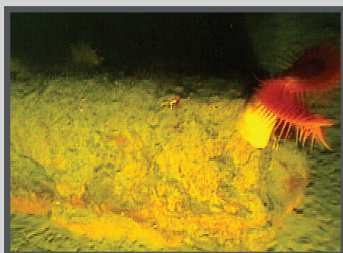


3Rs EXPLOSIVES SAFETY GUIDE

MARITIME INDUSTRY



During maritime operations (e.g., fishing, clamming or dredging), nets, bottom tending gear, and dredges may catch or dredge munitions from the ocean. Munitions pose a potential, but real danger to vessels and crews as well as to commercial and recreational divers.

Vessel crews often tell tales about catching suspicious items in a net or dredging gear. Lucky crews live to spin their own tales, while others become the subject of a tragic tale.

In July 1965, such a tragedy took place aboard the fishing vessel (FV) Snoopy. While trawling for scallops off the coast of North Carolina, the FV Snoopy caught a large cylinder, described by a witness on deck as a long round object swaying in the net amidships.

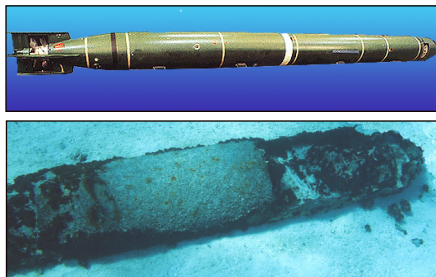
What happened next is unclear, but an explosion caused the loss of the FV Snoopy and eight of her crew.

What went wrong? Was it preventable? Could something have been done to save the FV Snoopy and her crew? No one but the crew of the FV Snoopy actually knows what happened. However, this tragedy is meaningful if others learn from it.

If you encounter or suspect you have encountered a munition at sea, follow the 3Rs of Explosives Safety (Recognize, Retreat, Report).



UNEXPLODED ORDNANCE RECOVERED DURING DREDGING



A NEW TORPEDO (TOP) AND A HEAVILY CORRODED TORPEDO ON THE SEA FLOOR (BOTTOM).



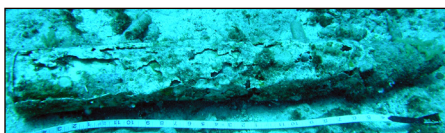
The military has conducted live-fire training and combat operations at sea for centuries. Prior to 1970, the U.S. military and the militaries of other nations sea-disposed excess, obsolete and unserviceable munitions either en route to port or as part of a planned disposal. In 1970, militaries of the U.S and other countries stopped the practice, now allowing it only during an emergency. Mariners should be prepared for an encounter with munitions during commercial operations, such as fishing, clamming or dredging. By following the 3Rs and using common sense, mariners will know what to do if they inadvertently recover a munition.

Munitions may be encountered anywhere, not just in charted hazard areas. Munitions that may be encountered include mines, torpedoes, depth charges, artillery shells, bombs and missiles. Munitions may contain explosives or chemical agents, both potentially posing serious dangers to a vessel and her crew.

- All munitions, including those that have been in the sea or fresh water for many years, should be considered extremely dangerous.
- In some cases, munitions that have been in water for a long time have become more sensitive.
- Whether encountered at sea or on land, munitions might explode when moved, disturbed, or handled.
- Munitions submerged in sea or fresh water for any length of time may:
 - ▶ Look new and be easy to identify;
 - ▶ Be heavily rusted or encrusted with sea growth and be difficult to identify.



VARIOUS RECOVERED PROJECTILES



PROJECTILE AND CARTRIDGE CASE ON SEA FLOOR

RECOGNIZE

MUNITIONS ARE DESIGNED TO BE DANGEROUS

In support of its mission, the Department of War (DoW) designs military munitions to kill or seriously injure people, or destroy equipment (e.g., vessels). To protect yourself from the potential hazards associated with munitions, avoid known disposal areas

by heeding warnings on nautical charts and following the 3Rs of Explosives Safety (Recognize, Retreat, Report). (Note: This guide includes drawings and photos of some munitions to help crews recognize suspect munitions.)

CHEMICAL MUNITIONS AND CHEMICAL AGENTS

In the early 1900s, DoW developed chemical munitions to kill, seriously injure, or incapacitate an enemy. In the past, the U.S. and other countries sea-disposed chemical munitions and chemical agents in bulk containers, such as 55-gallon drums. As a result, some munitions or containers recovered from the sea may contain chemical agents.

Vessel crews should be alert for the following signs that a chemical munition or chemical agents are present:

- Unusual odor from equipment or fish;
- Stinging sensations in the eyes;
- Burning or irritated skin;
- Presence of an oily liquid;
- Corroded containers or suspicious clay-like lumps.



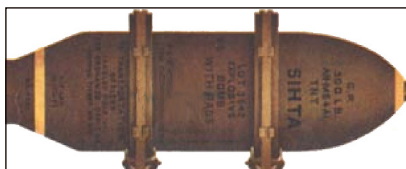
RECOVERED CHEMICAL MUNITION



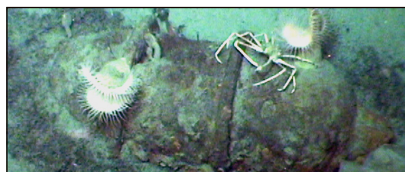
CHEMICAL MUNITION RECOVERED FROM CLAMBED

IF YOU SUSPECT A CHEMICAL MUNITION OR AGENT IS PRESENT, ACT IMMEDIATELY TO PROTECT THE CREW AND VESSEL.

- Move all crew members upwind;
- Steam into the wind to carry any contaminants away from the crew;
- Close all doors and hatches;
- Shut down all ventilation systems;
- Flush the area thoroughly with water to wash suspect chemical agent overboard;
- Contact the U.S. Coast Guard (USCG) for immediate assistance;
- Do not steam into port, unless the USCG advises you to do so.



AN AERIAL BOMB PREPARED FOR SHIPPING (ABOVE). AN AERIAL BOMB ON THE SEA FLOOR (BELOW).

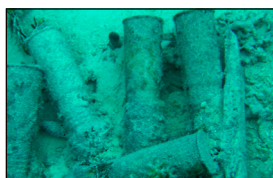


IF YOU SUSPECT CONTAMINATION BY CHEMICAL AGENTS

If you suspect a crew member has come in contact with a chemical agent, immediately:

- Remove any contaminated or potentially contaminated clothing and place it in a plastic bag (double bag, if possible) and seal it or just throw the clothing overboard. (Similar actions should be taken with contaminated or potentially contaminated tools.)
- Rinse the crew and the immediate area with large amounts of water. (If possible, use warm soapy water.)

Every effort should be made to prevent the spread of chemical contamination. Chemical agent-contaminated clothing and tools may expose other crew members to chemical agent and spread the contamination to other areas on the vessel. Crew members should not work in areas known or suspected to be contaminated by chemical agent. Vessels that may have come in contact with chemical agents should not bring their catch ashore until the state's department of environmental health has determined it is safe to do so.



MUNITIONS ON THE SEA FLOOR

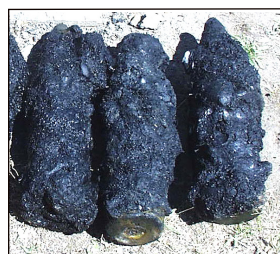
RETREAT

Because munitions present a potential explosive or chemical agent hazard, they should not be moved, disturbed or handled. However at sea, and depending on the circumstances, specific action may be required to protect the vessel and her crew.

- Avoid bringing munitions (or suspect munitions) onboard, whenever possible.
- If a munition is ensnared or fouled in gear, retreat by carefully returning the munition to the water or by cutting away the gear.
- If the munition cannot be carefully returned to the water, secure it onboard, and move the crew upwind and as far away from the munition as possible.
- Limit the number of crew members securing the munition, and avoid bumping or dropping the munition. Remember that each action carries some risk!



**A NEW 5-INCH 38 CALIBER PROJECTILE (ABOVE).
RECOVERED 5-INCH 38 CALIBER PROJECTILES (BELOW).**



MUNITIONS RECOVERED, BUT NOT YET ONBOARD

- Immediately stop all operations;
- Do not bring the munition or gear containing it onboard, if possible;
- Do not allow the munition to come or remain alongside the vessel where wave action could cause the munition to contact the hull;
- If a munition is caught in the gear, but has not been brought onboard, try to lower it safely back into the water, note the position and report it to the USCG. In:
 - ▶ Shallow water (less than 120 feet), lower the munition to the bottom, buoy off the net or dredge recovery lines and remain in the area while awaiting assistance.
 - ▶ Deep water, stream the munition as far aft as possible, maintain steerageway, as necessary and remain in the immediate area while awaiting assistance.

MUNITIONS RECOVERED AND BROUGHT ONBOARD

If gear is brought over the deck with a munition or suspected munition, but it remains suspended and it can be safely secured in place or nearby, immediately:

- Secure the munition with guy lines to prevent movement;
- Keep the crew upwind and away from the area.

If a suspect munition is brought onboard:

- Keep crew members upwind and as far away as possible.
- Minimize handling, and decide whether it is safest to:
 - ▶ Carefully return it to the water, or
 - ▶ Retain it onboard.

If returned to the water, note and report position to USCG.

If retained onboard:

- Keep the crew upwind and away from the munition.
- Minimize handling, and avoid disturbing (hitting, dropping or bending) any part of the munition;
- Secure the munition on deck with lines and/or by chocking it to prevent movement, but do this as far away as possible from heat sources, vibrations and the crew;
- Cover the munition with a tarp or wet cloth to reduce the potential for:
 - ▶ Deterioration of metal parts and release of its fill;
 - ▶ Explosives to dry out and become sensitive to shock.
- Request assistance (Channel 16 - 156.800 MHz).



A NEW RIFLE GRENADE (ABOVE). A RECOVERED GRENADE (BELOW). ITEM IS ABOUT FOUR INCHES LONG.



NEVER BRING A MUNITION INTO PORT, UNLESS DIRECTED TO DO SO

REPORT

Careful observation and accurate reporting of the situation is necessary, so that proper instructions and assistance can be provided. However, never attempt to clean or open a munition to get a better description or tamper with a munition in any way. Information you provide may be combined with other reports to produce a Notice to Mariners and/or update nautical charts.

When a munition or suspect munition is encountered, the vessel's captain should notify the USCG (Channel 16 - 156.800 MHz) and provide the below information, as soon as possible. (Note: If a munition is encountered while in port, call 911.) Report:



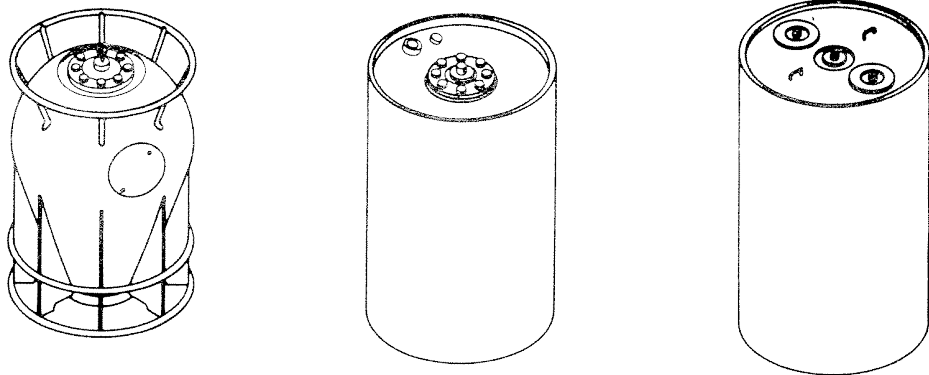
**FLOATING MINE WASHED
ASHORE**

- The vessel's position (use World Geodetic System 1984 [WGS-84] for reporting). If the exact position is unknown, give approximate coordinates, or a range and bearing from a charted feature.
- The activity (e.g., fishing, clamming, dredging) being conducted when the munition was encountered.
- A general description of the munition's key features (i.e., size, shape, fins, markings) and overall condition, if observed or known.
- Any unusual odors.
- The action taken (e.g., secured munition on deck, munition carefully returned to water, washed off deck where munition was placed) to protect the crew.
- If the munition was returned to the water, provide:
 - ▶ The position where it was returned to the water: the water depth, buoys or markings used, if any; and whether the location is near or within a charted disposal area;
 - ▶ A description, if appropriate, of any entanglement (e.g., net, dredge);
 - ▶ A description of surface or sub-surface structures within 1,000 yards.

**THE US COAST GUARD WILL NOTIFY AN EXPLOSIVE
ORDNANCE DISPOSAL UNIT TO ARRANGE FOR SUPPORT.**

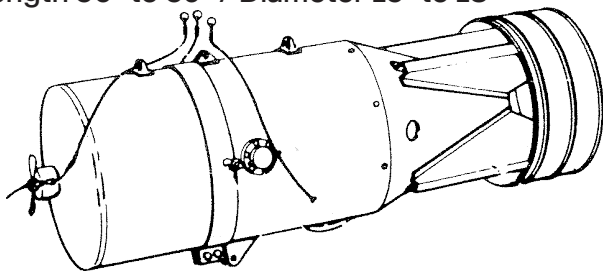
DEPTH CHARGES

Length 28" / Diameter 18" to 25"

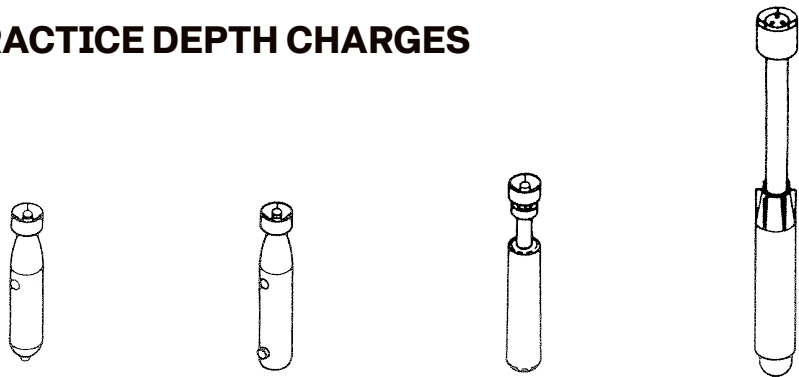


DEPTH BOMB

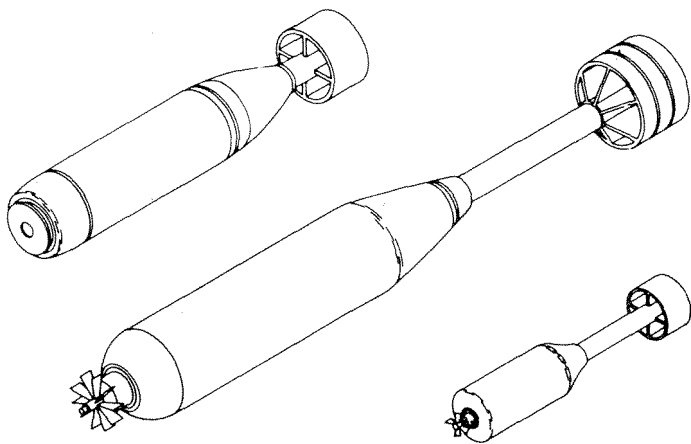
Length 50" to 59" / Diameter 15" to 18"



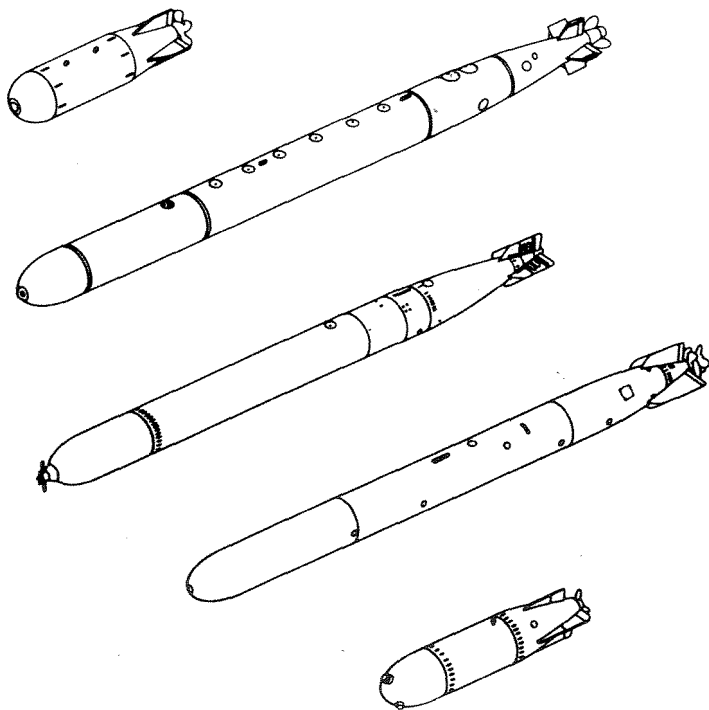
PRACTICE DEPTH CHARGES



PROJECTED ANTI-SUBMARINE-WARFARE WEAPONS



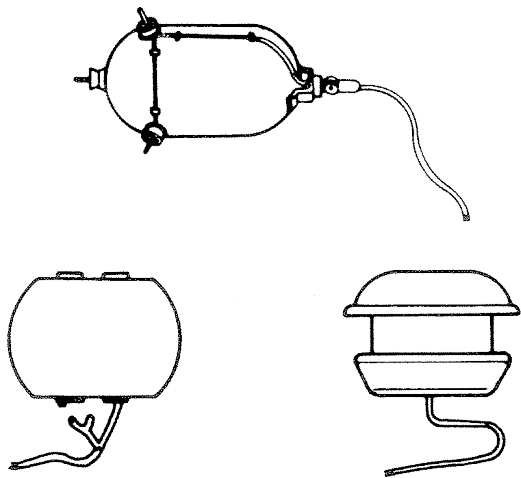
REPRESENTATIVE TORPEDOES



MISCELLANEOUS MINE FLOATS

Length 10" to 24"

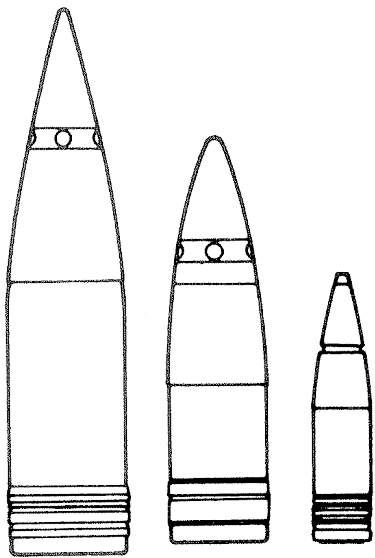
Diameter 12" to 18"



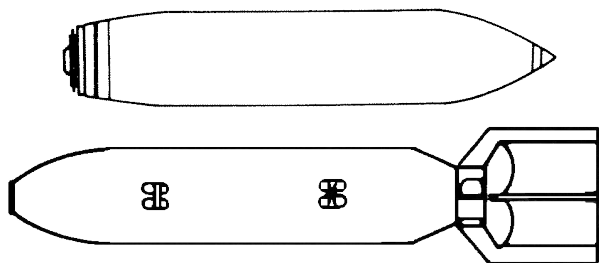
PROJECTILES

Lengths 20 mm to 16"

3" to 5" in Diameter (Typically)

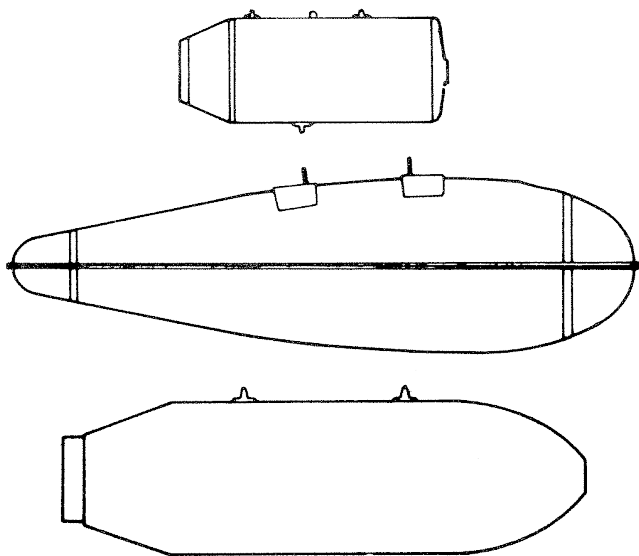


AERIAL BOMBS



Bomb Body Lengths 39" to 97"

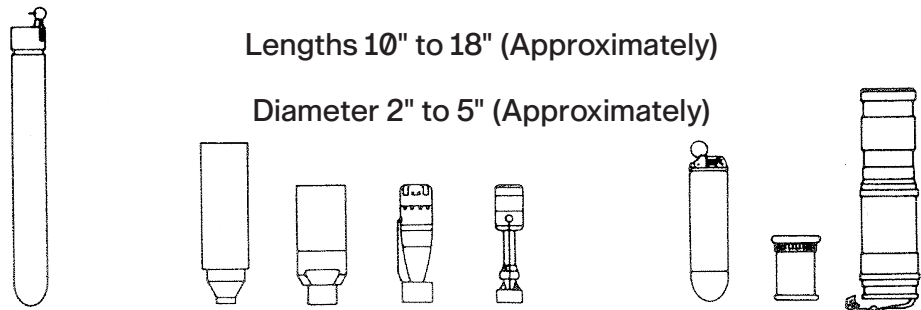
Diameter 7" to 19"



MARKERS AND SIGNALS

Lengths 10" to 18" (Approximately)

Diameter 2" to 5" (Approximately)



3Rs EXPLOSIVES SAFETY GUIDE

DON'T FORGET

- Munitions are dangerous and may not be easily recognizable!
- Avoid operational and former military ranges, and disposal areas!
- Do not bring munitions on board!
- Never bring a munition into port, unless directed to do so by USCG!

FOLLOW THE 3Rs OF EXPLOSIVES SAFETY

RECOGNIZE - When you may have encountered a munition and that munitions are dangerous.

RETREAT - If you know or suspect you have encountered a munition, carefully return it to the water or secure it and keep the crew away from the immediate area.

REPORT - Immediately notify the USCG of the vessel's or munition's location and provide a description of the munition.

EMERGENCY CONTACTS

In port: Call 911

At sea: Use Channel 16 (156.800 MHz)

FOR ADDITIONAL INFORMATION, CONTACT:



For additional information, visit the US Army's
3Rs Safety Education website

<https://3Rs.mil>