

Formerly TB 43-0243

**Ammo
Operations
in the
Desert
Guide**

TB 43-0243 is obsolete. This publication has been updated and is released as a guide, for information only. Please check with your local Ammunition Professional for current and theater policy.

AMMUNITION OPERATIONS IN THE DESERT

Coping with ammunition operations in a desert environment takes all the know-how at your disposal. Here is a handy guide to help you handle, move and store ammunition safely.

Use the information in this TB and in other publications cited to keep ammunition working against the enemy and not against you, the user.

Protect ammunition from anything that could cause it to deteriorate. That means guarding against high temperatures, dampness, dirt, sand, rust, grease, rough handling, and anything else that could keep ammunition from doing what it's supposed to. That's the story for all ammo--from rifle cartridges to 8-inch projectiles, mines pyrotechnics, grenades, bombs, rockets, demolition materials and guided missiles.

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SAFE HANDLING

Handle ammunition and explosives carefully. Improper, rough or careless handling may set them off. Personnel working with ammunition and explosives must observe the following general safety precautions:

- Keep ammunition in containers as long as possible to prevent exposure to the elements. This is especially true of material packed in barrier bags or sealed metal containers.
- Open ammunition boxes carefully. Return all inner packaging material to the container, and close it to keep out moisture or debris.
- Repack items opened and not used.
- Do not tumble, drag, throw or roll containers of ammunition.
- Do not tamper, disassemble or alter an ammunition item.
- Do not drive nails into shipping or storage containers containing ammunition.
- Do not be careless because of familiarity with munitions.

- Wear gloves when handling dark colored metal material because it may be very hot from radiant heat.

- When in doubt as to the proper care and condition of ammunition, refer to DA PAM 385-64 and FM 4-30.13, or ask the ammunition experts at the Ammunition Supply Point (ASP).

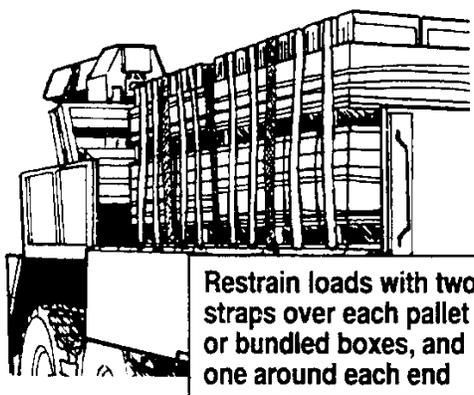
MOVEMENT

Shipping ammunition requires special care. Otherwise, the trip can end with an unexpected bang.

Before loading ammunition, be certain all pallets, boxes and containers are in good shape, sealed tight and secured. Ammunition packed in boxes should not move. Maintain a tight pack using approved packing material.

Brace or restrain the load as firmly as possible to prevent pallets and boxes from shifting, and to protect them from jolts and bumps. Load tactical vehicles in accordance with AMC 19-48 series drawings (your Quality Assurance Specialist (Ammunition Surveillance)(QASAS) or Logistics Assistance Representative (LAR) can get you the drawings), using wooden dunnage or web straps. Never rely on the tarp alone to restrain ammunition in an open vehicle.

A good rule of thumb when using web straps to restrain the load is to put two straps over each pallet or bundled group of boxes and one around each end of the load.



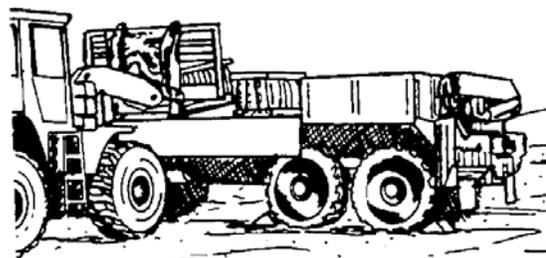
Never load HE and WP or other chemical ammunition on the same vehicle. See your ASP experts for approved transportation compatibility.

Before you load one box of ammunition, find out your vehicle's load limit. The weight of the ammunition is usually listed on the side of the boxes or containers. Do not exceed vehicle maximum load limit.

During the loading or unloading of vehicles, set the brakes, turn off the engine and chock

wheels if on a grade or if the trailer is disconnected from the tractor. Load the ammunition to properly distribute the weight, then secure the load to prevent movement.

When handling unpalletized loads of ammunition on vehicles with load-bearing sideboards, do not allow more than one-third of the height of the box to extend above the sides or tailboards.



Brake set, engine off, wheels chocked during loading or unloading

Take extra care handling palletized ammunition. A forklift is the best equipment to lift and move ammunition short distances. Take care not to strike the ammunition with the forks. When using larger forklifts with long forks, such as the 6,000-lb or 10,000-lb

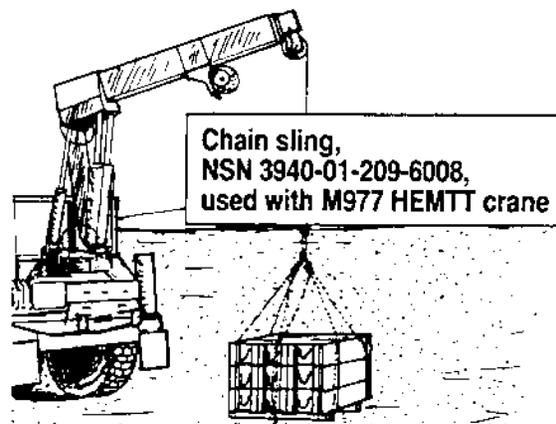
rough terrain forklifts, don't stick the forks all the way through the pallet or you may puncture or topple the adjacent pallet.



When moving ammunition with a forklift, don't travel with the forks elevated. Lower the forks so they're less than a foot above the ground. If you travel with forks raised, the forklift may become unstable and you may lose the pallet or turn over the forklift.

When the forklift won't do the job or isn't available, you can use a crane, such as on the M977 HEMTT. Each M977 has a chain

sling, NSN 3940-01-209-6008. Loop the two chains under the wings on opposite sides of the pallet and hook them to the two hooks on the chain sling ring.

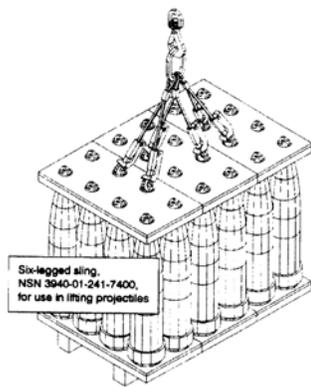


For best results, hook the length of chain so it makes an angle of 45 to 60 degrees with the top of the pallet. If you hook the chain too long, you might not be able to lift the pallet high enough to position the load on the truck or trailer. If you hook the chain too tight, you will create added pressure on the top edge of the boxes and containers and may damage them.

If you're lifting projectiles, use a specially designed six-legged sling, NSN 3940-01-241-7400. It lets you lift three pallets of 155MM projectiles or two pallets of 8-inch projectiles at

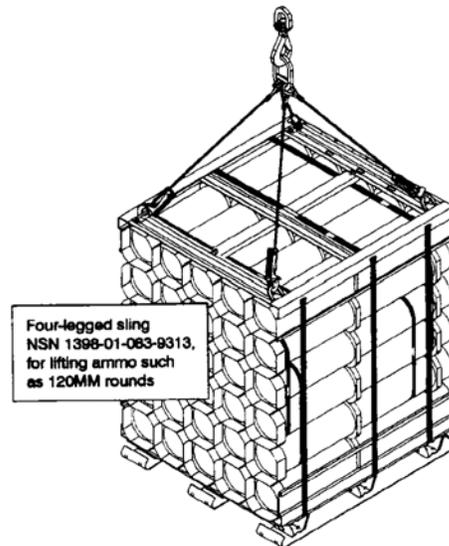
one time. Before lifting pallets, though, make sure there is no broken or missing banding. Repair or replace broken or missing banding before lifting.

Since three pallets of 155MM projectiles come banded together most of the time, leave them banded for ease of handling.



The six-legged sling's legs are too short to lift 120MM M1A1 tank ammunition, which has four lifting rings attached to the top of the pallet. To lift these pallets from the top, you need the four-legged sling, NSN 1398-01-083-9313 (a replacement four-legged sling, NSN 1398-01-348-4670, may already be available). Make sure all banding is present and tight on 120MM pallets. You can also use the four-legged sling to lift palletized

projectiles, but you can only lift two pallets of 155MM projectiles at a time.



MOTOR VEHICLE MOVEMENT

Any vehicle used to haul ammunition, or one that even goes near ammunition, must be in tip-top condition. That means all systems must be working smoothly. The vehicle must also be clean: No stains from leaking fuel, lube, grease or anything else. Stains attract dirt and oily dirt could create a fire hazard.

Crew level maintenance may be performed on a vehicle loaded with ammunition without unloading the ammunition. Higher level maintenance and maintenance involving heat or flame-producing devices requires that the ammunition be off-loaded and moved at least 50 feet from the operation.

Fuel up your vehicle before you load it with ammunition, if possible, and as far away from ammunition as possible. If you must refuel a loaded vehicle, do the job in an isolated spot.

When tactical situations permit, refueling operations should be delayed until the engine has cooled for at least 10 minutes to lessen the danger of fires from spills or overflows.

Make your load *off limits* to riders, visitors and *especially smokers*.

A must for any vehicle carrying ammunition is two serviceable carbon dioxide (CO₂) fire extinguishers rated 10BC or higher.

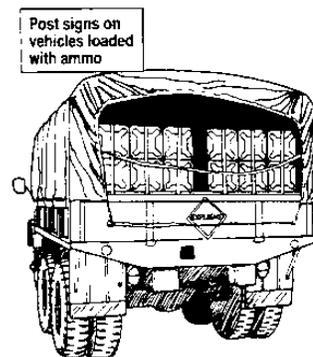
Do not place unpackaged ammunition directly on the hot metal bed of vehicle. Use wooden dunnage or pallets.

Maintain proper convoy distances between trucks when moving and loaded with ammunition. When parked or stopped and loaded with ammunition, maintain a distance

of 10 meters between trucks. This will not prevent propagation, but will allow maneuvering room in case of fire.

A good checklist for trucking ammunition is DD Form 626, Motor Vehicle Inspection. DD Form 836 provides Special Instructions for Motor Vehicle Drivers.

Mark ammunition loaded motor vehicles with placards in accordance with DA PAM 385-64 and local and national requirements.



COMBAT VEHICLE AMMUNITION

If you keep your small arms ammunition stored in your combat vehicle, check the ammunition regularly for contamination with sand or grit. Keep the ammunition wiped

clean. Whenever possible, air out the vehicle. Be especially careful that ammunition isn't coated with oil or grease.

It's the same story for the big ammo stored in your combat vehicle. Check your SOP on unloading the big stuff for a thorough cleaning and inspection.

When you clean, paint, grease, oil or wash the inside of your vehicle, either remove ammunition or protect it. Seal the vehicle tight when you hose down the out sides. Remove ammunition from floor storage on M2-M3-series Bradleys before washing.

Remove the ammunition when the vehicle is taken to the motor pool or other facility for maintenance.

Post a fire plan for evacuation of combat-loaded vehicles in the parking area. The fire plan for uploaded armored vehicles will include provisions for a quarterly fire drill for armored vehicle crews.

Park ammunition loaded vehicles in shaded areas when possible. Open ammunition compartments to the maximum extent possible to allow for ventilation.

See your vehicle's -10 TM and your weapon's pubs for more info on maintaining ammunition stored in combat vehicles.

AIRLIFTING AMMUNITION

Moving your load by helicopter presents different problems. During loading and unloading, the chopper must:

- Be properly grounded.
- Have all switches OFF
- Have its rotors secured.

Always, load the chopper away from the ammunition storage area.

Make sure all boxes and containers are in good shape, (no leaks or burst seams), tightly sealed and clearly marked.

Load and lash down the ammunition according to the aircraft commander's SOP.

Specific sling-out area requirements:

- Locate helicopter sling-out areas at least 550 meters from ammunition storage structures, inhabited buildings/personnel areas or other vital facilities.
- Consider prevailing winds in the sling-out site selection. Select a site that helicopters could normally approach and depart without

flying over magazines, inhabited buildings, personnel areas or other vital facilities. Provide a windsock or other wind direction indicator so pilots can determine the current wind direction. Never use smoke grenades or open fires to establish wind direction.

- The sling-out area must have a good earthen ground. Ground helicopters before loading. Make sure you touch the grounding cables to bleed off any static charge prior to loading. Ground a hovering helicopter by using a grounding wand (shepherd's crook) prior to hooking up the cargo net. See July 1990 issue of PS Magazine for local fabrication of the grounding wand.

- Never use the sling-out area for long-term storage of ammunition. The only ammunition that should be present is the load the last helicopter just left or the load the next helicopter is about to pick up.

- Have the ammunition on cargo nets ready to be slung out prior to the arrival of the helicopter. If possible, have the loads assembled on cargo nets prior to arrival at the sling-out point.

- Assure adequate firefighting equipment is available and MHE is clear of the area prior to the arrival of the helicopter.

For more info on load limits, safety, grounding and ammunition compatibility, see

TM 38-250, Packaging and Handling of Dangerous Materials for Military Air Shipment or DA PAM 385-64, Ammunition and Explosives Standards.

AMMUNITION PORT OPERATIONS

Follow normal safe handling preparations during port loading and unloading operations. The following requirements apply to port operations conducted in high temperatures.

- Give higher priority to protected dock-side storage of munitions than to weapons.

- Since excessive heating can result in increased sensitivity of explosive materials, exercise care during movements dockside, both on-loading and down-loading of vessels.

- Keep pre-loading and off-loading times on dockside to a minimum to avoid solar overheating. Downloading and uploading should be done in the early morning as first choice or after sundown as second choice to minimize overheating.

- Open doors to ammunition in MILVANs as far as possible to allow for ventilation.

- Park ammunition loaded MILVANS east - west to minimize container surface exposure to the direct sun rays.

- Provisions should be made for the construction of shelters, on or near all on-loaded/off-load operations. Most desirable are shelters providing complete protection from solar radiation and the best ventilation. Sandbags may be stacked against the sides of MILVANS used to store munitions at the dock. The sandbags reduce exposed metal surfaces and allow for smaller tarps to cover the top.

Munitions sensitive to shock, such as artillery primers, blasting caps or fuzes should be set down on a mattress or cushion when unloading from the ship.

AMMUNITION STORAGE

Ammunition storage conditions vary between the ASP, where large quantities are stored, and field storage, where smaller quantities are stored outside, in MILVANS or aboard tactical and combat vehicles. Hazards of the various munitions must be considered in all these storage environments. You want to be able to quickly access the different types of ammunition and explosives, but safety factors

restrict the quantity and mixing of ammunition and separation distances.

Quantity-distance and storage compatibility standards differ in ASP and field storage. Use DA PAM 385-64 and FM 4-30.13 or contact your MOS 55B, 910, 91D or civilian QASAS for specific guidance in these areas. Follow the word in DA Pam 710-2-1, FM 9-38 and appropriate Standard Army Ammunition System (SAAS) regulations for accountability and record keeping.

Storage safety factors are:

- Point all boxes or containers in a stack in the same direction, leaving the ammunition ID clearly in view.

- Isolate rockets into single rows, all pointing into an embankment or some sort of barrier (never toward billets).

- Never store WP munitions lying on their sides.

- Park vehicles and trailers loaded with explosives 250 feet or more from vehicles and trailers transporting flammable liquids or cargo vehicles loaded with packaged gasoline, diesel fuel and similar flammable liquids.

- To safely store temporarily downloaded tank main gun ammunition, build a special rack to keep the ammunition protected

- Post the appropriate fire or chemical hazard symbol(s) for each magazine or field storage unit (FSU). Refer to DA PAM 385-64.

OUTDOOR STORAGE IN DESERT ENVIRONMENT

The best place for outdoor storage of ammunition is on high, hard ground with good drainage. If you can't find that sort of site, dig drainage ditches around the stacks to protect them. Although it seldom rains, when it does it is usually a downpour for a short time.



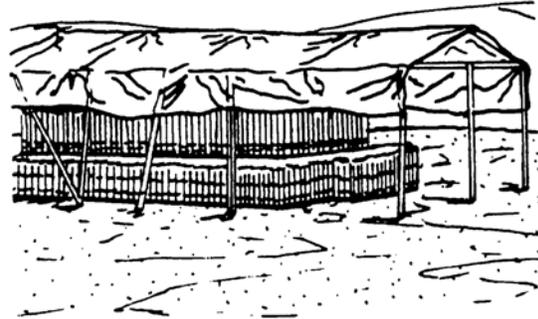
Best place to store ammo is on high, hard ground

Stack palletized or boxed ammunition on a solid, level base, with at least three inches of dunnage. Do not stack ammunition more than two pallets high to ensure stack stability. Stack heights may be altered to meet local conditions (pallet height and available equipment, for example). A rule of thumb – stack ammunition boxes only as high as your head.

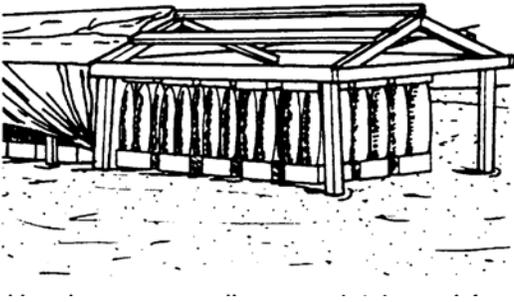
Do not store ammunition directly on the sand for any length of time. The sand absorbs the radiant heat from the sun and transfers that heat to the ammunition. Sand also shifts, causing ammunition stacks to fall. Sand will also cover ammunition if it's left in place for any length of time. Keep stacks straight and dunnage in good condition.

Shade stacks of ammunition and trucks or MILVANS containing ammunition.

Use available cover or light-colored tarpaulins or camouflage netting to provide the cover.



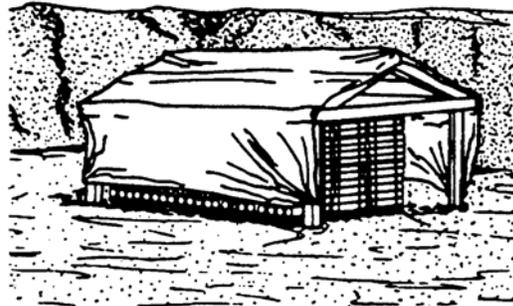
Make risers to give air space above ammo stacks



Maintain a minimum of 18 inches of space above stacked ammunition between it and the tarp or net to allow for circulation of air. Locally fabricated risers placed on top of ammunition stacks effectively provide the air space.

Use dunnage or pallets to maintain a *minimum* three-inch space beneath and around stacks of ammunition. Allow sufficient separation between stacks to remove accumulated sand.

Use dunnage or pallets for three-inch air space under stacks



Arrange tie downs to allow air to flow under the tarp. A six-inch air space is required between the tarp or net and the side of an ammunition stack.

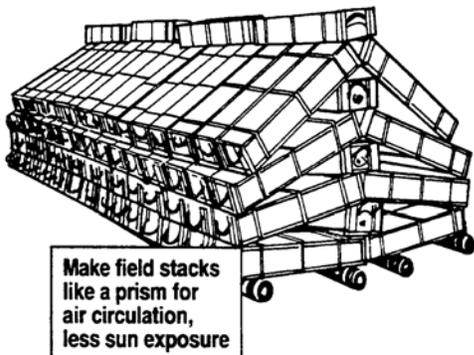
Securely fasten camouflage netting or tarpaulins and allow for quick lowering in the event of high winds. Do not nail a tarp or net to ammunition boxes or pallets.

Protect end opening metal container lids (propellant charges or 120MM cartridges, for examples) from the wind, because driven sand makes opening the container very difficult.

Don't store ammunition at ambient temperature above the limits specified on the box or TM.

Open compartments to ammunition stored in armored and wheeled vehicles, and doors to MILVANS for ventilation.

Arrange field stacked boxed ammunition like a prism to allow air circulation and less exposure to the sun.



MILVAN/CONTAINER STORAGE

Pyrotechnic material, propelling charges, fuzes, rockets, WP ammunition and guided missiles have the highest priority for covered storage.

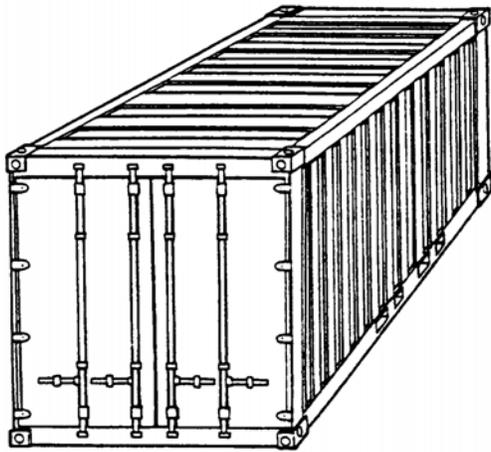
Remember, ammunition kept out in the high intensity sun may be much hotter than a

shaded temperature reading observed in the same area.

MILVAN/CONTAINER STORAGE

Field storage of ammunition in MILVANS and other ISO containers represents a halfway point between outdoor storage and indoor magazine storage. When storing your ammo in containers, remember:

- Don't place the containers directly on the ground or available surface. At a minimum, place 4"x4" or larger wood boards under each of the four corner blocks to prevent damage to the cross members.
- Do not stack containers that are used for ammo field storage.
- Don't modify the containers in any permanent way (ventilation holes, welded ramps, nailed-in structures). If you alter them, they won't meet international shipping standards.
- Take care not to damage containers. You will need them to ship your ammo back to your home station!



FIRE SAFETY

Heed these fire safety rules:

- Never carry fire producing items (matches, lighters, etc.) into ammunition storage areas.
- Never smoke in ammunition storage areas.
- Do not allow waste materials or litter to accumulate in storage areas. Waste materials include oily rags, solvents, lubricants, paper and explosive scraps.

- Don't allow dry vegetation and flammable debris to accumulate around your ammunition.

- Do know the location of fire points within storage areas.

- Do know the fire plan and the organization of the storage area's firefighting crew.

ACCOUNTABILITY

Stack ammunition by type, DODIC and lot number - that's critical SOP whenever you're loading or storing ammunition.

Make a planograph of each ammunition storage area including as much information as possible to ensure a complete record, but as a minimum, you will need:

- Location within the storage area
- Type and quantity of ammunition
- Storage compatibility and Hazard Class/Division (used for firefighting).

Following the information in the planograph will save lives when trying to put out fires within a storage area. The plan will also save time when you need to get out an emergency issue at night.

Protect ammunition against human threats, too. Post guards to stop uninvited visitors and vehicles. Also post RESTRICTED AREA and NO SMOKING signs around the ammunition area. for more security info, see AR 190-11.

AMMUNITION SUPPLY RULES

You ammunition supply types have some pretty important rules to follow, too.

Most important, request and store only the ammunition your unit needs - never more. When you have excess, turn it in pronto. Keep accurate records on all ammunition transactions (requests, turn-ins, transfers). Maintain "written" records on all receipts and issues of ammunition at all times at every level. These records are used as management tools for command and have a significant impact on tactical decisions. Battles are always influenced by knowing where, how much, and what kind of ammunition a Commander has available.

See DA Pam 710-2-1 for info on ammunition supply and inventory. The pamphlet provides instructions on preparing documents (DA Forms 581 and 5515) for request, sub-hand receipt and turn-in of ammunition.

MAINTENANCE

Operator and crew maintenance is usually limited to unpacking, inspecting, cleaning, repairing packing material and repacking. The appropriate ammunition -10, -12, or -20 series TM provides a Maintenance Allocation Chart (MAC) for authorized field inspection care and maintenance.

UNPACKING/REPACKING

Keep ammunition in containers as long as possible to prevent exposure to the elements. This is especially true of material packed in barrier bags or sealed metal containers.

Watch the rough stuff when opening and closing ammunition boxes. Being careful protects ammunition in the box and saves the box for reuse. Always use band cutters or wire cutters to open ammunition boxes. Never use axes, shovels, or lug wrenches to cut or break steel banding on pallets or boxes.

Place inner packing material inside the outer pack, close the box and save it for reuse.

Save your ammo packaging! It's accountable, too! Place inner packing material inside the outer pack, close the box and save it. There's a good chance you'll need to reuse it.

Assure repackaged ammunition has the proper stock number, lot number and quantity markings on the container.

Return desiccant to an air-tight container as soon as possible.

Keep ammunition unitized and palletized as long as practical to allow for quick handling by material handling equipment (MHE).

INSPECTION

Ammunition doesn't always survive movement or storage in A-1 condition. It's up to your local ammunition supply to ensure the ammunition is issued in working order. It's also up to ammunition supply to determine any added firing restrictions, which will be noted on the draw document (DA Form 581) with your ammunition.

After issue, it is up to you and your unit to inspect and care for your ammunition. Other than allowable maintenance instructions listed in the TM's MAC chart, unserviceable ammunition should be returned to the ASP.

Another source for advice on ammunition serviceability is the military Ammunition Specialist (MOS 55B) or civilian QASAS. Just ask your ammunition supply people how to find them.

Obvious damage such as dents, cracks and bulges in critical surfaces, like cartridge cases, require turn-in. Slight dents or bumps may be OK if the round seats correctly in the weapon. Damage to less critical surfaces such as mine or grenade cases are acceptable if internal components or fuze cavities are not affected.

The same applies to rust and corrosion. Unless the condition could affect functioning, it is acceptable. Wipe down exposed ammunition frequently to fend off rust or corrosion.



Never fire ammunition that's been water-soaked or exceeded the temperature limits. Turn it in.

The -10, -12 and -20 series TMs provide inspection criteria, and direct the turn-in of ammunition not meeting field standards.

CLEANING

Sand, moisture and oil are ammunition's chief enemies. Dirty or corroded ammunition can jam your weapon or cause misfires. Wet ammunition may not fire. Oil or grease on ammunition can cause it to malfunction or even flashback and set you on fire. If you spot oil or grease on your ammunition, clean it off. If it won't come off, turn the round in to the ASP.

In a desert environment, one of your best ammunition PM tools is a clean, lint-free rag. Normally, a frequent going over with a clean rag can keep your ammunition in prime condition. It is a good way to head off corrosion, too.



Do not clean ammunition with oil, solvents water or steel wool.

PAINTING/STENCILING

If your unit has the OK to touch up paint your ammunition, check for the appropriate ammunition TM for authorized paints, thinners and other supplies. Use a light touch with the paint --no extra coats , and no coats just for looks. Uneven, layered painting could keep ammunition from chambering properly. If in question, check with your QASAS or MOS 55.

Move ammunition to be painted at least 30 meters from the magazine or storage site.

Painting over surfaces (bourelet or rotating band of artillery ammunition) or ID markings for all ammunition is critical. Excess paint on the bourelet may cause the round to not chamber. Covered ID markings must be replaced immediately to prevent loss of identity or erroneous markings. The lot number is an especially important ID for all ammunition. The lot number tracks the history of the ammunition and is the tool for separating good ammunition from suspended or restricted ammunition.

Paint carefully and in thin coats.

When the ammunition lot number is lost the ammunition is unserviceable and must be turned in to the ASP. Ammunition incorrectly identified, e.g., training ammunition marked as HE or HE ammunition marked as training, could be hazardous to the user

As a field expedient, use felt tip markers to reapply ID markings to rounds and packing materials. Hand-written markings are better than none at all.

REPAIR PACKING MATERIAL

Here's what you need to know about repairing packing materials:

- Repair only empty containers.
- Do not repair ammunition boxes or containers within 30 meters of an ammunition stack.
- ID markings on boxes and containers are also important. When you're repairing or cleaning a box or container, protect the markings or redo them quickly.

AMMUNITION RECOVERY

Obey these rules. They can be life savers:

- Never discard unserviceable ammunition. Report it or turn it in.
- Never abandon unused ammunition. Return it to storage or turn it in to ammunition supply.
- Never handle duds. A nudge can instantly change their dud status. Report duds immediately to EOD.
- While training, collect and return fired brass, aluminum casings and empty

ammunition containers to the ASP for recycling or reuse.

- Segregation operations at the ASP call for the unit turning in material to inspect residue 100 percent for live explosives and munitions.



A certification statement that the material is free of explosives will be added to the turn-in documents.

MALFUNCTIONS

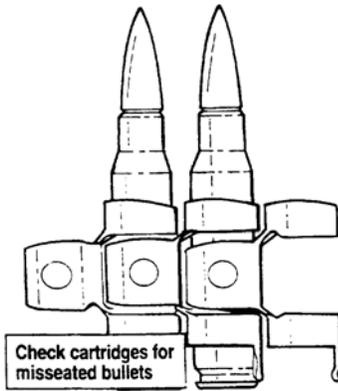
When your ammo doesn't work the way it is supposed to, you may have a malfunction. Malfunctions include hangfires, misfires, duds, abnormal functioning, and premature functioning of any of your ammo items when they've been stored, handled and used the way they are supposed to be. If you know or

believe you are having an ammunition malfunction, report it ASAP through your chain of command. Check the lot number of the ammo involved, and don't use any more of it until the malfunction is resolved. Contact your Ammunition Specialist (MOS 55B) or servicing QASAS for assistance to turn it in to your servicing ASP for replacement.

SMALL ARMS AMMUNITION

To make sure small arms ammunition will function right, give rounds, clips and magazines a quick inspection before use.

- Reject cartridges that have bullets seated too far in or out of their cases, i.e., cartridge case not crimped on edged indentation (cannelure) or bullet. They make an uneven clip or belt and will jam your weapon.
- Reject cartridges that are loose, split or have lopsided points.



- Reject belted machine gun ammunition with weak, broken or stretched links.
- Reject rifle clips and magazines with dents, bulges, cracks or weak springs.

Small arms ammunition safety precautions:

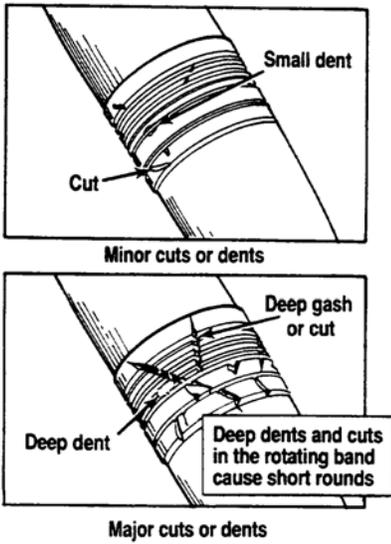
- Keep small arms ammunition in closed metal containers and out of the direct rays of the sun as much as practical.
- Save all inner and outer small arms ammunition packing material for repackaging turned-in material.
- Check small arms ammunition frequently and clean as necessary with a soft cloth.

- Wear protective leather or cotton gloves when handling metal containers that have been sitting in the hot sun

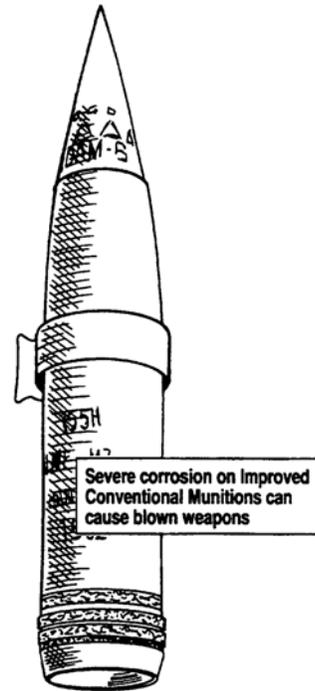
ARTILLERY AMMUNITION

To detect any serviceability problems, give rounds a quick inspection before chambering.

- Eyeball separate-loading for loose or cracked base plates, loose, missing or damaged grommets, and damaged or corroded rotating bands. Look for a cut or dent that extends through all sections of the rotating band; this could cause a short round.



- Severely corroded aluminum base plates on Improved Conventional Munitions (ICM)(specifically the M483A1 w/green base plate) could cause a blown weapon.



120MM and 152MM tank ammunition has combustible cartridge cases. Inspect the cartridge cases for cracks or holes where the propellant could fall out. Also look for abrasions on the 120MM that removes the protective coating and exposes yellowish-white combustible material. See TM 9-1300-251-20 to determine serviceability. If you are in doubt and without the TM, turn in suspect ammunition and draw new.

- When handling 105MM howitzer ammo, protect the percussion primer on the cartridge case from being accidentally bumped, struck or compressed. That will ignite the propellant and you'll be hurting.



- Reject fixed rounds such as 105MM or 120MM gun with loose, wobbly or rusty projectiles. Semi-fixed rounds such as 105MM howitzer are loose by design, but may be rejectable because of rust.

- Reject a perforated cartridge case if it's badly dented or its propellant container is split or has holes.

- Watch for liquid or crystalline matter oozing or growing around the threads in the projectile nose or around the fuze cavity. The goo could be explosive exudate or leaking chemical. Isolate the leaky round and yell for the experts. Leaking white phosphorous (WP) is indicated by white smoke or gray crusty powder. Any leading WP round should be immediately dunked in water and left submerged. Then notify EOD.

- Protect the percussion primer on the cartridge case from being accidentally bumped, struck or compressed. that will ignite the propellant and you'll be hurting!

- Guard against artillery ammunition with primers not flush with the cartridge case. If the primer sticks out, it could explode when you least expect it. If it's too far in, the primer won't fire.

- While loading a primer-installed round, inspect the base for damage, and use the fiber container cap to safeguard the primer until it's being loaded.

- Turn in all rounds damaged by recoil or rammed out of a gun or howitzer.

Special precautions for artillery ammunition in a desert environment.

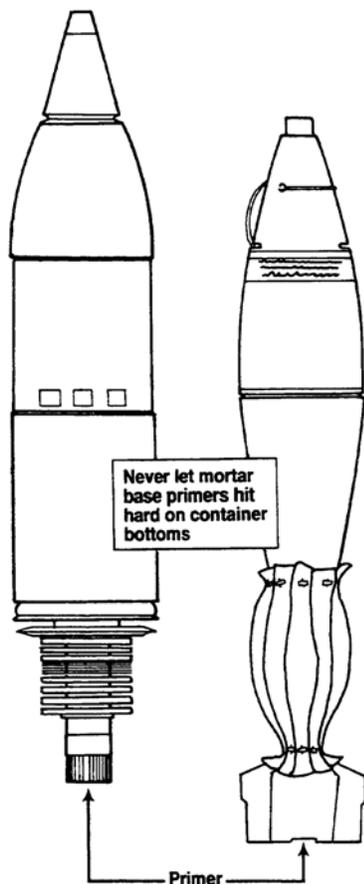
- Open hatches, ports and compartments on uploaded tanks to the maximum extent possible to allow air circulation.
 - Park uploaded tanks in shaded areas when possible
 - Protect electrically-fired cartridges from static electricity caused by low humidity and blowing sand, Ground stored cartridges with what ever grounding equipment is available
 - Store separately loaded artillery projectiles upright to expose less surface to the sun and to reduce the possibility of voids created by filler melting and solidifying
 - When loading un packaged ammunition into a tank, use care not to dent the cartridge case, projectile or fuze in tight quarters
- For C445/105MM and D544/155MM ammo, assure that if a supplementary charge is needed, one is used. Never fire a short

fuze designed for a shallow fuzewell in a deep-cavity projectile without using a supplementary charge. Turn in projectiles missing supplementary charges.

MORTAR ROUNDS

With mortar rounds, watch for damaged projectiles, missing obturators, fins and fuzes, and loose or damaged propellant.

Warning: Never let the base primer of any mortar ammunition hit hard on the bottom of the containers.



Protect the primer with the fiber container end
End cap prior to firing.

Keep mortar rounds packaged as long as practical to keep propellant from exposure.

Always store your WP mortar ammo so the rounds are in a vertical position.

Keep mortar rounds packaged as long as practical to keep propellant from exposure.

Ammunition packed in "jungle wrap" softens and becomes sticky under high temperatures. Use care to prevent wax from sticking to rounds, which would collect blown, sand and dust, increasing the probability of misfires or hang fires.

Use a two-man procedure to open and remove rounds. The first opens and holds the container while the second removes the round.

The one with the sticky hands won't touch the round that way.

TANK AMMUNITION

Ammunition used for M1A1 tank presents different concerns than most munitions due to the confinement of the troops with these items and their use of special design and materials.

120MM tank rounds have special features which include a combustible cartridge case, synthetic obturators, easily damaged nose tips and, on the M829-series, Depleted Uranium

(DU) penetrators. Take the time to check your 120MM ammo for the following conditions:

- Cracked or punctured cartridge case
 - Scratches or abrasions on the cartridge case that remove the protective coating and expose a yellowish-white material.
 - Loose projectile (separation of projo from cartridge case)
 - Cracked obturator
 - Cracked sabot
 - Bent, cracked or loose windshield
 - Damage to the cartridge which might expose the DU core

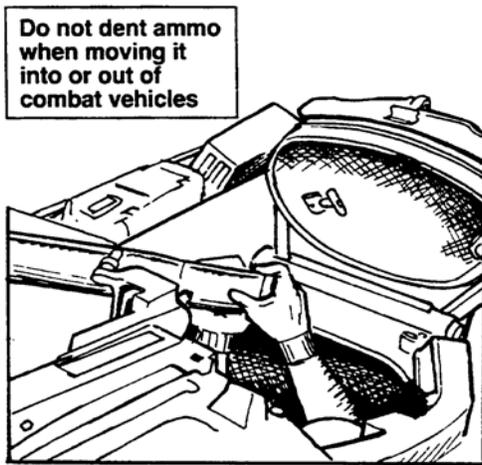
ANY possible damage to the DU core should be reported to your NBC NCO for action.



If any of your rounds has any of the conditions noted above, turn it in to your ASP. See TM 9-1300-251-20 to determine serviceability. If you are in doubt and without the TM, turn in suspect ammunition and draw new.

The M829A1 cartridge is susceptible to forward bourrelet expansion due to water freezing between the penetrator and the sabot. When this happens, the round is either difficult to chamber, or won't chamber at all. If you are chambering rounds in freezing temperatures and you have one hanging out of the breach about 8 inches, frozen bourrelet is the likely problem. Remove the round and place it where

the ice can melt; after melting, the round is OK and can be chambered.



When loading unpackaged ammunition into a tank, use care not to dent or scrape the cartridge case, projectile or fuze in tight quarters.

Watch out for primers not flush with the cartridge case. If the primer sticks out, it could be dangerous to use. If it's too far in, the primer won't fire.

- Protect electrically fired cartridges from static electricity caused by low humidity and layers of clothing during the winter months. Ground stored cartridges with whatever grounding equipment is available.

- Turn in all rounds damaged by recoil or rammed out of a gun.

Tarps or other suitable waterproof covering should be placed over the turret bustle on uploaded tanks when parked. Water leakage into the bustle has caused damage to uploaded ammunition in the past, including corroded stub case and primers, which affects firing, and wet, soggy combustible cases which may not chamber or won't perform as intended. This will get you low round velocity and poor accuracy. Wet cartridge cases also give you residue problems.

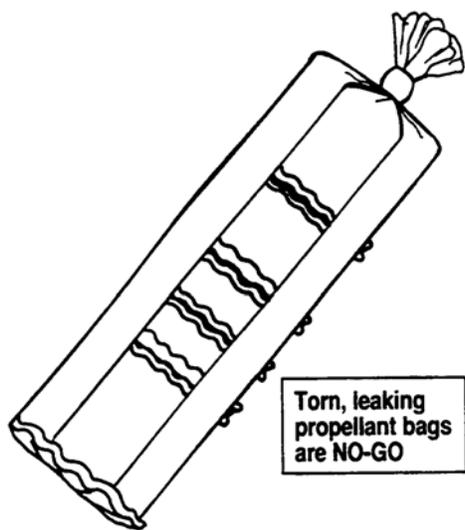
If standing water is present in the bustle, don't store ammo in the bottom row of turret racks.

PROPELLANT

There are several basic checks you need to make on artillery propellant:

- Propelling charge containers must be closed tight against moisture.
- Propellant bags must be firm, dry, clean, laced and tied.
- Increments must be in proper sequence.

- Bags cannot be torn or leaking propellant.
- Propellant bag stains aren't necessarily bad.



Yellow stains are okay. Blue, Brown or orange stains with weakened cloth (tears easily) are bad. Turn the bags in to the ASP. Blue, brown or orange stains with strong cloths are okay.

With separate-loading propellant, always eyeball the igniter. The igniter end will be padded or marked IGNITER or packed in red cloth. To be used, the igniter must be clean, dry and its powder loose. Lumpy, damp igniter may not work, and poor propellant can result in erratic flight, hangfire or misfire.

Keep separate-loading propelling charges away from the breech of the weapon and protect them from sparks and heat. If the propellant doesn't look or feel right, turn it in to ammunition supply to be checked.

On semi-fixed and separate-loading ammunition, always protect the exposed charge as you prepare the round for firing. Keep the charge clean and dry and make sure all the increments are in proper order.

You can remove propellant increments when ammunition is authorized for zone firing. But never add extra increments.--that's Russian roulette with big bullets.

If you do remove increments, store them in a safe place. Follow your outfit's SOP for disposing of them. If you can, collect and periodically open burn the excess charges in small quantities.

Propellant concerns in a desert environment:

- Store propellant charges in closed containers out of the direct rays of the sun until needed.
- Handle metal containers with leather or cotton gloves to keep your hands from getting burned.
- Propelling charges should always be stored in closed containers and in hot weather, under shade.

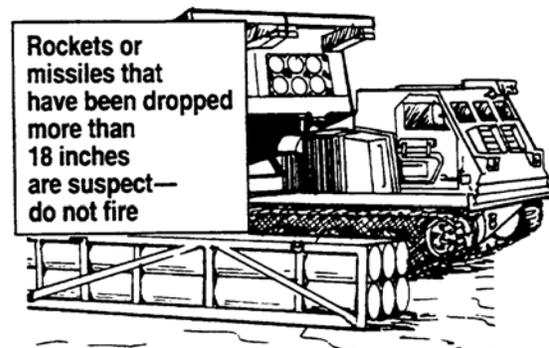


ROCKETS AND GUIDED MISSILES

Rockets with bent or broken fins, dented motors or launcher tubes, or broken electrical

connections are NO-GO and should be turned-in.

Solid propellant rocket motors in guided missiles that have been dropped more than eighteen inches should be tagged unserviceable and returned to the ASP for disposition. Cracked rocket motors could rupture inside the launcher, causing personnel injury and equipment damage.



Protect electrically initiated rockets and guided missiles from static electricity. Use whatever grounding material is available.

Orient rocket motors, rockets and guided missiles during storage and handling in a direction that will cause the least damage to

personnel and equipment if unintentionally initiated.

After unpacking guided missiles packed with desiccant, immediately return the desiccant to the container and close for reuse.

Store rocket ammunition and guided missiles in a shaded area whenever possible.

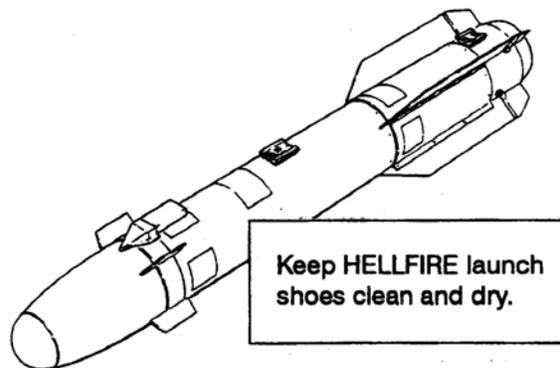
As soon as you unpack a shillelagh missile inspect it for exuding explosive filler on the missile or blistered paint. Blistered paint may have been caused by extreme heat which could have caused explosive growth inside the missile. If either condition is noted, do not replace missile in the container. Call EOD for assistance

Avoid sealing wet missiles in shipping and storage containers. If possible, place containers/wet missiles in a sheltered area or cover, allowing missiles to dry. Don't forget to add desiccant (if available).

HELLFIRE environmental protection cover (EPC) kit may be installed on the nose of the missile in cold weather to protect the seeker dome prior to launch. There are two configurations of the EPC :

- NSN 1377-01-159-3918 MH51 can be used on the AGM-114A/B/C/K HELLFIRE missile.

- NSN 1377-01-359-2923 MT26 has a longer cable for use on the AGM-114F HELLFIRE missile.



Be sure the missile dome is ice-free before you install the EPC. It's a tight fit and may shatter if you try to install it on a missile dome that has ice on it.

If your HELLFIRE missiles are exposed to the elements in freezing weather, take care to keep the launch shoes wiped free of rain/sleet/snow before it freezes on. Otherwise, the missiles won't slide onto the launcher.

FUZES

Primers, blasting caps and fuzes are extremely shock sensitive. Handle and transport these items with extreme caution. Mishandled fuzes could detonate or cause the round to malfunction

Before firing fuzed ammunition, make sure the fuze is fully seated. The fuze shoulder must be seated smack on the projectile's nose - no threads or space showing.

Make sure the safety pins, pull wires or any other safety devices on fuzes are in place and in good shape. Never remove the safety devices until you're ready to fire the item.

If a fuze's safety device is missing, broken, corroded or dented, turn in the fuze or report it.

For artillery ammunition assure that if a supplementary charge is needed, one is used. Never fire a short fuze designed for a shallow fuzewell in a deep-cavity projectile without using a supplementary charge. Turn in projectiles missing supplementary charges,

Know which fuze tools are authorized for which fuzes. Use the tools gently when you screw on a fuze. Never force, spin, roll or drop a fuze.

When a round is issued to you already fuzed, leave it fuzed unless your ammunition pubs give you a different fuze for the round. Unauthorized or altered fuzes are also off-limits. Ammunition with no fuze or the wrong fuze can blow up in the bore or become a dud downrange.

Fuzes are extremely shock sensitive. Handle and transport these items with extreme caution. Mishandled fuzes could detonate or cause the round to malfunction.

Before fuzing, make sure the fuze cavity is clean. Use a lint-free, clean cloth and wooden (not metal) stick to clean the cavity. For the fuze to seat right, the fuze and projectile threads must be clean. Never use a fuze or projectile with damaged threads. Turn it in.

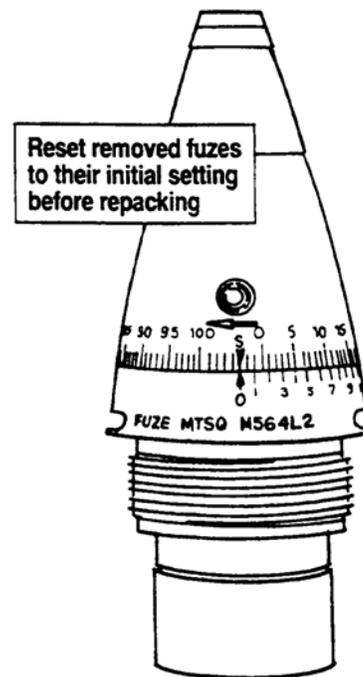
Keep fuzed ammunition out of the path of your weapon's recoil or anything else that might bang it. If a round is hit, isolate it with a tag explaining what hit the round, then report it immediately. Do the same for any damaged rounds, fuzed or not.

On separate loading ammunition, keep the lifting or closing plug on until the round's ready for use. The plug must be tight, but it should

give to a good, strong turn. If the round has a frozen plug, turn it in. If a lifting plug has rusty threads, lean the threads and apply a light coat of silicone grease, NSN 6850-00-702-4297

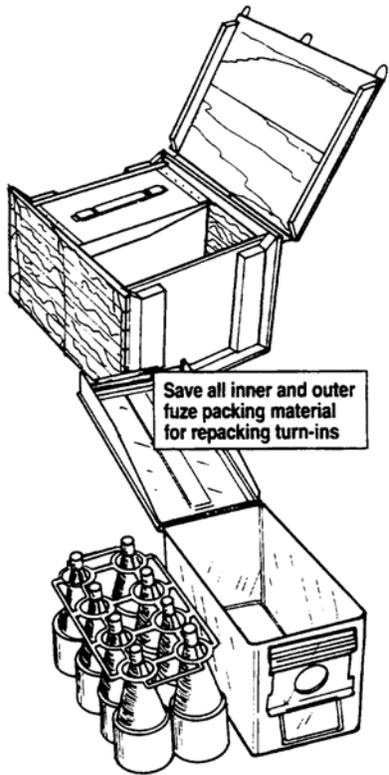
Fuzes that've been prepared, but aren't fired, need special handling. Before repacking, clean well and then seal in the original packing. On separate-loading ammunition, remove the fuze, pack it carefully and replace the projectile's plug and gasket. Write on the box the date the ammunition was repacked. Use that ammunition first next time you fire. That cuts down on opened boxes.

Removed fuzes should be reset to their initial setting before being repacked.



Keep fuzes in closed metal containers as much as practical.

After removing fuzes, save all inner and outer fuze packing material along with the desiccant. Put it all in the closed container for repackaging turn-ins.



Save all inner and outer fuze packing material for repacking turn-ins

Styrofoam inner packing material for fuzes readily absorbs moisture from humid air. Keep metal cans closed to prevent swelling of the foam, making it difficult to remove the fuzes.

M732 proximity fuzes (DODIC N464) must be stored nose down (arrow on box pointing up) to prevent the battery electrolyte from leaking.

GRENADES

Fragmentation hand grenades and smoke grenades are the types you will most likely handle. When handling these grenades, you should:

- Be sure the safety pin is present and installed before you remove a grenade from its container. If you can't see the pin, assume it isn't there and get assistance.
- Never lift or handle a grenade by the safety pin pull ring or safety clip.
- Never pull the grenade safety pin until you are ready to use the grenade.
- Don't put the grenade in a location where the safety pin could be accidentally removed.
- Never put HC smoke into water; HC reacts violently with water.
- Cold temperatures may cause the Thermite grenade (AN-M14, G900) to explode rather than burn when functioned.

MINES

Besides the explosive fillers, mines are made of a various plastics and metals which can be susceptible to damage or deterioration. Don't use or emplace mines that are cracked or damaged.

The Volcano mine canister (M87, DODIC K045) has a lower temperature limit for use of -35°F, but some lots are restricted from use in any temperatures below 0°F. These lots of K045 are:

LS-91D001-001, -002, -003, -004, -005, -006, -007 (seven lots)

LS-91D002-001, -002, -003, -004, -005, -006, -007,(seven lots)

LS-91D003-001, -002 (two lots)

If you're going to use Volcano mines and the temperature is low, be sure to check your lot numbers. If you have any of these, don't use them! They may be unreliable at the restricted temperature.

PYROTECHNICS

Any signalling devices with misleading or missing marking as to the color should not be used. Using the wrong color may result in disastrous consequences.

WARNING: The M206 IR countermeasure flare storage container may be bulging due to gas pressure buildup inside the container. Since the gas is explosive, be very careful when opening a bulged container and open it very slowly so it can vent the gas. Don't

use tools that may cause a spark and don't have any open flames nearby. The M206 flares are still good to use.

DEMOLITION MATERIAL

Detonators, initiators, squibs, blasting caps and other initiating devices should be carried in protective containers, never carried loosely in your pocket. The devices should be securely packed inside the container to prevent rolling and jostling. Mark the container so you'll know what's inside.

Some of your demolition materials, like sheet explosive and C4 blocks, come with an adhesive backing. If the temperature is below freezing, that adhesive won't stick. Also, if the surface is wet, the adhesive won't stick. You'll need to devise a field expedient method to affix the demolition explosives when it is freezing or wet.

Detonating Cord (M456) becomes stiff and more difficult to use in cold weather and, if it is extremely cold, it may even break.

Blasting Time Fuse (M670) also become stiff in cold weather and can break in extreme cold. Also, remember that the lower the temperature, the slower the burn rate will be.

Percussion detonators (8 second and 15 second delay) (M448, M450) will have an increasingly greater delay time at temperatures below +60°F.

The M58 Demolition Charge (MICLIC) warrants these cautions:

- Do not operate RF transmitter within 5 feet of the MICLIC
- Do not operate the MICLIC if the shorting loop is missing or improperly assembled.

Don't use blasting caps that have cracks or splits. Be sure electric blasting caps are shunted by twisting the lead wires or have a short circuit tab attached.

MISCELLANEOUS EQUIPMENT

The lists below contain materials in the supply system which can be used for palletizing, transporting and storing supplies.

ITEM	NSN	UI	COMMENTS
Strapping, Steel (Zinc 5/8 in)	8135-00-286-8565	CL	95 lbs/coil 31ft/lb
Strapping, Steel (Zinc 3/4 in)	8135-00-283-0670	CL	60 lbs/coil 11ft/lb
Strapping, Steel (Zinc 1 1/4 in)	8135-00-283-0671	CL	100 lbs/coil 7ft/lb
Strapping, Steel (Zinc 2 in)	8135-00-283-0672	CL	
Seal, Stl Strapping (Zinc 5/8 in)	8135-00-239-5291	BX	5000/box
Seal, Stl Strapping (Zinc 3/4 in)	8135-00-290-1090	BX	5000/box
Seal, Stl Strapping (Zinc 1 1/4 in)	8135-00-290-1077	BX	1000/box
Seal, Stl Strapping (Zinc 2 in)	8135-00-239-5296	BX	
Stretcher, Stl Strap (1/2-1 1/4)	3540-00-278-1251	EA	
Stretcher, Stl Strapping (2 in)	3540-00-223-8436	EA	
Sealer, Stl Strapping (5/8 in)	3540-00-234-6742	EA	
Sealer, Stl Strapping (3/4 in)	3540-00-234-8589	EA	
Sealer, Stl Strapping (1 1/4 in)	3540-00-234-8591	EA	
Sealer, Stl Strapping (2 in)	3540-00-223-8856	EA	
Cutter, Stl Strapping	5110-00-223-6281	EA	
Strapping Coil Hand Truck	3540-00-273-8821	EA	2 wheel, holds 1 ea
			3/4,1 1/4,2in strap
Strapping/Sealing Kit (5/8 in)	3540-00-565-6242	EA	90 lbs strap; 500 seals; stretcher; sealer
Strapping/Sealing Kit (3/4 in)	3540-00-565-6243	EA	90 lbs strap; 500 seals; stretcher; sealer

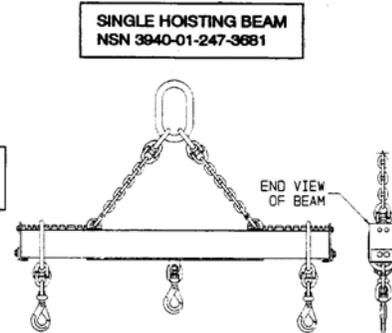
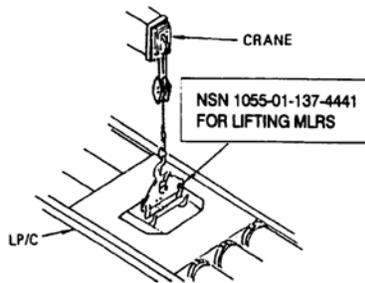
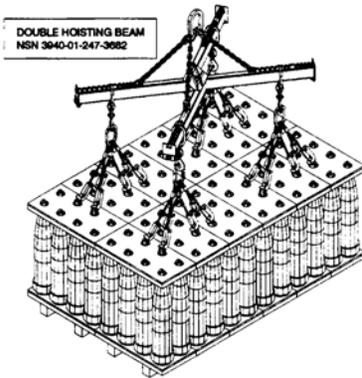
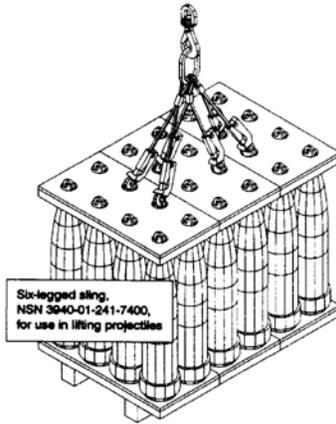
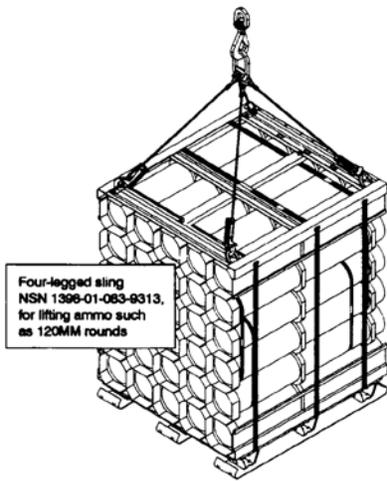
Strapping/Sealing Kit (1 1/4 in)	3540-00-565-6244	EA	90 lbs strap; 100 seals: stretcher; sealer; heavy duty cutter
Strapping/Sealing Kit (2 in)	3540-00-591-2758	HD	
Seal, Anti-pilferage (1/2 in dia)	5340-00-292-0886	HD	100/box, galvanized
Tape, Pressure Sensitive (1 in)	7510-00-823-8071	RO	60 yds/roll
Tape, Pressure Sensitive (1 1/2 in)	7510-00-823-8073	RO	60 yds/roll
Tape, Pressure Sensitive (2 in)	7510-00-266-7715	RO	60 yds/roll
Ink, Mkg, Stencil, Yellow #33538	7510-00-224-6733	PT	Spray
Ink, Mkg, Stencil, White #37875	7510-00-224-6732	PT	Spray
Ink, Mkg, Stencil, Black #37038	7510-00-224-6734	PT	Spray
Paint, Sand Oblit	8010-00-226-3906	GL	Can
Paint, Sand Oblit	8010-00-582-4743	PT	Can
Lacquer, Olive Drab, #34088	8010-00-292-3053	GL	Can
Lacquer, Olive Drab, #34088	8010-00-721-9479	PT	Spray
Lacquer, Orange, #12197	8010-00-584-3148	PT	Spray
Holder, Envelope Plastic	8140-00-334-4120	HD	For mag data card
Tie-Down Strap	5340-00-980-9277	EA	Old Strap (still OK)
Universal Tie-Down Strap (20 ft)	5340-00-204-3009	EA	Preferred new strap
Rope, Nylon (1/4 in dia)	4020-00-928-3438	RL	600 ft/roll
Rope, Nylon (3/8 in dia)	4020-00-968-1356	RL	600 ft/roll
Rope, Nylon (1/2 in dia)	4020-00-968-1357	RL	600 ft/roll
Rope, Nylon (5/8 in dia)	4020-00-968-1358	RL	600 ft/roll
Rope, Manila (5/8 in dia)	4920-00-289-8616	CL	600 ft/coil
Rope, Manila (1 in dia)	4920-00-266-1824	CL	600 ft/coil
Camouflage Screening (Woodland)	1080-01-266-1824	EA	1 hexagon/674 sq ft; 1 rhombus 224 sq ft; tie-down lanyards; carrying case.
Tarpaulin, Cotton	8340-00-817-2126	EA	16x16 ft, natural color

FORMS

FORM	TITLE
DD Form 626	Motor Vehicle Inspection
DD Form 836	Special Instructions for Motor Vehicle Drivers
DD Form 1577-2	Unserviceable (Repairable) Tag-Materiel
DD Form 1577	Unserviceable (Condemned) Tag-Materiel
DD Form 1575	Suspended Tag-Materiel
DD Form 1576	Test/Modification Tag-Materiel
DA Form 581	Request for Issue and Turn-in of Ammunition
DA Form 5203	DODIC Master/Lot Locator Record
DA Form 3151-R	Ammunition Stores Slip
DA Form 5204	Serial Number Record
DA Form 1298	Due Out Record
DA Form 4999	Due In Record
DA Form 3020-R	Magazine Data Card

SLINGS SPECIFICALLY DESIGNED FOR AMMUNITION HANDLING

NSN	SOS	DESCRIPTION
1398-01-083-9313	B14	Sling, Four-legged top lift ammo pallets, HEMTT crane
3940-01-241-7400	B14	Sling, Six-legged, used to lift up to three pallets of 155mm projectiles, HEMMT crane
3940-01-209-6008	AKZ	Sling, Chain, used with M977 HEMTT crane
3940-01-247-3682	B14	Beam, Double, hoisting 11,000 lb load; used with four each six-legged or four- legged slings, center hook for single sling lift
1055-01-137-4441	S9G	Hoist Attachment, MLRS LP/C; attaches to top lifting bar.
3940-01-247-3681	B14	Beam, Single, hoisting 5500 lb load; used w/two each six-legged or four-legged slings, center hook for single sling lift



AMMUNITION PUBS

FM 9-38 Conventional Ammunition Unit Operations

FM 4-30.13 Ammunition Handbook

TM 9-1300-200 General Ammunition

DA PAM 385-64 Ammunition and Explosives Standards

TM 9-1300-250 Organizational Maintenance Manual: Artillery Ammunition for Guns, Howitzers, Mortars, Recoilless Rifles and 40MM Grenade Launchers

TM 9-1305-201-20&P Organizational Maintenance Manual Including Repair Parts and Special Tools List for Small Arms Ammunition to 30MM Inclusive

TM 9-1330-200-12 Operators and Organizational Maintenance Manual for Grenades

TM 9-1340-222-20 Operators and Organizational Maintenance Manual for Rockets

TM 9-1345-203-12&P Operators and Organizational Maintenance Manual for Land Mines

TM 9-1370-203-20&P Organizational Maintenance Manual for Military

Pyrotechnics

TM 9-1375-213-12 Operators and Organizational Maintenance Manual (Including Repair Parts and Special Tools Lists) Demolition Materials

TM 9-1425-472-12 Operators and Organizational Maintenance Manual for TOW Missile System

TM 9-1425-475-20 Organizational Maintenance Manual for HELLFIRE Missile System

TM 9-1425-646-10 Operators Maintenance Manual for Multiple Launch Rocket System

TB 9-1300-278 Guidelines for Safe Response to Handling, Storage, and Transportation Accidents Involving Army Tank Munitions or Armor Which Contain Depleted Uranium

TB 9-1300-385 Restricted or Suspended Munitions (published quarterly)

SB 755-1 Disposition of Used Ammunition Packing Material and Certain Ammunition Components

AR 75-1 Malfunctions Involving Ammunition and Explosives

AR 190-11 Physical Security of Arms, Ammunition and Explosives

AR 385-63 Firing Ammo in Training, Target Practice and Combat

AR 385-64 Ammunition and Explosives Safety Standards

Use the Supply Update to keep current on all accountability and supply procedures. It now contains several publications:

AR 710-2, Supply Policy Below the Wholesale Level

AR 735-5, Policy and Procedures for Property Accountability

DA Pam 710-2-1, Using Unit Supply System Manual Procedures

DA Pam 710-2-2, Supply Support Activity Supply System Manual Procedures

AMC Drawings (Loading, Tie-down, Bracing, Unloading Procedures in/on Tactical Vehicles and European Railcars).

19-48-4900 -CA17Q1 Conventional Ammunition Items

19-48-4901/1-CA17Q2 Separate Loading Projectiles

19-48-4901/2-CA17Q2 Propelling Charges

19-48-4901/3-CA17Q2 Complete Rounds

19-48-4901/4-CA17Q2 Boxed Ammunition (Palletized and Unpalletized)

19-48-4901/5-CA17Q2 Unit Basic Loads

19-48-4902 -CA17Q3 Boxed Ammunition and Components in/on M998 HMMWV for Military Air Deployment

19-48-4903 -CA17Q4 Conventional Ammunition Items on PLS Flatracks

19-48-4286 -5PE1006 Separate Loading Projectiles in European Boxcars

19-48-4287 -5PM1006 Complete Rounds and Propelling Charges in European Boxcars

19-48-4288 -5PA1006 Boxed Ammunition Items in European Boxcars

Drawings available from:

**Director
US Army Defense Ammunition Center
ATTN: SOSAC-DET
McAlester, OK 74501-9053
DSN 956-8071
Commercial (918) 420-8071**

AmmoHelp Hotlines:

www.dac.army.mil/ammohelp/
ammohelp@dac.army.mil
1-877-668-2840

Ammunition and explosives technical assistance may be obtained from:

+ Ammunition Serviceability

U.S. Army Operations Support Command
ATTN: AMSOS-PBS
Rock Island, IL 61299-6000
DSN 793-7518
Commercial (309) 782-7518
e-mail: amsos-pbs@osc.army.mil

+ Ammunition Logistics

U.S. Army Defense Ammunition Center
ATTN: SOSAC-AV
McAlester, OK 74501-9053
DSN 956-8049
Commercial (918) 420-8049
e-mail: smaac-av@dac.army.mil

+ Explosives Safety

U.S. Army Defense Ammunition Center
ATTN: SOSAC-ES
McAlester, OK 74501-9053
DSN 956-8919
Commercial (918) 420-8919
e-mail: smaac-es@dac.army.mil

APPENDIX 1
Inspection Checklist
for
Motor Vehicles carrying Ammunition & Explosives

1. NOTE vehicle number & type, driver name/rank, date & hour.
2. INSPECT the for the following, inbound and (especially) outbound vehicles:
 - ___a. Engine, body, cab and chassis clean. No excessive oil, grease or debris.
 - ___b. Steering Mechanism. Check steering gear case for leaks; look at pitman arm & tie rod for fit & condition.
 - ___c. Horn Operates. Loud enough to be heard over road noise.
 - ___d. Windshield & Wipers. No glass breaks, cracks or stickers or decals that could be unsafe or block driver's view. Wipers should work properly & wipe clean. In winter, be sure the defroster works.
 - ___e. Spare Fuses available. Unless circuit breaker equipped
 - ___f. Rear View Mirrors installed. Not broken & must adjust.
 - ___g. Full Fire extinguishers. Two each 10B:C are usually reqd.
 - ___h. Lights and Reflectors operate: Check all lights and signals. See that lenses are clean and not broken.
 - ___i. Exhaust System. Inspect for tight and correctly installed system; look for anywhere hot pipes or exhaust could burn, char or melt floor, wiring, gas tank, etc.
 - ___j. Fuel System. Check tanks, lines and fittings for leaks.
 - ___k. All Brakes Operate. Look for oil or grease around drum flanges, check pedal travel, hand brake, etc.
 - ___l. Landing Gear. In good operating condition on trailers.

____m. Springs & Suspension. Inspect for cracked springs, loose or missing shackles, suspension hangers, etc.

____n. Tires. Cuts, blisters, tread worn smooth, etc. no good.

____o. Cargo Space. No holes in floor, no nails, bolts, screws sticking up. Wood can't be gas or oil soaked. Loose items in same compartment as ammo not allowed.

____p. Electric Wiring. Clean, secure, no bare wires or improper splices. Keep wires away from ammo.

____q. Tailgate & Doors. Check for tight hinges, secure safety chains, doors & gates that shut tight.

____r. Tarpaulin, Fire & Water resistant. Ammo hauled in open ust be covered with fire & water resistant tarps.

____s. Explosives Compatibility. If more than one type ammo is on truck/trailer, be sure it is compatible to haul.

____t. Load is secure to prevent movement. Over the top straps needed, but don't forget to check fore & aft restraint.

____u. Proper Weight Distribution & Load Limit.

____v. Placards and warning devices (if required). Be sure the vehicle meets theater & host nation requirements.

3. SIGNATURE. Inspector and driver sign appropriate documents to acknowledge acceptance of load; driver & inspector each need copies. Maintain records on all inbound & outbound shipments.

Appendix 2

Weapon Lubrication Chart		
M2 MG	LSA, CLP or LSA-T	
M4 Carbine	LAW below +10 F	CLP above -10 F
M9/M11 Pistol	CLP or LSA	
M16 A1 Rifle	LAW below 0 F	CLP above -35 F
M16 A2 Rifle	LAW below 0 F	CLP above -35 F
MK 19 GMG	LSA-T	
M24 Rifle	LSA or CLP	
M60 MG	LAW below 0 F	PL-S above 0 F
M134 MG	LSA or LSA-T	
M197 AC	LAW-AW	
M230 AC	MDS grease	
M240 MG	PL-S or LSA	
M249 S.A.W.	CLP	
M296 MG	LSA-T	
	-65 -45 -25 -5 15 35 55 75 95 115 135 155	
	Temperature (deg F)	

Weapon