

ATTACHMENT 2

POTENTIAL MILITARY MUNITIONS USED AT MRS-6 EXPANSION AREA

Mines

Information concerning mines and fuzes potentially used at the site was obtained from technical manuals (*Army, 1977a, b*) and *The American Arsenal (Hogg, 2001)*. Practice, inert, and training mines potentially used at the site could include of the following:

M1 antitank practice mine – M1 antitank practice mines were used in World War II. According to Headquarters Munitions Command data cards, these mines were produced between 1941 and 1945. The M1 consists of a mine body, spider, black powder charge, smoke charge, detonator, firing pin assembly, safety fork, fuze, shear pins, and steel filler ring. The steel filler ring is inserted in the mine body so that the M1 will equal the weight of the M1A1 and M4 mines. The fuze consists of a striker assembly and a body that contains the detonator. In the M1, the fuze sets off a smoke-puff charge; the charge produces smoke which escapes from the mine through the holes. The charge consists of 60 grains of army black powder, which ignites 100 grains of red phosphorous. The complete assembly weighs 10.67 pounds and is 8.2 inches in diameter and 4.25 inches high (*Hogg, 2001*).

M10 Antitank practice light mine – The M10 antitank practice mine consists of a rectangular steel container that is loaded with sand in the field. According to Headquarters Munitions Command data cards, the M10 antitank practice mine was produced between 1946 and 1947. A primary fuze well for the practice fuze is located in the top center of the mine. The smoke charge is contained in the fuze. The M10 practice mine can be booby trapped with a regular firing device threaded directly into the secondary fuze well. Functioning of the fuze ignites a smoke charge that emits a cloud of smoke and creates a noise. When booby trapped, the mine is activated by a pull wire (*Army, 1977a, b*).

M8 (M8A1) Antipersonnel practice mine – According to Headquarters Munitions Command data cards, the M8 antipersonnel practice mines were produced between 1944 and 1960. The M8 mine uses a cardboard projectile containing a delay and a spotting charge of black powder, which bursts in the air. The M8A1 uses a smoke pellet that is discharged from the top of the main body of the mine to indicate activation of the mine. The fuze firing mechanism on both models is activated by an applied load of 8 to 20 pounds on any of the prongs or by a pull of 3 to 10 pounds of the trip wire. In the M8, the fuze firing train ignites the delay element in the projectile and propels it about 2 meters into the air. The delay initiates the spotting charge that explodes with a loud report and emits smoke. In the M8A1 the fuze firing train ignites the yellow smoke pellet through a 4 to 5 second delay. The plastic plug is propelled into the air allowing the yellow smoke to be emitted from the top of the mine.

M80 Antitank training mine – The inert M80 mine is used to train personnel in handling, placing, arming, booby trapping (using an activator/firing device without a primer), and disarming of the M19 heavy nonmetallic mine. The parts used in the M80 mine are constructed to appear identical to the M19 mine and M606 fuze. The mine and fuze element are completely inert and contain no energetic components.

The M604 fuze is used to activate the M12, M12A1, and M20 anti tank practice mines. According to Headquarters Munitions Command data cards, these fuzes were produced between 1953 and 1954. The fuze is an instantaneous, mechanical pressure-actuated type. It consists of a steel body containing a firing pin assembly, cover assembly, primer and smoke charge, and safety fork. It is attached to the mine in the field, and after it is fired, it can be replaced. The primer ignites the smoke composition that flashes, emitting a cloud of smoke and creating a noise. The M45 primer consists of 1.62 grams of PA #100 and 2.96 grams of black powder (*Army, 1977a*).

Booby Traps - Firing Devices, Simulators, and Activators

The following information was obtained from Department of the Army Field Manual FM 5-31, Booby Traps, dated September 1965 and represent the types of firing devices that may have been used at Fort

Ord in the 1950s when the area was used for mine and booby Trap training. Information for the booby trap simulators was obtained from *Technical Manual, Army Ammunition Data Sheets: Military Pyrotechnics (Federal Supply Class 1370), TM 43-0001-37*

M5 Pressure Release Firing Device – The M5 Firing device consists of a protective cap, standard base, cap, gasket, activator, locking safety pin, interceptor pin, firing pin, release plate or pressure base. The M5 is activated by release of pressure. Lifting or removing a restraining weight releases the striker or firing pin to fire the cap.

M1A1 Pressure Firing Device – The internal action of the M1A1 pressure firing device is a spring-driven striker with a keyhole slot release. It contains a safety clip and positive safety pin. 20 pounds of pressure on the pressure cap moves the trigger pin downward until the striker spindle passes through the keyhole slot. This releases the striker to fire the percussion cap.

M1 Pull Firing Device – The internal action of the M1 pull firing device is mechanical with a split head striker release. It has a locking and positive safety pins. It is initiated by a 3 to 5 pound pull on a trip wire which withdraws the tapered end of the release pin from the split head of the striker. This frees the striker to fire the percussion cap.

M3 Pull/Release Firing Device – The internal action of the M3 pull/release firing device is mechanical with spreading striker head release. A pull of 6 to 10 pounds on a taut trip wire raises the release pin until the shoulder passes the constriction in the barrel of the device. The striker jaws then spring open, releasing the striker to fire a percussion cap. The device can also be actuated by a release of tension (cutting a taut trip wire) permitting the spring driven striker to move forward firing the percussion cap.

M1 Pressure Release Firing Device – The internal action of this firing device is mechanical with a springed latch release. It has a safety pin and hole for interceptor pin. Lifting or removing a restraining weight unlatches a lever, releasing the striker to fire a percussion cap.

M117 Flash, M118 Illuminating, and M119 Whistling Explosive Booby Trap Simulators – Explosive booby trap simulators are used during maneuvers and during training exercises to teach the installation, detection, and use of booby traps. According to Headquarters Munitions Command data cards, these booby trap simulators were produced between 1951 and 2000. The simulators consist of a cylindrical outer tube and a flat metal nailing bracket extending from the end of the tube. Within the outer tube there is a charge initiating assembly and an inner tube containing a pyrotechnic charge. Running through the initiating assembly is a pull cord. One end of the cord is covered with a friction composition. The other end is coiled and secured in the end of the body by a paper cap and tape. A spool of trip wire, extension spring, three staples, and four nails are provided for booby trap installation. Movement of the pull cord produces an ignition flash that is transmitted into the flash tube, igniting the pyrotechnic charge. The M117 produces an instantaneous explosion, flash and, sound on initiation. The M118 produces a 28-second illumination flame, and the M119 produces a 2.5 to 5 second whistle (*Army, 1977b*).

M1 Practice Antitank Mine Activator – The activator is used to adapt practice booby trap firing devices to any practice antitank mine with the appropriate trend configuration. It is constructed of plastic and contains a small igniting charge and smoke charge to signal it has been functioned. The activator functions when the firing device ignites the smoke charge which emits white smoke and noise (*Army, 1994a*).