

Issue 601

PS

December
2002

THE PREVENTIVE MAINTENANCE MONTHLY

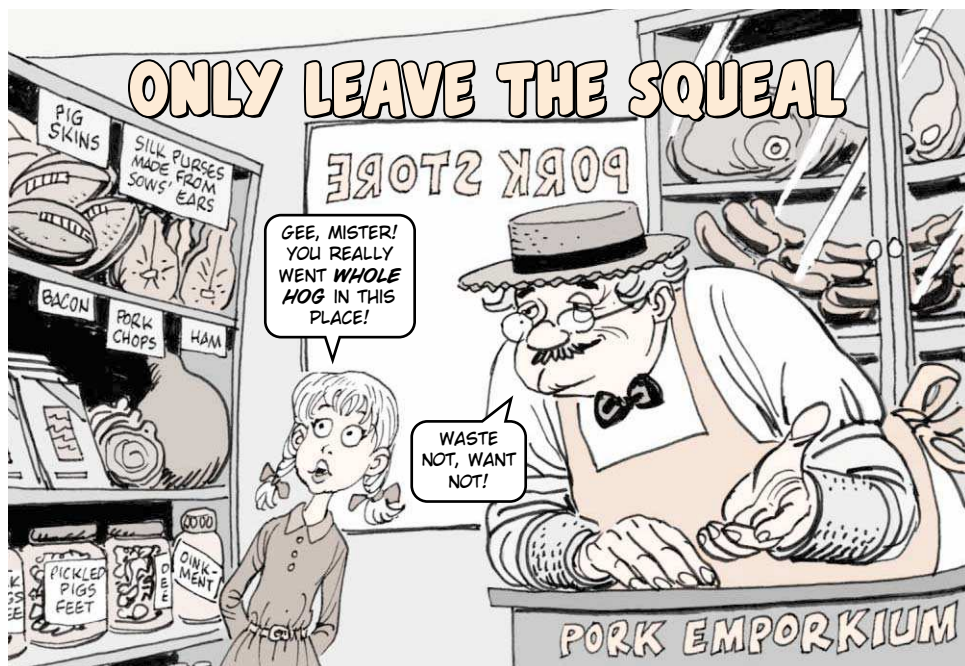
TB 43-PS-601

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JOE KUBERT

AMMO
STORAGE
PART 2 (OF 3)
SEE PAGE 26



There was a time when resources—money, people and equipment—were used as efficiently and completely as possible. To do less would have been wasteful. It was said in jest, but not far from truth, that the only part of the pig not used was the squeal.

Some people think this time has passed and that our affluence allows for waste. But it hasn't and it doesn't. We are no less compelled to use our resources as efficiently and completely as the soldiers who came before us were. They lived and died by the truth of "waste not, want not."

That's where preventive maintenance comes in. PM lets you stretch the useful life of trucks, tanks, howitzers, generators, radios, radars, helicopters, missiles and thousands of other equipment systems and gear. Correct and timely application of PM leaves your equipment ready to defend your country and keep you alive on the battlefield.

Your equipment maintenance manuals and other publications go a long way in providing the information you need to keep your gear ready for any mission. But you've got to apply that information, using as much muscle and sweat as needed, for the effort to be anything other than eyewash and lip service.

PREVENTIVE
MAINTENANCE
DEMANDS
"WHOLE HOG"
EFFORT.

BUT THE RESULTS WILL
SAVE MONEY AND LIVES
AND HELP ENSURE VICTORY
ON THE BATTLEFIELD.



THE
PREVENTIVE
MAINTENANCE
MONTHLY

ISSUE 601 DECEMBER 2002

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You are invited to send PS your ideas for improving maintenance procedures, questions on maintenance and supply problems and questions or comments on material published in PS.

Just write to:
MSG Half-Mast
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5307 Sparkman Circle
Redstone Arsenal, AL 35898-5000

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<http://www.logsa.army.mil/psmag/pshome.html>

By order of the Secretary of the Army:

ERIC K. SHINSEKI
General, United States Army Chief of Staff

Official:

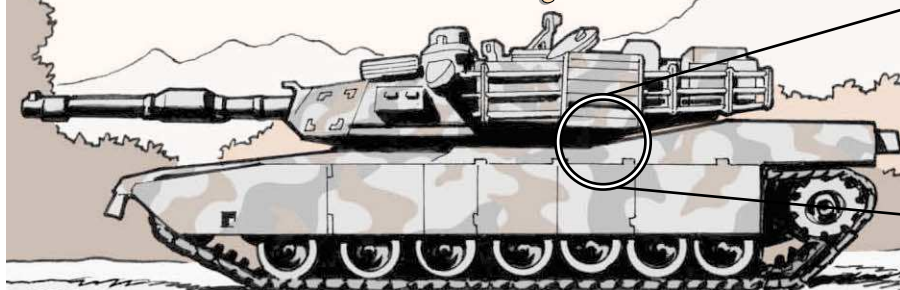
JOEL B. HUDSON

Administrative Assistant to the Secretary of the Army
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M1A1/A2 Tanks...

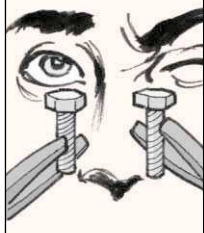
Use Right Bolts to Measure Up



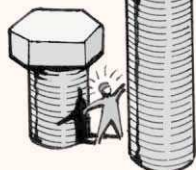
HEY, SHORTY, I'VE GOT A FULL 1/8 INCH ON YOU!

YEAH, BUT I WON'T PUNCH A HOLE IN THE NBC CONDENSER, EITHER!

TO THE NAKED EYE, 1/8 INCH DOESN'T SEEM LIKE MUCH...



...BUT WHEN IT COMES TO THE NBC SPONSON ACCESS COVERS ON M1A1 AND M1A2 TANKS, THE DIFFERENCE IS **HUGE**.



THE BOLTS THAT HOLD THE ACCESS COVERS IN PLACE COME IN **THREE SIZES...**

1 1/8 inches, NSN 5305-00-432-3755
1 1/4 inches, NSN 5305-00-724-7219
2 inches, NSN 5305-00-071-2071



PUT THE **RIGHT BOLT** IN THE **RIGHT HOLE** AND YOU'RE GOOD TO GO. MIX UP THE 1 1/4-IN BOLTS WITH THE 1 1/8-IN BOLTS, THOUGH, AND YOU COULD END UP WITH A HOLE PUNCHED IN THE NBC CONDENSER. THAT PUTS THE NBC SYSTEM OUT OF ORDER AND MAKES YOUR TANK NMC.

THE 2-IN BOLTS AREN'T A PROBLEM BECAUSE THEY ARE 1/2 INCH WIDE AND WON'T FIT IN THE 5/8-IN DIAMETER HOLES.

HERE'S HOW TO AVOID ANY MIX-UPS...

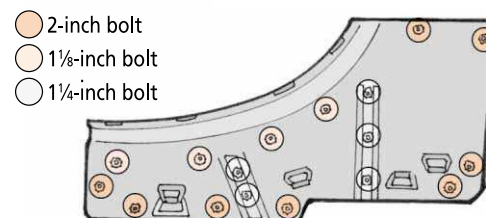


★ THE 1 1/8-IN BOLTS GO IN THE FOUR INBOARD HOLES ON THE TWO SMALLER PLATES. MAKE SURE YOU INCLUDE A **FLAT WASHER**, NSN 5310-01-379-9615, TO HELP HOLD THE BOLT IN PLACE AND TORQUE THE BOLT TO 100-105 LB-FT.

★ THE 1 1/4-IN BOLTS GO IN THE RETAINING PLATES THAT JOIN EACH OF THE COVERS TOGETHER. **DO NOT** ADD A WASHER TO THESE BOLTS. TORQUE 'EM TO 100-105 LB-FT.

★ ALL OF THE OUTBOARD HOLES AND THE TWO INBOARD HOLES ON THE LARGE PLATE TAKE **2-IN BOLTS**, NSN 5305-00-071-2071, WITH **WASHER**, NSN 5310-01-379-9615. TORQUE THESE BOLTS TO 75-80 LB-FT.

INBOARD SIDE



● 2-inch bolt
● 1 1/8-inch bolt
● 1 1/4-inch bolt

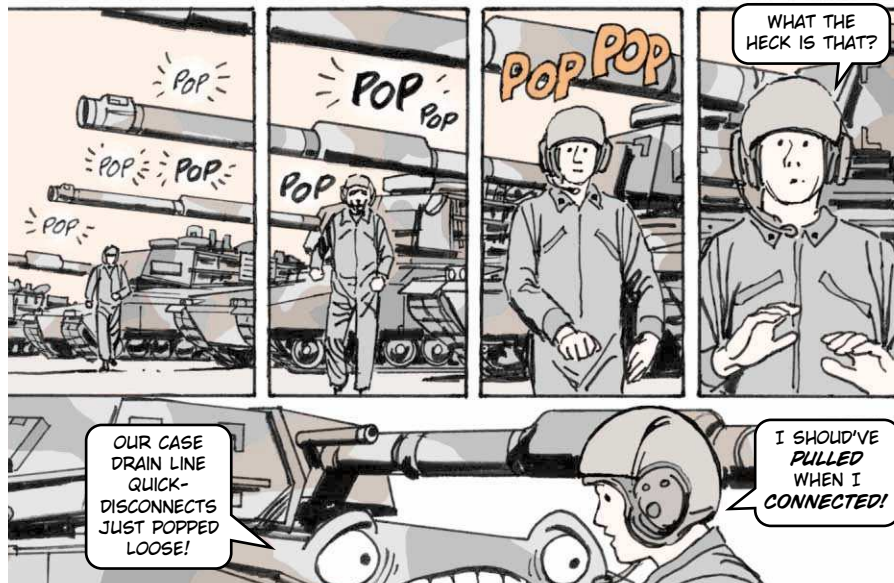
WHEN REMOVING THE ACCESS COVERS, YOU CAN SAVE YOURSELF A BIG HEADACHE BY MARKING EACH BOLT AND THE HOLE IT GOES INTO WITH A DAB OF COLORED PAINT. USE A DIFFERENT COLOR FOR EACH SIZE BOLT.

YOU CAN ALSO TRY **TAGGING** THE HARDWARE AS YOU TAKE IT OFF. NSN 9905-00-537-8955 GETS **50 REUSABLE WIRE TAGS**.

EXTRA NOTE

WHEN LIFTING THE ACCESS COVERS, GO EASY. FORCING THE COVERS WILL BREAK THE LOCATOR CLAMP SCREWS. THEN, THE ENTIRE TURRET HAS TO BE REMOVED IN ORDER TO REPLACE THE SCREWS.

FIRMLY CONNECT QUICK-DISCONNECT



When the tank's powerpack goes back into place, the main hydraulic pump gets reconnected.

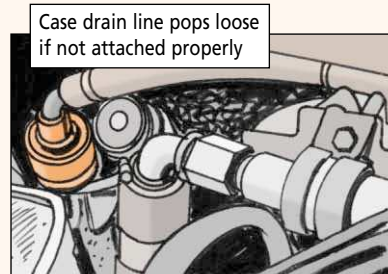
Sounds easy as 1, 2 and 3. After all, the supply, return and case drain lines all have quick-disconnects that make the job simple and easy.

W-e-e-ll, it's a bit more complicated than that.

The case drain line sits back in a corner, so its quick-disconnect is hard to attach. Yet a loose connection will cause an increase in hydraulic pressure and temperature that could ruin the hydraulic pump.

So make sure the quick-disconnect is firmly connected. Here's how:

After you attach the case drain line, grab the elbow portion and give it a good upward pull. If the quick-disconnect is not attached properly, it'll pop free when you pull it up. If it pops free, try again. Keep repeating the procedure until the quick-disconnect is properly connected.



SHORT CABLE NEEDS EXTENSION

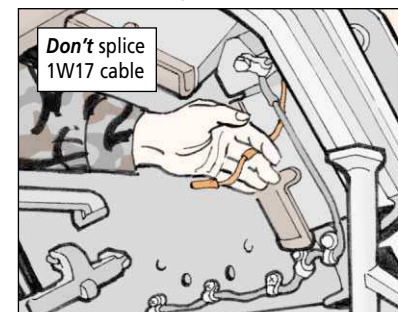


You Bradley mechanics replace a lot of crushed 1W17 cables. The cables are ruined by the hatch when drivers forget to plug them into their dummy jacks after removing the night sight.

You've also probably noticed that a newly ordered 1W17 cable ends up about 2 feet short of reaching the dummy jack on A2 model Bradleys.

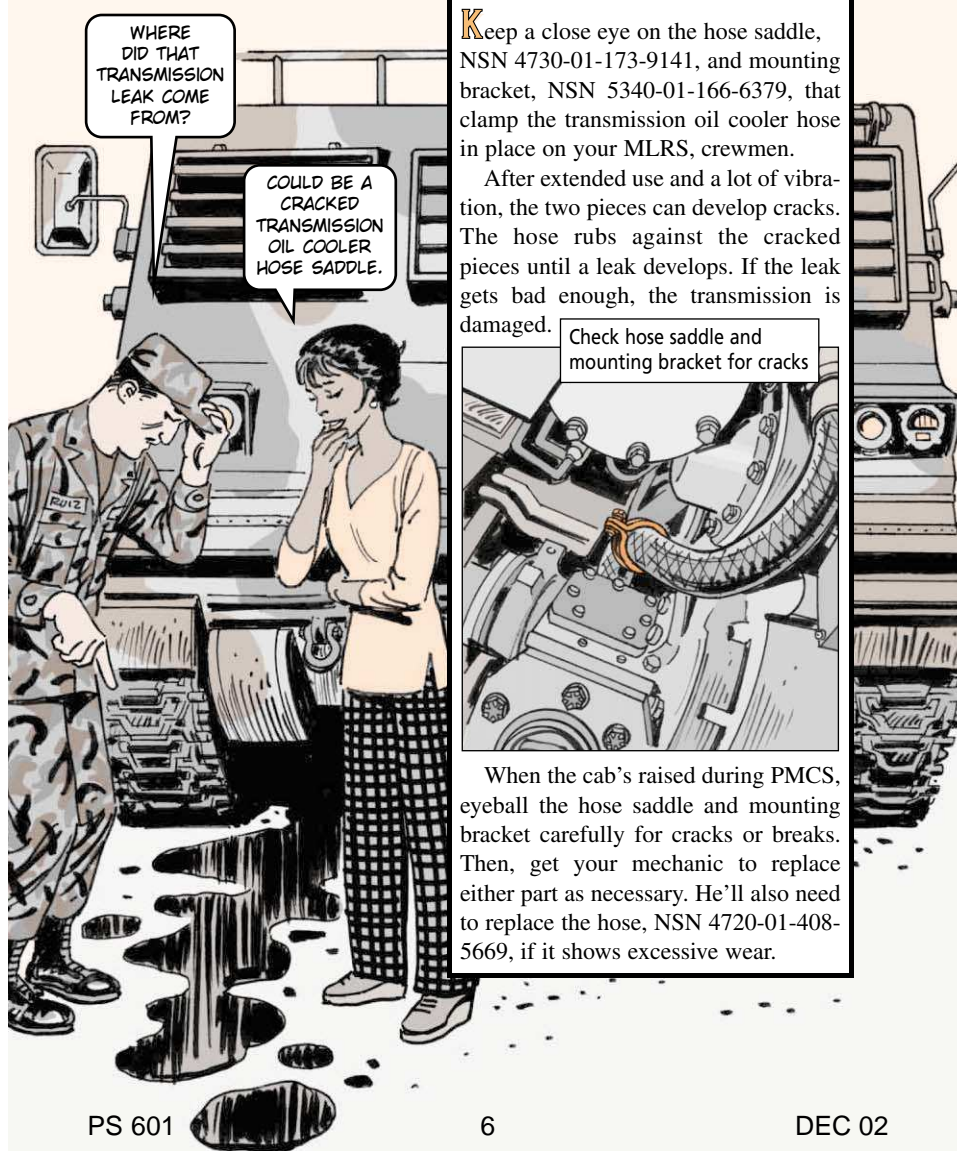
Some mechanics get around this by splicing a piece of the old cable to the new one. That can lead to a bad connection and interference when using the night sight.

A2 Bradleys need an extension—the 1W300 cable—to complete the connection between the 1W17 and dummy jack. Order the 1W300 with NSN 6150-01-426-2197. It's Item 205 in Fig 140 of TM 9-2350-284-24P-1 (Feb 97).



MLRS Carrier...

TWO HALVES MAKE A HOLE



KKeep a close eye on the hose saddle, NSN 4730-01-173-9141, and mounting bracket, NSN 5340-01-166-6379, that clamp the transmission oil cooler hose in place on your MLRS, crewmen.

After extended use and a lot of vibration, the two pieces can develop cracks. The hose rubs against the cracked pieces until a leak develops. If the leak gets bad enough, the transmission is damaged.

Check hose saddle and mounting bracket for cracks

When the cab's raised during PMCS, eyeball the hose saddle and mounting bracket carefully for cracks or breaks. Then, get your mechanic to replace either part as necessary. He'll also need to replace the hose, NSN 4720-01-408-5669, if it shows excessive wear.

AVLB...

Check the Rating on Pack Pulling

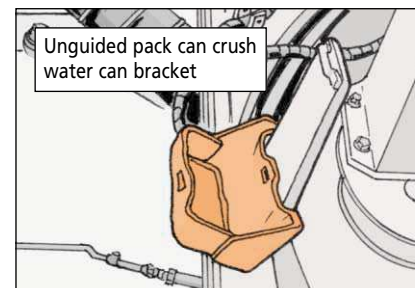


Pulling and installing the powerpack on your armored vehicle launched bridge (AVLB) should be rated CG—Crewman Guidance suggested.

That's because the powerpack is big, bulky, and hard to control. Mechanics need all the help they can get to keep the pack from hitting things it's not supposed to—like the 5-gal water can bracket, for instance.

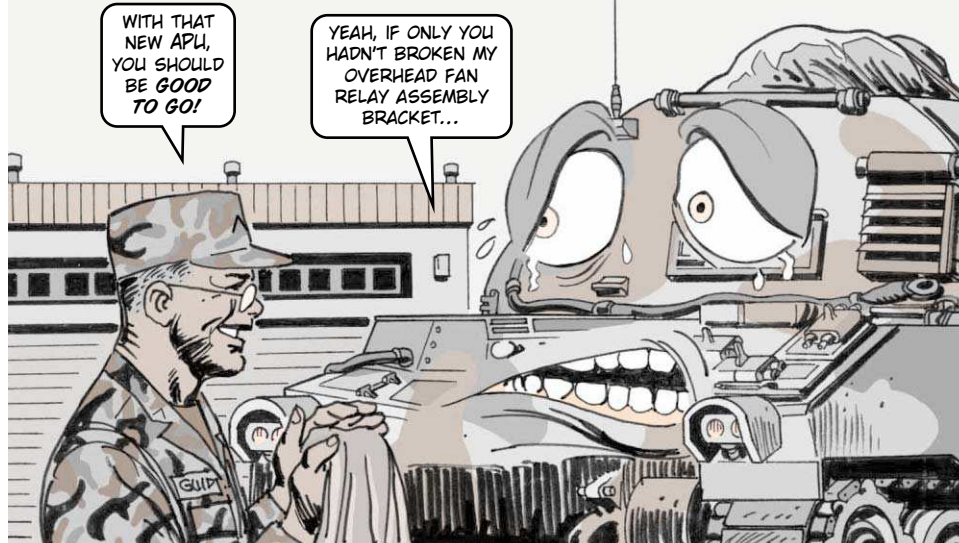
The bracket gets crushed, of course. But it's the unseen damage that's the real cause for concern. The edge of the water can bracket can cut or chafe some of the fuel lines on the powerpack.

Cut or weakened fuel lines can leak and cause a fire. So, crewmen, lend your mechanics a hand when it's time to pull or install the powerpack in your AVLB. Extra hands and eyes will prevent any damage.



M992A2 Ammo Carrier...

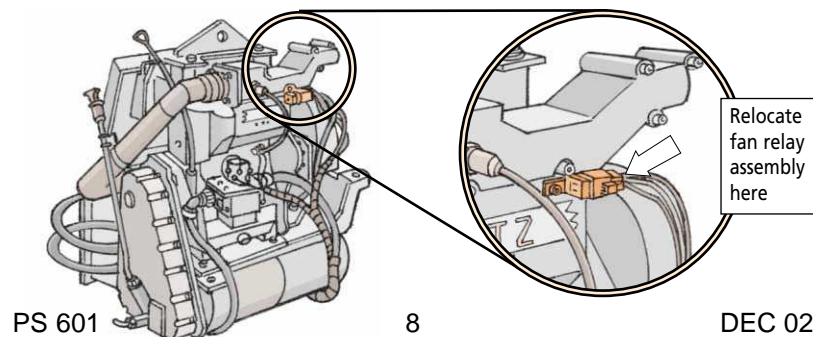
MOVE PROTECTS BRACKET



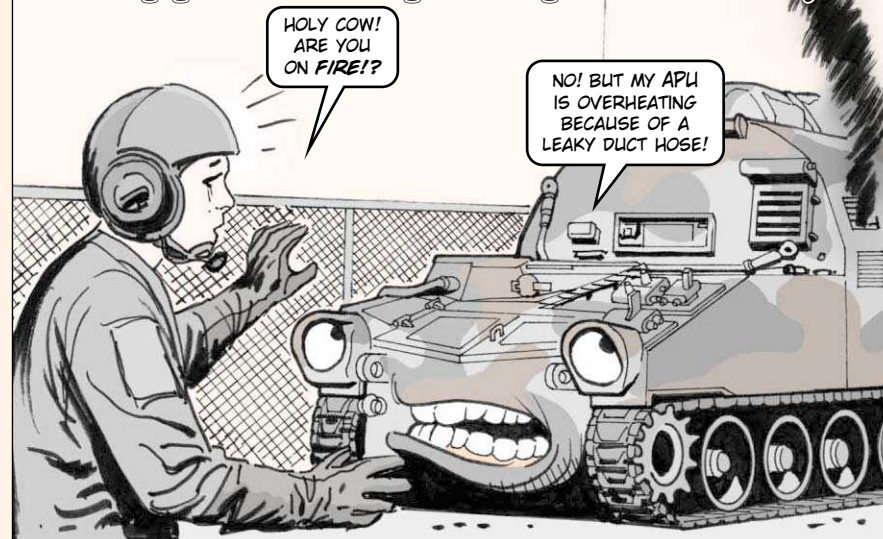
Does your ammo carrier have a Hatz 2G40 auxiliary power unit (APU)? If so, the overhead fan relay assembly bracket is in danger.

In its current position, the bracket is easily damaged when the APU is removed or installed. Since the bracket isn't available in the supply system, you have to replace the entire fan relay assembly, NSN 5945-01-456-6726.

Protect the bracket by having your mechanic relocate the fan relay assembly to the backside of the APU intake shroud. The bracket attaches easily using one of the existing shroud mounting bolts.



Dropped Clamp Keeps Duct Dry



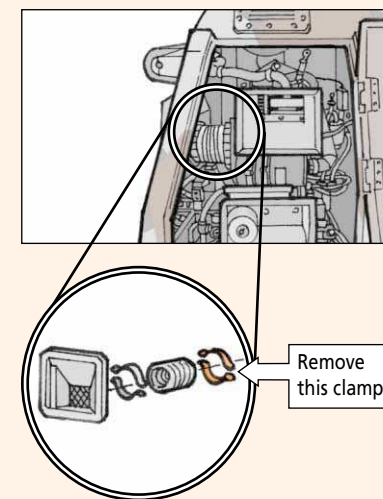
If your ammo carrier has a Hatz 2G40 auxiliary power unit (APU), chances are it also has a water problem.

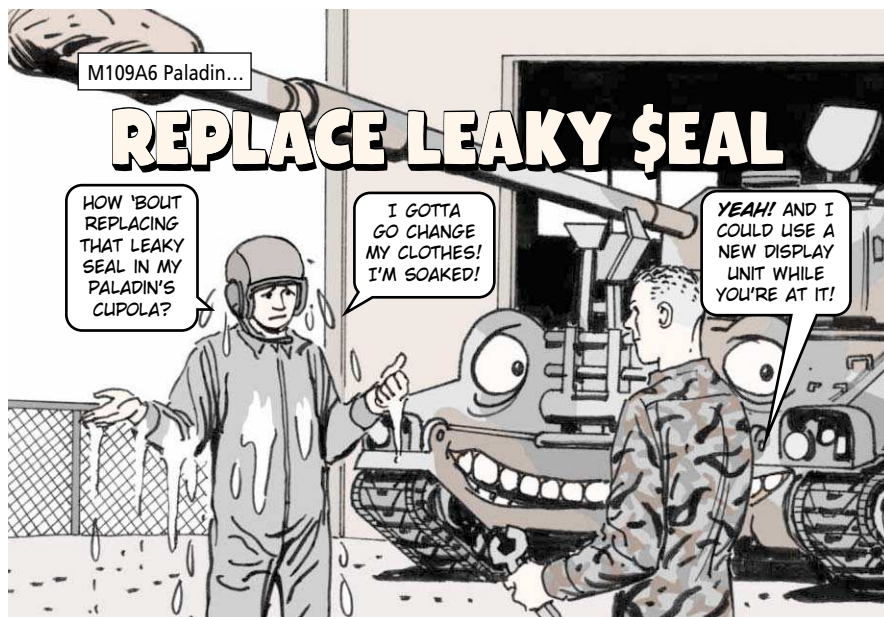
Rain and wash water get into the air duct hose through the inlet duct. Since the hose is clamped on both ends, the water sits there until the reinforcement wire inside the hose rusts.

Pretty soon, the APU starts overheating because it's pulling hot air through holes in the hose instead of the cooler air it needs from outside.

Stop this damage by removing the hose clamp, NSN 4730-00-908-6293, on the APU side of the air inlet duct. With the clamp gone, any water that gets inside will drain away before rust can set in.

The duct hose is compressed tightly between the APU and inlet duct, so it'll stay in place even without the clamp.



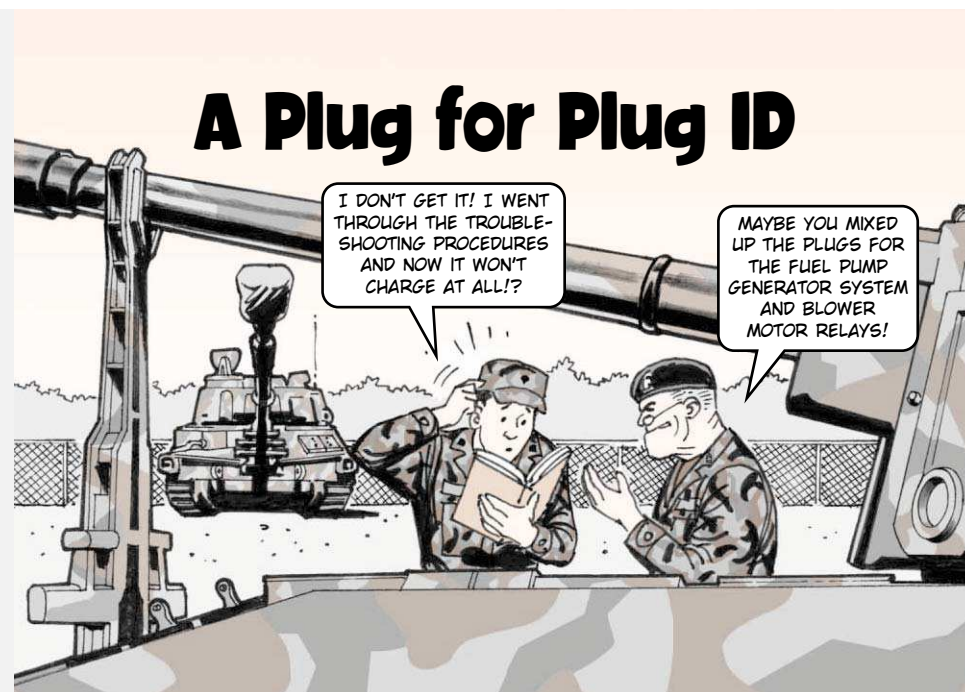
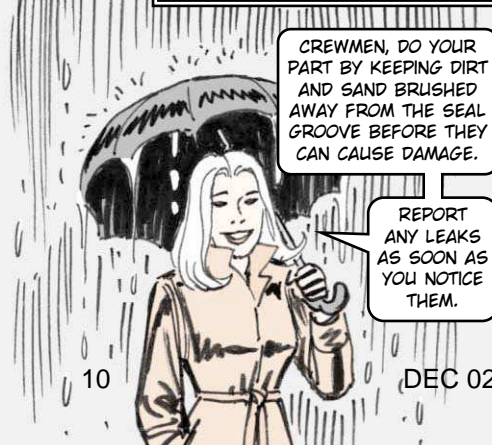
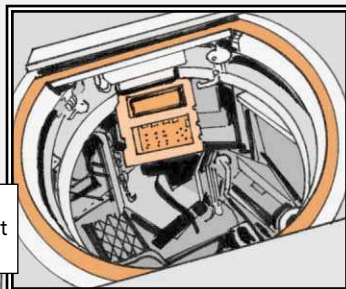


A leaky seal on the Paladin's cupola cover means more than a wet crew, mechanics.

If you don't install the seal correctly, it also lets water drip directly onto the display unit (DU), NSN 7025-01-307-5519. When the DU shorts out, you have to replace it to the tune of more than \$31,000!

Keep the DU—and the Paladin crew—dry by installing the new seal like this:

1. Remove and discard the old cover seal.
2. Scrape away any dirt or old adhesive from the cover seal groove. Make sure you get it all. If any is left, the new seal may leak.
3. Apply adhesive, NSN 8040-00-152-0063, to a new cover seal, NSN 5330-01-453-1007, and press the seal into the groove.



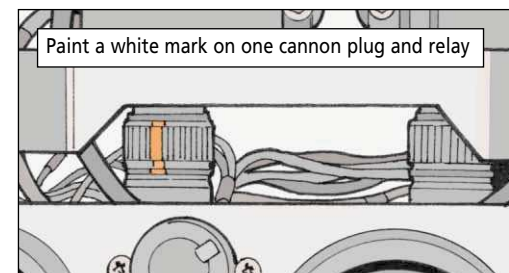
Dear Editor,

The troubleshooting procedures for the Paladin's charging system require removing the cannon plugs for the fuel pump generator system relay and the blower motor relay.

Both cannon plugs look the same, so it's easy to accidentally mix up the plugs when reconnecting them to the relays. If you do that, the system won't charge at all and you've just compounded your original charging problem.

We've stopped the mixup by painting a small white mark on one cannon plug and relay. The next time both have to be unplugged, it's obvious which plug goes to which relay.

Motor Pool
3/18 FA
Ft Sill, OK

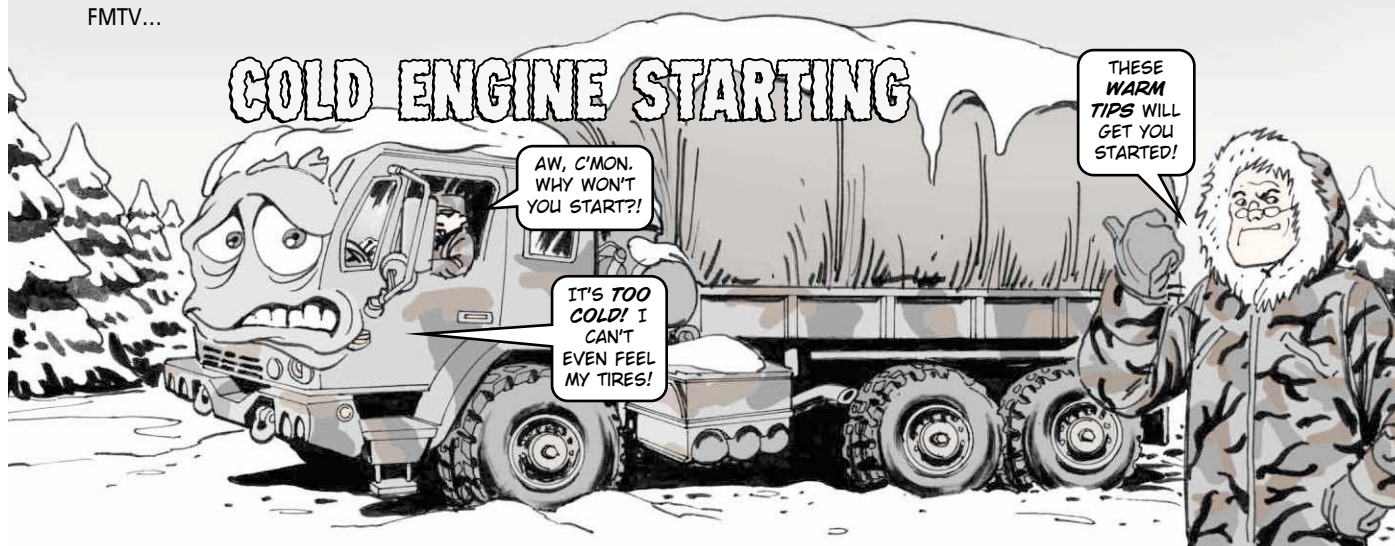


From the desk
of the *Editor*

You've plugged up that potential problem. Thanks!

FMTV...

COLD ENGINE STARTING

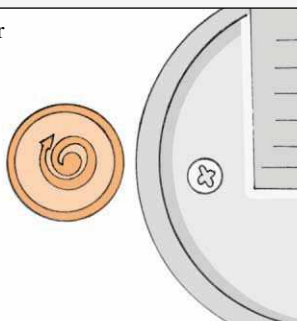
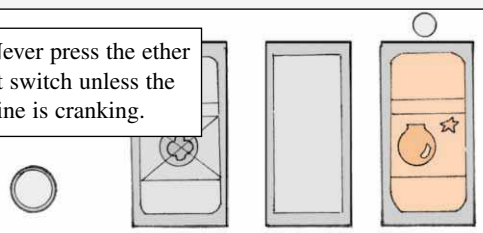


THOUGH THE OPERATOR'S TM OFFERS MORE SPECIFIC INFORMATION, THESE TIPS REQUIRE **SPECIAL ATTENTION** IN ORDER TO PREVENT DAMAGE TO THE FMTV'S ENGINE AND STARTER WHEN STARTING AT 0° TO 32° F

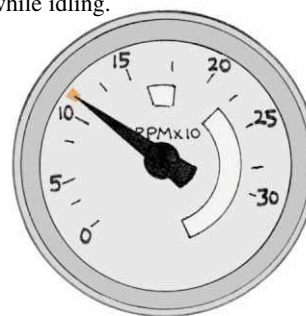
- Never press the ether start switch unless the engine is cranking.

- Do not use ether after the engine is up to speed and is in no danger of stalling

- Do not press the starter switch for longer than 30 seconds. If the engine doesn't start within 30 seconds, let go of the switch and wait two minutes before trying again. That keeps the starter from overheating.



- Never exceed 1,200 RPM while idling.

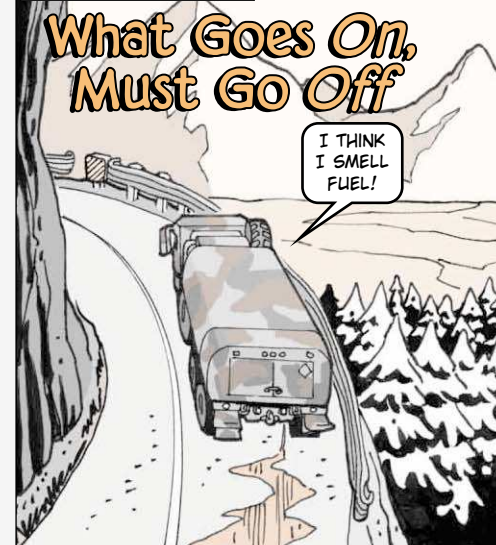


NO TACHOMETER? DON'T GO PAST A HAND THROTTLE POSITION HALF-WAY FROM THE BOTTOM. THAT'S APPROXIMATELY 1,200 RPM.

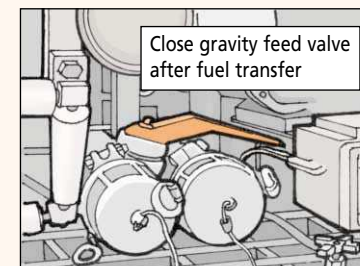


M978 HEMTT Tanker...

What Goes On, Must Go Off



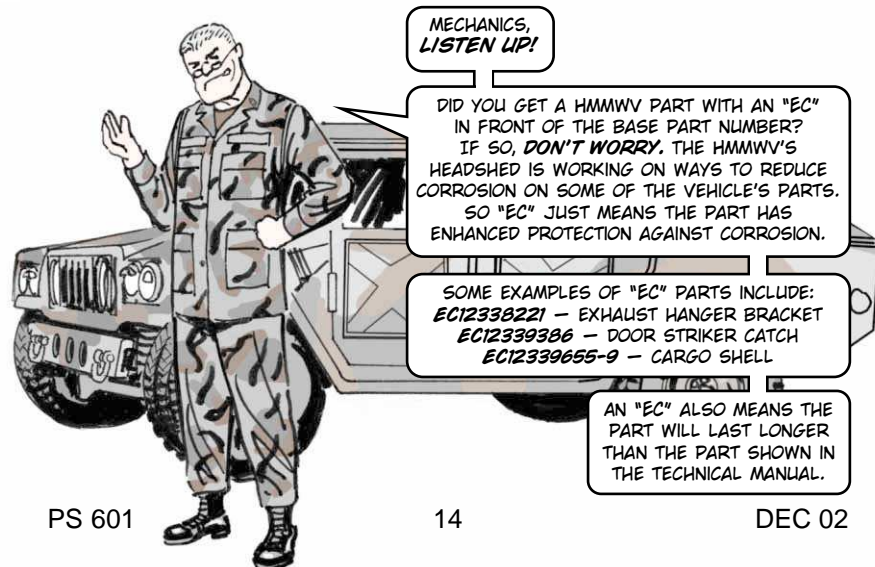
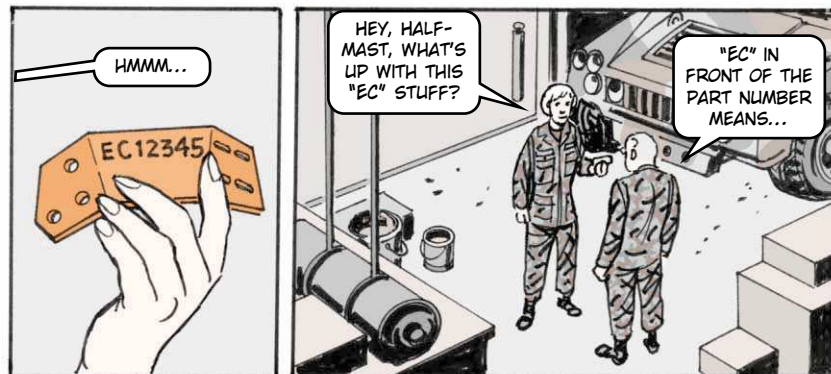
It's OK to use the free flow (gravity feed) valve for bulk fuel transfer from your M978 tanker, operators. But for your sake, remember to turn the valve off when you're finished.



Leave the valve on and you'll end up spilling quite a few gallons of fuel on the road when you head up an incline—like just about everything you have left in your tanker. When that happens, you'll soon be making the acquaintance of your environmental folks. And it won't be a happy meeting!

HMMWVs...

EC CODED PART NUMBERS



PS 601

14

DEC 02

HEMTTs...

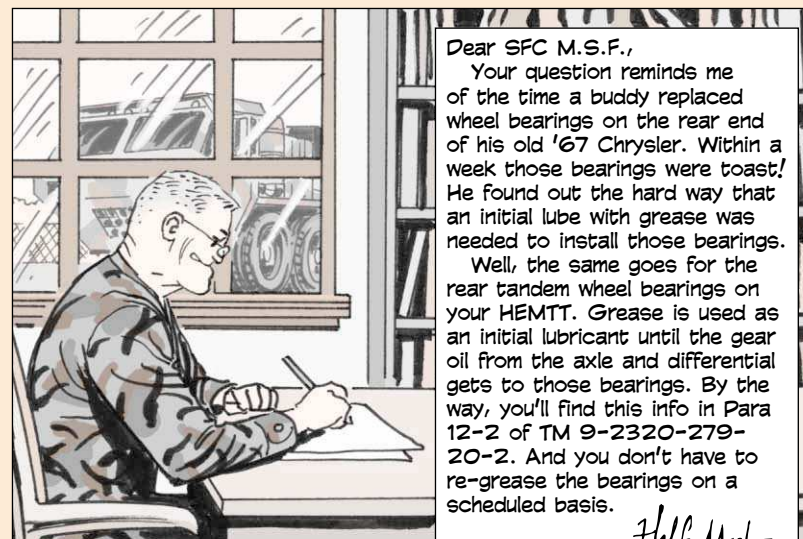
Grease 'Em Up



Dear Half-Mast,

Do we use gear oil or grease when we install the rear tandem wheel bearings on a HEMTT? The technical manual says gear oil, but some of our unit's senior mechanics want to use grease.

SFC M.S.F.



Half-Mast

PS 601

15

DEC 02

Commercial and Tactical Vehicles...

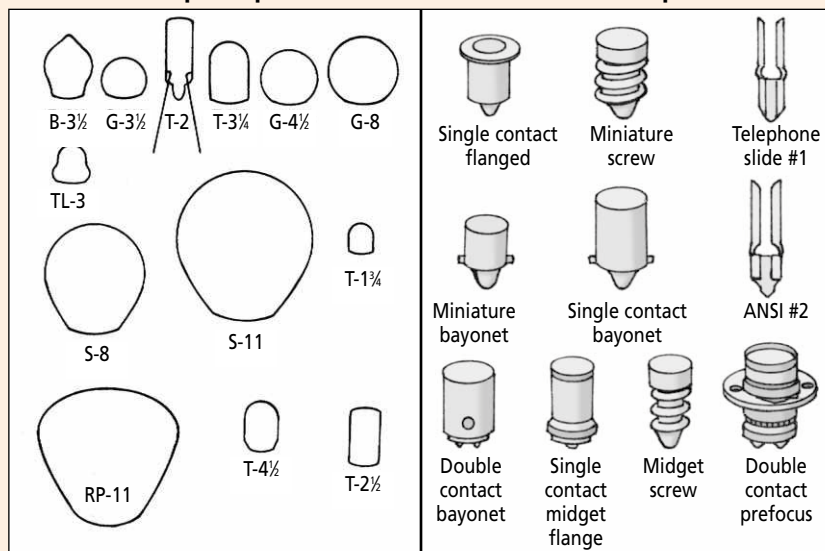
Lights Out? Look Here!

Finding a replacement bulb for the taillight, dome light, brake light or any other kind of light on your commercial or tactical vehicle isn't always easy.

Most bulbs are imprinted with the standard trade numbers. That helps if you're going to an auto parts store, but what if you need an NSN? Check out this list, or call 1-800-DLA-BULB, the next time you need a replacement for a common automotive bulb.

Lamp Shapes

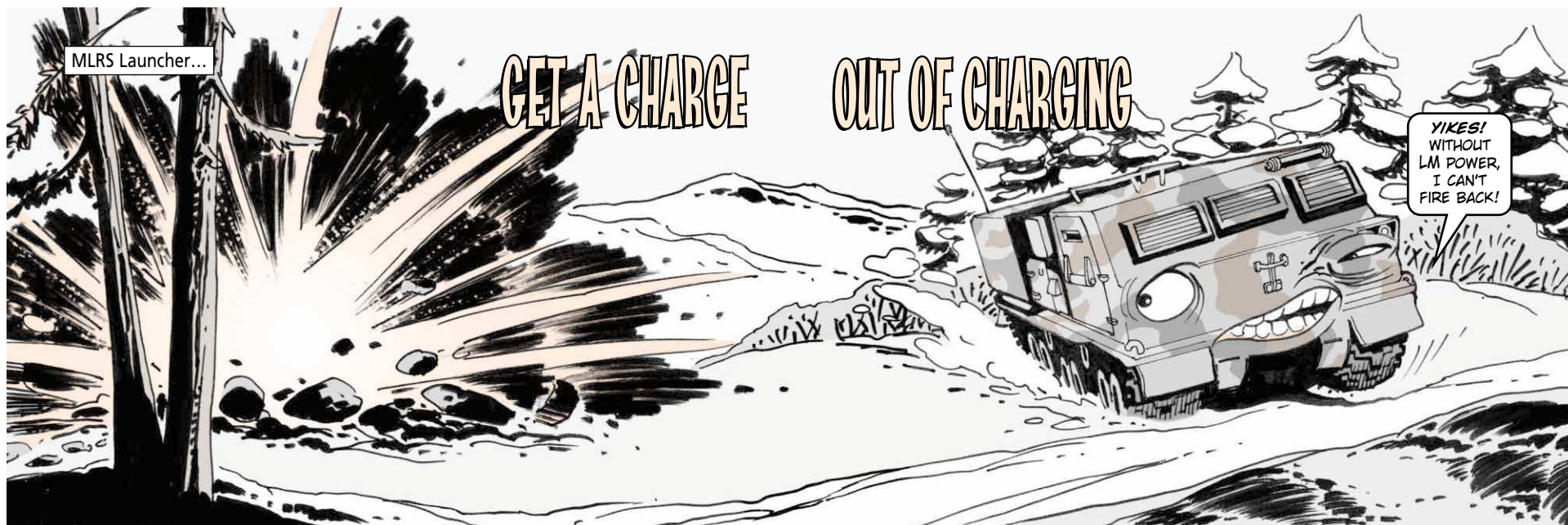
Base Shapes



Trade Number	NSN 6240-	Base Shape	Lamp Shape	Amps	Volts
PR2	00-155-7786	Single contact miniature flanged	B-3 1/2	0.5	2.34
PR3	00-155-7916	Single contact miniature flanged	B-3 1/2	0.5	3.57
PR4	00-984-1887	Single contact miniature flanged	B-3 1/2	0.27	2.33
PR6	00-155-8675	Single contact miniature flanged	B-3 1/2	0.3	2.47
PR7	00-155-7915	Single contact miniature flanged	B-3 1/2	0.3	3.7
PR12	00-299-6767	Single contact miniature flanged	B-3 1/2	0.5	5.95
PR13	00-844-1758	Single contact miniature flanged	B-3 1/2	0.5	4.75
PR15	00-044-5026*	Single contact miniature flanged	B-3 1/2	0.5	4.82
14	00-797-2650	Miniature screw	G-3 1/2	0.3	2.47
24E1	00-155-7837	Telephone slide #1	T2	0.035	24
24X	00-178-9941	ANSI #2	T2	0.035	24
43	01-043-3595*	Miniature bayonet	T-1 1/4	0.5	2.5

Trade Number	NSN 6240-	Base Shape	Lamp Shape	Amps	Volts
44	00-057-2887	Miniature bayonet	T-3 1/4	0.25	6.3
47	00-155-8706	Miniature bayonet	T-3 1/4	0.15	6.3
49	00-155-8683	Miniature bayonet	T-3 1/4	0.06	2
55	00-012-5588	Miniature bayonet	T-3 1/4	0.41	7
57	00-012-7934	Miniature bayonet	G-4 1/2	0.24	14
67	00-155-8717	Single contact bayonet	G-6	0.59	13.5
89	00-143-3159	Single contact bayonet	G-6	0.58	13
93	00-014-2454	Single contact bayonet	S-8	1.04	12.8
120MB	00-939-7859	Miniature bayonet	T-2 1/2	0.025	120
157	00-975-0865	Miniature screw	G-6	1.1	5.8
243	00-155-7898	Miniature screw	TL-3	0.27	2.33
312	00-155-7923	Double contact bayonet	S-11	1.29	28
313	00-155-8714	Single contact bayonet	T-3 1/4	0.17	28
327	00-155-7836	Single contact midget flanged	T-1 1/4	0.04	28
328	00-155-7857	Single contact miniature flanged	T-1 1/4	0.2	6
330	00-851-4352	Single contact miniature flanged	T-1 1/4	0.08	14
335	00-270-4698	Midget screw	T-1 1/4	0.04	28
338	00-542-6571	Single contact miniature flanged	T-1 1/4	0.06	2.7
345	00-683-0560	Single contact miniature flanged	T-1 1/4	0.04	6
382	00-965-1381	Single contact midget flanged	T-1 1/4	0.08	14
387	00-763-7744	Single contact miniature flanged	T-1 1/4	0.04	28
407	00-965-6059	Miniature screw	G-4 1/2	0.3	4.9
425	00-519-1520	Miniature screw	G-4 1/2	0.5	5
1034	00-295-1184	Double contact bayonet	S-8	1.8/0.59	12.8/14
1062	01-071-1507	Double contact bayonet	RP-11	0.92	40
1073	00-617-0991	Single contact bayonet	S-8	1.8	12.8
1133	00-155-8687	Single contact bayonet	RP-11	3.91	6.2
1156	00-924-7526	Single contact bayonet	S-8	2.1	12.8
1157	00-889-1799	Double contact bayonet	S-8	2.1/0.59	12.8/14
1183	00-019-3120	Single contact bayonet	RP-11	6.25	5.5
1184	00-155-8684	Double contact bayonet	RP-11	6.25	5.5
1195	00-019-3096	Single contact bayonet	RP-11	2.96	12.5
1196	00-295-2729*	Double contact bayonet	RP-11	3.04	12.5
1224	00-155-7841	Double contact bayonet	G-6	0.16	34
1460	00-913-8529	Double contact prefocus	S-8	2.75	6.5
1490	00-196-4501	Miniature bayonet	T-3 1/4	0.16	3.2
1630	00-669-6516	Double contact prefocus	S-8	2.75	6.5
1813	00-155-7967	Miniature bayonet	T-3 1/4	0.1	14.4
1815	00-155-7859	Miniature bayonet	T-3 1/4	0.2	14
1819	00-155-8707	Single contact bayonet	T-3 1/4	0.04	28
1820	00-143-3173	Miniature bayonet	T-3 1/4	0.1	28
1822	00-267-1167	Miniature bayonet	T-3 1/4	0.1	36
1829	00-266-9940	Miniature bayonet	T-3 1/4	0.07	28
1847	00-583-9610	Miniature bayonet	T-3 1/4	0.15	6.3
1850	00-044-5025	Miniature bayonet	T-3 1/4	0.09	5
1855	00-143-3175	Miniature bayonet	T-4 1/2	0.8	6.3
1864	00-765-8443	Miniature bayonet	T-3 1/4	0.17	28
1866	00-924-7504	Miniature bayonet	T-3 1/4	0.25	6.3
1891	00-770-3372	Miniature bayonet	T-3 1/4	0.24	14

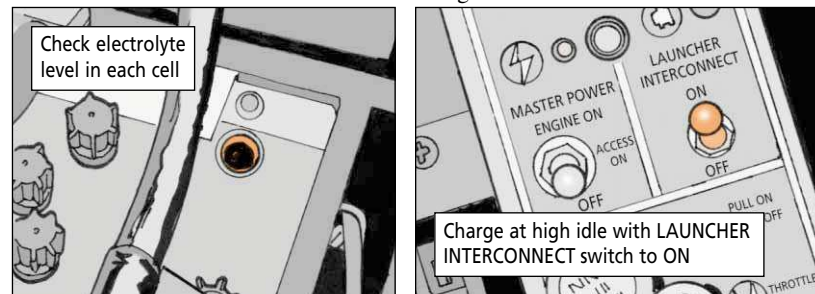
*Order on a DD form 1348-6 and put "NSN not on AMDF" in the REMARKS block.



The MLRS' launcher module (LM) is only as effective as the batteries and charging systems onboard. If the LM batteries aren't in good shape before you go to the field, or aren't given a chance to recover after use, you'll come up short on power—maybe at a critical time.

PMCS

Before you go to the field, check the battery electrolyte level in each of the battery cells. If it's low, get your mechanic to add distilled water. Then run the engine at high idle—1,200 to 1,400 rpm—for 15-20 minutes with the LAUNCHER INTERCONNECT switch turned on to recharge the batteries.



Next, check for corrosion around the battery terminals and clamps. Your mechanic can clean away corrosion with a mixture of baking soda and water.

Gently tug at the battery post connections to see if they are loose. Get your mechanic to tighten loose ones.

Just because new batteries have been installed is no reason to assume they're fully charged. Run the engine at high idle for 15-20 minutes with the LAUNCHER INTERCONNECT switch on to charge 'em.

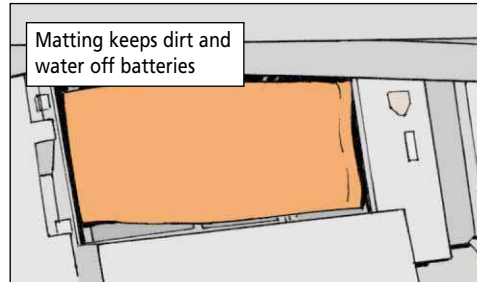
Eyeball the gaskets that go under the eight bolts that hold the battery and electronics boxes together. If the gaskets are missing or damaged, water gets into the boxes and causes corrosion and electrical problems.

Look for missing or damaged gaskets under bolts



Before closing the battery box, give the batteries some extra protection by covering them with rubber matting. Matting keeps water and dirt off the tops of the batteries.

NSN 9320-01-168-1513 brings a 7½-ft long sheet of matting. Just cut it to fit the battery box.



In the Field

Even with perfect batteries and a charging system that's working right, you can operate on battery power alone for only 20 minutes. So operate the LM with the engine running at high idle as much as possible. That'll provide enough juice to recharge the batteries and run the LM.

Check the batteries' electrolyte levels daily in the field. Operating with a high load requirement can dry out the batteries fast.

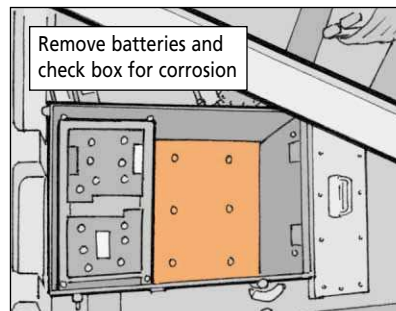


In the Motor Pool

Don't let your MLRS sit idle for long periods. At least weekly, run the engine at high idle for 30 minutes with the LAUNCHER INTERCONNECT switch on to keep the carrier and LM batteries charged.

During semiannual maintenance, you and your mechanic need to pull all the LM batteries and check the battery box for corrosion. If you spot any, rub it off with a wire brush and spot paint the bare area with zinc chromate primer, NSN 8010-00-515-2208.

When the primer dries, coat the box with corrosion preventive compound, NSN 8030-01-134-6513, before re-installing the batteries.



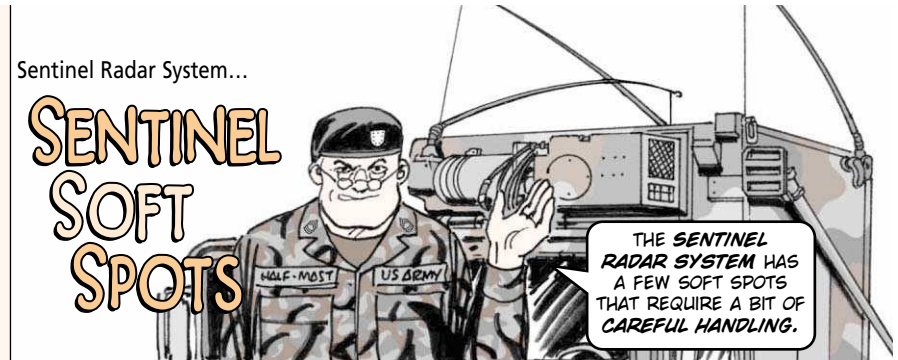
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PS END

Sentinel Radar System...

SENTINEL SOFT SPOTS



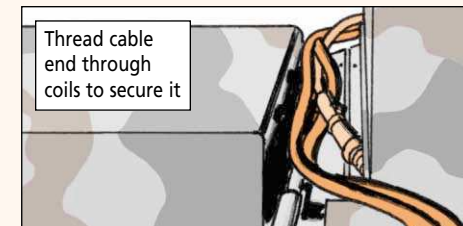
Driving: Take it slow, very slow, over rough country. The Sentinel antenna-transceiver group is top-heavy and it can roll over if it bounces hard over bumps. One unit had a Sentinel ATG turn over at 15 mph. So keep it slow—no more than 10 mph.

Cleaning: Keep water hoses out of the shelter. Water will damage electrical components like cannon plugs. To get rid of dirt, sweep it out with a broom. If more cleaning is needed, use a damp mop inside the shelter.

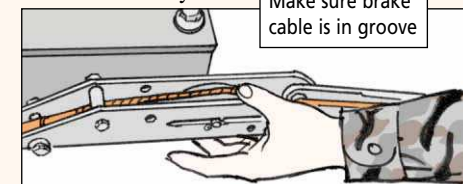


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Generator cable: Before you move out, secure the generator cable. If the cable works loose and drags on the ground, it can quickly be ruined. An easy way to secure the cable is to weave its end through the cable coils and let the weight of the cable hold it in place.



Hand brakes: As part of your weekly PMCS, make sure the trailer hand brake cable is seated in its groove. If it's not, it will fray and break. Your mechanic can reposition the cable if necessary.



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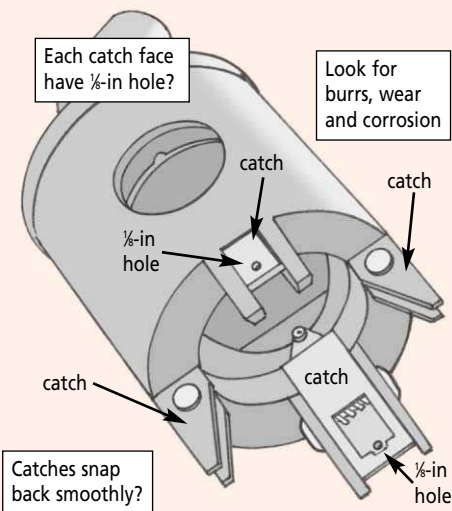
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Before You Go to The Field

As part of your BEFORE PMCS, thoroughly check out the cartridge extractor. Add these checks to the PMCS on Page 2-36:

- Make sure the cartridge extractor catches have a $\frac{1}{8}$ -in hole in each of the four catch faces. The holes means the extractor is the latest model. If any of the 4 catches don't have the hole, the extractor is an older model and should **not** be used. Turn in the extractor for replacement.
- Inspect the cartridge extractor catches for burrs, wear, and corrosion that could prevent the extractor from working right. Push down each of the 4 catches and release it. It should spring smoothly back into place. If you spot problems, don't use the extractor. Get it repaired or replaced.



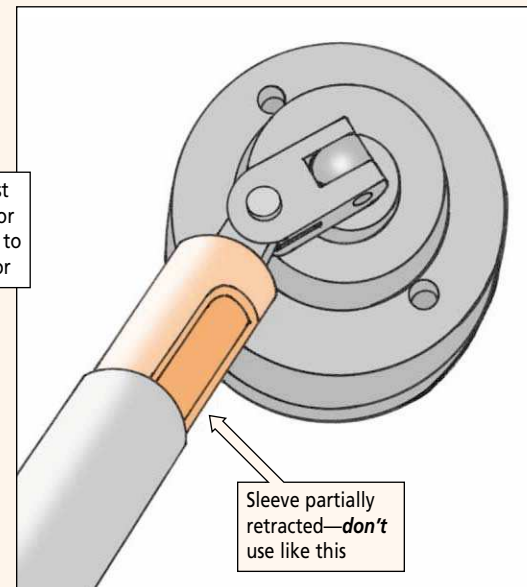
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- Attach the extractor to the staff assembly. If the extractor doesn't attach firmly and completely to the staff, it's not usable.

Prior to use, sleeve must fully cover the connector and extend all the way to the link on the extractor



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Changes to Misfire Procedure

TACOM SAFETY OF USE MESSAGE (SOLIM) 2-004 IS CHANGING THESE STEPS IN TM 91015-250-10.

UNTIL YOU GET THE SOLIM AND CAN UPDATE YOUR TM, USE THESE STEPS...



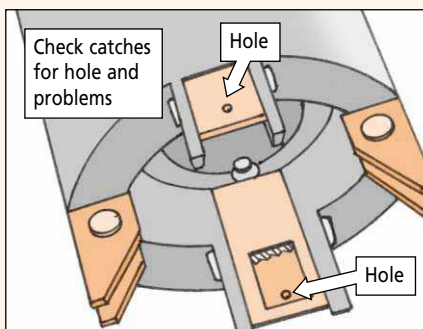
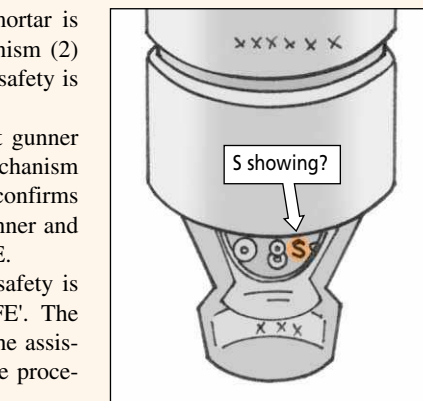
Para 5, Page 2-115: "When the mortar is cool, gunner places the safety mechanism (2) on SAFE (S showing) and shouts 'the safety is on SAFE'."

Para 6, Page 2-116: "The assistant gunner physically confirms that the safety mechanism is on SAFE (S showing). Squad leader confirms actions of the gunner and assistant gunner and checks the selection switch is on SAFE."

"If the assistant gunner agrees the safety is on SAFE, he shouts 'safety on SAFE'. The squad leader confirms the actions of the assistant gunner and gunner and the misfire procedures continue."

Para 7, Page 2-116: "Gunner removes sight and sight extension. Assistant gunner removes and stows blast attenuator device (BAD) (M121 only). Squad leader confirms action of the gunner and assistant gunner."

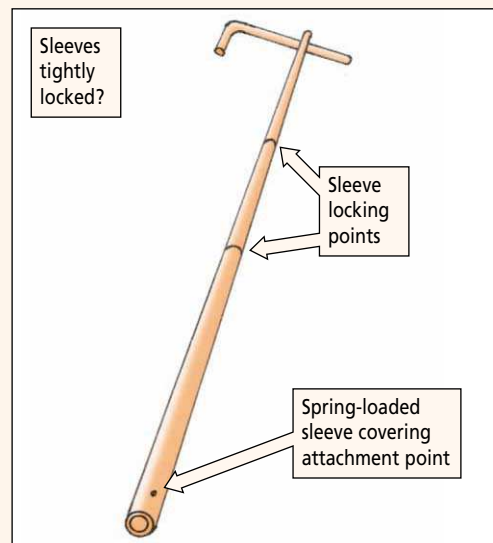
Para 8, Page 2-117: "Make sure each cartridge extractor assembly catch face has a 1/8-in hole. If the extractor catches don't have the holes, don't use the extractor. Assistant gunner inspects cartridge extractor catches for burrs, wear or corrosion that would prevent it from doing its job. Assistant gunner makes sure each extractor catch moves freely and snaps back in position. Problems? Don't use the extractor. Go to Para 13, Page 2-121 and use the barrel tip method to remove the misfired cartridge. The squad leader confirms the actions of the assistant gunner."



Para 9, Page 2-117:

"Make sure the artillery cleaning staff assembly section sleeves (5) are all tightly locked so that the staff assembly will not extend or retract. If the section sleeves cannot be tightly locked, then the cartridge extractor assembly is non-mission capable. Don't use it. Proceed to Para 13, Page 2-121 and follow the barrel tip method to remove the misfired cartridge. Squad leader confirms actions of the gunner and assistant gunner."

The rest of the misfire procedure stays the same.



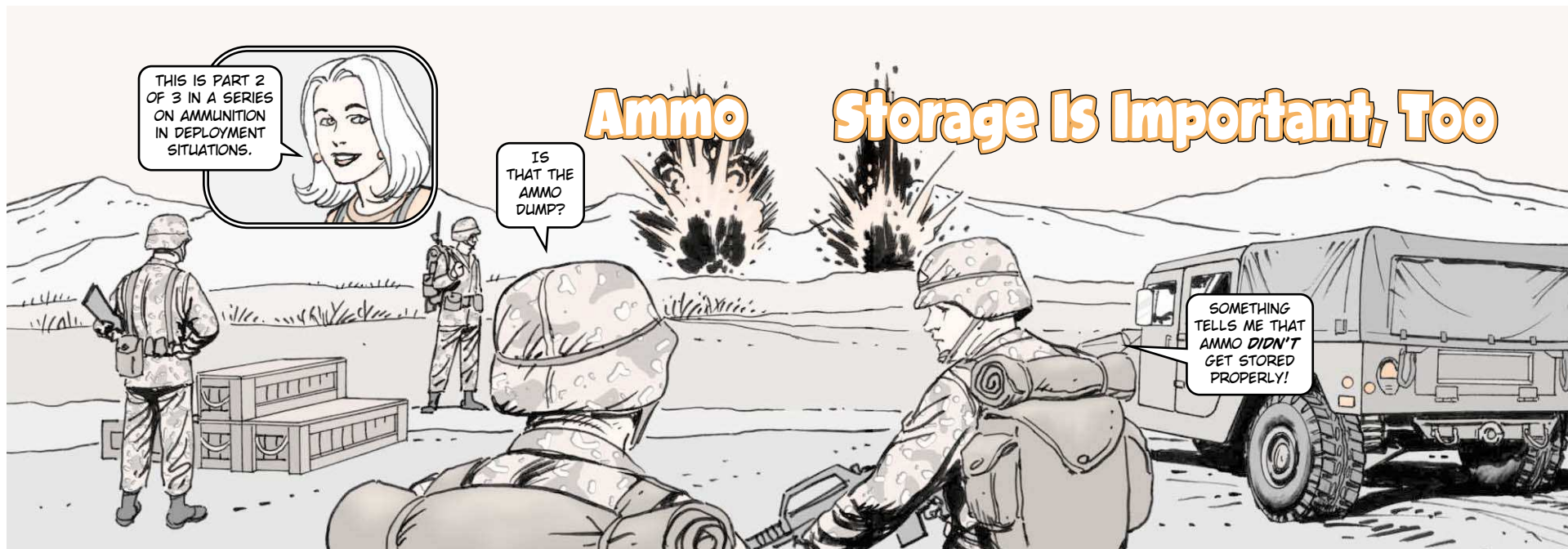
Practice Makes Perfect



Armorer and NCOs, before you go to the field again, train the crews with these new PMCS and misfire procedures. Every 6 months, personally inspect the cartridge extractors. In the field, have each mortar crew daily rehearse the misfire procedure using the dummy round and cartridge extractor.

Never fire unless at least one fully functional cartridge extractor is available at each firing point.

Check with your pubs clerk to be sure your TM account is up-to-date so that you will receive the TM change that includes this new information. Also be on the lookout for an MWO that will have stickers and decals to help you safely use the extractor. See your TACOM logistics assistance representative for details.



Ammo Storage Is Important, Too

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.

Ammunition Storage

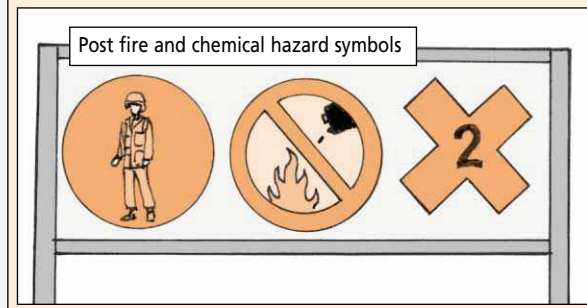
Ammunition storage conditions at the ammunition supply point (ASP), where large quantities of ammunition are stored, are a lot different from the conditions found in field storage, where smaller quantities are stored outside, in MILVANS, or aboard tactical and combat vehicles. Hazards of the various 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.

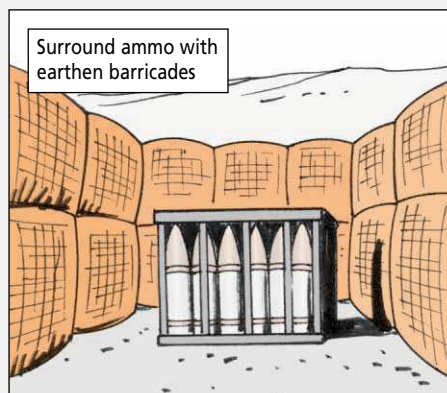
Establish explosives limits for each site/location. Use DA Pam 385-64, *Ammunition and Explosives Safety Standards*, FM 4-30.13, *Ammunition Handbook: Tactics, Techniques, and Procedures for Munitions Handlers*, or contact your Quality Assurance Specialist (Ammunition Surveillance) "QASAS" for specific 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.

ONCE YOU'VE ESTABLISHED EXPLOSIVES LIMITS, CONSIDER THE FOLLOWING 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.



- ✧ 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.



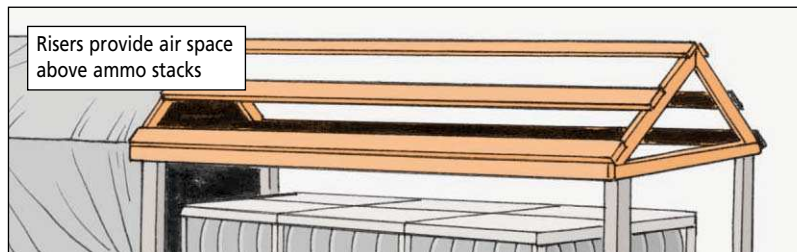
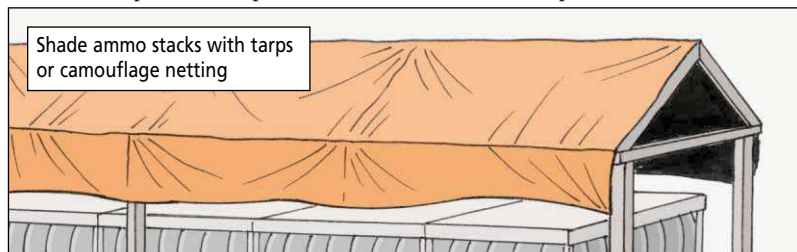
IF YOU **CAN'T** FIND THAT SORT OF SITE, YOU MAY HAVE TO DIG DRAINAGE DITCHES AROUND THE STACKS TO PROTECT THEM.

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.

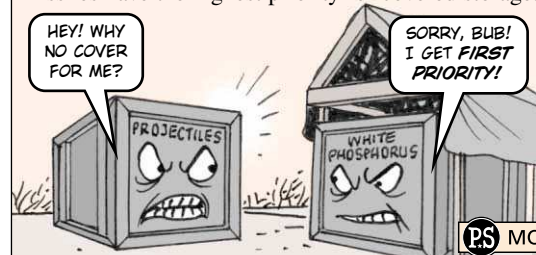
Wet, muddy ground may cause ammunition stacks to shift and fall. Keep stacks straight and dunnage in good condition. If available, consider using Air Force landing mats for outdoor storage to provide a firm base on all types of soil.

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.

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

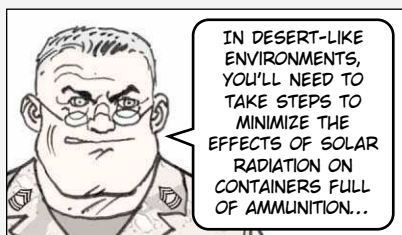


MILVAN/Container Storage



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:

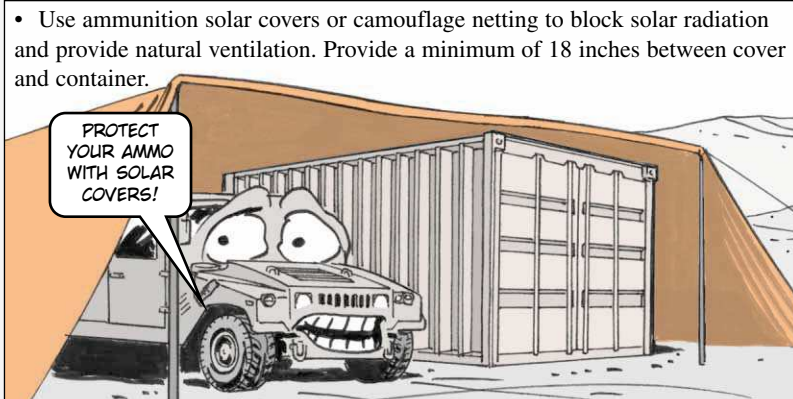
- Do not place the containers directly on the ground. At a minimum, place 4x4 inch or larger wood boards under each corner block to prevent damage to the cross members.
- Do not modify the containers in any way. If you add ventilation holes, welded ramps, or nailed-in structures, they won't meet international shipping standards.
- Treat containers carefully. Remember, they will be needed to ship unused ammunition back to your home station!



- Allow ventilation by opening doors as much as possible, consistent with safe and secure operations.



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



For more information on solar covers, check out this web-site:
<http://www.sbcom.army.mil/products/shelters/ASC.htm>

The solar covers are available from war reserve stock. Units pay for shipping charges only. Contact the War Reserve Manager, Chris Elliott at DSN 793-3993, (309) 782-3993, or elliottc@ria.army.mil.

You can also contact SBCCOM's Frank Kostka at DSN 256-5257, (508) 233-5257, or frank.kostka@natick.army.mil for more information.

Fire Safety

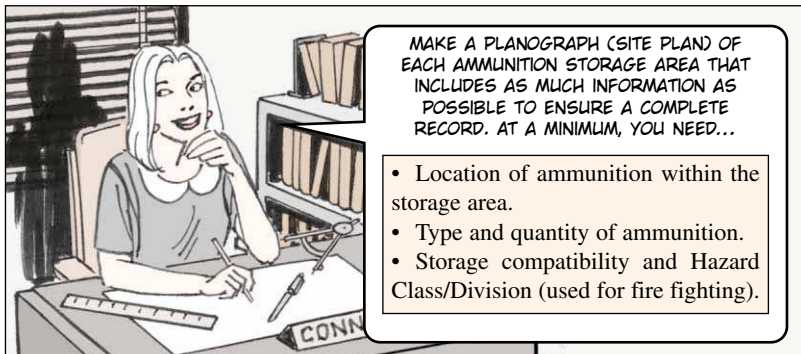


- Never smoke or carry matches, lighters or other fire-producing items into any ammunition storage area.
- Keep waste materials such as oily rags, solvents, paint cans, and paper out of ammunition storage areas.
- Remove dry vegetation in and around ammunition storage areas.
- Be familiar with the fire plan and the organization of the ammunition storage area's firefighting crew. Check out AR 420-90, *Fire and Emergency Services*.
- Know the location of fire extinguisher points within the storage area.

Accountability



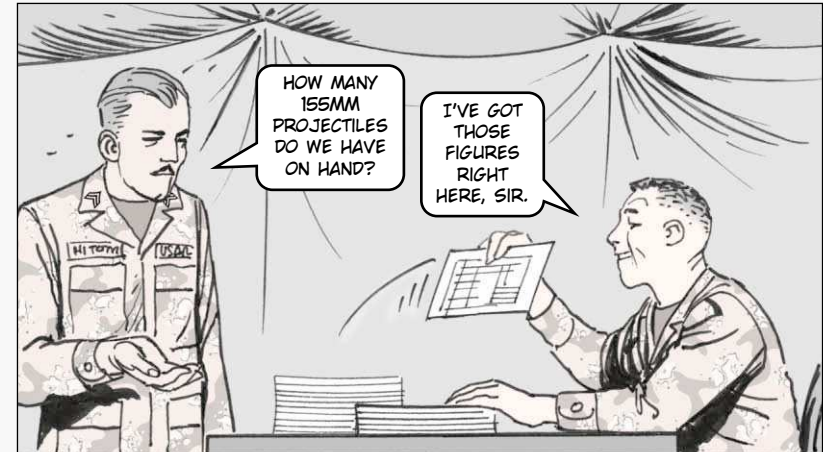
Always strive to maintain proper accountability and lot or serial number integrity when dealing with ammunition. Stacking ammunition by type, DODIC and lot number is critical whenever loading or storing ammunition.



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

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

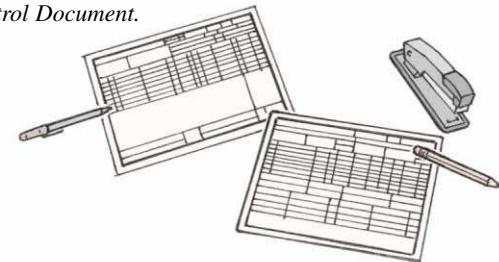


AMMUNITION SUPPLY PERSONNEL NEED TO BE AWARE OF THE FOLLOWING RULES...

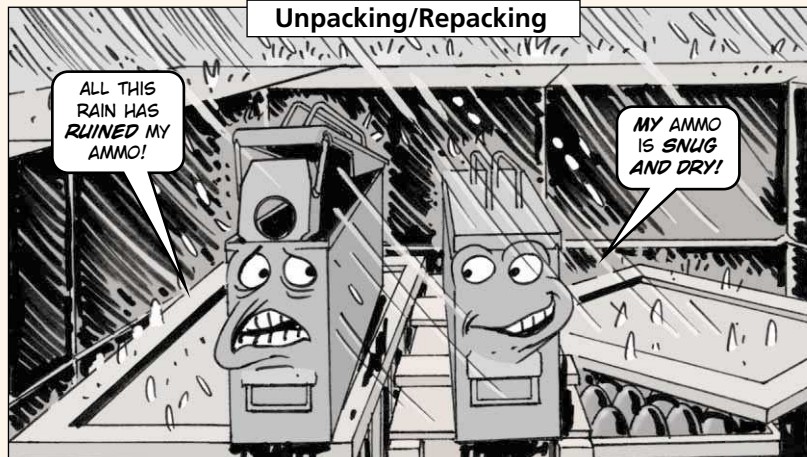
- Request and store only the ammunition your unit needs.
- Turn in excess ammunition promptly.
- Maintain a “balance sheet” of all ammunition on hand.
- Maintain written records of all receipts, issues, and any other transactions.

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.

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 ammunition boxes. Being careful protects you, the ammunition, 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.

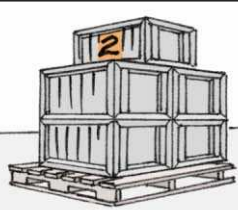
Make sure repackaged ammunition has the right stock number, lot/serial number and quantity marked on the container. Identification markings on boxes and containers are extremely important, so protect the integrity of the markings when repacking.



TO MINIMIZE ACCOUNTABILITY ERRORS IN MULTIPLE PACKS OF AMMUNITION, HAVE ONLY ONE BOX THAT'S LESS THAN FULL PER LOT.



CLEARLY MARK THE QUANTITY ON THE BOX AND PLACE IT AT THE FRONT OF THE STACK SO THAT IT'S THE FIRST USED.



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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.

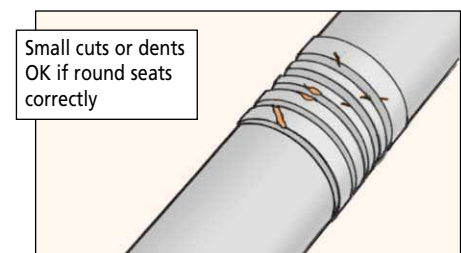
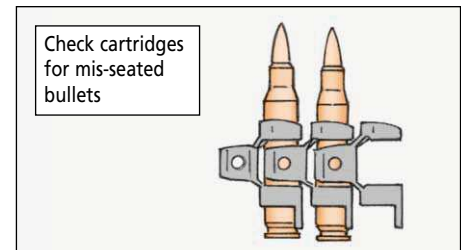
Ammunition does not always survive movement or storage in the best condition. ASP personnel must ensure that ammunition is issued in proper working order. Part of this responsibility includes reporting any and all firing restrictions, which will be noted on the DA Form 581 with the ammunition issue.

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 charts, 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.

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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

- After 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 do a 100 percent inspection of residue to check for live explosives and munitions.

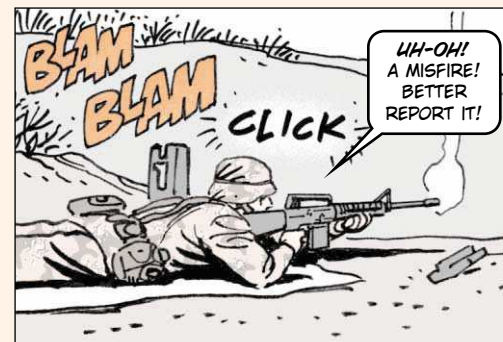


- A certification statement that the material is free of live ammunition will be added to the turn-in documents.

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.

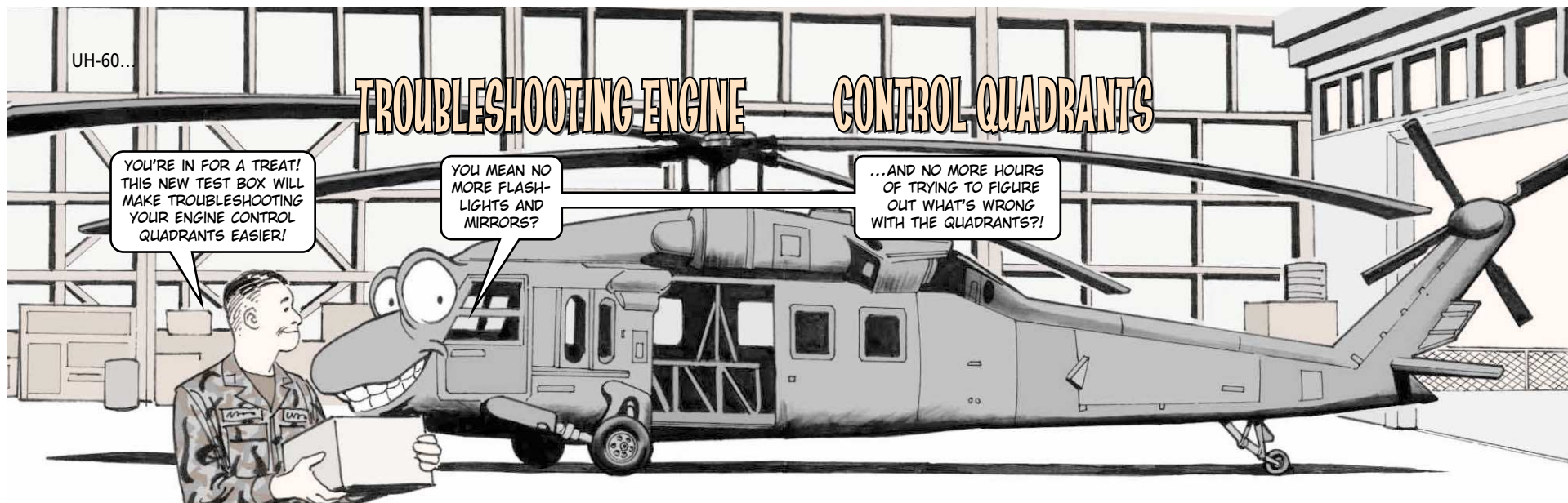
If you know or believe you are having an ammunition malfunction, report it ASAP through your chain of command. Check the lot number of the ammunition involved and discontinue use of that lot until the reason for the malfunction is determined. The best source for advice on ammunition serviceability is a QASAS.



More Help

THE U.S. ARMY DEFENSE AMMUNITION CENTER (DAC) MAINTAINS USEFUL AMMUNITION SUPPORT INFORMATION ON ITS WEB SITE.

STAY TUNED NEXT MONTH! PART 3 WILL INCLUDE INFORMATION ON SPECIFIC TYPES OF AMMUNITION.



HERE'S
ANOTHER GOOD
SUGGESTION
FROM THE FIELD!



Dear Rotor,

Our mechanics have a tough time and spend hours trying to troubleshoot, test and inspect the Blackhawk's engine control quadrant switches using a multimeter, a flashlight and a mirror. It takes three hands to do it.

The J105 and J106 connectors of the quadrants are mounted in the upper console of the cockpit in a tight space. That makes it difficult to see the pin letters without the aid of the mirror and a flashlight.

The procedure in TM 1-1520-237-23-3, Paras 4-2-8 and 4-2-9, requires continuity, resistance and voltage checks of all pins and micro-switches when we suspect an engine start problem or an ignition system problem.

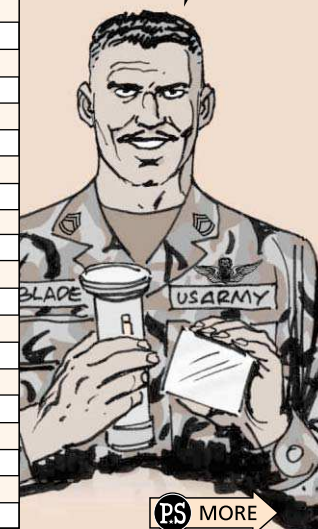
We solved that problem with a new test box that can aid in and speed up the testing and troubleshooting of the engine control quadrant switches. It now takes 5 minutes, and doesn't require the aid of a mirror and flashlight to check the switches.

Any AVIM shop can build the test box. Here are the materials for the control quadrant test box:

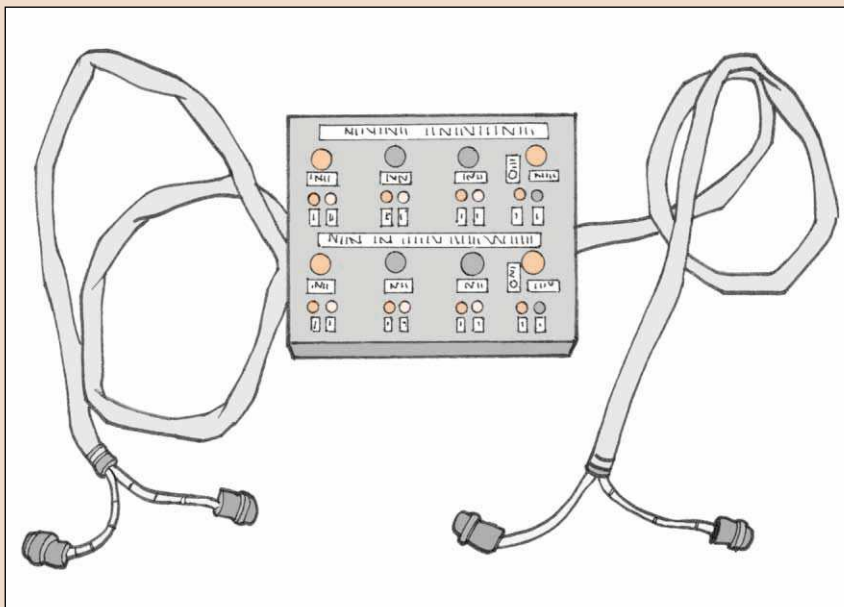
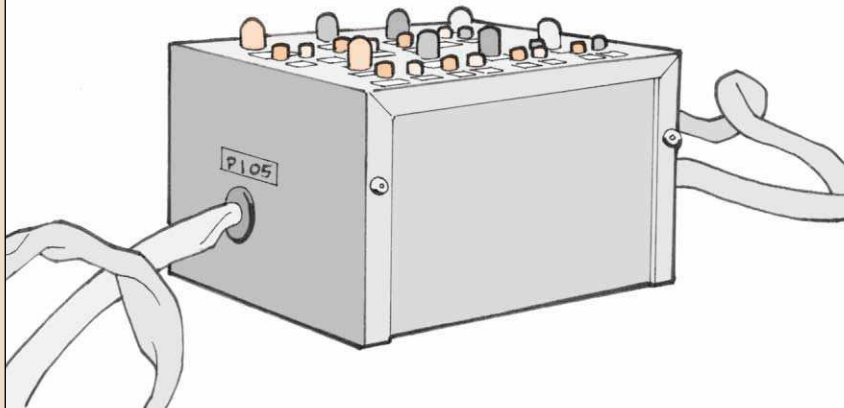
Engine Control Box Parts List

Item name	NSN	Qty
Box, electrical	5975-00-489-1407	1
Socket light (DS1-DS8)	6250-00-813-8265	8
Lens light (red) DS7 & DS8	6210-00-410-2530	2
Lens light (green) DS5 & DS6	6210-00-079-8943	2
Lens light (blue) DS3 & DS4	6210-00-045-5494	2
Lens light (amber) DS1 & DS2	6210-00-080-1048	2
Lamp Incandescent	6240-00-155-7836	8
Test jack (red) K, S, G, & N	5935-00-702-4199	8
Test jack (yellow) J, T, & H	5935-00-768-4232	6
Test jack (blue) M	5935-00-776-4617	2
Test jack (black) B	5935-00-762-0312	2
Grommet	5325-00-291-9366	2
Wire Elec (20 gauge)	6145-00-939-4964	100 ft
100ft Terminal lug	5940-00-827-2653	1
Insulation sleeving	5970-00-543-1156	7 ft
7ft Connector plug (J105 & J106)	5935-01-078-4517	2
Connector plug (P105 & P106)	5935-01-109-7541	2
Connector backshell	5935-01-162-8704	4
Terminal splice	5940-00-271-7741	18
Screw (for ground lug wire)	5305-00-866-0935	1
Nut (for ground lug wire)	5310-00-081-8087	1
Washer (for ground lug wire)	5310-00-515-8058	1
Cable ties		AR

PUT AWAY YOUR
FLASHLIGHTS AND
MIRRORS! USE
THE TEST BOX
INSTEAD!



Then assemble the box and you're ready to start testing. Here's what the test box looks like:



If all the switches are operating properly, you will get a light when the start buttons are pushed. To test the engine control quadrants, connect your box in line with the quadrant and follow the engine control test procedures below while troubleshooting. The tables referenced in these procedures are on pages 44 and 45.

Engine Control Test Procedures

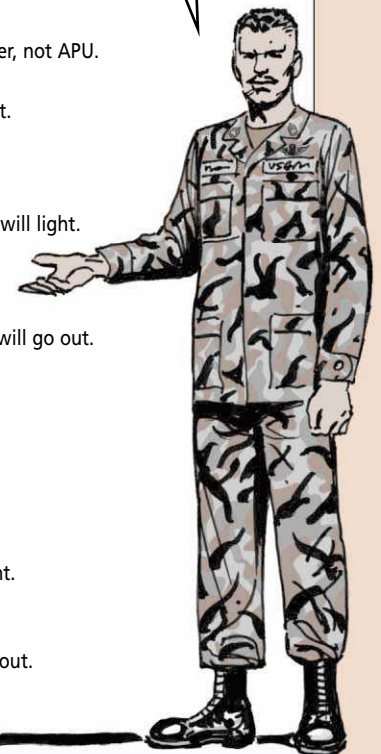
1. Unfasten and lower upper console panel.
2. Disconnect P105 and connect to test box J105.
3. Connect P105 of test box to J105 of aircraft.
4. Disconnect P106 and connect to J106 of test box.
5. Connect P106 of test box to J106 of aircraft.
6. Refasten upper console.
7. Place test box on upper glare shield.

NOTE

Test box used with external power, not APU.

8. Apply external power.
Result: #1 and #2 ABORT lights on test box will light.
•If #1 ABORT light not lit, go to TABLE NO. 1
•If #2 ABORT light not lit, go to TABLE NO. 2
9. Depress and hold #1 PCL start button.
Result: #1 START and OVERRIDE Lights on test box will light.
•If START light not lit, go to TABLE NO. 3
•If OVERRIDE light not lit, go to TABLE NO. 4
10. Release #1 PCL start button.
Result: #1 START and OVERRIDE lights on test box will go out.
11. Pull down #1 PCL handle and hold.
Result: #1 ABORT light on test box shall go out.
•If result is not as specified, go to TABLE NO. 5
12. Release #1 PCL handle.
Result: #1 ABORT light on test box will light.
•If result is not as specified, go to TABLE NO. 1
13. Pull #1 FIRE T HANDLE away from forward detent.
Result: #1 FIRE T HANDLE light on test box will light.
•If result is not as specified, go to TABLE NO. 6
14. Return FIRE T HANDLE back to forward stop detent.
Result: #1 FIRE T HANDLE light on test box will go out.
15. Repeat steps 9 through 14 above for #2 quadrant.

THE TABLES ARE ON THE NEXT TWO PAGES.



Tables for Engine Test Control Procedure

Table No. 1. #1 abort light does not come on when external power applied.

1. **Check #1 abort bulb in test box.**
Step 1. If bulb is good, go to 2.
Step 2. If bulb is not good, replace bulb, go to 4.
2. **Check #1 abort switch for proper adjustment (PARA 4-4-24).**
Step 1. If #1 abort switch properly adjusted, go to 3.
Step 2. If #1 abort switch not properly adjusted, do (PARA 4-4-24), go to 4.
3. **Check for 28 VDC at #1 Quad test point K and ground.**
Step 1. If voltage as specified, do (PARA 4-2-9), go to 4.
Step 2. If voltage not as specified, troubleshoot aircraft wiring between J105 K and CB312, go to 4.
4. **Procedure completed.**

Table No. 2. #2 abort light does not come on when external power applied.

1. **Check #2 abort bulb in test box.**
Step 1. If bulb good, go to 2.
Step 2. If bulb is not good, replace bulb, go to 4.
2. **Check #2 abort switch for proper adjustment (PARA 4-4-24).**
Step 1. If #2 abort switch properly adjusted, go to 3.
Step 2. If #2 abort switch not properly adjusted, do (PARA 4-4-24), go to 4.
3. **Check for 28 VDC at #2 Quad test point K and ground.**
Step 1. If voltage as specified, do (PARA 4-2-9), go to 4.
Step 2. If voltage not as specified, troubleshoot aircraft wiring between J106 K and CB236, go to 4.
4. **Procedure Completed.**

Table No. 3. Start light does not come on when start button depressed.

1. If checking #1 Quad go to 2. If checking #2 Quad go to 5.
2. **Check #1 start bulb in test box.**
Step 1. If #1 start bulb good, go to 3.
Step 3. If #1 start bulb is not good, replace bulb, go to 8.
3. **Check #1 start switch for proper adjustment (PARA 4-4-23).**
Step 1. If #1 start switch properly adjusted, go to 4.
Step 2. If #1 start switch not properly adjusted, do (PARA 4-4-23), go to 8.
4. **Check for 28 VDC at #1 Quad test point G and ground.**
Step 1. If voltage as specified, do (PARA 4-2-9), go to 8.
Step 2. If voltage not as specified, troubleshoot aircraft wiring between J105 G and CB312, go to 8.
5. **Check #2 start bulb in test box.**
Step 1. If #2 start bulb is good, go to 6.
Step 2. If #2 start bulb is not good, replace bulb, go to 8.
6. **Check #2 start switch for proper adjustment (PARA 4-4-23).**
Step 1. If #2 start switch properly adjusted, go to 7.
Step 2. If #2 start switch not properly adjusted, do (PARA 4-4-23), go to 8.
7. **Check for 28 VDC at #2 Quad test point G and ground.**
Step 1. If voltage as specified, do (PARA 4-2-9), go to 8.
Step 2. If voltage not as specified, troubleshoot aircraft wiring between J106 G and CB236, go to 8.
8. **Procedure Completed.**

Table No. 4. Override light does not come on when override button depressed.

1. If checking #1 Quad, go to 2. If checking #2 Quad, go to 5.
2. **Check #1 override bulb in test box.**
Step 1. If #1 override bulb good, go to 3.
Step 2. If #1 override bulb is not good, replace bulb, go to 8.
3. **Check #1 override switch for proper adjustment (PARA 4-4-25).**

Step 1. If #1 override switch properly adjusted, go to 4.

Step 2. If #1 override switch not properly adjusted, do (PARA 4-4-25), go to 8.

4. **Disconnect test box connector J105 from aircraft connector P105 and check continuity between #1 Quad test points T and S while depressing override button.**

Step 1. If continuity is present, troubleshoot aircraft wiring between J105 T and J105 S through left hand relay panel, go to 8.

Step 2. If continuity is not present, do (PARA 4-2-9), go to 8.

5. **Check #2 override bulb in test box.**

Step 1. If #2 override bulb good, go to 6.

Step 2. If #2 override bulb is not good, replace bulb, go to 8.

6. **Check #2 override switch for proper adjustment (PARA 4-4-25).**

Step 1. If #2 override switch properly adjusted, go to 7.

Step 2. If #2 override switch not properly adjusted, do (PARA 4-4-25), go to 8.

7. **Disconnect test box connector J106 from aircraft connector P106 and check continuity between #2 Quad test points T and S while depressing override button.**

Step 1. If continuity is present, troubleshoot aircraft wiring between J106 T and J106 S through right hand relay panel, go to 8.

Step 2. If continuity is not present, do (PARA 4-2-9), go to 8.

8. **Procedure Completed.**

Table No. 5. Abort light does not go out when PCL handle is pulled down.

1. If checking #1 abort, go to 2. If checking #2 abort, go to 4.
2. **Check #1 abort switch for proper adjustment (PARA 4-4-24).**
Step 1. If #1 abort switch properly adjusted, go to 3.
Step 2. If #1 abort switch not properly adjusted, do (PARA 4-4-24), go to 5.
3. **Do PARA 4-2-9, go to 5.**
4. **Check #2 abort switch for proper adjustment (PARA 4-4-24).**
Step 1. If #2 abort switch properly adjusted, go to 3.
Step 2. If #2 abort switch not properly adjusted, do (PARA 4-4-24), go to 5.
5. **Procedure Completed.**

Table No. 6. Fire T handle light does not come on when handle pulled away from forward detent.

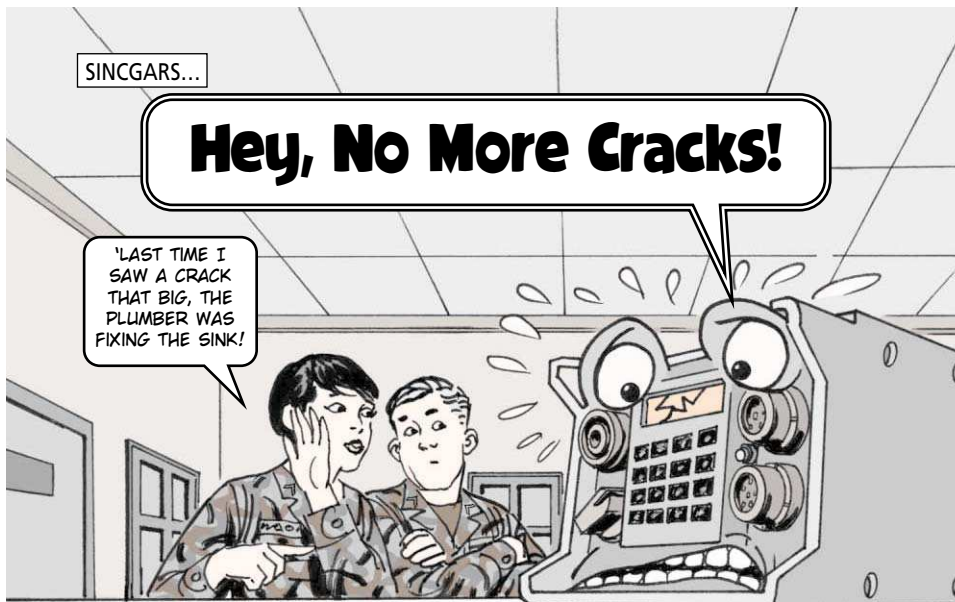
1. If checking #1 fire T handle, go to 2. If checking #2 fire T handle, go to 5.
2. **Check #1 fire T handle bulb in test box.**
Step 1. If #1 fire T handle bulb good, go to 3.
Step 2. If #1 fire T handle bulb is not good, replace bulb, go to 8.
3. **Check #1 fire T handle switch for proper adjustment (PARA 4-5-17).**
Step 1. If #1 fire T handle switch properly adjusted, go to 4.
Step 2. If #1 abort switch not properly adjusted, do (PARA 4-5-17), go to 8.
4. **Check for 28 VDC at #1 Quad test point N and ground.**
Step 1. If voltage is as specified, do PARA 4-2-9, go to 8.
Step 2. If voltage not as specified, troubleshoot aircraft wiring between J105 N and CB1, go to 8.
5. **Check #2 fire T handle bulb in test box.**
Step 1. If #2 fire T handle bulb good, go to 6.
Step 2. If #2 fire T handle bulb is not good, replace bulb, go to 8.
6. **Check #2 fire T handle switch for proper adjustment (PARA 4-5-17).**
Step 2. If #2 fire T handle switch properly adjusted, go to 4.
Step 2. If #2 abort switch not properly adjusted, do (PARA 4-5-17), go to 8.
7. **Check for 28 VDC at #2 Quad test point N and ground.**
Step 1. If voltage is as specified, do PARA 4-2-9, go to 8.
Step 2. If voltage not as specified
troubleshoot aircraft wiring between J106 N and CB253, go to 8.
8. **Procedure Completed.**

Ethan Allen
AASF #3
TN Army National Guard

**From the desk
of the Editor**

Great idea! The
new test box will
shorten the troubling
troubleshooting.

PS END



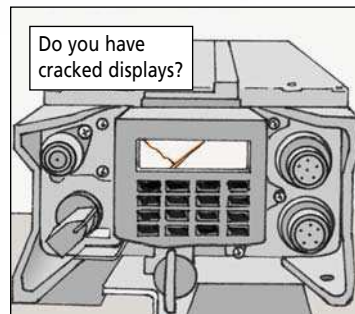
By now your unit probably has the new advanced SINCARS improvement program (ASIP) E-model RT. That also means by now you have been fighting the problem of cracking keyboard displays.

If you have cracked displays, here is how you can fix them. Order repair kit, NSN 5895-01-484-6837. The kit is around a third of the cost of a new keypad, which is how you had to fix the display before. To use the kit right, you'll need to follow the instructions in TB 11-5820-890-30-4.

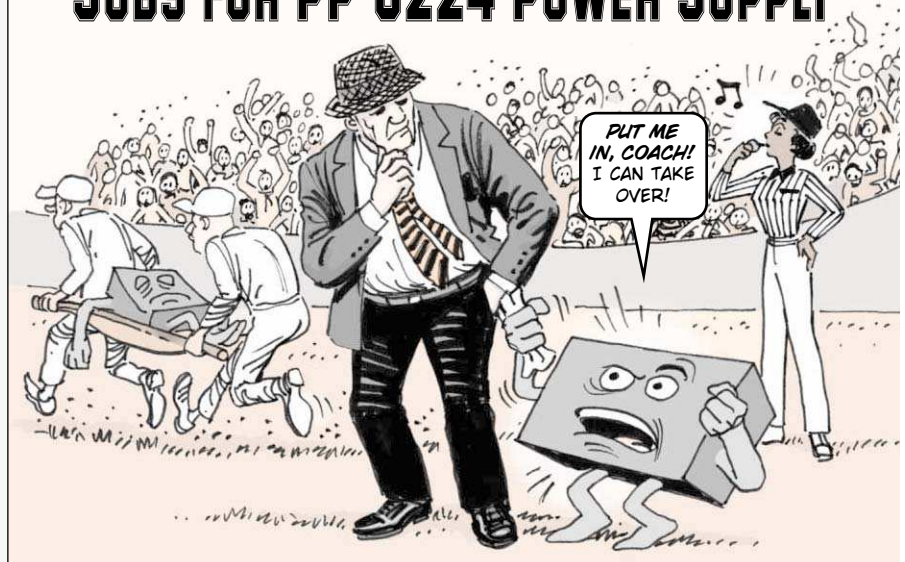
Of course, the best option is to try to keep the display from cracking. To do that, don't drop it. Use carrying strap, NSN 5340-01-461-4741.

To prevent other mishaps, use a display cover, NSN 5895-01-473-6804.

For more info on the repair kit, the strap or cover, contact CECOM at DSN 992-3329 or (732) 532-3329. Or e-mail them at: john.moran@mail1.monmouth.army.mil

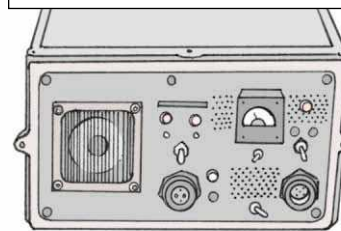


SUBS FOR PP-6224 POWER SUPPLY

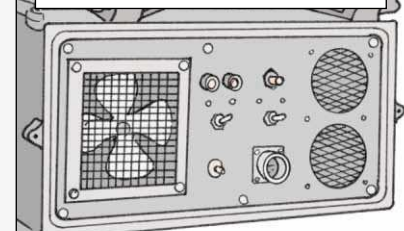


There are two substitutes for the PP-6224 power supply to power your SINCARS:

The PP-2953/C,
NSN 6130-01-235-3787, 10-amp output



The SLA 2002,
NSN 6130-01-493-4393, 25-amp output



Here is a list of power supplies that these replace:

Power Supply	LIN	NSN
PP-6224/U	P40750	6130-00-133-5879
PP-6224B/U	P40750	6130-01-223-0267
PP-2953	P38588	6130-00-985-7899

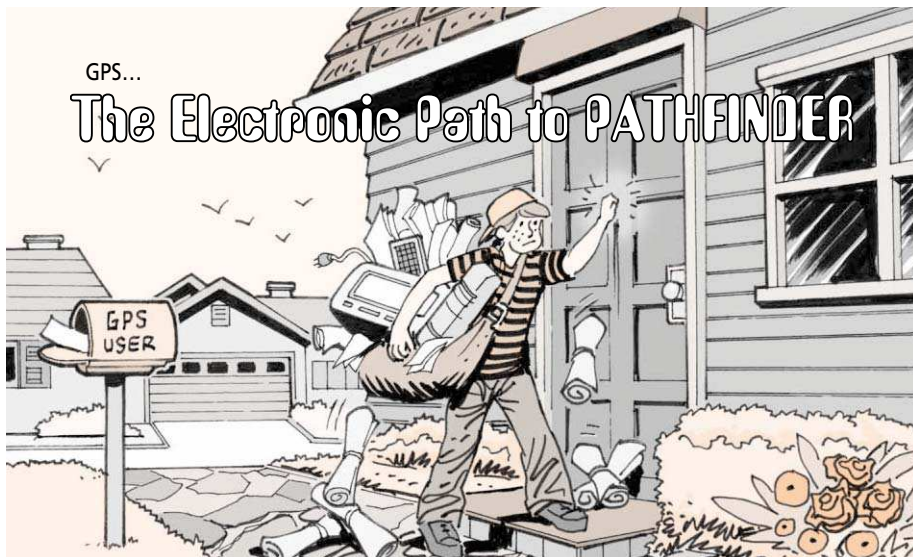
FOR FURTHER TURN-IN
AND REPLACEMENT INFO
CONTACT CECOM AT
DSN 992-3329/4341.
OR E-MAIL AT...



john.moran@mail1.monmouth.army.mil
jeanne.monahan@mail1.monmouth.army.mil

GPS...

The Electronic Path to PATHFINDER



Like having the Sunday paper delivered right to your door, you can be notified by e-mail when the latest PATHFINDER is posted on the GPS web site.



PATHFINDER is a quarterly newsletter published by the Global Positioning System folks at Ft Monmouth, NJ. It keeps you up-to-date on all the latest happenings in the GPS world.

The latest issue of PATHFINDER can be found at the GPS web page:

<http://army-gps.robins.af.mil>

To be notified by e-mail when an issue is posted, send your e-mail address to:
donald.mulligan@IEWS.monmouth.army.mil

Put the words "PATHFINDER request" in the subject line.

Then you'll get an e-mail every time the latest and greatest GPS info is posted on the web site.

Electronically is now the only way to get PATHFINDER. There is no longer a paper copy.

Questions? Write or call:

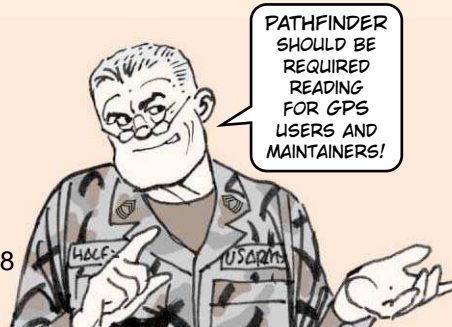
PM GPS (PATHFINDER)
AMSEL-DSA-GPSR
Bldg 283 Squier Hall
Ft Monmouth, NJ 07703

DSN 992-6137 or (732) 532-6137

Or e-mail them at the address above.

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AN/USC-55A...

THE MOISTURE MENACE



The AN/USC-55A Commanders' Tactical Terminal-3 (CTT-3) doesn't weather temperature changes very well. Those changes create moisture in the terminal.

Since you can't change the weather, you must do preventive maintenance to solve the problem and mop up the moisture.

Make sure you do weekly functional BIT and monthly hook ups of all antennas to the system for testing.

If the BIT fails, allow a 15-minute warm-up to stabilize the oscillator and rid the system of moisture. Then, set the CD-81 and RT-1714 power switches to OFF.

IT IS ALSO IMPORTANT THAT YOU DRY THE RADIO BATTERIES' CONNECTORS. MOISTURE CORRODES THEM.



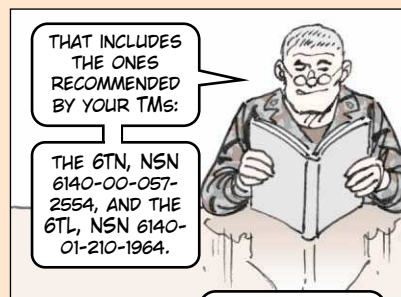
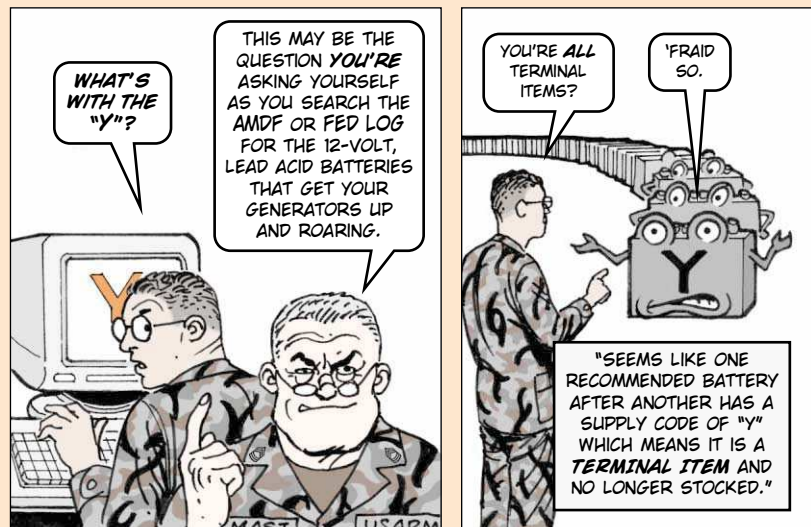
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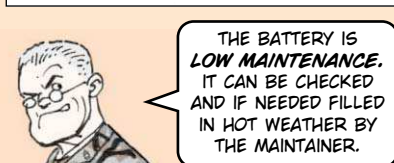
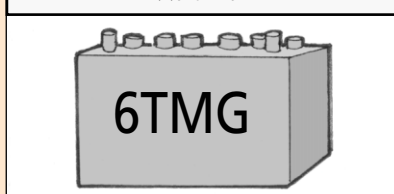
DEC 02

5-, 10-KW Generators...

"Y" BATTERIES



"THE **ONLY** BATTERY NOW AVAILABLE TO FILL YOUR 5- AND 10-KW GENERATORS' LEAD-ACID BATTERY NEEDS IS THE 6TMG, EITHER DRY CHARGE, NSN 6140-01-446-9498, OR WET CHARGE, NSN 6140-01-446-9506."



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DEC 02

15-, 30-, 60-KW Tactical Quiet Generators...



Dear Editor,

Every time it rained, the ground fault circuit interrupter on our 15-KW tactical quiet generators (TQG) would trip.

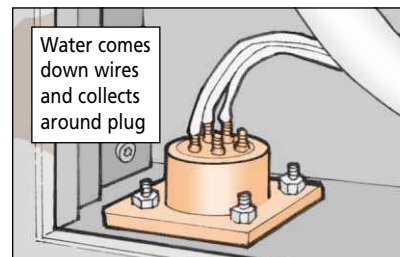
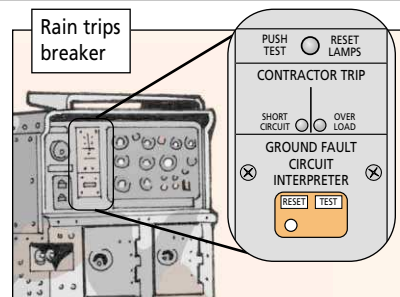
The problem was the J16 plug located on the bottom of the output box assembly, just below the voltage reconnection panel. When the door to this compartment is bent, when it has a worn seal or does not close properly, water leaks and collects around the J16 plug.

It doesn't take much moisture to short out the input wires.

I solved the problem by insulating the plug with RTV.

First, make sure the plug is **completely** dry. Then apply the RTV at the top of the plug where the wires are exposed.

SPC Carlos Torres
Ft Hood, TX



From the desk of the Editor

Fine job, Specialist. This is also a problem on the 30- and 60-KW generators. CECOM is aware of this. New production generators will have heat shrink around the J16 plug wires and should solve the problem. RTV is fine for those generators in the field with the problem. Just make sure the RTV fully covers the electrical wires from the wire insulation to the J16 connector.

Also, replace the seal on the access door to the compartment or get a new door if the old one won't close.

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DEC 02



KEEP IT CLEAN

The best way to keep your protection assessment test system (PATs) running and running is to practice good hygiene when you're using it—keep it clean.

If dirt is sucked in the PATs' pump, eventually the pump stops working and you stop testing masks.

So, before you set up your PATs, wipe off the table it will be sitting on. When you disconnect the sampling tubes, don't let them touch the floor or any other dusty area where they can suck in dust. That keeps the pump pumpin'.

KIT SILENCES ALARM



Are you tired of the rain shield and the flow rate meter on your M8A1 chemical alarm disappearing? Would you like to be able to completely turn down the volume on the horn? Well, help is here and it's the best kind—it's free.

SBCCOM is issuing a kit for the M8A1 that modifies the horn so you can shut it off completely. The kit also includes two tethers that let you secure the flow rate meter and rain shield.

The part number for the kit is 5-15-19014. To get the kit, contact SBCCOM's Rebecca Morse at (309) 782-4773/DSN 793-4773 or e-mail:

Morser@ria.army.mil

The NBC NCO installs the tethers and support modifies the horn.

REPLACING BROKEN TOOLS



Dear Half-Mast,

We recently purchased some of the new General Mechanics Tool Kits, which PS told us are under warranty. The cold chisel shattered the first time we used it. How do we get it replaced?

CW2 J.F.

Dear Chief,

The instructions for submitting a warranty claim are as close as your toolbox—they're listed under the lid. There are two methods of submitting a warranty claim, depending on which contract your tool kit was manufactured under.

If your tool kit falls under the newest contract, DAAE20-02-D-0009, you submit a warranty claim through the Army Electronics Product Service System (AEPS), using the Electronic Deficiency Reporting System (EDRS). Go to:

<http://aeps.ria.army.mil/aepspublic.cfm> and click on **SUBMIT QUALITY DEFICIENCY REPORT**.

All other tool kit contracts require you to e-mail a claim through TACOM-Rock Island at:

TACOM-RI-SKO-HELP@ria.army.mil

Warranty claims should be submitted only by someone who can approve requisitions, such as a shop chief, supply clerk, squad leader, or the commander.

ALL WARRANTY CLAIMS REQUIRE THE FOLLOWING INFO...

- tool set NSN
- contract number
- mailing address of where to send the tool
- date of incident
- short description of incident



TACOM-Rock Island then forwards the claim to the tool contractor, who has 5 days to get a replacement tool to a CONUS unit and 10 days to a OCONUS unit. Currently, there is no requirement to return the damaged tool.

The same procedure can be used to replace a lost tool except the request goes directly to the contractor and must include a method of payment, such as a personal credit card or IMPAC card. The contractor is listed on the lid of the toolbox.

Half-Mast

Sets, Kits, and Outfits...

SKOs Covered by One SC



Beginning in April, 2002, all of the different sets, kits, and outfits (SKO) became covered by one big supply catalog, SC 9999-01-SKO.

Of course, all the tool kits didn't disappear. It's just the SC that disappeared from the front of the number. When you look up an SC now on EM 0074, the CD-ROM that contains SC 9999-01-SKO, or on the SKO website:

<http://weblog.logsa.army.mil/sko>

you'll find each SKO now listed as a "component list".

The date on each component list is the date of the last major review by the commodity command that manages the tool kit.

SC 9999-01-SKO will be published each April and September and will include the latest changes to the component lists.

There is one other SKO news item. The general mechanic's tool kit (GMTK) and the multi-capable maintainer tool kit (MCMTK), which both contain different NSNs for the versions of the tool kit made by different manufacturers with different brand names and part numbers, are now both available on the ARMY SKO web page. They can be found under the Soldier's Bulletin Board icon as downloadable files. See:

http://weblog.logsa.army.mil/sko/bulletin_board.cfm

Don't forget to use the cross book search function at the SKO site when you need to figure out which tool belongs to which tool set. The search engine lets you conduct a quick search by NSN, part number, or nomenclature for individual component items. The search engine is also available on EM 0074.

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DEC 02

Tool Maintenance...

WOOD HANDLE PM



✧ If the handle is on a tool stored outside, paint it to protect against weather.

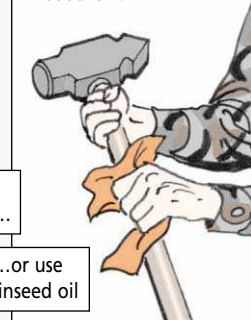
✧ Follow the local SOP for paint color, usually the same as the vehicle's basic color—but not in camouflage pattern.

✧ If the handle is on a tool kept inside, rub it with linseed oil. That'll prevent drying, cracking and splintering. Order a gallon of linseed oil with NSN 8010-00-152-3245.

When a painted handle shows exposed wood, strip and repaint it.



When an unpainted handle starts to feel dry, give it another rub with linseed oil.



PS 601

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DEC 02



YOU MAY NOT BECOME A MILLIONAIRE, BUT IT DOES PAY TO SUBMIT SUGGESTIONS TO THE **SUPPLY AND MAINTENANCE ASSESSMENT AND REVIEW TEAM (SMART)**—THE LIFELINE FOR LOGISTICS IDEAS.

HERE ARE SOME RECENT SUGGESTERS, THEIR IDEAS AND THE RECOMMENDED AMOUNT OF EACH AWARD.

Name/ Location	Approved Suggestion	Recommended Award
*SSG Robert Bordner & SPC James Eppley PA ARNG	Created special tool to perform jam test of ILCA on CH/MH-47 fleet	\$ 1,600
WO1 Jerry Rosario Ft Sill, OK	Modification of CO ₂ repair/refill outfit in ground support equipment	\$ 1,000
CW2 Leonard Kober Ft Carson, CO	Procedure for routing fuel pump vent line on M998	\$ 1,000
*Peter Kohler & Reinhold Meier Vilseck, Germany	Replace bearing on shock absorbers of the M88A1 in lieu of bracket replacement	\$ 500
*MSG Jerry Gerber & SSG Phil Wojciek Whitewater, WI	Modification to 5 year service requirement of M1000 semitrailer	\$ 7,500
SGT Douglas Urban Camp Douglas, WI	Dolly Fabrication for M1000 Semitrailer 5 year service	\$ 2,000

*Dual suggesters share award money

DEC 02

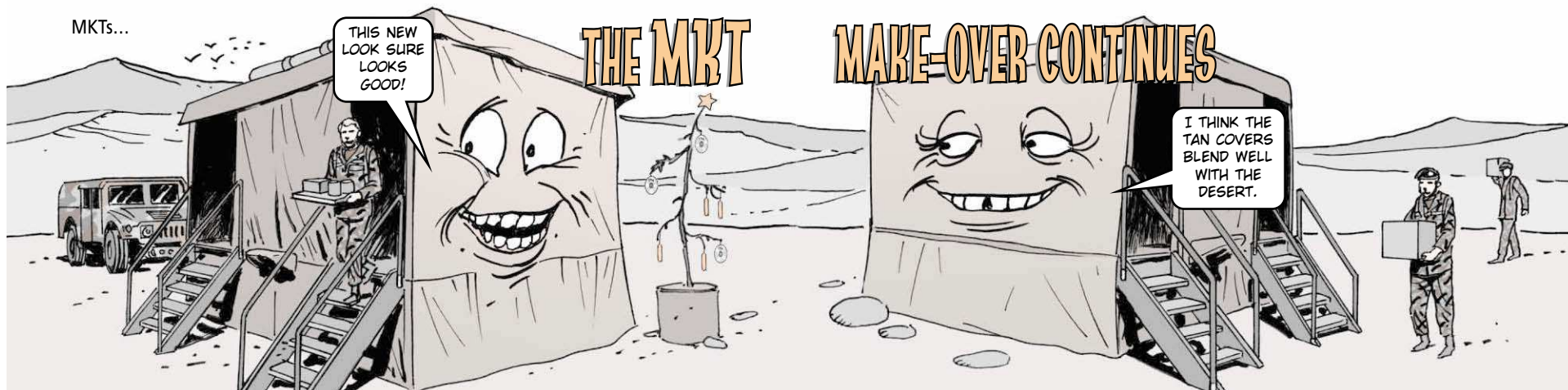
Name/ Location	Approved Suggestion	Recommended Award
MSG Allison Yano Hilo, HI	Change to SINGARS operator's manual to prevent battery drain	\$ 500
WO1 Adam Hagenston Ft Lewis, WA	Add replacement knob for phase selector on TQG to parts list in TMs 9-6115-641-24P & 9-6115-642-24P	\$ 500
CW2 Randy Hill Ft Campbell, KY	Publish article to notify HMMWV operators of correct lens cover	\$ 500
Hugh Olsen Johnston, IA	Change level of service on night vision devices	\$ 1,000
SSG Glenn Layne Boise, ID	Fabricated vent cover to seal out water on airframe wash of AH-64	\$ 500

TO SUBMIT **YOUR** IDEAS, YOU CAN GO ON-LINE TO:
<http://www.aeps.ria.army.mil/SMART/smartidea.cfm>
 OR
http://www.cascom.army.mil/multi/project_smart
 AND CLICK ON **INITIATE A SMART IDEA HERE!**

CALL (804) 734-2435/2406,
 OR, YOU CAN E-MAIL:
SMART@lee.army.mil
 FOR ADDITIONAL SMART INFORMATION.

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PS 601



In PS 598 (Sept 02) we told you that the mobile kitchen trailer (MKT) had been upgraded with new green covers. The old covers couldn't stand up to heat, dust, water and mildew, and were hard to maintain.

WELL, THE MKT-I IMPROVEMENT KIT, NSN 7360-01-496-3869, HAS TAN FABRIC, SCREENS AND TRAVEL COVERS YOU CAN ORDER.

IF YOU DON'T NEED THE COMPLETE KITS, ORDER JUST THE PARTS YOU NEED.



Item	NSN	Qty
Chest, ice storage, tan	4110-01-452-7315	1
SCREEN ASSEMBLY COMPONENTS		
Screen assembly, end, large MKT-I	5411-01-496-2100	2
Screen assembly, end, small MKT-I	5411-01-496-2106	2
Screen assembly, side, MKT-I	5411-01-496-2108	2
WALL AND ROOF ASSEMBLY COMPONENTS		
Cover, end, large, MKT-I	5411-01-496-2109	2
Cover, end, small, MKT-I	5411-01-496-2110	2
Cover, side, assembly, MKT-I	5411-01-496-2111	2
Roof canopy assembly, MKT-I	5411-01-496-2101	2
TRAVEL COVER COMPONENTS		
Travel cover assembly, left side, MKT-I	5411-01-496-2104	1
Travel cover assembly, right side, MKT-I	5411-01-496-2105	1
Travel cover assembly, front, MKT-I	5411-01-496-2099	1
Travel cover assembly, rear, MKT-I	5411-01-496-2107	1
COLD WEATHER SKIRT COMPONENTS		
Cold weather skirt assembly, roadside	5411-01-496-2102	1
Cold weather skirt assembly, curbside	5411-01-496-2103	1

All kit components not listed are not color specific and are the same NSNs as the green kit.

The new green and tan covers are made of polyester with a vinyl coating that's fire retardant, easier to clean and prevents ice build up in the winter.

The MKT-I upgrade kit was put together to improve kitchen safety and working conditions. Here's how the make-over improves your kitchen.

- ✧ The griddle has higher sides to contain grease and prevent fires if the kitchen is not on level ground.
- ✧ An easy-to-clean, all-stainless-steel can opener with an easy change blade replaces the aluminum opener.
- ✧ The ice chest is lighter with fewer breakable parts.
- ✧ Floor matting covers all floors and keeps feet warm and reduces leg fatigue.
- ✧ Cold weather skirts keep cold wind from under the trailer and help keep your feet warm. The skirts also provide weather protection for storage, too.
- ✧ A duplex outlet powers the lights and the fan. MWO 10-7360-206-30-1 installs the outlet for the MBU. The kit comes with a 2-KW generator. If the MWO is not applied use another power source for the lights and fan.
- ✧ The exhaust fan assembly consisting of the blower, hose and vent, can be used to re-distribute the heat in cold weather or vent heat or smoke in inclement or hot weather.
- ✧ Two 50-watt fluorescent tent lights replace a gasoline lantern, which was a potential fire hazard.

MAINTAIN THESE IMPROVEMENTS WITH THE PM TIPS IN TM 10-7360-206-13. AND DON'T FORGET THE 1½-TON TRAILER PMCS IN TM 9-2330-213-148P TO KEEP THOSE MEALS COMING DOWN THE ROAD.

MAKE A NOTE OF THE NEW NSNs UNTIL THE TM IS UPDATED.



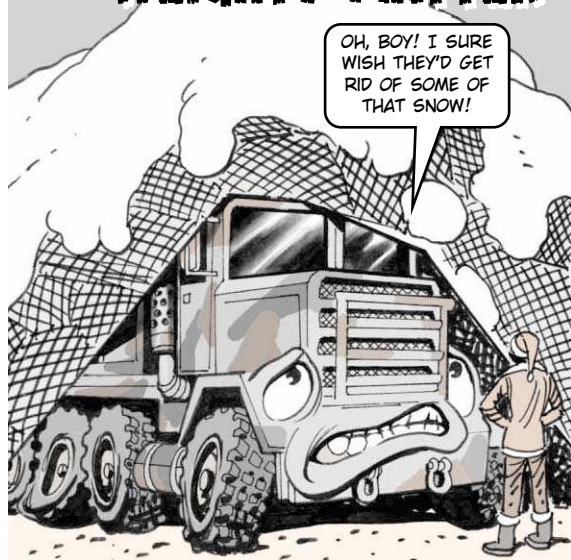
Camouflage Screening...

SNOW IS A WEIGHTY MATTER

OH, BOY! I SURE
WISH THEY'D GET
RID OF SOME OF
THAT SNOW!

SNOW AND COLD DON'T MIX
WELL WITH CAMOUFLAGE
NETS AND POLES. THE
FIBERGLASS POLES SHATTER
EASILY WHEN THEY'RE COLD-
SOAKED AND BENT UNDER
THE WEIGHT OF SNOW. THE
EXTRA WEIGHT CAN BEND
ALUMINUM POLES.

THE SNOW COULD BRING
YOUR CAMOUFLAGE
SCREEN DOWN ON TOP OF
YOUR EQUIPMENT. SHAKE
IT OFF TO KEEP THE
SCREENING IN PLACE.

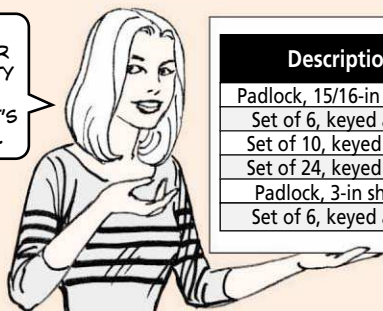


Padlocks...

SECURE YOUR STUFF



IF YOU'RE
LOOKING FOR
LOW SECURITY
PADLOCKS,
HERE'S WHAT'S
AVAILABLE...



Description	NSN 5340-
Padlock, 15/16-in shackle	00-158-3805
Set of 6, keyed alike	01-437-0625
Set of 10, keyed alike	01-408-8452
Set of 24, keyed alike	01-437-0627
Padlock, 3-in shackle	01-408-8434
Set of 6, keyed alike	01-437-0630

PS 601

60

DEC 02



M992A2 TORSION BARS REVISITED

The NSN listed for the M992A2 ammo carrier's torsion bar #5 on Page 17 of PS 597 is wrong. The correct NSN is 2510-01-300-0226.

BRADLEY FIRE SUPPRESSION ROPE

The parts manuals show no listing for the wire rope that goes between the activation handle and fire extinguisher valve of your M2/M3-series Bradley's fire suppression system. To get it, you'll need to order a new valve, NSN 4210-01-125-4294 (M2/M3) or NSN 4210-01-336-9159 (M2A3/M3A3). M2A2/M3A2 and ODS Bradleys can use either valve. Make a note until the TMs are updated to show the rope with the valves.

PATS TRAINING CD

NBC NCOs, when you receive your M41 PATS back from calibration or repair, you'll also get a CD-ROM explaining how to use PATS. The CD replaces the video that formerly came with PATS but often disappeared before anyone saw it. Keep the CD in the PATS case. That way, you'll have it if you need to brush up on PATS later. And so will the next NBC NCO.

SUSV Fire Extinguisher

Get the hand-held CO₂ fire extinguisher and bracket for your small unit support vehicle with NSN 4210-01-388-7854. It's a replacement for the Halon extinguisher shown as Item 11 on Page B-4 of TM 9-2350-285-10. The new extinguisher alone is NSN 4210-01-391-0784.

KIOWA MMS DESICCANT

OH-58D Kiowa mast mounted sight desiccant, NSN 6850-01-456-0554 is obsolete. Order replacement desiccant with NSN 6850-01-214-3682. This desiccant comes in a non-refillable container that should always be replaced when depleted. Refilling attempts allow desiccant dust to escape and that could cause damage to the thermal imaging sensor.

TRANSMISSION FILTER KIT

Use NSN 2520-01-051-6687 to get a transmission filter kit for the M915A2, M916A1/A2 and M917A1 tractor trucks. The NSN shown as Item 42, Fig 154 of TM 9-2320-363-24P is no longer available. The kit includes the filter, pan gasket and seal ring.

DISTRIBUTION: To be distributed in accordance with the initial distribution number (IDN) 340312, requirements for TB 43-PS-Series.

Would You Stake Your Life ^{right now} on the Condition of Your Equipment?

DRIP PANS IN PLACE?

OOPS!

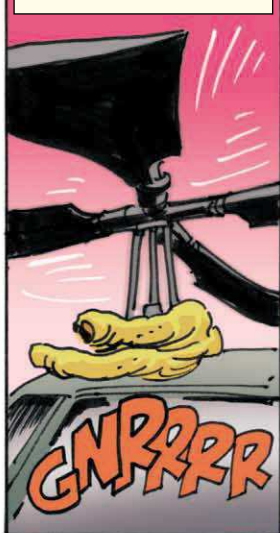


MISHAPS
DON'T
HAVE TO
HAPPEN.

AIRCRAFT GROUNDED?



FOREIGN OBJECTS PICKED UP?



THE MESSAGE
IS CLEAR...

THINK SAFETY FIRST!

- AIRCRAFT SAFED
- CHOCKS IN PLACE
- AIRCRAFT GROUNDED
- BATTERIES DISCONNECTED
- DRIP PANS IN PLACE
 - FLOORS CLEAN
- F.O.D. PREVENTED
- JEWELRY REMOVED
- PIN-ON RANK REMOVED
- BY-THE-BOOK MAINTENANCE
- ALL OPEN LINES CAPPED
 - NO HORSE PLAY!