

Issue 300

PS

November
1977

THE PREVENTIVE MAINTENANCE MONTHLY



SPECIALIST
LE YONZ
IS BACK,
SARGE...

≡GULP≡

?

SARGE, YOU SAID
THIS OUTFIT NEEDS A TOP
COLD WEATHER EXPERT...

WELL, HERE
HE IS...
AB SNOWMAN!

AB
LOVES
PM

MURPHY
ANDERSON

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ISSUE No. 300 NOVEMBER 1977

GROUND MOBILITY 1C-21,29-36

Coping With Cold	1C-15	Gama Goat	20
Tire Chains	16-17	M880	21
Battery Tips	18,19	Icy Driving	29-36

FIREPOWER 22-27

Small Arms,		M106-mm RR	26
Missiles	22-25	AN/VPS-2	27

AIR MOBILITY 37-43

Huey Couplings	37	Kiowa Seals	42
UH-1 Covers	38-39	Protective Caps	43
Chinook	40,41		

ELECTRONICS 44-49

Cables and		NATO Adapter	47
Batteries	44-45	26-Pair Cable	48
Antenna Mast		Night Vision Sight	49
Care	46-47	Radar Plotter	49

TROOP SUPPORT/SUPPLY

New Publications	28	Tie-Down Straps	55
3-KW Gen	50-52	Bung Hole Plugs	55
Mil Std Eng	53	DA Form 2408-9	56-61
30-KW Gen	53	Microfiche Pubs	62-64
M2 Crimper	54	Medical Support	64

PS wants your ideas and contributions, and is glad to answer your questions. Name and address are kept in confidence. Just write to: Or call AUTOVON 745-3503.

MSG Half-Mast
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Lexington, KY
40511

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Planning's The Secret For ...

COOPING with the COLD



As you probably learned the hard way last year, trying to get through a cold winter with ordinary maintenance just won't hack it. Operating in the cold calls for something extra. And that something starts with good maintenance habits.

This is simply orienting yourself for conditions that will actually exist—conditions that can frustrate the best mechanics and operators if they're not ready to meet the hazards head-on.

ING



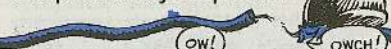
WHEN THE TEMPERATURE DROPS TO ZERO AND BELOW, STRANGE THINGS HAPPEN ...

1. LUBRICANTS become stiff and hard to use.

MOLASSES?



2. PLASTIC AND HARD RUBBER PARTS become brittle. A hard knock or sharp bend may snap them.



3. GAGES AND DIALS stick and give wrong readings. A gentle tap usually frees them.



4. BRAKES freeze to drums if left standing when wet.



5. FUEL TANKS, FILTERS AND LINES freeze tight or ice up from condensation.

6. LINKAGES get stiff causing hard operation or delayed response.

7. PAINT becomes brittle and cracks easily.

8. CRANKCASES sludge up from condensation caused by short runs.

9. BATTERY efficiency is cut. They freeze and crack when discharged.



10. ENGINES are hard to start, with threat of hydrostatic lock.

11. MACHINED AND UNPAINTED SURFACES rust and corrode quickly.

12. DRAIN COCKS AND PLUGS freeze tight, discouraging daily or periodic draining.



13. POWER TRAIN BREATHERS AND VENTS clog from slush and freeze closed.

14. WINDSHIELDS crack easily when hit by a blast of hot air when being defrosted.



15. PERSONNEL EFFICIENCY gets lousy.

You learn right off that just about any task may take twice as long to do so you make sure you allow enough time to get the job done right.

And since the wind-chill factor can have you operating at -50 degrees at times, you make sure there're at least 2 people assigned to any outside task. Not only is the extra help needed, but each can watch the other for signs of frostbite, which can strike FAST.





1. Be acquainted with the Cold-Weather Operation portion of your operator's TM.

GREAT READING FOR A LONG WINTER'S NIGHT!



2. Lubricate according to the temperature range on your equipment's LO.

3. Arm your outfit with the necessary special winterization equipment that's authorized for the average temperature range of your area. Area climatic conditions are determined by the average temperature range of the season's coldest month.

4. Keep your extreme cold-weather TM's, TB's, FM's and other cold-weather

pubs within reach for quick reference. Look 'em over before the cold blast hits to offset any trouble due to lack of know-how.

5. Keep vital spots or portions of your equipment under cover, or out of the weather altogether.

6. Always remember . . . you're working under unusual conditions so give your equipment that type of attention and service.

7. Try no short cuts, alterations or repairs that're beyond your MOS know-how.

8. Never force a cold, stiff or frozen piece of equipment.



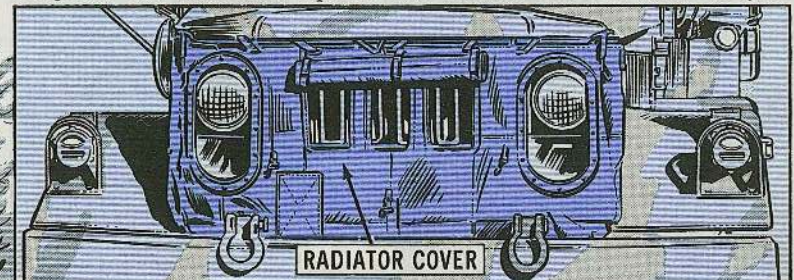
9. Protect your fuel and lubricants from winter's contaminating elements.

10. When in doubt whether winterization treatments apply, check with someone who knows.



Authorization for heaters, closure kits and cold-weather starting aids is given in SB 9-16 (Aug 70).

Assemblies like personnel heaters, closure kits, primer pumps, slave receptacle kits and other special cold-weather aids are listed in your



equipment's support-level parts manuals. So check out your climatic zone with your support unit, and get whatever winter aids that're needed to offset the winter's damaging effects on your equipment.

Tire chains for tactical vehicles are listed in the -20P TM's. If your TM hasn't yet picked up the info on tire chain authorization, see the "Note" on page 157, TM 9-2320-218-20P (Jan 72). Authorization is the same for all tactical trucks—except in special cases, like wrecker trucks—where chains are usually required. The swivel-type hooks for securing cross chains are listed in TB 9-2300-282-12 (Nov 65). See page 16 for more on tire chains.





Use 1 pint of technical methanol, NSN 6810-00-275-6010, to 40 gallons of gasoline. Pour the methanol on top of the fuel—mixes better.

You just can't keep water out of fuel. It comes from condensation. So, drain filters daily. If water builds up, you may have to drain the fuel tank.



Goats, Goers and TM-260-series 5-tonners have fuel tank drains that'll let you drain as much as you want.

Extra effort should be taken to wipe away snow or ice from fuel tank filler openings, filler cans and hose nozzles before refueling.

In cold weather, you get lots of static electricity—so make certain all your filler nozzles are grounded before pumping any fuel. And do your best to keep fuel tanks full to hold down the condensation.

Bulk fuel containers should be stored with their openings tightly closed and protected. And keep open cans under cover. A little care here goes a long way.



Keeping a battery at its peak efficiency and charge in zero weather is as easy as getting a date with Farrah Fawcett-Majors.

You've got to watch its specific gravity like a hawk—easy to do with the optical tester, NSN 6630-00-105-1418, in the No.1 Common Automotive Shop Equipment.

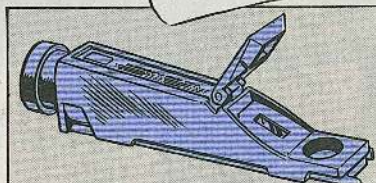
How to use the tester is explained in TM 9-6140-200-12 (Sep 73), page 3-33. Complete instructions are right on the tester. Even at its best a battery has only 40 percent of its cranking ability at 0°F when fully charged. And at zero temperature it'll freeze and break when reading 1.160 specific gravity.

If your vehicle is not putting on enough miles to keep the battery charged up, you'll have to keep switching batteries and get 'em charged by your shop.

Before adding water to a battery be sure you're going on a long haul to give it a chance to mix with the electrolyte ... it'll need about an hour's running time. Never add water to a cold battery. Add it only if the battery's ready to be charged or when the electrolyte's about +40°F, if the battery is to be left standing.

If a battery freezes, get it indoors and let it thaw slowly. And anybody who thaws out a battery with a torch or open flame is off his rocker—it can blow like a grenade.

For the whole rundown on battery care read your copy of TM 9-6140-200-12 Operator and Organizational Maintenance Manual for Lead-Acid Storage Batteries.



Electrolyte Specific Gravity Reading	Freezing Point
1.280	-90°F
1.250	-62°F
1.200	-16°F
1.150	+5°F
1.100	+19°F

COOLING SYSTEMS

Your bible for antifreeze for liquid cooling systems is TB 750-651 (Jan 71). It spells out procedures for cleaning and conditioning cooling systems and gives the type and amount of antifreeze needed for various degrees of protection. This TB applies to all Army equipment.

And TM 750-254 (Mar 72), Ch 1 (Oct 72), tells you everything else you need to know about Cooling Systems: Tactical Vehicles.

USE THIS CHART AS A GUIDE WHEN FILLING YOUR COOLING SYSTEM!

Protection Desired	Pints of Ethylene Glycol needed in each gallon of water.
+20°F	
+10°F	1½
0°F	2
-10°F	2¾
-20°F	3¾
-30°F	3½
-40°F	4
-50°F	4¼
-55°F	4½
	4¾

HMMMM... JUST THE THING FOR COLD WEATHER PROTECTION!

!GULP! HOW MUCH ANTI-FREEZE DOES AB TAKE, LE VONZ!

FOR THIS CLIMATE-- I GAL...

For good operation, a cooling system should heat up to 160° to 180°F regardless of the cold weather. If it won't, have the engine's thermostat checked—it could be stuck open and need replacing.

Cooling systems that constantly go over 200° also need attention. Again it could be a bad thermostat, a clogged radiator, a bad radiator cap or filthy coolant. Or maybe the flow of air is blocked.

Air cooled systems don't need too much attention. All they need is a good flow of air with all the air-flow shrouds in place. To speed up heating in zero weather, you can partially cover the air intake grills with canvas when starting. Just be sure to take it off after the engine reaches operating temperature.

LUBRICATION

Crankcase oil can go to pot much quicker in winter and may need changing oftener than the LO specifies. Sludge from condensation and dilution from fuel are the main reasons.

HMMM! NO FUEL ODOR... BUT I THINK I CAN SEE WATER!

SNIFF
SNIFF

A BETTER WAY IS TO DRAW A SAMPLE AND LET IT STAND IN THIS JAR! WATER WILL SEPARATE FROM OIL!

YES... BUT HE COULD USE A BATH!

AAAA-AAY! AB KNOWS HIS STUFF, EH, CONNIE?

After every daily oil-level check, sniff the dipstick for fuel. And use your eyes and fingers to detect sludge. Moisture contamination is hard to detect unless it's really bad. If you suspect it, draw a sample and let it stand in a glass jar. Water will show by separating from the oil.

When contamination is found, change the oil and oil filters.

If you're using OES or the new APG PD #1 Arctic engine oil, check your oil level often because an engine will consume more of this thin oil than OE. Keep an eye on the oil-pressure gage: a pressure drop can indicate low oil. If you're on a long run, check the oil several times a day. And never overfill to cut or skip oil checks. Overfilling causes other troubles, so don't push your luck.

Same goes for the rest of the chassis— don't over-lube. Globbs of cold-stiffened grease can cause parts to bind and lock.

Condensation is always looking for a place to happen. So, in between your regular periodic lube services, check one or 2 of your gear cases; like a differential, transmission or transfer. Any evidence of water contamination is the signal for an oil change.

AND NEVER MIX GRADES OF OIL--USE THE RIGHT STUFF FOR THE TEMPERATURE RANGE!

YOU MAY HAVE TO DRAIN WATER OFF THE BOTTOM

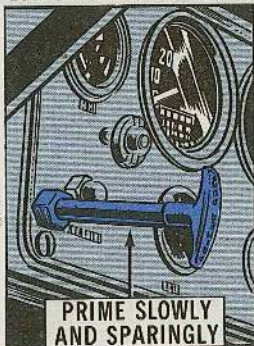
One thing is for sure, zero weather makes it tougher to start your engine. The best way to help yourself and the engine is to be familiar with the equipment's cold-weather starting procedure. Usually there're a few extras that have to be done—so bone up on that section of the -10 TM.

First off, keep your batteries at peak charge for good cranking power. Then turn off all accessories and crank the engine no longer than your -10 TM says. Longer periods can burn up the starter.



Wait a full 3 minutes before cranking again.

Many operators over-prime. This leads to hydrostatic lock and crankcase oil dilution. Before turning the engine over—prime 2 or 3 slow strokes—no more. Then turn over the engine and prime slowly and sparingly until the engine'll run on the choke and throttle settings alone.



COLD WEATHER STARTING

1. OPEN FOOT THROTTLE ONE-THIRD.
2. TURN ON PRE-HEATER SWITCH - WAIT 30 SECONDS.
3. PUMP PRE HEATER PRESSURE TO 80 PSI AND TURN IGNITION SWITCH TO "START".
4. KEEP 30-60 PSI PRESSURE WHILE CRANKING.
5. WHEN ENGINE STARTS, OPERATE AT 600-1000 RPM. PUMPING 30-60 PSI FOR 2-3 MINUTES.
6. IF ENGINE DOES NOT FIRE IN 30 SECONDS CRANKING. REPEAT STEP 2 THROUGH 5.
7. LOCK PUMP AND TURN PRE-HEATER SWITCH OFF.

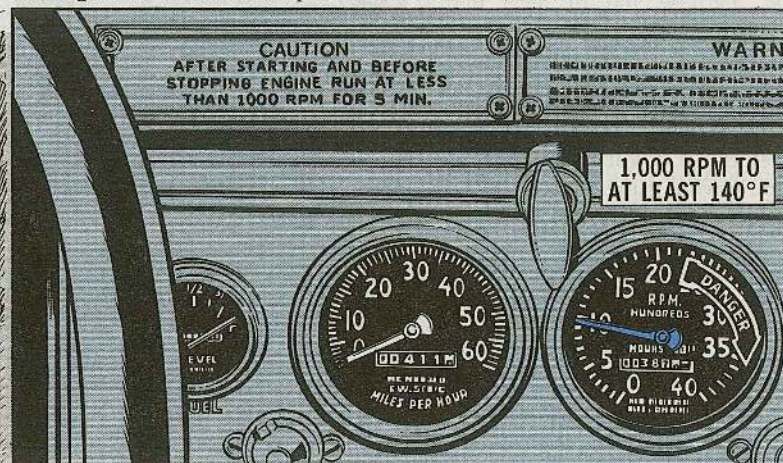
ENGINES

ALL ACCESSORIES OFF? FINE!
NOW...TURN 'ER OVER... BUT BE CAREFUL!!...

RRR-RRRR

...YOU DON'T WANT TO BURN UP A STARTER!

Easy on that throttle! Warm up at about 1,000 RPM and don't put a load on the engine until it warms up to at least 140°F (about 5 minutes).



Idling under 800 RPM for long periods causes many problems. If you're required to run the engine to keep your radio in net or to operate some auxiliary equipment off the vehicle's power train, then run the engine at high idle—between 1,000 and 1,200 RPM. Use a separate generator whenever possible. In extreme cold weather you'll have to idle your engine more than normal. However, keep in mind the Army's energy shortage and idle only as much as absolutely necessary. When on a stop-and-go mission it's best to let the engine run at high idle.

Diesel engines should be kept running during short stops or waits—here again at 1,000 to 1,200 RPM.

Spark plugs foul like crazy and can give you a lot of grief. Cold engines running at slow speeds and low RPM's are the greatest cause.

Zero weather calls for extra attention. Don't wait until your ignition system poops out to clean and reset the plugs. If you've firing problems, be sure to check your plugs when you're troubleshooting.

There's a spark-plug cleaner and tester within reach of every unit. It's found in the No. 1 Supplemental and No. 2 Common Tool Sets. If you're new at plug cleaning, dig up a copy of TM 9-4910-422-12 (Jun 64). The cleaning instructions in this TM can be applied to all makes of spark plug cleaners.

SLAVE-STARTING

Before doing any slaving, dig out a copy of TB Ord 537 (Sep 56). It gives the ABC's of slaving wheeled and track vehicles. This TB along with the vehicle's TM will give you the rules of the slaving game.

THEN YOU GOTTA START SCROUNGIN' UP THE PARTS AND MAKE IT-- CAUSE IT'S NOT ISSUE EQUIPMENT!

HEY, WHAT'S TH' NSN FOR THAT OUTFIT? WE GOTTA GET ONE!

A PORTABLE JUMP-STARTING OUTFIT CAN BE MIGHTY HANDY—LIKE THIS ONE MADE FROM SALVAGE PARTS, INCLUDING A BATTERY BOX FROM A 2½-TON TRUCK. STARTING OUT WITH FULLY-CHARGED BATTERIES, YOU CAN HAUL IT AROUND THE MOTOR PARK AND GIVE A BOOST TO ANY HARD-STARTERS. THE JUMPER CABLES COME UNDER NSN 2920-01-027-0125.

Slave receptacles are standard on some equipment, like tanks.

Other equipment, like tactical trucks, get slave receptacles only as part of the special winterization kit.

And you use the slave cable in the No. 1 and No. 2 automotive tool sets.

There're 2 different slave cables in the field. The old 2-prong job, NSN 4910-00-474-9135, is being replaced by the NATO single-prong cable, NSN 2590-00-148-7961. This cable comes with adapters to fit the old 2-hole slave receptacles.

Clamp-type jumper cables, NSN 2920-01-027-0125, can be added to your No. 1 or No. 2 common tool set if you've got M880-series 1¼-ton trucks.

Stay awake and take an extra look when hooking up jumper cable connections. The hook-up must always be positive to positive and negative to negative. On alternator charging systems, even a slight flash on a wrong post can burn out a component. One thing you can be sure of is that all tactical and combat vehicles have negative ground. Believe it!!

It's always a good idea to try to keep at least one vehicle in a semi-warm shelter, its batteries fully charged. You use it to slave-start the others.

A last word . . . while slaving or jumping keep the live vehicle running at 1,800 RPM, and always pair up vehicles that have a similar battery configuration. For example, never try to slave a tank that has 4 6TN batteries with a ¼-ton truck that only has 2 2HN batteries. If you do you're just asking for more trouble.

AIR BRAKES

Water accumulates in an air brake system even in fair weather, but during low winter temperatures it accumulates like mad.

Let the pressure drop before draining the tanks.

Drain the compressed air reservoirs daily, or even twice a day when on long runs. The best time to open the petcocks is after the day's operation.

And never move out until the air has built up to the right pressure. On equipment that's equipped with a buzzer, don't move until it stops buzzing.

If you're towing a trailer with an air line filter, make sure you keep the water drained out of that filter—or you'll suddenly find yourself without trailer brakes.

If your vehicle's air brake system is equipped with an alcohol evaporator, make sure it's operating and the jar is filled with alcohol.

The air compressor's unloader valve shouldn't be frozen or stuck. To check it out, build the air pressure to its rated maximum, apply the brakes and hold 'em, then stop the engine. The pressure should not drop within one minute.



Zero weather requires no tire pressure adjustment unless you're operating in deep loose snow. Your -10TM gives the low tire pressure that works best. But after the snow's gone, get those tires back to their normal highway pressure.

If you happen to get a flat spot frozen into a tire, move out slow like and let it round out.



Every valve stem should be capped or else the stems'll ice up and freeze solid.

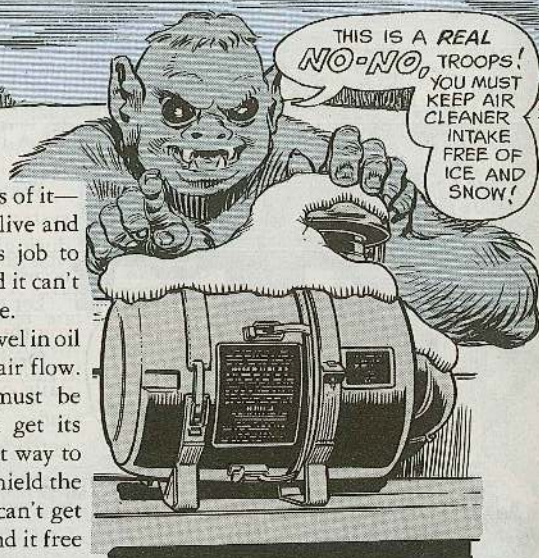


AIR CLEANERS

Air—good clean air and lots of it—is needed to keep an engine alive and healthy. It's the air cleaner's job to make sure that air's clean, and it can't do this if it's choked up by ice.

Ice and slush raise the oil level in oil bath air cleaners and cut off air flow.

The air cleaner intake must be protected so the engine can get its needed supply of air. The best way to assure this is to position or shield the intake so the snow and sleet can't get to it. And keep the area around it free of ice and snow.



UNDER COVER

Maintaining equipment in cold miserable weather can be a lesser pain in the end when you keep vital or delicate parts and equipment under cover. The first item that comes to mind is windshields. Especially when the truck's parked overnight in sleet.



A piece of canvas or hardboard cut to size and fitted on the windshield during times like that really pays off.

This same technique can be used on many items that're left out in the weather all night—like exposed instrument panels, winches, sighting and fire-control equipment, operating levers, etc.

Many of these items already have their own covers. If so, an extra minute putting one on pays big profits. Ask any operator who's spent half an hour chipping and scraping ice to get at his winch cable.

HEATERS

In weather that'll make a brass monkey twitch and groan, a little heat can save many a delicate situation. Particularly a warm vehicle compartment. And no compartment is going to be warm unless you know how to keep your personnel heater putting out.

Keeping a stream of heat flowing from a heater depends on exact operation and constant maintenance, especially on fuel-burning heaters. Knowing the starting and stopping techniques for a fuel type heater is mighty important. Since there're several types and models being used, be certain you know how to operate the one you have before you start flipping switches.

When most fuel-burning heaters are turned off, they'll stop burning but the blowers will keep running. This is to cool the heater and purge it of unburned gases. It'll stop automatically when it's ready. So never turn off a master switch when shutting down a vehicle until your heater stops.

When this kind of heater goes kaput, it's usually one of these: igniter fouled, burned or loose; flame switch out of adjustment; loose electrical connections; or clogged or leaking fuel lines. Most heaters have a parts repair kit that includes a replacement igniter. Know which kit your heater gets and have one handy for quick repairs.

When defrosting a windshield with your heater... careful. A sudden blast of hot air against cold glass will crack it for sure. Always warm up your cab first then start the defrosters on LOW. After a few minutes of this then go to HIGH.

Keep your CF₃B₇ fire extinguisher away from any "hot" spot that gets hotter than 180° F. For instance, never leave it too close to the vehicle personnel heater duct. Same goes for ducts on Herman-Nelson heaters. Too much heat too fast on a cold extinguisher can make it blow.



A BIG NO-NO

DID O'HAGAN
PULL HIS EXHAUST
SYSTEM PM?

DUNNO!

OH, TH'
WEATHER
OUTSIDE IS
FRIGHTFUL...

BUT HERE
IN MY
CAB IT'S
SO-OO
DELIGHTFUL!

In vehicles, keep a window or hatch cracked open—and even with that, never take a nap while the engine or heater's running.

In a work bay or shop, pipe the exhaust to the outside or keep the doors wide open.

Keep all fuel-burning heater exhausts and their couplings tight and leakproof. Don't take any chances—it's not worth it.

Operating equipment or pulling maintenance in a closed area with an engine or fuel-burning heater going can put you to sleep for a long time. Carbon monoxide is not to be fooled with—and nobody is tough enough to withstand its sneaky and deadly consequences.

Regardless of where you're holed up—driving in a closed cab or tuning an engine in a closed shop—you're a candidate for the deep freeze.

R.I.P.

Here lies Private O'Hagan
From this sleep ne'er to awaken,
A leaky exhaust
Joined with the frost
And done him in... NO FAKIN'!

Next Month In PS

M812 TRACTOR PM

FAAR OUT NEWS

COMMO/ELECTRONICS STORY

2408-9 GAIN REPORT

Goat Throttle Cable

If you order the throttle control cable for your Goat that's listed as item 2, page 36, TM 9-2320-242-20P (Mar 77), you'll commit over 40 bucks of your maintenance funds—but you won't get the cable! Instead, order NSN 2590-00-679-3179. You'll get the cable for \$3.14.

COLD WEATHER LIBRARY

I'M AVAILABLE
FOR SNUGLIN',
TOO!

To keep your equipment ready to shoot, scoot and communicate, the best bet is to scan through all the extreme cold weather publications for the portions that pertain to your climatic operations.

HERE'RE THE PUBS YOU'LL WANT
TO SNUGGLE UP WITH ...

AAAAAY!!
COOL, CONNIE!

- TM 9-207 (Dec 70), w/Ch 1
- TB Eng 347 (Dec 59)
- TB 750-651 (Jan 71)
- TM 750-254 (Mar 72), w/Ch 1
- SB 9-16 (Aug 70)
- SB 11-576 (Apr 69)
- TB 9-2855 series*
- SM 8 & 9 SNL G249 series*
- TM 9-8662 (Mar 54)
- TM 9-247 (Oct 60)
- FM 31-70 (Apr 68)
- SB 38-100 (Jun 73)
- TM 9-6140-200-12 (Sep 73)
- Operation and Maintenance in Extreme Cold Weather
- Winterization Techniques for Engineer Equipment
- Use of Antifreeze Solutions and Cleaning Compounds in Engine Cooling Systems
- Cooling Systems: Tactical Vehicles
- Winterization Kits and Aids (authorization)
- Cold Weather Batteries for AN/PRC Radio Sets
- Winterization Kits
- Winterization Equipment
- Fuel Burning Heaters (vehicles)
- Materials and Chemicals used for Cleaning, Preserving, Abrading and Cementing Ordnance Materiel
- Basic Cold Weather Manual
- Preservation, Packing and Marking Supplies
- Lead-acid Batteries

*See your DA Pamphlet 310-4 for complete listing.

WORKIN' on the CHAIN GANG?

HEY--GREAT!!
ROADS ARE
CLEAR NOW!!!

REMINDE ME
TO TAKE OFF
TH' CHAINS WHEN
WE GET BACK!

DON'T WORRY... THE BARE
PAVEMENT TOOK CARE OF
IT FOR YOU!

It's hard enough to drive when you need chains. But with one of them wrapped around an axle, or flying through a brake line, that's real bad news!

The answer boils down to care. Take care to put the chains on right and take care to give them proper PM.

The first thing to do before you put tire chains on is to inspect 'em. Make sure they're not too worn or damaged. Then spread them out and straighten the twists or kinks.

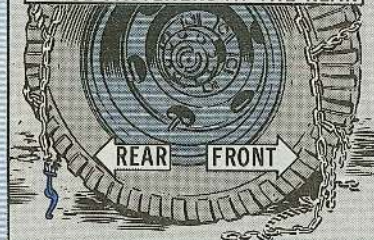
TIRE SIZE	CHAIN ASSEMBLY NSN 2540-00-	CROSS CHAIN NSN 2540-00-933
7.00 x 16	177-7235	6916
9.00 x 16	933-9026	6916
9.00 x 20	933-9024 (single)	6916
	933-9030 (dual)	
11.00 x 18	933-6933	6915
11.00 x 20	933-9022 (single)	6915
	933-9599 (dual)	
12.00 x 20	933-6922 (single)	6915
	933-6917 (dual)	
14.00 x 20	933-9033 (single)	6992
	933-6928 (dual)	
14.00 x 24	933-9023 (single)	6992
	933-6929 (dual)	
16.00 x 20	933-6937	6914
18.00 x 33		(no cross chain)

HERE ARE
YOUR CHAINS
AND CROSS
CHAINS FOR
REPAIR...

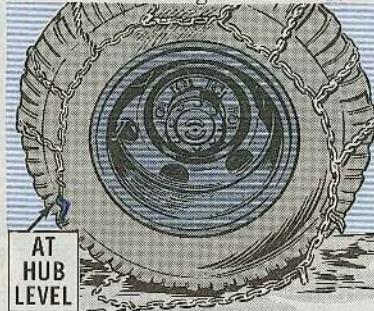
CHAINS FOR M880-SERIES
1½-TON TRUCKS COME UNDER
NSN 2540-00-057-0204

Drape the chains over the tires with fasteners at the rear. Tuck the first cross chain of the end without fasteners under the front of the tire.

PLACE FASTENERS AT THE REAR



Move the vehicle forward until the fasteners are as high as the hub.



Bring the side chains up to see which link to use for fastening. The chains should be just loose enough to



... TO
CREEP
A
LITTLE

let them "creep" a little. This saves wear on both the chain and tire. Fasten the inner side chain first, then the outer. With dual-wheel chains, fasten the center chain first, then the inside, then the outside.

To remove the chains, just unhook them, let 'em drop to the ground at the side of the tire, and drive off them. Hook the side chains back together again so they won't get tangled.

Chains need care to prevent rust. After use clean 'em, then preserve 'em. Dipping in used crankcase oil is good.

During use they should be inspected often—like, at every stop. Repair broken links immediately. Take off the chains when you're going to travel over roads where they aren't needed. Pavement and chains are enemies.

With these tips, a driver won't have to worry about a runaway tire chain wrapping itself around something it shouldn't.

Banish Battery Boiling

Does your truck's battery make you sick? It could, if you're not careful.

Some trucks, like the 1/4-ton, 3/4-ton, M715-series and 10-ton, have batteries inside the driver's compartment. If your charging system's putting out the wrong voltage, it could make the battery "boil" off dangerous fumes. Inside a closed compartment, you can get that "queasy rider" feeling.

So if you smell an acid odor while you're driving, do yourself a favor and get that charging circuit checked out double-quick. Instructions are in the vehicle's -20 TM.

TM-260-Series 5-Ton Truck

Battery Box Drainage

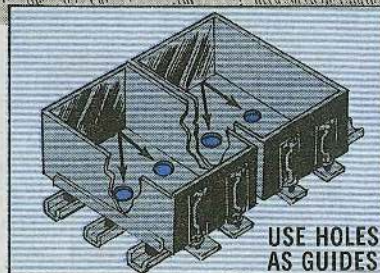
NO, NO! YOU'RE SUPPOSED TO DRILL HOLES IN THE PLATE!

THIS IS BETTER THAN SKATEBOARDING!

HOPE HE'S WEARING HIS LIGHT FALL CLOTHES, JONATHAN!

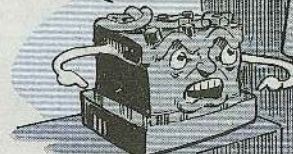
Trapped water rusts thru battery box floors on M809-series 5-ton trucks. The boxes have holes for drainage, but water accumulates unless the skid plate beneath the boxes has drain holes to match.

So, if the skid is trapping water, use the box drains as guides to make 1 1/2-in holes in the skid.

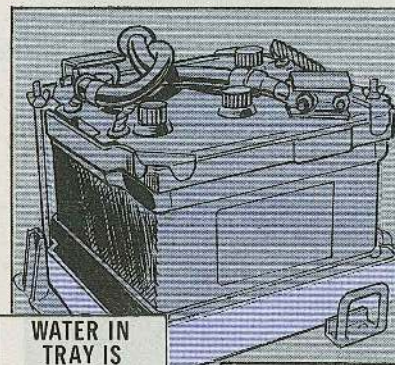


Gama Goat . . .

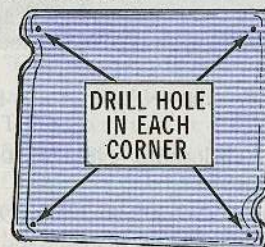
LET'S GET TO THE BOTTOM OF THIS PROBLEM... I'M FREEZIN'!



Water in the battery trays of your M561 or M792 1 1/4-ton truck is messy and'll lock the batteries in ice in freezing weather.



Your mech can make a permanent drain by drilling a 1/4-in hole in each corner of the tray.



Also, the tray can be raised to keep water from sitting under it. Cut an 8 by

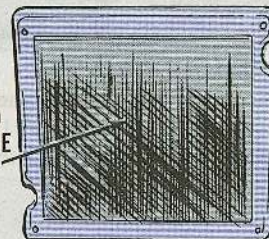
Battery Up

COMIN' RIGHT UP, OL' BUDDY!



10-in piece of 1/4-in thick rubber sheet. NSN 9320-00-684-2695 gets a 36 x 36-in sheet.

CEMENT RUBBER SHEET TO UNDERSIDE OF TRAY



Cement it to the underside of the tray . . . don't cover any of the new holes. Use adhesive, NSN 8040-00-664-4318 (1 pint).

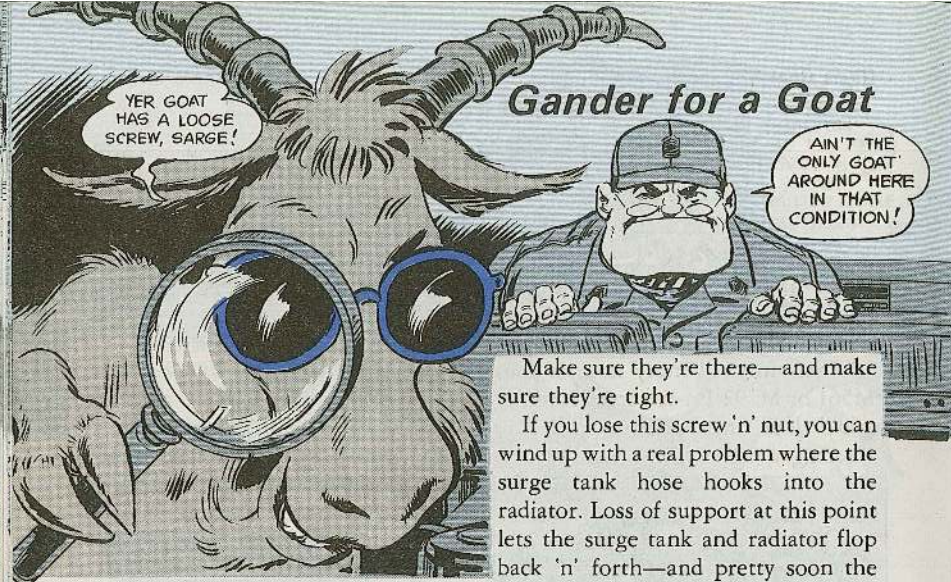
The hold-downs need protection too. Clean off all rust and corrosion. Apply a coating of compound 1 1/32 - 1/8-in thick. There are 3 kinds you can use:

Coating compound, Plastic. NSN 8030-00-145-0151 gets a quart.

Epoxy coating. NSN 8010-00-959-4661 gets a kit.

Compound, Bituminous. NSN 8030-00-290-5141 gets a gallon.

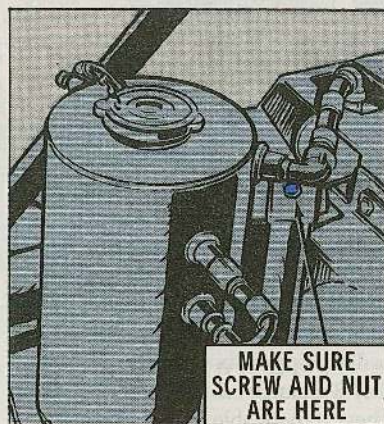
Use Appendix A, CTA 50-970 (Jul 74)w/Change 1 as your authority to get these expendable items as required.



Gander for a Goat

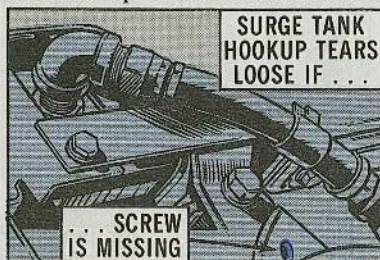
Look again when you're eyeballin' things around the engine cooling system in your Gama Goat. Like while you're checking the coolant level in the radiator surge tank.

Take a special gander at that screw and nut where the surge tank, radiator crossmember bracket and right hand support are hooked together.



Make sure they're there—and make sure they're tight.

If you lose this screw 'n' nut, you can wind up with a real problem where the surge tank hose hooks into the radiator. Loss of support at this point lets the surge tank and radiator flop back 'n' forth—and pretty soon the hose hookup at the radiator breaks off.



The support screw, plain nut and lock washer are in your TM 9-2320-242-20P (Mar 77) with NSN's—Items 2, 6 & 7, Figure 29.

But you'll get an even better hookup by using:

Washer, flat NSN 5310-00-809-4058

Nut, self-locking, NSN 5310-00-483-8792

Screw, NSN 5305-00-225-3839.

This screw is longer. It should show at least 3 threads at the end after you've torqued the nut to 96 lb-in.

M880-Series 1¼-Ton Truck . . .

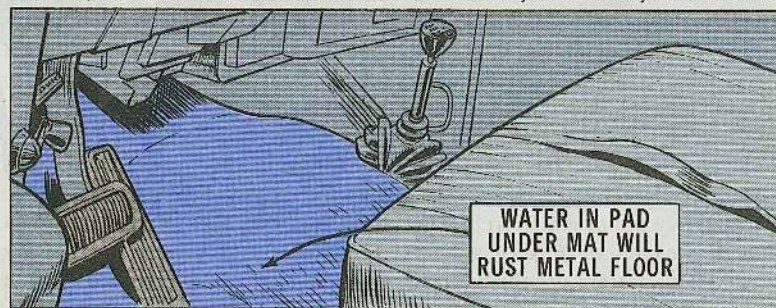
Stamp Out Damp Mats



The padding under the floor mat in your truck cab soaks up water like a sponge—and holds it there to form rust.

Rust can chew right through the metal floor in no time at all.

Even though the mat may look dry on top, it often hoards water—for a dry day, maybe—on its underside. And that leads directly to the rust you don't want.



"OK," you say. "How can I clean that mat? It's hard to get out. I just can't take it out and hang it on a clothesline someplace."

The answer to that one lies in taking it easy on the water.

Sweep the mat first . . . then clean with a brush and water.

Once that's done, make sure the vents and windows are open so the mat can dry out.

If the mat's really soaked, you may indeed have to take drastic action. Take it out and hang it out to dry once.

After that, you can keep it up to snuff with regular sweeping and brushing.

FIREPOWER

Small Arms,
Missiles

the
WOW!
LOOKIT!!

IT'S
CONNIE!

PULL UP YER FACE
MASK, LOVER-BOY...

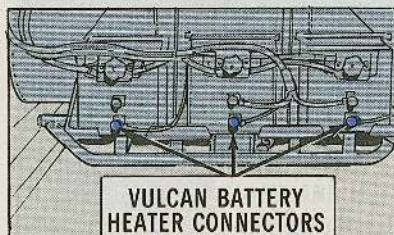
YOU'RE FOGGING
UP THE OPTICS!

Small arms and missiles do very well for themselves in cold weather, thank you.

You've got to remember, though, that some missile systems are not designed to operate when the dipstick goes deep into the sub-zero zone. Your TM clues you there, of course.

And, small arms only need a minimum of help from you... but they do need it to get the job done.

In general, it's up to you to keep snow and ice out of gun barrels. Also, if your weapon or missile systems have battery heaters, use them for the time specified in your TM.



**VULCAN BATTERY
HEATER CONNECTORS**

22



For self-propelled or mobile systems, the article on general and vehicle maintenance in this issue is must reading.

Also, whether you have vehicles or weapons, there's much valuable cold weather material in TM 9-207 (Dec 70).

LAW, Lubricating Oil, Arctic Weapons, is a must when the temperature dips to zero and below. Don't let the "Arctic" fool you. You need it at zero, and zero is what you get... in a lot of places. Your TM tells you when your weapon needs LAW.

SCENE

HERE ARE
SOME COLD
WEATHER
POINTERS ON
SPECIFIC
KINDS OF
WEAPONS...

ROCKET LAUNCHERS

You also double the distance for back blast with rocket launchers, and operators should wear face masks (such as ski masks) and gloves. They protect against burning particles. (Back blast double distance does not apply to missile systems).



**WEAR
FACE MASK
AND GLOVES**

Hands Off!

Gun barrels, launcher tubes... bare metal... can weld your skin and flesh to them in sub-zero weather. Never touch them with bare hands... and never let them touch your bare skin.

23

PS MORE



GRENADES

One big caution with grenades: Be sure your gloves or mittens are dry when you get ready to toss them. Otherwise the grenade can freeze to the glove, and . . .

**WET GLOVE
OR MITTEN
CAN FREEZE
TO GRENADE**



AMMUNITION

Small arms ammo needs few precautions. Keep it the same temperature as your weapon, and remove any ice or snow before use.

Heavier ammo is stamped with the minimum/maximum temperature

U. S. ARMY

ROCKET HE 66MM ANTITANK M72A1
LOT
OPERATING TEMP. -40°F TO +140°F
STORAGE TEMP. -40°F TO +140°F

TEMPERATURE MARKINGS

ranges in which it can be used. If you're out there at 20° below zero, be sure your ammo can operate in the range.

M16A1

Like most small arms, your M16A1 rifle needs LAW at 0° and below. You also must keep it moisture free. If the rifle is kept outdoors, cover it up (poncho, blanket, whatever).



**COVER IT
OUTDOORS**

24

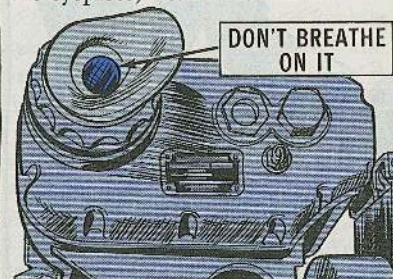
FIRE CONTROL

Most fire control systems need preoperation warm-ups, so check your TM's.

Never move fire control systems swiftly from hot (like in a warm tent or hut) to cold temperatures. Use your anti-condensation containers for that, or wrap them up good and strip the layers off a little at a time outdoors.

Sudden temperature changes will cloud the optics and rust internal parts.

Never breathe directly on a fire control eyepiece. You'll give it instant frost. When using or working around the eyepiece, wear a face mask.



**DON'T BREATHE
ON IT**

MACHINE GUNS

Clean them well and cover all internal or wear surfaces with LAW.

With machine guns, cannon and other small weapons, cover them when they're not being used.

WITH SMALL ARMS,
TROOPERS... IT PAYS
TO BE LAW ABIDING!



?

!

MISSILES

Missile systems cold weather requirements range from none to extensive. Check your TM for your specific system.

HERE ARE
SOME ITEMS ON
THE MORE COMMON
MISSILE SYSTEMS
WHICH SHOULD BE
UNDERLINED...



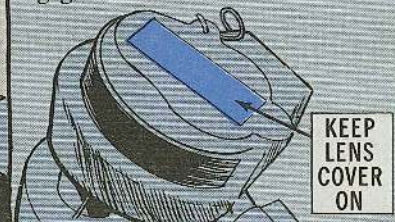
SHILLELAGH— The exhaust from the vehicle can frost the transmitter lens when the transmitter door is open. So, keep the door closed until you're ready to use the transmitter. Even then, check the lens for frost before firing.

**KEEP
TRANSMITTER
DOOR
CLOSED**



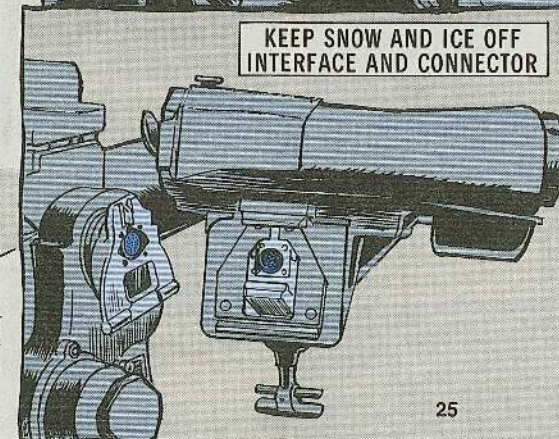
LANCE—You've got to pre-heat the cab before the tachometer will work right. As with other equipment, keep the moving or mechanical parts free of ice and snow. Same goes for all electrical connectors and for the optics.

DRAGON—Keep the lens cover on the tracker until you're prepared to fire. Replace the cover when the engagement's over.



**KEEP
LENS
COVER
ON**

**KEEP SNOW AND ICE OFF
INTERFACE AND CONNECTOR**



TOW—Keep snow and ice off the optical sight-to-traversing unit interface and connector, latches and clamps, as well as the rotating mechanism. Protect all optical surfaces when possible by covering with the shroud assembly bag, and check them before use. Use the MI anti-fogging kit on the lenses.

25

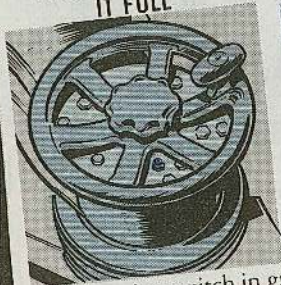
Some GREASE for your Reckless Rifle

Dear Half-Mast,
The LO for the M92 mount on the 106-mm recoilless rifle doesn't give enough dope on the amount of grease to put in.
Got anything new to pass on?

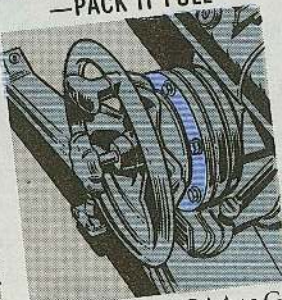
MAJ I. R. V.

Dear Major I. R. V.,
Sure have, Sir. The traversing mechanism drive assembly and the elevating mechanism of the M92 mount should be packed full once a year.

TRAVERSE DRIVE
ASSEMBLY—PACK
IT FULL



ELEVATING MECHANISM
—PACK IT FULL



FITTING FOR
ELEVATING MECHANISM



There's a switch in grease, too... from GAA to GMD (Grease, molybdenum disulfide, MIL-G-21164C). GAA does a good job, but GMD holds up better. This info will be revised in TM 9-1015-221-12 and LO 9-1015-221-12, both of which will be out shortly.

HERE ARE
STOCK NUMBERS
FOR GMD...

NSN 9150-00-935-4018, 14-oz cartridge
NSN 9150-00-754-2595, 1-lb can.

Short-Wired VPS-2 Cards

MAKE SURE
MY Q1 AND
Q3 TRANSISTORS
HAVE LEADS
THAT...



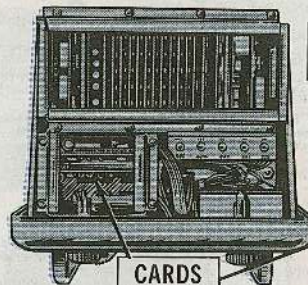
...ARE
1 1/2 INCHES
LONG!



SAME
FOR MINE,
TOO!

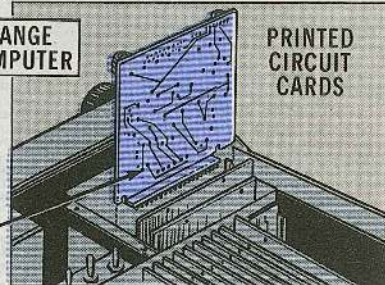
Are you about to repair the 4A19 or 4A20 printed circuit cards for the range computer (Unit #4) of the AN/VPS-2 radar set?

Hold one for this poop or you may end up being short-wired.



CARDS
LOCATED
HERE

RANGE
COMPUTER



PRINTED
CIRCUIT
CARDS

First off, the Q1 and Q3 transistors that you order must have leads 1 1/2 inches long. Manufacturers have standardized the leads on the transistors to 3/4 inch, which won't cut it.

So, what you've got to do is:

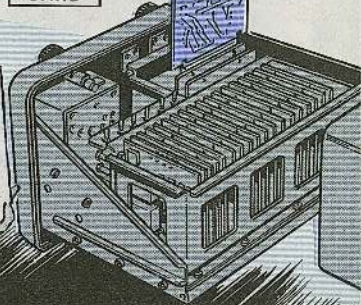
1. Make sure the Q1 and Q3 leads are 1 1/2 inches before you install them... so you can trim them up to specs.
2. When you request the transistors on a DA Form 2765-1, fill in a 2B advice code and note in Block M that the Q1 and Q3 leads must be 1 1/2 inches long.



•4A19, 15V regulator, NSN 1285-00-034-4600
•4A20, 25V regulator, NSN 1285-00-034-4601
•Transistor, Q1, NSN 5961-00-054-0046
•Transistor, Q3, NSN 5961-00-949-1440

HERE'S
THE FULL
ID ON EACH
CARD...

CIRCUIT
CARD



PUBS



This is a selected list of recent pubs of interest to organizational maintenance personnel. This list is compiled from recent AG Distribution Centers Bulletin. For complete details see DA Pam 310-4 (Nov 74), and Ch 3 (Oct 75), TM's, TB's, etc.; DA Pam 310-6 (Jul 77), SC's and SM's and DA Pam (0) 310-9 (Aug 74), COMSEC pubs.

TECHNICAL MANUALS

TM 3-1040-220-34 & P May Disperser, Riot Control Agent M5
Ch 2, TM 3-6655-253-12 Jul AN-M15A2A and AN-M15A2N Detector Kit
Ch 2, TM 3-6655-308-10 Jun Water Testing Kit, AN-M2 and Refill Kit, ABC-M30A1
TM 5-4520-239-24P May Space Heater Multifuel, 15,000-BTU Hunter Mod UN-48C
TM 5-6675-296-14 Jun Theodolite (Wild Heerbrugg Models)
TM 8-605 Aug PM and Serviceability Standards for Med Ept
Ch 1, TM 9-1005-233-10 May M73, M73A1, M219 Machine Guns
TB 9-1425-383-10 Jul Pershing 1A
TB 9-1425-470-14-1 Jun TOW Artillery Cover
TM 9-1430-580-20P Apr AN/GSA-77
Ch 1, TM 9-2300-216-20 Jun M107/M10/M110A1 SP Artillery
TM 9-2350-232-ESC Jun M60A2 Tank
Ch 1, TM 9-2350-257-10-1 Jul M60A1 Tank (Rise)
TM 9-2350-258-20-1 Apr M48A5 Tank

TM 11-1290-200-20P Jul Flash Range Set AN/GTC-1
TM 11-3895-207-20P Jul RL-172/G Reeling Machines
TM 11-5410-201-14P Jul 9-89C/G Electrical Shelter Ept
TM 11-5805-201-20P Jul TA-312/PT Telephone Set
TM 11-5805-353-24P May TA-499/U Telephone Terminal
TM 11-5815-303-14P Jul SA-880/G Teletypewriter Unit
TM 11-5820-256-24P Jul AN/GRC-26D Radio Set
TM 11-5820-334-20P Jul R-392/URR Radio Receiver
TM 11-5820-398-20P Jul AN/PRC-25 Radio Set
TM 11-5820-503-24P Jul CV-823/U Converter, Freq, Electronic
TM 11-5820-823-24P Jul AN/FRC-155(V), -157(V), -158(V), -159(V) Radio Sets
TM 11-5830-241-20P Jul AN/UTH-6(V)1, -2, -3, -4 Public Address Sets
TM 11-5895-225-24P Jul SB-675(S) Patching Communication Panels
TM 11-5895-293-24P Jul AS-2189/G Antenna and AB-1078/G Antenna Support Base
TM 11-6110-201-12P Jul J-1077(I)U Distribution Boxes
TM 11-6130-245-24P-1 Jul PP-2309B/U Power Supply
TM 11-6130-250-24P May PP-4127/U Battery Charger
TM 11-6130-386-24P Jul R-7202/G

Battery Charger
TM 11-6130-387-24P Jul PP-7208/U Power Supply
Ch 3, TM 11-6625-563-12 Jul AN/GPM-46A Radar Test Set
Ch 32, TM 55-1520-210-20 Jun UH-1D/H
TM 55-1520-214-23P Jun OH-6A
Ch 15, TM 55-1520-219-20 Jun UH-1B
Ch 30, TM 55-1520-227-20-1 Jul Ch-47B, C
Ch 3, TM 55-1520-228-PMS Jun OH-58A
TM 55-1520-236-23-1, -2 Jun AH-1S (Prod)
TB 56-1905-203-12 Jun Landing Craft, Util, 115-ft LCU 1466
TM 55-2840-247-23P Jul Engine, Aircraft, Turbine T-53-L-703

MISCELLANEOUS

Ch 1, AR 310-25 Apr Army Dictionary
Ch 2, AR 310-34 Apr Equipment Authorization Policies and CTA's
Ch 2, AR 310-50 Apr Authorized Abbreviations
DA Pam 310-7 May Index of Modification Work Orders
FM 6-1533 Apr Lance
FM 6-1534 Apr Lance
FM 9-55B1/2 Jun Ammunition Specialist
FM 9-55B3 Jul Ammunition Specialist
LO 5-2805-258-12 May 10-HP Mil Std Gas Engine, Mods 2A04-2, 2A04-3
LO 5-2805-259-12 May Engine, Gas, 20-HP Mil Std Mods, 4A04-2, 4A04-3
LO 5-5420-202-12-2 Mar M60A1 Tank AVLB
TC 21-5-9 Jun Bn TEC Handbook

AUDIO-VISUAL STUFF— Available at Your Local TASC (Training and Audiovisual Support Center)

TEC LESSONS
020-171-1133-F Troubleshooting the Coax
020-171-1633-F M551-Part III—Zeroing Weapons, Sights
041-061-6103-F Artillery—Intro to 100-Series Panoramic Telescope
043-441-5401-F Intro to Improved HAWK, Orientation, Alignment
043-441-5405-A Orientation, Alignment of IPAR, Part 2
043-441-5410-F Alignment of

Improved HAWK Launcher, Part 1
043-441-5413-A Alignment of Improved HAWK Launcher, Part 4
043-441-5442-A Improved HAWK Loading, Unloading—Part 3, Hand and Arm Signals
201-113-4615-F Prep Radio Teletypewriter Set AN/VSC-2 for Op Part I (Preliminary Starting, Starting Procedure)
201-113-4817-F Prep Radio Teletypewriter Set AN/VSC-2

for Op Part III (Teletypewriter Modes of Operation)
201-113-4615-F Prep Radio Teletypewriter Set AN/VSC-2 for Op Part IV (Voice and CW Modes)
221-301-7202-A AN/PPS-4A Installation
510-091-6482-F Prep, Maintaining, Using DA Form 2407 (Maintenance Request), Part IV
510-091-6480-F Prep, Maintaining—DA Form 2408-4

(Weapon Record Data)
662-051-7603-F Servicing GED Generator Set: Part II
662-051-7604-F Servicing GED Generator Set: Part III
662-051-7606-F Loading GED Generator Set
910-171-0015-F PM—Small Scale Storage of Fuels, Cleaning Materials, Lubricants
941-071-0079-F M60 Machinegun: Mechanical Training Part 2

NSN Change

Use NSN 3030-00-625-2989 to get the drive belt for the Essick Model VR 55 TM towed roller. The NSN on pages D-5 and D-12 of TM 5-3895-341-14 (Oct 71) is wrong.

Fuel Filter NSN's

Fuel filters for the F1500M Huber Grader have been changed. TM 5-3805-253-20P (Feb 76), fig 83 item 36 should be NSN 4930-01-027-3592. Item 38 should be NSN 2910-01-025-6853.

On Icy Roads...



CONTROL that COOL

AAAAAY!...

WHEN I, SPEC 4 LE VONZ, TH' COOL ONE, APPLIED FOR SOME COOL DUTY...



...THIS SCENE WASN'T WHAT I HAD IN MIND...



...BUT I REALLY DIG THE SCENE, CONNIE! MY KIND O' PEOPLE -- COOL, Y'KNOW!! YOU'LL DIG CAMP NORDIC, TOO, I'M SURE...

ER, SPEC... DON'T MAKE ANY SUDDEN MOVES ON THIS ICE AND SNOW...

BUT... LOOK OUT!



GAK!



ZOWEEE-- HANG ON, CONNIE... WE'RE SKIDDING!



WELL, AT LEAST THE SNOW CUSHIONED US, SPEC!

SORRY-- BUT YOU'RE GONNA BE LATE, CONNIE!

WE'LL BE HOURS GETTIN' OUTTA HERE!

HO! PERHAPS NOT--



UPSY-DAISY!

WHY-- IT'S...

AB SNOWMAN!



YOU'RE A LIFESAVER, AB! THANKS!

WEREN'T WE TO PICK YOU UP AT THE CROSSING, AB, OL' MAN?

YES... BUT I WAS EARLY... SO I WALKED UP THE ROAD TO MEET YOU!



SAY, AB (HEH-HEH) IS THIS WHERE YOU LIVE -- AROUND HERE?



HAH! NICE TRY, SPEC 'LE VONZ!! FOR CENTURIES MEN HAVE SOUGHT TO FIND MY DOMICILE...

I'M NOT GIVING AWAY HINTS NOW... HA-HA!



GOOD FOR YOU, AB! YOU DESERVE YOUR PRIVACY SAME'S ANYONE ELSE!

BUT HOP ABOARD -- AND LET'S MOVE OUT! YOU MUSTN'T BE LATE FOR YOUR LECTURE AT CAMP NORDIC!

G!!AM!

RIGHT ON, CONNIE!



SHAME ON YOU, SPEC!

AWW, CONNIE-- IF I KNEW WHERE HE LIVES, I'D WRITE A BOOK AN' MAKE A ZILLION BUCKS!



WELL, HERE WE ARE!

GOOD! WE'RE ON TIME!...

...COME ALONG, SPEC...

YOU NEED TO HEAR THIS TALK-- BADLY!



WELCOME, FOLKS!

TROOPS-- HERE'S THE WORLD'S BIGGEST EXPERT ON COLD WEATHER DRIVING! LISTEN CAREFULLY TO MR. AB SNOWMAN!



WOTEVER HE SAYS, I THINK WE BETTER LISTEN!

SOLDIERS... DRIVING IS A SERIOUS BUSINESS!

WAY TO GO!

A GOOD DRIVER KNOWS THIS AND FOLLOWS THE WORD IN DRIVERS MANUAL, FM 21-305 (APR 75).



HE'S EVER ALERT, KEEPS AN EYE ON WEATHER AND ROAD CONDITIONS AND COMPENSATES FOR CHANGING CONDITIONS QUICKLY BUT CALMLY...

EVEN WHEN A BULL MOOSE SUDDENLY JUMPS IN FRONT OF YOU?

HA-HA!! YOU LOST CONTROL OF YOUR DEUCE-- AND-- A- HALF, SPEC, BECAUSE YOU LET INERTIA OVERCOME TRACTION WHEN YOU SUDDENLY APPLIED YOUR BRAKES!

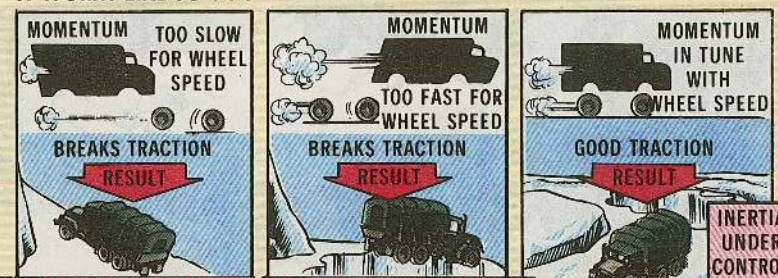


HERE ARE THE **THREE FACTORS** WHICH MUST BE KEPT UNDER CONTROL...

...SPECIALLY ON ICY ROADS!

- 1 MOMENTUM**—A combination of vehicle weight and speed. You control momentum by varying speed.
- 2 TRACTION**—The vehicle's grip on the road. Good tires, tire chains and smooth clutch and brake action help keep good traction.
- 3 INERTIA**—The tendency of a vehicle to continue moving in the direction it's moving or to stay at rest if it's not moving.

YOU MUST BE IN CONTROL OF TRACTION AND MOMENTUM ALWAYS IT WORKS LIKE SO . . .



INERTIA WINS, WHEELS SPIN **INERTIA WINS, VEHICLE SKIDS** **GOOD TRACTION** **INERTIA UNDER CONTROL**

CAREFUL SPEED CHANGES AND CAREFUL BRAKING KEEP INERTIA FROM OVERCOMING TRACTION . . . AND YOU'RE IN CONTROL.



SOUNDS GOOD!

BUT HOW DO WE DO ALL THIS?

I HAVE MORE VISUALS, BUT FIRST, CONNIE HAS COPIES OF A HELPFUL POSTER FOR EACH OF YOU!

THANKS, AB!

COME AND GET 'EM, TROOPS!!

Joe's Dope Sheet

If you've got the know-how to go,
To drive where winter's blasts blow
And to meet the demands
For cool head and skilled hands,
You've passed the test for a "Pro."

WE HAVE THE WORLD'S BEST EQUIPMENT ... *Take care of it*

IF YOU WANT TO DISPLAY THIS CENTERPIECE ON YOUR BULLETIN BOARD, OPEN STAPLES, LIFT IT OUT AND PIN IT UP.

YOUR POSTER SPELLS IT OUT, CONNIE! STEADY NERVES AND "KEEPING COOL" ARE WHERE IT'S AT! NOW, LET'S BEGIN WITH

STARTING OUT

Ease out real slow or you'll spin wheels. Not enough traction? Tap, tap, tap the accelerator to rock vehicle. Rocking can increase traction. Or try moving out in second or third gear.



BE PREPARED FOR ANY AND EVERYTHING ONCE YOU'RE...

ROLLING



Change accelerator pressure slightly but regularly to keep a feel of traction. Plan braking well ahead. Even with tire chains, at 20-mph your stopping distance is 4 times longer than it is on bare pavement. No chains—you'll need up to 12 times the space.

OF COURSE YOU'LL HAVE TO THINK EVENTUALLY ABOUT

STOPPING

Rolling to a stop is best. Take your foot off the accelerator, and let engine compression slow you down. If you must use the brakes, tap them gently, repeatedly. Sudden braking will send you skidding.



EASY ENOUGH, AB... BUT HOW 'BOUT

HILLS

JUST GETTING TO THAT, SPEC!

UPHILL—

Leave plenty of room between you and the vehicle in front of you, so you can hold your speed in case that vehicle slows down. Get up to maximum safe speed before you hit the hill.



SLOW DOWN ALMOST TO A STOP



DOWNHILL—

If you think you'll have to downshift again, do it before you pick up too much speed—or you'll break traction. Shift fast 'n' smooth. Only tap-tap the pedal if you've got to use your brakes.

AS YOU MIGHT SUSPECT, YOUR BIGGEST HASSLE FROM INERTIA COMES ON

CURVES

Enter curve slowly so you won't slide off the road. Keeping slight pressure on the accelerator helps traction—if you don't pick up too much speed.



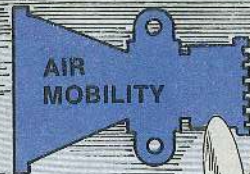
OH, YEAH?

WELL, IT'S BEST NEVER TO, BUT IF YOU DO HIT TH'

SKIDS...



Turn the steering wheel in the direction the rear wheels are sliding, and get your foot off the accelerator! Leave the brake pedal alone! Braking will make the skid worse.



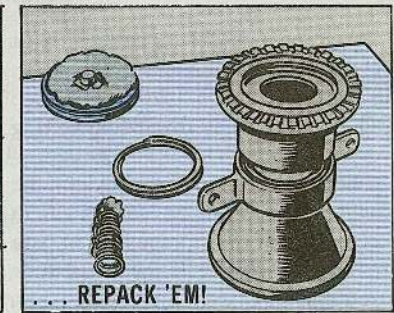
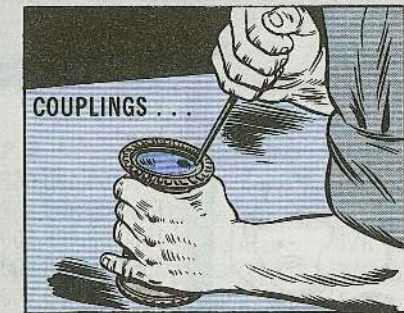
Couplings Need Grease ...
Or Else!!!



What happens when a tail rotor drive shaft coupling on your Huey or Cobra doesn't get greased? Plenty—all bad!

A dry flexible coupling won't flex. It overheats and the splines begin to wear fast; then you get loss of tail rotor control.

That's why you now repack the couplings every 12 months if your bird doesn't meet the 600-hr interval in the lube chart.



Those couplings are at the transmission drive quill, 42-degree gearbox input/output quills, 90-degree gearbox input quill, and the hanger assemblies. No exceptions, please!

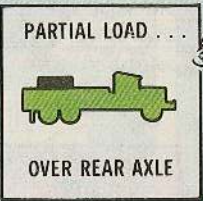
Use extreme pressure grease, NSN 9150-00-926-1969, on the Huey couplings. All Cobras get extreme pressure grease, NSN 9150-00-506-8497.

The grease packing poop, spelled out in TSARCOM Messages DRS AV-FEU 191600Z JAN 77 and DRSTS-MEU 131910Z JUL 77, will be picked up by the tech pubs.

JUST A FEW FINAL WORDS ON YOUR

EQUIPMENT

Tires, shocks and steering must be in "A" shape. Check 'em carefully and see your truck's -10 TM for proper tire pressures. Check brakes—they must catch evenly. Make sure the load is spread out evenly and is secure. Partial loads go over the rear axle.



DIG YA, AB! BE COOL, LIKE ME, IN ALL THINGS, AT ALL TIMES!

CORRECT, LE YONZ! NOW I REALLY MUST GO-- IF YOU'LL PLEASE RETURN ME TO THE CROSSING...

... SOON ...

S'LONG, AB! WAS GREAT SEEING YOU!

YER SPIEL WAS COOL, BUDDY!

SEE YOU PEOPLE WHEN...

HEH-HEH... LOOK, CONNIE--HE'S HEADING TOWARD MT. KENDALL! THAT'S WHERE HE HANGS OUT, I BETCHA...

HEY! SNOW'S BLOWIN' UP-- OBSCURING OUR VIEW--

ODD-- WHERE DID THAT WIND COME FROM?

THERE... THE STRANGE BREEZE IS DYING DOWN... B-BUT, CONNIE!... HE-HE-- AB'S GONE!

TH-THAT'S A FLAT PLAIN FOR MILES OUT THERE!! WHERE'D HE GO?

DON'T KNOW FOR SURE, SPEC... BUT WHILE YOU WERE GETTING THE TRUCK, HE SAID HE WAS TO ATTEND AN EMERGENCY PM SESSION AT THULE AFB...

... IN HALF AN HOUR!!

COVERS for the HUEY



COLD WEATHER CAN BE HARD ON YOUR INACTIVE HUEY-BIRDS.

RIGHT ON, CONNIE!

HERE Y' ARE, GOOD BUDDY!



YOU DIDN'T FORGET!!

If any of your UH-1's are headed for storage, the all-weather covers shown in Fig 1-7 of TM 55-1520-210-20 (Sep 71) go a long way toward protecting your birds.

'Course, a commander decides if the covers are needed in your area, in keeping with the storage info in para 16-5 of the-20 pub. They can also be used in areas of extreme cold weather. Your unit has to shell out the moola for the covers.

THE COVERS STACK UP LIKE SO...



NSN

1560-00-403-0624
1560-00-403-0626
1560-00-488-5003
1560-00-488-5004
1560-00-488-5005
1560-00-488-5007
1560-00-488-5010
1730-00-148-9076
1730-00-258-8372
1730-00-904-9916
1730-00-148-9081
1730-01-042-5543

P/N

Nomenclature

Location

Use On Model

Qty Per Acft

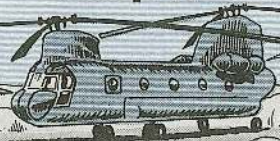
Approx. Cost

205-070-676-1	Cover Assy	Pylon	D/H	1	\$164
205-070-677-7	Cover Assy	Aft Cabin	D/H	1	\$429
204-070-462-1	Sleeve Assy	T/R Blade	All	2	\$12
204-070-462-17	Body Assy	T/R Gearbox	All	1	\$23
204-070-463-13	Cover Assy	Fwd Cabin	All	1	\$197
204-070-466-5	Cover Assy	Stab Bar	All	2	\$16
204-072-441-1	Cover Assy	M/R Blade	D/H	2	\$102
204-070-462-13	Cover Aircraft	T/R Hub	All	1	\$23
204-072-467-9	Cover Aircraft	Nose	All	1	\$110
204-070-478-1	Cover Aircraft	Pylon	B/C/M	1	\$128
204-070-461-5	Cover Assy	Aft Cabin	B/C/M	1	\$88
204-072-485-1	Cover Assy	M/R Blade	B/C/M	2	\$50

When You Really
Need Heat ...

Keep It Coming

BRRRR!
IT'S COLD
IN HERE!



DON'T FRET,
FRED... HERE
COMES THE CURE!

When the cabin heater in your Chinook is driving out the bitter cold, prior to starting the engines, you don't want the warm flow stopped, right?

But that's what happens when the engines are turned over. The auxiliary bus relay drops out and shuts off the heater. But you electrical types can eliminate cycling the heater with a simple rewiring job.

Eyeball TM 55-1520-209-20 and TM 55-1520-227-20: Figs 13-37 thru 13-40, for the A Model; Fig 13-39, for the B Model; Fig 13-40, for the C Model.

Look behind the center instrument panel for the K108 engine start relay (may be R3 on early birds). Remove wire #V53D20 (or #53C20) from Terminal A2 and connect it to Terminal A3. If the wire is short, attach it to relay coil ground, Terminal X2.

Be sure you make an entry in the Bird DA Form 2408-15 that the engine start relay has been rewired to prevent heater shutdown during engine starting.

Clean and Dry



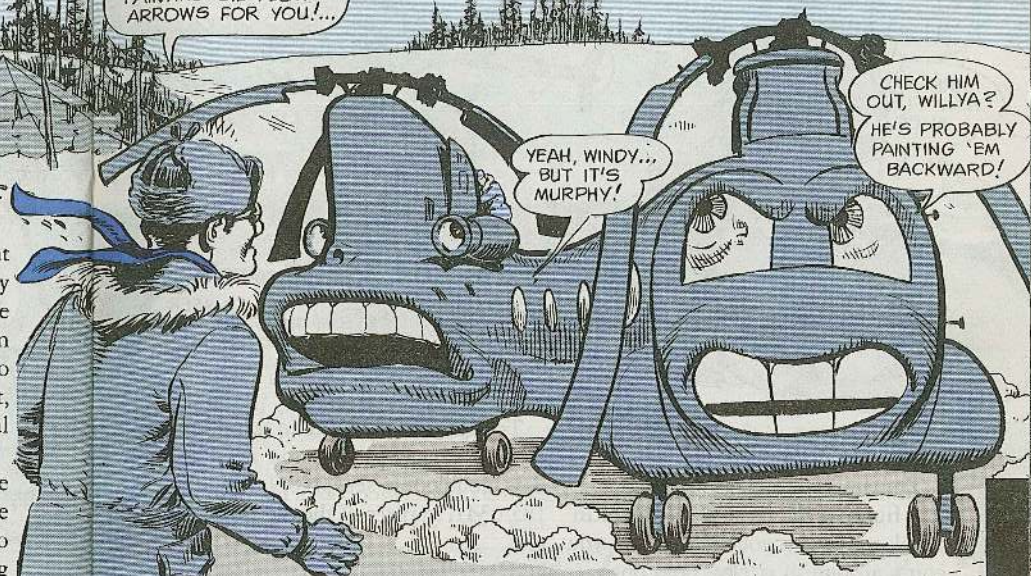
As you were, Chinook mechs, about using anti-seize compound on the engine shaft mounting bolts, NSN 5306-00-863-1220 and 5306-00-863-1221.



This is no place for loose hardware. So, para 7-42 of TM 55-1520-227-20-1 (Aug 73) on the B and C Models is being changed so you put those bolts in clean and dry. It's the same deal on the A Model.

To Keep the Oil Flowing

GREAT! SOMEONE'S
PAINTING OIL FLOW
ARROWS FOR YOU!!!



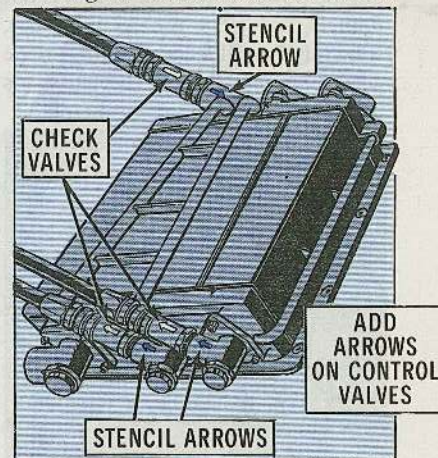
The next time your big Chinook is down for extended maintenance, add a few oil flow arrows on the combining and engine transmission oil cooler, NSN 1615-00-866-5999. It's on the upper aft pylon deck.

It's important because if you were to pull a Murphy on the check valves, you would get transmission failure due to oil starvation. The purpose of the 3 valves is to prevent oil from draining back into the transmissions when the bird is idle.

Use a stencil and yellow paint to put arrows on the thermostat control valves.

Point 'em in the direction of oil flow—same as the arrows on the check valves.

That'll keep Murphy at bay!



On the Level . . .

New Seal Needed!



Engine oil level up?
Transmission oil level down?
If figuring the cause of this revoltin' development on your Kiowa has you going around in circles, hold one!

There's a seal, P/N 6854086, on the engine power takeoff shaft that is not doing the job. When it's shot, transmission oil leaks into the engine accessory gear case. From there it's pumped into the engine oil tank.



To solve the problem, in the area of the freewheeling unit, you need the new double lip seal, NSN 5330-00-185-0341, in place of the old single lip seal.

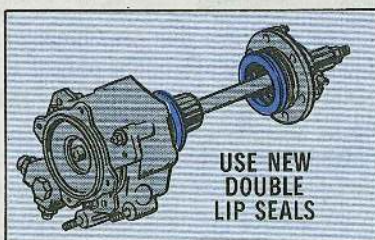


Fig 48, item 76 in TM 55-1520-228-23P (May 76) shows that 2 of the seals are needed. Eyeball Fig 49, item 66, for the seals on the latest engines.

Before installation, coat the recess in the seals—and the housing—with grease, MIL-G-25537. Insert the seals with the metal flange facing outward.

This will give you accurate oil level readings.

Caps and Plugs . . .

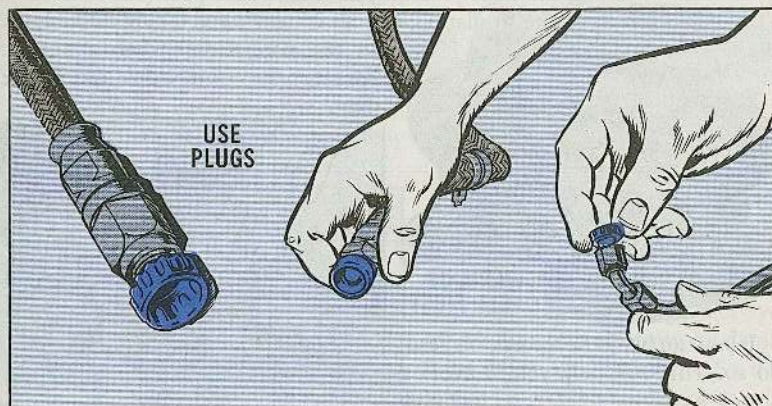
Little Gems Do Big Job!



Contamination is a dirty word. A contaminated fuel, oil, or hydraulic system can bring down a bird faster than you can say "autorotation."

Every time you mechs disconnect a line, dirt and water will get into the system if the line remains open for any length of time.

Which is why para 7-42 of TM 55-1500-204-25/1 (Apr 70), on general practices, calls for using protective caps and plugs. Those babies will save you a lot of sweat and elbow grease flushing a dirty system, changing a contaminated component or replacing a leaky seal.



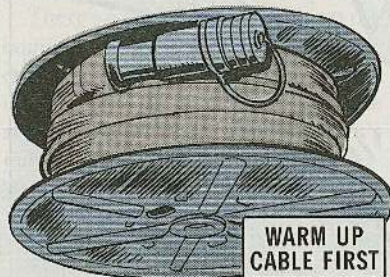
If tech supply is fresh out of those penny items, use heavy aluminum foil to cover disconnected lines. The foil can go to pot real quick, so your first choice is caps and plugs.

The dust and moisture protective caps and plugs are listed in the bulk materials section of the parts pub for your bird.

Cold Weather Effect on ELECTRONICS CABLES, BATTERIES



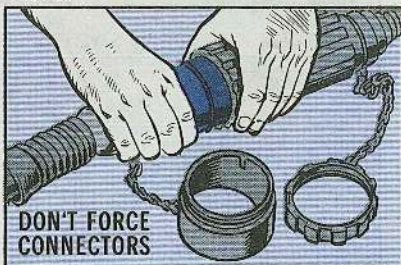
Before unrolling a cable, let it warm up awhile. Unrolling the cable when it's too cold can crack the insulation.



If you can hang the cables overhead, do so. This will help you to avoid a

freeze-in . . . the cable stuck to the ground or stuck in the snow.

Be careful when taking cables apart at the connectors when it's cold. Forcing the connectors can break them.



COMMO'S GREAT
HERE AT O.P. NORTH!

YOU
BETCHA!

SERGEANT
SPARKS KNOWS
HIS COMMO STUFF
FOR SURE!

WHERE
IS HE
NOW?

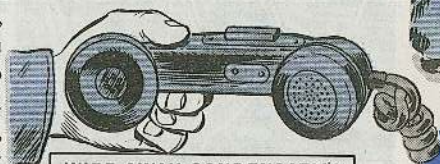
HE'S WORKING
ON MUKLUK'S
C-B RIG!

YES, BILL--THAT'LL
TAKE CARE OF YOUR
DELTA TUNER!



HOLD ONE, SOLDIER!
LET'S TALK PM...

RADIO SET, TELEPHONE or SWITCHBOARD must not be located in a tent or shelter in the direct line of a blast of cold air when a door is opened. Cold air hitting the warmer equipment will cause condensation that can create shorts.



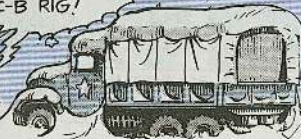
When your gear gets any moisture on it, wipe it away before it gets a chance to ice up on you.

A HANDSET moisture guard or de-icing screen will protect your transmitter element from ice damage if the screen's in good shape. So, if the screen is cracked, torn or missing, replace it.

ALWAYS CARRY EXTRA BATTERIES



... IN YOUR CLOTHING



ANTENNA MAST

It's good PM on the ground level that keeps your antenna, like the AB-577 mast, trouble-free up in the air.

One place you can start is with those antenna sections. While they are stowed in a shelter or trailer, always keep the heavy gear off of them. Be sure the sections are fastened in the rack. This will keep the locking collars from getting bent or broken.

Where there are cables and connectors around, use extra care when you're putting those sections away or taking them out to run them up.

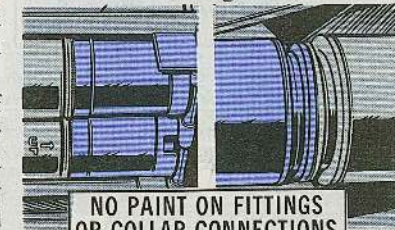


When you're putting the sections together, snug them up before you fasten the grooved clamp coupling. If you don't, you might wind up with a coupling in a strain that will break when your antenna gets whipped around by the wind.

Rid the metal mast surfaces of corrosion with a wire brush or sandpaper. Touch up the spots with a coat of paint. Keep that paint away from the antenna section collars and



fittings. Too much paint in some places can make it hard to put the antenna sections together.



CARE GETS IT

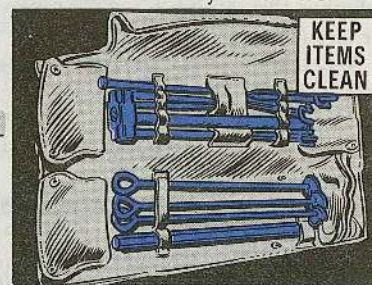
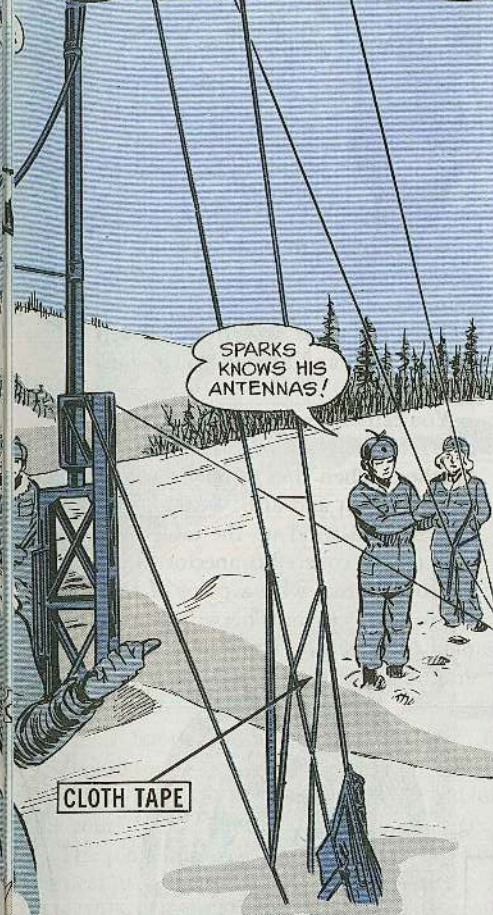
Before you run up your antenna, look over the guy wires for frays or breaks. A weakened guy wire can let your antenna down real hard . . . and that's bad.

Sometimes the guy is rubbed over rough rocks or metal. If sharp edges can't be helped, always put padding around the wire for protection.

After your guys are fastened, loop the excess wire and tape the loop to the secured guy. This'll keep it out of the mud and dirt and out from under foot.

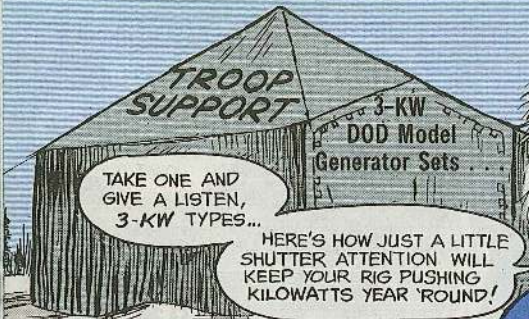
To keep some unwary person from walking into the guys, wrap some cloth tape around them. This will call attention to where the guys are located.

Keep your canvas items clean to head off mildew and fungus. They can shorten the life of your canvas.



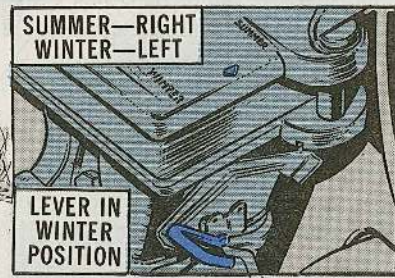
NATO Adapter has No NSN

The NATO or United Kingdom adapter for your PP-1578A/PID radiac detector charger is not issued separately. You can either cannibalize or replace the entire charger, NSN 6665-00-542-1177.



With summer gone and winter coming on, what's important to 3-KW military design generator operators is the cold weather operations poop in their TMs.

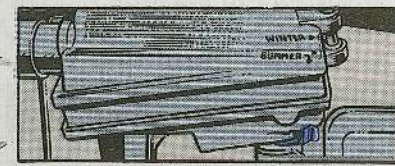
Like when you change the military standard engine's air intake shutter on the air cleaner. Para 2-5e, TM 5-6115-271-14 (Aug 76) says put the air intake shutter in the WINTER position—to the left—when the temperature is 32 degrees F (0°C.) or lower. This setting lets hot air from the manifold warm the carburetor and your set works at its best.



COLD WEATHER WATCH



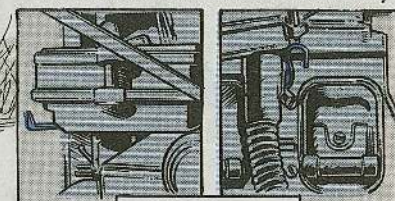
Hold it! You don't move all military standard engine air intake shutters left for WINTER setting.



SOME LEVERS MOVE TO THE RIGHT FOR WINTER

Not all shutters—levers—look alike.

Not all shutters work the same way.



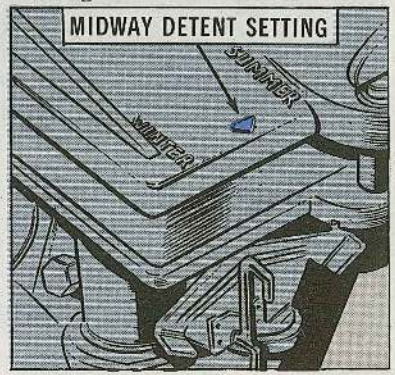
WATCH IT—LEVERS ARE NOT THE SAME

Not all air cleaners have detents that hold the shutter in position.

It's tricky. Just be sure you know those air intake shutters are in the correct setting for best wintertime operations.

Here're some tips that'll cut down on engine repairs and downtime.

The air cleaner on most 3-KW DOD sets has 3 detents for the air intake shutter settings: SUMMER (right side); WINTER (left side); but only an arrow indicates the mid way detent setting. Summer and winter settings are stamped on the upper housing of the air cleaner.



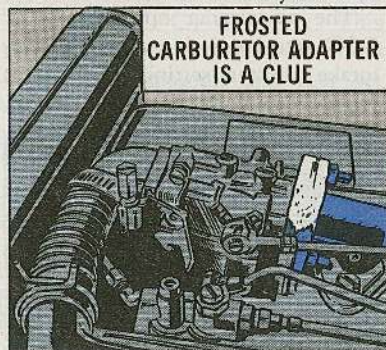
Some military standard engines have these stamped settings in reverse order. So you have to watch 'em close-like. If you don't, you could have the shutter in the wrong setting. Then the engine might not get enough warm air for best operation in below freezing weather.

A shutter in the wrong position at the wrong time of year destroys air filters. Pieces of the filter are ingested by the engine—causing hangups that you wouldn't believe.

Another tip: If the temperature is around—or just below—freezing, and the shutter's in the SUMMER setting, the carburetor intake adapter will frost over in a hurry. Move the shutter to the middle setting for a few minutes. If the frost stays on the



You can always be sure the shutter's in the right place by unhooking the air cleaner's upper housing and checking its position.



adapter, move the shutter to the WINTER position.

On some engines there's no detent at the half-way setting. F'rinstance, on your lube and service unit. Just make sure you go "all the way" when moving the shutter from SUMMER to WINTER. A half-way move won't hack it!



Mil Std Engines . . .

Quarter's Worth of PM

Dear Half-Mast,

Para 4-9c, TM 5-2805-257-14 (Apr 76) says to pull Preventive Maintenance Check and Services (PMCS) every 250 hours of operation or every 3 calendar months—whichever comes first.

But Table 4-1 says we pull the PMCS weekly, monthly, and semi-annually! Para 4-8, TM 5-2805-203-14 (Jan 77) says the same thing for the 6-HP engine.

What's the unscrambled truth in Chapter 4, Sarge?

SFC D. W.

Dear SFC D. W.,

Forget about the PMCS tables in Chap 4 of the 3- and 6-HP engine TM's. Use the PMCS—Table 4.1—in the 1½-HP Mil Std engine book, TM 5-2805-256-14 (Jan 76).

UPCOMING CHANGES TO THE 3- AND 6-HP TM'S WILL SHOW THE RIGHT O-LEVEL PMCS POOP!

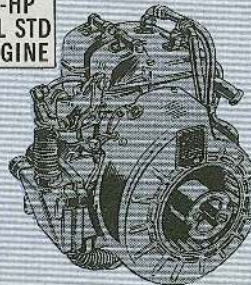


C'MON, BABY! WHATSA MATTER?

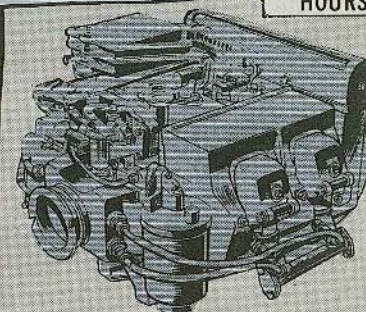
I AIN'T RUNNIN' WITHOUT MY PMCS!!



3-HP MIL STD ENGINE



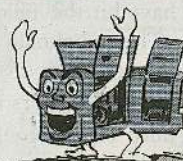
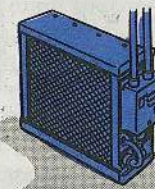
BOTH GET QUARTERLY SERVICES OR EVERY 250 OPERATIONAL HOURS



6-HP MIL STD ENGINE

30-KW Kit Chat

You can get the load bank kit for your 30-KW DED generators. Use A12 as the SOS—Source of Supply. Fig 86, TM 5-6115-465-24P (Feb 77) shows the item. NSN 6115-00-463-9088 for the MEP-005ALM kit hasn't made the AMDF yet.



HEY, KIT! LET'S ME AN' YOU GET TOGETHER!

Stop Blasting
Cap Mishap...

CRIMPING
JAWS

CUTTING
JAWS

M2

CRIMPER ROPPER

STOP...
(MUST BE
AT LEAST
1/16-INCH
HIGH)

NUT...
(MUST BE
STAKED
REAL
WELL)

WELL,
YA SEE,
I HAD THESE
CRIMPERS
AND...

Some bad M2 blasting cap crimpers NSN 5120-00-029-0683 have hit the field, so better eyeball yours ASAP!

The nut should be staked real well to the bolt, and the stop should be high enough to do its job—at least 1/16 inch high.

If your crimpers don't come up to standard, you could be in for a world of hurt. The nut could back off, loosening the jaws. That alone, or coupled with the faulty stop, could allow the jaws to overlap and cut the cap or cause a mishap.

Turn in your bad crimpers for replacement. Send 'em back in their original packing materials if possible. This'll help support with their paperwork. They are part of Demolition Equipment Set, NSN 1375-00-047-3750.

Tie-down Helpers...

Rubber Straps

...AND THEY
COME IN 4 HANDY
DANDY SIZES!

Now you can get tough, durable rubber straps—in 4 sizes—to help hold canvas covers and such down tight. The straps come with reinforced ends and 2 S-hooks per strap.

Here's the supply poop:

NSN	length, inches	stretch range, inches	price, cents
5340-01-			
029-9083	10	15-20	24
029-9084	15	20-30	25
030-3098	21	26-42	28
029-9085	31	36-42	37

RUBBER
STRAP

S-HOOKS

S-HOOK

Drum Plug NSN's

Dear Half-Mast,
How do I get replacement bung hole
plugs (large and small) for 55-gal
drums?

SGT R.A.H.

PLUGS...

FOR
55-GAL
DRUM

REQUEST NSN 8110-00-132-9640 FOR THE
2-in. OR "BUNG," AND NSN 8110-00-138-8451
FOR THE SMALLER VENT PLUG.

DA Form 2408-9 Identification Check



Today's movies feature people menaced by sharks and giant apes, grizzly bears, demons, mad dogs and the standard stampede or two.

But, many TAMMS clerks say those creatures are nothing to the DA Form 2408-9.

The DA 2408-9 Equipment Control Record masquerades as a mild-mannered logbook form. But under that pale disguise lurk 6 separate identities—6 separate roles to play. Eat your heart out, Superman!

One of these roles, the Usage Report, applies only to equipment with an X under the DA Form 2408-9 "Use Data" column in Appendix C of TM 38-750.

The form's other roles are required on equipment with either an X under the DA Form 2408-9 column in Appendix E of TM 38-750 or equipment covered by the U.S. Army Vehicle Registration Program in Section III, Chap 7 of AR 710-3, Asset

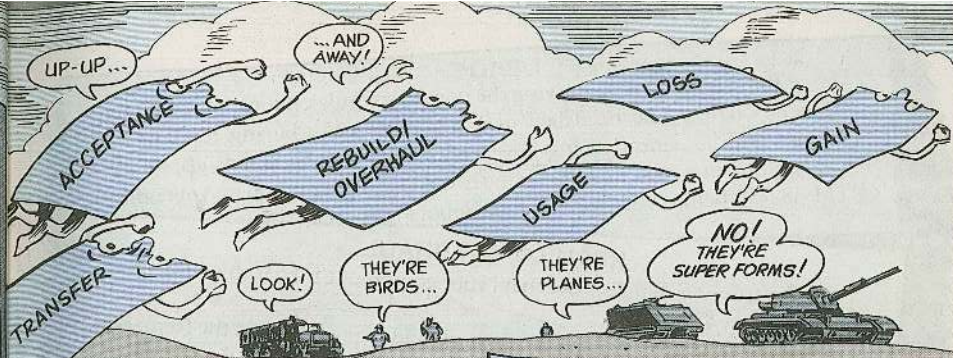
and Transaction Reporting System (Sep 72).

Depending on the life-style and age of your equipment, you could have several DA 2408-9's in your logbook.

THE TYPE REPORT YOU CHECK IN BLOCK 16 DETERMINES WHAT AND HOW MUCH INFORMATION YOU NEED FOR THE FORM

CONTROL NO. 271926		ORGANIZATION
6. NOMENCLATURE		7. MODEL
11. YEAR OF MFG	12. MANUFACTURER (MPG Code)	
16. TYPE REPORT	17. REPORT CODE	
a. ACCEPTANCE AND REGISTRATION		1
b. USAGE		
c. TRANSFER		
d. LOSS		
e. GAIN		
f. OTHER		
21. REMARKS		

SEE APPENDIX A, TABLES A-16 THRU A-21 FOR BLOCK 17 CODES



ACCEPTANCE

The DA 2408-9 Acceptance Report is filled out when equipment comes into the Army inventory. That form operates as the gear's "birth certificate." The logbook copy stays with the equipment throughout its life.

For equipment that comes under the vehicle registration program, the DA 2408-9 Acceptance Report doubles as a registration record—showing the assigned registration number.

Some older items may have a DA Form 2408-8 Acceptance Report. Hold onto it. It's still good for logbook purposes.

LOSS

A DA 2408-9 Loss Report tells the headshed that item's gone. It's been destroyed, lost or integrated permanently into another item.

GAIN

A Gain Report is turned in every time an item is added—rather than accepted—to the Army inventory or Appendix E of TM 38-750.

You need a Gain on items you received without an Acceptance Report when the people who sent the item cannot track down the missing information for you. Fill out a Gain Report when an item is added to Appendix E for the first time with an X under the DA 2408-9 column or when you pull items permanently out of higher assemblies.

TRANSFER

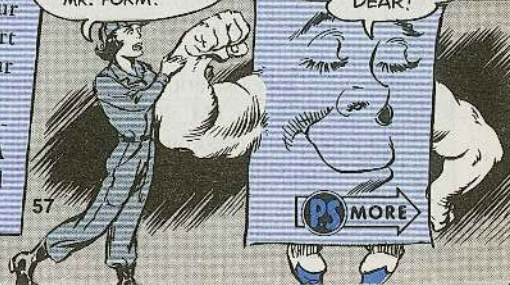
DA 2408-9 Transfer Reports tell the headsheds when the equipment permanently moves from one organization to another.

When you transfer equipment, your DA 2408-9 "shipped to" report removes the equipment from your unit's UIC in the computer.

The unit that receives the equipment sends out a "received from" DA 2408-9 telling the headshed to add that item to their UIC.

MY... YOU'VE SURE GOT MUSCLES, MR. FORM!

THE BETTER TO SERVE YOU, MY DEAR!



USAGE

Usage Reports go in yearly giving the number of miles, hours or rounds your equipment carries. The headshed uses that info when buying replacement items and POL . . . and figuring how well the equipment stands up.

Your equipment must have an X under the Use Data column in Appendix C of TM 38-750 before you need a usage report.

REBUILD/OVERHAUL

The people who rebuild or overhaul your equipment fill out this form. You won't get a copy.

However, the rebuild/overhaul people should make a note in the Remarks Block of the item's Acceptance or Gain Report telling you about the rebuild or overhaul.

The headshed keeps tabs on rebuilds and overhauls so they know how much it costs to keep equipment running and when to go out for new equipment.



CLEAN YOUR LOGBOOK

No matter how many DA 2408-9's you fill out, there's a limit to the number you need in the logbook.

The permanent logbook copy of the DA 2408-8 or -9 Acceptance and Registration or Gain Report stays in the logbook for the life of your equipment.

You should have the latest Transfer ("received from") Report and the last Usage Report you sent in. That's all.

Any time you fill out a new Transfer or Usage Report, pull the old copy for that use and trashcan it. You need one and only one Acceptance and Registration or Gain Report and one Transfer and Usage Report in the logbook at any one time.

Course, if your logbook covers more than one item or a system, you'll have more than one copy of each -9. But, you should still only have one copy of the Acceptance or Gain and one copy of the latest Transfer and Usage Report on each item.

EQUIPMENT NEEDING FORMS

Make sure you know which items need DA 2408-9's and which do not. Fill out DA 2408-9's only on items with an X under the DA Form 2408-9 column in Appendix C or E of TM 38-750 or covered by the vehicle registration program in Chap 7 of AR 710-3.

The vehicle registration program requires a complete set of -9's on some items not listed in TM 38-750. Check it out.

For equipment needing DA 2408-9's in both AR 710-3 and TM 38-750, one set covers both. Do not make out duplicates for the 2 programs.

FILLING OUT THE FORM

The DA 2408-9 is filled out based on the form's use. Different uses need different amounts of info. The following table tells you which blocks need entries.



DA FORM 2408-9 ENTRIES

T- Transfer Reports Only

X- Entry Required

** - Special Instructions for Commercial Design Vehicles

CDV - Commercial Design Vehicles

BLOCK	BLOCK TITLE	ACCEPTANCE/ REGISTRATION		USAGE/REBUILD- OVERHAUL		TRANSFER/ GAIN/LOSS	
		Non-CDV	CDV	Non-CDV	CDV	Non-CDV	CDV
1	Organization	X	X	X	X	X	X
2	Location	X	X	X	X	X	X
3	UIC	X	X	X	X	X	X
4	Utilization Code		**	X	**	X	**
5	Vehicle Use & Sup Code		**		**		**
6	Nomenclature	X	X	X	X	X	X
7	Model	X	**	X	**	X	**
8	NSN	X	**	X	**	X	**
9	Serial Number	X	X	X	X	X	X
10	Registration Number	X	X	X	X	X	X
11	Year of MFG	X	**	X	**		
12	Manufacturer	X	X				
13	Contract Number	X	X				
14	Purchase Order Number	X	X				
15	Warranty Period	X	X				
16	Type of Report	X	X	X	X	X	X
17	Report Code	X	X	X	X	X	X
18a	Hours			X	X	X	X
b	Miles			X	X	X	X
c	Rounds (Weapons Only)			X	X	X	X
19a	Shipped To-Organization					T	T
b	Shipped To-UIC					T	T
20a	Received From-Organization					T	T
b	Received From-UIC					T	T
21	Remarks	X	X			X	X
22	Signature	X	X				
23	Julian Date	X	X	X	X	X	X

You can track down the info for a DA 2408-9 in many places. The best source is another DA 2408-9 on the equipment—no matter what use the form served.

Other logbook forms, the equipment's data plate and your property book office may have more information.

TRUCK, WRECKER, 5 TON 6X6, XM816 W/W
FED. STOCK NO. 2320-051-0489
ORD. SERVICE NO. 8736857
MFD. BY  **General Products Division**
Jeep Corporation
IDENTIFICATION NO.

**THE END ITEM'S DATA PLATE AND
 OTHER LOGBOOK FORMS ARE YOUR BEST
 SOURCES OF INFORMATION.**

U.S. PROPERTY

WATCH FOR
 THESE PROBLEM
 AREAS...

If you go to the data plate, watch it! You want the data plate on the item requiring the DA 2408-9's and not a subsystem's, component's or separate item's data plate.

No matter how many or how few components or subsystems an item has, you only want the info on the end item requiring the -9.

That's the rule on serial numbers, too.

Component or subsystem serial numbers do not count. You must have a serial number on the actual item requiring the -9. If that item does not have a serial number, use the control number from its Acceptance or Gain report.

Once you use the control number, it becomes the permanent serial number on that item for the equipment's life.

Ask your maintenance officer about putting the control number/serial number on the item's data plate to keep everybody straight.

DA 2408-9's eventually make it to the computer people. They cannot check your equipment data plate or other logbook forms. All they can go on is what you tell them.

So make your entries clear and write plainly. Go over your numbers especially. Murphy's Law works on forms, too. If an entry can be goofed—it will be!

Double-check your UIC. UIC's and DODAAC's look similar—but they're not substitutes. UIC's belong on logbook and maintenance records. DODAAC's belong to supply forms and records. Keep 'em apart.

**UIC'S GO ON TAMMS FORMS, DODAAC'S
 ON SUPPLY FORMS. KEEP 'EM APART.**

**YOU WANT THE SERIAL NUMBER
 FOR THE ITEM IN BLOCK 6—NOT A
 COMPONENT OR WEAPONS SYSTEM
 SERIAL NUMBER.**

**WHEN YOU MAKE OUT A DA 2408-9... ESPECIALLY
 A USAGE REPORT... MAKE SURE BLOCK 18 INCLUDES
 ANY METER (SPEEDOMETER/ODOMETER OR HOUR
 METER) CHANGES. THE LOGBOOK DA FORMS 2408-10
 KEEP UP WITH METER CHANGES.**

1. CONTROL NO. 271926		2. LOCATION FA		3. UNIT IDENT CODE WYOU77		4. UTILIZATION CODE ON		5. VEHICLE USE CODE	
6. NOMENCLATURE TRUCK		7. MODEL MB16		8. FEDERAL STOCK NO. 2320-00-051-0489		9. SERIAL NO. D5C-18370-C127-10624		10. REGISTRATION NO. NL 74A2	
11. YEAR OF MFG M73		12. MANUFACTURER (MFG Code)		13. CONTRACT NO.		14. PURCHASE ORDER NO.		15. WARRANTY PERIOD	
16. TYPE REPORT TRUCK		17. REPORT CODE C		18. MILES 2572		19. RECEIVED FROM CSGLD 1604		20. SHIPPED TO UIC	
19. ACCEPTANCE AND REGRATION		20. USAGE		21. TRANSFER		22. LOSS		23. GAIN	
24. OTHER		25. REMARKS		26. INSPECTOR'S SIGNATURE		27. JULIAN DATE 7305		28. REPORTS CONTROL SYMBOL: CSGLD 1604	

EQUIPMENT CONTROL RECORD
 This form, see TM 38-750, the proponent agency is the Office of the Deputy Chief of Staff for Logistics.
 REPLACES DA FORMS 2408-7, 1 JAN 64, AND 2408-8, 1 JAN 64, WHICH ARE OBSOLETE.

DA FORM 2408-9
 1 OCT 72

CONTROL COPY 2

The DA 2408-9 is your equipment's passport into the Army's computers. Your forms control the trip.

In Supply Pubs

SMALLER is BETTER!

AN' EASY
TO LOOK AT,
TOO...

Give your fingers a rest, and let your eyes do the walking. Not only will it make your job easier, it should save you a lot of time, too!

The tool that pulls off these miracles is probably sitting in your supply room right now. It's your microfiche reader. With a quick glance at one of the available microfiche pubs, questions which stumped you before can be answered easily.

Tons of pubs have already been transformed into dozens of 4-in x 6-in microforms for quick reading.

With a flick of your eyeball, you can now get part numbers, substitutions, expendability data, supply class information and more.

Not all pubs are on the little plastic sheets yet. But many of the ones you use every day—and others which come in handy—are already on microfiche.

HERE ARE
A FEW
AVAILABLE
MICROFICHE
SETS...
NEED IT
NOW?
USE
DA FORM
17!

FICHE	USE	SOURCE	HOW TO ORDER
The ARMS Monthly Army Master Data File (AMDF).*	Gives current NSN, price, unit of issue, expendability, recoverability code and management control numbers (MCN's) for medical items only.	DARCOM Catalog Data Activity ATTN: DRXCA-M New Cumberland Army Depot New Cumberland, PA 17070	Letter to source. Telephone orders will be accepted AV 977-6741 or 6608.
*Officially known as "Army Master Data File Retrieval Microform Systems" (ARMS).			
Monthly ARMS Interchangeable and Substitute (I & S) Index and I & S Group Files. (Ordering the AMDF automatically gets you the I & S Index and I & S Group Files.)	I & S Index lists interchangeable and substitute items by NSN and MCN. I & S Group identifies NSN/MCN groups and gives order of use.	See above	See above
Consolidated Master Cross-Reference List Part I (C-RL-1)	Manufacturer's parts numbers translated to NSN	AG Pubs Center 1655 Woodson Rd., St. Louis, MO. 63114 (AUTOVON 698-7861)	DA Form 12-21
Identification Lists by FSC (Replaces some SC's)	Descriptions of items	St. Louis	DA Form 12-21
SB 700-20	List of reportable items	St. Louis	DA Form 12-34
SB 708-3	Ammo Codes	St. Louis	DA Form 12-34
SB 708-21	Groups & classes of supply	St. Louis	DA Form 12-34
SB 708-22	Numeric index to supply classes and items covered by each class	St. Louis	DA Form 12-34
SB 708-23	Alphabetic index to supply classes	St. Louis	DA Form 12-34

COLD?

BRRRR-RRR



SAVE YOUR ENGINE

CHECK OIL LEVEL OFTEN

"WINTER WEIGHT" OILS ARE THINNER . . .
GET USED FASTER !!