How to Recognize Unexploded Ordnance

The hazards of Unexploded Ordnance (UXO) on the battlefield have an enormous effect on command-and-control decisions for battle planning. During Operation Desert Storm, 21 Army personnel were killed and 53 injured as a direct result of handling (or mishandling) UXO. UXO is a hazard, whether it is on the battlefield or in designated training areas. You can lessen the the danger by recognizing the hazard and strictly following basic precautions and guidelines. Several things fall into the category of explosive ordnance: munitions, weapon-delivery systems, or ordnance that contains explosives, propellants, and chemical agents. The "unexploded" hazard exists after these things have been:

- armed or otherwise prepared for action,
- launched, placed, fired, or released in a way that they cause hazards, or
- remain unexploded either through malfunction or design.

Your ability to recognize UXO is the most important step in reducing risks. Munitions come in all shapes, sizes, and colors. They are color-coded during manufacture to make them easy to identify; however, don't rely on color alone to identify something that might blow you up. Exposure to the weather can alter or remove these markings. Instead, use physical features to identify UXO outside its normal environment. Listed below are just a few items that you might encounter on the battlefield or during training:

Hand grenades can be filled with explosives or chemicals. You may come across fragmentation, smoke, and illumination grenades. All types have three main parts: a body, a fuze with pull ring, and safety-clip assembly. Fragmentation grenades are the most common. They have a metal or plastic body filled with an explosive. Most use a burning delay fuze that functions 3 to 5 seconds after the safety lever is released, but some (such as smoke grenades) activate instantly when the lever is released.

Rockets use gas pressure from rapidly burning propellant to transport a warhead to a target. They range from 1.5 inches to more than 15 inches in diameter, and from 1 foot long to more than 9 feet long. All rockets have a warhead section, a motor section, and a fuze. The warhead can be filled with explosives, toxic chemicals, white phosphorus, submunitions, a riot-control agent, or illumination flares.

Some fuzes are in the rocket's nose; others are located inside the rocket between the warhead and motor. Impact fuzes function when they hit the target. Delay fuzes contain an element that delays the explosion for a fixed time after impact. Proximity fuzes are intended to function when the rocket reaches a predetermined distance from the target. Don't approach this kind of rocket! The proximity fuzing may activate and cause the warhead to explode. Also, fired rockets may still contain residual propellant that could ignite and burn violently.

Projectiles range from approximately 1 to 16 inches in diameter and from 2 to 48 inches in length. Projectile fuzes can be located in the nose or in the base. Like rockets, projectiles have fins or bands that stabilize them during flight.

Mortars range from approximately 1 to 11 inches in diameter and can be filled with explosives, toxic chemicals, white phosphorus, or illumination flares. Mortars generally have a thinner metal casing than projectiles, but use the same types of fuzing and stabilization.

Projected grenades, specifically the 40mm grenade which is the most common type used, are among the most commonly found UXO items. The 40mm grenade is about the same size and shape as a chicken egg. It contains high explosives and uses a variety of fuzes, including some of the most sensitive, internal, impact-fuzing systems. Because of their relatively small size, 40mm grenades are easily concealed by grass or bushes. They are extremely dangerous and can explode if moved or handled.

Submunitions includes bomblets, grenades, and mines filled with explosives or chemical agents. They may be antipersonnel, antimateriel, antitank, dual-purpose, incendiary, or chemical. They are typically spread over a large area by dispensers, missiles, rockets, or projectiles, which disperse the submunitions while still in flight, scattering them over a wide area. Depending on their intended use, they may be activated by pressure or impact, or if they are moved or disturbed. Some are activated in flight or when they come near metallic objects. Some submunitions contain a backup fuze that will make the device self-destruct after a couple of hours or even several days. Submunitions are extremely hazardous, because even very slight disturbances can cause them to explode. Some submunitions must be stabilized to hit the target straight on, so they are equipped with an arming ribbon, parachute, or fin assembly.

Bombs range in weight from 1 to more than 3,000 pounds and in length from 3 to 10 feet. Generally, all bombs have the same parts: a metal container, a fuze, and a stabilizing device. The metal container, or bomb body, holds the explosive or chemical filler and may consist of one or multiple pieces. Bombs use either mechanical or electrical fuzes, typically located in the nose or tail, either inide or outside. Mechanical fuzes are generally armed by some type of arming vane, which operates like a propeller to line up all the fuze parts and thus arm the fuze. The fuzes may be configured as impact, proximity, or delay fuzes. Bombs are stabilized during flight by fin or parachute assemblies attached to the rear section of the bomb, which often detach after impact.

Now that you have an introduction to the wide variety of UXO, its time to learn rule #1: *If you didn't drop it, don't pick it up!*

Next, once you visually identify a UXO, do not move any closer to it. Don't try to remove any object on, attached to, or near a UXO. Some types of ordnance have magnetic or motion-sensitive proximity fuzing that may detonate when sensing a target. Others may have self-destruct timers built in. Leave the hazard area and report the UXO.

Do not transmit on any radio frequencies near a suspected UXO hazard. Signals transmitted from items such as walkie-talkies, short-wave radios, citizens' band (CB) radios, or other communications and navigation devices may detonate the UXO.

Whenever possible, mark the general location of the UXO hazard with engineer tape, colored cloth, or colored ribbon. Attach the marker to a stick or some other object so that it is about 3 feet off the ground and visible from all approaches. Place the marker no closer than the point where you first recognized the UXO hazard.

Stay away from areas known or suspected of UXO contamination.

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