firing point (1376.35-1297.94) (1376.4-1297.7)
Danger area to coordinates (1372.95-1297.85) (1373.02-1297.05)
General direction of fire - 264° Grid azimuth

(d) Musketry Range "C-1"

Field firing .30 cal.
Coordinates of firing point (1376.1-1297.6)(1376.2-1297.56)
Danger area to coordinates (1372.3-1296.8) (1373.4-1294.6)
General direction of fire - 245° Grid azimuth

(e) Machine Gun Range "A"

Field firing .30 cal.
Coordinates of firing point (1375.05-1304.45)(1375.3-1304.45)
Danger area to coordinates (1373.9-1300.6)(1375.8-1300.4).
General direction of fire - 181° Grid azimuth

(f) Machine Gun Range "B"

Field firing .30 cal.
Coordinates of firing point (1368.3-1299.85)(1368.34-1299.6)
Danger area to coordinates (1371.6-1300.85)(1371.8-1300)
General direction of fire - 078° Grid azimuth
Remarks: 1000" range adjacent.

(g) Machine Gun Range "C"

Field firing .30 cal., 60 and 81mm mortars
Coordinates of firing point (1375.9-1298.7)
Danger area to coordinates (1372.4-1299.1)(1372.4-1298.4)
General direction of fire - 271° Grid azimuth
Maximum ordinate - 1899 yards

(h) Machine Gun Range "D"

Field firing .30 cal., 60 and 81mm mortars
Coordinates of firing point (1359.1-1292.9)
Danger area to coordinates (1362.3-1293.99)(1362.1-1294.6)
General direction of fire - 70° Grid azimuth
Maximum ordinate - 1899 yards

(i) Infantry Weapons Demonstration Course

All infantry weapons including 37mm AT and recoiler weapons.
Coordinates of firing point (1357.0-1301.9)
Danger area to coordinates (1356.5-1298.6) (1359.4-1299.7)
Maximum ordinate - 1899 yards

(j) L-1 Mortar Range

Field firing 60 and 81mm mortars
Coordinates of firing point (1356.95-1293.9)(1357.05-1293.93)
Danger area to coordinates (1356.8-1291.9)(1358.15-1292.6)
General direction of fire - 165° Grid azimuth
Maximum ordinate - 1899 yards

(k) Mechanized Anti-Tank Range

Anti-Tank and rocket grenades, .30 and .50 cal., 20mm, 37mm, 40mm.
Coordinates of firing point (1376.5-1292.5)
Danger area to coordinates (1381.0-1292.05)(1377.4-1289.6) and extending seaward of firing point 10,000 yards, including the Brown's Island ocean area.
Electrically driven, remote control target cars.

(l) Engineer Firing Range

AT and rocket grenades, demolitions, flame throwers.
Danger area coordinate squares (1374-1294)(1375-1294) (1374-1292)(1374-1293)(1375-1293)

[redacted]ral direction of fire - 165° Grid azimuth
Maximum ordinate - 1899 yards

[redacted]

(k) [redacted] Anti-Tank Range

Anti-Tank and rocket grenades, .30 and .50 cal., 20mm, 37mm, 40mm.
Coordinates of firing point (1376.5-1292.5)
Danger area to coordinates (1381.0-1292.05)(1377.4-1289.6) and extending seaward of firing point 10,000 yards, including the Brown's Island ocean area.
Electrically driven, remote control target cars.

(l) Engineer Firing Range

AT and rocket grenades, demolitions, flame throwers.
Danger area coordinate squares (1374-1294)(1375-1294)(1374-1292)(1374-1293)(1375-1293)

(m) Sneads' Creek Bridging Area

Engineer Bridging facilities and training.
Coordinate squares (1361-1289) (1362-1289)

(n) Transport Mockup

Located on Inland Waterway just below Onslow Beach Ferry at coordinates (1373.5-1287). Two 10-ton booms, facilities for embarking and debarking.

(o) Engineer Stockade Area

Engineer equipment area, classrooms, bivouac area.
Coordinate squares (1373-1292)(1373-1291) and (1374-1291)

(p) Montford Point 1000" Range

.30 cal., .45 cal.

Coordinates (1359.2-1306.0)
Danger area - fire into butts
General direction of fire - 242° Grid azimuth

(q) "C" Range Bivouac Area

Galley, water and heat facilities for 1000 men.
Coordinates (1376.4-1297.8)
(See paragraph 11(c) of this order)

4. Artillery Firing Areas.

(a) Impact Areas

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(1) Area (K) bounded by Lewis Creek, Verona Loop Road to Mill Creek, down Mill Creek to mouth, and New River to mouth of Lewis Creek.

(2) Area (N), Brown's Island Impact Area. Brown's Island bounded by the Intra-coastal Waterway Brown's Inlet, Atlantic Ocean, and Bear Inlet.

(b) Direct Fire Artillery Range

All caliber artillery firing direct fire, including Tanks and LVT's.
Coordinates of firing points (1378.7-1294.4)(1278.85-1294.5)
Danger area to coordinates (1380.15-1291.3)(1381.8-1293.1) extending 14000 yds seaward.
General direction of fire - 135° Grid azimuth

(c) No firing points or position areas will be designated at this time. As it becomes necessary, firing points will be designated by modifications to this General Order.

5. Assignment of training facilities is as follows:

(a) To Second Marine Division

(1) Musk "A" (Para. 3(a) above)
(2) Musk "B" (Para. 3(b) above)
(3) Musk "C" (Para. 3(c) above)
(4) Musk "C-1" (Para. 3(d) above)
(5) MG "A" (Para. 3(e) above)
(6) MG "B" (Para. 3(f) above)
(7) MG "C" (Para. 3(g) above)
(8) L-1 Mortar Range (Para. 3(j) above)
(9) Engineer Firing Range, coordinate squares (1374-1294) and (1375-1299) (Para. 3(l) above)
(10) Direct Fire Artillery Range (Para. 5(b) above)
(11) Engineer Stockade Area (Para. 3(o) above)

(b) To Engineer School Battalion

(1) Engineer Firing Range coordinate squares (1374-1292), (1374-1293) and (1375-1295) (Para. 3(l) above)
(2) Sneads' Creek Bridging Area (Para. 3(m) above)

(c) To Montford Point Camp

(1) MPC 1000" Range (Para. 3(p) above)

6. (a) The following areas are hereby designated <u>Danger Areas</u>.

(1) Musk "A" (See para 3(a) above)
(2) Musk "B" (See para 3(b) above)

(3) Musk "C" (See para 3(c) above)
(4) Musk "C-1" (See para 3(d) above)
(5) MG "A" (See para 3(e) above)
(6) MG "B" (See para 3(f) above)
(7) MG "C" (See para 3(g) above)
(8) MG "D" (See para 3(h) above)
(9) Inf. Weapons Demonstration Course (See para 3(i) above.
(10) Engineer Firing Range (See para 3(l) above)

7. Units to which ranges are assigned by this order will be responsible for reports of firing of live ammunition in accordance with the following:

(a) [illegible]

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(1) Musk "A" (See para 3(a) above)
(2) Musk "B" (See para 3(b) above)

(3) Musk "C" (See para 3(c) above)
(4) Musk "C-1" (See para 3(d) above)
(5) MG "A" (See para 3(e) above)
(6) MG "B" (See para 3(f) above)
(7) MG "C" (See para 3(g) above)
(8) MG "D" (See para 3(h) above)
(9) Inf. Weapons Demonstration Course (See para 3(i) above.
(10) Engineer Firing Range (See para 3(l) above)

7. Units to which ranges are assigned by this order will be responsible for reports of firing of live ammunition in accordance with the following:

(a) For firing of small arms (except Rifle Range) demolitions, and bazooka, reports will be submitted to reach this Headquarters (G-3) two (2) working days in advance of the date of firing.

(b) Reports of high trajectory fire (60mm and 81mm mortar), anti-tank, and all artillery will be submitted to reach this headquarters (G-3) six (6) working days in advance of the date of firing.

(c) Reports of firing will include name of organization, place of firing, date and time of firing, type of firing, and maximum ordinate in the case of artillery or mortar firing.

8. (a) Use of facilities not assigned by this order or modifications thereto will be arranged in writing with this headquarters (G-3), in accordance with the time limits prescribed by paragraph 7 above.

(b) Use of facilities assigned by this order or modification thereto by other than the organizations to which assigned may be arranged without reference to this headquarters, subject to the provisions of paragraph 7 above.

9. (a) Any unit firing live ammunition will take such local measures and post such guards as are necessary to safeguard life and property and to prevent entry of unauthorized personnel into the immediate Danger Area.

(b) Regulations published in reference (b) and all Camp Lejeune and Marine Corps regulations governing firing will be observed.

(c) Special care will be exercised by officers in charge of firing units to cease firing high trajectory weapons when aircraft approach and enter the Danger Area.

REPRODUCED AT THE NATIONAL ARCHIVES

(d) Special precautions will be observed by artillery units using time fire. Personnel will be barred from areas directly forward of the guns and roads over which the trajectory passes will be closed during the firing.

(e) At no time will traffic on the Intra-Coastal Waterway be interrupted without specific authority from Camp Headquarters.

(f) Duds will be handled in accordance with the following:

"Anyone finding a dud will leave it alone, mark the position, and immediately notify this headquarters (G-3) who will take necessary action for removal and destruction of the dud. Units firing high explosive shells on the reservation will mark and so report all duds that occur during firing."

(g) The Magazine Area (that area bounded by French Creek, Jumping Run, Cow Head Creek, and the Onslow Beach Road) will not be included in the line of fire or in the Danger Area of any firing involving live ammunition.

(h) Special precautions must be used to prevent starting forest fires by units firing tracer ammunition, rockets, high explosive shells, or demolitions. Paragraph 10(f) of reference (e) states: "All units engaged in training requiring the use of tracers, high explosives, white phosphorus, flame throwers, or other material which creates a fire hazard will organize and assemble at the training site one (1) detail as set forth in Appendix 1 of this order. This detail may be composed of men engaged in the training. When CLASS FOUR or FIVE fire danger condition exists the detail will be doubled." This headquarters will issue a warning when CLASS FOUR or FIVE exists and will order cessation of firing if conditions warrant.

The fire detail will be organized and equipped with the necessary tools, transportation, and communications and will be so posted as to be readily available to extinguish fires before they become serious. At the conclusion of firing a careful search will be made to insure that no smoldering fires are left in the impact area.

Units conducting firing will make every attempt to prevent the starting of fires; or, once started, to extinguish them. However, when it appears that a dangerous fire has been started, the Fire Marshal (Phone 7070) will be notified immediately.

10. (a) The firing of .30 cal. and .50 cal. ammunition of field firing problems will be so conducted as to allow a distance of 4000 yards from the most forward point of firing to the end of the Danger Area.

(b) The boundaries of ranges set down by this order will be observed and no firing will be permitted outside of the limits of the designated ranges without prior permission of this headquarters.

11. Bivouac Area

(a) Organizations desiring the use of the bivouac areas will make their requests in writing (two copies) to reach this headquarters (G-3) four (4) working days in advance of the date of use. Requests will show grid coordinates of bivouac, size of area to be used, number of men to be billeted, type of shelter to be used, dates of use, and the name of the officer to be designated as Unit Malaria Control Liaison Officer.

[redacted] the most forward point of firing to the end of the Danger Area.

[redacted]

(b) The boundaries of ranges set down by this order will be observed and no firing will be permitted outside of the limits of the designated ranges without prior permission of this headquarters.

11. Bivouac Area

(a) Organizations desiring the use of the bivouac areas will make their requests in writing (two copies) to reach this headquarters (G-3) four (4) working days in advance of the date of use. Requests will show grid coordinates of bivouac, size of area to be used, number of men to be billeted, type of shelter to be used, dates of use, and the name of the officer to be designated as Unit Malaria Control Liaison Officer.

(b) The officer designated as Unit Malaria Control Liaison Officer will contact the Camp Malaria Control Officer to draw appropriate supplies and act as liaison between the using unit and the Camp Malaria Control Officer.

(c) In the case of the "C" Range Bivouac Area, the facilities will be issued to using units by the Camp Property Officer on memorandum receipt upon notification by this headquarters (G-3).

BY COMMAND OF BRIGADIER GENERAL NIMMER:

R. H. RIDGELY, JR.,
Colonel, U.S. Marine Corps,
Chief of Staff,
Acting.

DISTRIBUTION: "B"

O F F I C I A L:

B. W. GIEBLER,
Captain, USMC,
Camp Adjutant.

APPENDIX A-113

Base Order 11102.1B, dated 5 May 1960

HEADQUARTERS, MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

BO 11102.1B
3D/JTS/dmb
5 May 1960

BASE ORDER 11102.1B

Subj: Regulations governing the use of Field Firing Ranges, Training Facilities and Maneuver Areas

Ref: (a) U.S. Army Regulations 385-63, Safety
(b) Map H.O. 15,042-50-1A, United States - East Coast, North Carolina: Approaches to New River 1:50,000, 2nd Ed., 24 Feb 1958, Revised 20 Oct 1958
(c) U.S. Coast Pilot, Atlantic Coast; Section D: Cape Henry to Key West, Fifth (1948) Edition
(d) Base Order 5000.1A
(e) Base Order 8010.1
(f) Base Order 11210.3A

Encl: (1) Regulations Governing the Use of Field Firing Ranges, Training Facilities and Maneuver Areas
(2) Telephone Number List
(3) Field Firing Ranges and Training Facilities
(4) Maneuver Area Overlay
(5) Camp Davis Overlay
(6) Range and Survey Control Marker Description
(7) Recommended Road Guard Special Orders

1. Purpose. To promulgate regulations governing the use of field firing ranges, training facilities and maneuver areas of this Base.

2. Cancellation. The following Base Orders are cancelled on 1 June 1960: BO 3530.1A, BO 5510.1A, BO 8027.1A, BO 11102.1A, and BO 11102.2.

3. Applicability. All military and non-military individuals and organizations attached to, serving within the geographical limits of, or utilizing the facilities of, this Base will comply with this order.

4. Effective Date. This order is effective 0001, 1 June 1960.

WIL DIST - COE
ENVIRO OFFICE
DANGER ZONE FILES

BO 11102.1B
5 May 1960

BY COMMAND OF BRIGADIER GENERAL S. S. WADE

K. A. JORGENSEN
Colonel, U.S. Marine Corps
Chief of Staff

DISTRIBUTION: "A" and "F"
Plus: ComFive (5)
ComSix (5)
CG, FMFLant (5)
CG, Fort Bragg, N.C. (3)
CG, 2d MAW (25)
CG, MCAS, ChPt, N.C. (5)
CG, LFTU, Little Creek, NORVA (5)
CO, MCAAS, Beaufort, S.C. (2)
CO, Seymour Johnson AFB, Goldsboro, N.C.
DistEngr, USA, Corps of Engrs, Customhouse Wilmington, N.C.
OinC, USCG Station, Wilmington, N.C.
OinC, USCG Station, Morehead City, N.C.
OinC, USCG Station, Swansboro, N.C.
OinC, Res & Ln Unit, MCB (70)
G-3, MCB (Range Officer) (310)

OFFICIAL:

Homer King

HOMER KING
Major, U.S. Marine Corps
Base Adjutant

REGULATIONS GOVERNING THE USE OF FIELD FIRING RANGES, TRAINING FACILITIES & MANEUVER AREAS

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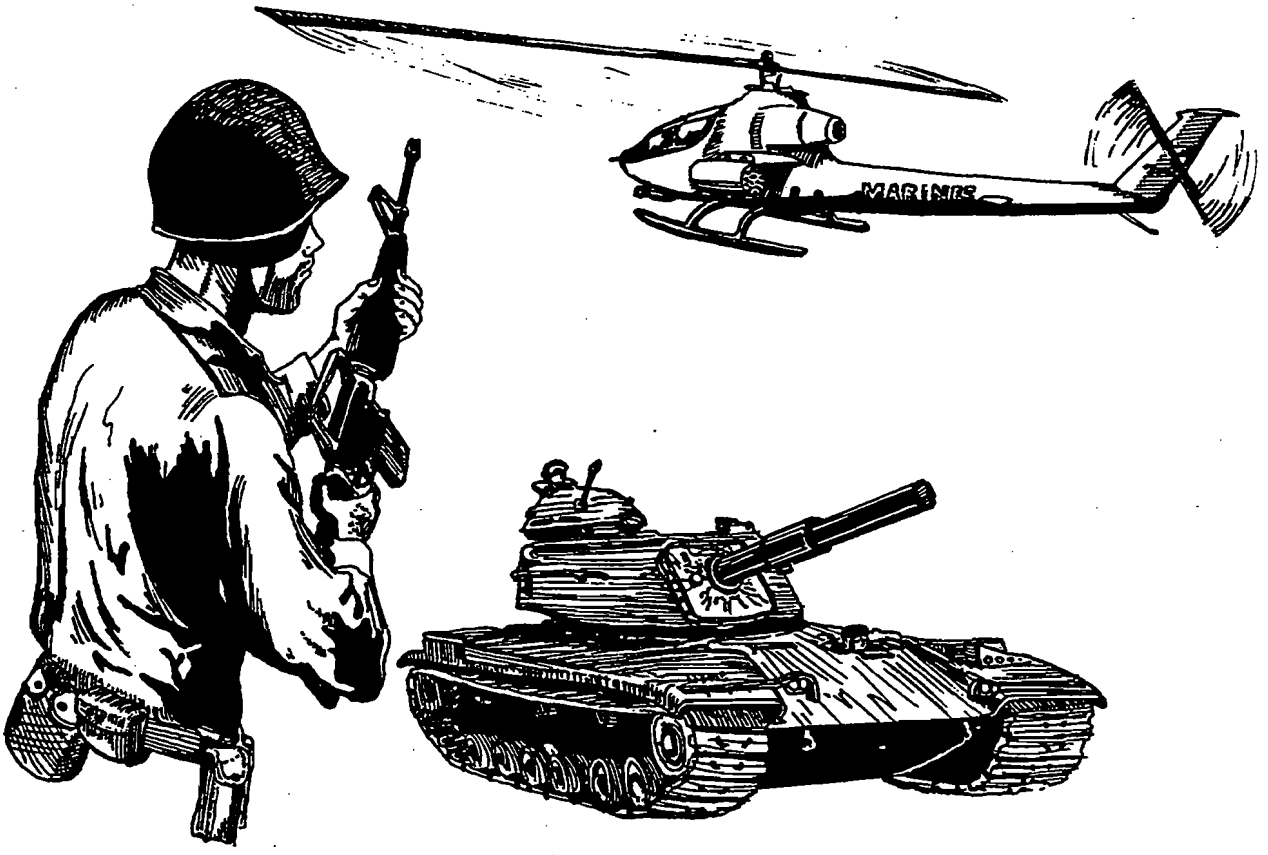
APPENDIX A-114

Base Order P11102.1G

BO P11102.1G

STANDING OPERATING PROCEDURE FOR TRAINING FACILITIES AND SERVICES



MARINE CORPS BASE, CAMP LEJEUNE, N.C.

WIL DIST CE
ENVIRO OFFICE
DANGER ZONE FILES

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SECTION I
GENERAL INFORMATION

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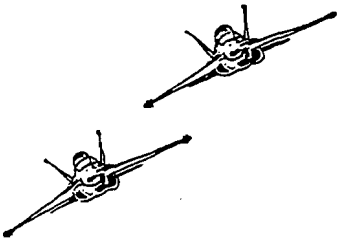
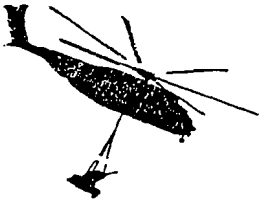
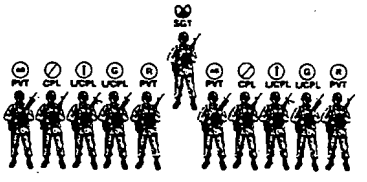
Base Order P11102.1

BO P11102.1

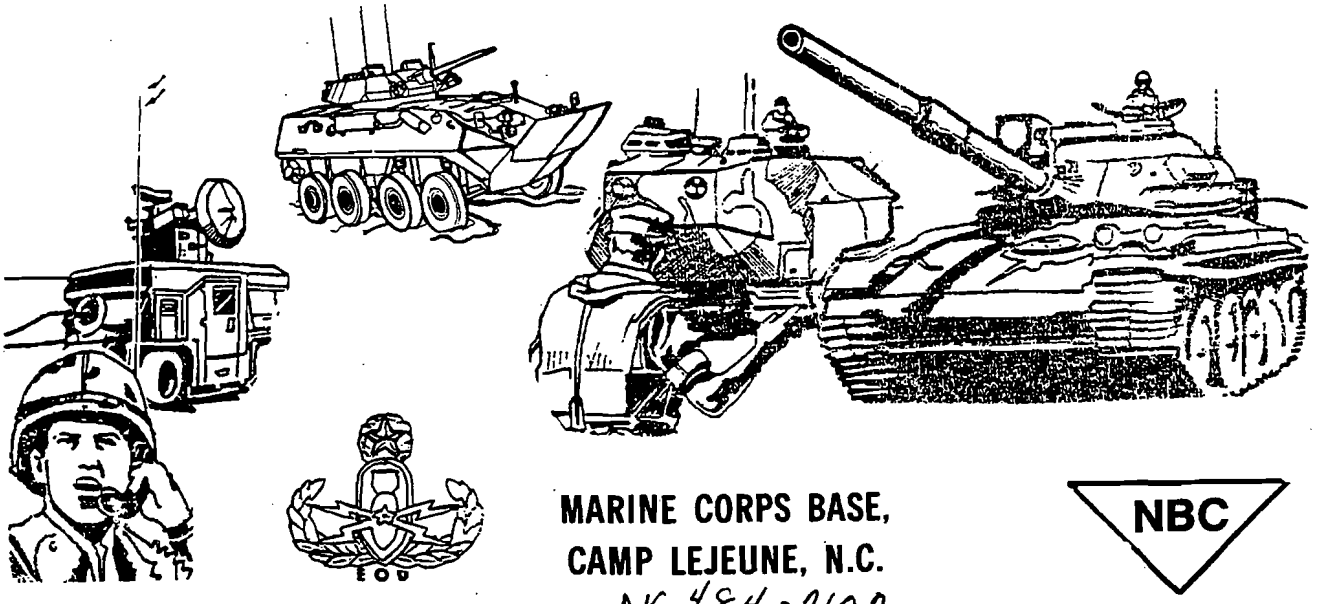




STANDING OPERATING PROCEDURE FOR RANGE CONTROL



Marine Rifle Squad



MARINE CORPS BASE,
CAMP LEJEUNE, N.C.

AV 484-2102
3065
5803

NBC

3

RANGE CONTROL SOP

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2	SPECIAL INSTRUCTIONS
3	TRAINING SERVICES
4	SAFETY REGULATIONS

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A	DEFINITIONS
B	DESCRIPTION OF RANGES
C	RANGE AND SURVEY CONTROL MARKER DESCRIPTIONS
D	TRAINING FACILITIES
E	TRAINING AREA REQUEST FORM
F	REGULATIONS FOR COMBAT TOWN
G	RANGE CHECK OUT/IN SHEET
H	RANGE CHECK-OUT AND CHECK-IN INSTRUCTIONS
I	WHAT CAN I SHOOT WHERE?
J	EXPLOSIVE EQUIVALENT INFORMATION
K	CAMP LEJEUNE SPECIAL MAP

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Base Order P3570.1

BO P3570.1

STANDING OPERATING PROCEDURES FOR RANGE CONTROL

MARINE CORPS BASE,
CAMP LEJEUNE, NC

RANGE CONTROL SOP

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3	RANGE/TRAINING AREA/TRAINING FACILITIES REQUEST AND SCHEDULING PROCEDURES
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5	MEDICAL EVACUATION PROCEDURES
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12	RESTRICTED AREAS AT CAMP LEJEUNE
13	RANGE MAINTENANCE/OPERATORS SECTION
14	POLICE OF RANGES, TRAINING/MANEUVER AREAS AND TRAINING FACILITIES
15	ENVIRONMENTAL RESTRICTIONS
16	TRAINING FACILITIES/AREAS EXTERNAL TO CAMP LEJEUNE
17	OBSERVATION OF TRAINING BY MILITARY DEPENDENTS AND CIVILIANS
18	PRIVATELY OWNED VEHICLES
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RANGE CONTROL SOP

CONTENTS

D SPECIAL RANGES AND TRAINING FACILITIES

E ACRONYMS/DEFINITIONS

APPENDIX B

REPORT DISTRIBUTION LIST

APPENDIX B - REPORT DISTRIBUTION LIST

Addressee	No. of Copies
Commander, U.S. Army Engineering and Support Center Huntsville, ATTN: CEHNC-ED-SY P.O. Box 1600 Huntsville, Alabama 35807-4301	2
Headquarters, U.S. Marine Corps ATTN: CMC(LFL), Kelly Dreyer, Environmental Restoration Program Manager 2 Navy Annex, Room 3109 Southgate Road Washington, DC 20380-1775	10
Commanding General ATTN: AC/S EMD (IRD), Neal Paul Marine Corps Base PSC Box 20004 Camp Lejeune, North Carolina 28542-0004	3

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1 REGIONAL LOCATION AND VICINITY MAP
2 RANGE OVERLAY MAP - MAY 1941
3 RANGE OVERLAY MAP - FEBRUARY 1942
4 RANGE OVERLAY MAP 1946
5 RANGE OVERLAY MAP - AUGUST 1951
6 RANGE OVERLAY MAP - FEBRUARY 1953
7 RANGE OVERLAY MAP - APRIL 1953
8 RANGE OVERLAY MAP - JUNE 1954
9 RANGE OVERLAY MAP - FEBRUARY 1957
10 RANGE OVERLAY MAP - APRIL 1958
11 RANGE OVERLAY MAP - FEBRUARY 1959
12 RANGE OVERLAY MAP - JANURAY 1962
13 RANGE OVERLAY MAP - FEBRUARY 1970
14 DETAIL "K" RANGES - SEPTEMBER 1970
15 MISCELLANEOUS RANGE FEATURES
16 RANGE OVERLAY MAP - SEPTEMBER 1976
17 DETAIL "K" RANGES - SEPTEMBER 1976
18 RANGE OVERLAY MAP - DECEMBER 1987
19 DETAIL "K" RANGES - DECEMBER 1987
20 RANGE OVERLAY MAP - 1993
21 RIFLE RANGE COMPLEX
22 HISTORICAL FEATURES - JUNE 1954

METADATA FOR THEMATIC COMPUTER AIDED DESIGN AND DRAFTING (CADD) FILES - CAMP LEJEUNE

****

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I Introduction
II File Naming Conventions
III Reference Maps
IV Historic Maps
V Aerial Photos
VI Mosaicked Aerial Photos
VII Plates

****

I Introduction

Thematic Computer-Aided Design and Drafting (CADD) map files completed in association with this Archives Search Report are based on historic cartographic, aerial and site visit data collected during this investigation. The thematic maps were created using Intergraph's Microstation software. Microstation *.dgn files can be imported directly into an Arc/Info system, as geospatially located entities. Geospatial data derived by this report will directly overlay on current GIS (Geographic Information System) data residing on the Camp Lejeune database by using the "**Import Microstation *.dgn**" function. After import, the data can be viewed and manipulated using the software that runs Camp Lejeune's GIS database. Raster files have been saved with Georeferenced Tiff (Tiff World) files having a .tfw extension. These files are Arc/Info-compatible.

The thematic maps were created by scanning and warping selected historic data to reference points collected from non-stable selected base maps such as U.S. Geological Survey (USGS) 7.5 minute, quadrangle sheets or National Imaging and Mapping Agency (NIMA) maps. The horizontal scale and horizontal datum of the base maps is generally known. In this case the datum used was 1927 North Atlantic Datum/World Geodetic System (WGS) 1984. Attempts have been made to rectify the data to the referenced base maps. However, distortions in scale and contortions of the features are present. These distortions are a result of inaccuracies in the source data, as well as the processes of scanning and rectifying the data. Much of the data on the maps lack sufficient information to support a determination of accuracy.

Many of the historic maps used were hand-drawn or built on locations that were inaccurate by modern standards. In general, historic map inaccuracies are unknown and not quantifiable. The georeferencing process may then magnify the unknown inaccuracies. Therefore, thematic maps generated from historic maps and drawings will have accuracy no greater than the least accurate source.

The historical aerial photography has been semi-rectified (georeferenced) to the base map; however, the photos have not been corrected for photogrammetric displacements such as those due to topography or the altitude of the aircraft at the time of imaging. They are not orthorectified images. Locations of features noted on aerial photography are not exact due to the rectifying of both the image and the base map.

The horizontal and vertical locations of selected features noted in the ASR and located on the thematic maps have been established utilizing Global Positioning System (GPS) technology. These coordinates were acquired using the Federal Version PLGR96+ GPS receiver. Features located utilizing GPS techniques are so noted in the ASR. The PLGR+96 uses the Precise Positioning Service (16 m SEP) and Wide Area GPS Enhancement (WAGE) 4 m CEP.

Copies of the thematic maps are included on the companion CD diskette to this report. The lineage and source of the historic data used to generate the thematic maps is unknown. The majority of Federal Geographic Data Committee (FGDC) Metadata fields are therefore unknown. A metadata file that gives all available pertinent information has been provided with this product. The statements above are inclusive of all available information regarding the historic data sources and the thematic maps generated. The thematic maps are not original digital mapping data; are scanned and warped data with selected unique feature annotation. The intended purpose of the mapping data is for photo-interpretation and not design. The vector data and associated symbology is unique to the intended purpose. The majority of the digitized features are not part of the current Tri-Service CADD Standards list of features and associated line types and symbology (i.e. range fans, pits, disturbed land). The mapping data produced does comply with applicable Tri-Service Standards.

****

II File Naming Conventions

There are five basic types of CADD files created for this project:

Reference Maps - generally U.S.G.S maps used for horizontal control
Historic Maps - a map from other sources of generally unknown accuracy
Aerial Photos - individual aerial photo, typically 9" by 9" format
Mosaicked Aerial Photos - mosaic of aerial photo images
Plates - composite of annotated or interpreted vectors and notations over map and photo images

The file extensions naming convention is:

*.CIT - initial image scan without modification or warping, readable in Microstation
*.WRP - horizontally warped image based on reference points, readable in Microstation
*.MOS - mosaic of scanned and warped aerial photo images, readable in Microstation
*.EXT - extracted (i.e. smaller) versions of above raster image files, readable in Microstation

*.DGN - Microstation vector file
*.JPG - raster image file readable on a variety of platforms
*.TIF - ARCINFO compatible image file, readable on a variety of platforms
*.TFW -georeference information for Tiff files.
****

III Reference Maps

Reference maps were used for informational purposes only. Data analyzed for this project was referenced to map data resident on Camp Lejeune's GIS database. The data was furnished on CD-Rom for the expressed purpose of referencing data used in analysis of this ASR. Please refer to Camp Lejeune GIS POC for information on these datasets.
****

IV Historic Maps

Historical Maps used in this report are referenced in the Appendix to this report as follows:

G-1 Bureau of Yards and Docks
1941 Marine Corps Base, New River, NC General Area and Layout Map (Proposed use), 16 May 1941. National Archives - College Park, Cartographic Section, College Park, MD

G-2 Bureau of Yards and Docks
1942 Map of Marine Barracks, Camp Lejeune, New River, N. C, 12 February 1942, revised 6 February 1943. Naval Facilities Engineering Command,. Historians Office, Port Heuneme, CA

G-3 Unknown
1945 New River Marine Corps Base, Onslow County, North Carolina, 20 March 1945, revised 11 June 1945. RG 71, Entry 1001, Box 934, File: New River, National Archives - College Park, College Park, MD.

G-4 Carr & J. E. Greiner Co
1943 Attachment to Construction Completion Report with information added from range regulations from 1946 and 1947. Training, Education, and Operations Department, MCB Camp Lejeune, NC.

G-5 Public Works Officer
1951 Map of Rifle Range Area, Camp Lejeune, North Carolina, as of 30 June 1951. Naval Facilities Engineering Command,. Historians Office, Port Heuneme, CA

G-16 Facilities Engineering
1985 Real Estate Summary Map, updated 26 March 1985, Drawing No. 4096472. Facilities Engineering, Camp Lejeune, Jacksonville, NC

G-17 Facilities Engineering
1985 Real Estate Summary Map, 28 March 1985, Drawing No. 4096791. Facilities Engineering, Camp Lejeune, Jacksonville, NC

****

V Aerial Photos

Two aerial photographs were scanned for inclusion in this report:

DuckRiver.ext - Frame: 16PS-4M751-16V39
Plate 23

Photo Date	Scale	Record Group	
08 NOV 1944	22,000	DIA - Archives II	373

Unknown.ext - Frame: AOR-4N-25
Plate 24

Photo Date	Scale(1:x)	Record Group	
04 March 1956	20,000	ASCS - Archives II	145

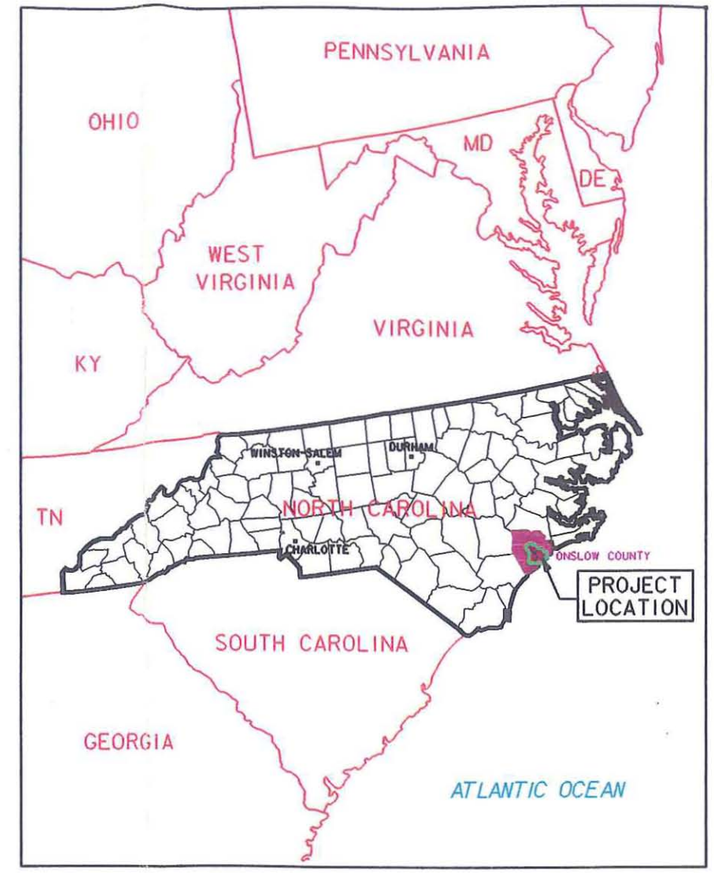
VI Mosaicked Aerial Photos

An existing data set from Camp Lejeune was used for **Plate 25**. The photography was natural color, flown in 1998. Metadata information for this data set resides at Camp Lejeune. Please contact Camp Lejeune GIS POC for this information.

****

VII Plates

REPORT PLATES		FILE NAME
1	REGIONAL LOCATION AND VICINITY MAP:	lejeunevc.dgn, .ext
2	RANGE OVERLAY MAP - MAY 1941	16may41.dgn
3	RANGE OVERLAY MAP - FEBRUARY 1942	12feb42.dgn
4	RANGE OVERLAY MAP 1946	40squadr.dgn
5	RANGE OVERLAY MAP - AUGUST 1951	aug51r.dgn
6	RANGE OVERLAY MAP - FEBRUARY 1953	16feb53.dgn
7	RANGE OVERLAY MAP - APRIL 1953	apr53.dgn
8	RANGE OVERLAY MAP - JUNE 1954	30june54.dgn
9	RANGE OVERLAY MAP - FEBRUARY 1957	9feb57.dgn



LEGEND

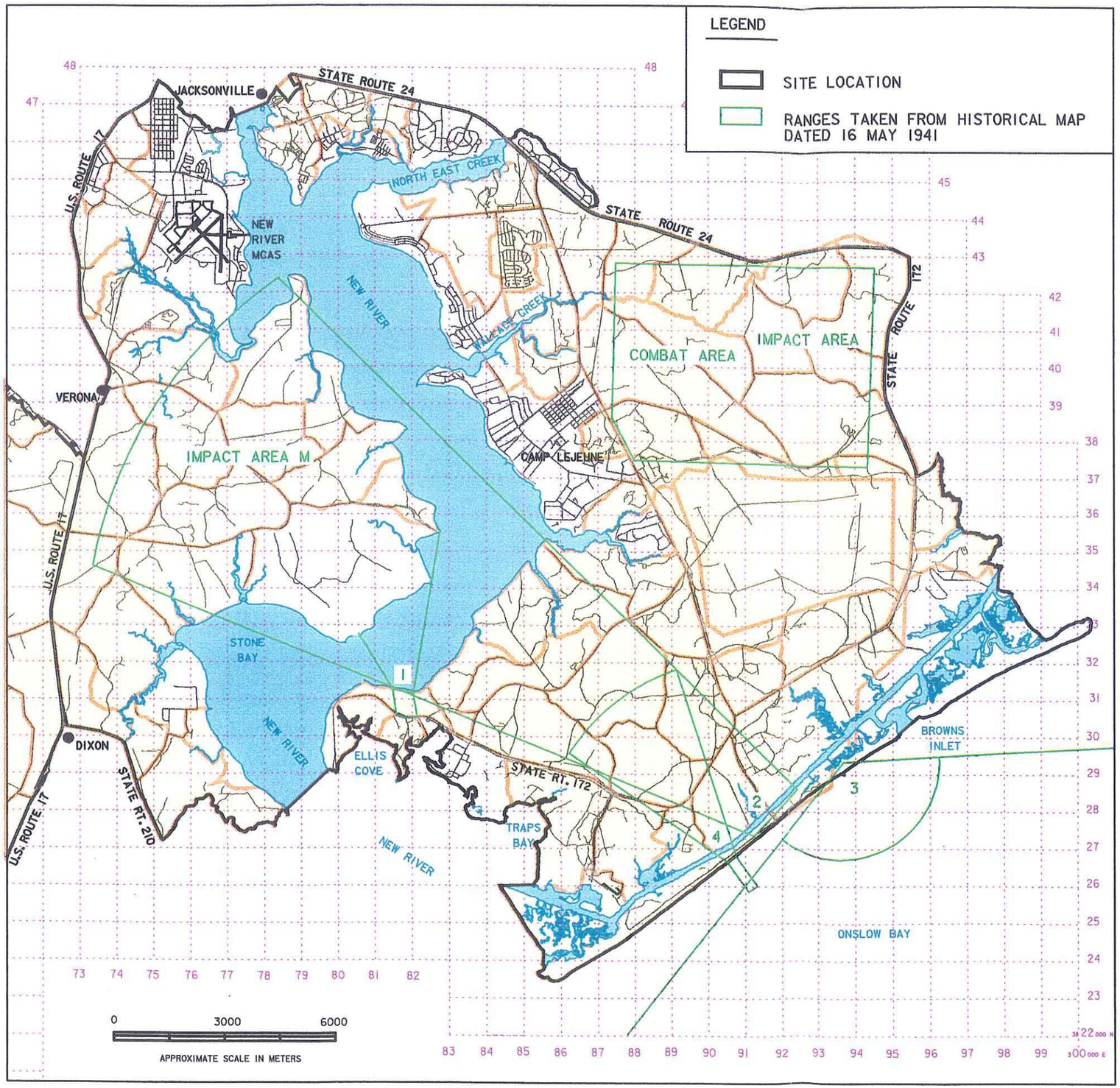
CAMP LEJEUNE

N

U.S. ARMY CORPS OF ENGINEERS
ST. LOUIS DISTRICT

MARINE CORPS BASE
(MCB) CAMP LEJEUNE
JACKSONVILLE, NORTH CAROLINA
ONSLOW COUNTY
REGIONAL LOCATION AND VICINITY MAP

PROJ. DATE: SEPT. 1999	DATE OF MAP: 1998	PLATE NO. 1
15-FEB-2000 14:33	n:\coe\northcarolina\lejeune\LEJNEYC.DGN	



KEY TO FEATURES:

FEATURE NUMBER	FEATURE DESCRIPTION
1.	ANTI-MECHANIZED RANGE
2.	ARTILLERY TRAINING AREA (1941)
3.	ONSLOW BEACH / HURST BEACH FIRING AREA
4.	BOAT GUN RANGE "J" LOCATION

***NOTE: HISTORICAL MAP SHEET DATA USED IN THIS REPORT WAS RECTIFIED TO A CURRENT MAP PROVIDED BY MCB CAMP LEJEUNE USING INTERGRAPH CORPORATION SOFTWARE. THE ACCURACY OF FEATURES RECTIFIED FROM THE HISTORICAL MAP SHEET DATA TO THE CURRENT MCB CAMP LEJEUNE MAP MAY VARY.

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U.S. ARMY CORPS OF ENGINEERS
ST. LOUIS DISTRICT

MARINE CORPS BASE
(MCB) CAMP LEJEUNE
JACKSONVILLE, NORTH CAROLINA
ONSLOW COUNTY
RANGE OVERLAY MAP - MAY 1941

PROJ. DATE: SEPT. 1999	DATE OF BASE MAP: 1998	PLATE NO. 2
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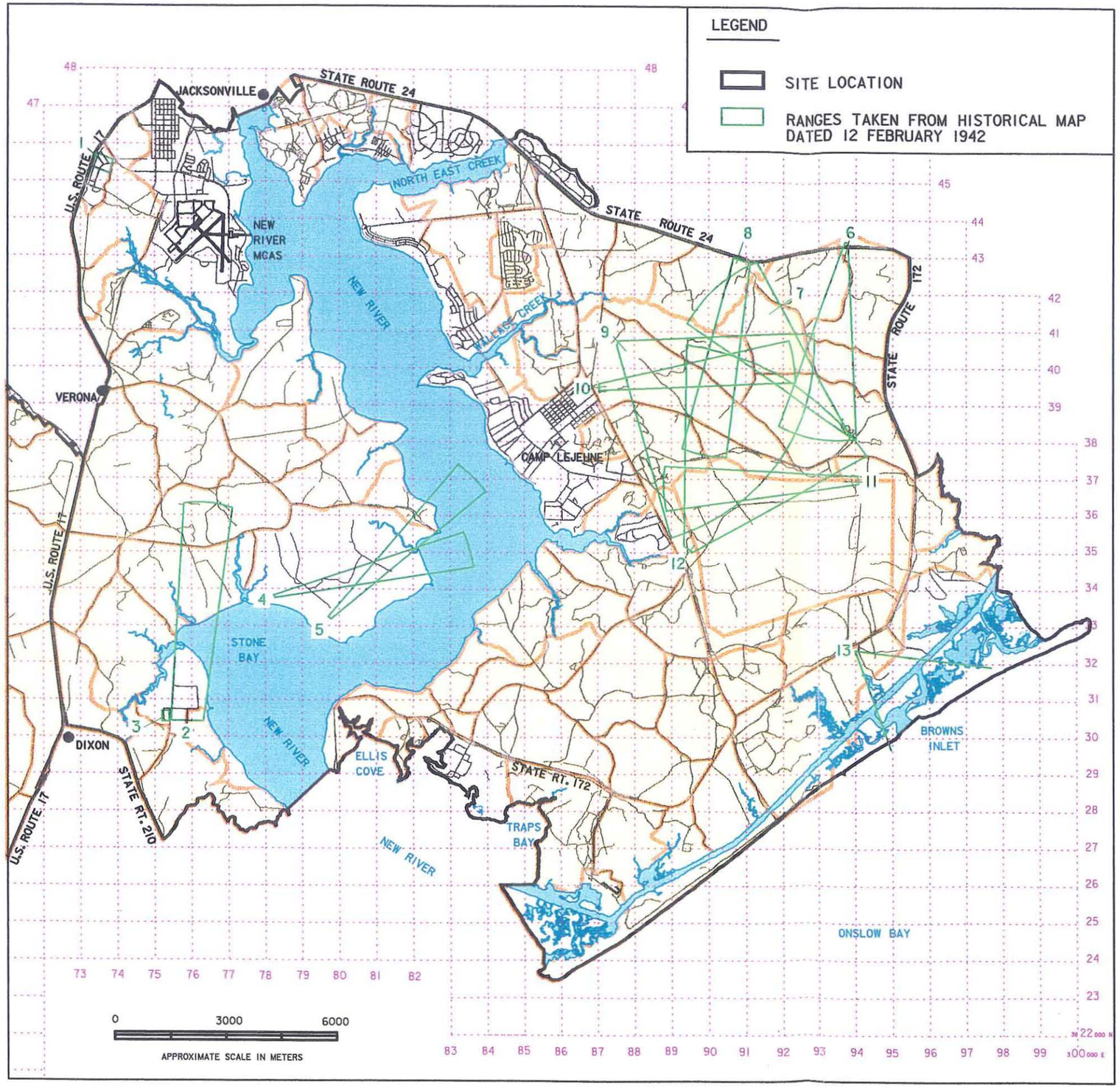

KEY TO FEATURES:

FEATURE NUMBER	FEATURE DESCRIPTION
1.	MINIATURE ANTI-TANK RANGE (TANK BATTALION TENT CAMP)
2.	RIFLE RANGE
3.	PISTOL RANGE (RIFLE RANGE AREA)
4.	MACHINE GUN RANGE D
5.	COMBAT RANGE - MUSKETRY RANGE D
6.	MACHINE GUN RANGE A
7.	UNNAMED RANGE I
8.	MUSKETRY RANGE A
9.	COMBAT RANGE (MUSKETRY RANGE B)
10.	MACHINE GUN RANGE B
11.	MUSKETRY RANGE C
12.	MINIATURE ANTI-AIRCRAFT RANGE (AREA D & F)
13	ANTI-TANK RANGE

***NOTE: HISTORICAL MAP SHEET DATA USED IN THIS REPORT WAS RECTIFIED TO A CURRENT MAP PROVIDED BY MCB CAMP LEJEUNE USING INTERGRAPH CORPORATION SOFTWARE. THE ACCURACY OF FEATURES RECTIFIED FROM THE HISTORICAL MAP SHEET DATA TO THE CURRENT MCB CAMP LEJEUNE MAP MAY VARY.

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ST. LOUIS DISTRICT

MARINE CORPS BASE
(MCB) CAMP LEJEUNE
JACKSONVILLE, NORTH CAROLINA
ONSLOW COUNTY
RANGE OVERLAY MAP-FEBRUARY 1942

PROJ. DATE: SEPT. 1999	DATE OF BASE MAP: 1998	PLATE NO. 3
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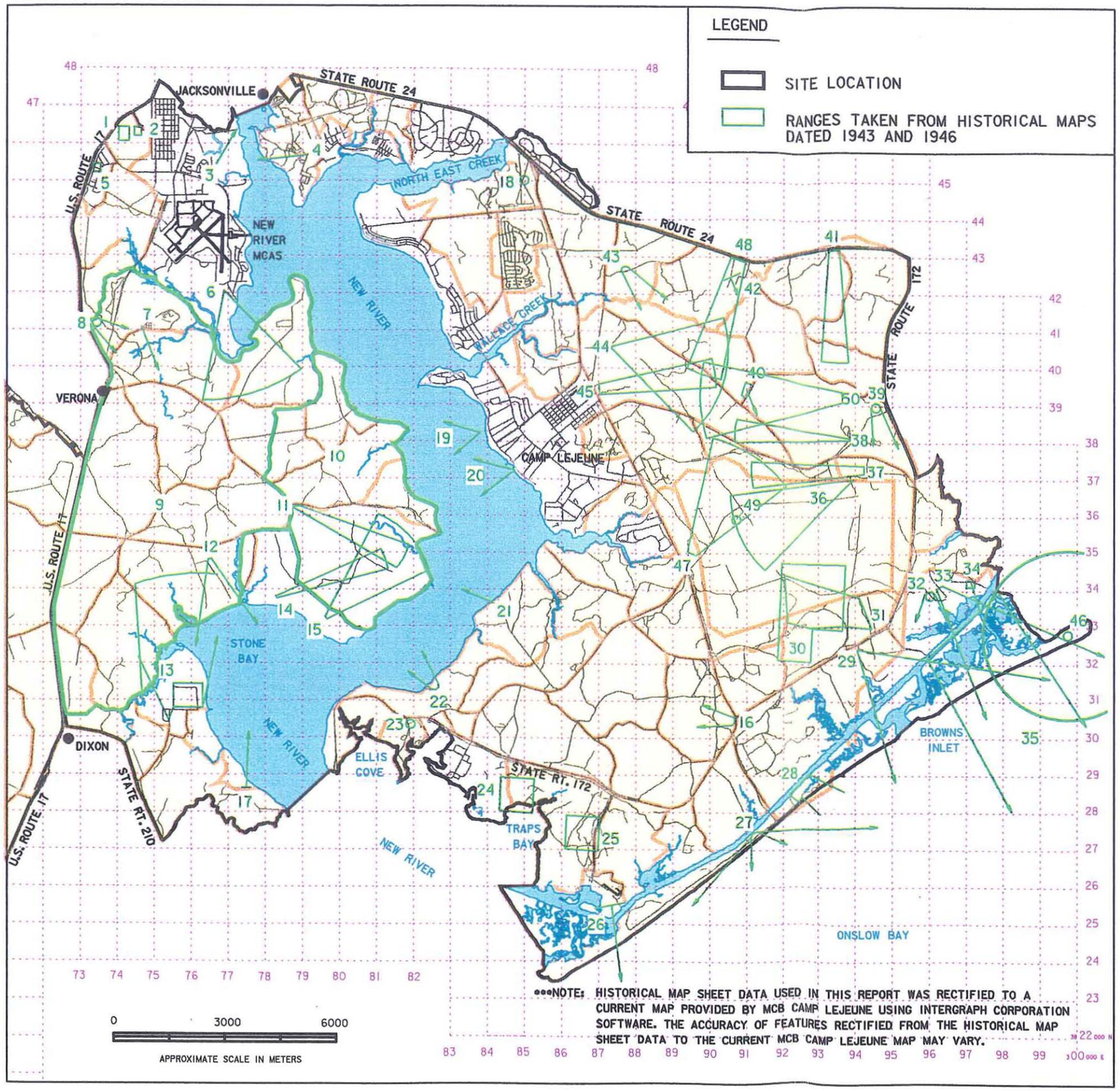

KEY TO FEATURES:

FEATURE NUMBER	FEATURE DESCRIPTION
1.	1000 INCH RANGE (TENT CAMP AREA 1943)
2.	MINATURE ANTI-AIRCRAFT (TENT CAMP AREA 1943)
3.	LIVE AMMUNITION INDOCRINATION COURSE (1945)
4.	1000 INCH RANGE, MONFORD POINT (1946)
5.	MINIATURE ANTI-TANK RANGE (TANK BATLLION TENT CAMP-1943)
6.	INFANTRY WEAPONS DEMOLITION COURSE (1946)
7	MORTAR RANGE M-1 (1945)
8.	ARTILLERY FIRING POINT #7 (1946)
9.	IMPACT AREA (1945)
10.	IMPACT AREA K (1946)
11.	MUSKETRY RANGE E (1945)
12.	MORTAR RANGE L-1 (1946)
13	RIFLE RANGE (1943)
14.	MACHINE GUN RANGE D (1943)
15	MUSKETRY RANGE D (1943)
16.	ARTILLERY FIRING POINT #4 (1943)
17.	MORTAR RANGE L-2 (1945)
18.	LIVE HAND GRENADE COURSE (1945)
19.	DEMOLITION FIRING POINT #1 (1945)
20.	FIRING POINT #5 (1945)
21.	ARTILLERY FIRING POINT #10 (1945)
22.	ARTILLERY FIRING POINT #6 (1946)
23.	1000 INCH RANGE (AMPHIBIAN BASE AREA-1946)
24.	ENGINEER FIRING AREA (1947)
25.	ENGINEER FIRING AREA (1947)
26.	ARTILLERY FIRING POINT #2 (1945)
27.	ARTILLERY FIRING POINT #5 (1946)
28.	ENGINEER BEACH DEMOLITIONS AND TRAINING AREA (1946)
29.	ANTI-TANK RANGE (1943)
30.	ENGINEER FIRING RANGE (1947)
31.	ENGINEER FIRING RANGE (1946)
32.	ARTILLERY FIRING POINT #3 (1946)
33.	DIRECT FIRE ARTILLERY RANGE (1947)
34.	BEACH ARTILLERY FIRING POINT (1945)
35.	STRAFING TARGET #2 (1946)
36.	MUSKETRY RANGE C-1 (1943)
37.	MUSKETRY RANGE C (1943)
38.	MACHINE GUN RANGE C (1943)
39.	ARTILLERY FIRING POINT #2 (1946)
40.	ARTILLERY FIRING POINT #14 (1945)
41.	MACHINE GUN RANGE A (1943)
42.	ARTILLERY FIRING POINT #8 (1945)
43.	ARTILLERY FIRING POINT #1 (1946)
44.	MUSKETRY RANGE B (1943)
45.	MACHINE GUN RANGE B (1943)
46.	ROCKET RANGE #1 (1946)
47.	MINIATURE ANTI-AIRCRAFT RANGE (AREA D AND F 1943)
48.	MUSKETRY RANGE A (1943)
49.	OC BATTALION FIELD FIRING RANGE (1943)
50.	MUSKETRY RANGE C-2

N

U.S. ARMY CORPS OF ENGINEERS
ST. LOUIS DISTRICT

MARINE CORPS BASE (MCB) CAMP LEJEUNE JACKSONVILLE, NORTH CAROLINA ONSLOW COUNTY RANGE OVERLAY MAP-1946

PROJ. DATE: SEPT. 1999	DATE OF BASE MAP: 1998	PLATE NO. 4
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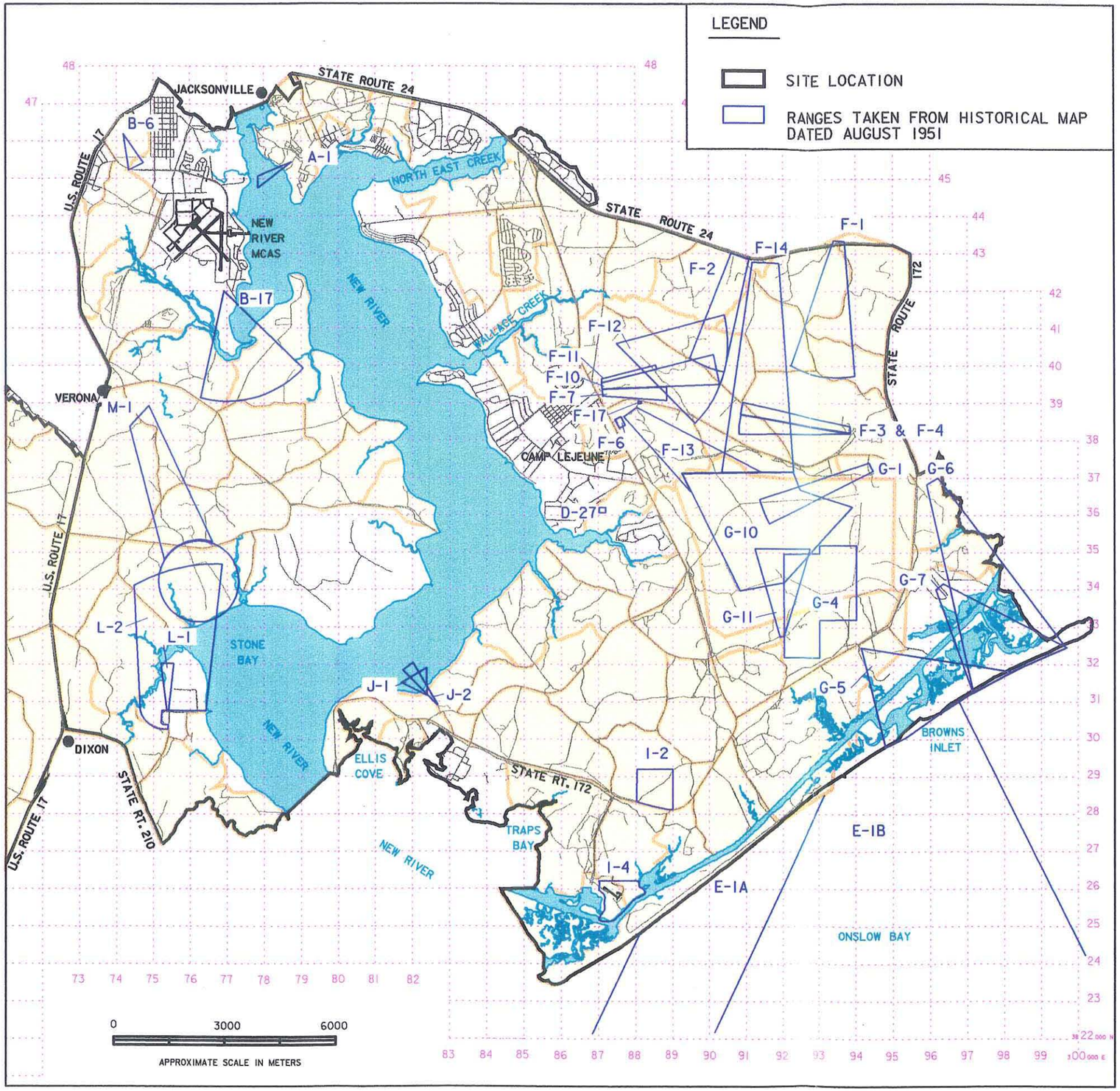


KEY TO FEATURES:

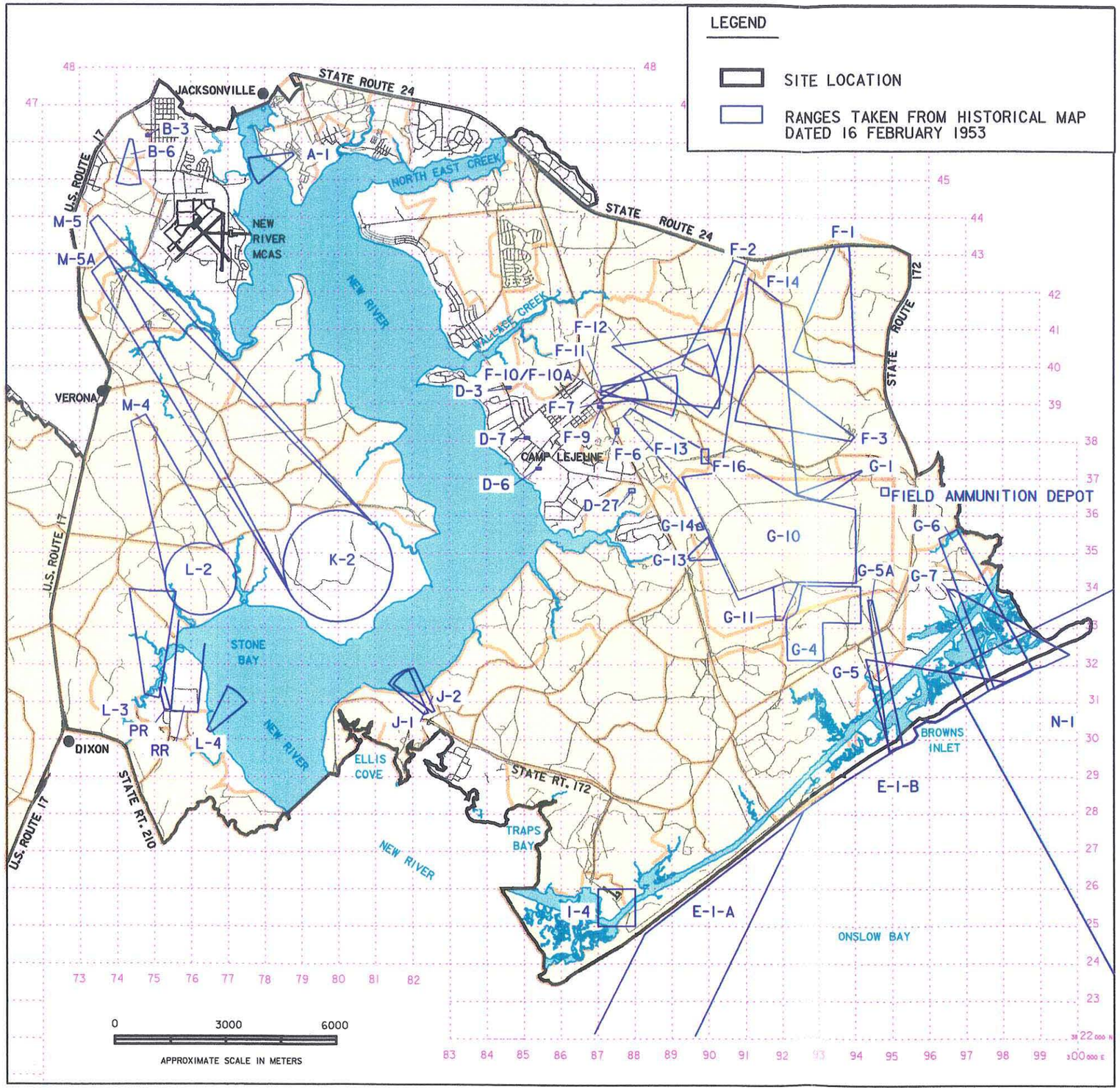
FEATURE NUMBER	FEATURE DESCRIPTION
A-1	50 FOOT .22 CALIBER RANGE
B-6	50 FOOT SMALL ARMS RANGE
B-17	INFANTRY WEAPONS DEMOSTRATION COURSE
D-27	FORTIFIED BEACH ASSAULT AREA
E-1A	AAA AND ANTI-BOAT FIRING RANGE
E-1B	AAA AND ANTI-BOAT FIRING RANGE
F-1	FIELD FIRING RANGE
F-2	FIELD FIRING RANGE
F-3	FIELD FIRING RANGE
F-4	FIELD FIRING RANGE
F-6	LIVE HAND GRENADE RANGE
F-7	.22 CALIBER RANGE, 1000 INCH
F-10	MACHINE GUN QUALIFICATION RANGE
F-11	PISTOL RANGE
F-12	FIELD FIRING RANGE
F-13	FIELD FIRING RANGE
F-14	FIELD FIRING RANGE
F-17	DRY NET MOCK-UP
G-1	COMBAT RANGE
G-4	DEMOLITIONS ASSAULT COURSE
G-5	ANTI-TANK RANGE
G-6	ARTILLERY RANGE
G-7	DIRECT FIRE ARTILLERY RANGE
G-10	IMPACT AREA
G-11	BATTLE INDOCTRINATION COURSE
I-2	DEMOLITION RANGE
I-4	DEMOLITION AREA
J-1	1000 INCH RANGE
J-2	1000 INCH RANGE
L-1	PISTOL RANGE
L-2	RIFLE RANGE
M-1	RANGE M-1

***NOTE: HISTORICAL MAP SHEET DATA USED IN THIS REPORT WAS RECTIFIED TO A CURRENT MAP PROVIDED BY MCB CAMP LEJEUNE USING INTERGRAPH CORPORATION SOFTWARE. THE ACCURACY OF FEATURES RECTIFIED FROM THE HISTORICAL MAP SHEET DATA TO THE CURRENT MCB CAMP LEJEUNE MAP MAY VARY.

U.S. ARMY CORPS OF ENGINEERS
ST. LOUIS DISTRICT

MARINE CORPS BASE
(MCB) CAMP LEJEUNE
JACKSONVILLE, NORTH CAROLINA
ONSLOW COUNTY
RANGE OVERLAY MAP-AUGUST 1951

PROJ. DATE: SEPT. 1999	DATE OF BASE MAP: 1998	PLATE NO. 5
10-MAR-2000 12:40	n:\oew\northcarol\lejeune\aug5lr.dgn	



KEY TO FEATURES:

FEATURE NUMBER	FEATURE DESCRIPTION
A-1	50 FOOT .22 CALIBER RANGE
B-3	GAS CHAMBER
B-6	1000 INCH RANGE
D-3	PRACTICE HAND GRENADE COURSE
D-6	PRACTICE HAND GRENADE COURSE
D-7	GAS CHAMBER
D-27	FORTIFIED BEACH ASSAULT AREA
E-1A	AAA AND ANTI-BOAT RANGE
E-1B	AAA AND ANTI-BOAT RANGE
F-1	FIELD FIRING RANGE
F-2	FIELD FIRING RANGE
F-3	FIELD FIRING RANGE
F-6	LIVE HAND GRENADE RANGE
F-7	1000 INCH RANGE
F-9	TRIANGULATION RANGE
F-10	MACHINE GUN QUALIFICATION RANGE
F-10A	1000 INCH RANGE
F-11	PISTOL RANGE
F-12	FIELD FIRING RANGE
F-13	FIELD FIRING RANGE
F-14	FIELD FIRING RANGE
F-16	COMBAT VILLAGE
G-1	COMBAT RANGE
G-4	ASSAULT DEMOLITION AREA
G-5	ANTI-TANK RANGE
G-5A	MECHANIZED ANTI-TANK RANGE
G-6	ARTILLERY RANGE
G-7	DIRECT FIRE ARTILLERY RANGE
G-10	IMPACT AREA
G-11	BATTLE INDOCTRINATION RANGE
G-13	MINIATURE ANTI-AIRCRAFT RANGE
G-14	TANK MACHINE GUN RANGE
I-4	DEMOLITION AREA
J-1	1000 INCH RANGE
J-2	1000 INCH RANGE
K-2	IMPACT AREA
L-2	IMPACT AREA
L-3	MACHINE GUN TRANSITION RANGE
L-4	1000 INCH RANGE
M-4	FIELD FIRING RANGE
M-5	ARTILLERY RANGE
M-5A	ARTILLERY RANGE
N-1	DANGER AREA
PR	PISTOL RANGE
RR	RIFLE RANGE

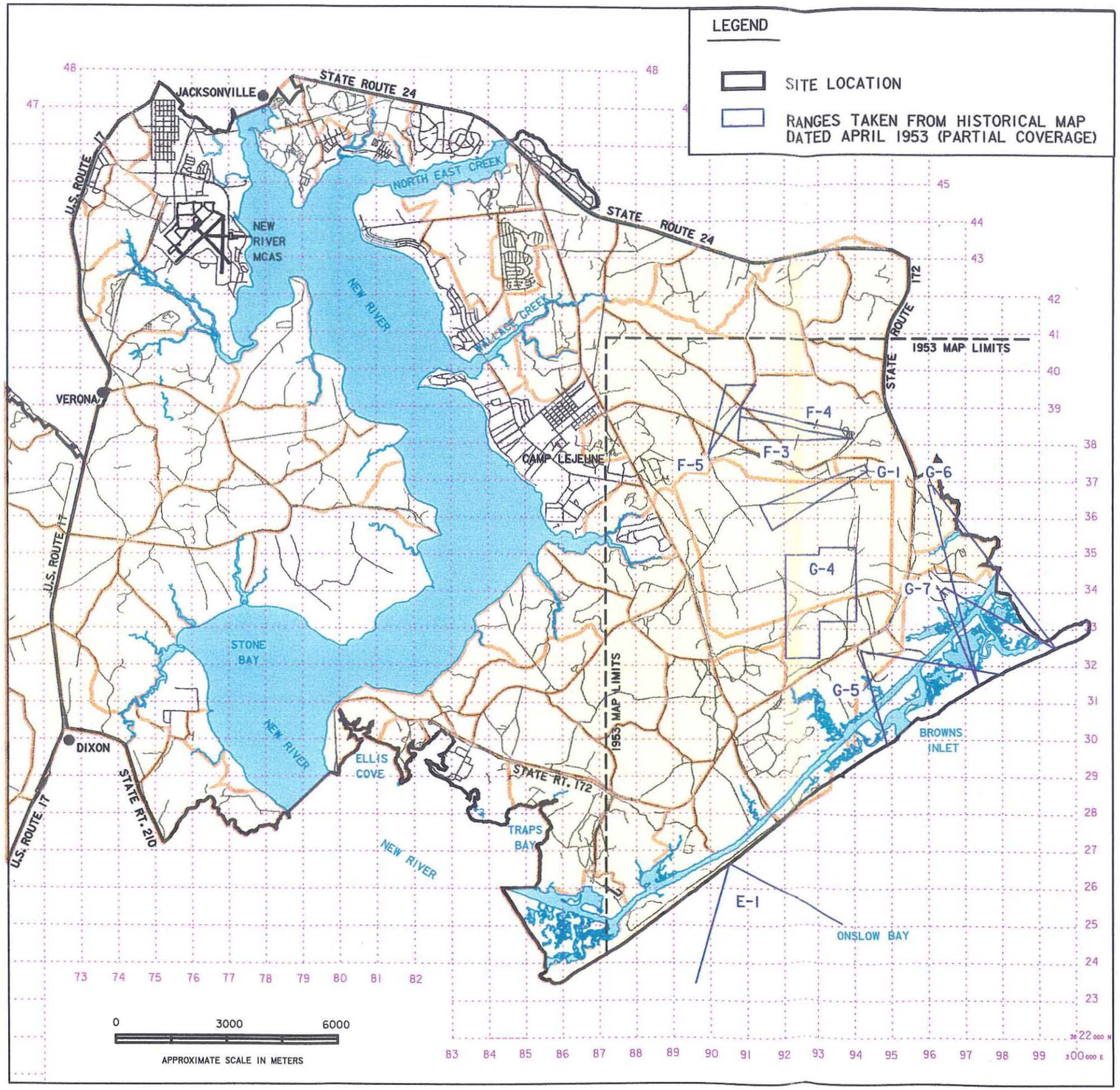
***NOTE: HISTORICAL MAP SHEET DATA USED IN THIS REPORT WAS RECTIFIED TO A CURRENT MAP PROVIDED BY MCB CAMP LEJEUNE USING INTERGRAPH CORPORATION SOFTWARE. THE ACCURACY OF FEATURES RECTIFIED FROM THE HISTORICAL MAP SHEET DATA TO THE CURRENT MCB CAMP LEJEUNE MAP MAY VARY.

N

U.S. ARMY CORPS OF ENGINEERS
ST. LOUIS DISTRICT

MARINE CORPS BASE
(MCB) CAMP LEJEUNE
JACKSONVILLE, NORTH CAROLINA
ONSLOW COUNTY
RANGE OVERLAY MAP-FEBRUARY 1953

PROJ. DATE: SEPT. 1999	DATE OF BASE MAP: 1998	PLATE NO. 6
10-MAR-2000 12:58	n:\osw\northcarol\lejeune\16feb53.dgn	



KEY TO FEATURES:

FEATURE NUMBER	FEATURE DESCRIPTION
E-1	AAA FIRING AREA
F-3	FIELD FIRING RANGE
F-4	MOVING VEHICLE RANGE
F-5	1000" RANGE
G-1	COMBAT RANGE
G-4	DEMOLITION ASSAULT AREA
G-5	ANTI-TANK RANGE
G-6	ARTILLERY RANGE
G-7	DIRECT FIRE ARTILLERY RANGE

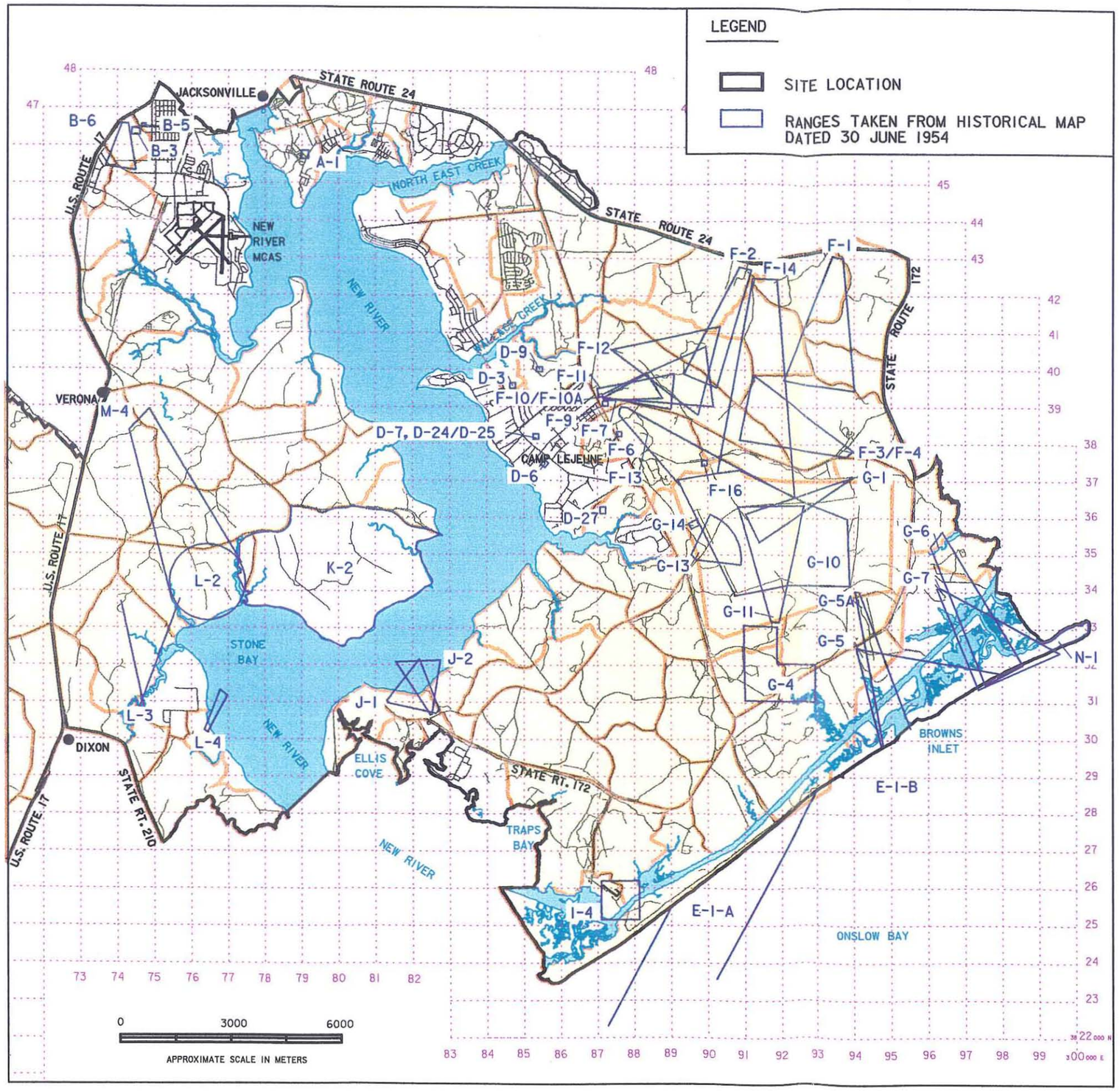
***NOTE: HISTORICAL MAP SHEET DATA USED IN THIS REPORT WAS RECTIFIED TO A CURRENT MAP PROVIDED BY MCB CAMP LEJEUNE USING INTERGRAPH CORPORATION SOFTWARE. THE ACCURACY OF FEATURES RECTIFIED FROM THE HISTORICAL MAP SHEET DATA TO THE CURRENT MCB CAMP LEJEUNE MAP MAY VARY.

N

U.S. ARMY CORPS OF ENGINEERS
ST. LOUIS DISTRICT

MARINE CORPS BASE
(MCB) CAMP LEJEUNE
JACKSONVILLE, NORTH CAROLINA
ONSLOW COUNTY
RANGE OVERLAY MAP-APRIL 1953

PROJ. DATE: SEPT. 1999	DATE OF BASE MAP: 1998	PLATE NO. 7
15-FEB-2000 12:22	n:\cew\northcarol\lejeune\apr53.dgn	



KEY TO FEATURES:

FEATURE NUMBER	FEATURE DESCRIPTION
A-1	50 FOOT .22 CALIBER RANGE
B-3	GAS CHAMBER
B-5	PRACTICE HAND GRENADE COURSE
B-6	50 FOOT SMALL ARMS RANGE
D-3	PRACTICE HAND GRENADE COURSE
D-6	PRACTICE HAND GRENADE COURSE
D-7	GAS CHAMBER
D-9	SKEET RANGE
D-27	FORTIFIED BEACH ASSAULT AREA
E-1A	AAA AND ANTI-BOAT FIRING RANGE
E-1B	AAA AND ANTI-BOAT FIRING RANGE
F-1	FIELD FIRING RANGE
F-2	FIELD FIRING RANGE
F-3	FIELD FIRING RANGE
F-4	FIELD FIRING RANGE
F-6	LIVE HAND GRENADE RANGE
F-7	.22 CALIBER RANGE 1000 INCH
F-9	TRIANGULATION RANGE
F-10	1000 INCH RANGE
F-10A	MACHINE GUN QUALIFICATION RANGE
F-11	PISTOL RANGE
F-12	FIELD FIRING RANGE
F-13	FIELD FIRING RANGE
F-14	FIELD FIRING RANGE
F-16	COMBAT VILLAGE
G-1	COMBAT RANGE
G-4	DEMOLITION ASSAULT COURSE
G-5	ANTI-TANK RANGE
G-5A	MECHANIZED ANTI-TANK RANGE
G-6	ARTILLERY RANGE
G-7	DIRECT FIRE ARTILLERY RANGE
G-10	IMPACT AREA
G-11	BATTLE INDOCTRINATION RANGE
G-13	MINIATURE ANTI-AIRCRAFT RANGE
G-14	TANK MACHINE GUN RANGE
I-4	DEMOLITION AREA
J-1	1000 INCH RANGE
J-2	1000 INCH RANGE
K-2	IMPACT AREA
L-2	IMPACT AREA
L-3	MACHINE GUN TRANSITION RANGE
L-4	1000 INCH RANGE
M-4	FIELD FIRING RANGE
N-1	IMPACT AREA

***NOTE: HISTORICAL MAP SHEET DATA USED IN THIS REPORT WAS RECTIFIED TO A CURRENT MAP PROVIDED BY MCB CAMP LEJEUNE USING INTERGRAPH CORPORATION SOFTWARE. THE ACCURACY OF FEATURES RECTIFIED FROM THE HISTORICAL MAP SHEET DATA TO THE CURRENT MCB CAMP LEJEUNE MAP MAY VARY.

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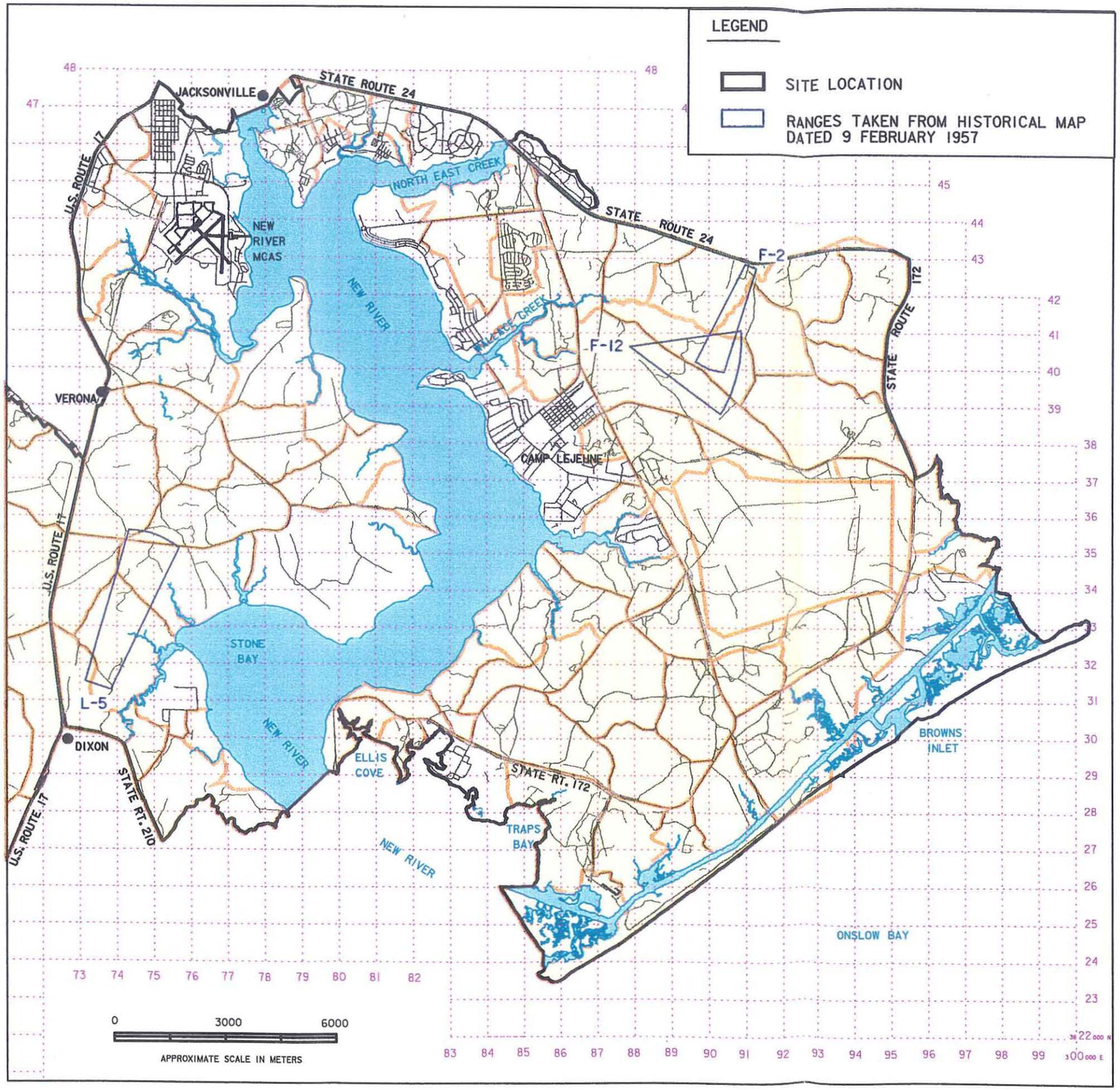
U.S. ARMY CORPS OF ENGINEERS
ST. LOUIS DISTRICT

MARINE CORPS BASE (MCB) CAMP LEJEUNE JACKSONVILLE, NORTH CAROLINA ONSLOW COUNTY RANGE OVERLAY MAP-JUNE 1954

PROJ. DATE: SEPT. 1999	DATE OF BASE MAP: 1998	PLATE NO. 8
15-FEB-2000 12:26	n:\cow\northcarol\lejeune\30June54.dgn	



KEY TO FEATURES:

FEATURE NUMBER	FEATURE DESCRIPTION
F-2	FIELD FIRING RANGE
F-12	FIELD FIRING RANGE
L-5	MULTI-PURPOSE MACHINE GUN RANGE

***NOTE: HISTORICAL MAP SHEET DATA USED IN THIS REPORT WAS RECTIFIED TO A CURRENT MAP PROVIDED BY MCB CAMP LEJEUNE USING INTERGRAPH CORPORATION SOFTWARE. THE ACCURACY OF FEATURES RECTIFIED FROM THE HISTORICAL MAP SHEET DATA TO THE CURRENT MCB CAMP LEJEUNE MAP MAY VARY.

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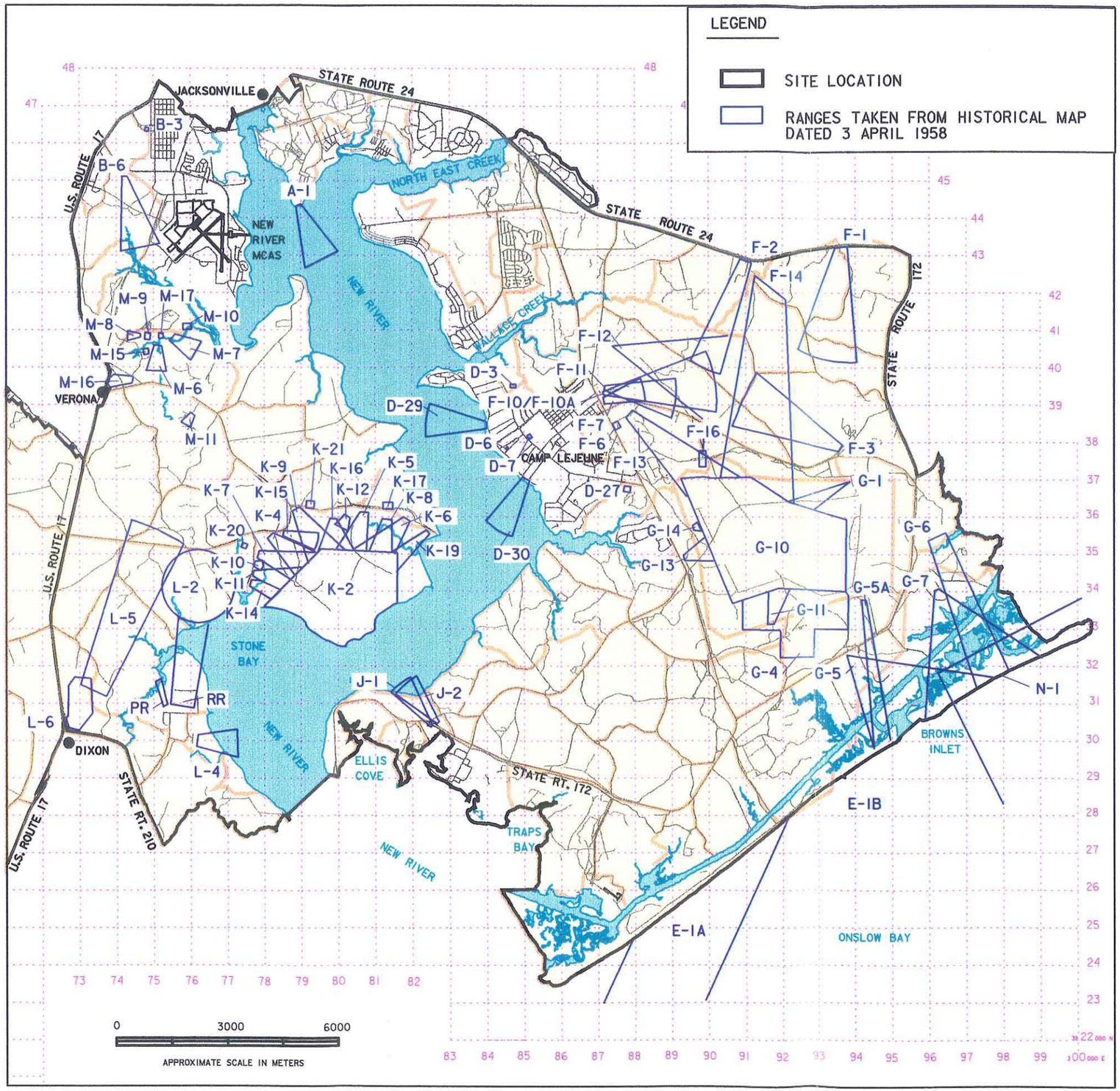
U.S. ARMY CORPS OF ENGINEERS
ST. LOUIS DISTRICT

MARINE CORPS BASE
(MCB) CAMP LEJEUNE
JACKSONVILLE, NORTH CAROLINA
ONSLOW COUNTY
RANGE OVERLAY MAP-FEBRUARY 1957

PROJ. DATE: SEPT. 1999	DATE OF BASE MAP: 1998	PLATE NO. 9
15-FEB-2000 12:27	n:\oew\northcarol\lejeune\9feb57.dgn	



KEY TO FEATURES:

FEATURE NUMBER	FEATURE DESCRIPTION
A-1	50 FOOT .22 CALIBER RANGE
B-3	GAS CHAMBER
B-6	50 FOOT SMALL ARMS RANGE
D-3	PRACTICE HAND GRENADE COURSE
D-6	50 FOOT INDOOR SMALL BORE RANGE
D-7	GAS CHAMBER
D-27	FORTIFIED BEACH ASSAULT AREA
D-29	50 FOOT SMALL BORE RANGE
D-30	50 FOOT SMALL BORE RANGE
E-1A	AAA AND ANTI-BOAT FIRING RANGE
E-1B	AAA AND ANTI-BOAT FIRING RANGE
F-1	FIELD FIRING RANGE
F-2	FIELD FIRING RANGE
F-3	FIELD FIRING RANGE
F-6	LIVE HAND GRENADE RANGE
F-7	.22 CALIBER RANGE, 1000 INCH
F-10	MACHINE GUN QUALIFICATION RANGE
F-10A	1000 INCH RANGE
F-11	PISTOL RANGE
F-12	FIELD FIRING RANGE
F-13	FIELD FIRING RANGE
F-14	FIELD FIRING RANGE
F-16	COMBAT VILLAGE
G-1	COMBAT RANGE
G-4	DEMOLITION ASSAULT AREA
G-5	ANTI-TANK RANGE
G-5A	MECHANIZED ANTI-TANK RANGE
G-6	ARTILLERY RANGE
G-7	DIRECT FIRE ARTILLERY RANGE
G-10	IMPACT AREA
G-11	BATTLE INDOCTRINATION COURSE
G-13	MINIATURE ANTI-AIRCRAFT RANGE
G-14	TANK MACHINE GUN RANGE
J-1	1000 INCH RANGE
J-2	1000 INCH RANGE
K-2	IMPACT AREA
K-4	TRANSITION FIRING RANGE
K-5	COMBAT FIRING RANGE
K-6	TRANSITION RANGE
K-7	COMBAT FIRING RANGE
K-8	CLOSE COMBAT COURSE
K-9	3.5 INCH ROCKET FIELD FIRING RANGE
K-10	RIFLE GRENADE FIELD FIRING RANGE
K-11	INFILTRATION COURSE
K-14	CLOSE COMBAT COURSE

KEY TO FEATURES:

FEATURE NUMBER	FEATURE DESCRIPTION
K-15	MACHINE GUN FIELD FIRING RANGE 500" AND 1000"
K-16	INFANTRY WEAPONS DEMONSTRATION RANGE
K-17	PRACTICE HAND GRENADE COURSE
K-19	300 YARD BATTLESIGHT RANGE
K-20	HAND GRENADE RANGE
K-21	FLAME THROWER RANGE
L-2	IMPACT AREA
L-4	1000 INCH RANGE
L-5	MULTI-PURPOSE MACHINE GUN RANGE
L-6	MINE WARFARE AND DEMOLITION AREA
M-6	INFILTRATION COURSE
M-7	LANDSCAPE RANGE
M-8	ASSAULT OF A FORTIFIED POSITION RANGE
M-9	COMBAT VILLAGE AREA
M-10	HAND GRENADE RANGE
M-11	ASSAULT OF A FORTIFIED POSITION AREA
M-15	MINE, BOOBYTRAP DISPLAY AREA
M-16	OUTDOOR CLASSROOM
M-17	PRACTICE HAND AND RIFLE GRENADE RANGE
N-1	IMPACT AREA
PR	PISTOL RANGE
RR	RIFLE RANGE

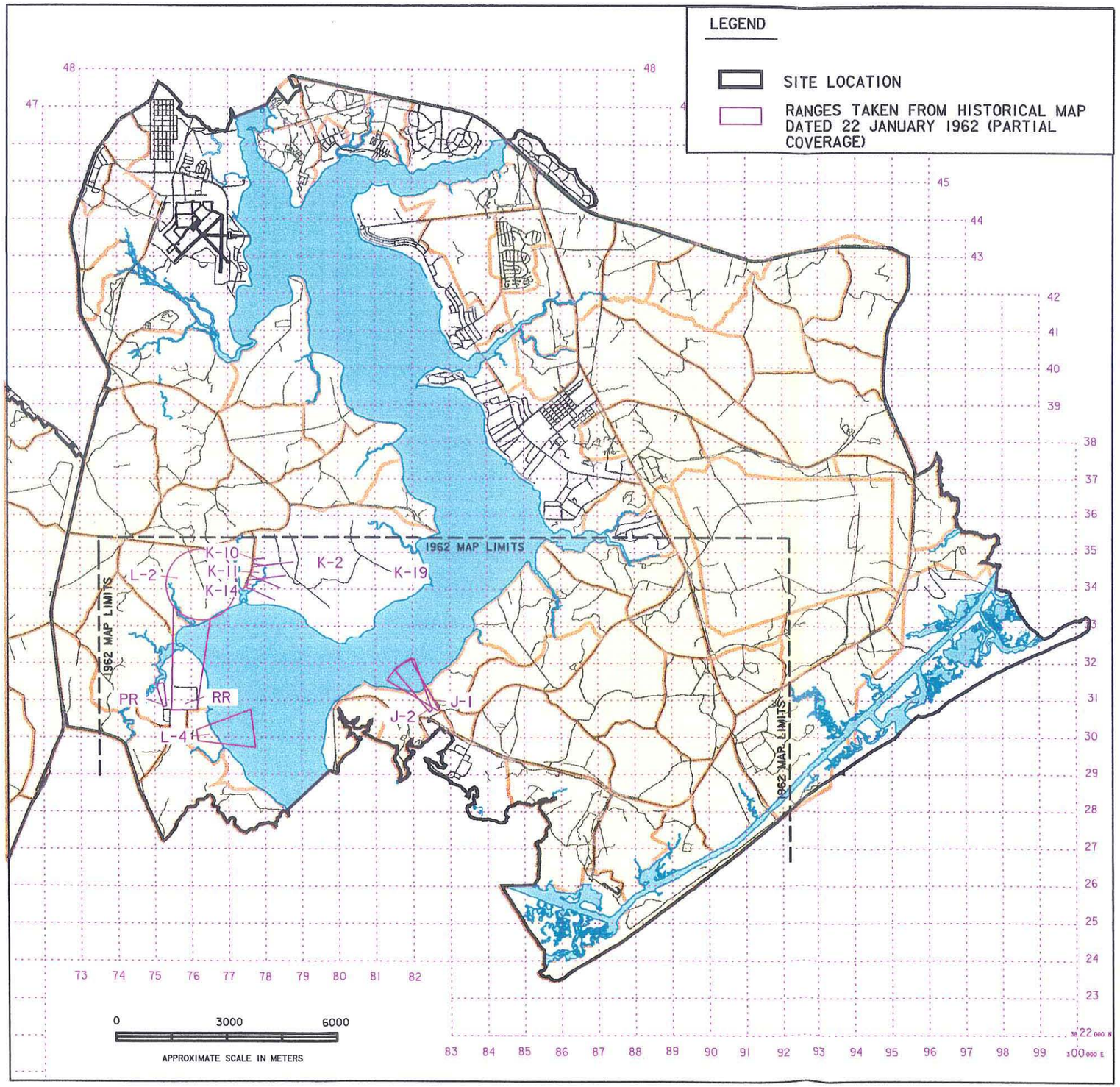
***NOTE: HISTORICAL MAP SHEET DATA USED IN THIS REPORT WAS RECTIFIED TO A CURRENT MAP PROVIDED BY MCB CAMP LEJEUNE USING INTERGRAPH CORPORATION SOFTWARE. THE ACCURACY OF FEATURES RECTIFIED FROM THE HISTORICAL MAP SHEET DATA TO THE CURRENT MCB CAMP LEJEUNE MAP MAY VARY.

N

U.S. ARMY CORPS OF ENGINEERS
ST. LOUIS DISTRICT

MARINE CORPS BASE (MCB) CAMP LEJEUNE JACKSONVILLE, NORTH CAROLINA ONSLOW COUNTY RANGE OVERLAY MAP-APRIL 1958

PROJ. DATE: SEPT. 1999	DATE OF BASE MAP: 1998	PLATE NO. 10
13-MAR-2000 08:30	n:\cesw\northcarol\lejeune\3apr58r.dgn	



KEY TO FEATURES:

FEATURE NUMBER	FEATURE DESCRIPTION
J-1	1000 INCH RANGE
J-2	1000 INCH RANGE
K-2	IMPACT AREA
K-10	RIFLE GRENADE FIELD FIRING RANGE
K-11	INFILTRATION COURSE
K-14	CLOSE COMBAT COURSE
K-19	300 YARD BATTLESIGHT RANGE
L-2	IMPACT AREA
L-4	1000 INCH RANGE
PR	PISTOL RANGE
RR	RIFLE RANGE

***NOTE: HISTORICAL MAP SHEET DATA USED IN THIS REPORT WAS RECTIFIED TO A CURRENT MAP PROVIDED BY MCB CAMP LEJEUNE USING INTERGRAPH CORPORATION SOFTWARE. THE ACCURACY OF FEATURES RECTIFIED FROM THE HISTORICAL MAP SHEET DATA TO THE CURRENT MCB CAMP LEJEUNE MAP MAY VARY.

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U.S. ARMY CORPS OF ENGINEERS
ST. LOUIS DISTRICT

MARINE CORPS BASE
(MCB) CAMP LEJEUNE
JACKSONVILLE, NORTH CAROLINA
ONSLOW COUNTY
RANGE OVERLAY MAP-JANUARY 1962

PROJ. DATE: SEPT. 1999	DATE OF BASE MAP: 1998	PLATE NO. 12
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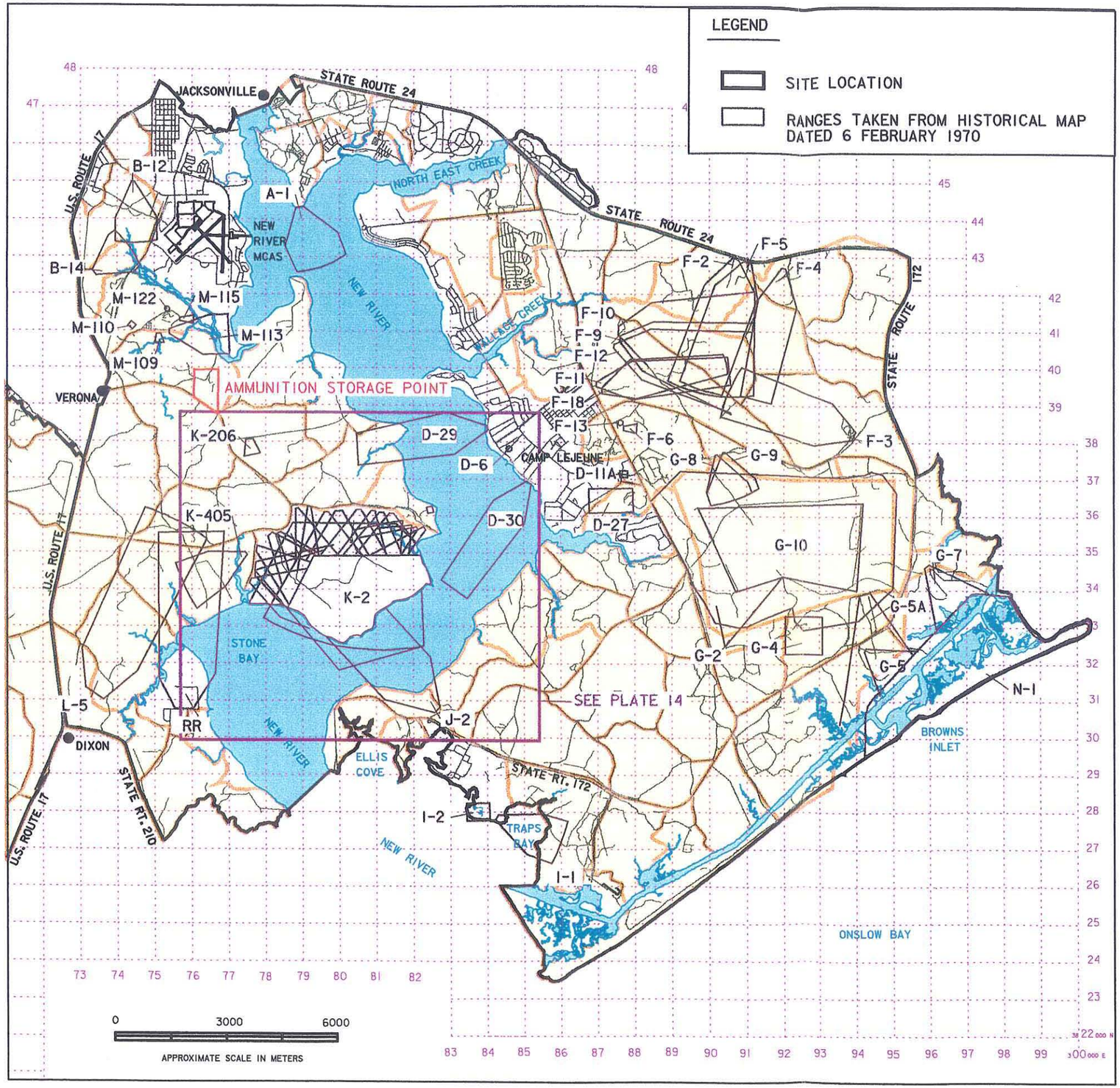

KEY TO FEATURES:

FEATURE NUMBER	FEATURE DESCRIPTION
A-1	PISTOL AND SHOTGUN RANGE
B-12	BAFFLED PISTOL RANGE
B-14	ASSAULT OF A FORTIFIED POSITION RANGE
D-6	50 FOOT INDOOR SMALL BORE RIFLE AND PISTOL RANGE
D-11A	FLAME TANK AND FLAME THROWER RANGE
D-27	FORTIFIED BEACH ASSAULT AREA
D-29	50 FOOT SMALL BORE RANGE
D-30	50 FOOT SMALL BORE RANGE
F-2	FIELD FIRING RANGE
F-3	FIELD FIRING RANGE
F-4	FIRE CONTROL RANGE
F-5	SQUAD LIVE FIRE AND MANEUVER COURSE
F-6	LIVE HAND GRENADE RANGE
F-9	BATTLE SIGHT RANGE
F-10	MACHINE GUN QUALIFICATION RANGE
F-11	PISTOL RANGE
F-12	FIELD FIRING RANGE
F-13	FLAME THROWER RANGE
F-18	MACHINE GUN FIELD FIRING RANGE
G-2	INFILTRATION RANGE
G-4	DEMOLITION ASSAULT COURSE
G-5	ANTI-TANK RANGE
G-5A	MECHANIZED ANTI-TANK RANGE
G-7	DIRECT FIRE ARTILLERY RANGE
G-8	GRENADE LAUNCHER RANGE
G-9	LIGHT ANTI-ARMOR WEAPONS AND SHOULDER LAUNCHED MULTI-PURPOSE ASSAULT WEAPONS RANGE
G-10	IMPACT AREA
I-1	50 FOOT SMALL BORE RANGE
I-2	DEMOLITION AREA
J-2	1000 INCH RANGE
K-2	IMPACT AREA - SEE NOTE BELOW
K-206	UNKNOWN RANGE
K-405	COMBAT PISTOL MARKMANSHIP RANGE
L-5	MULTI-PURPOSE MACHINE GUN RANGE
M-109	INFILTRATION RANGE
M-110	DEMOLITIONS AND BOOBY TRAP RANGE
M-113	HAND GRENADE RANGE (PRACTICE)
•	DEMONSTRATOR
M-115	HAND GRENADE RANGE
M-122	FLAME THROWER RANGE
N-1	IMPACT AREA
RR	RIFLE RANGE

***NOTE: SEE PLATE 14 FOR FEATURE NUMBERS AND FEATURE DESCRIPTIONS ON K RANGES.

***NOTE: HISTORICAL MAP SHEET DATA USED IN THIS REPORT WAS RECTIFIED TO A CURRENT MAP PROVIDED BY MCB CAMP LEJEUNE USING INTERGRAPH CORPORATION SOFTWARE. THE ACCURACY OF FEATURES RECTIFIED FROM THE HISTORICAL MAP SHEET DATA TO THE CURRENT MCB CAMP LEJEUNE MAP MAY VARY.

U.S. ARMY CORPS OF ENGINEERS
ST. LOUIS DISTRICT

MARINE CORPS BASE (MCB) CAMP LEJEUNE JACKSONVILLE, NORTH CAROLINA ONSLOW COUNTY RANGE OVERLAY MAP-FEBRUARY 1970

PROJ. DATE: SEPT. 1999	DATE OF BASE MAP: 1998	PLATE NO. 13
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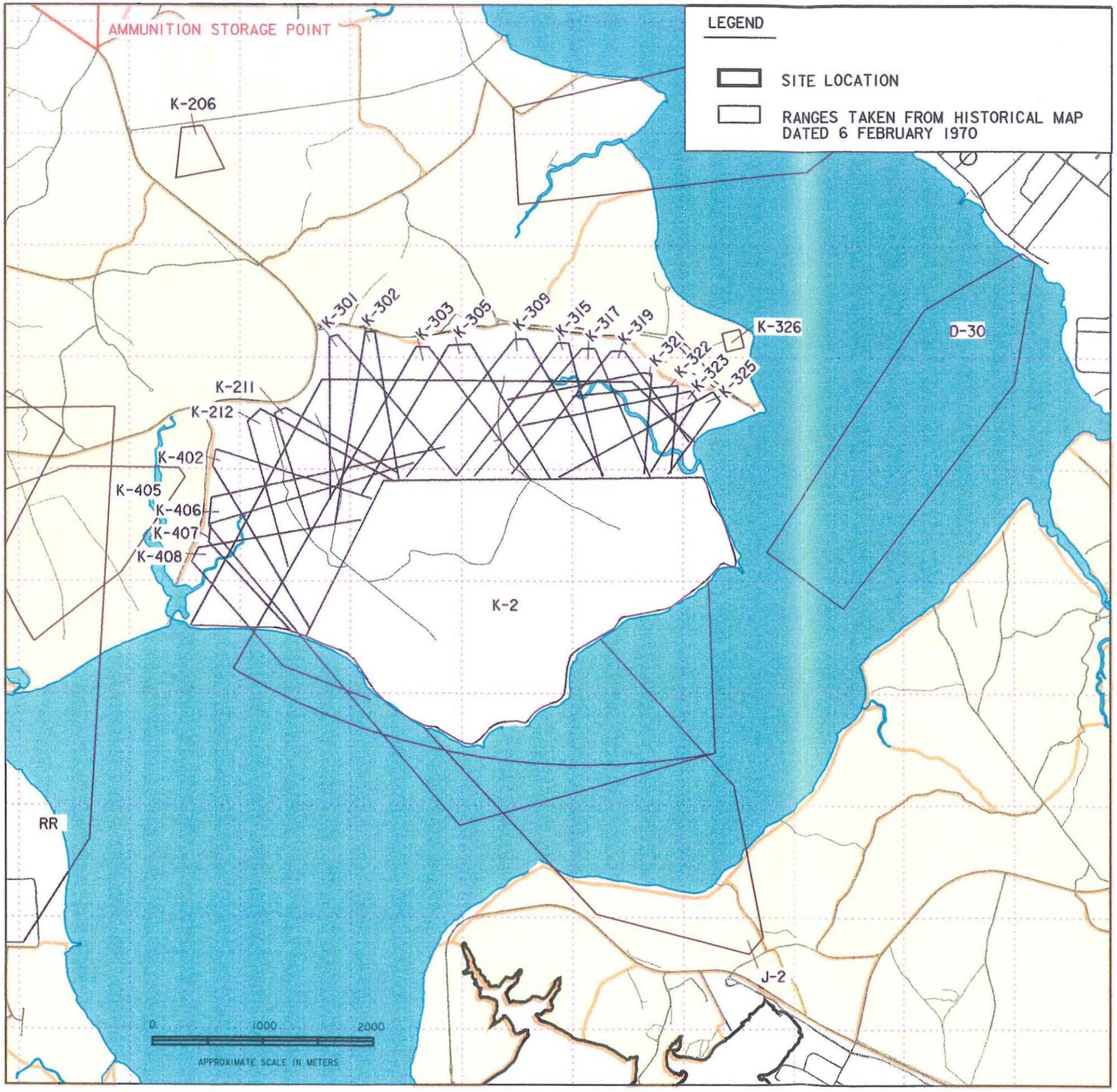


KEY TO FEATURES:

FEATURE NUMBER	FEATURE DESCRIPTION
K-2	IMPACT AREA
K-206	?
K-211	M203 AND MK 19 GRENADE LAUNCHER RANGE
K-212	INFILTRATION AND INDIVIDUAL MOVEMENT RANGE
K-301	LIGHT ANTIARMOR WEAPONS AND SHOULDER-LAUNCHED MULTIPURPOSE ASSAULT WEAPON RANGE
K-302	FIELD FIRING AND BATTLESIGHT RANGE
K-303	BASIC TECHNIQUES OF FIRE AND MORTAR FIELD FIRING RANGE
K-305	INFANTRY WEAPONS DEMONSTRATION RANGE
K-309	MACHINE GUN AND LIGHT ANTIARMOR RANGE
K-315	NIGHT AND COMBAT FIELD FIRING RANGE
K-317	CLOSE COMBAT RANGE
K-319	FIELD FIRING RANGE
K-321	TRANSITION RANGE
K-322	MOVING REALISTIC TARGET RANGE
K-323	GRENADE LAUNCHER RANGE
K-325	M72 LIGHT ANTIARMOR WEAPON AND M203 GRENADE LAUNCHER RANGE
K-326	EOD-2 EXPLOSIVE ORDNANCE DISPOSAL RANGE
K-402	FIRE AND MOVEMENT RANGE
K-405	COMBAT PISTOL MARKMANSHIP RANGE
K-406	MACHINE GUN RANGE
K-407	INDIVIDUAL QUICK REACTION RANGE
K-408	URBAN OBSTACLE COURSE

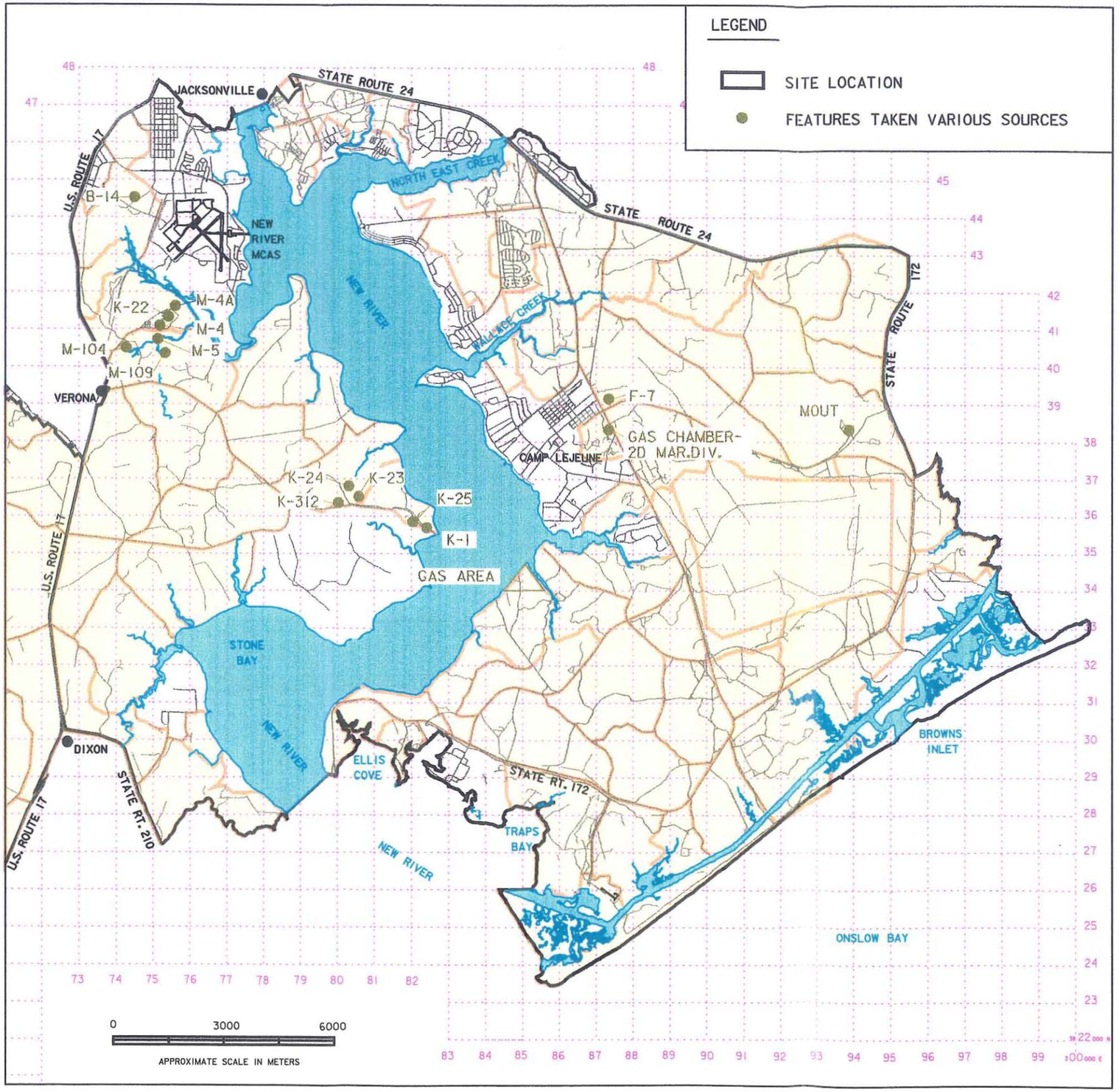
***NOTE: HISTORICAL MAP SHEET DATA USED IN THIS REPORT WAS RECTIFIED TO A CURRENT MAP PROVIDED BY MCB CAMP LEJEUNE USING INTERGRAPH CORPORATIC SOFTWARE. THE ACCURACY OF FEATURES RECTIFIED FROM THE HISTORICAL MAP SHEET DATA TO THE CURRENT MCB CAMP LEJEUNE MAP MAY VARY.

N

U.S. ARMY CORPS OF ENGINEERS
ST. LOUIS DISTRICT

MARINE CORPS BASE
(MCB) CAMP LEJEUNE
JACKSONVILLE, NORTH CAROLINA
ONSLOW COUNTY
DETAIL "K" RANGES-SEPTEMBER 1970

PROJ. DATE: SEPT. 1999	DATE OF BASE MAP: 1998	PLATE NO. 14
10-MAR-2000 13:04	n:\oew\northcarolinajeune\6FEB70B.DGN	



KEY TO FEATURES:

FEATURE NUMBER	FEATURE DESCRIPTION
K-24	DEMOLITION RANGE (1960)
K-25	ASSAULT OF A FORTIFIED POSITION RANGE (1960)
M-4	RIFLE GRENADE RANGE (1960)
M-5	PRACTICE RIFLE GRENADE RANGE (1960)
K-22	PRACTICE HAND GRENADE COURSE (1960)
K-23	GAS CHAMBER (1960)
M-4A	PRACTICE HAND GRENADE COURSE (1960)
K-1	81MM MORTAR FIELD FIRING RANGE (1960)
F-7	FLAME THROWER RANGE (1960)
M-104	DEMOLITIONS RANGE (1970)
M-109	INFILTRATION RANGE (1970)
MOUT	MOUT ASSAULT COURSE (1994)
B-14	ABC WARFARE AREA (1960)
GC	GAS CHAMBER (2D MAR. DIV.) (1970)
K-312	GAS CHAMBER (1970)
GAS AREA	GAS TRAINING AREA (1945)

***NOTE: THESE LOCATIONS ARE APPROXIMATE. NO PRECISE LOCATIONS WERE FOUND IN THE DOCUMENTATION.

***NOTE: HISTORICAL MAP SHEET DATA USED IN THIS REPORT WAS RECTIFIED TO A CURRENT MAP PROVIDED BY MCB CAMP LEJEUNE USING INTERGRAPH CORPORATION SOFTWARE. THE ACCURACY OF FEATURES RECTIFIED FROM THE HISTORICAL MAP SHEET DATA TO THE CURRENT MCB CAMP LEJEUNE MAP MAY VARY.

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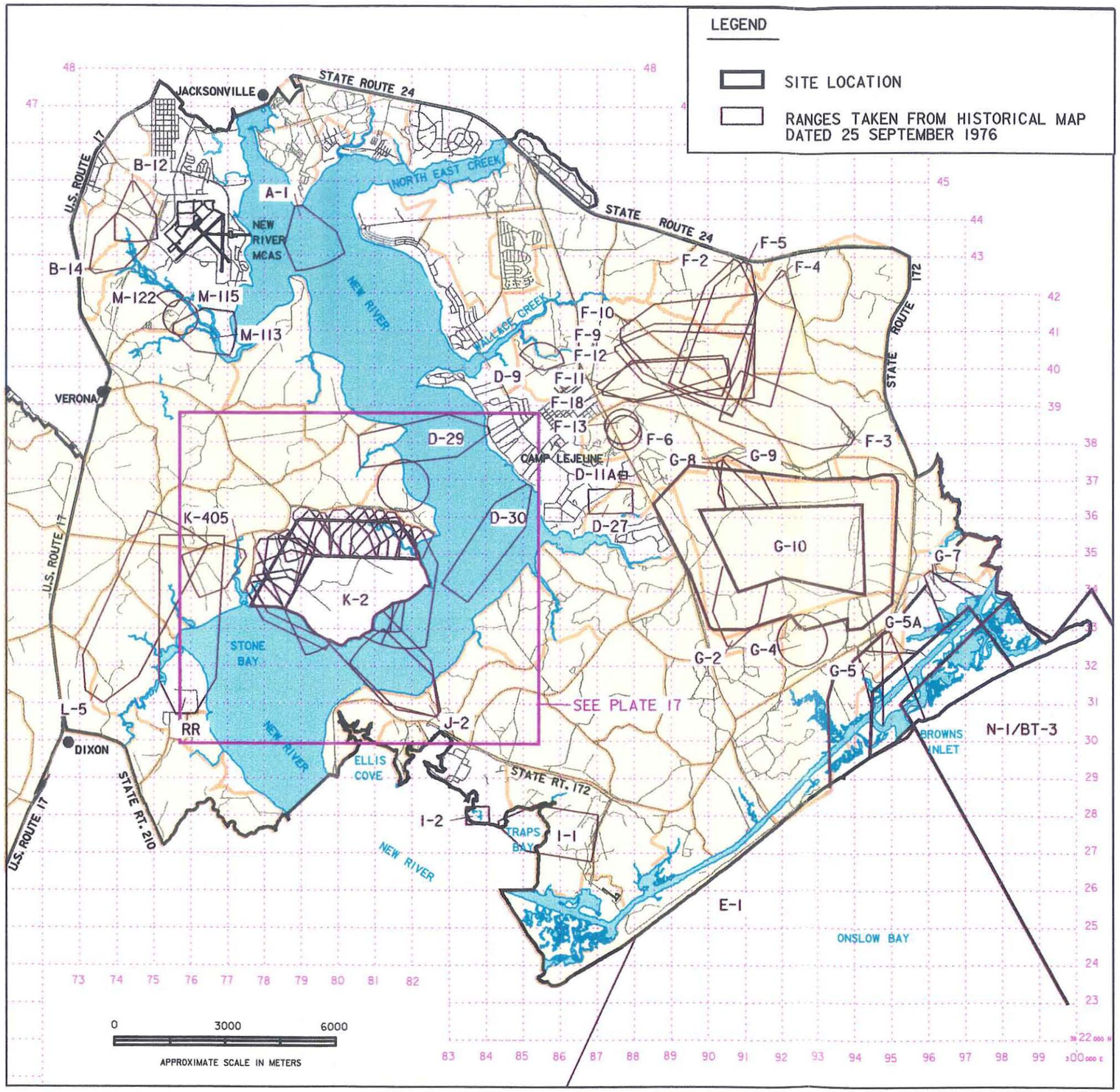
U.S. ARMY CORPS OF ENGINEERS
ST. LOUIS DISTRICT

MARINE CORPS BASE
(MCB) CAMP LEJEUNE
JACKSONVILLE, NORTH CAROLINA
ONSLOW COUNTY
MISCELLANEOUS RANGE FEATURES

PROJ. DATE: SEPT. 1999	DATE OF BASE MAP: 1998	PLATE NO. 15
10-MAR-2000 15:35	n:\oew\northcarol\lejeune\VARIOUS.DGN	



KEY TO FEATURES:

FEATURE NUMBER	FEATURE DESCRIPTION
A-1	PISTOL AND SHOTGUN RANGE
B-12	BAFFLED PISTOL RANGE
B-14	ASSAULT OF A FORTIFIED POSITION RANGE
D-9	SKEET RANGE
D-11A	FLAME TANK AND FLAME THROWER RANGE
D-27	FORTIFIED BEACH ASSAULT AREA
D-29	50 FOOT SMALL BORE RANGE
D-30	50 FOOT SMALL BORE RANGE
E-1	AIR DEFENSE FIRING RANGE
F-2	FIELD FIRING RANGE
F-3	FIELD FIRING RANGE
F-4	FIRE CONTROL RANGE
F-5	SQUAD LIVE FIRE AND MANEUVER COURSE
F-6	LIVE HAND GRENADE RANGE
F-9	BATTLE SIGHT RANGE
F-10	MACHINE GUN QUALIFICATION RANGE
F-11	PISTOL RANGE
F-12	FIELD FIRING RANGE
F-13	FLAME THROWER RANGE
F-18	MACHINE GUN FIELD FIRING RANGE
G-2	INFILTRATION RANGE
G-4	DEMOLITION ASSAULT COURSE
G-5	ANTI-TANK RANGE
G-5A	MECHANIZED ANTI-TANK RANGE
G-7	DIRECT FIRE ARTILLERY RANGE
G-8	GRENADE LAUNCHER RANGE
G-9	LIGHT ANTI-ARMOR WEAPONS AND SHOULDER LAUNCHED MULTI-PURPOSE ASSAULT WEAPONS RANGE
G-10	IMPACT AREA
I-1	50 FOOT SMALL BORE RANGE
I-2	DEMOLITION AREA
J-2	1000 INCH RANGE
K-2	IMPACT AREA - SEE NOTE BELOW
K-405	COMBAT PISTOL MARKMANSHIP RANGE
L-5	MULTI-PURPOSE MACHINE GUN RANGE
M-113	HAND GRENADE RANGE (PRACTICE) DEMONSTRATOR
M-115	HAND GRENADE RANGE
M-122	FLAME THROWER RANGE
N-1/BT-3	IMPACT AREA
RR	RIFLE RANGE

***NOTE: HISTORICAL MAP SHEET DATA USED IN THIS REPORT WAS RECTIFIED TO A CURRENT MAP PROVIDED BY MCB CAMP LEJEUNE USING INTERGRAPH CORPORATION SOFTWARE. THE ACCURACY OF FEATURES RECTIFIED FROM THE HISTORICAL MAP SHEET DATA TO THE CURRENT MCB CAMP LEJEUNE MAP MAY VARY.

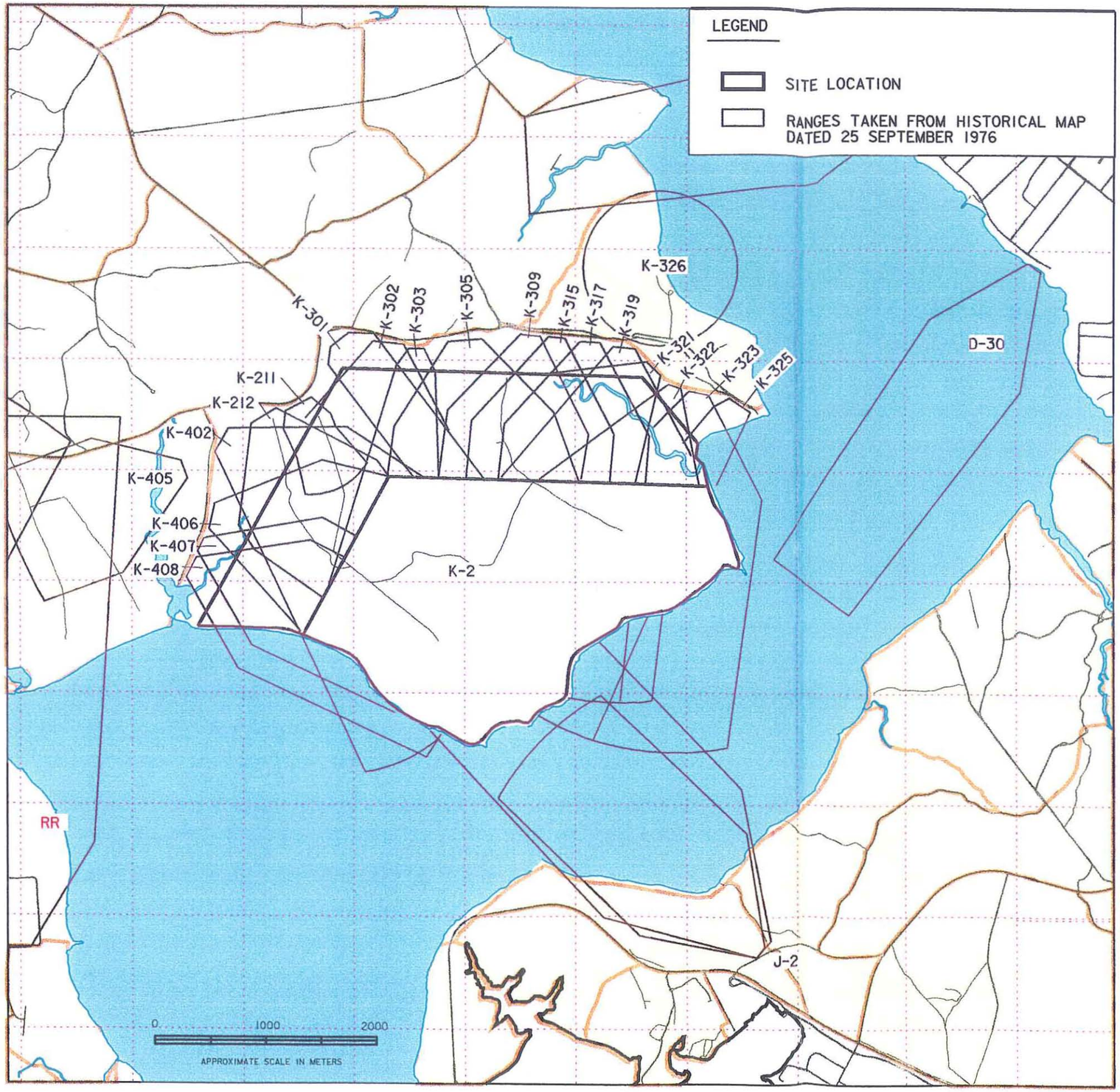
***NOTE: SEE PLATE 17 FOR FEATURE NUMBERS AND FEATURE DESCRIPTIONS ON K RANGES.

N

U.S. ARMY CORPS OF ENGINEERS
ST. LOUIS DISTRICT

MARINE CORPS BASE
(MCB) CAMP LEJEUNE
JACKSONVILLE, NORTH CAROLINA
ONSLOW COUNTY
RANGE OVERLAY MAP-SEPTEMBER 1976

PROJ. DATE: SEPT. 1999	DATE OF BASE MAP: 1998	PLATE NO. 16
10-MAR-2000 13:12	n:\oew\northcarolina\jacksonville\25SEP76.DGN	



KEY TO FEATURES:

FEATURE NUMBER	FEATURE DESCRIPTION
K-2	IMPACT AREA
K-211	M203 AND MK 19 GRENADE LAUNCHER RANGE
K-212	INFILTRATION AND INDIVIDUAL MOVEMENT RANGE
K-301	LIGHT ANTIARMOR WEAPONS AND SHOULDER-LAUNCHED MULTIPURPOSE ASSAULT WEAPON RANGE
K-302	FIELD FIRING AND BATTLESIGHT RANGE
K-303	BASIC TECHNIQUES OF FIRE AND MORTAR FIELD FIRING RANGE
K-305	INFANTRY WEAPONS DEMONSTRATION RANGE
K-309	MACHINE GUN AND LIGHT ANTIARMOR RANGE
K-315	NIGHT AND COMBAT FIELD FIRING RANGE
K-317	CLOSE COMBAT RANGE
K-319	FIELD FIRING RANGE
K-321	TRANSITION RANGE
K-322	MOVING REALISTIC TARGET RANGE
K-323	GRENADE LAUNCHER RANGE
K-325	M72 LIGHT ANTIARMOR WEAPON AND M203 GRENADE LAUNCHER RANGE
K-326	EOD- 2 EXPLOSIVE ORDNANCE DISPOSAL RANGE
K-402	FIRE AND MOVEMENT RANGE
K-405	COMBAT PISTOL MARKMANSHIP RANGE
K-406	MACHINE GUN RANGE
K-407	INDIVIDUAL QUICK REACTION RANGE
K-408	URBAN OBSTACLE COURSE

***NOTE: HISTORICAL MAP SHEET DATA USED IN THIS REPORT WAS RECTIFIED TO A CURRENT MAP PROVIDED BY MCB CAMP LEJEUNE USING INTERGRAPH CORPORATIO SOFTWARE. THE ACCURACY OF FEATURES RECTIFIED FROM THE HISTORICAL MAP SHEET DATA TO THE CURRENT MCB CAMP LEJEUNE MAP MAY VARY.

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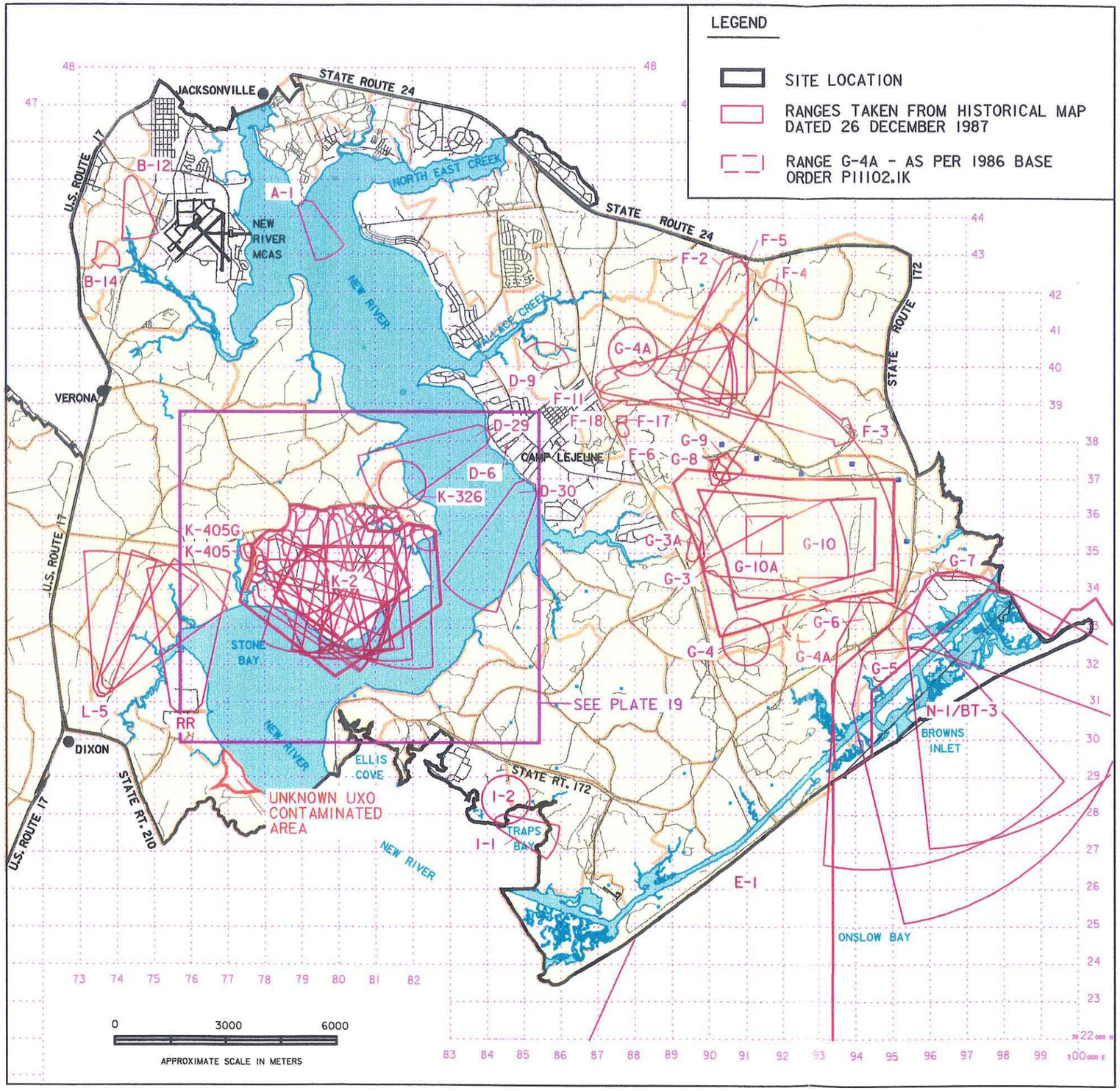
U.S. ARMY CORPS OF ENGINEERS
ST. LOUIS DISTRICT

MARINE CORPS BASE
(MCB) CAMP LEJEUNE
JACKSONVILLE, NORTH CAROLINA
ONSLOW COUNTY
DETAIL "K" RANGES-SEPTEMBER 1976

PROJ. DATE: SEPT. 1999	DATE OF BASE MAP: 1998	PLATE NO. 17
15-FEB-2000 13:36	n:\cad\northcarol\lejeune\25SEP76B.DGN	



KEY TO FEATURES:

FEATURE NUMBER	FEATURE DESCRIPTION
A-1	PISTOL AND SHOTGUN RANGE
B-12	BAFFLED PISTOL RANGE
B-14	ASSAULT OF A FORTIFIED POSITION RANGE
D-6	50 FOOT INDOOR SMALL BORE RIFLE AND PISTOL RANGE
D-9	SKEET RANGE
D-29	50 FOOT SMALL BORE RANGE
D-30	50 FOOT SMALL BORE RANGE
E-1	AIR DEFENSE FIRING RANGE
F-2	FIELD FIRING RANGE
F-3	FIELD FIRING RANGE
F-4	FIRE CONTROL RANGE
F-5	SQUAD LIVE FIRE AND MANEUVER COURSE
F-6	LIVE HAND GRENADE RANGE
F-11	PISTOL RANGE
F-17	DRY NET TRAINING
F-18	MACHINE GUN FIELD FIRING RANGE
G-3	INFANTRY WEAPONS RANGE
G-3A	M 257 SMOKE GRENADE LAUNCHER SYSTEM RANGE
G-4	DEMOLITIONS ASSAULT AREA
G-4A	EOD RANGE SHOWN ON 1987 MAP (SOLID LINE)
G-4A	EOD RANGE SHOWN ON 1986 BASE ORDER (DASHED LINE)
G-5	ANTI-TANK RANGE
G-6	TANK GUNNERY RANGE
G-7	DIRECT FIRE ARTILLERY RANGE
G-8	GRENADE LAUNCHER RANGE
G-9	LIGHT ANTI-ARMOR WEAPONS AND SHOULDER LAUNCHED MULTI-PURPOSE ASSAULT WEAPONS RANGE
G-10	IMPACT AREA
G-10A	EOD DISPOSAL AREA
I-1	50 FOOT SMALL BORE RANGE
I-2	DEMOLITION AREA
K-2	IMPACT AREA- SEE NOTE BELOW
K-326	EOD-2 EXPLOSIVE ORDNANCE DISPOSAL AREA
K-405	HAND GRENADE RANGE
K-405G	UNKNOWN RANGE
L-5	MULTI-PURPOSE MACHINE GUN RANGE
N-1/BT-3	IMPACT AREA
RR	RIFLE RANGE

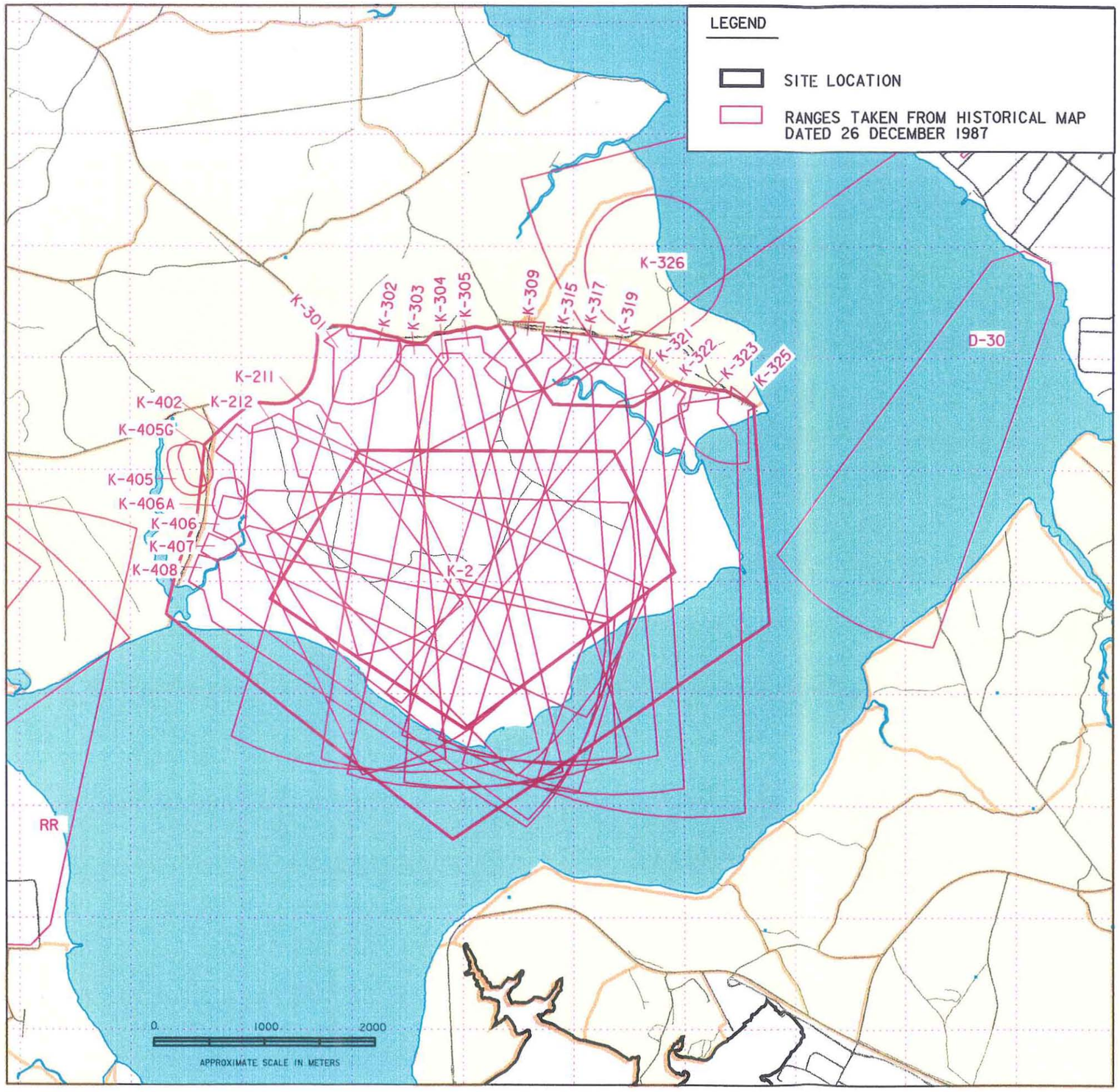
***NOTE: HISTORICAL MAP SHEET DATA USED IN THIS REPORT WAS RECTIFIED TO A CURRENT MAP PROVIDED BY MCB CAMP LEJEUNE USING INTERGRAPH CORPORATION SOFTWARE. THE ACCURACY OF FEATURES RECTIFIED FROM THE HISTORICAL MAP SHEET DATA TO THE CURRENT MCB CAMP LEJEUNE MAP MAY VARY.

***NOTE: SEE PLATE 19 FOR FEATURE NUMBERS AND FEATURE DESCRIPTIONS ON K RANGES.

U.S. ARMY CORPS OF ENGINEERS
ST. LOUIS DISTRICT

MARINE CORPS BASE (MCB) CAMP LEJEUNE JACKSONVILLE, NORTH CAROLINA ONSLOW COUNTY RANGE OVERLAY MAP-DECEMBER 1987

PROJ. DATE: SEPT. 1999	DATE OF BASE MAP: 1998	PLATE NO. 18
14-MAR-2000 09:04	n:\oew\northcarol\lejeune\26DEC87.DGN	



KEY TO FEATURES:

FEATURE NUMBER	FEATURE DESCRIPTION
K-2	IMPACT AREA
K-211	M203 AND MK 19 GRENADE LAUNCHER RANGE
K-212	INFILTRATION AND INDIVIDUAL MOVEMENT RANGE
K-301	LIGHT ANTIARMOR WEAPONS AND SHOULDER-LAUNCHED MULTIPURPOSE ASSAULT WEAPON RANGE
K-302	FIELD FIRING AND BATTLESIGHT RANGE
K-303	BASIC TECHNIQUES OF FIRE AND MORTAR FIELD FIRING RANGE
K-304	HELICOPTER DOOR GUNNERY RANGE
K-305	INFANTRY WEAPONS DEMONSTRATION RANGE
K-309	MACHINE GUN AND LIGHT ANTIARMOR RANGE
K-315	NIGHT AND COMBAT FIELD FIRING RANGE
K-317	CLOSE COMBAT RANGE
K-319	FIELD FIRING RANGE
K-321	TRANSITION RANGE
K-322	MOVING REALISTIC TARGET RANGE
K-323	GRENADE LAUNCHER RANGE
K-325	M72 LIGHT ANTIARMOR WEAPON AND M203 GRENADE LAUNCHER RANGE
K-326	EOD-2 EXPLOSIVE ORDNANCE DISPOSAL RANGE
K-402	FIRE AND MOVEMENT RANGE
K-405	HAND GRENADE RANGE
K-405G	UNKNOWN RANGE
K-406	MACHINE GUN RANGE
K-406A	COVER AND CLEAR RANGE
K-407	INDIVIDUAL QUICK REACTION RANGE
K-408	URBAN OBSTACLE COURSE

***NOTE: HISTORICAL MAP SHEET DATA USED IN THIS REPORT WAS RECTIFIED TO A CURRENT MAP PROVIDED BY MCB CAMP LEJEUNE USING INTERGRAPH CORPORATIC SOFTWARE. THE ACCURACY OF FEATURES RECTIFIED FROM THE HISTORICAL MAP SHEET DATA TO THE CURRENT MCB CAMP LEJEUNE MAP MAY VARY.

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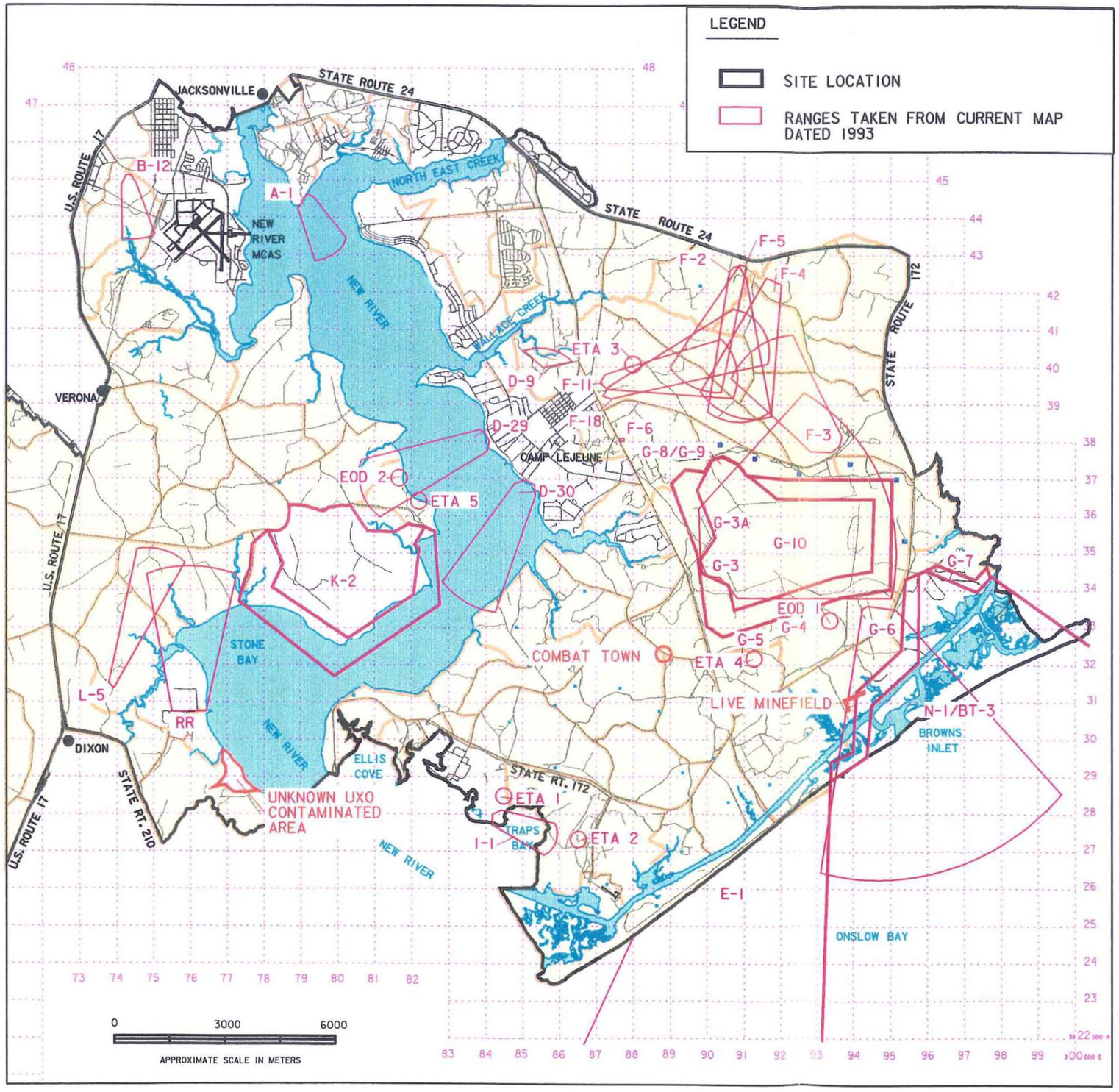
U.S. ARMY CORPS OF ENGINEERS
ST. LOUIS DISTRICT

MARINE CORPS BASE
(MCB) CAMP LEJEUNE
JACKSONVILLE, NORTH CAROLINA
ONSLOW COUNTY
DETAIL "K" RANGES-DECEMBER 1987

PROJ. DATE: SEPT. 1999	DATE OF BASE MAP: 1998	PLATE NO. 19
13-MAR-2000 12:49	n:\oew\northcarol\lejeune\26DEC87B.DGN	



KEY TO FEATURES:

FEATURE NUMBER	FEATURE DESCRIPTION
A-1	PISTOL AND SHOTGUN RANGE
B-12	BAFFLED PISTOL RANGE
D-9	SKEET RANGE
D-29	50 FOOT SMALL BORE RANGE
D-30	50 FOOT SMALL BORE RANGE
EOD-1	EOD DISPOSAL AREA
EOD-2	EOD DISPOSAL AREA
ETA-1	ENGINEER TRAINING AREA
ETA-2	ENGINEER TRAINING AREA
ETA-3	ENGINEER TRAINING AREA
ETA-4	ENGINEER TRAINING AREA
ETA-5	ENGINEER TRAINING AREA
E-1	AIR DEFENSE FIRING RANGE
F-2	FIELD FIRING RANGE
F-3	FIELD FIRING RANGE
F-4	FIRE CONTROL RANGE
F-5	SQUAD LIVE FIRE AND MANEUVER COURSE
F-6	LIVE HAND GRENADE RANGE
F-11	PISTOL RANGE
F-18	MACHINE GUN FIELD FIRING RANGE
G-3	INFANTRY WEAPONS RANGE
G-3A	M 257 SMOKE GRENADE LAUNCHER SYSTEM RANGE
G-4	CLOSE QUARTER BATTLE RANGE
G-5	ANTI-TANK RANGE
G-6	TANK GUNNERY RANGE
G-7	DIRECT FIRE ARTILLERY RANGE
G-8	GRENADE LAUNCHER RANGE
G-9	LIGHT ANTI-ARMOR WEAPONS AND SHOULDER LAUNCHED MULTI-PURPOSE ASSAULT WEAPONS RANGE
G-10	IMPACT AREA
I-1	50 FOOT SMALL BORE RANGE
K-2	IMPACT AREA - SEE NOTE BELOW
L-5	MULTI-PURPOSE MACHINE GUN RANGE
N-1/BT-3	IMPACT AREA
RR	RIFLE RANGE

***NOTE: HISTORICAL MAP SHEET DATA USED IN THIS REPORT WAS RECTIFIED TO A CURRENT MAP PROVIDED BY MCB CAMP LEJEUNE USING INTERGRAPH CORPORATION SOFTWARE. THE ACCURACY OF FEATURES RECTIFIED FROM THE HISTORICAL MAP SHEET DATA TO THE CURRENT MCB CAMP LEJEUNE MAP MAY VARY.

***NOTE: 'K' RANGE FANS WERE NOT SHOWN ON 1993 SOURCE MAP AND THEREFORE NOT INCLUDED ON THIS PLATE.

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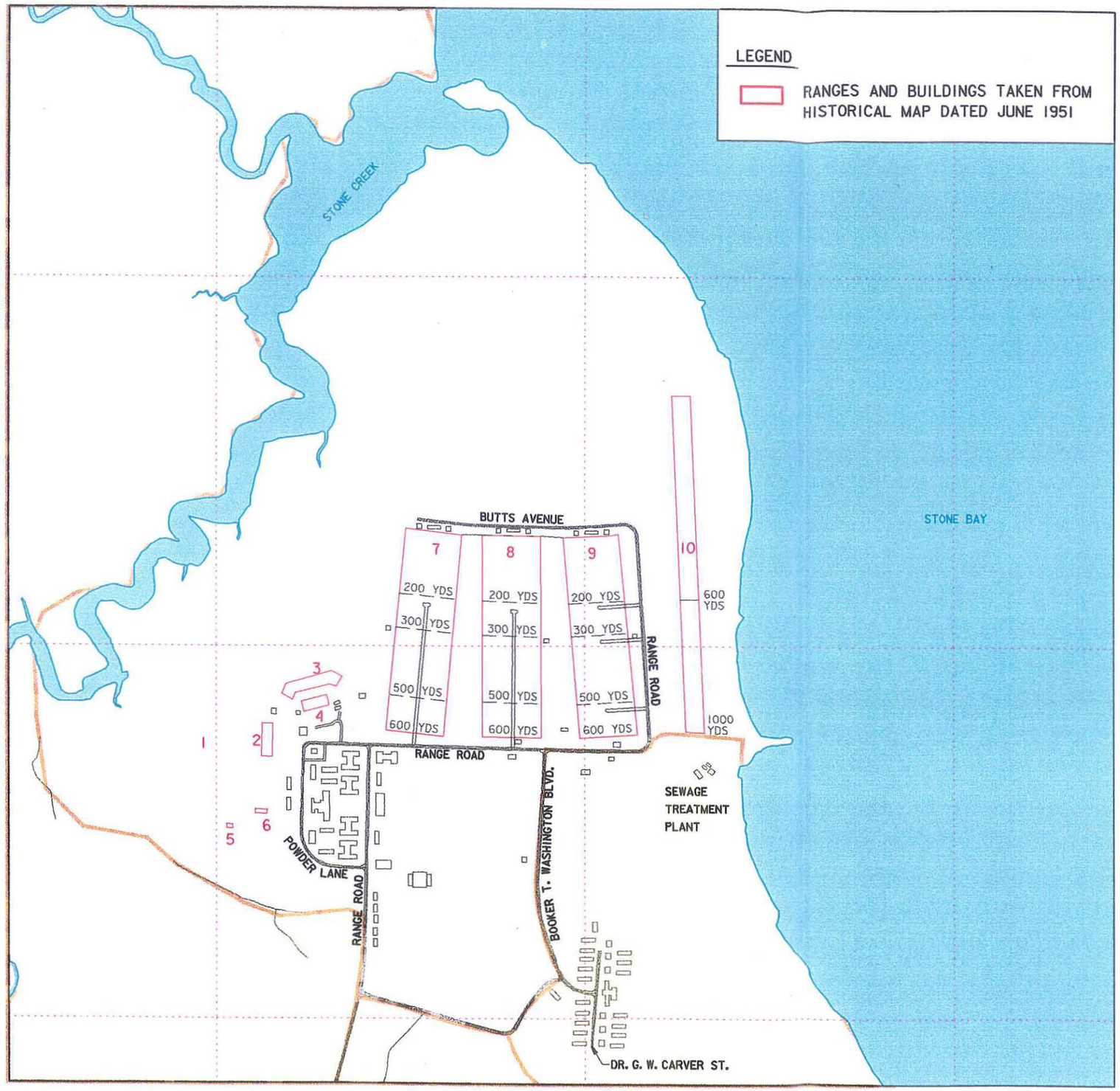
U.S. ARMY CORPS OF ENGINEERS
ST. LOUIS DISTRICT

MARINE CORPS BASE (MCB) CAMP LEJEUNE JACKSONVILLE, NORTH CAROLINA ONSLOW COUNTY RANGE OVERLAY MAP-1993

PROJ. DATE: SEPT. 1999	DATE OF BASE MAP: 1998	PLATE NO. 20
13-MAR-2000 09:05	n:\oew\northcarol\lejeune\1993east.dgn	



KEY TO FEATURES:

FEATURE NUMBER	FEATURE DESCRIPTION
1	COMBAT RANGE
2	BUTT
3	PISTOL BUTT
4	PISTOL RANGE
5	GAS CHAMBER
6	INDOOR PISTOL RANGE
7	RIFLE RANGE 1
8	RIFLE RANGE 2
9	RIFLE RANGE 3
10	MACHINE GUN RANGE

***NOTE: HISTORICAL MAP SHEET DATA USED IN THIS REPORT WAS RECTIFIED TO A CURRENT MAP PROVIDED BY MCB CAMP LEJEUNE USING INTERGRAPH CORPORATION SOFTWARE. THE ACCURACY OF FEATURES RECTIFIED FROM THE HISTORICAL MAP SHEET DATA TO THE CURRENT MCB CAMP LEJEUNE MAP MAY VARY.

0 300 600

APPROXIMATE SCALE IN METERS

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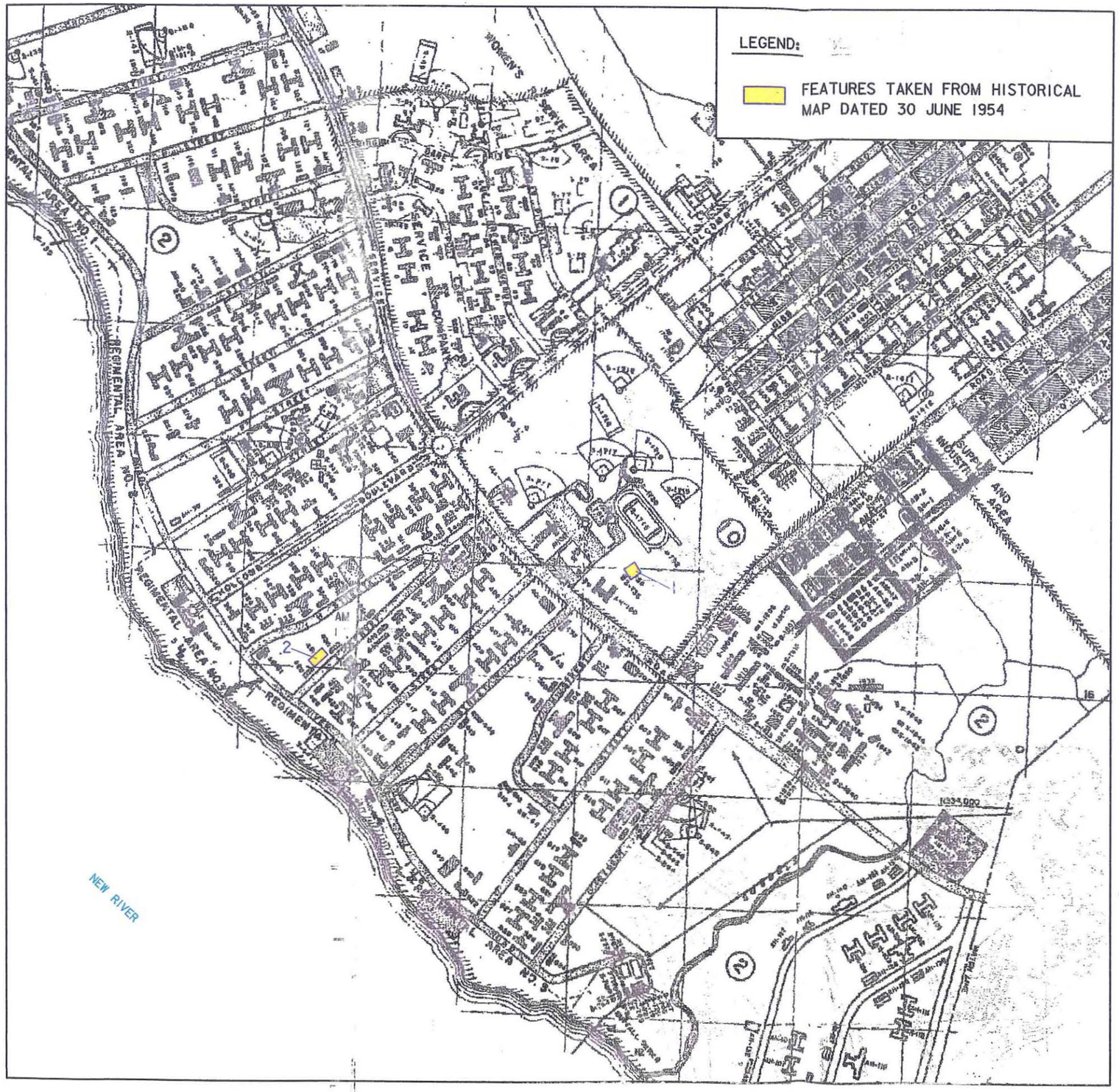
U.S. ARMY CORPS OF ENGINEERS
ST. LOUIS DISTRICT

MARINE CORPS BASE
(MCB) CAMP LEJEUNE
JACKSONVILLE, NORTH CAROLINA
ONSLOW COUNTY
RIFLE RANGE COMPLEX

PROJ. DATE: SEPT. 1999	DATE OF BASE MAP: 1998	PLATE NO. 21
15-FEB-2000 13:45	n:\oew\northcarol\lejeune\RIFLE.DGN	



KEY TO FEATURES:

FEATURE NUMBER	FEATURE DESCRIPTION
1	BASE CS CHAMBER AND NBC TRAIL
2	RANGE D-6 - 50 FOOT SMALL BORE RANGE

***NOTE: HISTORICAL MAP SHEET DATA USED IN THIS REPORT WAS RECTIFIED TO A CURRENT MAP PROVIDED BY MCB CAMP LEJEUNE USING INTERGRAPH CORPORATION SOFTWARE. THE ACCURACY OF FEATURES RECTIFIED FROM THE HISTORICAL MAP SHEET DATA TO THE CURRENT MCB CAMP LEJEUNE MAP MAY VARY.

0 300 600

APPROXIMATE SCALE IN METERS

U.S. ARMY CORPS OF ENGINEERS
ST. LOUIS DISTRICT

MARINE CORPS BASE
(MCB) CAMP LEJEUNE
JACKSONVILLE, NORTH CAROLINA
ONSLOW COUNTY
HISTORICAL FEATURES-JUNE 1954

PROJ. DATE: SEPT. 1999	DATE OF BASE MAP: 1954	PLATE NO. 22
28-FEB-2000 13:06	n:\oew\northcarol\lejeune\PLATE22.DGN	