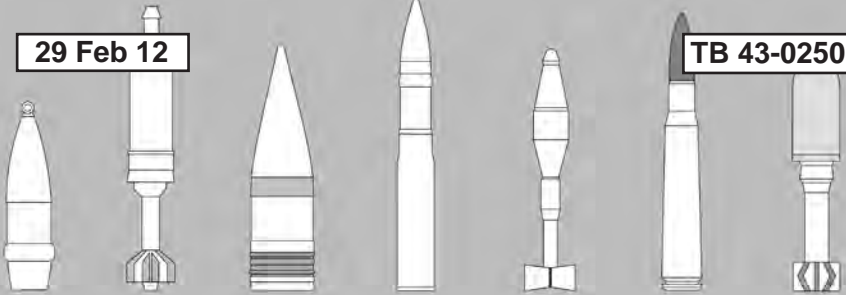


29 Feb 12

TB 43-0250



# Ammunition Handling, Storage and Safety

*This TB supercedes TB 43-0250, Ammunition  
Handling, Storage and Safety, dated 3 Dec 2007*

DISTRIBUTION STATEMENT C. Distribution authorized to U.S. Government agencies and their contractors. This publication is required for administration and operational purposes, as determined 1Mar 03. Other requests for this document shall be referred to Commander, U.S. Army Logistics Support Activity, AMXLS-GP, Redstone Arsenal, AL 35898.

# Table of Contents

Handle and Transport Ammo with Care .....	1
Safe Operations .....	2
Loading and Unloading .....	4
Motor Vehicle Movement .....	7
Combat Vehicle Ammunition .....	9
Airlifting Ammunition .....	10
Ammo Storage Is Important, Too .....	12
Ammunition Storage .....	12
Outdoor Storage .....	14
MILVAN/Container Storage .....	16
Accountability .....	18
Ammunition Supply Rules .....	19
Unpacking/Repacking .....	20
Maintenance and Inspection .....	21
Ammunition Recovery .....	22
Malfunctions .....	23
Fire Safety .....	23
All Ammo Not Handled Equally .....	24
Small Arms Ammunition .....	24
Artillery Ammunition .....	26
Pyrotechnics .....	27
Propellant .....	28
Mortar Rounds .....	29
81mm HE M374A2/A3 (1315-C256) and 81mm WP Smoke M375A1/A2/A3 (1315-C276) .....	29

This Page Intentionally Blank

Tank Ammunition .....	30
Grenades .....	31
Mines .....	32
Demolition Material .....	32
Rockets and Guided Missiles .....	33
Fuzes .....	34
More Help .....	36

# Handle And Transport Ammo

## WITH CARE



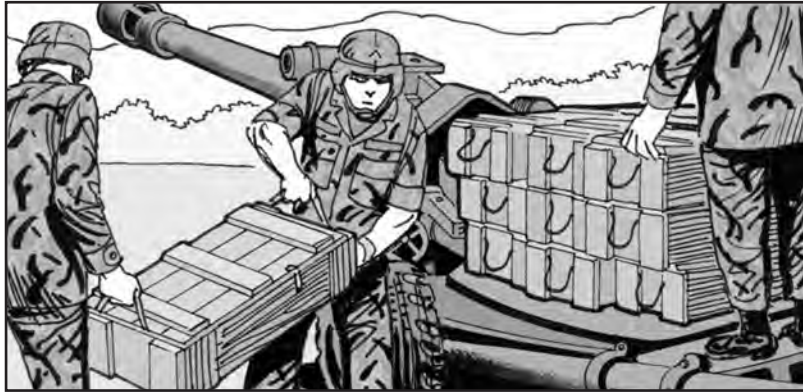
WHEN IT'S TIME TO DEPLOY, YOU WANT TO MAKE SURE ALL YOUR EQUIPMENT IS UP-TO-SNUFF.

BUT ALL THE PM IN THE WORLD **WON'T** HELP YOUR WEAPON IF YOU **HAVEN'T** TAKEN CARE OF ITS AMMO.

TO MAKE SURE YOUR AMMO WORKS AGAINST THE ENEMY AND NOT YOU, TAKE A SHOT AT THE FOLLOWING INFORMATION.



## Safe Operations



During deployment, you'll encounter many different types of ammunition. The single most important fact to remember is: **Ammunition is intended to maim, kill and destroy!** If you are not **completely** sure about an item, **do not go near it, do not touch it, and do not pick it up!** There are plenty of examples of overly curious soldiers who ended up either wounded or killed, so handle ammunition carefully.



Limit the number of soldiers exposed to ammunition handling to the minimum necessary to get the job done. Cell phones will not be used inside an ammunition/explosives facility or within 10 feet of ammo or explosives stored outdoors.



Protect ammunition from dirt and sand, temperature extremes, moisture, grease, rough handling or anything else that might cause it to deteriorate.



Keep ammunition clean

Keep ammunition in its original containers as long as possible to prevent exposure to the elements. Maintain accountability and preserve lot integrity. Do not remove seals from boxes until ready to use.

Open ammunition boxes carefully. Return all inner packaging material to the container and close it to keep out moisture, sand or debris. Repack items that have been opened and not used. Using ammo that cannot be identified by lot number is prohibited.

Make sure proper fire extinguishers are on-hand and properly maintained. In the event of a fire, try to keep it from spreading to ammunition. If the fire does reach ammunition, **evacuate immediately!**

Never tamper with, disassemble or alter any ammunition.



Do not become careless because of familiarity with munitions.



Make sure you are properly grounded when handling ammunition items containing electric primers, exposed propellant or exposed explosive material. Static electricity and ammunition can be a lethal combination!

Ammunition that does not arm or has failed to explode after being armed is classified as a dud. **Dud ordnance poses an immediate threat!** It should not be handled or moved. Mark the location and call your local EOD support unit to remove or destroy it. You should also contact your EOD support unit if you locate unexploded ordnance.

The greatest danger posed by munitions with depleted uranium (DU) filler is the explosive hazard of the munitions. The depleted uranium is radioactive, but the levels are so low that the main health risk is chemical toxicity. So follow these tips when dealing with DU munitions:

—In the event of a fire involving DU munitions, evacuate **upwind** and immediately notify your unit's NBC NCO and Safety Officer for instructions and assistance.

—If possible, place damaged DU munitions in plastic bags to contain any potential contamination. Turn them in at your ammunition supply point (ASP).



When in doubt as to the condition and proper care of ammunition, refer to DA Pam 385-64, *Ammunition and Explosives Safety Standards*, and FM 4-30.13, *Ammunition Handbook: Tactics, Techniques, and Procedures for Munitions Handlers*. Or, get in touch with a Quality Assurance Specialist (Ammunition Surveillance), or “QASAS”. A QASAS may be contacted through your ASP, range safety, or EOD personnel. You can also check with personnel from your ammunition supply organization or logistics staff element.

## Loading and Unloading



Loading and unloading ammunition requires special care. Before loading, be certain all pallets, boxes and containers are in good shape, sealed tight and secured.

Maintain a tight pack using approved packing material. Brace or restrain the load as firmly as possible to prevent pallets and boxes from shifting in transit, and to protect them from bumps along the way.

Load tactical vehicles in accordance with AMC 19-48 series drawings using wooden dunnage or web straps. The QASAS will be able to get these drawings, or you can check them out on-line at:

<https://www3.dac.army.mil/DET/>

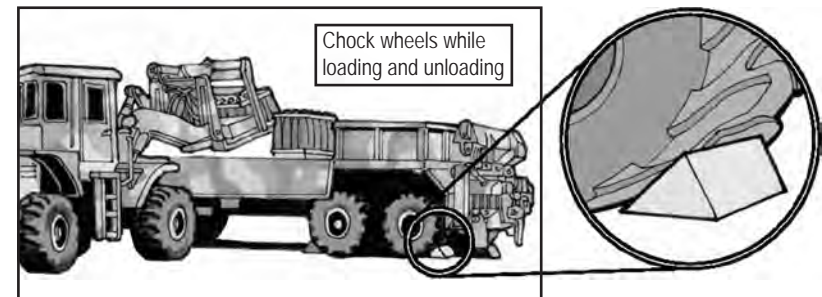
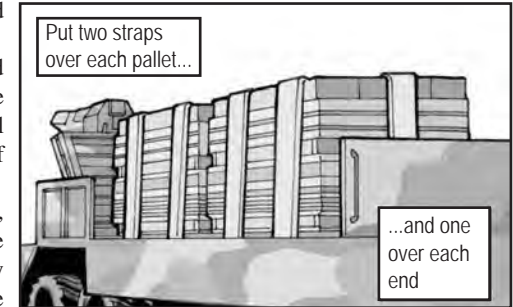
Never rely on the tarp alone to restrain ammunition in an open vehicle and never use boxes of ammunition as dunnage to block and brace your load. Remember, the ammunition load will need to be restrained both fore and aft as well as side-to-side.

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.

Unless you're involved in an actual battle scenario, do not load high explosive and white phosphorous or other chemical ammunition on the same vehicle. Check with your QASAS for approved transportation compatibility.

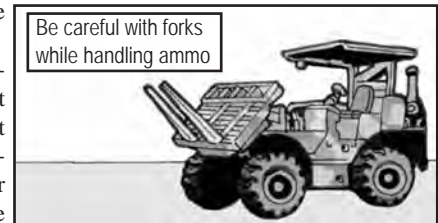
Know your vehicle's load limit and never exceed it. The weight of the ammunition will usually be listed on the side of the containers.

During loading or unloading, set the brake, turn off the engine and chock the wheels. Properly distribute the weight and secure the load to prevent movement during transport.



When loading unpalletized ammunition, do not allow more than one-third of the height of any box to extend above the vehicle sidewalls.

When handling palletized ammunition, a forklift is the best equipment to lift and move ammunition short distances. Do not strike the ammunition with the forks. When using larger forklifts, do not stick the forks all the way through the pallet or you may puncture or topple neighboring pallets.



After you have moved the pallet away from those nearby, slide the forks forward until the pallet is seated against the mast. When you're ready to move the load, keep the forks no higher than a foot off the ground to keep the pallet stable.

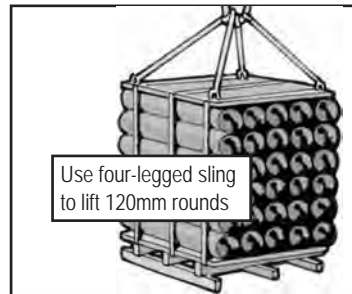
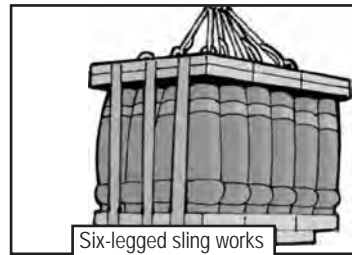
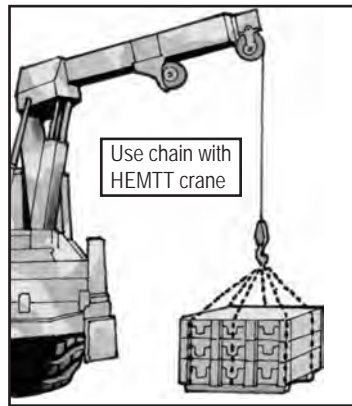
If a forklift won't do the job or isn't available, use a crane such as the one on the M977 HEMTT and a chain sling, NSN 3940-01-209-6008. Loop the two chains under opposite sides of the pallet and hook them to the two hooks on the chain sling ring.

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. Hooking the chain too short will create added pressure on the top edge of the containers and may damage them.

Although you can lift pallet units of separate loading projectiles with the chain sling, a specially designed six-legged sling, NSN 3940-01-241-7400, is the best way to go. It lets you lift three pallets of 155mm projectiles at one time. Since 155mm projectiles usually come banded together in bundles of three pallets, leave them that way for ease of handling.

Before lifting wooden pallets, make sure the banding is not broken or missing. If you're lifting the metal field artillery projectile pallet (FAPP), make sure the top locking handles are seated firmly in place.

The six-legged sling's legs are too short to lift 120mm tank ammunition pallets. Since these pallets have four lifting rings attached to the metal top adapter of the pallet unit, use the four-legged sling, NSN 1398-01-348-4670. Army users will need to order the sling on DD Form 1348-6 and put "NSN not on AMDF" in the REMARKS block. Just 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 proper working condition. The vehicle must be clean and free of leaking fuel, grease, or anything else that could create a fire hazard.

Vehicles transporting ammunition are only allowed on roads designated as "Ammunition Truck Routes". Consult with your local transportation office for road clearance.

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 require that the ammunition be off-loaded and moved at least 50 feet from the operation.

Fuel your vehicle **before** you load it with ammunition. If you must refuel a loaded vehicle, do so in an isolated area. When tactical situations permit, refueling a loaded vehicle should be delayed until the engine has cooled for at least 10 minutes to lessen the danger of fire from spills or overflows.

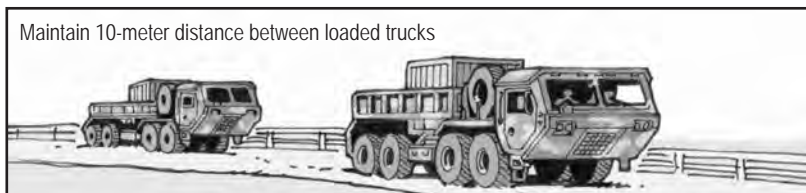




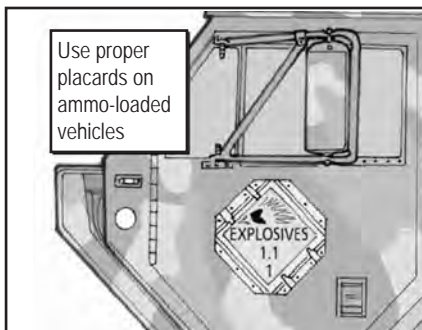


Vehicles carrying ammunition must be equipped with two serviceable fire extinguishers, rated 10BC or higher. Fire extinguishers rated 1A,10BC are even better, since they also handle paper and wood fires.

Maintain proper convoy distances when moving trucks loaded with ammunition. When parked or stopped, maintain a distance of at least 10 meters between loaded trucks. This will not keep a fire from spreading from one truck to another, but it will allow maneuvering room in the event of fire.



The required checklist for all trucks carrying ammunition is DD Form 626, *Motor Vehicle Inspection*. DD Form 836, *Dangerous Good Shipping Paper/Declaration and Emergency Response Information for Hazardous Materials Transported by Government Vehicles*, provides special instructions for motor vehicle drivers. Placard ammunition-loaded vehicles per guidance provided by HAZMAT-certified ASP or unit personnel.



## Combat Vehicle Ammunition



Check small arms ammunition stored in your combat vehicle regularly for contamination with dirt, grit or debris. Keep the ammunition wiped clean, but do not attempt to use oil, solvents, water or steel wool. Be especially careful that ammunition doesn't get coated with oil or grease.

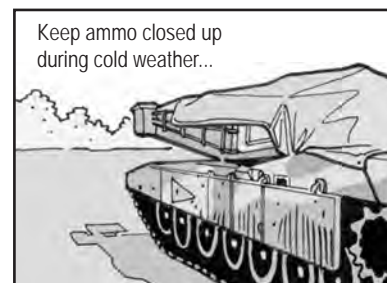
It's the same story for larger ammunition stored in your combat vehicle. Check your local SOP on unloading larger ammunition for a thorough cleaning and inspection.

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

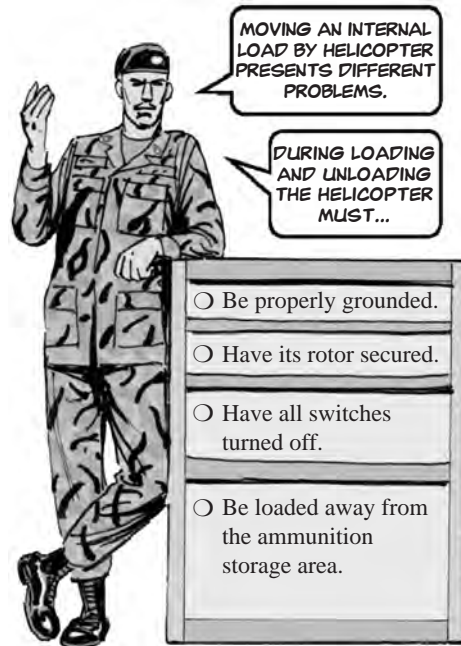
**Remove ammunition from all vehicles before taking them to the motor pool or other facility for maintenance.**

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

In cold weather, keep ammunition compartments closed as much as possible to keep down condensation. During hot weather, open ammo compartments to allow as much ventilation as possible. See your vehicle's -10 TM and your weapon's pubs for more information on maintaining ammunition stored in combat vehicles.



## Airlifting Ammunition



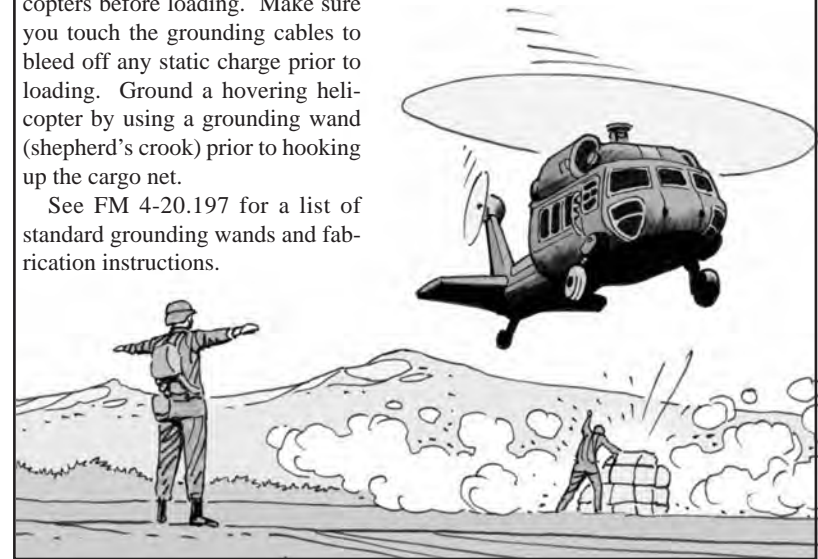
Make sure all boxes and containers are in good shape with no leaks or burst seams, tightly sealed and clearly marked. Load and secure the ammunition according to the aircraft commander's SOP.



### For sling-out operations:

- Locate helicopter sling-out areas at least 550 meters from ammunition storage structures, inhabited buildings, 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.
- 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 FM 4-20.197 for a list of standard grounding wands and fabrication instructions.



- 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.
- If possible, the loads should be assembled in cargo nets, ready to be slung out, prior to the arrival of the helicopter.

FOR MORE INFORMATION ON LOAD LIMITS, SAFETY, GROUNDING AND AMMUNITION COMPATIBILITY, SEE TM 38-250, PREPARING HAZARDOUS MATERIALS FOR MILITARY AIR SHIPMENT, AND DA PAM 385-64.





# Ammo Storage Is Important, Too



## Ammunition Storage

Ammunition storage conditions at the ammunition supply point (ASP), where large quantities of ammunition are stored, are a lot different from the conditions found in 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 of these storage environments.

Quick access to different types of ammunition may be desired, but safety factors and separation distances restrict the quantity and mix.

Establish explosives limits for each site/location. Use DA Pam 385-64, *Ammunition and Explosives Safety Standards*, FM 4-30.13, *Ammunition Handbook: Tactics, Techniques, and Procedures for Munitions Handlers*, or contact your Quality Assurance Specialist (Ammunition Surveillance) (QASAS) for specific guidance in these areas. Follow the directions of DA Pam 710-2-1, *Using Unit Supply System (Manual Procedures)*, and other appropriate regulations for accountability and record keeping.

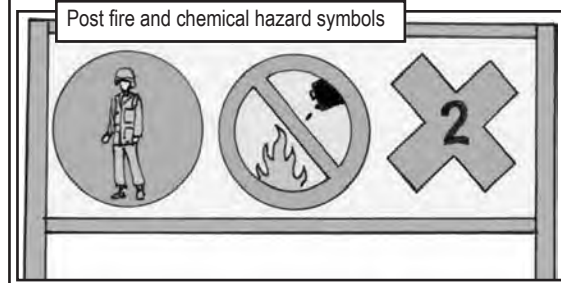
ONLY IF AMMUNITION HAS BEEN PROPERLY STORED, MAINTAINED, PACKAGED AND INSPECTED CAN IT DO ITS LETHAL BEST ON THE BATTLEFIELD.

SO DO YOUR BEST WITH THE FOLLOWING INFORMATION.

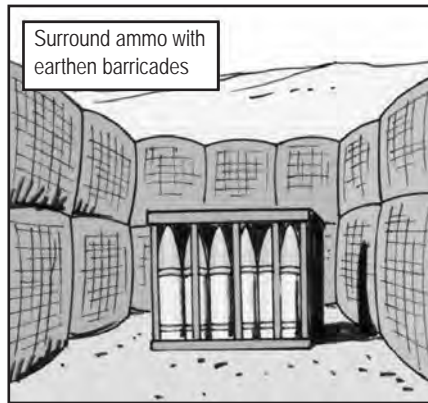
ONCE YOU'VE ESTABLISHED EXPLOSIVES LIMITS, CONSIDER THESE STORAGE SAFETY FACTORS.

- Point all boxes or containers in a stack in the same direction, leaving the ammunition markings clearly in view.
- Isolate rockets into single rows, pointing away from personnel and property. Preferably, rockets should point toward an embankment or some other type of barrier.
- Post the correct fire symbol and, when appropriate, chemical hazard symbols for each magazine or field storage unit. Refer to DA Pam 385-64 for proper guidance.

Post fire and chemical hazard symbols



- Except for 2.75-in rockets, never store white phosphorous munitions lying on their sides.
- Park all vehicles and trailers loaded with explosives at least 250 feet from other vehicles and trailers transporting flammable liquids or cargo vehicles loaded with packaged gasoline, diesel fuel or similar flammables. Make sure any fuel in the area is located downhill from ammunition.
- Separate serviceable ammunition from any unserviceable, foreign or captured ammunition.
- Earthen barricades should be used in unit ammunition storage areas to prevent or lessen the spread of potential explosions. The barricades can also be used to protect uploaded aircraft and key administrative/ operational facilities from low-angle fragments produced in explosions.



Barricades must be higher than the stacks of ammunition they separate and must be at least 3 feet wide at the top to be effective. Numerous construction aides (sand grid systems, hesco bastion, etc.) are available through the Defense Supply Center, Philadelphia.

## Outdoor Storage

THE BEST PLACE FOR OUTDOOR STORAGE OF AMMUNITION IS ON HIGH, HARD GROUND WITH GOOD DRAINAGE.



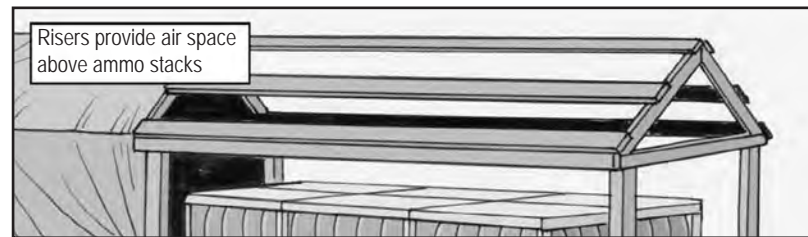
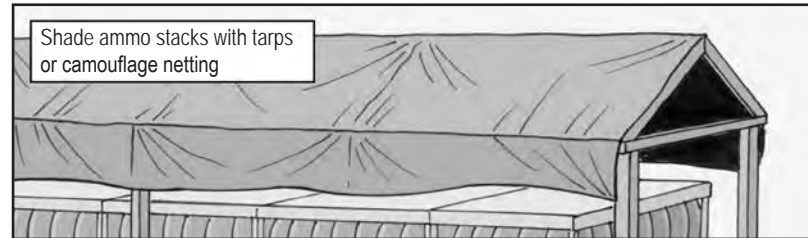
IF YOU CAN'T FIND THAT SORT OF SITE, YOU MAY HAVE TO DIG DRAINAGE DITCHES AROUND THE STACKS TO PROTECT THEM.

Stack palletized or boxed ammunition on a solid, level base, with at least three inches of dunnage. Stack heights may be changed to meet local conditions such as pallet height and available equipment, but a good rule of thumb is to stack ammunition boxes only as high as your head. Allow room between the ammunition stacks to remove debris.

Do not store ammunition directly on the ground for any length of time. Wood boxes absorb too much water during rainy conditions, causing the wood to rot. Use dunnage or pallets to maintain a minimum three-inch space beneath and around stacks of ammunition to allow air circulation.

Wet, muddy ground may cause ammunition stacks to shift and fall. Keep stacks straight and dunnage in good condition. If available, consider using Air Force landing mats for outdoor storage to provide a firm base on all types of soil.

Ammunition stacks kept outdoors should be covered with tarpaulins as protection against the elements. Camouflage netting is a good idea for shade during the summer months. Keep a minimum of 18 inches of space between the stacked ammunition and the overhead tarp or net so that air can circulate. Locally fabricated risers placed on top of ammunition stacks will help.



Fasten the camouflage netting or tarps securely, but allow for quick lowering in the event of high winds. Never nail a tarp or net to ammunition boxes or pallets.





## MILVAN/Container Storage



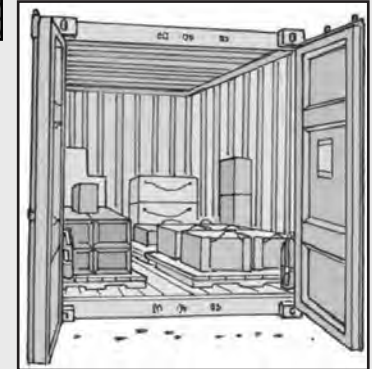
Field storage of ammunition in MILVANs and other ISO containers represents a halfway point between outdoor storage and indoor magazine storage. When storing your ammunition in containers, here are some good points to remember:

- Do not place the containers directly on the ground. At a minimum, place 4x4 inch or larger wood boards under each corner block to prevent damage to the cross members.
- Do not modify the containers in any way. If you add ventilation holes, welded ramps, or nailed-in structures, they won't meet international shipping standards.
- Allow ventilation by opening doors as much as possible, consistent with safe and secure operations.
- Treat containers carefully. Remember, they will need to be used again in the future.



- Use ammunition solar covers or camouflage netting to block solar radiation and provide natural ventilation. Provide a minimum of 18 inches between cover and container.

- Place sandbags along the sides and ends of the containers to reduce exposure to the sun.



<http://www.natick.army.mil/soldier/media/fact/shelter/asc.htm>  
<http://www.ssc.army.mil/soldier/media/fact/shelter/flexphoto.htm>  
<http://www.ssc.army.mil/about/pao/pubs/warrior/96/jul/sunscrn.htm>

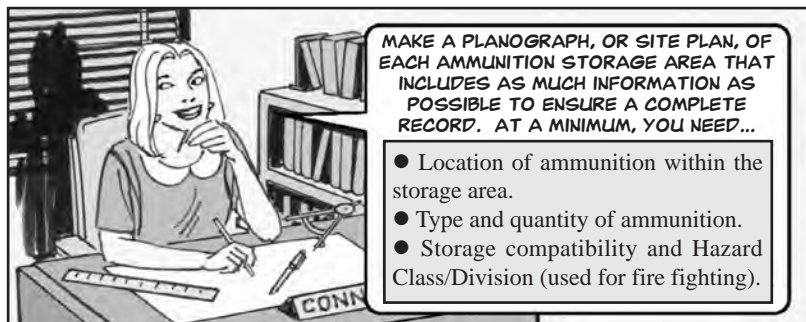
The solar covers are available from war reserve stock and units pay for shipping charges only.



## Accountability



Always strive to maintain proper accountability and lot or serial number integrity when dealing with ammunition. Stacking ammunition by type, DODIC and lot number is critical whenever loading or storing ammunition.



**MAKE A PLANOGRAPH, OR SITE PLAN, OF EACH AMMUNITION STORAGE AREA THAT INCLUDES AS MUCH INFORMATION AS POSSIBLE TO ENSURE A COMPLETE RECORD. AT A MINIMUM, YOU NEED...**

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

Having the planograph information will save lives when trying to put out storage area fires. The plan will also save time when an emergency issue is needed. Update the planograph when changes are made to location, type, or quantity of ammunition.

Inventory ammunition in accordance with the requirements of DA Pam 710-2-1. Inventory results should be recorded on the DA Form 3020-R, *Magazine Data Card*. Keep records of basic load ammunition draws on your organization's property book.

If you are the accountable officer, keep all ammunition accountability documents such as hand receipts/sub-hand receipts and issue/turn-in receipts secure, but readily accessible. Keep all documents, because you will need them to "balance the books" when someone else takes over your duties.

## Ammunition Supply Rules



HOW MANY 155MM PROJECTILES DO WE HAVE ON HAND?

I'VE GOT THOSE FIGURES RIGHT HERE, SIR.

**AMMUNITION SUPPLY PERSONNEL NEED TO BE AWARE OF THE FOLLOWING RULES...**

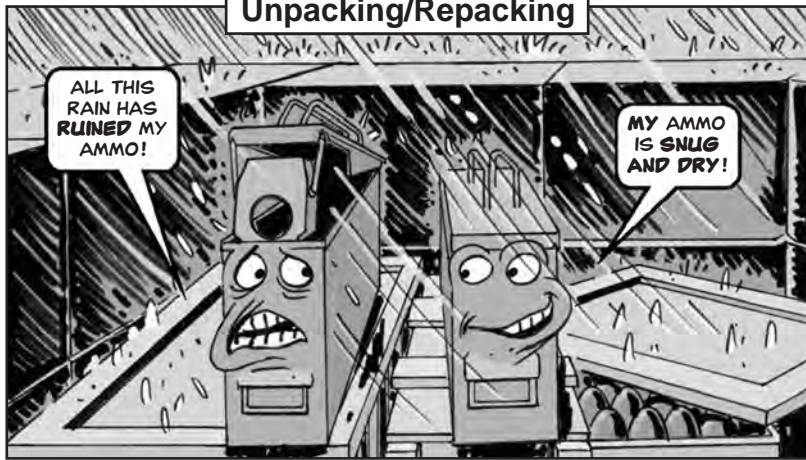
- Request and store only the ammunition your unit needs.
- Turn in excess ammunition promptly.
- Maintain a "balance sheet" of all ammunition on hand.
- Maintain written records of all receipts, issues, and any other transactions.

Commanders want to know how much ammunition is available to them and they want to know it **now**. Your records could have a significant impact on future tactical decisions. Knowing where, what kind, and how much ammunition is available to a commander has a direct influence on battlefield decisions.

Post ammunition receipts, issues, and any other transactions to your unit's document register (DA Form 2064). File the completed DA Form 581 and post the DA Form 5203 (DODIC Master/Lot Locator Record) accordingly. See DA Pam 710-2-1 for more information on ammunition supply and inventory. This pamphlet provides instructions on preparing DA Form 581, *Request for Issue and Turn-in of Ammunition*, and DA Form 5515, *Training Ammunition Control Document*.



## Unpacking/Repacking



Keep all ammunition unitized and palletized as long as possible to allow for quick loading by material handling equipment.

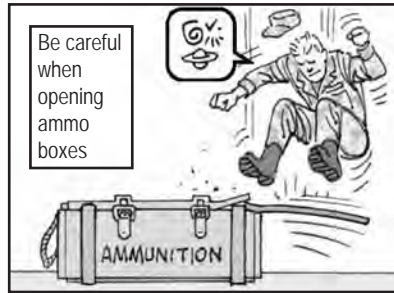
When ammunition is kept packed, it also prevents exposure to the elements. This is especially true of material packed in barrier bags or sealed metal containers. Be sure to return desiccant to airtight containers as soon as possible.

Don't be rough when opening and closing ammo boxes. Using care protects you, the ammo, and the box for later reuse.

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

Make sure repackaged ammunition has the right stock number, lot/serial number and quantity marked on the container. Identification markings on boxes and containers are extremely important, so protect the integrity of the markings when repacking.

The entire light box should be painted orange with no more than one light box per lot. Use black paint or marker to label the DODIC, nomenclature, lot number, and quantity on the box.



PLACE LIGHT BOXES ON TOP OF THE STACK SO THEY ARE USED FIRST.

## Maintenance and Inspection



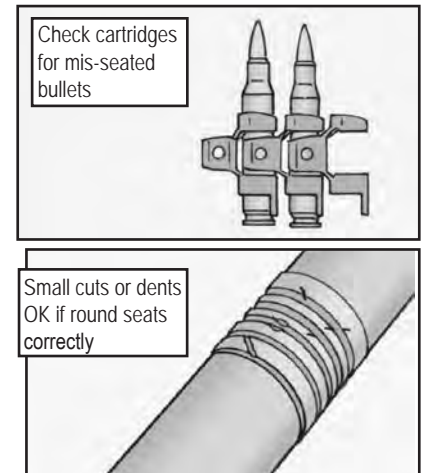
Operator and crew maintenance is usually limited to unpacking, repacking, inspecting, cleaning, and repairing packing material. The appropriate ammunition -10, -12, or -20 series TM will provide a Maintenance Allocation Chart (MAC) for authorized field inspection, care, and maintenance.

Ammunition does not always survive movement or storage in the best condition. ASP personnel must ensure that ammunition is issued in proper working order. Part of this responsibility includes reporting any and all firing restrictions, which will be noted on the DA Form 581 with the ammunition issue.

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

Small arms ammunition—especially operational loads—may have loose bullets or bullets pushed too far into the cartridge case. This ammunition shouldn't be used, so turn it in and draw new ammo. Obvious damage such as dents, cracks and bulges in cartridge cases also require turn-in.

For larger ammunition, slight dents or bumps may be OK if the round seats correctly. Incidental/minor damage to surface areas of items such as mine or grenade cases is acceptable if the internal components or fuze cavities are not affected. The same applies to rust and corrosion.





Wipe off ammunition used in operational loads before repacking in containers. Moisture is the No. 1 cause of small arms ammunition deterioration. Never fire ammunition that has been water-soaked or has exceeded its temperature limits. Turn it in.

When an ammunition lot or serial number is lost, the ammunition is unserviceable and must be turned in to the ammunition supply organization. Ammunition that's incorrectly identified (training ammunition marked as high explosive or vice versa) could be hazardous to the user.

In the field, use felt tip markers to reapply identification markings to rounds and packing materials. Hand-written markings are better than no markings at all. The ammo TMs provide inspection criteria, and direct the turn-in of ammunition that doesn't meet field standards.



### Ammunition Recovery

OBEY THE FOLLOWING RULES, THEY CAN BE LIFE SAVERS...



- After training, collect and return fired brass, aluminum casings and empty ammunition containers to the ASP for reconciliation, recycling or reuse. Submit a shortage certificate (DA Form 5811-R) for any residue that cannot be returned or accounted for.

- Segregation operations at the ASP call for the unit turning in material to do a 100 percent inspection of residue to check for live explosives and munitions. Do not mix residue from one issue document with residue from another issue document. Small arms residue must be segregated by caliber.

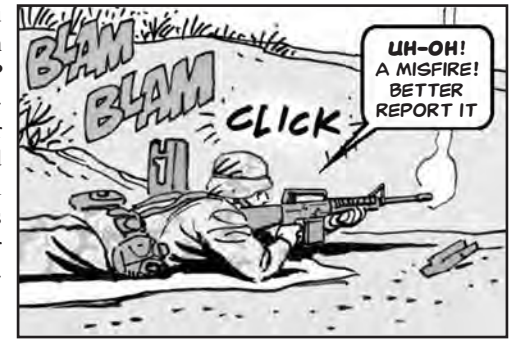
- A signed certification statement that the material is free of live ammunition will be added to the turn-in documents.



### Malfunctions

When your ammunition does not work the way it is intended to, you may have a malfunction. Malfunctions include hangfires, misfires, duds, abnormal functioning, and premature functioning of any ammunition items.

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 ammunition involved and discontinue use of that lot until the reason for the malfunction is determined. The best source for advice on ammunition serviceability is a QASAS.



### Fire Safety

FIRE AND EXTREME HEAT ARE THE TWO GREATEST HAZARDS TO AMMUNITION.

HEED THESE FIRE SAFETY RULES...



- Never smoke or carry matches, lighters or other fire-producing items into any ammunition storage area.

- Keep waste materials such as oily rags, solvents, paint cans, and paper out of ammunition storage areas.

- Remove dry vegetation in and around ammunition storage areas.

- Be familiar with the fire plan and the organization of the ammunition storage area's firefighting crew. Check out AR 420-1, *Army Facilities Management*.

- Know the location of fire extinguisher points within the storage area.





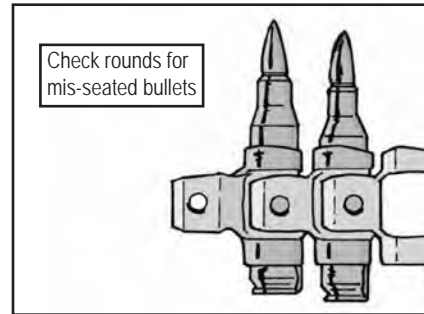
### Small Arms Ammunition



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



- Reject rounds that have bullets seated too far in or out of their cases. They make an uneven clip or belt that will jam your weapon.



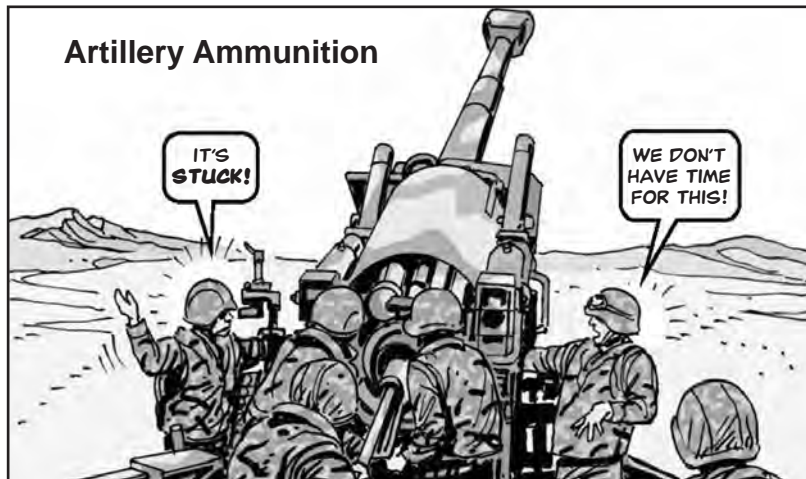
- Turn in rounds that are loose, split or have lopsided points.
- Avoid belted machine gun ammunition with weak, broken or stretched links.
- Don't use rifle clips or magazines with dents, bulges, cracks or weak springs.

Once you've determined your small arms ammunition is safe, keep it that way by storing it in closed metal containers. That keeps the ammo dry and out of the direct rays of the sun in hot weather.

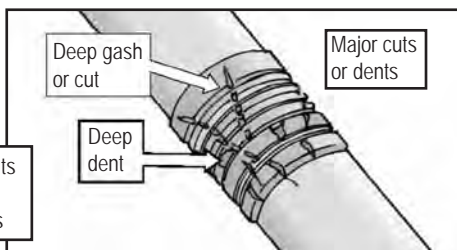
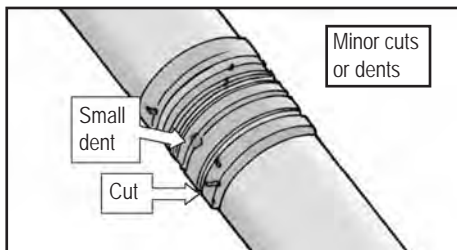
Make sure you save all inner and outer packing material for repackaging unused small arms ammunition for turn-in.



## Artillery Ammunition

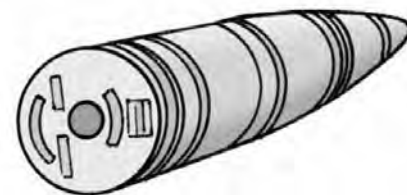


- 155mm projectiles with loose or cracked base plates, loose, missing or damaged grommets, and damaged or corroded rotating bands. A cut or dent that extends through all sections of the rotating band could cause a short round.
- Severely corroded aluminum base plates on Improved Conventional Munitions (ICM), specifically the M483A1 with the green base plate. Corrosion could cause a blown weapon.



- Swollen obturating bands on 155mm rocket-assisted projectiles (RAP) and ICM projectiles. The bands may swell due to moisture and pop out of groove. Reseat the bands if possible. Reject the round if the bands are cracked or missing.
- A stuck lifting or closing plug on 155mm projectiles. The plug must be tight, but it should give to a good, strong turn. If not, turn in the projectile. If the plug threads are rusty, clean them and apply a light coat of silicone grease, NSN 6850-00-702-4297. Then, keep the plug in place until the round's ready for use.
- Liquid or crystalline matter oozing or growing around the threads in the nose or the fuze cavity on high explosive D544 155mm projectiles. The goo could be explosive exudate or a leaking chemical. Isolate the leaky round and call in the Explosives Ordnance Disposal (EOD) experts.
- White smoke or gray crusty powder indicating a leaking white phosphorus (WP) round. Leaking WP rounds should be immediately submerged in water and left there. Notify EOD.
- Primers that are not flush with the cartridge case on 105mm artillery ammunition. If the primer sticks out, you could accidentally bump, strike or compress it and ignite the propellant. If the primer is too far in, it won't fire at all.
- Damage to the base of primer-installed rounds. Use the fiber container cap to safeguard the primer until it's being loaded.
- Supplementary charges, if needed, on C445 105mm and D544 155mm ammo. Never fire a short fuze designed for a shallow fuzewell in a deep-cavity projectile without using a supplementary charge. Turn in projectiles that are missing supplementary charges.
- Rounds damaged by recoil or rammed out of a gun or howitzer. Turn them in.

Protect the percussion primer from bumps, strikes or compression



## Pyrotechnics

Any signaling devices that have misleading or missing color markings should not be used. Using the wrong color signaling device could have disastrous consequences.

You may notice bulging of the storage container for the M206 infrared countermeasure flare. This is due to gas pressure buildup inside the container.

The gas is flammable, but the M206 flares are still OK to use. Just open the container slowly and carefully so the gas can vent. Don't use tools that may cause a spark and don't have any open flames nearby.



## Propellant



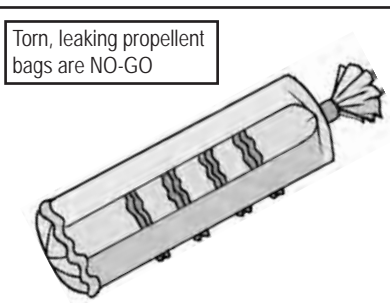
- Propellant containers should be closed tight to protect against moisture.

- Propellant bags should be firm, dry, clean, laced and tied. Do not use bags that are torn or leaking propellant.

- Propellant bag stains aren't necessarily bad. Yellow stains are okay. So are blue, brown or orange stains as long as the cloth is strong. Blue, brown or orange stains with cloth that is weak and tears easily should be turned in to your ammunition supply point (ASP).

- Always eyeball the igniter on separate-loading propellant. The igniter end will be padded, marked IGNITER, or packed in red cloth. The igniter must be clean, dry and have loose powder. Lumpy, damp igniter may not work right and may result in erratic flight, hangfire or misfire. Turn it in to your ASP to be checked.

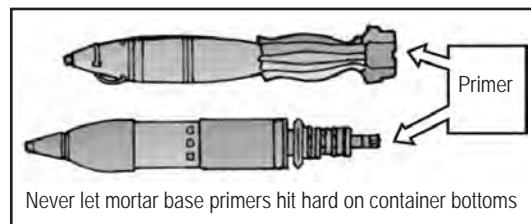
- You can remove propellant increments when ammunition is authorized for zone firing. But **never** add extra increments. If you do remove semi-fixed or separate-loading increments, store them in a safe place. Follow your unit's SOP for proper disposal.



## Mortar Rounds



**Warning!** Never let the base primer of any mortar ammunition hit hard on the bottom of the containers. That could ignite the propellant. Protect the primer with the fiber container 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.

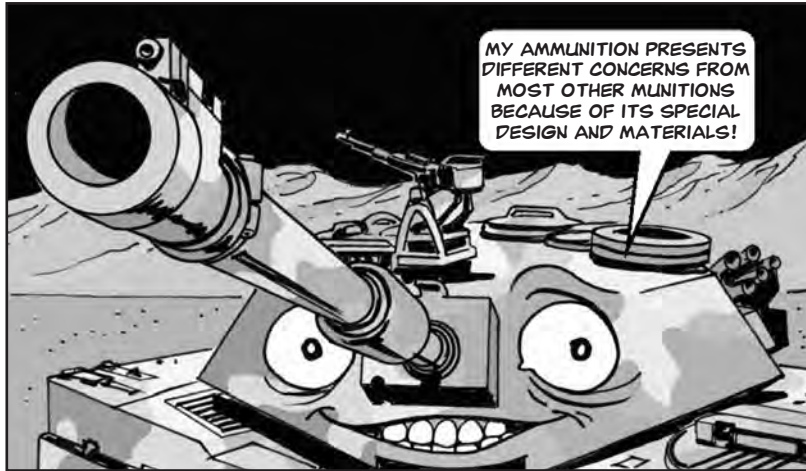
Use a two-man procedure to open and remove rounds packed in "jungle wrap". The first opens and holds the waxy container wrappings open while the second removes the round. That way the one with the sticky hands won't have to touch the round.

### 81mm HE M374A2/A3 (1315-C256) and 81mm WP Smoke M375A1/A2/A3 (1315-C276)

Every precaution must be taken to keep C256 and C276 ammunition dry. Firing in wet weather is not a good idea because critical short rounds may occur when propellant charge bags are wet or have previously been exposed to moisture.



## Tank Ammunition



120mm tank rounds have 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 PROBLEMS...



- A cracked or punctured cartridge case.
- Scratches or abrasions to the cartridge case that remove the protective coating and expose a yellowish-white material.
- Loose projectiles (separation from the 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.

The M829 series 120mm cartridges are susceptible to high humidity and extreme high and low temperatures. If problems are encountered chambering these rounds, do not force them and do not use them. Report these problems to your servicing QASAs or ASP.

Check out TM 9-1300-251-20&P for additional information.

When loading unpackaged ammunition into a tank, be careful not to dent or scrape the cartridge case, projectile or fuze.

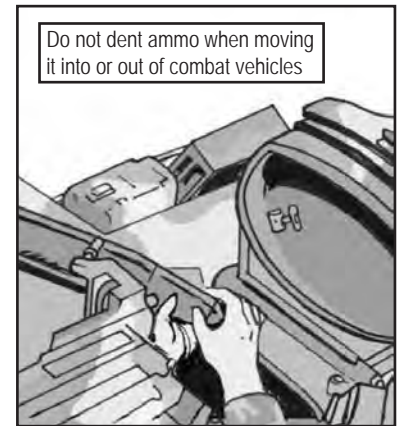
Watch for primers not flush with the cartridge case. If the primer sticks out, it could be dangerous to use. If it's too far in, the primer won't fire.

Protect electrically fired cartridges from static electricity caused by low humidity and layers of clothing during the winter months. Ground your 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 can cause damage to uploaded ammunition, including corroded stub cases and primers. Wet, soggy combustible cases may not chamber properly. That results in low round velocity, poor accuracy and residue problems.

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



## Grenades

WHEN HANDLING FRAGMENTATION HAND GRENADES AND SMOKE 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.

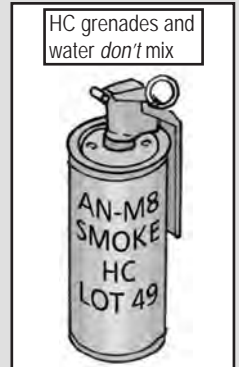
Never lift or handle a grenade by the safety pin pull ring or safety clip.

Don't pull the grenade safety pin until you are ready to use the grenade.

Avoid putting a grenade in a location where the safety pin could be accidentally removed.

Never put an HC smoke grenade into water. HC reacts violently with water.

Cold temperatures may cause the thermite grenade (AN-M14, G900) to explode rather than burn when used.



## Mines

Mines are composed of various plastics and metals which are susceptible to damage and deterioration. Never use or emplace mines that are cracked or damaged.

The plastic case on M18A1 (Claymore) anti-personnel mines (1345-K143 and K145) that were manufactured before December 1989 may become soft and sticky. This deterioration is caused by a chemical reaction between the explosive and polystyrene component of the plastic.

As long as the explosive isn't exposed, the mine is OK to use. However, you may need to cut the mine from its cloth bandoleer. Limit the cut to the minimum required to extract the mine from the bandoleer.



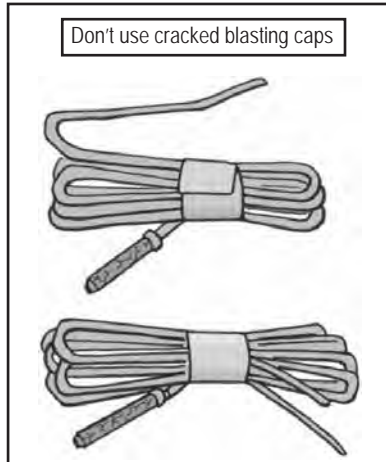
## Demolition Material

Detonators, initiators, squibs, blasting caps and other initiating devices should always be carried in protective containers—never loosely in your pocket.

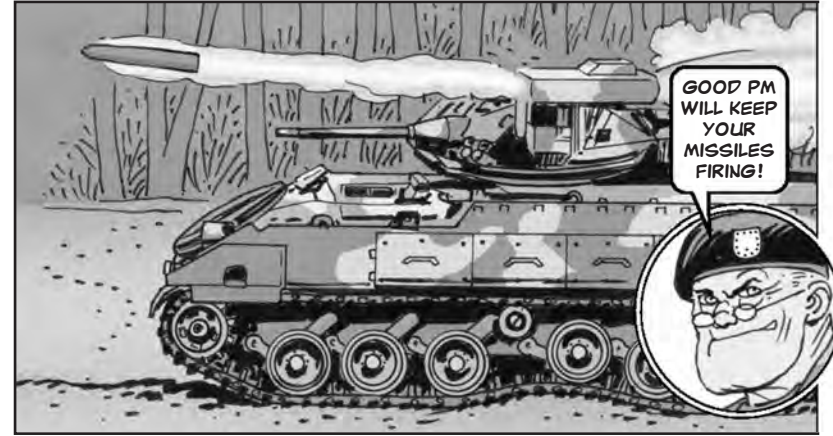
The devices should be securely packed inside the container to prevent rolling and jostling. Mark the container so you'll know what's inside.

Some demolition materials, like sheet explosive and C4 blocks, come with an adhesive backing. The adhesive won't stick to a wet surface or if temperatures are below freezing. You'll need to devise a field-expedient method to affix the demolition explosives when it's wet or freezing.

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.



## 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.

Don't use rockets that have been dropped. The propellant grain may crack if dropped, especially in cold weather. That could result in motor blow during rocket flight.

Guided missiles with solid propellant rocket motors that have been dropped from any height should be tagged unserviceable and returned to the ASP. Cracked rocket motors could rupture inside the launcher, causing injury and equipment damage.

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

When storing rocket motors, rockets and guided missiles, point them in a direction that will cause the least damage to personnel and equipment if they accidentally fire.

After unpacking guided missiles that contain desiccant bags, immediately return the desiccant to the container for later reuse and close the container.

Avoid sealing wet missiles in shipping and storage containers. If possible, place the wet missiles in a sheltered area or cover, allowing them to dry inside their containers before attaching the lids. Don't forget to add desiccant if available. Missiles with visible humidity indicators should be checked at least monthly. Missiles displaying pink or white humidity indicators should be reported to the ASP.



## Launcher and Cartridge, 84MM AT4:

Users must review instructions in FM 3-23.25, *Shoulder Launched Munitions* (located on EM 0205), and the illustration “Safety Labels” on the AT4 for the firing procedures. Understand weapon operation, safety and misfire procedures. Conduct familiarization training with a Field Handling Trainer, never a live AT4. Notify EOD or supporting QASAS for disposition if damaged, armed/cocked, or otherwise suspect AT4’s are found.

The HELLFIRE’s 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:

- The MH51, NSN 1377-01-159-3918, can be used on all the HELLFIRE laser missiles except the AGM 114F.
- The MT26, NSN 1377-01-359-2923, 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 an icy missile dome.

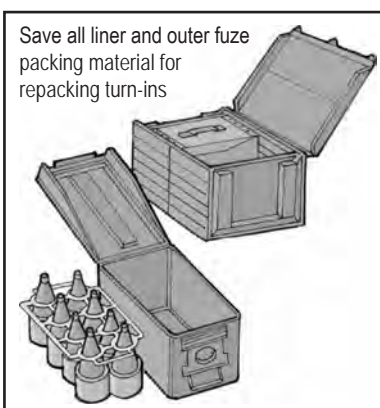
## Fuzes



After removing fuzes from their containers, save the inner and outer packing material and desiccant. Put it all back in the original container so that it’ll be available for repackaging turn-ins.

The styrofoam inner packing material will absorb moisture from humid air. That can make it difficult to remove the fuzes, so keep the container closed as much as possible.

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



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

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

Know which fuze tools are authorized for which fuzes. Then 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.

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.



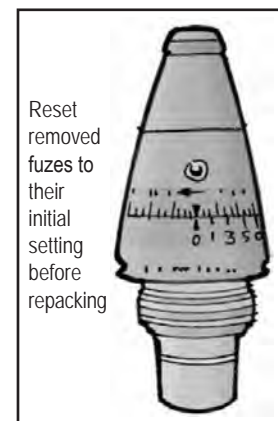
Keep fuzed ammunition out of the path of your weapon’s recoil or anything else that might bang it. If a round is hit, isolate it with a tag explaining what hit the round, then report it immediately. Do the same for any damaged rounds, fuzed or not.

Prepared fuzes that haven’t been fired need special handling. Clean them well before repacking in the original packing.

For 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 to cut down on opened boxes.

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

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





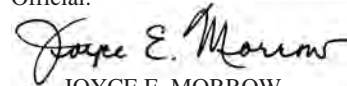


DAC Home Page:  
<https://www3.dac.army.mil/>  
AmmoHelp web site:  
<https://www3.dac.army.mil/ammohelp/>  
AmmoHelp e-mail:  
[MCAL.DAC.AMMO.HELP@conus.army.mil](mailto:MCAL.DAC.AMMO.HELP@conus.army.mil)

By Order of the Secretary of the Army:

RAYMOND T. ODIERNO  
*General, United States Army*  
*Chief of Staff*

Official:

A handwritten signature in black ink that reads "Joyce E. Morrow". The signature is written in a cursive style with a large initial "J" and "M".

JOYCE E. MORROW

*Administrative Assistant to the*  
*Secretary of the Army*

1206004

Comments and suggestions on how to improve this Technical Bulletin should be sent to Commander, USAMC LOGSA, AMXLS-GP, Bldg 5307, Redstone Arsenal, AL 35898.

**STORE, TRANSPORT,  
INSPECT AND  
MAINTAIN AMMO  
AS THOUGH YOUR LIFE  
DEPENDS ON IT...**



**...IT DOES!**

080612-000