3Rs Explosives Safety Guide

Construction Industry

ORecognize
ORetreat
OReport

THE UNITED STATES HAS ALWAYS MAINTAINED A HIGHLY TRAINED AND READY FORCE TO PROTECT ITS NATIONAL INTERESTS.

After both world wars and recently with force realignment and modernization efforts, the Department of Defense (DoD) closed a number of military installations and training areas, and returned other lands previously used for military-related activities to public use. Because of the live-fire training and testing required to maintain this force, millions of acres in the United States are known or suspected to contain military munitions in the form of unexploded ordnance (UXO), or discarded military munitions (DMM). In some cases, munitions constituents (e.g., TNT) may also exist in high enough concentrations to present an explosive (detonation) hazard. Although DoD routinely made an effort to remove any explosive hazards present before releasing land from its control, some may remain. These explosive hazards may be found on the surface or in the subsurface.

Munitions are designed to injure, maim or kill people, or to destroy equipment or structures. Consider any encounter with a known or suspected munition as an extremely dangerous situation.

During construction work (e.g. clearing vegetation, grubbing, grading, or excavation), munitions may be encountered. This is particularly true for areas known to have once been used by the military for munitions-related activities (e.g., live-fire training and testing, and munitions demilitarization).

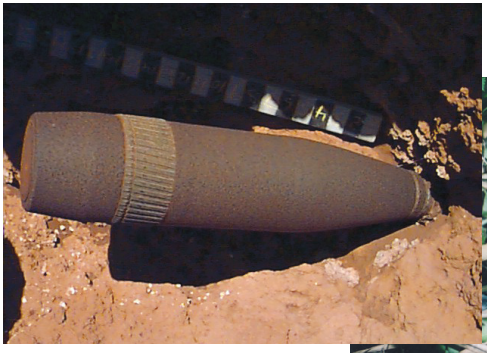
Military munitions operating buildings (e.g., munitions production and demilitarization facilities) and any installed equipment may contain explosives residue in high enough concetrations to present an explosive hazard. Building features (e.g., floors, walls, drains, internal and external piping, and ventilation systems), in which explosives residues could accumulate and present an explosive hazard, are of particular concern. Industrial equipment, particularly equipment with internal cavities, from facilities used in munitions production or demilitarization operations (e.g., cast loading, milling, or steam-out) that generated explosive residues (e.g., dust or vapors) is also of concern.

WILL YOU KNOW WHAT TO DO IF YOU ENCOUNTER A MUNITION?

Areas at which DoD conducted munitions-related activities include, but are not limited to operational and former ranges, and areas used for munitions demilitarization. The types of explosive hazards present may differ between areas. As an example, a former impact area may contain UXO, while a former maneuver area may only contain DMM.

Munitions can also be found in areas where combat operations once occurred. Even cannon balls found on Civil War battlefields present a potential explosive hazard. However, for a variety of reasons (unauthorized disposals, discarded souvenirs) munitions may be encountered almost anywhere.

Prior to working in areas with a history of military use, even areas where DoD has completed an environmental response to remove any hazards detected, it is important to familiarize yourself with the site history and potential hazards. This can be provided through site-specific safety training. In some cases, safety officials may determine that on-site or on-call construction support by UXO-qualified personnel is necessary to help ensure the safety of construction workers, particularly during ground disturbing or intrusive activities.



MUNITIONS ARE DESIGNED TO BE DANGEROUS

Remember that munitions:

- Come in many shapes and sizes.
  - They could look like a:
    - Pointed pipe
    - Soda can
    - Baseball
    - Car muffler
  - They may:
    - Look new or old
    - Be found alone or in clusters
- Should be considered extremely dangerous regardless of size or age
- Munitions often become more dangerous with age, not safer

Munitions may be:

- Found almost anywhere
- Clearly visible on the surface
- Buried at depths of inches to many feet
- Partially or completely hidden by dirt or vegetation
- Found under paved areas (roads, parking lots) or building slabs
- Underwater, in lakes, streams, or the ocean
- Exposed by natural phenomena (e.g., tides)
- Easy or difficult to recognize

While munitions are most likely to be encountered during construction in areas where DoD conducted munitions-related activities, they may be encountered anywhere. To protect yourself and your co-workers, know whether munitions-related activities ever occurred at your work site, and learn to follow the 3Rs: Recognize, Retreat, Report.

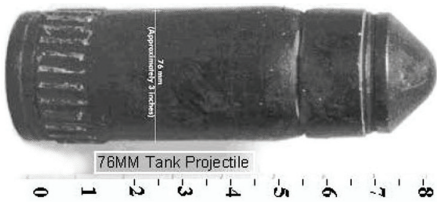
Recognize

Recognizing that you may have encountered a munition is one of the most important steps in reducing the potential risk of injury or death. Because munitions pose a potential explosive hazard, they should never be touched, moved or disturbed (handled).

WILL YOU DO THE RIGHT THING WHEN THE TIME COMES?

In 1993, a construction worker digging a trench unearthed what looked like large bullets. He recognized the potential danger, stopped digging and notified his supervisor. Local authorities were called. As a result of this worker's actions, nearly 150 high explosive tank shells were recovered from a former WWI training area.

Remember, whether complete or in pieces, any munition or suspect munition encountered should be considered extremely dangerous. Do the right thing! immediately stop all operations in the area; do not touch, move or disturb it, and notify your supervisor or local authorities.



Retreat

If you encounter or suspect you may have encountered a munition, do not touch, move or disturb it. Instead, carefully retreat from the area by retracing your steps.

- Immediately stop all construction activities in the area, warning others of the potential danger.
- Do not approach the munition or a suspect munition. (Some fuzes are sensitive to changes in temperature, movement or pressure.)
- Move away from the area and keep others away from it!

Unfortunately, munitions are often popular, but potentially deadly souvenirs. Taking a munition for a keepsake presents an immediate and real danger to you. Bringing one home endangers your family, your friends, and your community. Don't be tempted.

Report

If you encounter or suspect you have encountered a munition, do not touch, move or disturb it. Instead, immediately stop construction activities and move away from the area and report what you saw.

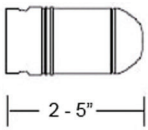
Protect yourself, your co-workers, and the public by immediately reporting any munitions or suspect munitions encountered to your foreman, site supervisor, or by calling 911.

Provide as much information as possible about what you saw and where you saw it. This will help the police and explosive ordnance disposal personnel (usually referred to as EOD personnel) find, evaluate and address the situation.

If you believe you may have encountered a munition, report the following:

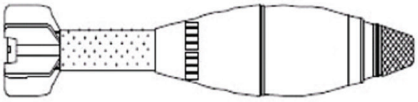
- The area where you encountered it.
- A general description of the munition, to include:
  - Its size
  - Its shape
  - Any readily visible markings--do not approach or handle the munition to see the markings

MUNITIONS COMMON SIZE AND SHAPE PROFILES

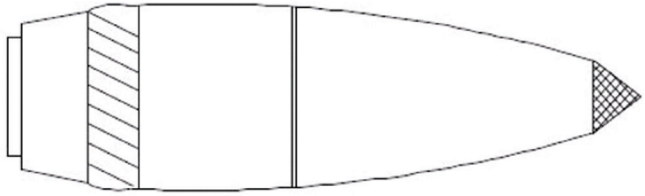


2 - 5”

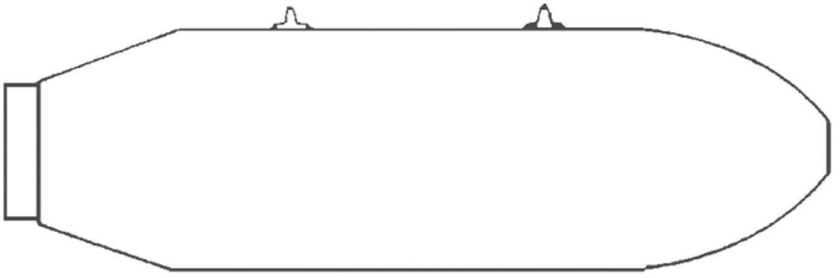
8 - 16”



10 - 25”



15 - 36”



18 - 60”

Don't Forget

- Munitions are dangerous and may not be easily recognizable!
- The history of your work site--know when you are working on a former military range or disposal area!
- Never touch, move or disturb a munition!

Follow the 3Rs

Recognize

When you may have encountered a munition.

Retreat

Do not touch, move or disturb it, but carefully leave the area.

Report

Immediately notify the police if on land,
or the U.S. Coast Guard if at sea.

Emergency contacts:

- On land: Call 911
- At sea: Use Channel 16 (156.800 MHz)

For additional information call
U.S. Army Technical Center for Explosives Safety
at (918) 420-8919
or see

the US Army's UXO Safety Education website
https://www.denix.osd.mil/uxosafety

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