

Issue 344

PS

July
1981

THE PREVENTIVE MAINTENANCE MONTHLY

AMAZING!

IN THIS
DARKNESS,
YOUR DEVICE
FOUND THE
THROWN SHOE
OF MY
STEED!

CAN YOU THUS FIND THE NAILS ALSO?...

WE MUST COMPLETE
OUR HURRIED TRIP TO
LEXINGTON *IMMEDIATELY!*

WELL...
ER...

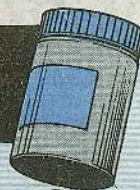
SORRY,
MR. REVERE,
BUT...

MURPHY
ANDERSON

"When Things Seem Darkest..."
Page 29



Simple Samples



If oil sampling with syringe and tube is getting you down, cheer up. There might be a better way.

The headshed has OK'd the addition of a sampling valve to many vehicles in its tracked and wheeled fleet. This valve lets you drain oil directly into the sample bottle or a clean container. That'll beat putting a tube down a dipstick hole, right?



TO SEE IF
YOUR VEHICLE
QUALIFIES, SCOPE
OUT THIS LIST!

Org OR DS SHOPS
ADD THE VALVE
PER THESE PUBS!

YEAH -- I KNOW WE
NEED AOAP HALF-MAST--
BUT SAMPLING CAN BE
SUCH A HASSLE!

NOT IF
YOUR
MAINTENANCE
SHOP ADDS THE
RIGHT VALVE!



See page 54 for
a list of sampling supplies

Vehicle

Pub

With the 8V71T engine
M107 gun, M108 howitzer
M110, A1, A2 howitzer
M109, A1, A2, A3 howitzer
M578 recovery vehicle

TB 43-0001-39-4
(Jan 80)

AVDS 1790-series engine/CD 850
transmission
M48A5/M60-series tanks

TB 43-0001-39-3
(Oct 80)

With the 6V53 engine
M113-series personnel carrier
M577A1 command post carrier
M106A1, M125A1 mortar carriers
M741 antiaircraft artillery gun chassis
M132A1 flame thrower carrier
M667, M727 guided missile carriers
M806E recovery vehicle
M901 TOW vehicle
M548 cargo carrier
M730 Chaparral carrier

TB 43-0001-39-4
(Jan 80)

Tactical wheeled vehicles
TM 209-series 2½-ton trucks, and
TM 211-series 5-ton trucks with
465-series multifuel engines.
M809 5-ton truck with
NHC-250 Cummins engine.
M123 10-ton truck with
300-V8 Cummins engine

TB 43-0001-39-1
(Apr 80)



THE
**PREVENTIVE
MAINTENANCE**
MONTHLY

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PS wants your ideas and contributions, and is glad to answer your questions. Name and address are kept in confidence. Just write to:

MSG Half-Mast
PS Magazine
Lexington, KY
40511

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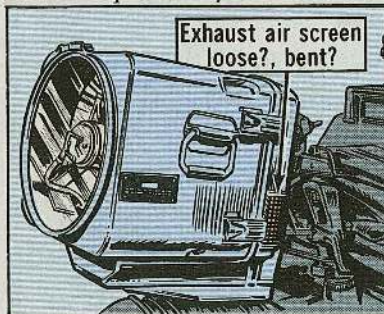
Searchlight Hazard

WHAT HAPPENED?
TH' XENON JUST
BLEW UP!

BEATS ME!
EVERYTHING WAS PERFECT
WHEN I CHECKED IT OUT...
'CEPT FOR A BENT
EXHAUST SCREEN...

You don't want your tank searchlight to blow up on you.

That can happen if the exhaust air screen gets bent so it short circuits the ballast resistor and explodes the xenon lamp assembly.



Check your searchlight and see if the exhaust air screen is loose or bent.

If the screen is bent or damaged, the searchlight should not be used until it is repaired. If it has to be used in an emergency, you take special precautions because of a possible explosion.

The exhaust air screen probably gets deformed or damaged when the searchlight is set down on a surface with sharp projections.

Before you power up your searchlight, take a fast look at your exhaust air screen to make sure it's not loose or bent.

THIS APPLIES TO
16 DIFFERENT KINDS OF
SEARCHLIGHTS, INCLUDING
ALL MEMBERS OF THE
AN/VSS, AN/GSS AND
AN/MS'S FAMILIES!

Anti-Fog The Shield

HEY, LOOK AT TH'
DENSE FOG ROLLIN'
IN...

AHH-- SO WHAT? NO
FOG BOTHERS ME!

YEAH-- BUT CERTAIN
FOG SURE DOES ME!



Dear Editor,

The ballistic shield over the pantel in our M109A2 and M109A3 howitzers fogs up during cold, wet weather.

To prevent this, we use the anti-fogging kit, NSN 6850-00-127-7193, which keeps the glass fog-free. This kit was made for use with the M25A1 protective mask but works very well on the ballistic shield.

2LT Kevin J. Bergner
11th Armored Cavalry

(Ed Note—Right on. Order additional anti-fogging kits for this purpose.)

M109A2 Howitzer Fix

? I THOUGHT 15 MPH WAS
OUR SPEED LIMIT!

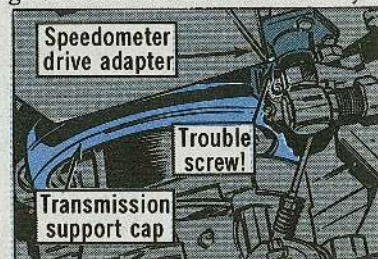
IT IS!

SAY--HOW FAST
ARE WE GOIN', FRED?

DUNNO--AN' I CAN'T GET
AT THAT SPEEDOMETER DRIVE
ADAPTER TO FIX IT!!

One of the 4 screws holding the speedometer drive adapter is so close to the transmission support cap that you can't get to it with standard tools unless you first remove the support cap.

So, next time you remove the support cap, replace the hex-head cap screws with 4 socket-head screws, NSN 5205-00-983-7456. This will let you use a socket-head wrench to remove the speedometer drive adapter.



How to Get...

The OI' 1-2 with Your 4.2

Your 4.2-in mortar and M106A1-series carrier combination gives you a lot of advantages over the Bad Guys, but you have to use some smarts to operate it without damage to carrier or crew.

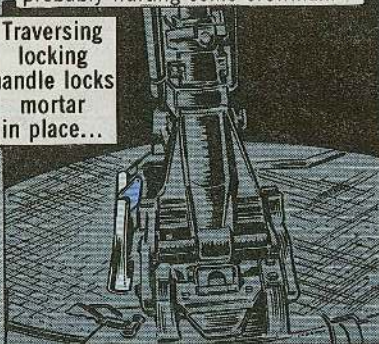
Like the first thing you have to do is put the carrier where you can deliver effective fire. This means not under trees, power lines or any overhead obstruction that could cause a premature burst.

That's an easy one. Here are some you might not think about.

TRAVERSING LOCKING

HANDLE—In the locked position this holds the turntable and the indexing ring together. If you fire with it unlocked, the mortar can rotate, damaging the carrier and probably hurting some crewman.

Traversing locking handle locks mortar in place...



HEY, CONNIE... PLEASE POINT OUT SOME OVERLOOKED PM POINTS FOR MY MEN, WILL YA?

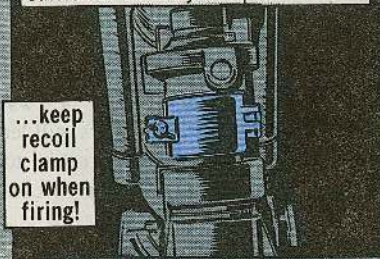
HAPPY TO, SARGE!

TROOPS, REMEMBER... DO ANY ONE OF THESE WRONG AND YOU CAN DAMAGE THE SYSTEM AND YOURSELF!



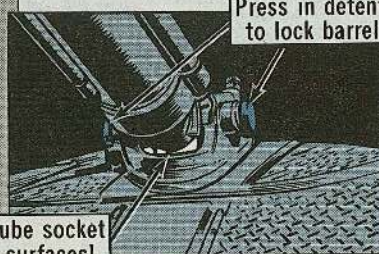
RECOIL CLAMP—This must be in place before firing. It keeps you from depressing the muzzle below safe limits and possibly damaging the carrier or friendly troops.

...keep recoil clamp on when firing!



DETENT PINS—The mortar tube detent pins must both be pressed IN to lock the tube to the mortar tube socket. If you fire with an unlocked barrel, the mortar can buck, damage your carrier and get somebody hurt.

Press in detents to lock barrel!

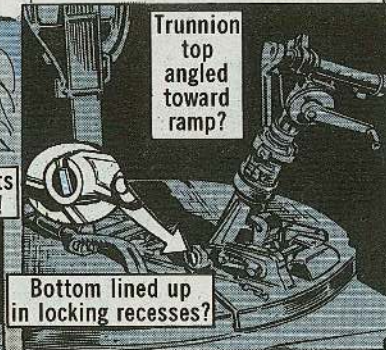


Lube socket surfaces!

MORTAR SOCKET—Surfaces of the socket that contact the bridge turntable need to be greased with GAA every 75 hours, 750 miles or quarterly.

STANDARD TRUNNIONS—The trunnions of the standard fit into the turntable trunnion holder 2 different ways. One way is correct. One way is not. The correct way is to angle the top of the standard toward the ramp and line up the trunnions with the support locking recesses. Inset the trunnions in the recesses and pivot the standard to the vertical position.

Trunnion top angled toward ramp?



Bottom lined up in locking recesses?

Look carefully to make sure the trunnion tops are completely covered (locked) by the recesses. The wrong way is with the standard pointing toward the engine compartment. Then, when you fire, only about 25 percent of the top surface of the trunnions will be locked.

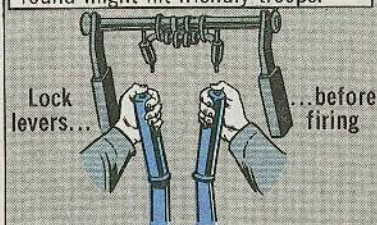
TRAVEL POSITION—You should not fire the M30 mortar from travel position in the mortar carrier. The travel position of the support will not completely lock the trunnions of a correctly mounted mortar standard. Fire from this position and you can damage the support or the standard trunnions. The standard support is down and locked for traveling. Before you fire you must reposition the standard support so it is up and locked instead of down and locked.

STOP LOCKS—These must be in place to keep you from traversing into a dangerous position. Traverse to make sure they are in place as part of your preparations before firing.



STEERING LEVERS LOCKED—

Your differential steering levers must be fully locked before you fire. If they are not, the recoil from your fired round can disturb the lay of your mortar so that your second round might hit friendly troops.

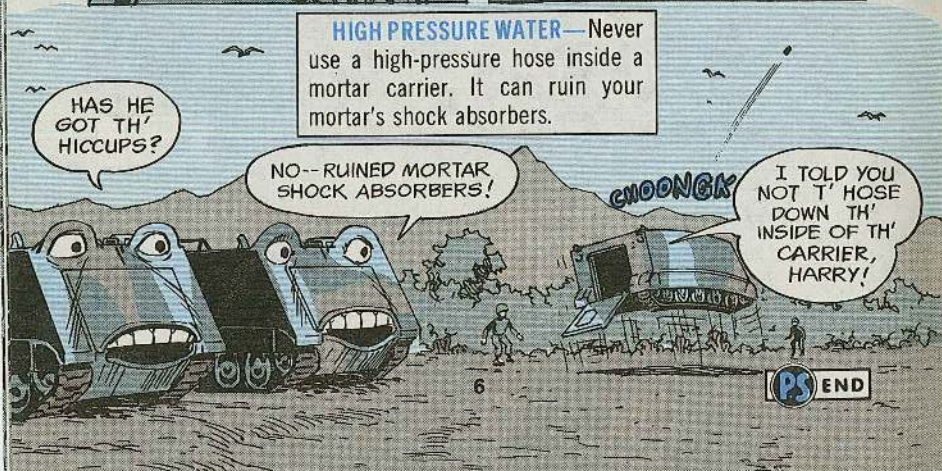


TURNTABLE INDEXING GEAR—

The mortar turntable indexing gear needs a light coat of grease on the top and inside bearing surfaces every quarter.



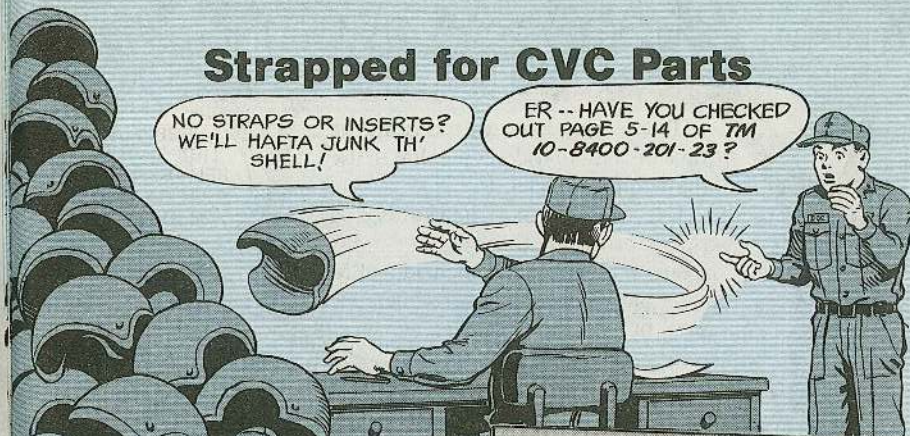
HIGH PRESSURE WATER—Never use a high-pressure hose inside a mortar carrier. It can ruin your mortar's shock absorbers.



Strapped for CVC Parts

NO STRAPS OR INSERTS?
WE'LL HAFTA JUNK TH' SHELL!

ER -- HAVE YOU CHECKED
OUT PAGE 5-14 OF TM
10-8400-201-23?



Dear Half-Mast,

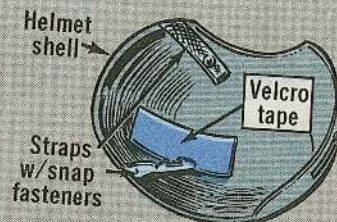
We got the word on how to order outer shells for our DH-132 helmets in PS 338, Page 51. No sweat there.



But, the outer shells arrive without rubber inserts or adjustable head straps. When these items tear or separate from the helmet, we need them, too. Without 'em the helmet has to be salvaged.

Can you supply us with part numbers or NSN's for these items?
SFC J.P.C.

Dear Sergeant J.P.C.,
Sure can. Hold on to those hats.



Everything you need is in TM 10-8400-201-23. See Page 5-14. The straps are NSN 8415-00-163-9049. Velcro pads for holding the liner and shell together are NSN 8415-00-163-9051.

Half-Mast

Weapon Turn-In

If you've been told to turn in a weapon that requires a DA Form 2408-4 (Weapon Record Data), be sure to send the form along. Appendix E of TM 38-750 tells you which weapons require a 2408-4. Para 4-6 has the needed info.

For Small
Arms PM...

Cleaners, Lubes, Preservatives



Troops put down weapons all the time because they don't pull PM or use the wrong material.

Use only cleaners, lubricants and preservatives authorized for your weapon. Lay off "homemade" PM cures like oven cleaner, kerosene, steel wool or whatever.

HERE'S A LIST THAT'LL HELP SHARPEN YOUR SMALL ARMS PM KNOW-HOW...

YEH--SARGE TOLD ME TO STUDY UP ON SMALL ARMS PM!

SAYS POSSUM FAT AIN'T AUTHORIZED LUBE!

THAT'S A RELIEF!

ITEM	NSN	UNIT OF ISSUE	REMARKS
CLEANING COMPOUND SOLVENT P-C-111	6850-00-965-2332	5-gal can	For armorer only
CLEANER, TOBACCO PIPE	9920-00-292-9946	32- per pkg	For M16A1 rifle
CLEANING COMPOUND Rifle Bore (RBC) MIL-C-372	6850-00-224-6656 6850-00-224-6657 6850-00-224-6663	2-oz container 8-oz can gal can	For inside and outside cleaning of all weapons after they've been fired
CLOTH, ABRASIVE	5350-00-221-0872	50-sheet pkg	For armorer only
CLP (Cleaner/Lubricant/Preservative)	9150-01-102-1473 9150-01-079-6124 9150-01-054-6453 9150-01-053-6688	½-oz bot 4-oz bot pt spray bot gal can	All-purpose lube for weapons. Apply light coat.
DRYCLEANING SOLVENT (SD-1)	6850-00-664-5685	qt can	For armorer only
ENAMEL: Blk, jet	8010-00-297-0546	qt can	For touch-up painting of outside metal surfaces

ITEM	NSN	UNIT OF ISSUE	REMARKS
GREASE, RIFLE MIL-G-46003	9150-00-248-3480 9150-00-754-0063	2.5 cc tube lb can	Use light coat on receiver group, especially in wet climates. Never use on the M16A1 rifle.
LACQUER: Blk, jet lusterless; Type 1 TT-L-50	8010-00-582-5382	pt spray can	For touch-up painting of outside metal surfaces
LINSEED OIL: Raw TT-L-215	8010-00-221-0611	gal can	For wood parts. Never use much. Rub it in well with your fingers. Never use it on plastic parts.
LUBRICANT: SOLID FILM	9150-00-168-2000	16-oz spray can	For armorer only
LUBRICATING OIL, GEN PURPOSE: Preservative Special (PL-S) VV-L-800	9150-00-273-2389 9150-00-231-6689	4-oz can qt can	For small arms except M16A1 rifle
LUBRICATING OIL: Semi-fluid MIL-L-46000 (LSA)	9150-00-935-6597 9150-00-889-3522 9150-00-687-4241 9150-00-753-4686	2-oz bot 4-oz bot qt can gal can	For M16A1 rifles, crew-served machine guns, certain parts of some helicopter machine guns (See your TM.)
LUBRICATING OIL, WEAPONS: (LAW) MIL-L-14107	9150-00-664-0038 9150-00-292-9689	4-oz can qt can	For small arms at temperatures below 0°F (See your TM.)
NEAT'S-FOOT OIL CN 200	8030-00-244-1031 8030-00-244-1033	qt gal	For leather slings and carrying cases
RAG, WIPING, COTTON	7920-00-205-1711	50-lb bale	For general purpose use
SWAB, SMALL ARMS CLEANING: 1¼-1½-in sq	1005-00-912-4248	1000	For M16A1 rifles
SWAB, SMALL ARMS CLEANING: 2½-in sq	1005-00-288-3565	1000	All small arms except M16A1 rifles

YOU and Your

M3A1 Oiler Cap





It Shouldn't Happen

The night has a thousand eyes...er, at least it did until Herm started fooling around with his night vision sight. At high noon he slipped off the lens cap to look around. The bright light zapped his image intensifier assembly. The night's got one less eye all right, but Herm's got a lot less money.

I-HAWK

Loading

When you need your M501E3 Improved HAWK system loader-transporter (L-T), you need it now.

HERE ARE SOME POINTS TO CONSIDER SO YOUR M501E3 CAN BE READY WHEN YOU ARE!

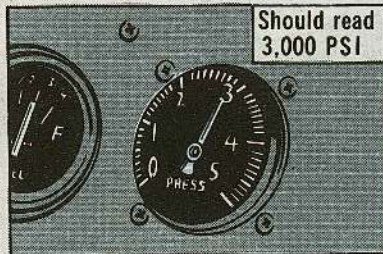
HEY, CONNIE...

CAN WE REALLY TOW HEAVY LOADS WITH THIS RIG LIKE TH' TM SAYS?

Leaking hydraulics sneak up on you. They seldom fail outright.

So what to do?

Eyeball the hydraulic pressure gage on the L-T instrument panel. The needle should hold a steady 3,000 PSI at engine idle speed if your hydraulics are OK.

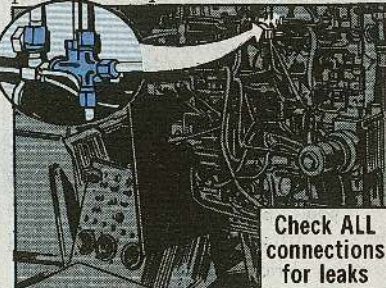


Should read 3,000 PSI

Next, open the hydraulic control panel cover and check each connection for leaks.

Repair those authorized at your

level. Contact your direct support platoon to repair those that are not.



Check ALL connections for leaks

Also, contact your DSP if the pressure won't hold at 3,000-PSI.

Do that, and not only will your L-T be ready when needed, but you'll save some headaches during the annual load test by your DSP. Like, the L-T won't be yo-yoing between you and DSP for you to do repairs you should have made during the year.



The book may say it's OK, but continual towing of up to 4,000-lb



Keep towing to a minimum

loads with your L-T won't do it any good. Heavy loads can tear up the transmission, transfer case and universal joint, among other damage.

Best bet, tow if you really have to, but otherwise, don't!

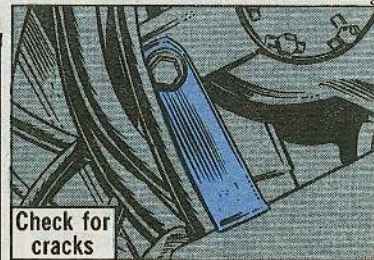
The transfer case reservoir cap must be put on tight and snug. If you



Secure cap tightly

don't get it on all the way, the transfer case fluid can be contaminated...which won't help the gears, etc, at all.

Transmission brackets crack during

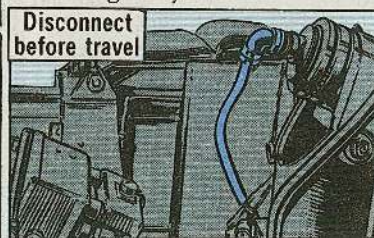


Check for cracks

normal operation. If they break off, you've got lots of problems.

So, make a pre-operations check. If you get a chance, check during operation, too. If you find a cracked bracket, notify your DSP.

Getting ready for road march?

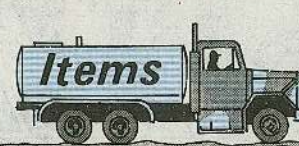


Disconnect before travel

Remember to first disconnect the boom cable (superstructure jumper special purpose cable).

If you forget it, the cable will tear out at each end..

Remember this: The boom is strictly for lifting missiles.



Fill in the NSN gaps in your Basic Issue Items List (BIIL) on Fig B-1 in Appendix B of TM 9-2320-273-10.

Item	Name	NSN
1	20-ton jack (M916-M920 trucks)	5120-00-188-1788
3	Handle, wrench	5120-01-084-3298
6	Hose, air	4720-00-328-5422
7	Triangles, reflector	9905-01-090-9819

THIS REFLECTOR KIT COSTS \$24.71! YOU CAN GET A KIT JUST LIKE IT FOR \$12.00 WITH NSN 9905-00-148-9546!



Item	Name	NSN
9	Bag, pamphlet	2540-00-670-2459
10	Folder, equipment record	7510-00-889-3494
11	Board, jack	2510-00-741-7585
12	Kit, power cable	6150-01-022-6004

YOU WON'T NEED THIS ON EVERY TRUCK. IT'S THE NATO SLAVE CABLE, WITHOUT THE ADAPTERS, THAT'S PART OF YOUR COMMON NO. 1 OR NO. 2 SHOP SET!



Item	Name	NSN
13	Cable, intervehicular 12-volt	2920-01-082-6214
14	Cable, intervehicular 24-volt	2590-01-082-3172
15	Lamp, portable work	6220-01-091-8016
20	Bag, cotton duck	5140-00-473-6256
22	Wrench, 12-in adjustable	5120-00-264-3796
23	Pliers, 8-in slip-joint	5120-00-223-7397

M915-Series Trucks... Vehicle Load Classification



Know before you go—across a bridge, that is—with your M915-series truck. You're too heavy if your truck's number is higher than the bridge's number.

These load classification figures are for fully loaded vehicles.

VEHICLE	LOAD CLASSIFICATION
M917 20-ton dump truck	50
M918 bituminous distributor	21
M919 mobile concrete mixer	45
M915 tractor/ M872 semitrailer	46
M916 tractor/ M172 semitrailer	45
M920 tractor/ M870 semitrailer	58

Your authorization for the load class kit, NSN 9905-00-565-6267, is TB 43-0209.

Downhill to Disaster!

HERE'S
A VITAL
Q & A
FOR YOU
BIG TRUCK
TYPES!

Question: What sounds like a garbage can half full of rocks rolling down a rough hill?

OH, OH! THERE GOES THE ENGINE!

I TOLD YOU TH' TACHOMETER WAS GETTING TOO HIGH!

Answer: Your diesel or multifuel truck when you've let engine speed get out of control...and you've gone over the RPM limit...and your engine winds up with bent push rods or broken connecting rods or holes punched through the tops of pistons by "floating" valves.

HMMM! DURNED IF THAT DON'T SOUND LIKE A GARBAGE CAN HALF FULL OF ROCKS ROLLING DOWN A ROUGH HILL!

RATTLE
CLUNK
CLINK
CLANK
BANG
BAM



Overspeeding your engine can lead to even worse surprises. Your truck may come back hanging on the rear end of a wrecker, but you may come

LOST CONTROL, HUH?

YEAH, FIRST HE LOST CONTROL OF HIS ENGINE SPEED! THEN HE LOST HIS FLYWHEEL! THEN HE LOST HIS HEAD! THEN...

I COULDN'T HELP IT!

Bad? You bet! If your engine's not completely ruined, the price tag for repair will be a big one.



This connecting rod was thrown out thru the side of the engine in an M911 Heavy Equipment Transporter Tractor Truck!

back in a meat wagon...with chunks of your engine fly-wheel or clutch pressure plate decorating your head.

You're too young to go that way—and so are most of the engines that're torn apart by overspeeding ("excessive RPM"). Instead of rolling up 100,000 miles or more as they should, many diesel/multifuel engines are out of the running with no more than 2,500 miles on 'em.

They're RPM'd to death!

RPM—And

Anything with moving parts has a speed limit. Those parts can move only so fast. If they're pushed beyond the limit, things start coming apart.

Even you've got a speed limit. You can't run faster than you can put one foot out in front of the other.

Try running full tilt down a steep hill. If you don't control your speed, your feet can't keep up. You wind up with your legs tangled and sliding on your face.

Engine overspeeding usually happens in downhill travel, when your truck's in a low gear and carrying a heavy load. You

FEET--
MOVE--
FASTER!

What is "RPM"?

Some of you newer drivers may not even know what RPM means. It's Revolutions Per Minute.

A "revolution" is 1 complete turn of your engine's crankshaft. So, if your tachometer shows 1,000 RPM, it means your crankshaft is making 1,000 turns per minute. And this means each piston is traveling from its lowest point to its highest point—and

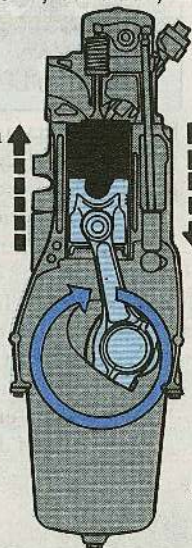
back again—1,000 times per minute. Fast? That's only high idle speed for a diesel/multifuel engine. At highway cruising speed, your engine may be turning over at more than twice that RPM.

Think about this: At 2,000 RPM, your engine's crankshaft is turning over more than 30 times every second! In just the time it takes for you to say "one thousand", each piston travels from bottom to top and back again more than 30 times! Push rods, valves and other parts are going like crazy!

Your engine is built to take that speed—and even more.

But every engine's also built with an RPM limit. That's not an RPM you try to reach—it's the RPM you stay away from.

That red arrow on your tachometer means just what it says—DANGER.



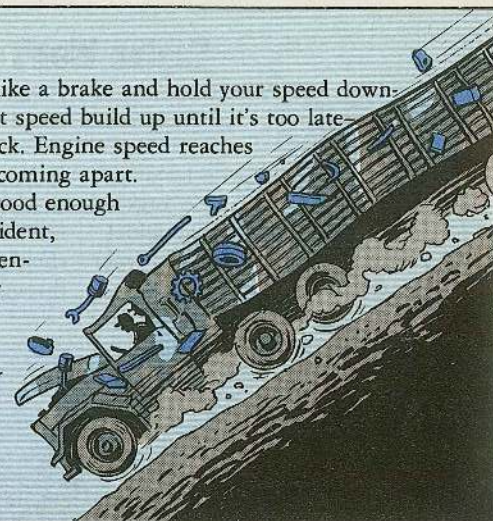
Your Feet

think your engine will work like a brake and hold your speed down—but you're wrong! And you let speed build up until it's too late—your brakes can't hold you back. Engine speed reaches the point where things start coming apart.

Maybe you're lucky and a good enough driver to steer clear of an accident, but you tear up a mighty expensive engine by failing to steer clear of "excessive RPM".

B-BUT I'M USIN'
MY BRAKES!

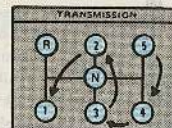
YOU THOUGHT O'
THAT TOO LATE!



No Brain Under the Hood

Your truck can do only what you allow it to. You're in control. You control steering, fuel flow, transmission gear, transfer range, braking—and engine speed. Driving a big, powerful, heavily-loaded Army truck is no job for someone who can think of only one thing at a time.

If you don't cut
your road speed,
each shift down...



...jacks up engine
RPM another notch—
toward DANGER!

Remember, engine speed (RPM) goes up as you shift down. This's how you jack up your power to get up a hill. No sweat—you keep shifting to a lower gear as you need more power. There's not much chance of your

overspeeding the engine when you're traveling uphill—it's easy to control.

Then you really sharpen up! As you reach the top of the hill and start down the other side, you keep your transmission in the same gear—and you keep one eye glued to that tachometer.

Keep your engine RPM well below the tail end of that red DANGER arrow. Use your brakes. But you don't "ride" your brake pedal or you'll burn



up your brakes. Just give your brakes a jab once in awhile if RPM starts creeping up.

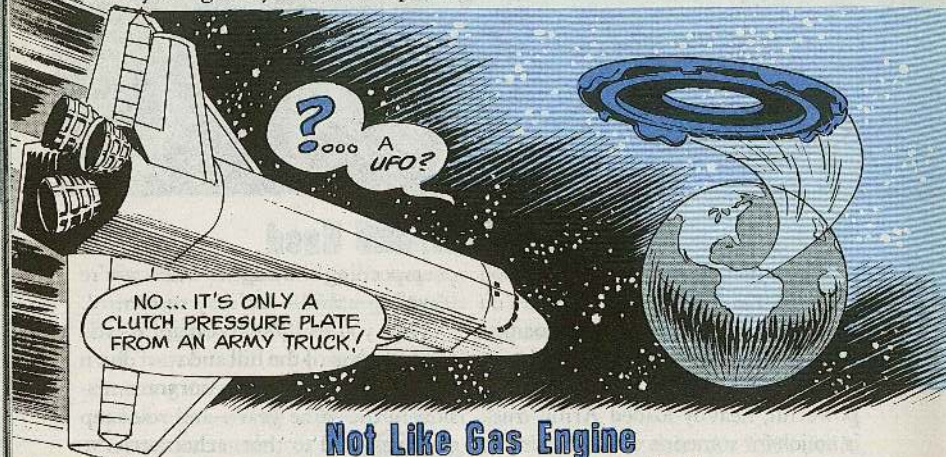
Engine Won't Help

"But," you say, "Won't my engine add braking power and help hold down my speed?"

This may be news to a lot of you drivers: There's very little braking power in a diesel/multifuel engine!

In fact, if you fail to control your engine speed—and let it get away from you—gravity and air will power

your engine. It'll feed on its own speed—no fuel needed. It'll drive itself faster 'n' faster. Your engine will come apart inside. It may even drive the flywheel and clutch pressure plate so fast they'll spin off into pieces—chunks of steel that can shoot right up through the floor of your truck.

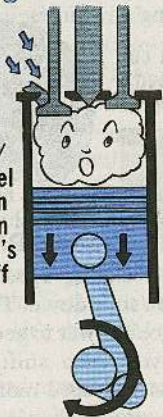


Not Like Gas Engine

Sure, there is braking power in a spark ignition (gasoline engine). Take your foot off the gas pedal and the engine will help slow you down. This's because the pistons are trying to pull air (and fuel) past the closed throttle valve. The pistons are "pulling a vacuum"—like you trying to suck air through a soda straw with your finger covering the other end. This work slows (brakes) the engine.

It's a different story with a diesel/multifuel engine. You take your foot off the accelerator pedal, and this cuts off the fuel. But the pistons still

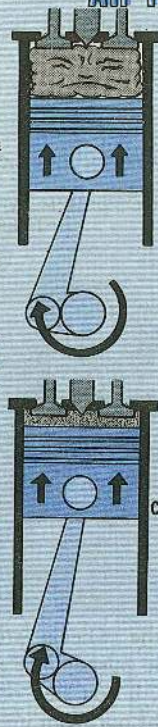
**Diesel/
multifuel
pulls in
air even
tho fuel's
shut off**



pull in the regular amount of air—there's no carburetor throttle valve to stop it. This can't last long on level ground, and your truck will slow to a stop.

Air Is Powerful "Spring"

But that air in your engine's cylinders is power when vehicle weight and load weight are pushing your truck downhill and turning your engine over. The pistons compress the air, squeezing it to less than 1/20th of its original volume—like you squeezing a 20-in long

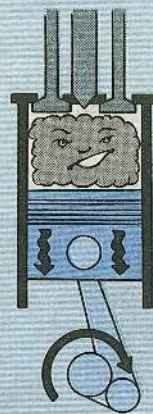


**Air is
squeezed
till...**

**...it's
like a
compressed
spring.
Then...**

spring down to 1 inch.

This's built-up power! When a piston starts back down, that compressed air is like a powerful spring pushing down on the piston.



**...it
pushes
down
against
piston
with
great
force!**

Meanwhile, other pistons are being forced to compress more air—more "springs". Vehicle speed goes up. Engine speed goes up.

If your service brakes can't slow you down, your engine will go to pieces—and you'll be lucky if you come out of it in one piece!

All of this can happen if you fail to control engine speed.

Under a full load, the governed speed is 2100 rpm. If the engine is allowed to exceed governed speeds, serious engine damage can result.

Remember—the engine governor has no control over speed when the engine is being pushed by a loaded vehicle down a grade. Use service brakes and gears in combination on long grades to keep vehicle speed under control and engine rpm below rated governed speed.

Avoid overspeeding the engine. Never allow the engine to be pushed above governed speed when rolling down a grade. Do not downshift if there is a chance of overspeeding the engine.

**YOU CAN'T SAY YOU DIDN'T
KNOW!... UNLESS YOU FAILED
TO READ YOUR OPERATOR'S TM!**

**FOR INSTANCE
TM 9-2320
270-10...**



PS END

Pusher Axle Hazard



A "pratfall" in the movies or on TV may be funny, but you won't die laughing if you take a header off the pusher axle wheels on your M915-series truck. You may wind up with anything from a skinned knee to a broken neck—or worse!

Three models in the M915 fleet are equipped with a pusher axle—the M917 20-ton dump truck, M919 concrete mixer truck and M920 medium equipment transporter.

This 3rd rear axle is used to take some of the weight off other axles when the truck's carrying a heavy load. When the pusher axle wheels are lowered to the ground—under air pressure—the wheels take over some of the load weight.

But the wheels are free-rolling when the pusher axle's in the raised position. If you step on a wheel, it'll spin right out from under you!

For your own safety, never use the pusher axle wheels for a step.

For extra safety, lower the wheels to the ground when parking your truck.

For the best safety, tho, don't step on the wheels even if you think they're on the ground.

SEE
WARNING, PUSHER
AXLE, Page d IN YOUR
TM 9-2320-273-10!



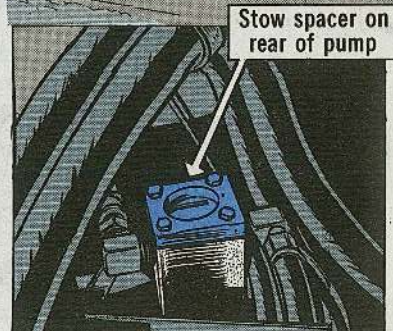
Transfer Pump Turnaround.



Did you change the transfer oil cooler pump spacer from the cold-weather position to the warm-weather position?

You've got to move the spacer—like it shows on Pages 7-10 thru 7-16 in TM 9-2320-273-20—or your M916 or M920 tractor will be in deep trouble. The oil cooler won't work. The oil will get too hot. You can burn out the transfer gears and seals.

When you pull your warm-weather seasonal service, move the spacer from between the pump and the transfer case to its stowed position at the rear of the pump. This engages the pump—the oil cooling system will work.



When your cold-weather seasonal service time rolls around, move the spacer from its stowed position to between the pump and the transfer case.

Handle for Jack

Need a handle for your hydraulic jack? Try NSN 5120-00-357-6106. It's a steel tube 20 inches long, a shade under 7/8 inch in diameter and with a slot in one end to release jack pressure. It's listed in the GSA Tool Catalog. It should do the job for most hydraulic jacks.

IT'S BRAKE FLUID, ALL RIGHT...

Finger on the Fluid

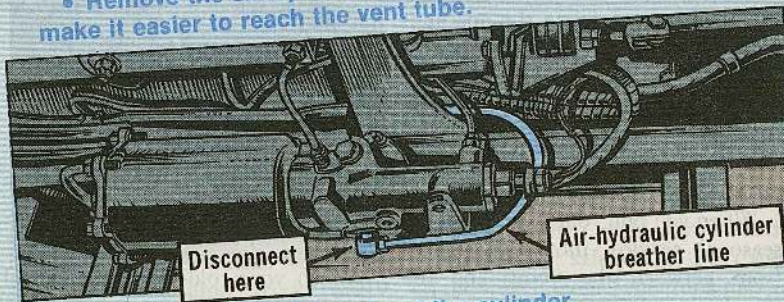
BUT WHERE'S IT COMIN' FROM?

WE THINK IT'S COMIN' FROM TH' AIR-HYDRAULIC CYLINDER...

... BUT HOW DO WE PROVE IT?

Dear Editor.
Positive proof of brake fluid being exhausted from the 2½-ton truck's air-hydraulic cylinder can be obtained by checking right at the cylinder instead of at the engine breather tube. Because of the location of the engine breather tube and the presence of engine oil in the tube, this method is better:

- Remove the skid plate under the air-hydraulic cylinder to make it easier to reach the vent tube.



- Disconnect the vent tube at the cylinder.

If brake fluid is being exhausted by the cylinder, it'll show up when the tube's disconnected. The air-hydraulic cylinder should be replaced.

CW2 Tom Logeman
HHC, 198th CRS Bn
Delaware ARNG

(Ed Note—A mighty good tip to prevent accidents involving brake failure. But, caution your mechanics against operating the brakes while the vent line's disconnected. Brake fluid may be sprayed out of the cylinder. It's bad for your health. And, when it's in a mist form, it's highly explosive!)

Seals & Bearings Get a Lift



Axle seals leaking? Wheel bearings pooping out?

These troubles happen when you don't get all of the hardware—including wheels—lined up right. You think everything inside is OK. It even feels OK when you adjust the bearings and lock 'em down.

But some of those parts may be cocked off just a bit. Seals won't seal. Bearings go to pot.

You've got a tool that'll help a lot to install the wheels without upsetting those seals and bearings. It's your truck, lift, wheel, NSN 4910-00-554-5983. It's in your No. 1 common shop equipment.

It works best on a smooth, level, hard surface. But when you're out in the field, you can do almost as well by using your wheel lift truck on a sheet of plywood laid on a flat surface.

Also, it's better to make wheel installation a 2-person job—one maneuvering the lift truck while the other watches carefully to see that everything's lining up right.



CAUTION!!

IF YOUR WHEEL LIFT TRUCK WAS MADE BY RUST MANUFACTURING, INC., DON'T USE IT!

IT'S NOT SAFE!

YOUR COMMAND WILL TELL YOU WHAT TO DO WITH IT!



WHAT'S THAT?
YOUR HORSE THREW HIS
SHOE AN' YOU NEED REPLACE-
MENT NAILS, MR. REVERE?...

Y'GOTTA HAVE AN NSN,
LOOK IT UP IN
YER -20P!

PUBS

This is a selected list of recent pubs of interest to organizational maintenance personnel. This list is compiled from recent AG Distribution Centers Bulletins. For complete details see DA Pam 310-4, DA Pam 310-6 and DA Pam (C) 310-9.

TECHNICAL MANUALS

TM 5-3805-257-14&P Jan Loader, scoop type, DED, 4x4, 4 1/2 to 5-cu-yd (CCE) Model 175 B
TM 5-3895-348-14&P-2 Feb Roller, 10-14-ton (CCE) Hyster Mod C350B-D
TM 5-3895-372-20P Jan Concrete-mixer M919, 160 BCM-24/F
C 1, TM 5-4920-273-14 Dec Pumping assy, 10-in, 100-GPM
TM 9-1430-528-24P Nov AN/MPQ-48 Improved HAWK
TM 9-1430-532-24P Feb AN/TPQ-29 Improved HAWK
TM 9-1430-534-24P Nov AN/MPQ-50 Improved HAWK
TM 9-1430-1535-12-4-2 Oct AN/MSQ-110, AN/MSW-13 Improved HAWK
TM 9-2350-215-10-2 Feb M60A1 AOS tank
TM 9-2350-215-20-1-4 Jan M60A1 and M60A1 AOS tanks (hull)
TM 9-2350-222-20-1-2 Feb M728 CEV
TM 9-2350-222-20-1-3 Feb M728 CEV
TM 9-2350-257-20-1-1 Jan M60A1 RISE and M60A1 RISE passive (hull)
TM 9-2350-257-20-1-2 Jan M60A1 RISE and RISE passive (hull)
TM 9-2350-257-20-1-3 Jan M60A1 RISE

and RISE passive (hull)
TM 9-2350-257-20-1-4 Jan M60A1 RISE and RISE passive (hull)
TM 9-2350-260-20-1-4 Feb M60 tank (hull)
TM 9-4910-531-14&P Jan Cleaner & tester, spark plug Mod 82
TM 9-4935-255-24P-2 Nov Test set, missile launcher AN/TSM-21
TM 9-4935-472-24P-3 Feb TOW, Dragon
TM 9-4940-507-14&P Mar Spray gun, paint Binks Mod 15
TM 9-5855-266-14 Dec Thermal sight, TS-3681/VSG-2
TM 9-6920-485-20P Dec Lance
C 2, TM 10-3930-231-20P Mar Fork, lift, 4,000-lb MHE 184
C 1, TM 11-5815-309-24P Mar AN/MGC-32 teletypewriter terminal
C 6, TM 11-5820-667-12 Jan AN/PRC-77 radio
TM 11-5840-354-10-1 Feb AN/TPQ-38 radar set
TM 11-5840-354-10-HR Mar AN/TPQ-38 radar
TM 11-5841-286-20P Mar AN/ARC-164 (V) 12 radio
TM 11-5895-482-12-HR Mar AN/TSC-26 commo central
TM 11-6660-255-12-HR Mar AN/PMQ-6, 6A wind measure, 2015
TM 11-6665-209-10-HR Mar AN/PDR-27J.L.Q. radac sets
TM 11-6665-209-20 Mar AN/PDR-27J.L.Q. radac sets
C 18, TM 55-1520-210-23-1 Mar UH-1D/H/V/EH-1H

C 2, TM 55-1520-210-23-3 Nov UH-1D/H/V/EH-1H
C 3, TM 55-1520-210-PMD Jan UH-1D/H, EH-1H
C 5, TM 55-1520-210-PMD Apr UH-1D/H, EH-1H
C 24, TM 55-1520-219-20 Mar UH-1B
C 12, TM 55-1520-219-PMS Mar UH-1B
C 1, TM 55-1520-220-23-1 Mar UH-1C/M
C 2, TM 55-1520-220-23-1 Mar UH-1C/M
C 1, TM 55-1520-220-PMD Mar UH-1C/M
C 10, TM 55-1520-227-23-2 Apr CH-47B, CH-47C
C 7, TM 55-1520-228-PM Mar OH-58A/C
C 8, TM 55-1520-237-PMS-1 Nov 10-hour/5-day inspect UH-60A
C 13, TM 55-2840-231-24 Jan T63-A-5A, T63-A-700
TM 55-2840-241-23P Jan Engine T63-A-720
C 2, TM 55-2840-248-23 Jan Engine T700-GE-700

MISCELLANEOUS

AR 708-1 Apr Supply
LO 9-2350-217-12N Dec M109/M109A1/M109A3 howitzers
MCRL-2 Apr Master cross-ref list Part 2
MCRL-3 Apr Master cross-ref list Part 3
ML-A Mar Management data list (fiche)
PAM 310-4 Jan Tech Pubs Index (fiche)
SC 5180-90-CL-N26 May Tool kit, gen mech automotive
SC 5180-90-CL-N45 Oct Telephone electrician's TE 49
TB 43-0239 Mar Maintenance in the Desert

AUDIO-VISUAL STUFF

Available at battalion or post Learning Center

Film, TV Tapes
TF 46-6203 Inspect overwater survival kit
TVT 55-109 Move by air, Part 1
1 Prep equipment
TVT 55-111 Move by air, Part 3
3 Shoring
TVT 55-112 Move by air, Part 4
4 Cargo restraint
TVT 55-115 M815 Tractor-

Trailer
TVT 55-116 M815 PMCS
TEC LESSONS
043-441-5484-J IPIPR
043-441-5520-J IPAR
043-441-5979-F Vulcan carrier PMCS Part I
121-093-6913-A AN/GSM-45 cable test set
121-093-6914-A Prep

AN/GSM-45 for test
121-093-6915-A AN/GSM-45 (missile)
231-909-4060-A Radio target transmitter T-279/UR
551-101-8221-A Supply status cards, Part I
551-101-8233-A Preprinted components list as hand

receipt shortage annex
551-101-8236-A Updating preprinted components list as hand
receipt shortage annex
611-091-6111-J M88A1 service brake linkage
611-091-6112-A M88A1 service brake linkage
944-171-0205-F Goer PMCS

Red Diagonal Due

When you pull a Phased Maintenance inspection on your aircraft just before it's due (and who doesn't?) use a red diagonal to start the check. Use a red X only if you hit the exact flying-hour the inspection is due, or when the inspection due time has been exceeded. The word's in Para 10-3d of TM 38-750.

Save Fuel Pumps

Never scrap a bum electrical fuel boost pump when you remove it from your OH-58 A/C aircraft. Save Uncle some cash by sending it to support for repair. The pump, item 111, Fig 90 in TM 55-1520-228-23P, is now a repairable item, according to TSARCOM Msg DRSTS-MEA 261515Z Feb 81.



FACE IT, KEVIN... WE'RE LOST DEEP IN THE BOONIES!

RIGHT, DAN! WHEN WE STOPPED T' TINKER WITH OUR NIGHT SIGHT, WE GOT SEPARATED FROM OUR UNIT!

WHAT A WAY T' SPEND TH' FOURTH!

NOW WE'LL MISS TH' FIREWORKS DISPLAY BACK IN TOWN!

WE'LL SEE PLENTY WHEN SARGE FINDS OUT WE FAILED IN OUR MISSION BECAUSE OUR SIGHT WON'T WORK...

HEY-- LOOK...

A SIGNAL LIGHT-- BUT WHERE'S IT COMING FROM?

SIMPLE, GENTLEMEN...



...FROM THE TOWER OF THE OLD NORTH CHURCH!

H-HUH? IT'S...

UNCLE SAM!

I AM SEEKING ASSISTANCE FROM YOU AND YOUR NIGHT SIGHT! A PROBLEM IS ARISING IN THIS TIME AND PLACE THAT MUST BE SOLVED...

THE VERY EXISTENCE OF THE UNITED STATES HANGS IN THE BALANCE!

GULP!

S-SORRY, UNCLE SAM, BUT OUR NIGHT SIGHT IS OUTTA WHACK!

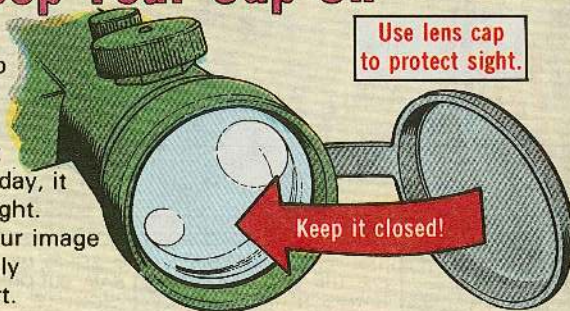
I KNOW! LET'S HAVE A LOOK AT IT! WE HAVE ONLY MOMENTS TO GET IT INTO ACTION!



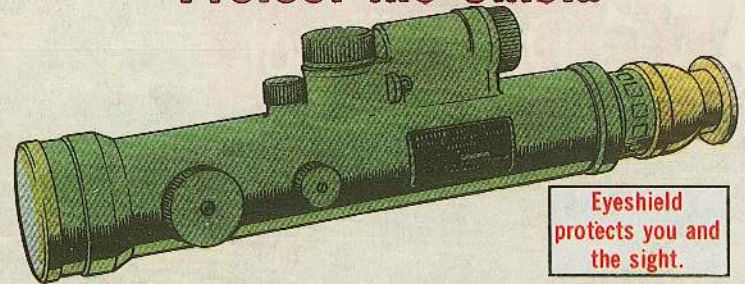
Keep Your Cap On

When you're not using the sight, keep the lens cap on. That keeps out dirt, dust and things that scratch. During the day, it also keeps out sunlight. That sun will zap your image intensifier, an awfully expensive repair part.

Of course, direct rays from artificial lights used at night, like headlights and flashlights, will do in your intensifier, too.



Protect the Shield



The idea is to see and not to be seen, right? One way to insure that is to maintain the eyeshield. Without it, light beams escape, giving away your position.

Keep those tell-tale beams hidden by treating the shield right. It's not a handle, so never pick up your sight with it.

Go easy on the leaves, too. They open and close with normal pressure. Poking around with pencils or sticks will only open 'em permanently. It also may scratch the lens.

If the lens should fog up, pump the shield a few times. That should clear it up. If not, turn the sight in.



JOE'S Dope Sheet



To see in the gloom and the night
You need the keen eye of the sight!
Good PM's the price
That assures your device
Will give you the edge in the fight!

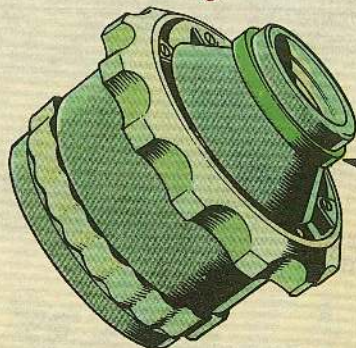
WE HAVE THE WORLD'S BEST EQUIPMENT ... *Take care of it*

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



NOW, WHILE YOU PROTECT THE SIGHT, PROTECT YOURSELF, TOO!

Ring Around the Sight?



Look for green knurled adapter ring.

Some sights are modified to protect against leakage of low-level radiation. They have a green knurled ring between the eyeshield and eyepiece housing. If yours doesn't have it, turn it in.

Your Image Need Improving?

If your sight picture starts to get weak, blurred or disappears entirely, check the battery first.

A rundown battery gives you problems, so save its power by turning the power switch off when not using your sight. Be sure it's off when you switch batteries.

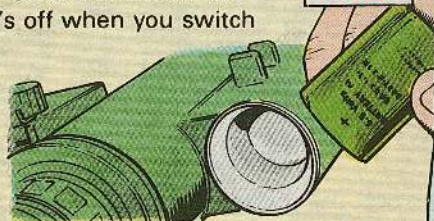
Replace the battery compartment cap carefully, too. If it goes on crooked, you risk damaged threads, as well as having no contact with the new battery.

If you've tried a new battery and still get a lousy picture, be sure your battery's installed correctly. The compartment or your TM will give you a clue.

Still unsure? Check out the image test in TB 11-5800-212-24.

Finally, head off corrosion problems by removing the battery when you quit operating for the night.

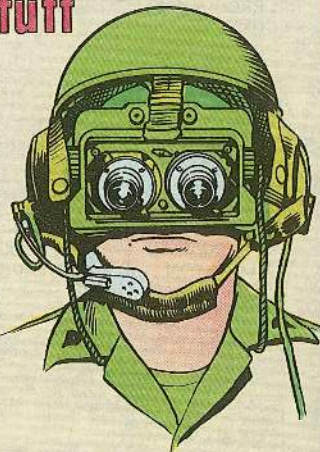
Take care of battery compartment.



No Rough Stuff

'Course, you won't use force on knobs and switches. Some, like focusing rings, move stiffly in normal use. A little grit can make them harder to turn. Get the feel of your sight so you can tell when resistance is normal. If it's not, clean it or turn it in for repair.

When mounting your sight on helmets or weapons, be sure it's seated securely. If it isn't, one good bounce and you're night-blind.



Keep It Clean

Store sight in its case.



When cleaning, use the right material. A shirt or hanky will grind grit into the glass, not remove it.

When your set's not in service, keep it in the carrying case. That's your best bet against dirt and moisture.

'Course, be sure the sight is clean and dry before you put it into the case. Even so, open the case periodically and be sure everything's still dry.

If salt water fouls your sight, douse it thoroughly with fresh water before drying and storing it. Check for a foggy lens before stowing it.

THAT'S ALL THERE IS TO IT, GENTLEMEN-- FOLLOW THESE PROCEDURES AND YOUR NIGHTSIGHT WILL BE READY WHEN YOU ARE!

GOTCHA, UNK!

NOW WHAT IS IT YOU WANT US TO HELP YOU WITH?

SAY... D-DO I HEAR... HOOF-BEATS?



35





It's true that Appendix C in the aircraft maintenance manuals is the inventory carried on the DA Form 2408-17. What some of you knuckle busters may not know is that the inventory is adjusted for your theater. If you're in the arctic, you won't want a bunch of equipment intended for the tropics.

Equipment may be added by a Modification Work Order, which is your backup until the appendix is updated.

Additional items may be required. For instance, if your unit has special equipment, your commander may determine that the equipment must be placed on the inventory. Your log book backup would be the published orders establishing the inventory requirement.

So, the inventory may vary from one aircraft to another even though type and model are the same.

When you inventory an aircraft, stick with the master guide in Appendix C. If a radio control head is listed separately, that's the way it should appear on the -17 form. If only the radio is listed, it's not necessary to list the control.



Oil Pressure Down,
Blood Pressure Up...

"What's Up, Sarge?"

"Wouldn't you know it—10 minutes into the flight and we're losing oil pressure on No. 2 engine!"

"Sarge, didn't you just add oil to that baby?"

"Ah, well...yes."

"And we're throwing oil overboard, Sir!"

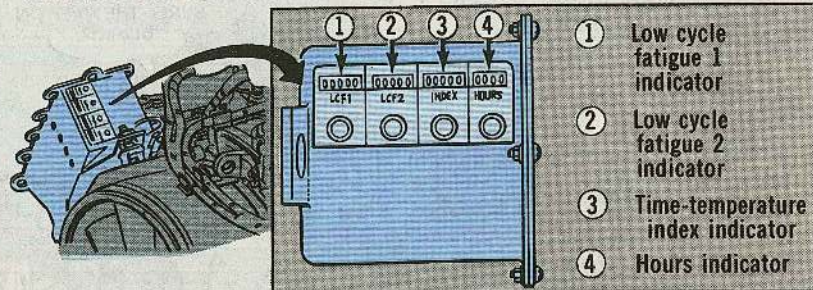
"Pressure's in the yellow and dropping fast, Sergeant. We'll have to shut 'er down!"

That's the scenario, Black Hawk types, when the engine oil filler cap is not secure. This bad scene has happened time and again recently because of unsecured caps.

...NOT THIS BIRD--
IF YOU DON'T SECURE
THE OIL FILLER CAP!

Watch Your

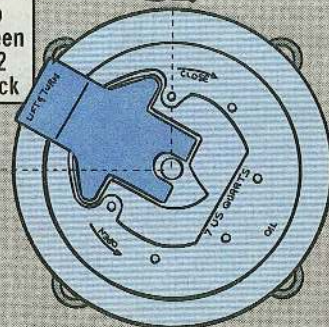
The T700 engine history recorder is also taking a beating. Some of the windows have been broken. When that happens, you lose the special oil



Make the "Feel" Test

12

Cap
between
9-12
o'clock



The cap is a standard design. Cap removal is fast...no sweat. Cap replacement takes a little longer. So try this for size, crew chiefs:

★ Seat the cap firmly, pointing it toward the engine accessory gear box between the 9-12 o'clock position. Then, the locking lever is not sticking out where it might be opened by accident.

★ Rotate the cap locking lever clockwise to engage the locking lugs with the tank.



★ Flip the locking lever DOWN flush with the cap. It's not necessary to check the cap for security by lifting the latch.

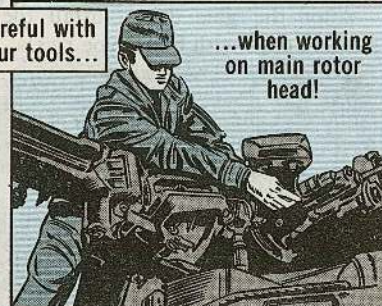


Tools and FOD

in that baby. Dirt and moisture enter

Careful with
your tools...

...when working
on main rotor
head!



the recorder in short order, causing it to fail.

'Course, when it is time to change an engine component, you need accurate historical info.

So, when you're working on the main rotor head, for example, never leave tools lying around.

A TOOL KNOCKED
INTO THE RECORDER
COULD PUT IT OUT
OF WHACK!



For a Good Seal...



SARGE... I THINK YOU'D BETTER HAVE THOSE DOOR SEALS CHECKED!!

I FELT A SLIGHT DRAFT DURING THE FLIGHT!

If you've had problems with your OH-58 door seals coming unglued, here're some tips to keep 'em in place:

Remove the retainers and rivets. Discard the old seal and remove the old glue. Clean the area with a cloth dampened with toluene, and dry with a clean cloth.



Clean a new seal with a toluene-dampened cloth. Use 80-grit sandpaper to roughen the seal so the glue will stick better, and clean the seal again with toluene. Dry it with a clean cloth.

Brush cement, NSN 8040-01-084-3861, on the seal and doorframe. Let it dry for the time specified on the label.

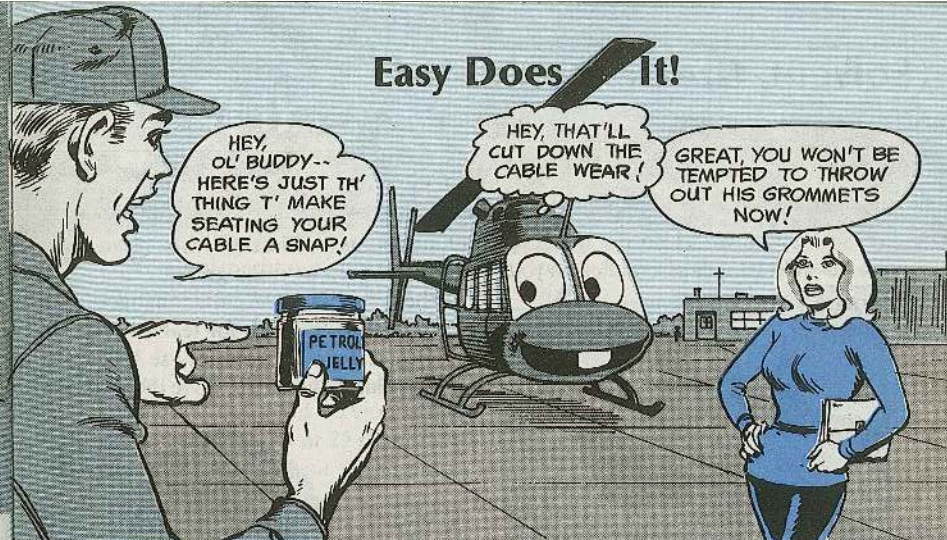
Firmly press the seal into place. You can maintain pressure for an hour or so by closing the door on the seal.



After the glue dries, install the retainer clips with blind-type rivets.



Easy Does It!



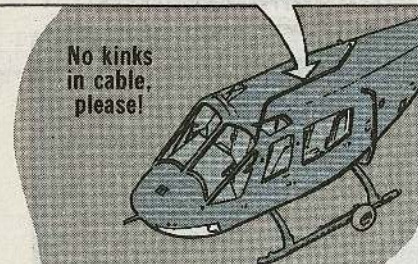
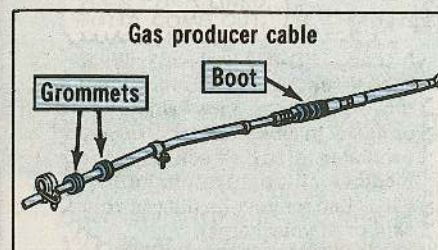
HEY, OL' BUDDY-- HERE'S JUST TH' THING T' MAKE SEATING YOUR CABLE A SNAP!

HEY, THAT'LL CUT DOWN THE CABLE WEAR!

GREAT, YOU WON'T BE TEMPTED TO THROW OUT HIS GROMMETS NOW!

You can get in a bind, OH-58 types, when routing a new gas producer cable.

So before you start, make sure the grommets in the cabin roof beam are in good shape and properly seated in the holes.



Using MEK? Wear plastic gloves!

Never take the grommets out and throw them away. That may make it easier to put the cable in but it'll rub against the metal and you'll soon need another replacement.

Coat the control cable with petroleum jelly before you start. The cable will slip through the grommets easier. Never use too much force pushing on the cable or you may kink it. That'll give you a stiff control. See Para 4-92f of TM 55-1520-228-23 for the word on maximum force you should need to turn the control after installation.

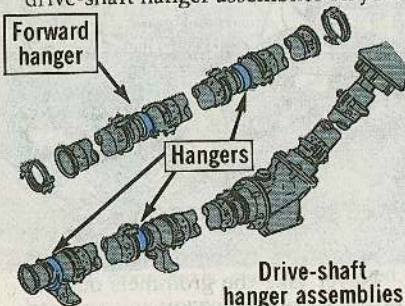
If the control gets stiff after it's been installed a while, check the boot, Item 38 in Fig 4-16A in the -23 TM.

The inside of the boot gets gummy from engine cleaning solvents and can cause partial binding of the cable. The outside may look OK so squeeze the boot together.

If the boot is sticky, clean the cable with MEK and use a new boot.

Solvent, Grease Don't Mix!

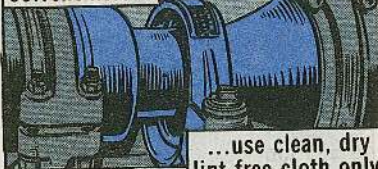
So how do you clean the tail-rotor drive-shaft hanger assemblies on your



Huey? Two Cautions on Page 6-128 of TM 55-1520-210-23-1 say you can't use cleaning solvent!

Those words of caution were put in to make sure cleaning solvent doesn't

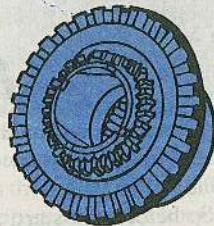
No cleaning solvent here...



get into the assemblies while you clean your bird. Solvent ruins grease!

When you have the hanger assemblies off the craft for tear down and inspection, tho, you can use PD-680 cleaning solvent to remove the old grease.

Solvent OK—blow dry!



Just make sure you get all the solvent off the assembly. Use compressed air to remove the last of the solvent.

Using PD-680 solvent? Wear rubber or plastic clothing and gloves, and a face shield or goggles. In close quarters? Poorly ventilated area? Check with the medics for the right respirator. PD-680 is bad for your health (on your skin or in your lungs).

Aviation Messages

If your unit has not received these messages, check with your next higher headquarters.

UH-1-81-02 Maint Notice UH-1B/D/H/V, UH-1E center frame assy DRSTS-MEA 022100Z Mar 81
UH-1-81-03 SOF Maint Notice change in daily inspect UH-1 tail rotor blades DRSTS-MEA 101945Z Mar 81
AH-1-81-06 SOF Technical AH-1 one-time inspect T53-L-703 engine DRSTS-MEA 080030Z Mar 81

AH-1-81-07 Maint Notice receiver-transmitter, antenna DRSTS-MEA 251330Z Mar 81
CH-47-81-07 Maint Notice CH-47C overhaul retirement sched change DRSTS-MEA 022010Z Mar 81
CH-47-81-08 SOF Technical/one-time inspect CH-47A/B/C mech transmission chip detector circuits DRSTS-MEA 182330Z Mar 81

OV-1-81-02 Technical one-time inspect all OV-1/RV-1 A/C actuator mech trim for loose rod ends DRSTS-MEA 202015Z Mar 81
UH-60-81-03 SOF Maint Notice UH-60 Blackhawk main rotor blades red blm indicator DRDAV-EEB 161615Z Mar 81
UH-60-81-04 SOF Technical one-time inspect UH-60 Blackhawk troop door stops DRDAV-EEB 102030Z Mar 81

Drop Electrolyte Check

TIME FOR THE WEEKLY CHECKUP!

NO MORE! HEADSHED MESSAGE SAYS T' MAKE 30-DAY OR 25-HOUR CHECKS!

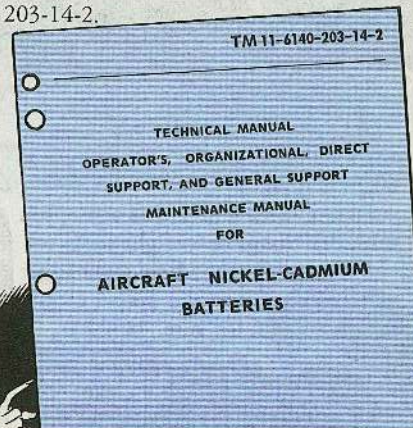
You bird mechs can drop the weekly electrolyte level check (Item 5) called for in Table 4-1 of your TM 11-6140-203-14-2.

That check is now made only by your support shop.

You also change the table's time interval. Checks and services will be made every 30 days or 25 flight-hours instead of the current weekly or 25 flight-hours.

This word will be in the next change to the TM.

IT'S NOW IN CERCOM MSG DRSEL-ME-SPF 141430Z Apr 81!



YOUR PITCH LINKS GOTTA COME OUT, FELLA!

Keep the Links!

MAYBE NOT-- I'VE GOT A NEW WEAR LIMIT!

There's no need for you mechs to remove the pitch links from your Chinooks based on the 0.006-in wear limit in Chap 5 of TM 55-1520-209-23-2 and TM 55-1520-227-23-2. The new bearing wear limit is 0.01 inch according to TSARCOM Msg DRSTS-MEA (2) 191545Z Nov 80. The pubs are being updated.

Stick with the Program!

When you avionics types program the CH-47 rotor heads, adjust the speed trim on the ground by following the poop in TM 11-1520-209-20. Never try to make any inflight adjustments. They could overstress the aircraft and ruin your whole day.

COMMO

Curing the Hots

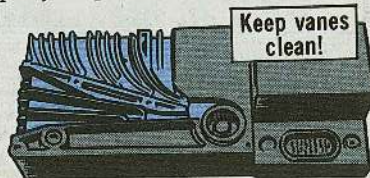
SHOULDN'T WE GET TH' RADIO OUTTA THE SUN?

HABA! THOSE SETS ARE BUILT TOUGH, MAN!

An overheated AN/VRC-12-series radio set doesn't have to be as sure as death and taxes.

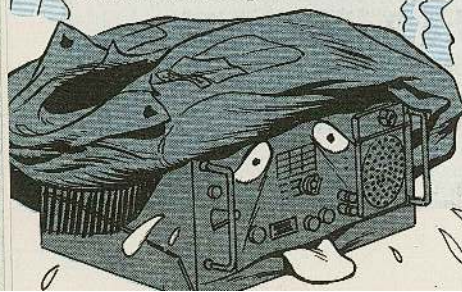
In fact, with a little PM sense, you can keep things downright cool.

First, keep the heat exchanger vanes clean. Clean 'em once a month per your pubs, for sure.

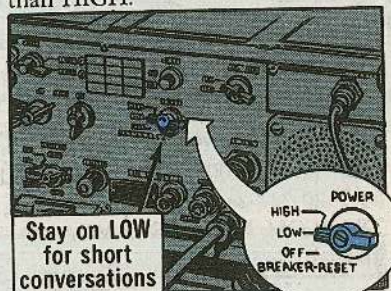


If you're in a dusty area, do it more often. In any case, once you're done, replace the panels. That keeps the cooling air from the fan inside where it can do some good.

'Course, you have to keep things like coats, notebooks, maps, etc, off the RT during operation. They act as insulators and keep heat in the set.



Another heat beater is to use only as much power as you need. If you're going to be transmitting no more than 5 to 15 miles, use the LOW setting on your POWER switch. That'll draw less current—and generate less heat—than HIGH.

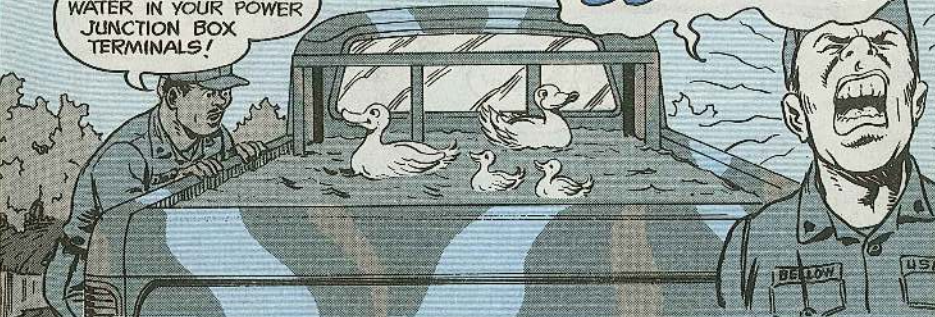


If you have to put a signal out further than that, of course, use HIGH. But, once you're done, go back to LOW. That way you won't forget and start doing close-in talking in the more powerful mode.

M882 Vehicles... Junction Box PM Tip

SUP-PORT!

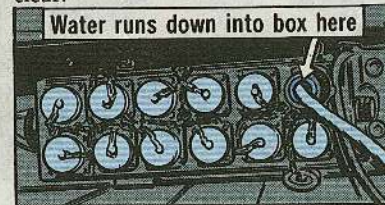
HMMM... MY GUESS IS YOU GOT WATER IN YOUR POWER JUNCTION BOX TERMINALS!



Here's a troubleshooting tip that can shorten equipment downtime for your M882 truck-mounted com-mo/electronic gear.

When you replace the power junction box—Para 4-3 in draft manual PDEP 11-5820-862-13—take a close look at the receptacles on the J1-J12 connectors.

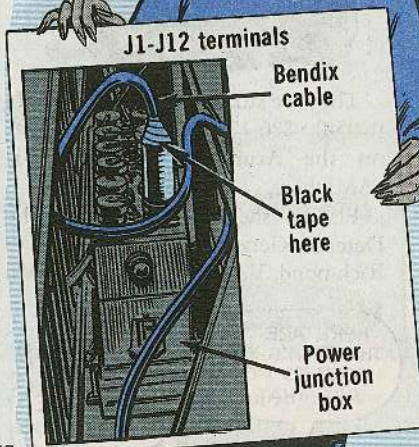
If you see drops of water in the terminals—especially where the Bendix cable connector—NSN 5935-00-856-8426—has been used—be sure to tell your support about it—loud 'n' clear.



Your support unit will dry the receptacle then open the box to see if water has run down the cables into the Bendix connectors...a shortout for certain.

If the connectors are OK, you'll get the box back a lot quicker than if DS had to troubleshoot it from A-Z.

'COURSE YOU CAN STOP THE WATER FROM RUNNING INTO THE BENDIX CONNECTOR BY WRAPPING IT WITH BLACK ELECTRICAL TAPE!

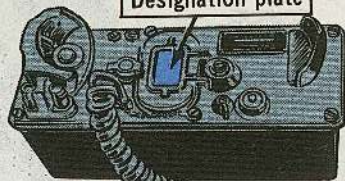


Need Plates? Make Your Own

NOT ONLY THAT--
HE ATE THE PLATE, TOO!

If the TA-312 telephones coming into your org shop need new designation plates, make 'em.

Designation plate



They are stock numbered, but NSN 9905-00-226-1742 is coded "fabricate" on the Army Master Data File (AMDF).

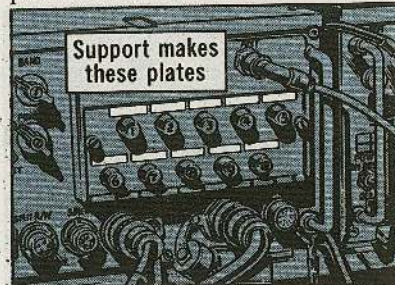
Plastic sheets come from the Defense General Supply Center in Richmond, VA, RIC S9G. Ask for Mil

HERE ARE
THE FIXIN'S YOU
NEED TO DO
JUST THAT...

Spec L-P-387A, Type GCP-H, $\frac{1}{16}$ th inch thick. Specify white stock and how much (square feet or inches) you want.

An adhesive for making your new plate stick is NSN 8040-00-262-9011.

Support makes
these plates



If your AN/VRC-12-series radios need new plates, your support makes 'em, of course. Still you might pass 'em the above info if they're looking for the material.

MAC, WE DON'T
HAVE T' LOOK FOR
PVT. GREENE!
HERE SHE
COMES!

46

Keep TE-33 Together

HEY YOU THIEVING
CROWS... BRING BACK MY
PLIERS AND POCKET KNIFE!

If you wiremen can't cut it, maybe it's your TE-33 tool kit. If one or both of those cutters are missing, a simple job gets tougher.

IF YOUR KITS
ARE SHORT...

...HERE ARE THE
ITEMS YOU NEED...

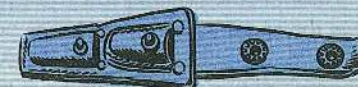
TL-29 pocket knife, NSN 5110-00-240-5943. It has a $2\frac{1}{2}$ -in blade, screwdriver and wire scraper.



TL-13 pliers, NSN 5120-00-247-2063. The 6-in tool offers a sidecutter and wire skinner.



CS-34 pouch, NSN 5140-00-498-8898.



The kit NSN is 5180-00-408-1859. Be a smart shopper, tho. Right now, the whole kit goes for \$14. The parts add up to about \$11.

47

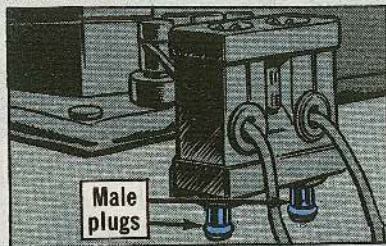
HERE--LEMMIE
CRANK FOR
YOU!

U-184's a Shocker

THEY
NEED RUBBER
BOOTS!

YEOW!

Using the U-184/GT connector adapter with your field phone can be a real shocker.



Male
plugs

Like if you touch those male plugs when you crank the hand ringing generator. It won't knock you down, of course, but who needs it?

Next time the headshed buys those visual ring indicators, they'll get rubber boots with 'em. In the meantime, wrap some insulating tape on the plugs.

Remove the tape when using the U-184 with the SB-993 switchboard.

DR-8 Stands Alone

I'M THE
INDEPENDENT TYPE!

Dear Macon,
Is the DR-8 spool part of the CE-11
reel equipment or is it a separate item?
SSG J. S.

Dear Sergeant J. S.,

The spool stands alone, Sarge.

It's just about always used with the CE-11's RL-39 reel, tho, so people get the idea they're together.

Proof of this pudding is the note on Page 4 of TM 11-3895-203-15, which says the spool is used with, but is not part of, the RL-39.

Note. Spool DR-8-(*) is used with, but is not a part of, Reel RL-39-(*). When requisitioning field wire for use with Reel Equipment CE-11, specify that it be wound on Spool DR-8-(*).

THAT'S WHEN
THE TWO GET
TOGETHER!

TA-1 Switch Boots...

Need a Stiffener

URGH! MOISTURE'S
DONE ME IN!

Dear Macon,

We've been getting in some "bad" push-to-talk and generator switch boot and moisture seals for our TA-1 telephone sets. They're missing the stiffener that goes inside the rubber base.

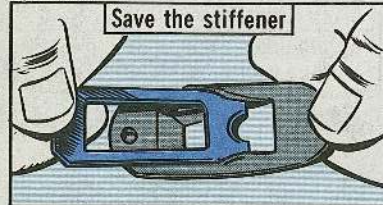
Without it, the screws can be overtightened. This pulls the rubber away from the retainer. There goes our moisture seal. Can we get the stiffener separately?

W.W.

Dear W.W.,

No. It's supposed to come with the assembly. It has no NSN or part number.

Save the stiffener



Everybody'll likely get "bad" ones for awhile. The manufacturer didn't include a stiffener on some orders but the next shipment will have 'em.

In the meantime, save the stiffeners when you replace a bad cover or have your support make a substitute.

Macon

Secure Light Secure?

I DUNNO...
LET'S ASK
MACON!

Dear Macon,

The handy little off-hook lamp assembly for our TA-312 telephones lets us know when the circuit is still open and the line unsecure. It's a great idea, so I ordered some.

Trouble is, nowhere can I find how to attach the light. What now?

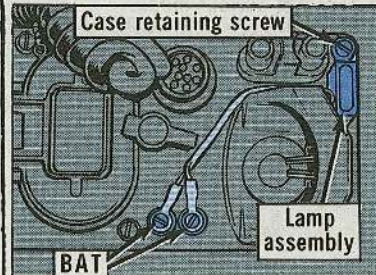
SGT R.W.D.

Dear Sergeant R.W.D.,

Once you get the knack, installing your new lamp assembly, NSN 5805-00-782-9210, won't hang you up.

Your first step is to connect the lamp's terminal lugs to the battery binding posts (BAT).

Case retaining screw



Lamp
assembly

BAT

Then, run the lamp wire across the TA-312 face, between the line binding posts and the handset cradle.

Remove the case retaining screw beside the line binding posts. Secure the lamp assembly to the case with that screw, keeping the lamp snuggled near the handset cradle.

Macon

TROOP SUPPORT

A Welder
Is a Welder...
Is a Welder...

Using a Libby Model LTO-300 arc welding machine's slave receptacle to start vehicles calls for extra attention to details 'n' dials.

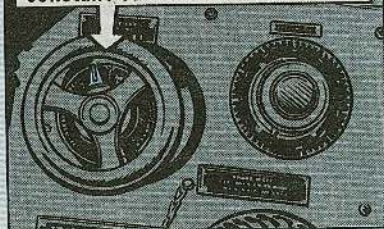
For instance, the welder's powered by a Mil Std engine that puts out a

maximum 80VDC. Since your vehicle has a 24-volt electrical system you have to get the output from the welder to match the input to your vehicle.

A careless hookup and dilly-dallying with dials could blow your vehicle's circuits.

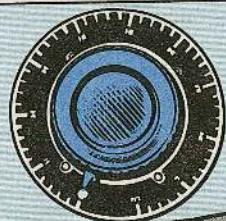
HERE'S
HOW TO STEP
DOWN THE WELDER'S
HIGHER DIRECT
CURRENT OUTPUT
TO SLAVE START
A VEHICLE.

1 Put your welder in the constant current mode.



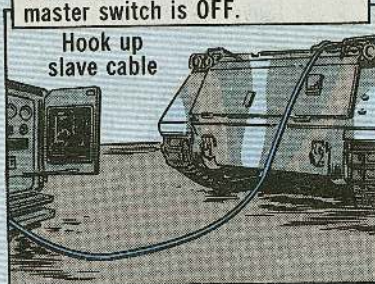
2 Turn the current and voltage controls to their lowest output. Now you'll have about 40VDC.

Voltage
control
to
lowest
output



3 Now connect the slave cable to your vehicle and the welder's electrical connector. When you do this, you'll have about 24-32 VDC at the welder's electrical receptacle. Be sure the slaved vehicle's master switch is OFF.

Hook up
slave cable



4 Start the welder like it says in Fig 2-2, TM 5-3431-221-15 (Jan 70).

SLAYER!

Huber Model F1500M...

Grader Filter NSN's

YOU CAN
NOW ORDER THE
FILTERS AND ELEMENTS
FOR YOUR GRADER
WITH THESE **NSN's**...

FILTER/ELEMENT	NSN
Engine oil filter (complete)	2940-00-789-4873
Engine oil filter element	2940-00-580-6283
Fuel filter element (PN 6438840)	2910-01-022-8183
Fuel filter element (PN 6438839)	2910-01-025-6853
Transmission oil filter element	2520-01-028-0082
Hydraulic oil filter	4330-01-044-2888
Air cleaner filter element	2940-01-048-4349
Air cleaner safety filter element	2940-01-043-3401

5 Start your vehicle, then unhook the receptacle from it.



Started?
Unhook this
end first

6 Unhook the cable from the welder.

Add these instructions to your unit SOP, or type and paste 'em on the welder near the receptacle.

COULD SAVE
YOU A BUNDLE OF
DOWNTIME AND
PARTS REPLACEMENT!

It's Your Fuel...

Keep It

CLEAN

WITH FUEL AS CRITICAL AND COSTLY AS IT IS TODAY, YOU DON'T WANT TO USE ANY MORE THAN YOU HAVE TO...

...AND YOU WANT TO GET PEAK PERFORMANCE OUT OF WHAT YOU DO USE!

Clean fuel works best, so your first concern is keeping water and crud out.

Keep the area around the tank filler opening clean because whatever

Keep this area clean!

collects there can get funneled into the tank.

Keep the tank cap clean and on tight, too.

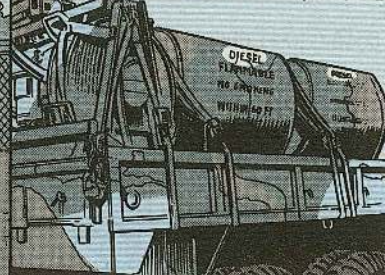
Every day make sure the filter screen in the hose nozzle is clean and working right. Run a little solvent through the screen to flush out dirt and gunk. If it's damaged, tho, replace it.

When you put the nozzle back together, remember—it only has to be hand tight.



Clean fuel won't help if it's not the right type. Check the markings on the container before you start pumping. If

Check markings on container before pumping



it's not the type and grade you need, never use it.

It won't take much of a drop in temperature to change moisture in the air in the fuel tank into water in your fuel. Stop condensation by topping off the tank at the end of each day you use the equipment.

Screens in the fuel system filter out dirt. Your -10 or -20 TM lets you know where they are. Clean 'em if they're dirty and replace any that are damaged

If your equipment has an electric fuel transfer pump, you've got another filter to take care of. It's easy to service,



tho. Just twist the bottom off the pump and remove the filter element. Swish it around in drycleaning solvent—PD-680—to clean it.

Engine fuel filters deserve a little extra attention. They're the last line of defense against contamination. Service them like your TM says.

The air filter element is important, too. It doesn't do you any good to get clean fuel to the engine if a dirty air filter keeps it from getting the air it needs.

CLEAN FUEL DOESN'T JUST HAPPEN!

YOU MAKE IT HAPPEN WITH GOOD PM!

Sampling Supplies

If getting the supplies you need to do your oil sampling thing has been a hassle, grab a pencil.

HERE'RE THE
ITEMS YOU NEED --

For Ground Equipment

Item

NSN

Sampling bottles (120)



8125-01-082-9697

50-cc syringe (100)



6515-00-727-0008

Non-metallic tubing, $\frac{3}{8}$ -in
inside diameter (100 feet)

4720-00-580-6055

or

Non-metallic tubing,
 $\frac{1}{4}$ -in outside
diameter (500 feet)

4720-00-964-1433

Shipping sack (250)



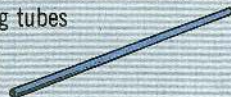
8105-00-290-0340

Plastic bag (1,000)



8105-00-837-7754

If you sample aircraft, you can use the same shipping sack, and if you want, the plastic bag. Otherwise, here's the sampling stuff you need:

For Aircraft		
Item		NSN
Sample bottle (144)		8125-00-933-4414
Plastic sampling tubes		($\frac{3}{8}$ -in outside diameter)
15-in long (25)		4710-00-933-4415
30-in long (25)		4710-01-087-1629

When filling those bottles, be sure to get oil within half an inch of the top. Otherwise, the lab won't have enough to make a good analysis.

Nonexpendable Containers

THANKS,
PAL!



ANY TIME!
THAT OLD
CONTAINER
WAS HEAVY!



WHAT HAVE
THEY DONE TO MY
--ER-- CONTAINER?

Think twice before you throw away your shipping and storage containers. If they cost \$200 or more, they're nonexpendable (Accounting Requirement Code "N" on the AMDF) and have to be accounted for. When you empty the containers, turn them in to support so they can be picked up on the stock record account. AR 725-12 (Dec 80) has the word on these nonexpendable reusable containers.

HEY--
HOW 'BOUT
IT?



Field Range DD 314

PMCS

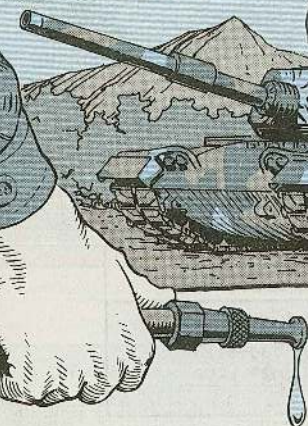
YEAH--
PLEASE!



The Preventive Maintenance Checks and Services listed in field range TM's such as TM 10-7360-204-13, are pulled by organizational maintenance personnel and must be scheduled on DD Form 314.

Gas-Particulate Filter Unit...

**No Water,
Please!**



Water spells trouble for an M13 or M13A1 gas-particulate filter unit.

So, never hose down the driver's compartment of your M60-series tank. Scrub it out by hand to keep water away from the filter unit.

In other words, using a water hose could mean chemical agents up your nose!

Waterlogged precleaner and gas-particulate filter housings rust and freeze the motors (fan assemblies)



and destroy the charcoal filters. That ruins the filter units and puts you in danger when chemical agents are around.

Make sure you cover the air intake opening with the spring clip when the filter unit is turned off. That'll help keep out water and dust.

M13/M13A1 gas-particulate filter unit



You have to uncover the air intake opening before you turn on the filter unit, but you don't have to take the spring clip completely off. Just slide the clip toward the air exhaust end of the precleaner and housing assembly until the openings are uncovered.



Nosecup Buttonup



Button up the nosecup with care on your M17/M17A1 protective mask if you want to prevent damage.



Never widen the buttonholes with a

pen or whatever to stretch them. That could rip out the buttonholes in the nosecup's flaps, ruining the mask.

Best bet: Moisten a finger tip with spit or with water from your canteen. Dab the buttons, making sure you don't get the filters wet. Then, button up. The buttonholes should slide over the buttons easy-like. Dry the mask with a lint-free cloth to stop dry rot.

ABC's on NBC Gloves

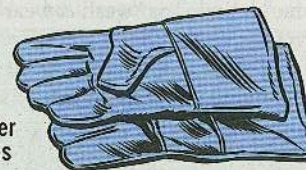


PM and safety go hand-in-glove in an NBC environment.

rubber in the CP gloves.

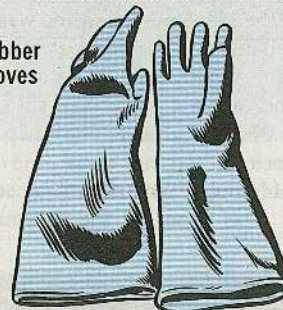
Make sure you wear white cotton gloves under your CP gloves. They'll

Leather
gloves

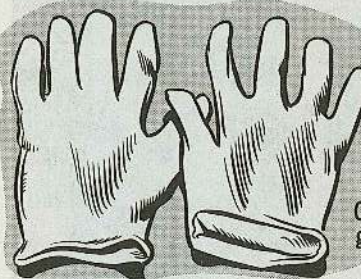


So, wear standard issue leather gloves over your chemical protective (CP) gloves when you're handling rough stuff. A tear ruins the butyl

Rubber
gloves



Cotton
gloves



help prevent dry rot by absorbing sweat.

You can get the CP gloves in 4 sizes. Each NSN brings a pair each of CP and white cotton gloves.

Use these stock numbers:

Small	8415-00-820-6294
Medium	8415-00-820-6305
Large	8415-00-820-6293
X-large	8415-00-820-6292

For Fliers and Tankers:
Nomex Fire Retardant Clothing...

YOUR NOMEX UNIFORM
CAN BE A LIFESAVER IN
A HOT SITUATION...

...BUT IF YOU DON'T
TAKE CARE OF IT AND
WEAR IT RIGHT, IT
CAN'T DO ITS JOB!

A LITTLE PM
CAN REALLY KEEP
YOU COOL!

Nomex is a Nylon fabric that only
chars at temperatures over 700° F. If
you ever find yourself in a fire, your
Nomex gives you time to get out.

Nomex won't burn—but fuel,
grease or grime on it will! All you have
to do to restore the fire protection is to
dryclean or wash the dirty garment.

It cleans easily, so you can wash it in
the "delicate" or "wash & wear" cycles
in your washer. Hot water won't hurt
it, but you don't need it. Save energy
and money and use a warm wash and a
cool rinse.

For best results, turn all pockets
inside out to keep the fabric from
"piling." Close all zippers and Velcro
fasteners—hook and pile—so they
won't be damaged during the
wash/dry cycle.

When it comes out of the wash, you
can hang it on the line to dry, or put it
in the dryer. To avoid static, dry it
alone, or use a good fabric softener in
the wash, or an antistatic strip in the
dryer.

Hang up your uniform as soon as
you take it out of the dryer so the

Keep It Clean to Keep Cool

IT'S
CONNIE!

HEY,
CONNIE!

...ON OUR
NOMEX?

WHAT'S
TH' POOP...

Cleaning

wrinkles can fall out. You can iron it,
but keep the iron away from the hook
and pile fasteners on your sage green
aircrew coveralls...they melt. Keep in
mind, tho, that repeated ironing will
decrease the lifespan of the uniform.

If the uniform is accidentally
starched, wash it with soap and water
and rinse it thoroughly. This restores
your Nomex uniformly to its high-
temperature-resistant qualities.

Your Nomex gloves can be washed
and rinsed with the other garments,
but don't put them in the dryer or

Hang
it up
to dry



Take
care of
your
gloves



hang them in the sun to dry. They may
shrink. Let them drip dry, then stretch
them back into shape.

You can use Saddle Soap NSN
7930-00-170-5467 or Near's-Foot Oil
NSN 8030-00-597-6105 on the
leather part of the gloves to keep it
soft.

Never, never starch Nomex—
starch burns and when starch burns,
you burn.



Static Electricity

Static electricity can be a problem. When you're fueling an aircraft, make sure the aircraft is properly grounded before you start. Connect the bonding wire from the fuel nozzle to the aircraft before you remove the fuel cap. Replace the cap before you disconnect the wire.

If you spill fuel on your Nomex, first move slowly at least 50 feet away from any fueling operation. Wet down your clothing with water before you attempt to remove any garment. If you try to take fuel-soaked clothes off without soaking them in water, static electricity can ignite the fuel and burn you.

SPILL FUEL ON YOUR **NOMEX**?

BEFORE YOU TAKE IT OFF, SOAK IT WITH WATER!

GOTCHA, CONNIE! STATIC ELECTRICITY CAN IGNITE THE FUEL!

'Course, if you don't wear it right, the Nomex can't work for you. Nomex

WEAR YOUR **NOMEX** ONLY WHEN YOU'RE OPERATING YOUR GEAR!



is not a substitute for your fatigues. Wear it only when you're operating your equipment. You do have to pull routine maintenance, tho, so be extra careful to keep your Nomex clean.

Wear fatigues or coveralls during maintenance operations.

60

Wear

Heat passes through Nomex and can melt other synthetic fabrics you wear under it. You might end up with your underwear melted to your skin. It's better to wear all natural fabrics under the Nomex.

Keep your gloves on, and your sleeves rolled down over the gloves, with the cuffs fastened. Some commanders require the uniform to be tucked or bloused inside the boots, but during actual operation, fasten your pants legs over the outside of your boots.

Tanker's boots



Bring trousers down over boots

Zip the zipper all the way to the top, and turn the collar up. That provides the protection for most of your neck.

Your commander determines what patches, nametags, insignia or rank you can wear. You shouldn't wear metal pin-ons because they transmit heat. The best kind to wear are made from natural fabrics, but synthetics are OK.

YOU HAVE TO DO YOUR PART, AND WEAR **NOMEX** RIGHT AND TAKE CARE OF IT! GOOD PM COUNTS! THEN, WHEN YOU NEED IT, **NOMEX** WILL TAKE CARE OF YOU!



61

To Sign Or

Confused about the responsibility and accountability statements to be signed and filed in the front of your property book? Paras 2-10b and c of AR 710-2 have the rules, but here's some more help.

If your property book is kept above company level, at battalion for example, the Property Book Officer (PBO) accountability statement is all that's required.

If you are a separate company detachment or equivalent TDA activity

SO, IF "TO SIGN OR NOT TO SIGN" IS YOUR VERSION OF HAMLET'S FAVORITE QUESTION, USE THIS TABLE TO HELP YOU DECIDE...

PROPERTY BOOK
1464 TRAINS CO

Not To Sign

keeping a property book, you'll need to have a responsibility statement signed by the commander and an accountability statement signed and filed with the property book. Who signs the accountability statement depends on whether your CO appoints someone else to be PBO.

"TO SIGN OR NOT TO SIGN?"	IF THE PROPERTY BOOK IS AUTHORIZED AT :			
	A separate company, or detachment, or TDA activity, and the -			A higher level
	Commander is the PBO	Commander is not the PBO and	PBO is appointed	PBO is appointed
Responsible officer statement	Commander signs	Commander signs and	PBO doesn't sign	Not required
PBO accountability statement	Commander signs	Commander doesn't sign and	PBO signs	PBO signs

645M Scoop Loaders

Use these PN's to get the filters for your Model 645M loaders that have Fiat engines.

Oil 74023548
Fuel 74028945
Water 74029089

The FSCM is 90940 and RIC S9C.

AH-- GREAT!! THE LATEST SCOOP ON FILTERS FOR OUR FIAT ENGINE!

Dispatching With DD Form 1970

DD Form 1970 was replaced by DA Form 2408-1 as the normal dispatch form when authorized by your commander, but you can still use it if your local SOP requires it.

Course, you may prefer to use the DD Form 1970 anyway for some situations and special purpose equipment, like hazardous cargo vehicles and ammo carriers. It'll give you more complete details on the vehicle's operation than the DA Form 2408-1.

When you dispatch equipment which has an X in the DA Form 2408-1 column of Appendix E, TM 38-750, you have to transfer the date of operation, mileage/hours readings and fuel and oil added from the DD Form 1970 to DA Form 2408-1.

If you need to show a status symbol, write it out and have your CO or his authorized representative sign off on it.

IF YOU GET HUNG UP
COMPLETING THE FORM,
CHECK OUT TM 38-750!
Para 2-2 HAS THE
INSTRUCTIONS
YOU NEED!



MOTOR VEHICLE UTILIZATION RECORD							
DATE	TYPE	REGISTRATION NO./SERIAL NO.		ADMINISTRATION NO.			
23 FEB 81	TRUCK M151A2	3M6521		B2			
ORGANIZATION Co C 3rd Bn 23rd FA		ACTION	TIME	MILES	HOURS	REPORT TO	
1ST OPERATOR R.F.C. Browne		IN	1100	3500		1 Lt. McGuire	
OPERATOR'S SIGNATURE R.F.C. Browne		OUT	0800	3450		DISPATCHER'S SIGNATURE M.R. Walker SSG	
2D OPERATOR		TOTAL	3	50		REPORT TO	
		IN					

DESTINATION		TIME		RELEASED BY (Signature)	REMARKS
FROM		ARRIVE	DEPART		
1. Motor Pool			0800		OIL 1 qt.
2. BLDG # 650		0830	0840		GAS 10 GAL
3. RANGE #2		0900	0930		
4. BLDG # 650		1000	1030	E. McGuire 1LT FA	
5. Motor Pool		1100			
6.					
7.					
8.					
9.					
10.					

DD Form
1970

Connie's
Mini Minis

CONSTANCE -- IT SEEMS
WE HAVE A MAINTENANCE
PROBLEM!



2 1/2-Ton TM Info OK

If you've got a copy of PS 330, turn to Page 65 and draw an X across that article headed "Tell DS About Brake Fix." That article has bum info. The seal installation instructions in your support's TM 9-2320-209-34 are OK.

6-HP Engine Rope

TM 5-2805-203-24P on the 6-HP Mil Std engine has the wrong NSN for the starter rope. The correct NSN for Item 4, Fig 12 is 2990-00-972-7950.

M60 MG Barrel

Forget part of the item on Page 23, PS 342. To remove the barrel of the M60 MG: 1. Retract the bolt. 2. Put the gun on SAFE and clear it. 3. Unlock the barrel lock lever. 4. Remove the barrel.

Aviation Cat I EIR Phones

AUTOVON 693-2066 (24-hr service)
Commercial 314-263-2066 (24-hr)
AUTOVON 693-3300 (0700-1600 CST)
Commercial 314-263-3300 (0700-1600 CST)



Tank "Hotline"



Got a problem with your M48A5, M60-series or M1 tank? If your DS/GS or LAO can't help, the Army has a hotline that can. Call AUTOVON 694-6582 any time, seven days a week. Be as detailed as possible in describing your problem.

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

☆ U.S. GOVERNMENT PRINTING OFFICE: 1981-757-003/9

M880 Caliper NSN's

Forget the "when manufactured" info shown for Item 2, Fig 53, TM 9-2320-266-20P. To get the correct front disc brake housing caliper for your 1 1/4-ton truck, use this table.

M880 Model/Caliper	NSN or PN/FSCM
4x2, left caliper	2530-01-033-1828
4x2, right caliper	2530-00-529-4461
4x4, left caliper	PN 4037969, FSCM 86403
4x4, right caliper	2530-01-085-0597

Microfiche Holders

Use NSN 7460-01-045-9190 to get a binder for your microfiche pubs. Get inserts for the binder with NSN 7460-01-045-9189. Each insert has 40 pockets. Your authority is CTA 50-970, Appendix A.

Flashlight Flash

The NSN for the flashlight in your TK-101/G Tool Kit's SC 5180-91-CL-R13 is wrong. The correct NSN is 6230-00-163-1856. The flashlight uses 2 BA-30/U batteries, NSN 6135-00-120-1020. Make a note of these new numbers.

Having a Hard
Time Getting

**EXPENDABLE
SUPPLIES**

Use

CTA



50-970

COMMON TABLE OF ALLOWANCES

50-970

EXPENDABLE ITEMS
(EXCEPT: MEDICAL, CLASS V, REPAIR PARTS
AND HERALDIC ITEMS)

HEAD

ARTERS, DE

**It's Loaded With
"Authorized as Required"
Items**