

**PS****THE  
PREVENTIVE  
MAINTENANCE  
MONTHLY****ISSUE 657 AUGUST 2007**

TB 43-PS-657, The Preventive Maintenance Monthly, is an official publication of the Department of the Army, providing information for all soldiers assigned to combat and combat support units and all soldiers with unit maintenance and supply duties. All information published has been reviewed and approved by the agency responsible for the equipment, publication or policy discussed. Application of the information is optional with the user. Masculine pronouns may refer to both genders.

**COMBAT VEHICLES**

Stryker Dipstick Update  
M1-Series Tank Semiannual Service Kit  
M1A2 SEP Tank FBCB2 Startup/Shutdown Aid  
M2/M3-Series Bradley Trailer Towing  
M88A2 Recovery Vehicle Powerpack Removal  
Oil NSNs  
DA Form 2408-4 Gun Card

**WHEELED VEHICLES**

Petroleum Refueling Systems Filter Elements  
M939-Series Truck Front Tire Wear  
Up-Armored HMMWV Gunner's Restraint System

**SMALL ARMS**

XM101 CROWS Hardware Transfers

**MISSILES**

Avenger Missile System FLIR  
M1084A1 HIMARS Crane Tips

**CBRN**

M17-Series Decon Troubleshooting  
BIDS Moisture Prevention

**RADAR**

Sentinel Radar System Desert Lessons Learned  
Sentinel Radar System Air Filters

2

**COMBAT ENGINEERING** 27

2 RTCH Maintenance, Operating Tips 27-34  
3 M9 ACE Hydraulic Lines Secured 56  
4-5 M9 ACE Voltage Regulator, Newsletter 57  
6-7 SEE Oil, Wiring Harness, Solenoid, Headlight 57  
7  
8  
9

**AVIATION**

35

10 UH-60 Rotor Head Bolt Removal 35  
CH-47D Aviation Vibration Analyzer Hookup 36-37  
Summer, Cold Weather Glove NSNs 37  
10-11 HGU-56/P AIHS Commo Plug, Helmet Shells 38-39  
12-13

**COMMUNICATIONS**

40

14-16 PLGR/DAGR Signal Security Crypto-keying 40-41  
17 DAGR Warranty 42  
RESET for Generators 43  
17 Generator Fuel Contamination 44-45

**SOLDIER SUPPORT**

46

18-19 Security Cages 46-48  
19 Containerized Shower Cleaning 49-51

**LOGISTICS MANAGEMENT**

52

20-22 Work Order Status Coding 52-54  
23 Automatic Disposal List 55

**TOOLS**

58

24 Tool Kit and Sets Upgrades, Warranties 58-60  
24-25  
26

**Connie's Post Scripts**

61

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.

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**MSG Half-Mast**  
**PS, the Preventive Maintenance Monthly**  
**USAMC LOGSA (AMXLS-AM)**  
**5307 Sparkman Circle**  
**Redstone Arsenal, AL 35898-5000**

Or e-mail to:

**logsa.psmag@conus.army.mil** or  
**half.mast@us.army.mil**

Internet address:

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

By order of the Secretary of the Army:

**GEORGE W. CASEY, JR.**  
General, United States Army Chief of Staff

Official:

*Joyce E. Morrow*  
**JOYCE E. MORROW**

Administrative Assistant to the Secretary of the Army

0714910

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Issue 657

PS

August  
2007

# THE PREVENTIVE MAINTENANCE MONTHLY

TB 43-PS-657

Approved for  
Public Release;  
Distribution is  
Unlimited



THESE CROWS ARE  
REALLY SOMETHING  
TO CROW ABOUT!  
SKAW KAW!E

JOE  
BER

KEEP YOUR  
COMMON  
REMOVELY  
OPERATED  
WEAPON  
STATION  
FLYING!

SEE PAGE 17



# PM is the Great Limiter



PM DRAWS A LINE IN THE SAND AND TELLS THE DEMON KNOWN AS EQUIPMENT VULNERABILITY, "THIS IS YOUR LIMIT. DON'T CROSS THAT LINE!"



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|                                            |           |                                              |           |
|--------------------------------------------|-----------|----------------------------------------------|-----------|
| <b>COMBAT VEHICLES</b>                     | <b>2</b>  | <b>COMBAT ENGINEERING</b>                    | <b>27</b> |
| M1-Series Tank Semiannual Service Kit      | 2         | M9 ACE Hydraulic Lines Secured               | 27-34     |
| M1A2 SEP Tank FBCB2 Startup/Shutdown Aid   | 3         | M9 ACE Voltage Regulator, Newsletter         | 56        |
| M2/M3-Series Bradley Trailer Towing        | 4-5       | SEE Oil, Wiring Harness, Solenoid, Headlight | 57        |
| M88A2 Recovery Vehicle Powerpack Removal   | 6-7       |                                              | 57        |
| Oil NSNs                                   | 7         | <b>AVIATION</b>                              | <b>35</b> |
| DA Form 2408-4 Gun Card                    | 8         | CH-47D Aviation Vibration Analyzer Hookup    | 35        |
|                                            | 9         | Summer, Cold Weather Glove NSNs              | 36-37     |
| <b>WHEELED VEHICLES</b>                    | <b>10</b> | HGU-56/P AIHS Commo Plug, Helmet Shells      | 37        |
| M939-Series Truck Front Tire Wear          | 10-11     |                                              | 38-39     |
| Up-Armored HMMWV Gunner's Restraint System | 12-13     | <b>COMMUNICATIONS</b>                        | <b>40</b> |
|                                            | 14-16     | DAGR Warranty                                | 40-41     |
| <b>SMALL ARMS</b>                          | <b>17</b> | RESET for Generators                         | 42        |
| Avenger Missile System FLIR                | 17        | Generator Fuel Contamination                 | 43        |
| M1084A1 HIMARS Crane Tips                  | 17        |                                              | 44-45     |
|                                            | 18        | <b>SOLDIER SUPPORT</b>                       | <b>46</b> |
| <b>MISSILES</b>                            | <b>18</b> | Containerized Shower Cleaning                | 46-48     |
| BIDS Moisture Prevention                   | 18-19     |                                              | 49-51     |
|                                            | 19        | <b>LOGISTICS MANAGEMENT</b>                  | <b>52</b> |
| <b>CBRN</b>                                | <b>20</b> | Automatic Disposal List                      | 52-54     |
| Sentinel Radar System Air Filters          | 20-22     |                                              | 55        |
|                                            | 23        | <b>RADAR</b>                                 | <b>58</b> |
|                                            | 24        | Tool Kit and Sets Upgrades, Warranties       | 58-60     |
|                                            | 24-25     |                                              |           |
|                                            | 26        |                                              |           |

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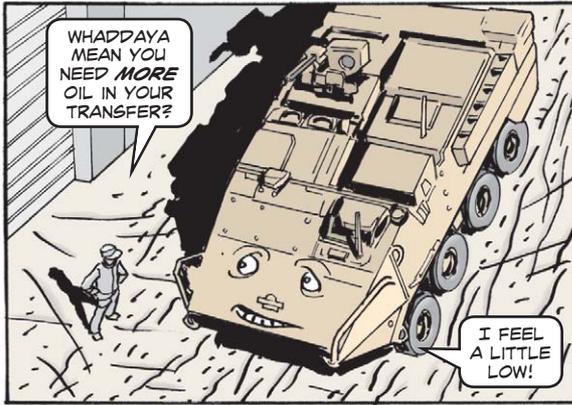
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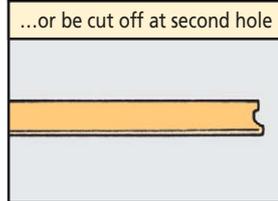
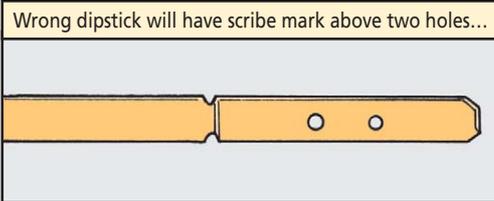
# NO CHOICE ON DIPSTICKS



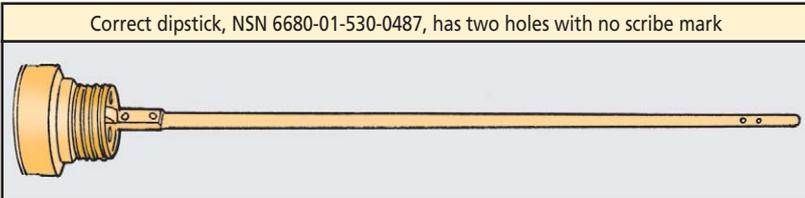
Crewmen, when it's time to check the oil level in your Stryker's transfer case, you don't have a choice on dipsticks.

If you have an old-style dipstick or one that's been modified, you've got the wrong one. Using it can give you a faulty reading.

The old dipstick has a scribe mark about an inch above the two holes located at the end of the stick. The modified dipstick may or may not have the scribe mark, but will be cut off through the middle of the top hole.

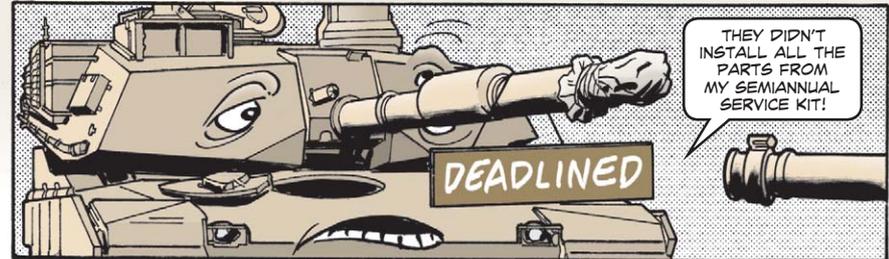


The correct dipstick to use is NSN 6680-01-530-0487. It has two holes at the end, which are marked L and H, but no scribe mark. A good reading will fall between the two holes.



[Click here for a copy of this article to save or email.](#)

# SERVICES MADE SIMPLE



Dear Half-Mast,

I'm hoping you can settle a bit of an argument we're having when it comes to performing semiannual and annual services on our tank turrets.

I've always thought that you need to use all of the replacement parts that come in the semiannual service kit, NSN 2540-01-255-3347, and the annual service kit, NSN 4330-01-117-7943, regardless of the condition of the parts being replaced. Others in my unit feel that's wasteful and that you should only replace those parts that appear to need it.

What do you say?

SSG W.F.P.

Dear Sergeant W.F.P.,

"I say" all of the parts that come in the semiannual and annual kits are **mandatory** replacement parts. Picking and choosing which parts to replace is a good way to ensure a breakdown later.

A couple more points have caused some confusion as well. First, the semiannual and annual services kits **do not** take the place of crew-level PMCS. A full crew-level PMCS should always be done prior to services.

Second, the annual service kit **does not** take the place of the semiannual kit. It's to be used **in addition to** the semiannual parts kit during annual services.

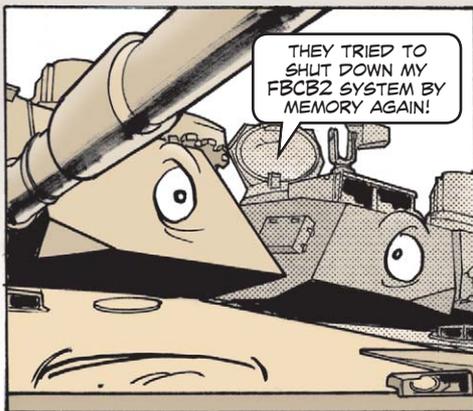
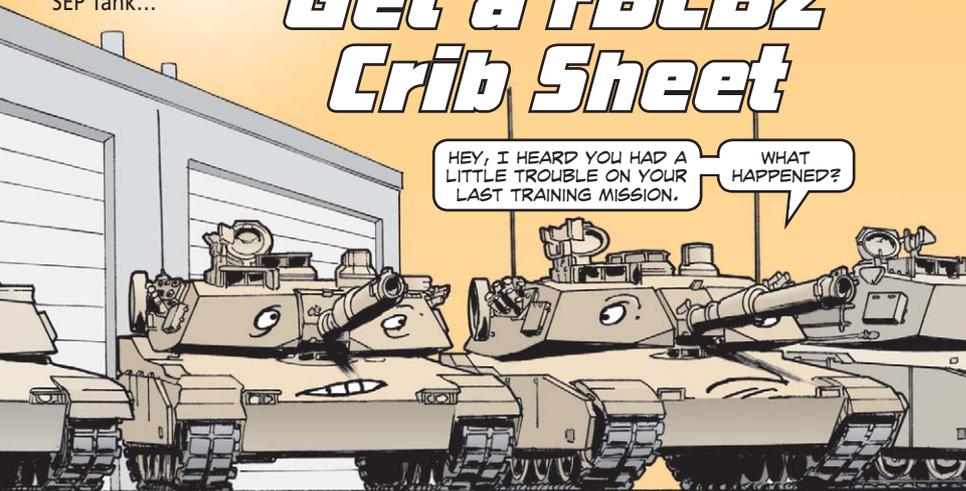
Half-Mast

[Click here for a copy of this article to save or email.](#)

# Get a FBCB2 Crib Sheet

HEY, I HEARD YOU HAD A LITTLE TROUBLE ON YOUR LAST TRAINING MISSION.

WHAT HAPPENED??



TM 9-2350-388-10-1 gives you step-by-step instructions on how to properly start up and shut down the FBCB2 system on your M1A2 SEP tank.

Some tankers don't want to go to the effort of digging through the sponson box to get the TM when it's needed. Instead, they rely on memory during FBCB2 startup and shutdown. Unfortunately, doing it wrong could corrupt the removable memory cartridge (RMC) and the FBCB2 software.

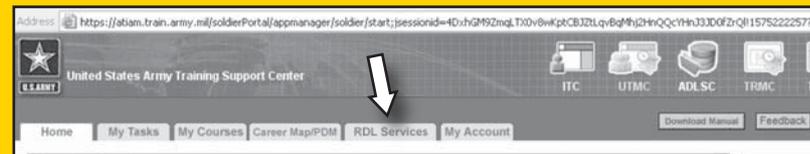
That's why the TRADOC Systems Managers Abrams folks at Ft Knox developed a graphic training aid (GTA) card with the FBCB2 startup and shutdown procedures. GTA 17-06-050 is a 4x6-in card that can be stored in your pocket or taped to your tank's ammo door for easy access when needed.

GTA 17-06-050 CAN BE DOWNLOADED FROM THE REIMER DIGITAL LIBRARY:  
<https://atiam.train.army.mil/soldierPortal/>



ONCE THERE, LOGIN WITH YOUR AKO USERNAME AND PASSWORD AND FOLLOW THESE STEPS...

1. Click on the RDL Services tab.

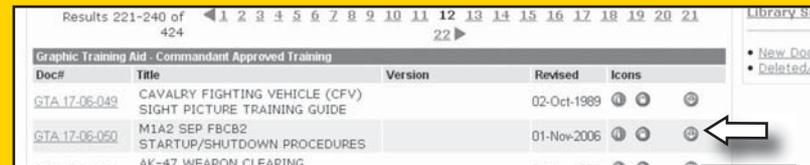


2. Under "Type" select Graphic Training Aids... then click Submit.

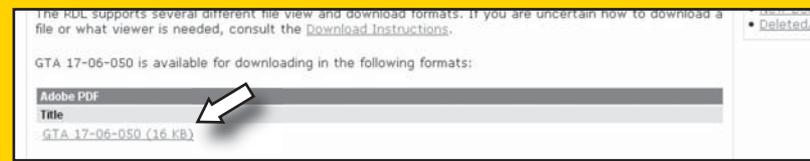


3. The GTAs are listed in numerical order on 21 pages. GTA 17-06-050 is on Page 12.

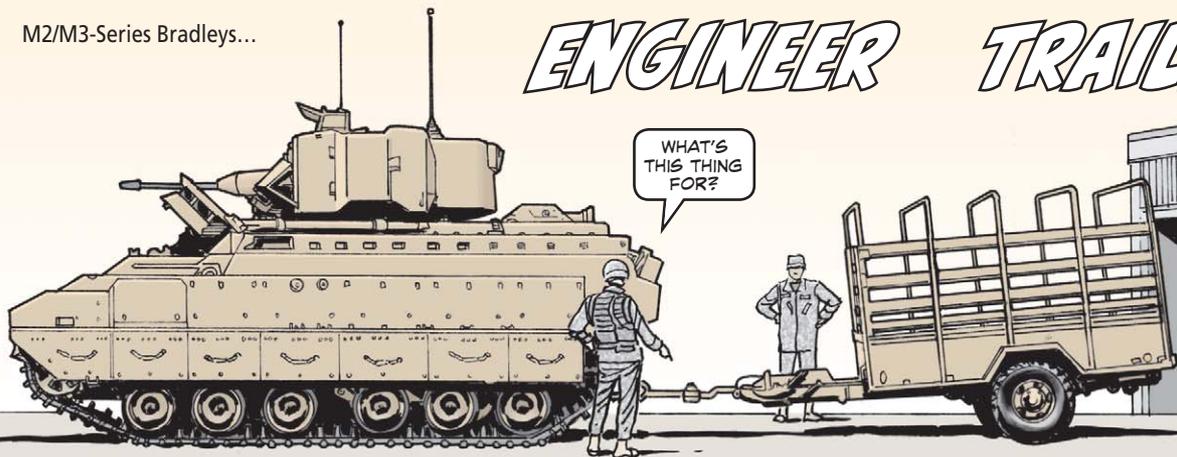
4. Look for GTA 17-06-050 under the Doc# column. Then click on the down arrow icon in the Icon column.



5. On the next page, click on GTA 17-06-050 (16 KB) to open the document in a PDF format for printing or saving.



# ENGINEER TRAILER TROUBLE

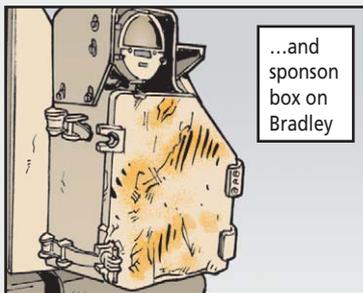


Dear Editor,

Our unit recently received some M2A2 ODS-E Bradleys and discovered a problem that other Bradley-equipped engineer units may have.

We have M105 trailers that are used to carry the tools and supplies for each squad. When we had M113A3s, we used a tow pintle extension to ensure that the trailer had enough clearance for the vehicle to turn.

No such item exists for the Bradley, though. So when we started towing our trailers, the left and right front corners of the trailers hit the sponson boxes on our Bradleys during turns. The end result was damage to both vehicles.



We've recently discovered an extension kit that has solved our problem. Towbar adapter kit, NSN 2540-01-408-1538, was originally developed to allow PLS vehicles to safely tow smaller trailers.



The kit attaches directly to the gooseneck on the trailer and provides enough clearance to prevent damage during turns. Before installing the kit, we first turn the gooseneck upside down. That tilts the trailer closer to level and adds another 1-2 inches of clearance.

SSG  
1/64 Armor  
Ft Stewart, GA

*Editor's Note: That's an idea you engineers can take to the bank!*

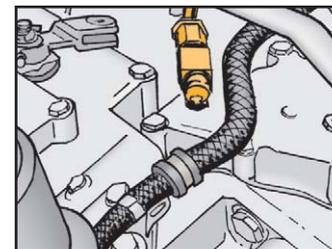
M88A2 Recovery Vehicle...

## DRAIN BEFORE PULLING

Dear Editor,

Mechanics who are preparing to pull the powerpack on an M88A2 recovery vehicle can save themselves a big mess with a little preparation.

Before pulling the pack, they should attach a hose to the AOAP sampling valve and drain about a gallon of oil from the vehicle. If they don't, oil will pour out of the final drives when the pack is pulled. Then they've got a huge environmental mess on their hands.



TACOM LAR  
Ft Hood, TX

*Editor's note: Good call, . Mechanics, a few minutes of effort before pulling the pack will save you a lot of headaches later!*

# Need Oil?

USING THE **RIGHT NSN** CAN MAKE ALL THE DIFFERENCE IN THE WORLD WHEN ORDERING LARGE QUANTITIES OF OIL FOR YOUR MAINTENANCE OPERATIONS IN SOUTHWEST ASIA.

HERE ARE THE NUMBERS TO USE TO ENSURE YOU GET THE **RIGHT STUFF** IN THE **RIGHT QUANTITIES** AND AT THE **RIGHT TIME**.

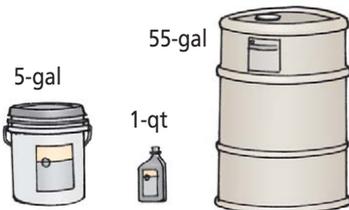
## 15W40 (MIL-PRF-2104)

| NSN 9150-01-421- | Qty          |
|------------------|--------------|
| 1432             | 55-gal drum  |
| 1424             | 5-gal bottle |
| 1427             | 1-qt bottle  |

### Engine Only 15W40

This product conforms to SAE J2363 and is approved for use **only** in engines of tactical systems. This oil cannot be used with other components that require 15W40 oil, such as transmissions or hydraulic systems. Order a 5-gal bottle with NSN 9150-01-422-8750.

Although available, using this oil is not recommended because of its potential misapplication in other components. If you do order this oil, segregate it from all other 15W40 oil.



## Gear Oil, 80W90

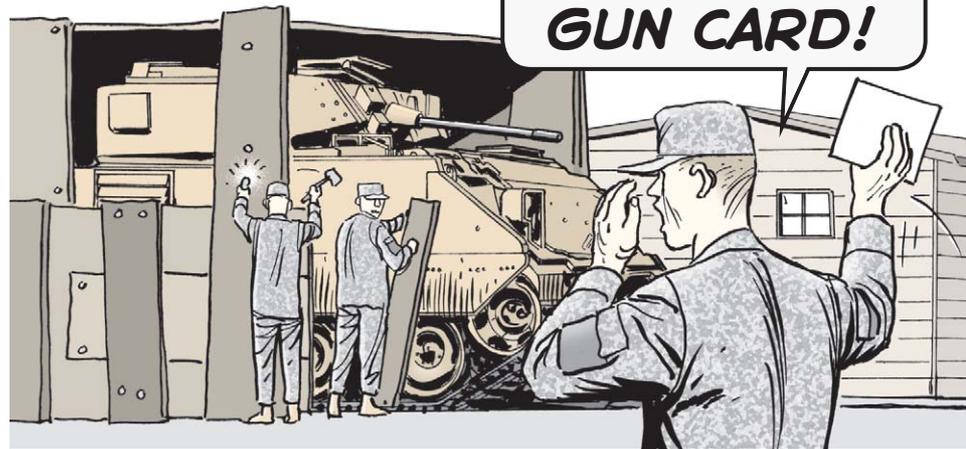
| NSN 9150-01-035- | Qty          |
|------------------|--------------|
| 5394             | 55-gal drum  |
| 5393             | 5-gal bottle |
| 5392             | 1-qt bottle  |

## CAT 10 Oil

Commercial Caterpillar hydraulic fluid comes in a 55-gal drum with NSN 9150-01-424-7698.

DA Form 2408-4...

**DON'T FORGET THE GUN CARD!**



Getting ready to store, transfer or turn in a mortar, tank or other gun system vehicle? Then you'd better follow DA Pam 750-8, *The Army Maintenance Management System (TAMMS) Users Manual*, and include an updated hard copy of DA Form 2408-4, *Weapon Record Data*, with it.

An updated copy can be printed out from the Army Electronic Product Support (AEPS) gun card website:

<https://aeps2.ria.army.mil/commodity/guncard/index.cfm>

You'll need your AKO login and password to access the site.

Once you've made sure the data on the gun card is accurate and complete, place it in the equipment record folder that is required to go with the vehicle.

Print out copy of DA Form 2408-4 to include with vehicle

|                                                                 |                                                           |                                                       |                                                                                                                                           |               |                      |                          |                                                                                  |             |
|-----------------------------------------------------------------|-----------------------------------------------------------|-------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|---------------|----------------------|--------------------------|----------------------------------------------------------------------------------|-------------|
| 1. Tube Serial<br>15896                                         | 2. Cannon Type, Model or Series<br>M256 Cannon, 120mm Gun | 3. ORGANIZATION (UIC/UNIT)<br>WDOJ97 (AFSBN - KUWAIT) | 4. SPECIAL LIFE DATA<br>Confirm the cannon tube when 1500 EFC rounds have been fired. Condemn the cannon when it reaches 4500 EFC rounds. |               |                      |                          |                                                                                  |             |
| 5. End Item Identification<br>SN: (Tank, Combat, FT: M1A1/M1A2) | 6. RDS/EFC COMPUTATION<br>ZONE EFC FACTORS                |                                                       |                                                                                                                                           |               |                      |                          |                                                                                  |             |
| 7. Cannon Serial<br>6589                                        | 8. Retubings<br>2                                         | 9. Rebusings                                          |                                                                                                                                           |               |                      |                          |                                                                                  |             |
| Cumulative EFC RDS fired for Cannon: 534,000                    |                                                           |                                                       |                                                                                                                                           |               |                      |                          |                                                                                  |             |
| Tubes:                                                          |                                                           |                                                       |                                                                                                                                           |               |                      |                          |                                                                                  |             |
| Status                                                          | Tube Serial                                               | EFC Rounds                                            |                                                                                                                                           |               |                      |                          |                                                                                  |             |
| Active                                                          | 10000                                                     | 123,000                                               |                                                                                                                                           |               |                      |                          |                                                                                  |             |
| Previous                                                        | 5719                                                      | 309,000                                               |                                                                                                                                           |               |                      |                          |                                                                                  |             |
| Rebreached                                                      | 8826                                                      | 42,000                                                |                                                                                                                                           |               |                      |                          |                                                                                  |             |
| 10. Date                                                        | Projectile Type                                           | Zone or Charge                                        | Rounds Fired                                                                                                                              | EFC RDS Fired | Cumulative RDS fired | Remaining Life (EFC RDS) | Remarks: Recoil Exercise (RE), Gauge or Velocity Reading, Safety Inspection (SI) | Signature   |
| 01-01-2005                                                      | (Previous DA Form 2408-4 final entries) N/A (1 EFC)       |                                                       | 103                                                                                                                                       | 103,000       | 103                  | 1,397,000                |                                                                                  | Doe, Johnny |
| 09-16-2005                                                      |                                                           | NA                                                    |                                                                                                                                           |               |                      |                          | BORESCOPE                                                                        | Doe,        |

# Filter Elements Get Extended Lease on Life

WANT A LONGER SERVICE LIFE FOR THE PETROLEUM FILTER SEPARATOR COALESCING/FILTERING ELEMENTS USED IN YOUR PETROLEUM REFUELING SYSTEMS?

WELL, HERE'S SOME GOOD NEWS!

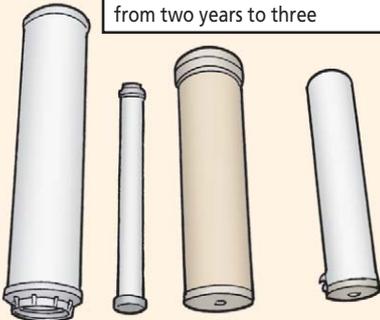


THE ARMY HAS EXTENDED THE FILTER ELEMENT SERVICE LIFE FROM TWO YEARS TO THREE.

THIS INCLUDES FILTER SEPARATORS ON ALL ARMY REFUELING VEHICLES, EQUIPMENT, AND FACILITIES.

SO PENCIL THIS INFO IN YOUR APPLICABLE TECHNICAL MANUALS, FIELD MANUALS, AND ARMY GUIDANCE LETTERS UNTIL THEY'RE UPDATED.

Filter element service life extended from two years to three

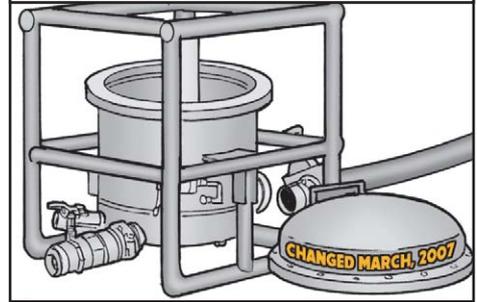


BY THE WAY, THIS SERVICE LIFE EXTENSION DOESN'T CHANGE THE REQUIREMENT TO MARK YOUR FILTER SEPARATORS.

SO WHEN REPLACING YOUR OLD COALESCING/FILTERING ELEMENTS AT THE NEW INTERVAL, REPLACE THEM WITH THE SAME TYPE ELEMENTS IDENTIFIED IN THE EQUIPMENT'S TECH MANUAL.

ALSO, STENCIL THE FILTER SEPARATOR HOUSING "DATE CHANGED" WITH THE "MONTH" AND "YEAR" WHEN THE ELEMENTS ARE CHANGED. BUT **DO NOT** STENCIL THE DATE DUE.

After replacing old filtering elements, stencil date changed with month and year on lid



EXTENDING THE SERVICE LIFE OF COALESCING/FILTERING ELEMENTS MAKES IT **MORE IMPORTANT THAN EVER** TO REGULARLY PERFORM FILTER PREVENTIVE MAINTENANCE AND QUALITY CHECKS.

THESE CHECKS INCLUDE...

- observing and recording a daily log of pressure differential readings
- draining the filter sump daily, such as the V15 valve on the M978 tanker
- performing 30-day cyclic particulate contamination testing to ensure that your filter is working properly.

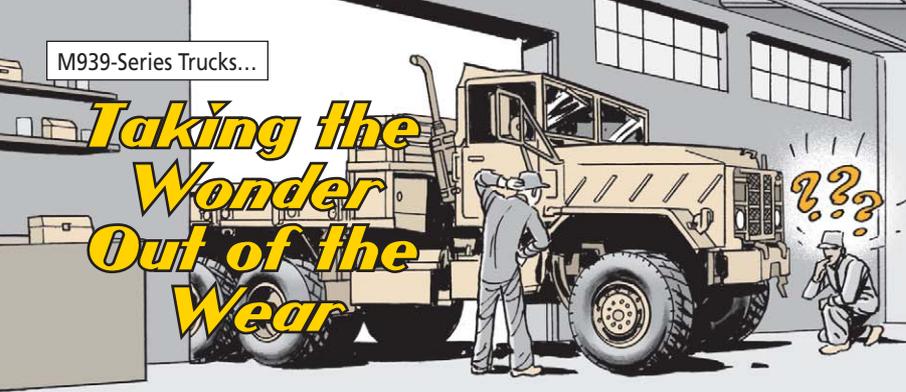
THE US ARMY PETROLEUM CENTER ISSUED TECHNICAL ADVISORY MESSAGE #07-002 TO TELL YOU ABOUT THIS SERVICE LIFE EXTENSION.

YOU CAN EYEBALL IT ON THEIR WEBSITE:  
<https://usapc2.army.mil>

FOR MORE INFORMATION, CONTACT  
OR  
AT DSN 771-8580/6111,  
(717) 770-8580/6111.

OR EMAIL:  
[us.army.mil](mailto:us.army.mil) OR  
[us.army.mil](mailto:us.army.mil)

# Taking the Wonder Out of the Wear



EVER WONDER ABOUT THE REASON BEHIND PREMATURE OR EXCESSIVE TIRE WEAR ON YOUR M939-SERIES 5-TON TRUCK?

WELL, WONDER NO MORE!

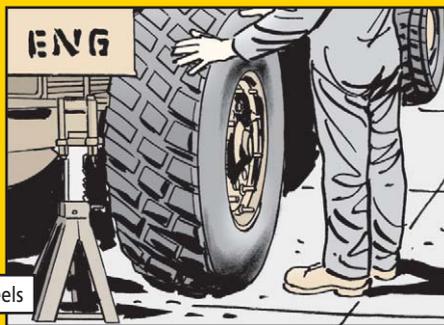
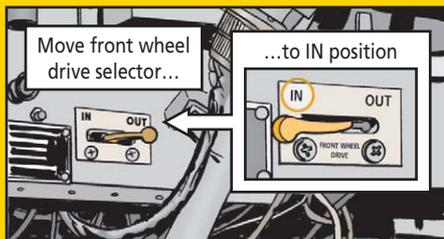
If you've noticed premature or excessive wear on the front tires of your 5-ton trucks, here's some help for you.

Abnormal cupping of the front tires sometimes happens if you're not able to disengage front wheel drive. The linear valve, NSN 4820-01-329-3245, located on the outside of the transfer case is often the problem. This linear valve is shown as Item 14 in Fig 212 of TM 9-2320-272-24P. Here are a couple of troubleshooting tips.

## Front Axle Check

To determine if the front axles are properly engaging, do the following:

1. Chock the vehicle's rear wheels.
2. Set the parking brake, start up the truck, and build up the air tank pressure to a minimum of 90 psi.
3. Turn the engine and the battery switches to the OFF position.
4. Raise the front end of the truck and place the front axles on jack stands.
5. Move the front wheel drive selector lever located inside the cab to the IN position.
6. Standing outside the front tires, manually rotate the front wheels. The front axles should be engaged, and the wheels should not spin freely. If they do, the linear valve is probably defective, so replace it.

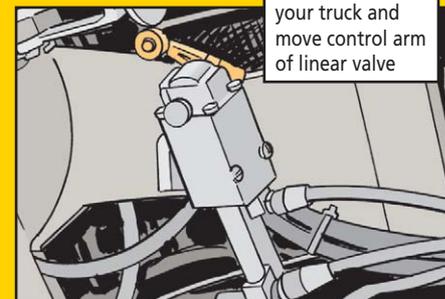


7. Move the front wheel drive selector lever to the OUT position.
8. Standing outside the front tires, manually rotate the front wheels. The wheels should turn freely. If the front axle is locked up, then the linear valve is probably defective, so replace it.

## Valve Movement Check

There's a PMCS check that you can do underneath your truck. But first do the following:

1. Chock the vehicle's wheels.
2. Set the parking brake, start your truck, and build up the air tank pressure to a minimum of 90 psi.
3. Turn the engine and the battery selector switch to OFF.
4. Now go underneath your vehicle and manually move the control arm of the linear valve located on the transfer case. The linear valve is working properly if a clunk sound is heard when you manually move the valve, if slight movement is seen in the front driveshaft, or **both**. If that doesn't happen, replace the linear valve.



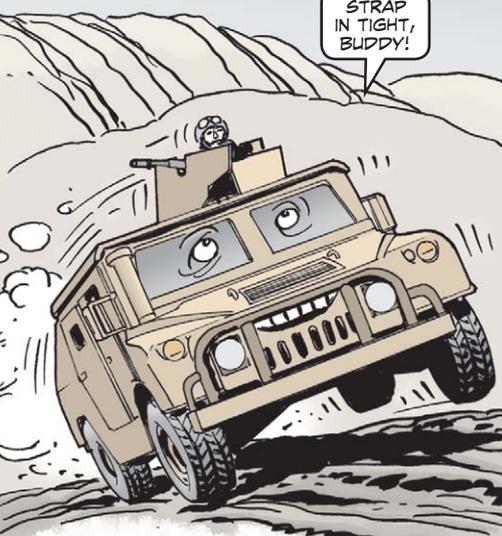
## Valve Movement Prevents Corrosion

Note that the longer the control arm of the linear valve stays in one position, the more likely it is that internal valve components will become corroded in place.

Now that the wonder's been taken out of the wear, use this info to keep your unit from wasting time changing tires unnecessarily.

# RESTRAINTS KEEP GUNNERS SAFE!

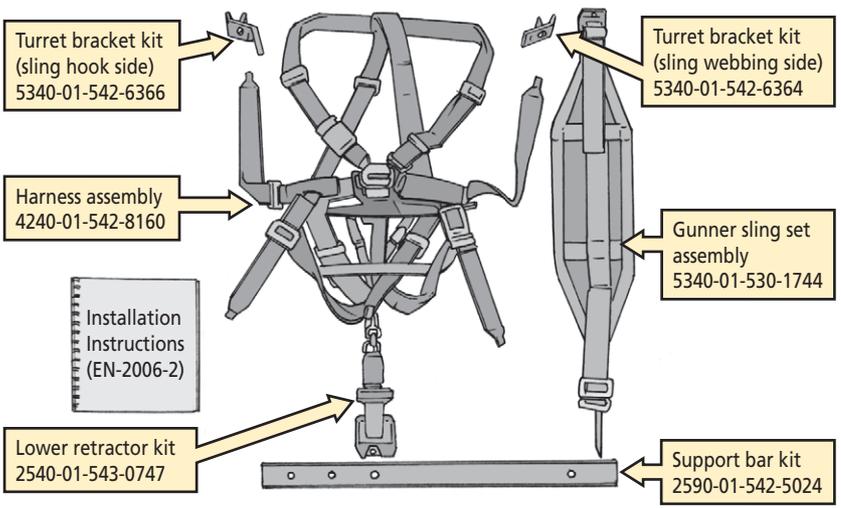
STRAP  
IN TIGHT,  
BUDDY!



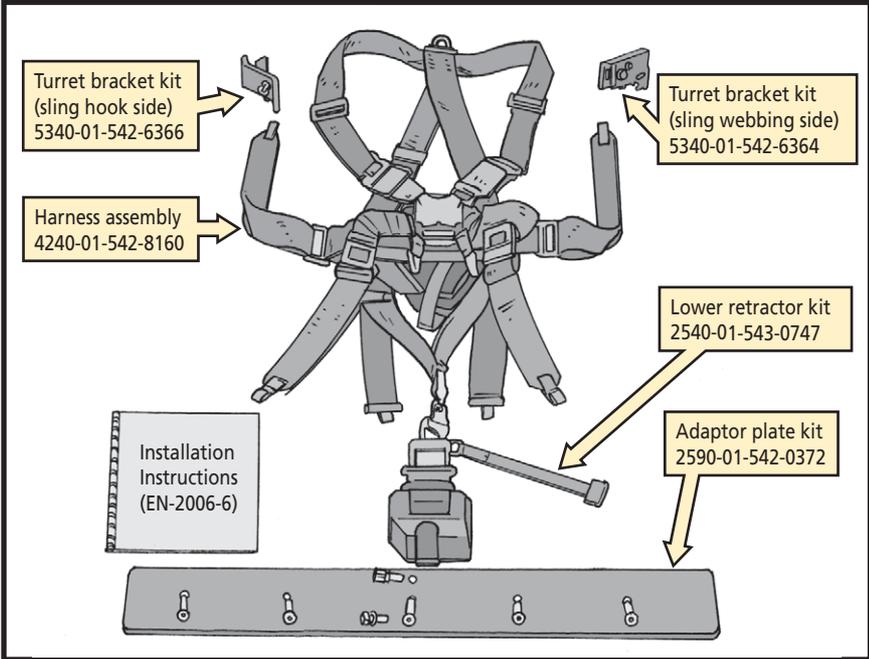
Let's face it. A soldier's job isn't the safest job. But there are things you can do to protect yourself. A big part of that is using and maintaining the safety equipment you have.

Gunners, there are **improved** gunner's restraint systems available for your up-armored HMMWVs. Order the kits using NSN 2540-01-542-7412 for the M1114, and NSN 2540-01-542-1130 for the M1151. The big difference between the two kits is the support bar that connects to the restraint harness assembly.

## M1114 Gunner's Restraint Kit, NSN 2540-01-542-7412



## M1151 Gunner's Restraint Kit, NSN 2540-01-542-1130



The M1114 gunner's restraint was first fielded without a swivel design so gunner's were getting tangled. And it didn't have the quick-release button, so gunners couldn't exit the vehicle quickly. But things have changed for the better.

If you see an adjustable tail strap with a push-button quick release and swivel, you've got the **improved** gunner's restraint system. The quick-release button lets you get out of your up-armored HMMWV quickly without having to drop the harness first. The swivel keeps the tail strap from twisting. And the adjustable tail strap lets taller gunners lengthen the straps for easier access. It also allows shorter gunners to keep the straps tight enough to protect them as it should.

Adjustable tail strap allows for changes to length



The gunner's restraint system will keep you from being ejected in case of a rollover. It will also stabilize you when riding on rough terrain and during high speed maneuvers.

If you want the restraint system to work as it should, however, you have to put it on the right way.

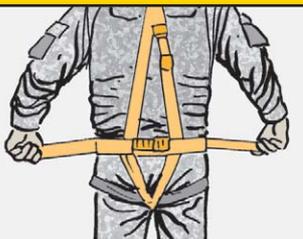
### Single Anchor Restraint

The Schroth single anchor restraint has a yellow quick-release rotary buckle. The installation instructions come with the kit. Follow these steps if you still have the original single anchor restraint:

1. Orient the harness by finding the upper D-ring. It goes on your back between your shoulder blades. Then bring the upper straps forward over your shoulders.

2. Fit the harness and connect the vertical anchor strap to the lower attachment ring on the harness, using the lower harness attachment. Make sure that the straps are smooth in the front and back of you. Also, make sure the lower attachment ring is connected in front of the gunner's seat.

A good fit includes smooth straps in front and back, like in this back view



The anchor strap is adjustable, but it shouldn't have slack in it. That's because too much slack may not keep you safely inside the vehicle. To exit the vehicle, turn the quick-release buckle.

### Improved Gunner's Restraint

If you have the improved gunner's restraint, put it on the same way you put on the single anchor restraint system with one exception. You'll have to attach the anchor strap to the push-button quick-release.

Make sure you attach the push-button quick release to anchor strap

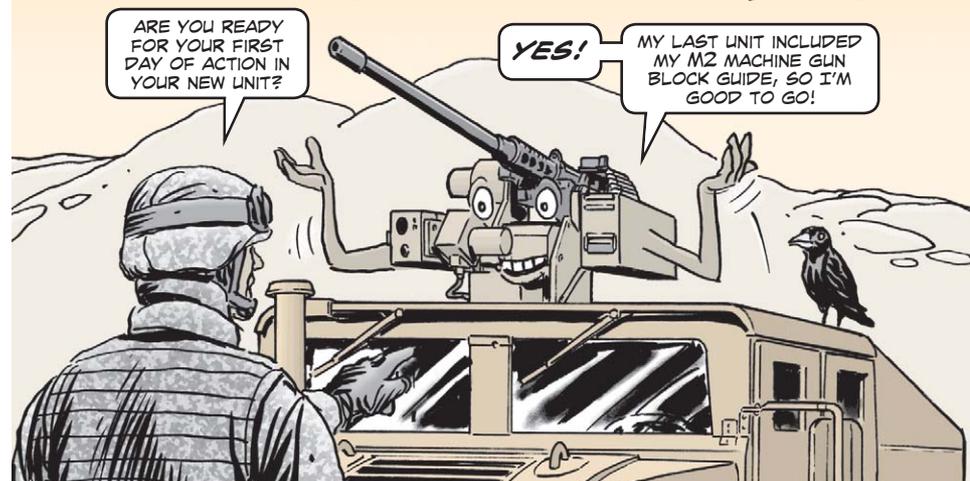


### Actions in Emergency

In an emergency, get out of the restraint system by using the rotary buckle quick-release. Press the yellow button and turn the buckle in either direction—right or left.

And if the vehicle is ever in an accident, replace the gunner's restraint system! You can order a new gunner restraint harness assembly with NSN 4240-01-542-8160.

# Keeping CROWS Flying



The XM101 common remotely operated weapon station (CROWS) can be a true lifesaver since it lets the gunner fire protected inside the vehicle.

But many CROWS have been shot down because all their hardware hasn't been passed on when the CROWS moves to a new unit. What usually ends up missing are items from the weapon adapter kit for the M2 and MK19 machine guns, items from the boresight kit, and tools.

Just one missing item can make your CROWS unusable.

The only way to ensure nothing gets left out when the CROWS goes from one unit to another is for both the giving and receiving units to inventory the CROWS with TM 9-1090-218-HR. That way you know every single CROWS item has been accounted for.

If you have already turned over your CROWS to another unit and discovered you still have CROWS components, send them to Rock Island's CROWS team at:

**TACOM-RI**  
**ATTN: CROWS Team**  
**(Mark for MOP Shop—Do not pick up to record)**  
**Bldg 108**  
**1 Rock Island Arsenal**  
**Rock Island, IL 61299-7630**

They will make sure the parts get to the units that need them.

If you have CROWS questions or you need a copy of TM 9-1090-218-HR, contact at DSN 793-7961/(309)

782-7961 or email

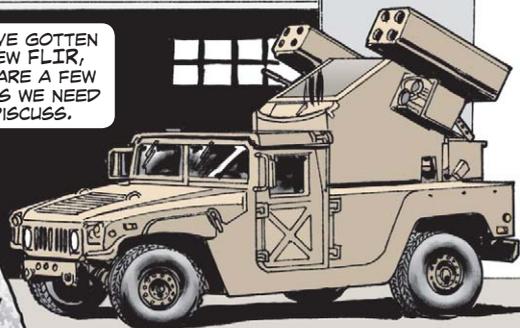
[@us.army.mil](mailto:us.army.mil)

or at DSN 793-1537/(309) 782-1537 or email

[@us.army.mil](mailto:us.army.mil)

Avenger  
Missile  
System...

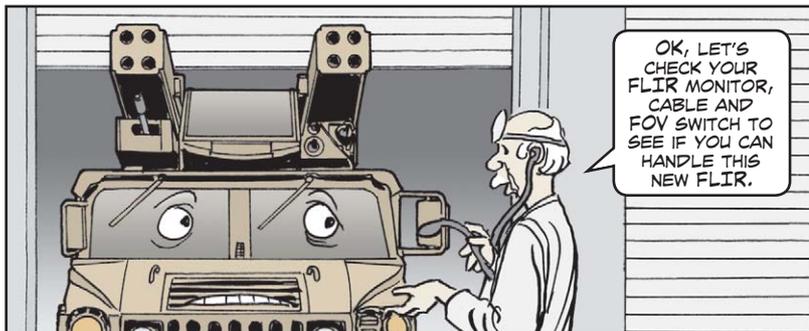
IF YOU'VE GOTTEN  
THE NEW FLIR,  
THERE ARE A FEW  
MATTERS WE NEED  
TO DISCUSS.



## New FLIR, New Procedures

The Avenger has a new forward looking infrared receiver (FLIR), NSN 5855-01-518-8691, that is more capable and durable than the previous FLIRs—and cheaper, too. Operating it is pretty much the same, except for these points:

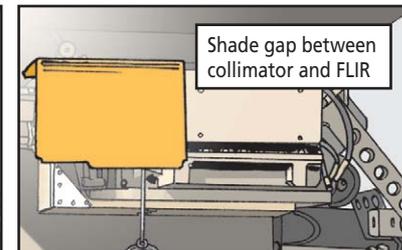
**Installation.** Before installing the new FLIR, make sure the FLIR monitor, FLIR cables, and the field of view (FOV) foot switch work. Also ensure that the vehicle and system battery power levels are within tolerance. These checks are in TM 9-1440-433-24-1&2.



**Operation.** When the FLIR is switched from STANDBY to RUN (like after the initial 2-5 minute cooldown), there is an automatic calibration called a non-uniformity correction (NUC). During the NUC, the FLIR monitor will have a fixed image in its display. After 45 seconds, the FLIR should then operate normally. If the fixed image doesn't disappear, check the FLIR monitor, FOV foot switch, cables, and system power for problems.

**Boresighting.** Boresighting the new FLIR is basically the same as with the old ones. But the afocal lens of the new FLIR doesn't project forward as far as the one on the old FLIR, so you may need to shade the gap between the collimator and the FLIR if there's too much light.

The target reticle on the collimator may be much brighter when boresighting the new FLIR. You may need to adjust the gain, focus and level to prevent light "blooming", where the target reticle graduations appear as a white blob on the display.



The new FLIR will be issued and turned in through the standard Army supply system.

If you have questions, contact AMCOM's [@us.army.mil](mailto:@us.army.mil) 842-7983 or email

at DSN 788-7983/(256)

## HELP FOR THE HIMARS CRANE

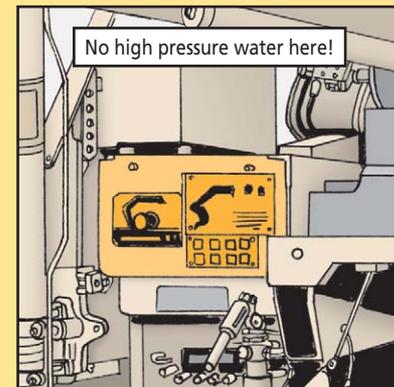
Dear Editor,

We have discovered two things about the M1084A1 re-supply vehicle's (RSV) crane used to load rocket pods onto the RSV and re-supply trailer for HIMARS (high mobility artillery rocket system) that will save headaches for other crews:

*Keep high pressure water hoses away from the crane's power distribution box and terminal box (commonly known as the brain box).* The seals on the boxes can't keep out water delivered with that much force. Water gets inside the boxes and shorts them out, putting the crane out of action.

You won't find NSNs for replacing the boxes in TM 9-2300-310-14&P, so here they are: Order the power distribution box with NSN 6110-01-521-1001 and the terminal box with NSN 5940-01-532-7411. They will be added to the TM.

*The NSNs for the outrigger extension strut cartridges are reversed in the TM.* Order the passenger side cartridge with NSN 2510-01-521-6224 and the driver side with NSN 2510-01-521-5517. This will be corrected in the TM.



CW2  
HHB, 3/27th FA Regt  
Ft Bragg, NC

*Editor's note: Thanks for the help, Chief. This will certainly help other HIMARS crews.*

# Better Deconning from the Chemical School



SERGEANT GINGRICH FROM THE CHEMICAL SCHOOL HAS SOME GOOD WAYS TO IMPROVE YOUR DECONNING!



Dear Editor,

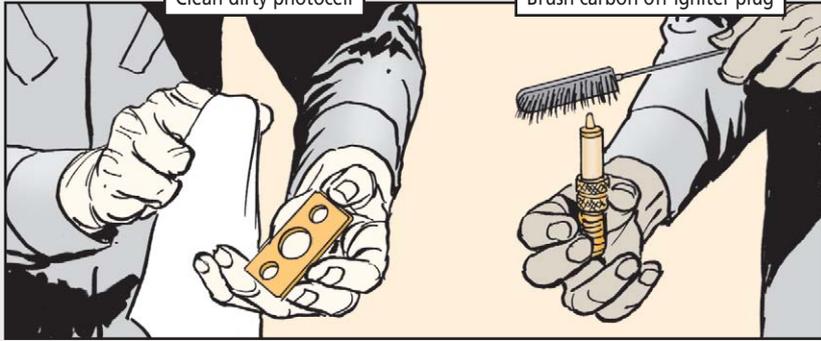
Experience is the best teacher and it's taught us at the U.S. Army Chemical School these tips for better deconning:

- If the burner won't light, check the photocell assembly and the burner igniter plug first. If the photocell is dirty, it can't sense what's happening in the burner. Clean the observation window with something like Simple Green and a non-abrasive pad.

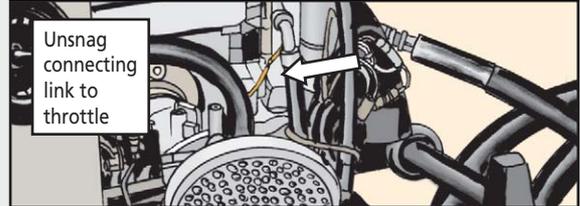
- If the plug is coated with carbon, it won't spark. Clean the plug with a metal brush.

Clean dirty photocell

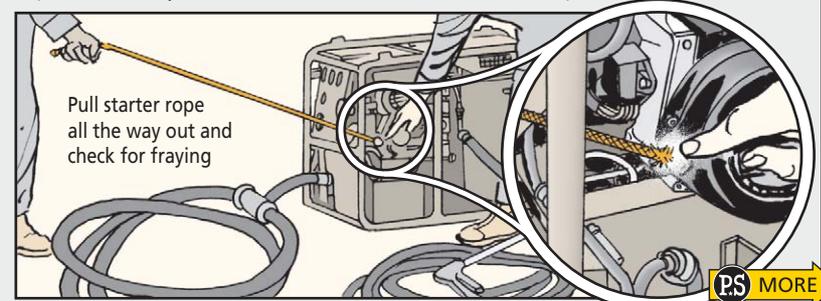
Brush carbon off igniter plug



- If the throttle doesn't want to move, check that the connecting link to it isn't hung up in the engine. If it is, gently pull up on the link until it unsnags.

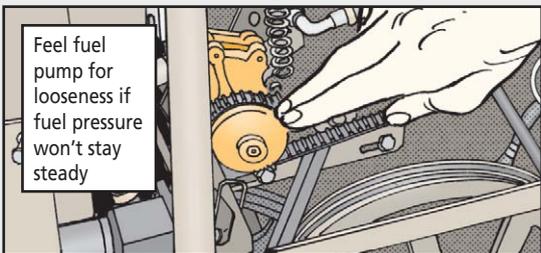


- Check the starter rope *before* you go to the field. If it breaks after you're in the field, you'll be doing no deconning. Pull the rope out to its full length and look for badly frayed spots that won't withstand a hard jerk. The only fix is to replace the entire recoil starter assembly.



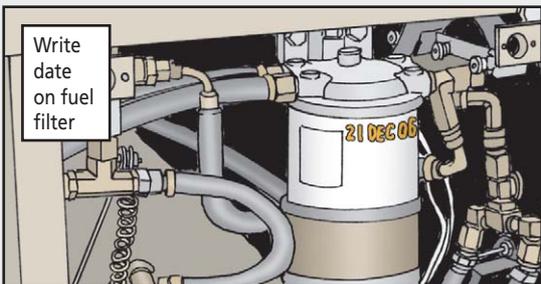
- If you're getting fluctuations in fuel pressure, feel the fuel pump for looseness. If it's bouncing around while the engine's running, it will cause the M17 to run rough. Tighten the pump if necessary.

Feel fuel pump for looseness if fuel pressure won't stay steady



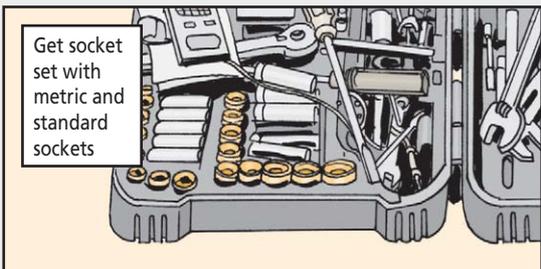
- When you change the fuel filter, write the date on the new filter with an indelible pen. That way you can easily tell when the fuel filter needs to be replaced. The filter should be replaced annually.

Write date on fuel filter



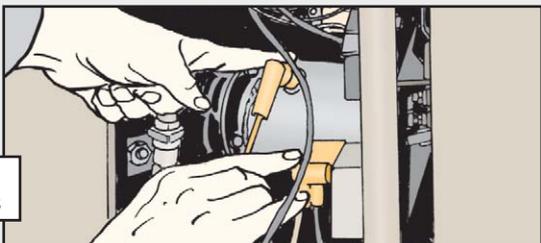
- Some versions of the M17 have both metric and standard parts, but the M17 tool kit is all metric. So it's a good idea to keep an inexpensive socket set on hand that has both metric and standard sockets.

Get socket set with metric and standard sockets



- **Never, ever** touch the wires to any components of the burner ignition system while the engine is running. If you forget, you'll get a shock so bad it will leave your arm numb.

Keep fingers off ignition system wires



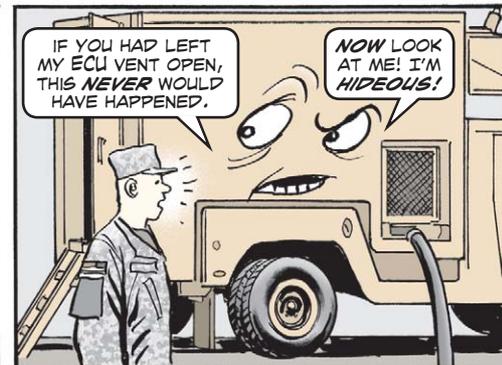
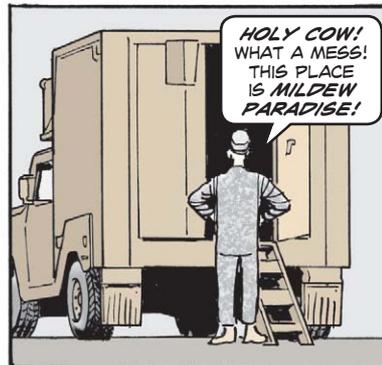
SSG  
US Army Chemical School  
Ft Leonard Wood, MO

**Editor's note:** You evidently listened when experience was teaching. Excellent suggestions. Thanks.



BIDS...

# PULL THE PLUG ON CONDENSATION



Dear Editor,

The non-expandable shelter, NSN 5411-01-473-5055, is being used with the biological integrated detection system (BIDS) worldwide. Because of chemical/biological agent threat, the shelters are as airtight as possible.

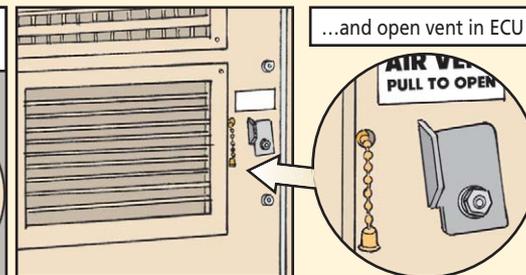
This means moisture can be trapped in the shelters when the shelters go days and days without being opened. One thousand cubic feet of air at 75°F can hold up to 1.4 pints of water. But when the temperature drops, air can't hold as much water. With nowhere to go, the moisture in the air turns to condensation and the condensation leads to corrosion and mildew in the shelter. A big mess, in other words.

It's pretty simple to prevent this mess. If there is no chemical/biological threat, pull out the drain plug in the floor of the shelter and open up the vent in the ECU. That lets air flow through the shelter and prevents moisture from building up inside the shelter.

To prevent condensation, pull floor drain plug...



...and open vent in ECU



Biological Detection Systems  
APG, MD

**Editor's note:** Way to pull the plug on that moisture problem. Thanks for the tip.

# WHAT WE LEARNED IN IRAQ

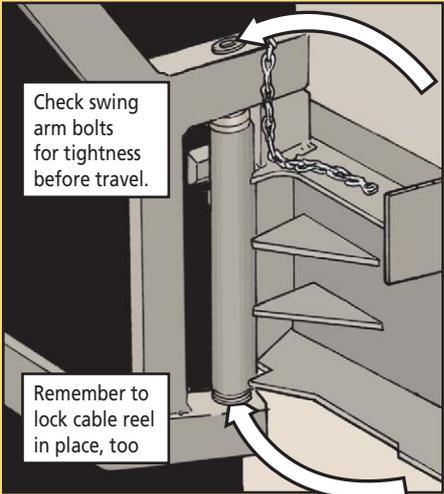
**LISTEN TO THESE SENTINEL TIPS THAT CAME FROM OPERATIONS IN IRAQ.**

**THEY'LL SAVE YOU HEADACHES AND DOWNTIME.**

Dear Editor,  
We gave our Sentinels a real workout in Iraq. From our efforts to keep them radiating, we came up with these tips that will help other Sentinel crews:



**Keep an eye on the bolts for the cable reel's swing arm.** Two bolts hold the axle that runs through the swing arm in place. Vibration works the bolts loose. If the bottom bolt comes out, that leaves the top bolt holding a 200-lb cable reel. If it gives way, the axle falls out and the whole cable reel can go rolling off.

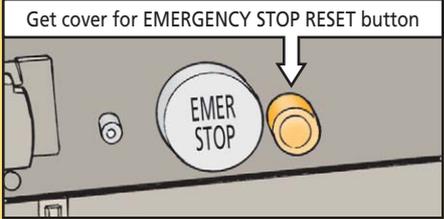


Check swing arm bolts for tightness before travel.

Remember to lock cable reel in place, too

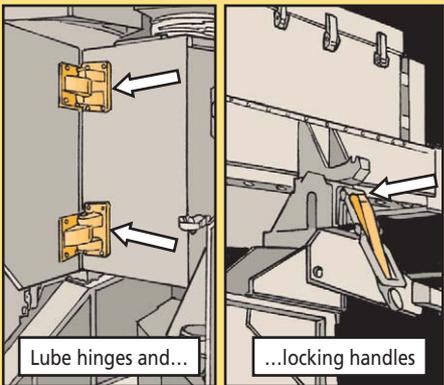
To prevent that, we make sure both bolts are tight before travel. It also helps to make sure the cable reel is locked in place so it's not jerking back and forth on the road.

**Get a cover for the EMERGENCY STOP RESET button.** The button has a housing that traps dirt and sand. The EMERGENCY STOP RESET button quits working eventually. There is a plastic cap for the button that seals out contaminants. Order the cap with PN 40215A746 through your contractor support.



Get cover for EMERGENCY STOP RESET button

**Lube hinges and locking handles.** The sensor power distribution door hinges support around 700 pounds. If the hinges aren't lubed with a light oil at least monthly, it can be a back breaker to move the assembly. The same goes for the antenna locking handles. If they're not lubed monthly with the same oil, they freeze. Then you can't lower the antenna. Lube the two handles and work them up and down until they move smoothly.



Lube hinges and...

...locking handles

SSG  
3-4 ADA  
Ft Bragg, NC

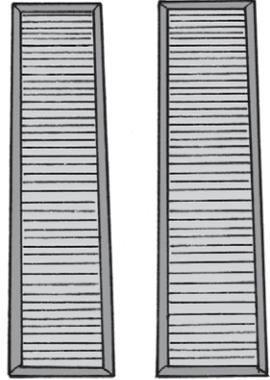
**Editor's note:** Your tips will help Sentinel crews everywhere. Thanks for sharing your experience.

# FILTERS DON'T NEED PANTYHOSE

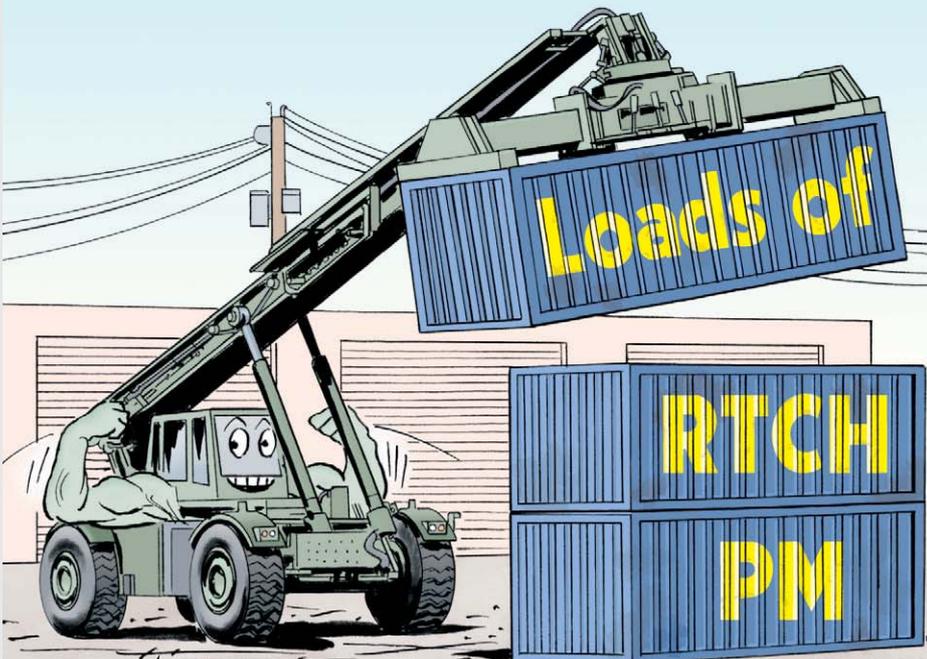


Dear Half-Mast,  
 In Iraq we've had big trouble with the fine sand clogging the filters for our Sentinel. Once the filters clog up, we have all sorts of overheating and electrical problems.  
 We're wondering if it would help to put pantyhose over the filters to give them extra filtering help. What do you think?  
 SSG T.M.

Dear Sergeant T.M.,  
 Save those pantyhose for your wife or girlfriend. Your Sentinel doesn't need them. Sentinel filters are electromagnetic interference (EMI) type filters with seals on their mounting surfaces. If you put pantyhose on the filters, you could hurt their EMI abilities.  
 The only acceptable way to keep filters clean is to check them every day for sand buildup. If they're clogged, clean them with soap and water or blow them clean with low-pressure air. An air hose is a good way to dry the filters after washing. In Iraq, you may need to clean them every day.  
 The best solution is to order an extra set of filters for each Sentinel and rotate the filters every day. That gives you and your Sentinel breathing space while you clean the filters and let them dry.  
 Half-Mast



In desert, order an extra set of filters and rotate them daily



I'M A ROUGH TERRAIN CONTAINER - A RTCH!  
 AND I'M A STEADY WORKHORSE WHEN IT COMES TO LIFTING AND STACKING 20- AND 40-FT ISO CONTAINERS IN SWA.  
 TO KEEP ME ON THE JOB, THOUGH, YOU NEED TO PICK UP ALL OF THESE PM POINTERS THAT OTHERS HAD TO LEARN THE HARD WAY.



TREAT YOUR RTCH RIGHT!  
 READ AND HEED THE INFO IN TM 10-3930-675-10 AND DON'T FORGET WHAT'S HERE IN PRINT.  
 IT'LL SAVE YOUR CONTAINER HANDLER UNNECESSARY AND EXPENSIVE REPAIR BILLS, PLUS DOWNTIME AT THE WORKSITE.

[Click here for a copy of this article to save or email.](#)

[Click here for a copy of this article to save or email.](#)



## Oodles of Info for Operators

- Only move an ISO container with your RTCH if the tophandler is in the normal latitudinal operational (across) position.

**RIGHT  
WAY**

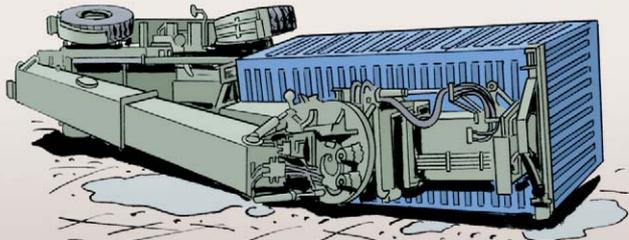
Transport an ISO container (load) in the normal operational (latitudinal) position



And **don't** drive the vehicle with the load in the in-line (longitudinal) position. That puts too much strain on the boom and hydraulics, and can cause the vehicle to tip over while it's moving.

**WRONG  
WAY**

Driving the vehicle with the load in the longitudinal position causes the vehicle to tip over while it's moving, especially on uneven ground



It's OK to stack or remove a container with the tophandler in the longitudinal position. But **don't** keep the load in that position while driving at the worksite.

Also, do not operate or move the load near a power line or overhead wires or carry a load while fording the RTCH. Always position the vehicle as close to the container as possible, use a ground guide when driving the RTCH up or down trailer ramps, and lower the boom **before** transporting a load.

- Bring the RTCH to a **complete** stop before changing gears from forward to reverse or changing steering modes. If you don't, you'll put unnecessary stress and strain on the vehicle's transmission, and shorten its life!

Always bring RTCH to a complete stop before changing gears from forward to reverse



- When selecting a lower transmission range or gear, the RTCH may **not** downshift until vehicle speed is reduced. So stop the vehicle, then select the direction and gear range with the transmission control lever, making sure you select a specific forward or reverse gear for that load before you move the vehicle.
- Bearing oil starvation kills the turbo. So operate like this: easy warm-up, hard workout, and time to cool down.

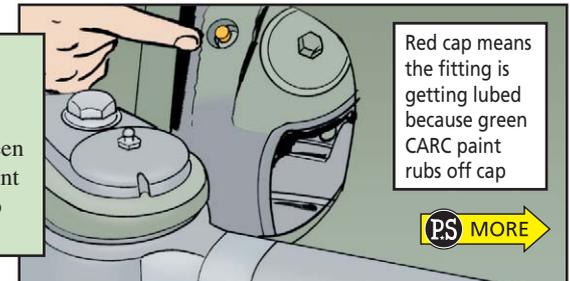
Right after startup, run the engine at low idle for three to five minutes. That gives the engine oil time to lube the parts.

Then eyeball the gauges, especially the water temperature and engine oil pressure, for normal readings.

After RTCH operation, idle-cool the engine for about five minutes before shutdown. The engine needs to cool down slowly, or the sudden shut down can crack the block, warp a head or valves, or bake the oil until it's not slick enough to lube the bearings.

## The Lowdown for Lubing

- If the red plastic caps on your RTCH's grease fittings are CARC green, they probably haven't been touched. That CARC paint usually flakes off the cap when it's removed.



**PS MORE**

All of the grease fittings work in tandem with each other for the smooth operation of the RTCH's front/rear axle steering knuckle pins, front/rear steering cylinders, and tophandler. Lube each fitting with four or five shots of grease during scheduled services.

### Steering Knuckle Pins

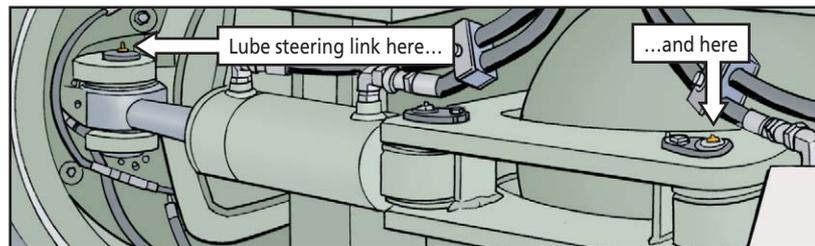
There are two grease fittings inside the top half of the wheel assembly that lube the front axle's steering knuckle pin. Reach behind the top sensor bracket to find 'em. Use a flexible extension, NSN 4930-01-103-8203, on your grease gun to get at all hard to reach fittings.



Reach under the steering knuckle pin to find the third grease fitting. All four of the vehicle's steering knuckle pins on the front and rear axles have this same setup.

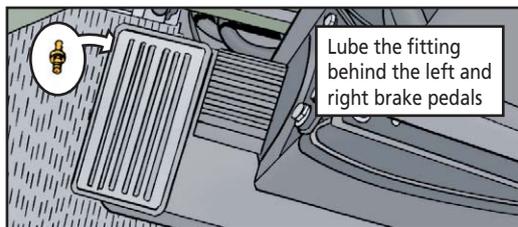
### Steering Cylinders

Next, find the steering cylinders which are in front of the steering knuckle pins. Wipe off the fittings with a clean rag. One fitting is next to the wheel assembly. The other is where the cylinder connects into the vehicle's main frame. Wipe and lube each steering cylinder on both the front and rear axles.



### Foot Pedals

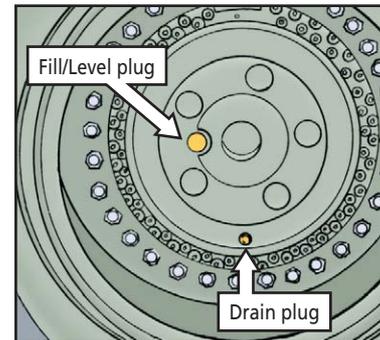
Remember to lube the two grease fittings in the cab behind the left and right brake pedals. Without lube, the pedals become sluggish and will eventually seize up. No pedal—no brakes!



### Gear Oil Reminder

Pay attention to LO 10-3930-675-10 when it comes to the gear oil level on the front and rear wheel assemblies. Make sure there's oil in each assembly.

Check the oil level by positioning the handler's wheel so the fill plug is level with the center of the axle. Remove the plug. The oil level should be at the bottom of the plug's opening. If you lose the fill plug, replace it with NSN 5365-01-479-9230 and its seal with NSN 5310-01-479-8568.



By the way, use NSN 5365-01-480-3306 to get the axle hub's drain plug and NSN 5310-01-479-8559 for the plug's seal. The parts manual doesn't tell you this yet.

### Tophandler Spur Gears

Both spur idler gears for the container handler's tophandler need lube so the chain assembly will operate smoothly. Without lube, the gears bind and the assembly won't rotate smoothly when you extend and retract the tophandler's spreader arms to lock, load and position a 20- or 40-ft ISO container. Not good!

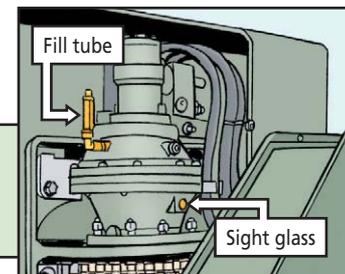
Climb up on the vehicle to get at these gears or lower the tophandler to about four feet for easier access.

Lube the non-motor spur idler gear located at the curbside end of the tophandler.



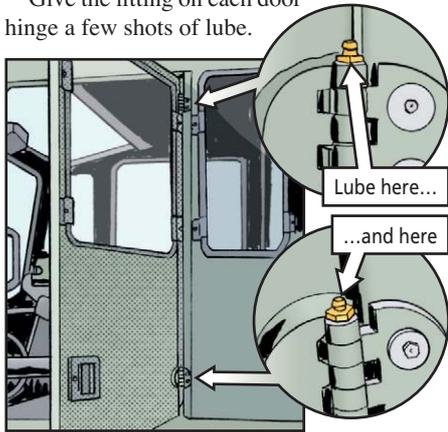
A motorized spur idler gear lubricated by the tophandler's spreader motor is on the roadside of the vehicle. The motor lubricates the gear's bearing shaft.

Each week, eyeball the oil level in the motor housing's sight glass. Make sure the oil is level at the top of the glass. If it's low, have your mechanic add oil in the housing's fill tube next to the sight glass.

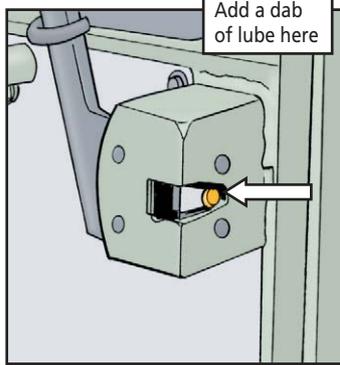


## Door Hinge and Lock

Give the fitting on each door hinge a few shots of lube.

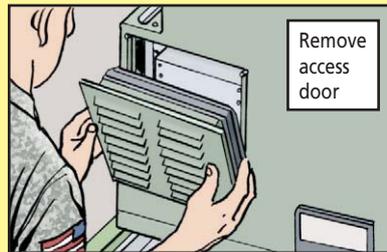
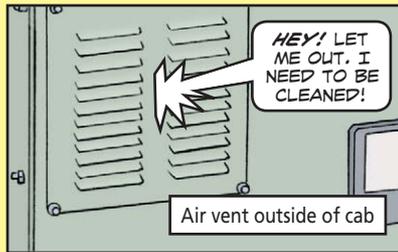


Then open the door and put a dab of lube on the door lock for ease of movement.



## PMCS Pointers

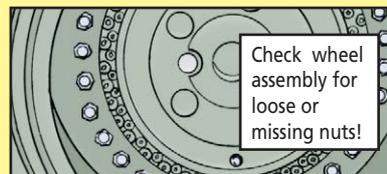
- The cab air conditioning system's filter element is behind the access door located outside the cab, in front of where the cab door opens. Remove the four nuts that hold the door in place, then pull out the filter by sliding it out of its holder.



Lightly tap the filter against your hand to remove the heavy debris. Then use low-pressure air, 30 psi or less, to blow out dust and sand.

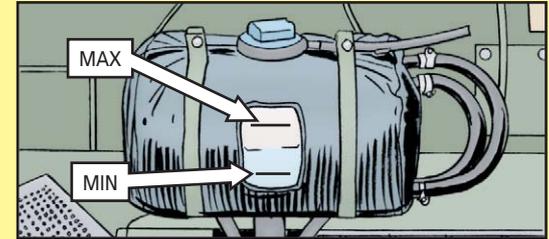


Push the air filter element all the way back into its holder before you put the access door in place. Do **not** operate the vehicle without the access door in place.



- Before the day's run, check each wheel assembly for loose or missing nuts. Mechanics, re-torque a loose stud nut to 479 lb-ft and replace missing nuts.

- See a crack in the coolant expansion tank? Cover it with duct tape as a quick fix, then order a new tank with NSN 2815-01-479-8859. If you want to replace the tank just to be safe, get your CO's approval first.



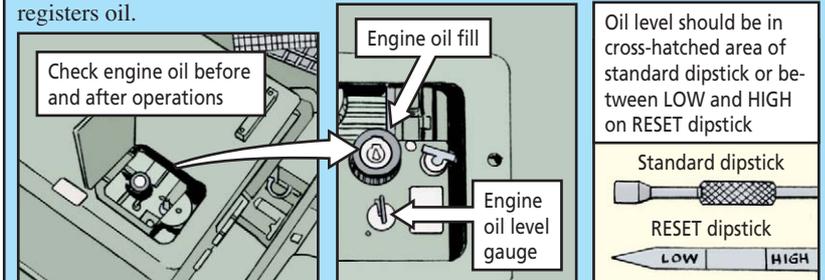
You can protect the tank with nylon cover, NSN 5340-01-534-4681. And keep the coolant level between the MIN and MAX lines on the tank.

## Engine Oil Check

Operators, check the engine oil before operations. Check it again after your shift. Do **not** wait for an error code to show up on the cab's instrument panel to tell you the oil level is low or needs to be changed!

Instead, make sure the handler is on level ground, shut down the engine and wait 10 minutes (after operations only), pull the dipstick, wipe it off, and insert it fully into the tube.

Next, pull the dipstick out and check for oil on both sides. The oil level should be in the cross-hatched area of the standard dipstick or between LOW and HIGH on the RESET dipstick. If you don't see oil, add a little at a time until the dipstick registers oil.



The dipstick is known to break off where it mounts into the rubber pull-handle so tell your mechanic if it is broken.

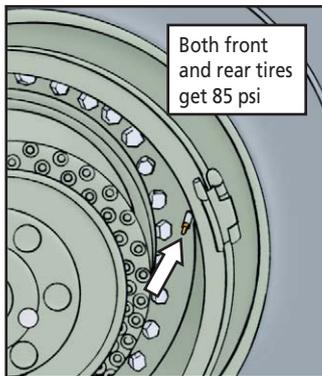
Mechanics, replace broken dipsticks with NSN 6680-01-534-4663 on vehicles with a serial number ending in "R", or "7364" on USMC vehicles. If the vehicle's serial number doesn't end in "R", use NSN 6680-01-484-5516.

Also, it's really easy to misplace or lose the handler's engine oil filler cap. Usually the cap gets bumped off the engine or vehicle frame while oil is being added to the engine. Do **not** run the engine with the cap missing. Replace missing caps with NSN 4730-01-480-5711.



## Tire Pressure PSI

Gauge the handler's tire pressure before the day's run. An under-inflated tire can slip on the rim, causing it to overheat and blow out. Or, the tire-to-rim seal will break, causing the tire to go flat. The front and back tires get 85 PSI.



Then make sure the tire's valve stem cap is screwed back in place. Otherwise, sand gets wedged into the stem and the tire loses air. Replace lost caps with NSN 2640-00-267-2982.



## Transmission Fluid Check

Make sure you check the transmission fluid's level **before** the After Operations engine oil check. Do this by first parking on level ground. Then with the engine idling, transmission selector lever in N (neutral), parking brake set, and engine at operating temperature (180°F), remove the dipstick.

If you get a bad reading, wipe off the dipstick and insert fully back into the tube. Then pull the dipstick out for another reading.

The transmission's fluid level should be between the two indicator marks at the end of the dipstick. If the level is low, slowly add 10W40 oil until it's in the marked range.



GOOD PM WILL KEEP YOUR RTCH FROM **EVER** FALLING INTO A STATE OF, WELL... WRETCHEDNESS!



PS END

UH-60...

# The "HIDDEN NUMBERS" GAME

THREE THINGS CAN HIDE OUR NUMBERS!

TIME, PAINT AND THE LOCKING PLATE!

SO YOU'RE GONNA WANT TO KEEP THIS INFO HANDY!



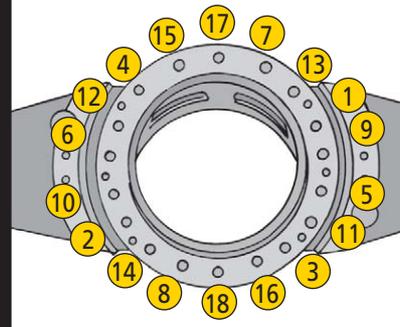
**M**echanics, the lower pressure plate and the main rotor shaft nut on a Black Hawk's main rotor head are bolted together. These bolts must be removed and installed in a particular sequence.

Each bolt hole is numbered on the pressure plate and the nut. However, time, paint and the nut locking plate hide those numbers and complicates the job.

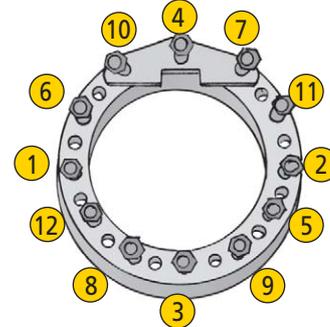
Here's the pattern if you can't see the numbers stamped on the pressure plate or nut.

Loosen or tighten each bolt, beginning with number 1.

Here's how the holes are numbered on the lower pressure plate:



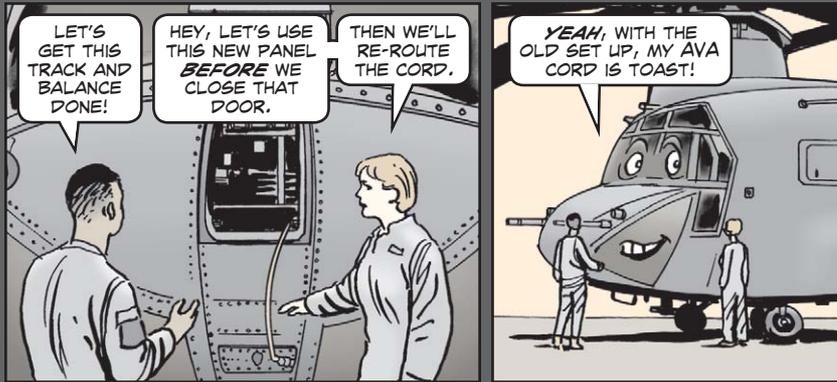
Here's how the holes are numbered on the shaft nut:



Each numbered bolt gets a 1/4-turn in sequence. This ensures that constant pressure is maintained on each bolt so that none will fail.

[Click here for a copy of this article to save or email.](#)

# CH-47D... AVIATION VIBRATION ANALYZER HOOKUP



Dear Sergeant Blade,

The aviation vibration analyzer cord gets pinched because the nose door has to be closed on the cord. That can damage internal wires over time during testing.

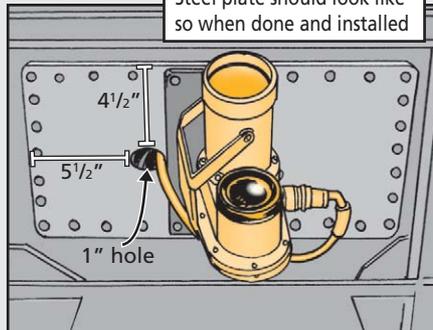
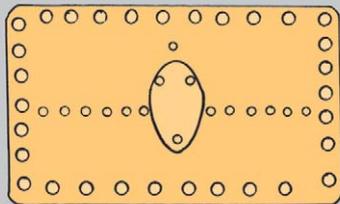
When we use the aviation vibration analyzer (AVA) test set, NSN 6625-01-282-3746, for Chinook rotor blade track and balance, we route the cord through the nose door to hook it up to the universal tracking device (UTD).

We've come up with a fix that prevents damage to the AVA cord.

We take off the existing access cover under the nose where the UTD is attached. We have our shop fabricate a temporary steel plate using the same dimensions and the same thickness as the original. Then we make an extra 1-in hole in the fabricated plate.

Steel plate should look like so when done and installed

Use original cover to make template



When it's time to check the track and balance on a Chinook, we replace the access cover with the fabricated plate using the same hardware. Then we route the cord through the hole and hook to the UTD to do our test.

This method keeps the cord safe from damage because it's routed through the extra hole in the substitute plate and does not get pinched by the nose door. After the test, we just reinstall the original access plate and we're done.

Sergeant  
MAARNG

Dear Sergeant

This solution looks like it closes the door on broken AVA cables and problems with rotor track and balance.

*Rotor Blade*

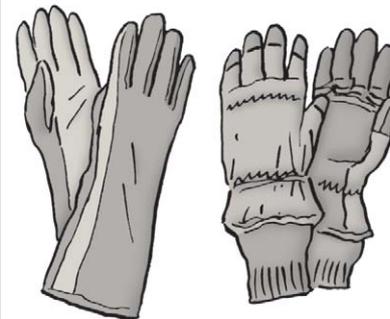
ALSO...

## "Gloves for the Asking"



Gloves, nomex, flyers (summer)

| NSN 8415-01- | Size |
|--------------|------|
| 482-8417     | 4    |
| 040-2012     | 5    |
| 040-1453     | 6    |
| 029-0109     | 7    |
| 029-0111     | 8    |
| 029-0112     | 9    |
| 029-0113     | 10   |
| 029-0116     | 11   |
| 482-8420     | 12   |



Gloves, nomex, flyers (cold weather)

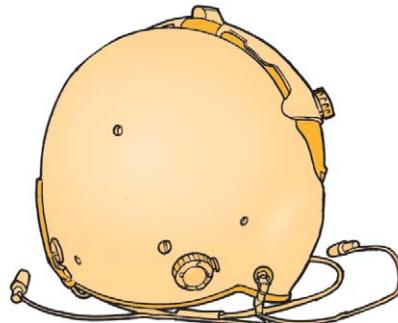
| NSN 8415-01-446- | Size |
|------------------|------|
| 9247             | 5    |
| 9248             | 6    |
| 9252             | 7    |
| 9253             | 8    |
| 9254             | 9    |
| 9256             | 10   |
| 9259             | 11   |

# COMMUNICATION EAR PLUG and HELMET SHELL

ALSO SHOPS,  
CHECK OUT  
TM 1-1680-377-138P  
ON EM-0250 FOR  
HELMET AND SHELL  
NSNs!



New helmet is ready...no MWO required



**ALSO** techs, the HGU-56/P aircrew integrated helmet system (AIHS) has had its share of upgrades.

The latest upgrade is a welcome one because it means you no longer have to apply the MWO kit, NSN 5965-01-488-4332, to install the communication ear plug (CEP). The MWO was 1-8415-216-20-1.

The helmet now comes with the CEP pre-wired and pre-installed.

Keep in mind that the old helmets are good and will be issued until the current stock is exhausted from the supply system. Helmets with the CEP installed have new NSNs, but if you order a new NSN, you're likely get the old helmet as long as there are any in the supply system.

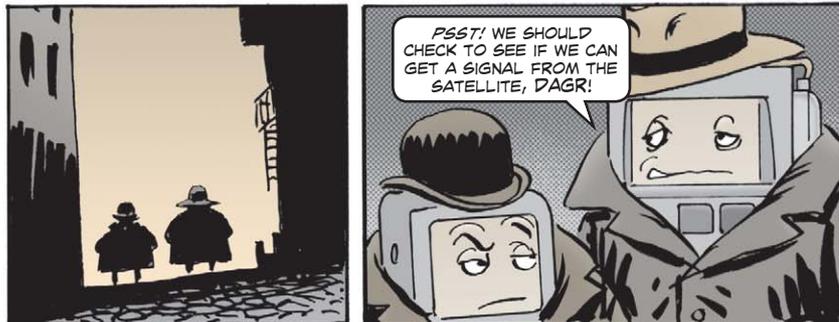
| New NSN<br>8415-01-522- | Original NSN<br>8415-01-394 | Size |
|-------------------------|-----------------------------|------|
| 5310                    | 8032                        | XXS  |
| 5339                    | 8033                        | XS   |
| 5344                    | 8036                        | S    |
| 5347                    | 8034                        | M    |
| 5348                    | 8035                        | L    |
| 5364                    | 6474                        | XL   |

Along with the new helmet assemblies, you'll get new spare parts to support the new helmet configuration.

FIRST, THERE IS A REPLACEMENT COMMUNICATION CORD THAT'S WIRED WITH THE CEP PIGTAIL FOR EASY CONNECTION.

SECOND, THERE ARE 4 NEW HELMET SHELLS THAT ARE PRE-DRILLED TO ACCEPT THE CEP CONNECTION.

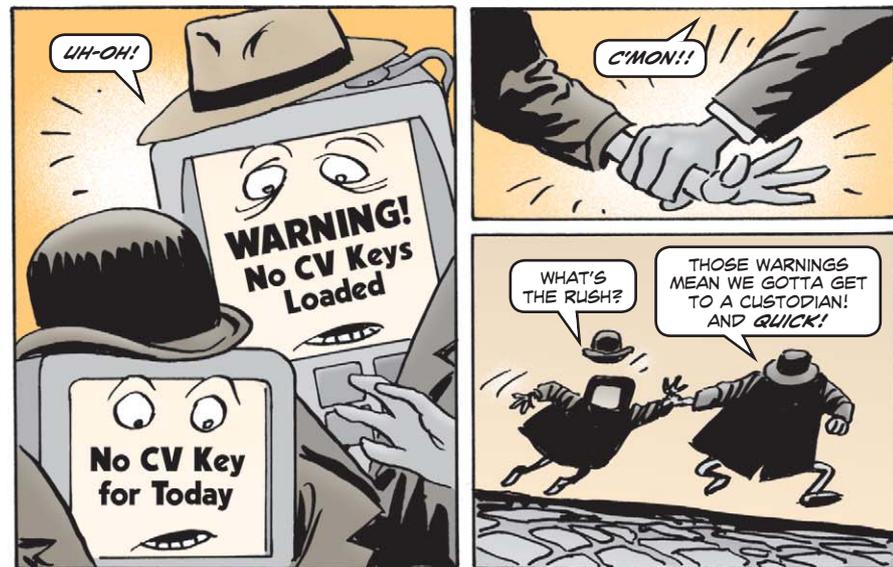
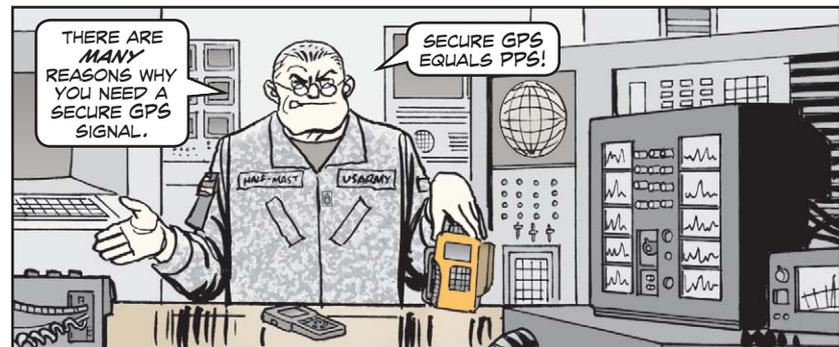
| New NSN                                                   | Original NSN                         | Size                                     |
|-----------------------------------------------------------|--------------------------------------|------------------------------------------|
| 5995-01-519-9234, communication cord with CEP connection  | 5995-01-391-9894, communication cord | one size fits all                        |
| 8415-01-522-4961, shell, helmet with CEP hole pre-drilled | 8415-01-394-8455, shell, helmet      | Small (used on the S, XS and XXS helmet) |
| 8415-01-522-4962, shell, helmet with CEP hole pre-drilled | 8415-01-395-2190, shell, helmet      | M                                        |
| 8415-01-522-4963, shell, helmet with CEP hole pre-drilled | 8415-01-395-2191, shell, helmet      | L                                        |
| 8415-01-522-4965, shell, helmet with CEP hole pre-drilled | 8415-01-395-2192, shell, helmet      | XL                                       |



Your Army-issued global positioning system (GPS) receiver, the PLGR or the DAGR, can receive—and should receive—a secure GPS signal.

In order for your GPS to receive the secure signal, the receiver must be crypto-keyed. This is the job of your unit's COMSEC custodian. Your custodian will load the crypto variable (CV) key to your DAGR or PLGR to let it receive a secure signal.

Your receiver will tell you if it has the key and if it's the current one. Watch the screen when you turn on your receiver and if you don't have the current key, it will read "No CV Key for Today." If you don't have any key, it will read, "Warning No CV Keys Loaded." If either of these warnings show up, get to your COMSEC custodian before you use your GPS.



First, it's mandatory! Use of un-keyed GPS devices is only authorized for training and for research and development programs. DoD policy says combat and combat support operations **must** use crypto-keyed GPS receivers. If you want to read the official policy, go to the PM GPS website: <https://gps.army.mil>

Once there, go to "About GPS" and click on "PPS Policy."

Second, secure GPS devices have a selective availability anti-spoofing module (SAASM). Not only does SAASM limit spoofing, but it also provides greater position accuracy and situational awareness—two things that could save your life in combat.

Finally, most signal interference is not intentional. Crypto-keyed receivers can resist this unintentional jamming at 10 times the level of interference that un-keyed receivers can resist.



One last word: Put those commercial off-the-shelf GPS devices back on the shelf. They may have a fancy doodad or two that the PLGR or DAGR doesn't have, but they are not secure! Also, they use the standard Positioning Service Signal, which is less accurate and more prone to interference than the military-only Precise Positioning Service (PPS) signal.

DAGR...



# YEP! IT'S UNDER WARRANTY

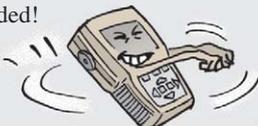
The Defense Advanced GPS Receiver (DAGR), both the AN/PSN-13 and AN/PSN-13A, are under warranty from the manufacturer, Rockwell Collins. This is good news since over the last two years 80,000 DAGRs have been fielded!

ARMY UNITS, ANY DAGR NEEDING REPAIR SHOULD BE TURNED INTO YOUR DS MAINTENANCE SUPPORT, IF YOU HAVE ONE.

IF YOU DON'T HAVE ONE, YOU CAN DO WHAT DS SUPPORT DOES WITH THE DAGRS AND THAT IS SHIP THEM TO...



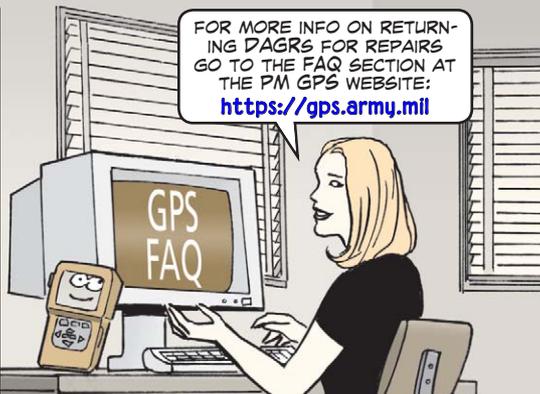
Rockwell Collins, Inc  
DODAAC: EZ7415  
MS 139-141 (M/F DAGR warranty)  
855 35th Street NE  
Cedar Rapids, IA 52402-3613



Remember to include the Cedar Rapids DODAAC, EZ7415, on the outside of the shipping package.

To find the status of any DAGR you have sent to Rockwell Collins for repairs, you can contact the project manager office for global positioning systems at DSN 992-5758 or (732) 532-4733.

To get the info, you'll need to give them your DODAAC, the DAGR serial number, and the approximate date shipped.



FOR MORE INFO ON RETURNING DAGRS FOR REPAIRS GO TO THE FAQ SECTION AT THE PM GPS WEBSITE:  
<https://gps.army.mil>

Generators...

# The Word is RESET!



**W**ar-ravaged generators used in Iraq and Afghanistan need to be restored to good-running shape for use in the States or for redeployment. This program is called RESET.

The generator RESET program is managed by the Communications-Electronics Life Cycle Management Command (C-E LCMC) in Fort Monmouth, NJ.

As soon as your unit returns from Operation Enduring Freedom (OEF) or Operation Iraqi Freedom (OIF), get C-E LCMC to inspect your generators and enroll them in the RESET program.

Contact your C-E LCMC logistics assistance representative (LAR) or go directly to one of these RESET program POCs:

| POC | DSN 992- | Com 732- | E-mail                                         |
|-----|----------|----------|------------------------------------------------|
|     | 6104     | 427-6104 | <a href="mailto:@us.army.mil">@us.army.mil</a> |
|     | 8119     | 532-8119 | <a href="mailto:@us.army.mil">@us.army.mil</a> |
|     | 3761     | 532-3761 | <a href="mailto:@us.army.mil">@us.army.mil</a> |
|     | 6899     | 532-6899 | <a href="mailto:@us.army.mil">@us.army.mil</a> |

Contact \_\_\_\_\_ if you are in Europe or the East Coast Region. Contact \_\_\_\_\_ if you are in the Pacific or West Coast Regions.

If you are a Depot involved in the RESET program and have questions, contact \_\_\_\_\_

Finally, \_\_\_\_\_ is the chief over all the generator RESET work.

The RESET folks will work on-site to get your generators operational to 10/20 standards. If more work is needed, the RESET program will pay to have your generators shipped to the necessary repair depot and will also pay to have them returned.

None of the RESET work comes out of your unit's funds, so there isn't a good excuse for not taking advantage of this program. In addition, RESET is mandatory according to OPORD 06-002. Ask your C-E LCMC LAR for a copy.

[Click here for a copy of this article to save or email.](#)

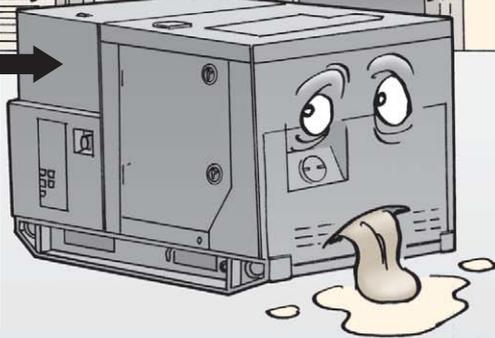
[Click here for a copy of this article to save or email.](#)

# PUT AN END TO DIRTY FUEL

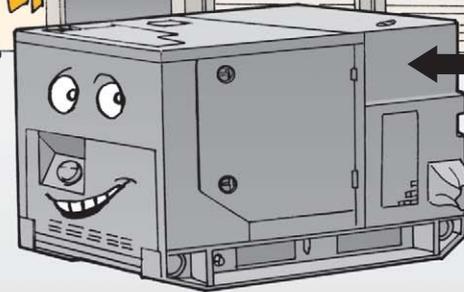
## DIRTY FUEL TANK



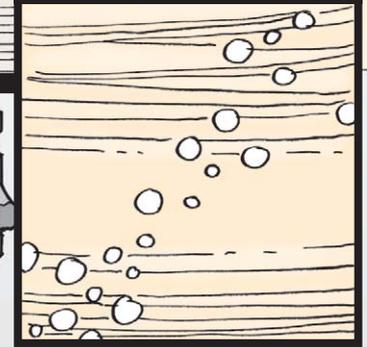
SPUT SPUT SPUTTER



VRRMMMMMMMM



## CLEAN FUEL TANK



The engine in your generator will run poorly—or not at all—with dirty fuel. And that's no good!



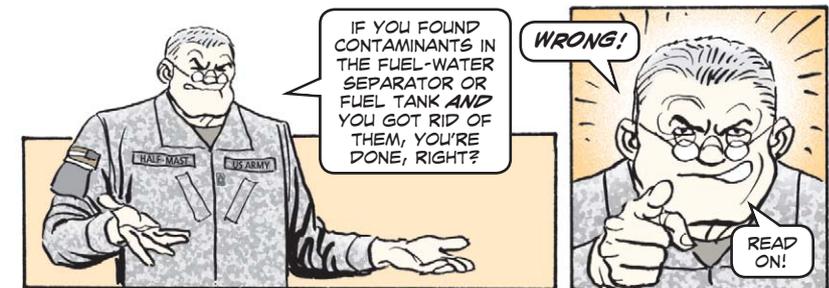
A small amount of contamination is normal, but it needs to be removed just the same. If contaminants are not removed, they'll accumulate in the bottom of your fuel tank. You won't know it right away because the fuel pick-up tube for your fuel system is a few inches above the tank bottom and the fuel will float on top of most contaminants.

The problem becomes noticeable when the contaminant level rises to the level of the pick-up tube. By then you have severely contaminated fuel!

In a diesel system, fuel transfer pumps, injection pumps and fuel injectors have parts that need lubrication. Water and other contaminants can permanently damage these parts.

Most TMs don't tell you to check generator fuel tank contaminant levels. But anytime you find water or other contaminants in the fuel-water separator or fuel system filter sump, here's what to do:

- Open the fuel tank drain cock and drain a small amount of fuel into a container that will let you see the fuel.
- If the fuel is free of contaminants and water, close the drain cock. Your system is not contaminated. If contaminants and water appear, continue to drain the fuel until samples are not contaminated. Then, close the drain cock.
- In cases of severe contamination it will be necessary to drain the system, replace all filters and clean all strainers. Follow the TM instructions for this job. Fuel filters may have to be replaced two or three times after severe contamination.



That contamination had to come from somewhere and you need to find out where. It could be a dirty fuel truck or a contaminated fuel tank or anything else in your fuel pumping chain. Get other users to help you. It's in their interest to find the source of the contamination, too.

Security...

# NEW CAGES PROTECT BETTER

EVERY UNIT HAS VALUABLES IT WANTS TO SECURE: BINOCULARS, NIGHT VISION GOGGLES, COMMO, COMPUTERS, EXPENSIVE TOOLS, CONTROLLED REPAIR PARTS AND THE LIKE.

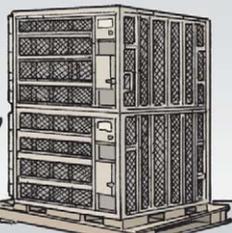
IF YOU'VE BEEN STORING THIS GEAR IN WALL LOCKERS, FOOT LOCKERS OR LOCALLY FABRICATED CONTAINERS, THERE'S A BETTER OPTION.

**High value asset security cages (HVASC)** protect valuables and prevent theft. Use them indoors and outdoors, in garrison and in the field, in arms rooms, supply storage areas, maintenance facilities, joint use areas and shipping containers. The cages are transportable, so they can provide added security during shipping and convoys.

## Two Types of Cages

TWO TYPES OF CAGES ARE AVAILABLE...

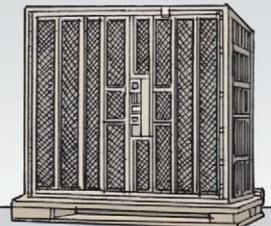
THE **PORTABLE CAGE** IS MADE UP OF AN UPPER AND A LOWER CONTAINER.



| Container | Weight in pounds | Height in inches | Width in inches | Depth in inches |
|-----------|------------------|------------------|-----------------|-----------------|
| Upper     | 415              | 29               | 33              | 45              |
| Lower     | 540              | 37               | 33              | 44 3/4          |

THE ASSEMBLED CONTAINERS WEIGH 955 POUNDS. THEY MEASURE 66 INCHES HIGH, 33 WIDE AND 45 DEEP.

THE **SUPPLY CAGE** IS A SINGLE, LARGE SECURITY CONTAINER, WEIGHING 1,090 POUNDS. IT MEASURES 72 INCHES HIGH, 60 WIDE AND 33 1/2 DEEP.



HERE ARE THE CAGES' NSNs...

| HVASC    | Color | NSN 5411-01-522- |
|----------|-------|------------------|
| Portable | green | 4822             |
| Portable | tan   | 4816             |
| Supply   | green | 4821             |
| Supply   | tan   | 4823             |

THE CAGES FEATURE...

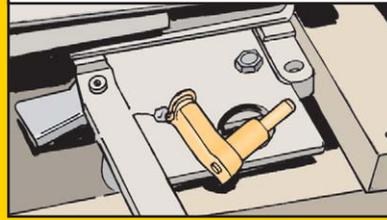


- solid steel plate, tubing and mesh construction
- doors that swing out
- tie-down points that swing up and out to accept hooks, shackles or straps

- removable casters that swivel 360 degrees



- quick release pins hold doors, shelves, and casters in place



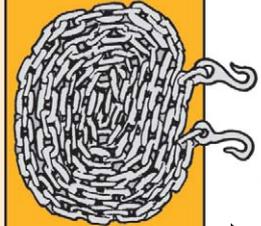
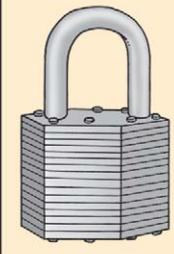
- tarp covers that protect gear from dust, dirt, rain, frost, snow and sun, and that also hide the valuables from view
- lock mechanisms designed to prevent padlocks from being cut by bolt cutters or hacksaws
- safety devices to hold doors open
- attachments to fasten HVASC to structures or other HVASC
- removable, adjustable shelves

## Padlocks and Chains

The HVASC does not come with padlocks or chains. Both types of HVASC accept the 5200-series padlocks. The portable cage needs four padlocks, and the supply cage calls for two. You may also need chains for attaching the cages to fixed objects. Here are the NSNs:

You may need to order padlocks...

...and chains



| Item                   | NSN              |
|------------------------|------------------|
| 5200-series padlock    | 5340-00-158-3805 |
| 20-ft heavy duty chain | 4010-00-171-4427 |

PS MORE



## Safety First

THESE CAGES ARE HEAVY, SO ALWAYS KEEP SAFETY IN MIND.

TAKE THE FOLLOWING PRECAUTIONS...

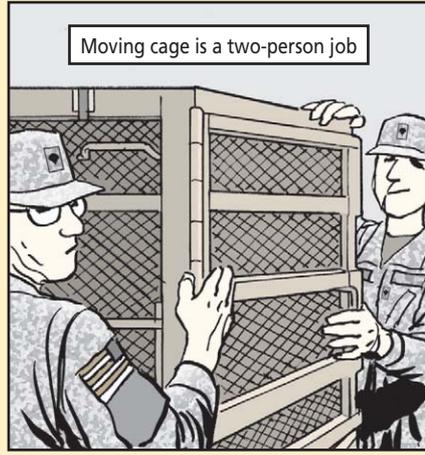
- Before you move the cage, securely fasten the gear inside. That'll keep things from shifting and prevent personal injury or damage to the gear.

- Before you roll the HVASC on casters, make sure the surface is firm, smooth and free of debris, clutter and cracks. Even though the cages are bottom-heavy, there's a risk of tipping.

- Use the two-man rule when you move the cage: one person to push and the other to pull and steer.

- When you put the cage in a permanent place, make sure it's on a firm, level surface with the casters locked.

- If you lift the cage with a forklift or crane, always lift from the bottom. **Never** connect hooks, chains, straps or shackles to the top of the cage for lifting.



Moving cage is a two-person job

## Shipping Safety

Before you ship the cage:

- Evenly distribute and securely fasten the gear inside.
- Use the caster locks to lock the casters in place.
- If you remove the casters, put them inside the cage so they won't get lost.

## Cleaning

Use warm water and a mild laundry detergent to remove dirt, oil and grease from the cage and the tarp. Rinse with clean water and allow to air dry. Do not fold and store the tarp until it is thoroughly dry. Storing the tarp damp can cause mold to grow.

## Publications

There is no Army technical manual supporting the HVASC. But each one comes with a user's guide that covers use, maintenance, shipping and safety.

If you have questions about security, start by going to your installation's security office. You may also want to read the following Army regulations:

- AR 190-11, *Physical Security of Arms, Ammunition and Explosives*
- AR 190-13, *The Army Physical Security Program*

You'll find them online: <http://www.army.mil/usapa/epubs/index.html>



Containerized Shower...

# CLEAN IT AND MEAN IT



## Operators Get Dirty

WHEN GRAYWATER (DIRTY WATER) BACKS UP IN SHOWER STALLS OR THE SINKS OF SHAVE STANDS, THE OPERATOR NEEDS TO FIND THE BOTTLENECK AND FIX IT IF HE CAN.

HERE ARE A FEW PLACES TO LOOK...

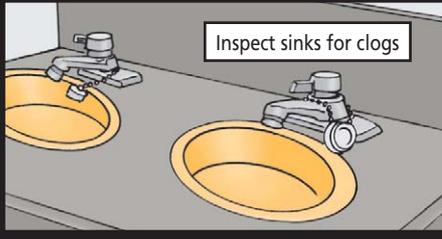


- Make sure the shower stall drains are not clogged. Remove any debris to get the water draining.

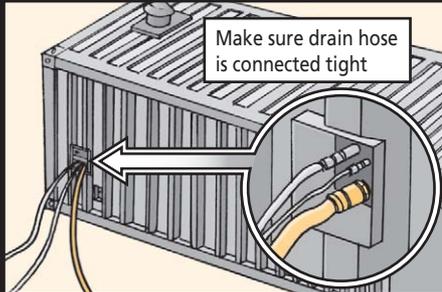


PS MORE

- Inspect the shave stand sinks for clogging. If you have to, disconnect the sinks' hoses to get a better look at the drains. Clean out any clogs you find.



- The problem could be that the graywater holding tank is not pumping out graywater. If the water has nowhere to go, it backs up in showers and sinks. Make sure the graywater drain hose is tightly connected to the water service panel. Straighten out any kinks or bends in the hose.



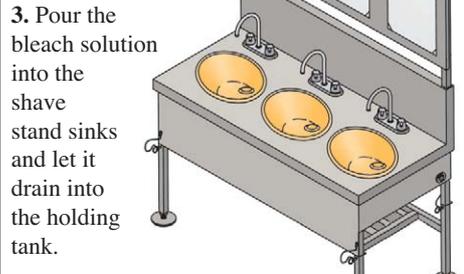
- Make sure the sump pump in the holding tank is working. Reset the circuit breaker switch if you have to.
- If water is still backing up in stalls or sinks, notify unit maintenance.

### It's Not Sanitary

Once a week the operator must sanitize the graywater holding tank. For this, you'll be using chlorine bleach, which can irritate the skin, eyes and lungs. Wear protective clothing: rubber apron or coveralls, safety splash goggles or a face shield and rubber gloves. Avoid breathing the vapors.



1. Turn off the sump pump.
2. Mix two ounces of household chlorine bleach in two gallons of warm water.



4. Let the solution sit in the tank for at least one hour.
5. Turn the sump pump back on and allow the tank to drain.

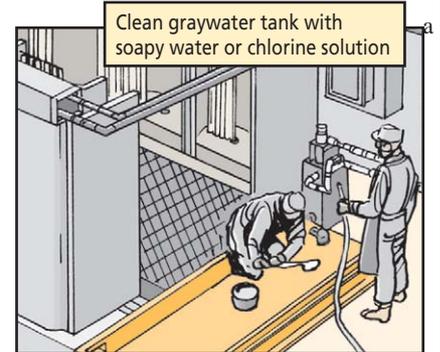
### Unit Maintainers Get Dirty, Too

Over time, hair, soap and grime form a sludge that can choke the sump pump in the graywater holding tank. Graywater can't get pumped out, so it backs up in showers and sinks.

Unit maintainers must clean the tank every 30 days—and it's a two-man job. Because you're dealing with wastewater and contaminated surfaces that carry disease, you also need to wear protective clothing: rubber apron and gloves, and safety splash goggles or a face shield.



1. Remove the equipment mounting platform. It's heavy, so it takes two persons to lift it. It also has sharp edges. You'll need the protective gloves.
2. Remove the graywater holding tank cover plates and duct cover plates.
3. Operate the sump pump manually using the pump override while you're cleaning. That'll drain the tank.
4. Use soapy water or chlorine solution, long-handled brushes and a garden hose to clean the duct and tank.
5. Rinse the cleaned duct and tank.
6. Pump the water out.
7. Replace the holding tank cover plates and duct cover plates.
8. Replace the equipment mounting platform.



FOR THE COMPLETE STORY ON CLEANING AND SANITIZING THE CSS, READ TM 10-4510-208-13&P, **ESPECIALLY THESE WORK PACKAGES...**

- WP 0018, Water Troubleshooting Procedures
- WP 0020, Preventive Maintenance Checks and Services
- WP 0022, Shower Service
- WP 0036, Cleaning the Graywater Holding Tank



# WHEN DO YOU CHANGE YOUR WORK ORDER STATUS?



Dear Half-Mast,

Some years ago, I read somewhere that you change the work order status when you determine a part is needed to repair an NMC piece of equipment, as opposed to changing the status when the part is actually ordered.

Waiting to change the code until the part is ordered doesn't seem right. If the unit is out of funds and has to wait a month to get money to order parts, the equipment could sit as NMCM for the month. But the equipment is NMC due to the lack of repair part supply, not because the unit isn't doing maintenance.

What's the right answer?

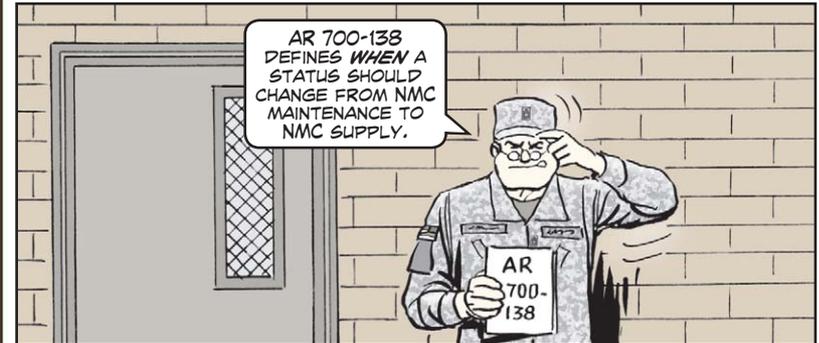
MSG J.C.

CHANGING STATUS CODES CAN BE CONFUSING. TRY FOLLOWING THESE IDEAS.



Dear MSG J.C.,

Generally, AR 700-138, Army Logistics Readiness and Sustainability, covers when work order status codes change. But this seems to be a case where practice is a bit different than procedure in the reg.

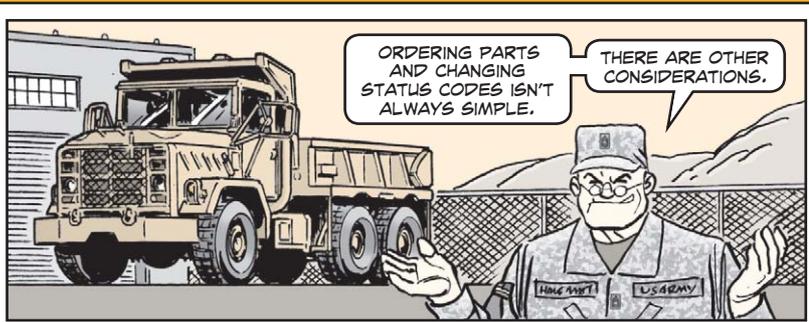


The regulation offers definitions of NMCM and NMCS.

NMCM begins when the equipment has an NMC fault that doesn't require a repair part. The maintenance repair is underway. NMCM continues until all work on the fault is completed "or the non-availability of a Class IX repair part creates a work stoppage." When there is a non-availability of Class IX (repair parts), or shortage of authorized sub-systems, NMCS demand time starts.

NMCS occurs when equipment is "not capable of performing any of their assigned missions because of a maintenance work stoppage due to the need for a repair part or a supply shortage of an authorized subsystem."

PS MORE



The ordering actions aren't really that simple. What if the unit is out of funds? If the repair part is ERC B or C, can the unit wait for the normal flow of funds? Maybe.

It's a commander's call and he or she will need to weigh maintenance needs in deciding whether to get additional funding from resource management, find the needed part in another unit's stocks on a reimbursable basis, or wait for funding.

Certainly, reportable assets with ERC P or A should cause the commander to use all available means (resource management fund transfers and other installation/major unit SSA/ASL/PLL/bench and shop stock assets) to bring the reportable asset back to mission capable status as quickly as possible.



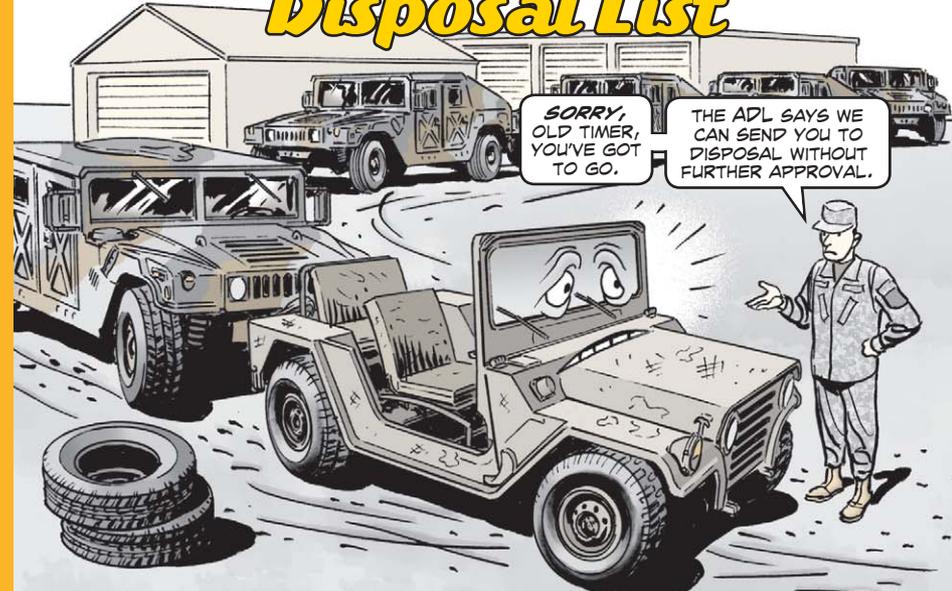
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<https://www.logsa.army.mil/psmag/pshome.cfm>

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[logsa.psmag@conus.army.mil](mailto:logsa.psmag@conus.army.mil)

# Finding the Automatic Disposal List



ONE OF THE CHALLENGES FACING SERGEANTS WHEN THEY TRANSFER INTO A UNIT AND TAKE OVER THE SUPPLY ROOM IS FINDING EQUIPMENT ON-HAND THAT ISN'T NEEDED.

SAY, FOR INSTANCE, AN M151A2 JEEP.



Quite naturally you want to get rid of it ASAP. You don't want to wait for the approval of the National Inventory Control Point (NICP), and chances are, you don't have to.

The Army publishes the Automatic Disposal List (ADL) twice each year. If your excess equipment is on the list you have all the authority you need to turn in that unneeded equipment.

You'll find the ADL on the Army Knowledge Online (AKO) intranet portal. To get to the ADL (Spring 07) from AKO, click the folder icon called **FILES**, scroll down to the **SHORTCUTS** area, select **DOWNLOAD A DOCUMENT**, and enter the identification number: 7816940. You'll get an Excel spreadsheet with items listed by SOS. Be sure to check all the tabs at the bottom of the spreadsheet.

You can subscribe to notifications of ADL updates. Logon to AKO, change the URL to get the DA G-4 SUS Collaboration Center and click on the ADL Excel document:

<https://www.us.army.mil/suite/page/436>



# MISSING STRAP RAP

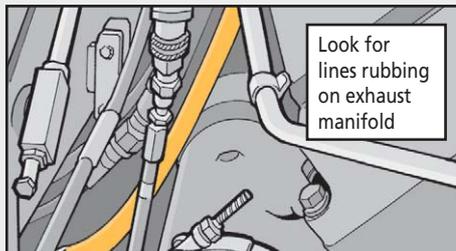
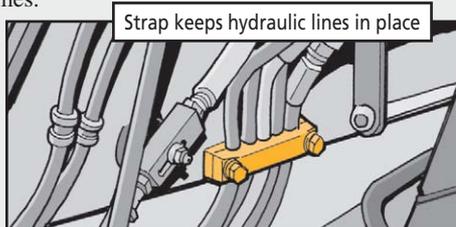
One missing strap on the earthmover can cause operations to shut down in flames. Here's a PM tip to prevent those flames.

Eyeball the five hydraulic lines that are mounted directly across from the engine's exhaust manifold.

Each line is held in place against the wall by a retaining strap that keeps it snug.

But straps get left off when a hydraulic line is repaired or when the engine is removed by support. It makes no difference how it happens. Operating the earthmover when a strap is missing allows those hydraulic lines to rub up against the engine's exhaust manifold. That can cause a leak—and a fire.

So have your mechanic replace a missing strap with NSN 5340-01-179-7530, or secure the lines with a tie-down strap, NSN 5975-00-570-9598, until the retainer strap is replaced. Straps are shown as Item 40 in Fig 140 of TM 5-2350-262-24P.



Small  
Emplacement  
Excavator...



SEE THAT  
YOU READ  
THESE  
BRIEFS!

## Get Your Oil Here!

NSNs may come and they may go. But here are some you'll need to know when it comes to the SEE's OE/HDO 10-weight oil. Keep 'em handy until they're added to TM 5-2420-224-10.

| Quantity    | NSN              |
|-------------|------------------|
| 1-qt can    | 9150-00-189-6727 |
| 1-qt bottle | 9150-01-496-1957 |
| 5-gal can   | 9150-01-496-1946 |

## SEE Wiring Harnesses

Use NSN 5995-01-503-8640 to get a new wiring harness, Item 1 in Fig 85 of TM 5-2420-224-24P-1, for the excavator's alternator. NSN 6150-01-496-5644 gets the vehicle's main wiring harness shown as Item 1 in Fig 102. Both harnesses are color-coded. They're marked with the original wire numbers so you can reference them with the original wiring diagrams.

## SEE Hydraulic Solenoid

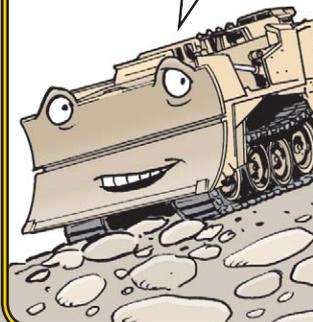
Use NSN 4810-01-257-3315 to get the solenoid for the excavator's hydraulic system. This NSN replaces the part shown as Item 2 in Fig 234 of TM 5-2420-224-24P-2.

## SEE Blackout Headlight

Use NSN 6220-01-496-1925 to get the excavator's new LED-style blackout headlight assembly. This NSN replaces the old incandescent-style assembly shown as Item 13 in Fig 63 of TM 5-2420-224-24P-1.

M9 ACE...

THESE ARE  
INTERESTING!



## M9 ACE Voltage Regulator

NSN 2920-01-483-2291 gets the earthmover's voltage regulator. This NSN replaces the one shown as Item 2 in Fig 112 of TM 5-2350-262-24P.

## M9 ACE Newsletter

For the latest copy of the earthmover's newsletter, *M9 ACE News 'n' Views*, go to the AKO website and type in: [https://aeps2.ria.army.mil/services/newsletter/m9\\_ace/m9aceneews.cfm](https://aeps2.ria.army.mil/services/newsletter/m9_ace/m9aceneews.cfm) You'll need your AKO login and password.

# WHAT'S NEW WITH TOOLS



...AND WE HAVE **BREAKING NEWS ON SATS!** WE'RE GOING LIVE TO PS MAGAZINE HEADQUARTERS!

BUT WHAT ABOUT THE BALL-GAME?!

The news is good on Army tools. The Army is putting lots of effort into improving the tools Army repairers use to keep equipment in top condition.

You can help the tool folks do an even better job by giving them your tool suggestions, complaints, and any other comments. They would also like to know which tools you are **not** using. Every comment they receive will be checked out. To submit your comments, just go to <http://pmskot.army.mil> and hit **Suggestions and Issues**. Then hit **Report Feedback**. You'll need your CAC to submit comments.



TELL THE SKO PEOPLE I COULD USE A BETTER SOCKET SET!

NOW FOR THE LATEST TOOL NEWS...

## GMTK Upgrade

The newest upgrade to the general mechanics tool kit is now available with NSN 5180-01-546-6674. Some of its improvements are:

- industrial quality tools
- wheels and collapsible handles for easier moving
- rapid inventory thanks to foam cutouts for the individual tools
- lifetime warranty with a 48-hour turnaround for replacements
- full set of 1/2 and 3/8-in sockets on rails
- socket extensions
- sealed-head ratchet
- 16-in ladyfoot pry bar
- 10-in channel lock pliers
- improved flashlight, magnetic pickup tool, inspection mirror, screwdrivers, and locking pliers

## SATS Facts

The Common #1 and #2 tool sets are obsolete and the Army no longer supports them. The good news is that the standard automotive tool set (SATS) has replaced the common tool sets and the heavy DS tool sets. The bad news is because of limited procurement funding for SATS production, it will take several years for all active and reserve units to get SATS. Priority will go to deploying units.



SORRY GUYS!

YOU'VE BEEN REPLACED BY SATS!

There is an interim solution, though. You can order the SATS tools and the field maintenance modules, which include everything but the actual SATS container, trailer, environmental control unit and power generator.



I CAN'T GET SATS. HOW CAN I FIX ANYTHING?



CALM DOWN. YOU CAN GET MOST OF SATS!

The basic SATS tool load is called the sturdy and mobile (S&M). It contains all SATS components, including the air compressor, air tools, bench grinder and drawer foam tool cutouts.





THE S&M CONSISTS OF THREE UNITS...

- the base SATS, NSN 4910-01-531-2053
- field maintenance module 1, NSN 4910-01-531-1673
- field maintenance module 2, NSN 4910-01-531-1674

THE BASE SATS REPLACES THE COMMON #1, MODULE 1 REPLACES THE AUTOMOTIVE HEAVY SUPPLEMENT #1, AND MODULE 2 REPLACES THE DIRECT SUPPORT AUTOMOTIVE SUPPLEMENT #2.

### Tool Warranty

Remember, all modernized sets, kits and outfits (SKO) have lifetime or limited-term warranties. That means if a tool breaks through normal use, you can get a replacement free, usually within two days. The warranty doesn't cover abuse, improper use of tools or lost or stolen tools.



To obtain warranty and replacement info, go to <https://pmskot.army.mil> and click on **REPLACEMENT/WARRANTY**. For a warranty claim, click on the warranty link and enter the requested info.

### Questions?

IF YOU HAVE TOOL QUESTIONS OR PROBLEMS, GO TO <https://pmskot.army.mil> OR WRITE...

Product Manager, PM SKOT  
ATTN: AMSTA-LC-CT  
Rodman Ave, Bldg 104, 1st floor  
Rock Island, IL 61299-7630

OR EMAIL [ROCK-PM-SKOT@conus.army.mil](mailto:ROCK-PM-SKOT@conus.army.mil)

OR CALL 1-877-4PM-SKOT (1-877-476-7563).



### Lack of Lube for M1114 Tie Rod Can Lead to Failure!

If you forget to lube your M1114's tie rod ends, or if grit and sand creep in, your tie rods will wear out or fail. **So remember to lube the tie rod ends regularly with GAA like TM 9-2320-387-10 tells you.** Lubing keeps everything moving smoothly and pushes out water and most debris.

*But be careful not to overlubricate tie rod ends!* One or two shots of lube will do and should lead to seeping. Eyeball the boot while you lube, because too much lube can rupture it and you'll have to replace the tie rod end. If the boot expands, you overdid it!

### M2 Poster, Card, TM Change

A poster is now available that gives the complete procedure for timing and headspacing the M2 machine gun. Your pubs clerk can order the poster with DA Poster 750-98, IDN 401181, and PIN 083874.

There is also a smart card available that gives the complete timing and headspacing procedure. It's available on the AEPS website: <https://aeps2.ria.army.mil/commodity/pubs/tacom/bulletin/m2-mg-time-gage2.doc>

Change 2 to the M2's TM 9-1005-213-23&P is available at the ETM site:

<https://www.logsa.army.mil/etms/online.cfm>

### Open Vents Clog A/C in M1114s

**Don't** leave the A/C system's air vent open in your M1114 HMMWVs! When it is open—the knob is pushed in—the A/C evaporator coils get clogged with dirt, *hindering your A/C's performance*. You may open the vent long enough to de-fog windows, but then **close the air vent**. When the air vent is closed—the knob is pulled out—air re-circulates in the cab, reducing clogging.

### ALIGNMENT SYSTEM EASES WORK

Mechanics, a mobile laser alignment system (MLAS), NSN 5860-01-543-4606, is available to help you with your tactical wheeled vehicles and M1000 semitrailers. The MLAS quickly identifies suspension problems and eases alignment work in the shop or in the field. It comes with four wheel adapters, a frame gauge, extensions, two air assist bottle jacks, the MLAS laser, rechargeable batteries, a battery charger, and instructions.

### HMMWV Hood Reinforcement Kit

Want relief from HMMWV hood cracking? Then the HMMWV hood reinforcement kit, NSN 2510-01-547-7220, should solve your problem. It stops cracks from developing and keeps cracks from growing in your HMMWV hood. Plus it's approved for use on all basic, -A1, and -A2 model M998s, as well as M1121s and M1123s. It is easy to install, and installation instructions come with the kit.

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

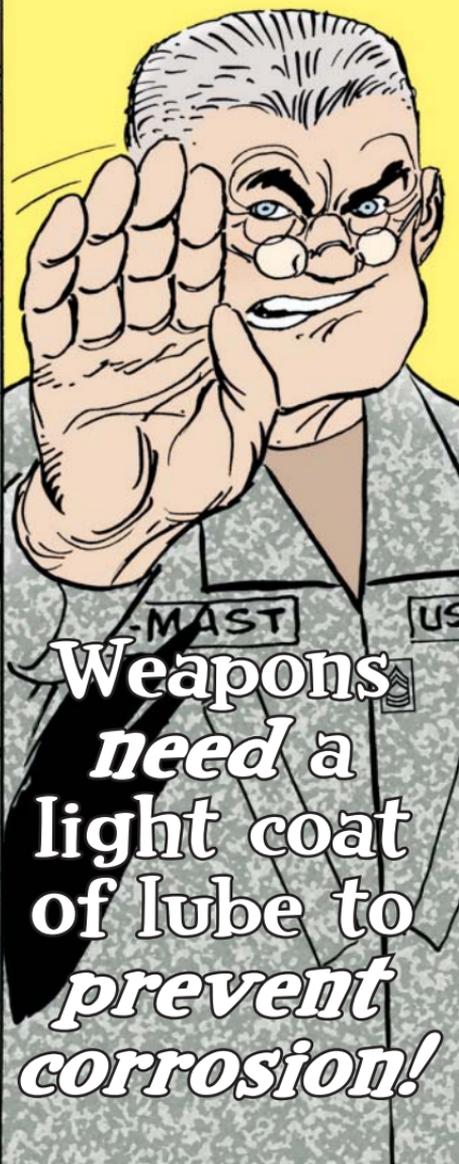
Would You Stake Your Life <sup>right now</sup> on the Condition of Your Equipment?

SURE YOUR WEAPONS LOOK IN GOOD SHAPE...

...BUT THEY'VE FAILED TO PASS MY WHITE GLOVE TEST!

**HOLD IT!**

A PROPERLY MAINTAINED WEAPON **SHOULDN'T** PASS THE WHITE GLOVE TEST!



Weapons *need* a light coat of lube to *prevent corrosion!*

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