



Bridge To The New Millenium

Bridging the Gap

Successes & Challenges Ahead

**Atlantic Division, Naval Facilities
Engineering Command**

**Construction Safety & the ORM
process**

From CNO

“ORM applies across the entire spectrum of naval activities, from joint operations and fleet exercises to our daily routine. We must encourage top-down interest in the ORM process, from the flag level all the way to the deckplates.”

-- August 1998

“We’re out of the do more with less business. We can do less with less or we can do more with more, but we will no longer do more with less.”

Admiral Jay Johnson

Naval War College June, 1997

Cost of Construction Mishaps



"Manage your risks before they manage you."



Background and Statistics

- **Construction Employs 5% of Work Force**
- **Construction Incurs 20% of Fatalities**
- **And 12% of the Total # of Disabling Injuries**
- **About 1000 Construction Workers Die Each Year**

Direct vs. Indirect Cost

- **Direct Costs:**
 - **Medical**
 - **Worker' s Compensation**
- **Indirect Costs:**
 - **Lost Production**
 - **Liability Lawsuits**
 - **Failure to Fill Orders**

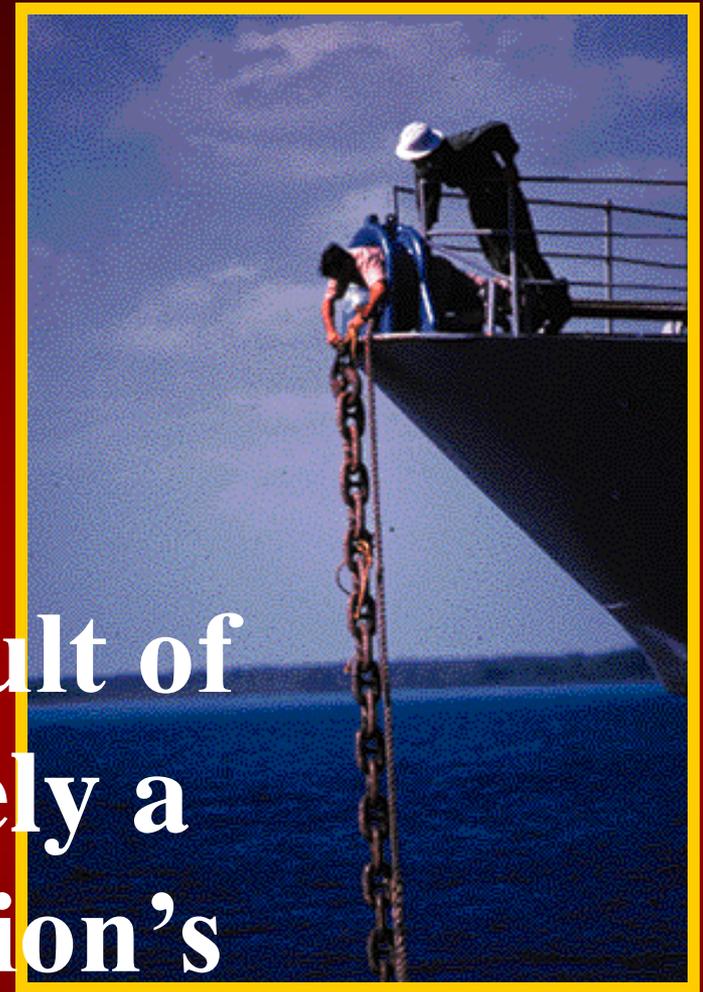
Indirect Costs of Accidents

- **Equipment & Property Damage**
- **Lost Efficiency Due to Crew Breakup**
- **Lost Time by Supervision**
- **Lost Time by Other Workers**
- **Cost of Training New Personnel**
- **Injured Worker's Lost Work Days**
- **Loss of Earning Power**
- **Economic Loss to Family**

Operational Risk Management (ORM) is a CNO instruction delineating a process for minimizing risk during military operations. Atlantic Division uses ORM in construction contracts via contract required pre planning stages that the contractor and 2nd Brigade follow.

Accident

“The unplanned result of behavior that is likely a part of an organization’s culture.”



Organization Culture

“The way we do things here.”

- ✓ **Fundamental Building Blocks**
- ✓ **Group Values and Standards**
- ✓ **Medium for Growth**
- ✓ **Shaped by Leadership**

Drives key decisions

Changing the Belief System

From the Top Down:

The Zero Injury Commitment:

- * Accidents Don't Just Happen
- * Accidents Are Not: "just part of doing business"
- * Commit to Eliminating, not Reducing Accidents
- * A Job w/an Injury is a "Defective Product"





**What's
wrong
with
this
picture
?**

Desired Cultural Attitudes

- Integrity
- Accountability
- Focus on standards
- Continuous and open communication
- Intolerance for non-compliance
- Consistent decisions

**ORM
/AHA**

Process ...

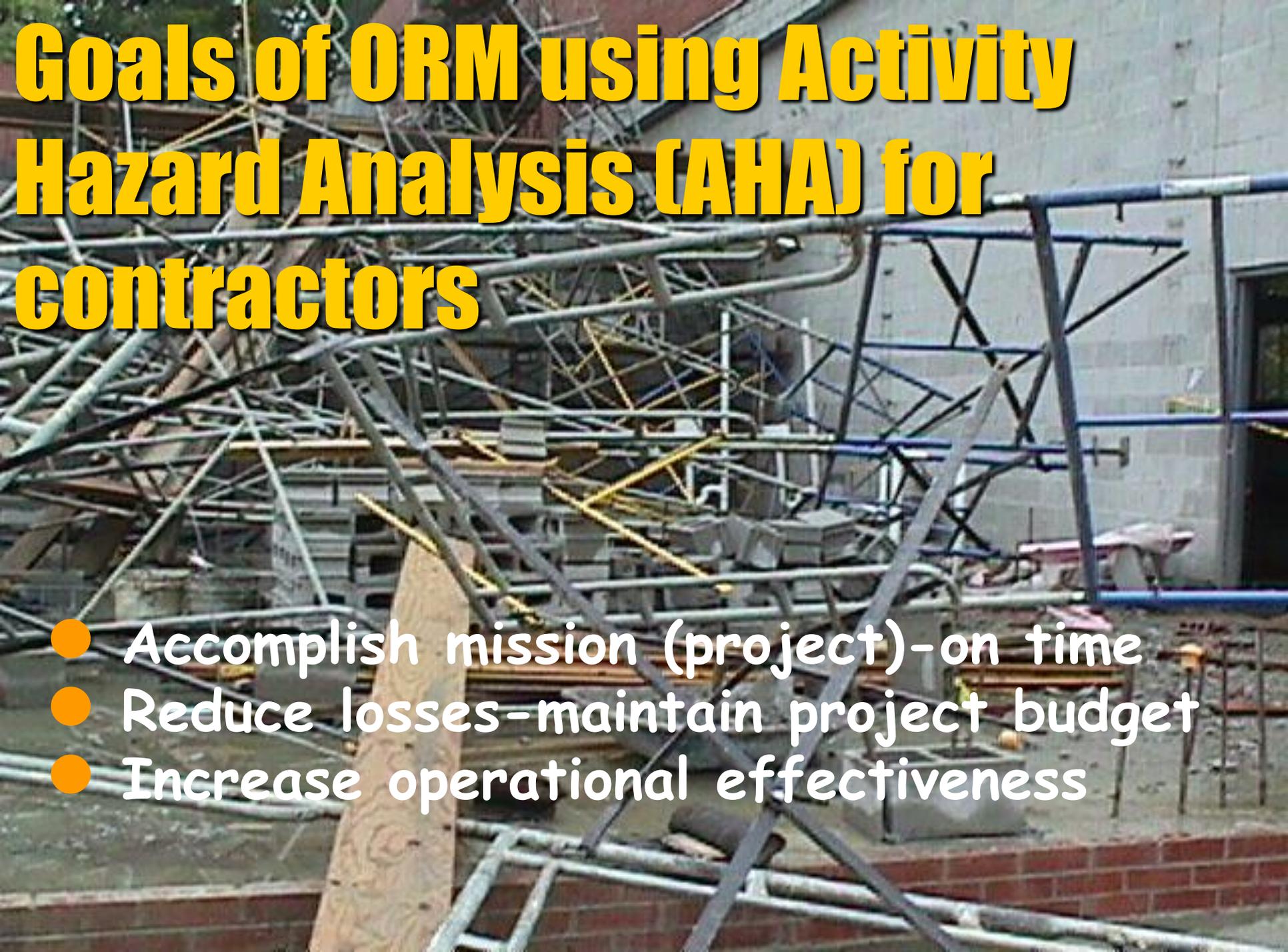
NOT Program!



Operational Risk Management through Activity Hazard Analysis (AHA)

- > A Decision Making Tool**
- > Increases Ability to Make Informed Decisions**
- > Reduces Risks to Acceptable Levels**
- > Forces the contractor to plan out the work**

Goals of ORM using Activity Hazard Analysis (AHA) for contractors



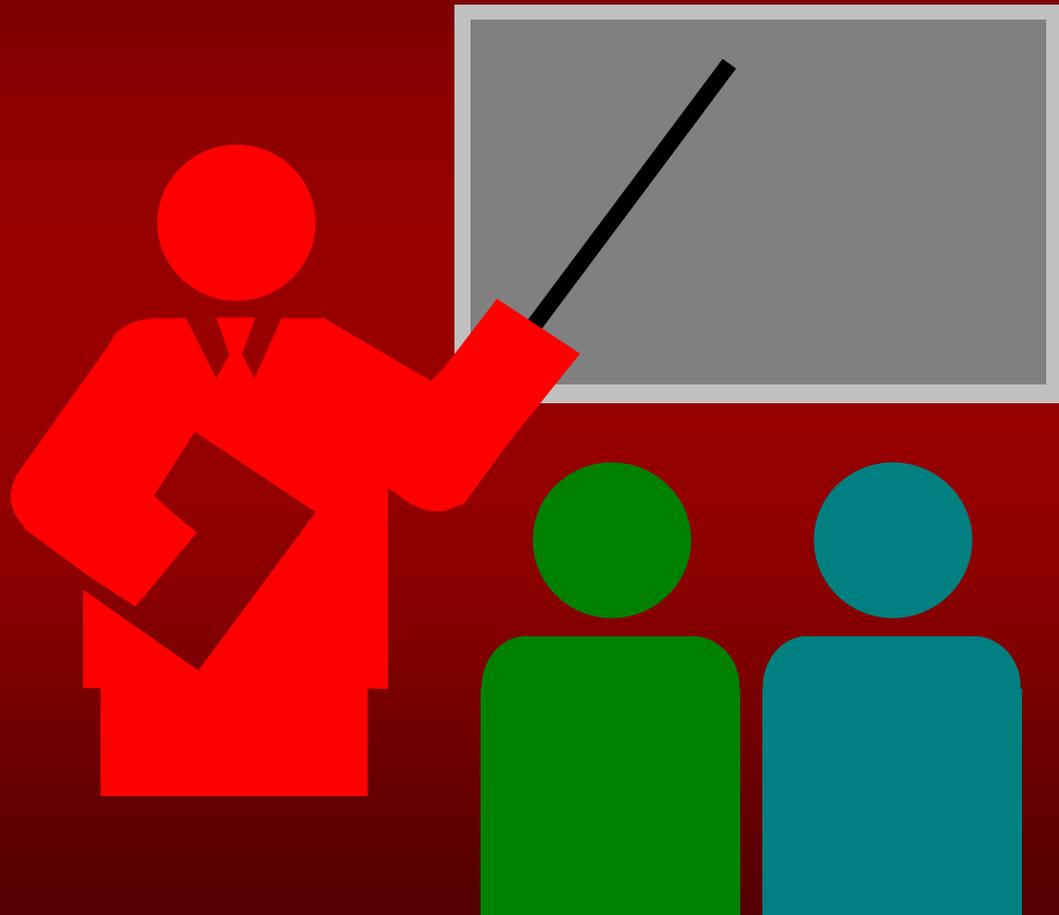
- Accomplish mission (project)-on time
- Reduce losses-maintain project budget
- Increase operational effectiveness

Operational Risk Management through Activity Hazard Analysis

Goal:

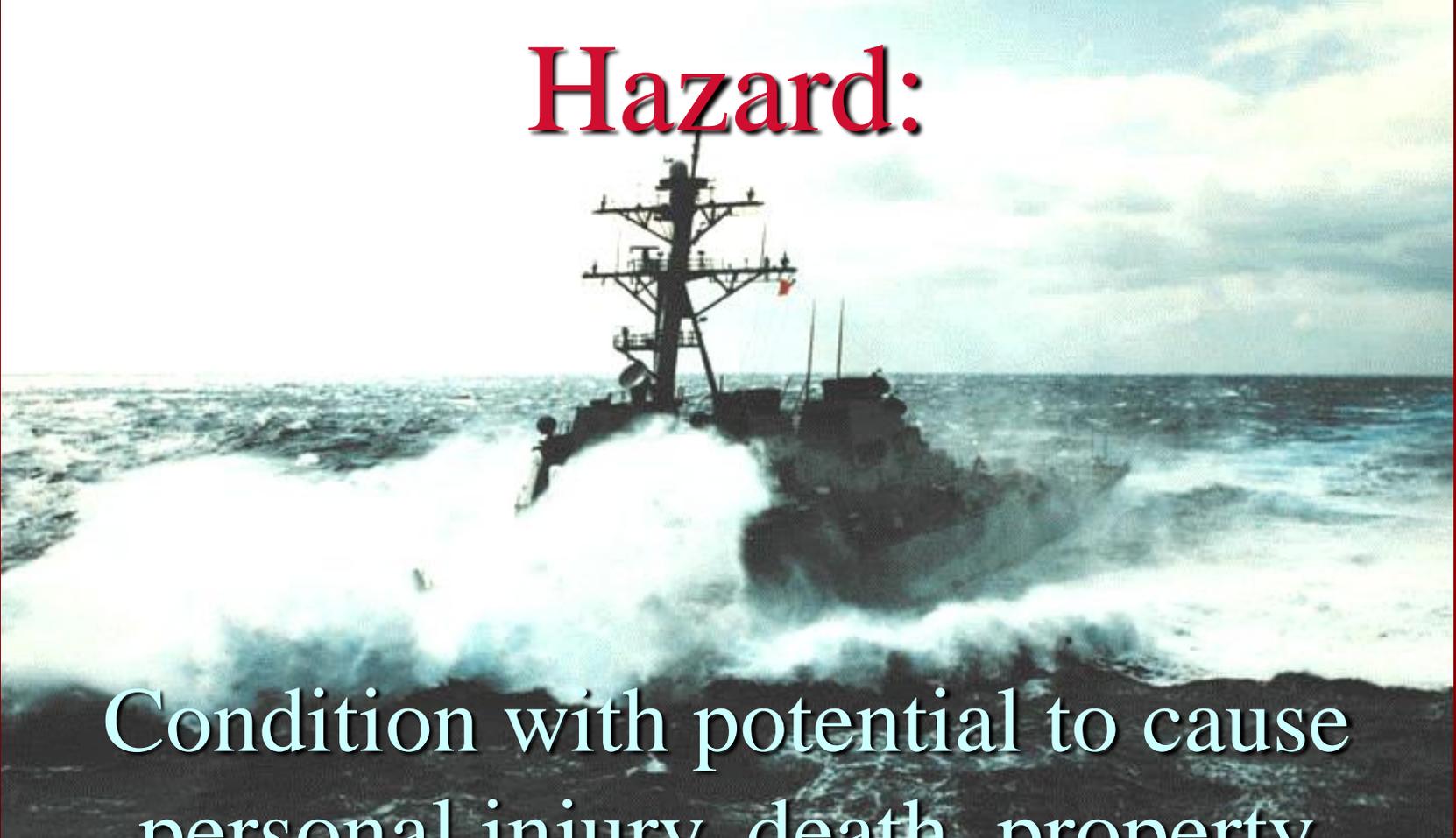
**To optimize operational capability
and readiness by managing risk to
accomplish the mission without
loss.**

ORM/AHA Terms



AHA Terms

Hazard:



Condition with potential to cause personal injury, death, property damage, or mission degradation.

ORM/AHA Terms

Risk:

Expression of possible loss in terms of severity and probability.



AHA Terms

Severity:

The worst credible
consequence which can occur
as a result of a hazard.

AHA Terms

Risk Assessment:

The process of detecting hazards and assessing associated risks.

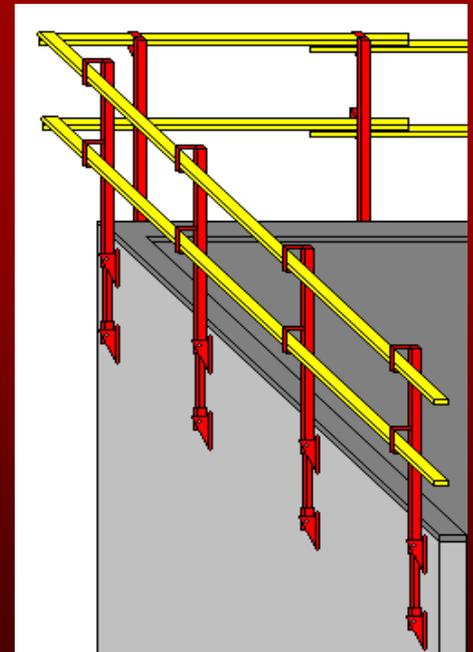
AHA Terms

Control:

A method for reducing risk for an identified hazard by lowering the probability of occurrence, decreasing potential severity, or both.



Same five step process for hazard recognition and control are in both the ORM and AHA processes



Operational Risk Management/Activity Hazard Analysis Process

- 1. Identify Hazards**
- 2. Assess Hazards**
- 3. Make Risk Decisions**
- 4. Implement Controls**
- 5. Supervise**

AHA vs. Traditional Approach

Systematic

Random, Individual-Dependent

Proactive

Reactive

Integrates All Types
of Risk Into Plan

Safety As After-thought Once
Plan is Done

Common
Process/Terms

Non-standard

Conscious Decision
Based on Risk vs. Benefit

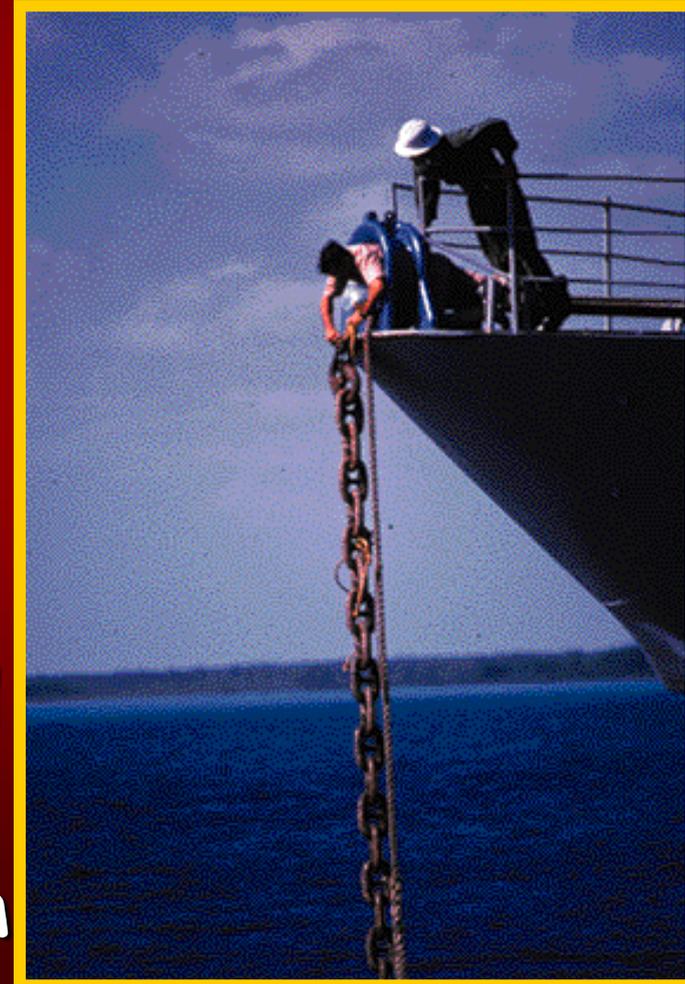
“Can Do” Regardless of Risk

The Benefits of ORM through AHA for contractors and 2nd Brigade

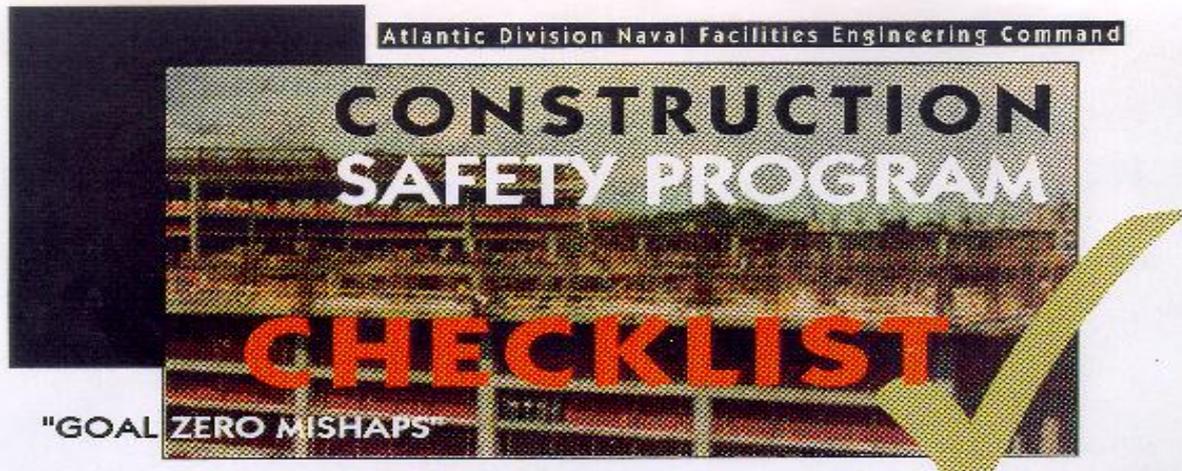
- > Reduction in Mishaps**
- > Improved Mission
Effectiveness**

Challenges of our Culture

- × Reluctance to say "No."
- × Doing more with less/same.
- × "The way we've always done it."
- × "Can do."
- × Cost of doing business.
- × I've been doing this for thirty years and never had to do that before
- × We've never had a problem







- ❑ **Hard Hats**
All construction areas are considered Hard Hat Areas
- ❑ **Fall Protection Program**
Construction Sites are required to maintain an effective program to eliminate hazards
- ❑ **Electrical Safety/Program**
Control of Hazardous Energy
- ❑ **Scaffolding**
Manufacturer recommendations and daily inspections
- ❑ **Ladders**
Proper setup and use
- ❑ **Drug Free Workplace**
Construction Areas must maintain program
- ❑ **Excavation Protection**
Adequate shoring systems/inspections
- ❑ **Equipment Inspections**
Rigging/Operations checklists
- ❑ **Activity Hazard Analysis**
Before Work Starts/Identify Hazards/
Identify Control/Communicate to
Workers/Inspect
- ❑ **Hazardous Communication Program**
Label Containers/Communicate to
workers
- ❑ **Emergency Fire Protection and Prevention/First Aid/
Destructive Weather**
Emergency Action Plans
- ❑ **Demolition Activities**
Site Surveys



5-Ton Truck Mishap and Fire



Result: Two Marine Fatalities

“The Bridge”

ORM/
AHA

Status
Quo

Change

**Atlantic Division “Best Practices”
plan of action has been
implemented to award contracts
to contractors with proven safety
performance, trained site
managers, proactive substance
abuse programs, and full-time
safety managers on staff.**

Safe vs. Unsafe Contractor Bids

- **Safe Contractor:**

WC Cost: \$750,000

EMR: .60

Modified WC: \$450,000

Savings: \$300,000

- **Unsafe Contractor:**

WC Cost: \$ 750,000

EMR: 1.40

Modified WC:\$1,050,000

Extra Expense: \$300,000

“ZERO INJURY” Philosophy for construction sites adopted from the Construction Industry Institute (CII)

- Safety Pre-Project & Pre-Task Planning**
- Safety Orientation and Training**
- Safety Incentives**
- Drug and Alcohol Abuse Program**
- Accident & Incident Investigation**

ORM using Activity Hazard Analysis in construction contracts - a Tool for Leaders



- ★ Easy, common-sense process**
- ★ Mind-set**
- ★ Way of life**
- ★ Operating Discipline**
- ★ Process must be taught --**



HOW DOES LANTDIV IMPLEMENT ORM CONCEPTS FOR CONSTRUCTION USING AHA REQUIREMENT

**Assure our contractors & 2nd Brigade
are providing a safework place for
contractor employees through AHA -
plan ahead for safety**

ORM and Activity Hazard Analysis are parallel processes for assuring a safe work place by forcing contractors to plan out their work, ahead of time, on each phase, before that work phase starts.

AHA = ORM

AHA requires contractors to identify the work phase, the hazards, the controls to eliminate the hazards, the special training or qualifications required, the equipment required, accountability, and communication to the workers.

Three Crucial Questions

- ★ **What's going to hurt me?**
- ★ **What am I going to do about it?**
- ★ **If I can't do anything, who do I tell?**

Atlantic Division has been advocating the AHA process since October 1995. It has been a USACE EM 385-1-1 requirement since 1967 however, until recently, has not been effectively enforced or accepted by the construction contracting community.

IT'S NO SECRET

***SUCCESS IN ASSURING A SAFE
CONSTRUCTION SITE
REQUIRES***

***EACH WORK PHASE TO BE
PLANNED WELL AHEAD OF TIME***

As ROICCs our responsibility in quality assurance helps make the AHA process happen through several standard business project pre planning stages which are required to take place

ROICC ABCs

A) ASSURE a clear contract (SECTION 01525)

B) ASSURE a site specific project safety plan

C) ASSURE communication of safe site expectations at PRE CON (“GOAL ZERO through ZERO tolerance”)

D) ASSURE quality Activity Hazard Analysis (AHA) are provided for each phase of the project

**Requirement communicated to
contractors by spelling it out in
the contract**

Activity Hazard Analysis-

Already included in contract documents:

USACE EM 385-1-1(09.A.01),

Specification Section 01525

& FAR Clause 52.236-13

HOW DO WE DO IT?

***Require it from the
contractor before work
begins on each phase***

Review and accept it

**WHAT IS THE CONTRACTOR SUPPOSE
TO DO WITH IT?**

**Ensure the workers know what's
in it - Communication during
weekly on site safety meetings,
supervise, and inspect**

WHO MAKES IT?

The optimum is for the sub contractor to provide it to the prime superintendent. The sub is most familiar with the men, material, and equipment planned to be brought on site. The superintendent is most familiar with the adjacent activities which will be going on at the site and the potential additional hazard exposures.

*"ORM through
AHA -- they're
not a destination,
they're a
journey."*

Four Pillars and Foundation



Five-Year Goals



- ★ **Human error mishaps cut by 50%**
- ★ **AHA embedded in training pipelines**
- ★ **All ROICCs have active AHA process**
- ★ **AHA in foundational documents**
- ★ **Leadership commitment**

"AHA... three words to construction mission accomplishment."

Resources We Have



- ★ **Leadership commitment**
- ★ **Time**
- ★ **Feedback**

AHA implemented through ORM concepts Can Save the Construction Community

**Cut human-error mishaps by 50% in
the next five years and save ...**



lives



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We didn't get where
we wanted to go by
taking baby steps.
We got there by
taking

Leaps

**“Life is tough, but it’s
tougher if you’re stupid”**

Sergeant John M.
Stryker, USMC, in
“The Sands of
Iwo Jima”



Questions ?

