

Issue 127

PS
★

1966 Series

THE PREVENTIVE MAINTENANCE MONTH

YOU SHOULD
STOP DRIVING
LET US CHECK
THE TIRE AND
REPLACE IT
BEFORE IT
BECOMES A
SAFETY HAZARD.

THAT'S THE
QUALITY WE
STRIVE FOR
EVERY DAY.
WE WANT
YOUR BUSINESS.

SPECIAL ARTICLE
Vehicle Recovery Systems
By Bob L.

ENTER

Did You Hear the One . . . ?

READY OR NOT

Did you hear the one about the small town and its fire truck? It lights everybody's clothes, seals buildings, and saved quite a few houses in the insurance zone besides.

The volunteer fireman kept the truck working, up and spum. And they had all the know-how for using it in tight fires.

But they were a bit weak on one thing—keeping their truck maintained. In fact, one wild winter night they were caught "flashed-out" on maintenance. It may have been the heavy summer oil that was still in the engine, or maybe the battery was just too far gone or the engine needed

a cleanup of water in the gas lines. Anyway, the wouldn't start.

The fire was in the building right beside the firehouse. You know what happens! It spread to the firehouse. Before they could invade enough trucks for a bucket brigade, everything was burned—springs, fire truck and firehouse.

Somewhere in this story is a lesson for every outfit. In fact, the people in charge of the fire have already got things set up so there'll be no "flashed-out incidents" . . . if every outfit does his part.

Just because your outfit's over these Army Regulations:

AR 250-1 -

UNIT READINESS

AR 250-10 -

MAINTENANCE SERVICES

They set up the shop so just what it means to be ready—can't be ready.

Then, you need to round up, for your outfit's equipment, the Equipment Readability Criteria (Technical Bulletin and TM Changes listed in Circular 154-16 dated 19 Nov 46 and also listed on pages 10-11 of PG issue 524 and page 26 of PG issue 1511), and you'll be in business.

Yes, for your OIG you can use the RMC called "Traffic-Light" (see bottom of the Green, Amber, Red sheet) to determine if your equipment is ready to go-to-fight.

If your equipment's not ready—the sheet identifies the troublemaker items you'll have to fix, so to speak.

PS

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IN THIS ISSUE

GROUND MOBILITY 2-21

AMPHIBIOUS MILITARY TRUCK	2-21
AMPHIBIOUS MILITARY TRUCK	2-21
AMPHIBIOUS MILITARY TRUCK	2-21

VEHICLE

VEHICLE	2-21
VEHICLE	2-21
VEHICLE	2-21

POWER 2-24

POWER	2-24
POWER	2-24
POWER	2-24

AIR MOBILITY 2-24

AIR MOBILITY	2-24
AIR MOBILITY	2-24
AIR MOBILITY	2-24

COMMUNICATIONS 2-25

COMMUNICATIONS	2-25
COMMUNICATIONS	2-25
COMMUNICATIONS	2-25

GENERAL AND SUPPLY

GENERAL AND SUPPLY	2-25
GENERAL AND SUPPLY	2-25
GENERAL AND SUPPLY	2-25

REPAIRS & MAINTENANCE

REPAIRS & MAINTENANCE	2-25
REPAIRS & MAINTENANCE	2-25
REPAIRS & MAINTENANCE	2-25

Get ready for all equipment that comes to you



THE TIE IN A TREE

REARWARD: YOU GET OFFERS TO PULL ABOUT 15,000 LBS. JUST A CORNER WHEELS AREN'T STRONG ENOUGH TO HOLD UP. YOU CAN GET OFFERS TO PULL ABOUT 15,000 LBS. JUST A CORNER WHEELS AREN'T STRONG ENOUGH TO HOLD UP.

Wheel Ties

With your feet down about a single wheel. Hook up a strong anchor. Run the truck's wheel cable to the back and across the side back on the truck. Take it to the wheel, and the truck will pull itself forward.

ANCHOR CABLE TO BACK

BRING THE WHEEL LOW ON THE



Steel Wheel Winding

A vehicle with steel wheels can pull itself out even without a wheel. You'll need two long pieces of strong rope. Pass the rope between the axle and the wheel, and then outside through the wheel spokes. Keep an eye on the wheel stand. Tie a bow-tie knot on one end of your rope, and put the knot over the axle hub. Tie the free ends of your ropes to anchors in line with the truck. Put the truck in reverse gear and use the rope line. As the vehicle goes the rope'll wind up between the axle and pull the truck out.



ROPE WRAP UP BETWEEN THE AXLE

LINE BEHIND BUT BETWEEN WHEELS

BOWLINE KNOT OVER THE AXLE HUB

TIGHTEN UP THE WHEEL

Single Wheel Wrecking

With rope, the lever, and a jack handle (piece of pipe, or steel pipe you pull out an old TV, 1 1/2-in. truck), slip the handle through the hole in the end of the axle flange, and hook the end to the hole with a figure-eight knot, tuck your foot and run the truck in reverse until the



Wheel Free Fall

If it has a front wheel, and you can collect enough rigging to the vehicle, a truck that's gone all the way can pull itself out by winding itself backward. It takes one double and three single snatch blocks and the usual strong sections. Hook the first single block a short way in front of the truck, the second one off to the side (away from the truck), and the third single block to pinch back on the rear of the truck. Hook the double block a short distance to the rear of the truck.

By the wheel-side, run through the block in front of the truck, through the one on the side, through the double block to the rear of the truck, through the one on the jack's back, and again through the double block, then across the cable to the rear of the truck.



Try It Out

Use an extra strong pole, or lifeline, for levers, and some more power can get out a truck that's gone head-first into a concrete ditch. Hook the lever on something sturdy (log, stump, etc.). By the lever make the longer for the first lift, if you'd be stuck in vehicle after first lift, using the lever first for under the wheel and get up again. Use the size of the ditch, length of the lever, and pulling power on some of the things that decide the time you'll have in using the lever.





When you're without trapezoidal mechanical gears, 12 or 24 feet on a rope provides a hefty pull. Put all the men on one side of the rope, and keep the line from coming loose. To give the men a 2-to-1 advantage, run one end of the rope a line with the load. Attach a simple snatch block to the lead. Run the rope from the snatch through the block and to the men.

LEAD ANCHOR
FOR ROPES

SNATCH
BLOCK



To lift a wheel-out of a log hole, chain a log to the wheel. Run the track directly on the log pipe. The wheel will raise up. Tie on the bottom from the wheel block, and the hole filled with rocks or blocked with a log, before you remove the log from the wheel.

WITH THE WRECKER



FOR SOME REASON, YOU'VE GOT TO GET A WRECKER TO GET A LOG OUT OF A HOLE.



First, though, before you do anything, with any kind of tackle, choose the best road (you know ground, if possible) for your wrecker, and, also, if possible, run the wrecker for a straight pull on the load.

Dig two holes for the wrecker's ground spades, lower the spades into the ground, and then lock the wrecker back all the spades are well dug in.

With any necessary vehicle—when digging spades in near the crest of a hill or on an embankment or on soft ground, keep a heavy log ahead of the spades, and then strike the log with pickets. Then make a strong second crew of this. You can use what the recovery vehicle and crew might end up if the spades don't grab a good hold.

Lock the wrecker's wheels (use the electric brake lock), and also block 'em with logs, rocks, chocks, or what-have-you.

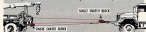
BASIC HOOK-UPS

These hook-ups are OK for a wrecker, tow truck, or recovery vehicle, and, properly put together, they'll help you recover just about any wheeled or tracked vehicle that's worth taking home.

Two-Part Line—This is your simplest hook-up, but attach a snatch block to the lead. By your snatch cable to the block on the lead and then across the cable on the towing vehicle.



Three-Part Line—This gives you a better pull. It takes two snatch blocks, one on the lead and one on the wrecker. Your snatch cable goes first through the snatch block on the lead, then back through the snatch block on the wrecker, and again in the lead when you secure it.



Four-Part Line—This one's for your greatest pull. It calls for two snatch blocks, one, a double-shackle snatch block for the lead and a single-shackle snatch block for the wrecker. The snatch line goes first through one shackle of the double block on the lead, back through the single block on the wrecker, through the second shackle on the double block, and then back to the wrecker for anchorage.



When you can't set-up your recovery power for a straight pull on the lead, you have to line-up an especially good anchor in the direction the load must move, and find the best possible stand for your wrecker, and anchor it there—dig in the rear spades, and anchor it by its boom winds, if need be.

Attach a snatch block to the anchor in line with the lead, and another one on the lead. Run the rear snatch-cable first through the block on the anchor, then through the block on the lead, take the cable through the block on the anchor again, and then return it to the lead and secure it.



If you have to angle your pull to move a load in a direction you can't add a second block to the fall line.



Move everything and arrange out of the engine area when the cables are under stress. Cables have been known to snap, and when they do, they can whip violently which can easily slip through humans, trees, equipment, and anything else within its reach. To give a bit of lead so be away to the length of the pull-out cable for any spectators or any baggage you may be led to collect.

GET THE "A" BLOCK

Suppose a truck goes headlong into a narrow trench . . . If its engine runs, and if it has a winch, the truck can recover itself with the aid of an A-frame.

1. Lay two strong poles with rope for your feet down to form an A-frame, and dig a trench back to the point. The wood poles at least 8 feet long, and 4 inches or more in diameter.

2. Dig in the hollow where the poles meet their feet about 10 feet from the front bumper, but stopped away from the track. The log should spread out some 2 to 4 feet, and be dug in about 12 to 15 inches.

AND GET YOUR ANCHOR TO THE TRUCK!



- 
3. Run the truck's slack cable to the front block on the A-frame and then under the cable on the truck's bumper.

- 
4. Tie a working line from the frame just to a nearby anchor. Because the block in the working line usually is too far to be long enough to allow the frame to be straight, and tipped over the truck's hood as the truck is lifted out.

- 
5. Fast to the truck just the truck's wheels drag the truck. Then lock out slowly whenever you get the load about midway past from the truck, unhook the rig.

ANOTHER WAY

A ditched truck can also winch itself forward using the A-frame. Dig the frame in so it lies over the truck's hood. Attach a new chain from the frame's joint to the truck's bumper. Run the winch line through a snatch block anchored nearby, in front of the load, and bring the cable back and tie it to the joint of the A-frame. As you pay in, the frame will lift up, pulling the truck's front end with it. Tilt the frame and pull the truck out.



If the disabled truck has a dead engine and no winch it can be pulled out with another truck and the help of an A-frame.

Dig in the frame, or below, but this time away out in front of the truck. Run the other truck's cable to the A-frame joint (think it above the joint) and then attach the cable's end to the disabled truck's front bumper.



USE A FRAME
TO GET YOUR
TRUCK OUT OF
A DITCH.

And, here is an easy recovery job, "safety catch first." Use strong poles for shore logs, dig 'em in good, another or hitch the pulling truck carefully, and prepare the area as well as you can (dig or fill around the road truck, or chain or ramp stretch walls if it's help to smooth out the pull).



AND KEEP
EYE-LEVEL SAFETY
AROUND TRUCKS THAT
WENT INTO DITCHES.
IT'S A DANGEROUS SITUATION.

WHEN UP

Recovery work always takes longer... but sometimes more than others, like when one of 'em goes all the way over, or lands on its side.

The safety, and to avoid further damage, this procedure calls for two separate operations. First, it's best to get the vehicle right-side up again, and then you set-up to haul it out. Also, it takes two sources of power. One to roll the vehicle over, another for holding it to check a weak landing as you pull it over.

With an upside down wheeled vehicle the recovery job usually means two riggers for the wheels... or loop it from riggering over... and plenty of help.

Also, with any overpowered vehicles, watch for spilled fuel. Mark off a "no-smoking" area before you get down to the engine working.

It takes a lot of time to pull your truck out the first, but with care you can roll your way with few necessary losses.

1. The safest place to tie up to a situated vehicle is always to the frame. Not pulling from one point on the frame can bend it. In it's best to use a sling, the best rope for most is an equal or one year two diam to make the sling. You tie it to the frame side that's in the air. Tie one end behind the front bumper, and the other end above the spring-rod bearing where the frame is strong.



2. Tie up a second sling at the same point on the first, to the holding lines that'll come the truck's sling so it will come. Good holding lines will help prevent damage to suspension, wheels, etc.). Power for these lines can be the front ends of another vehicle, or strong ropes welded around trees.
3. The ground's condition, as always, has a lot to do with your other preparations for the job. For example, you may have to fill, dig out, or otherwise repair the spot where it's to hold up-right.
4. Soft ground, on the other hand, will help you hold the truck as you start to pull it out. If you're on hard ground, though, the truck may get able with the pull. Holding lines from the pull's back, frame or towing eye, to trees, stumps, or another vehicle, should do the trick for you here.



5. After you've rigged the truck you'll likely have to reposition the anchor before you hook-up your trailer to pull the truck out.

BOUNTING A TRADED FENCE



After you struggle to pull 'em out, you may find a better way when, damaged, safe, or a bit 'fad, you can still get away.



Start along with your load is light, and the road's flat, by this time a 1/2 or 3/4-ton truck had a strong pull, it is 1/2 ton long, and at least 1/2 ton in diameter. Load the pile to the frame with extra chain or heavy wire, and remove the wheel. Then you shift into front wheel drive and you can move out without any. It might be tough getting a start, but once you get moving it'll give you a fair risk for speed plus.

On a flat slope or slightly banked—drive the front end wheel, and load the pile to the frame with a few chains or heavy wire. Drive one gear slipping slowly but the brake hard. Remove the wheel and you're on your way.

DOOR HOOKUP



MEMBERSHIP -
 HONOR AND SERVICE -
 SETTLERS ONLY.

There's now you see the desperate situations. It's scary fast, and it's helpful in an emergency, but it's not as safe as you'd want it under normal conditions (like, with a new tire).



Use two lag chains. Put one chain around the bumper of the disabled truck, and then through the wrecker's hitch hook. Wrap the other chain around the truck's bumper and then up to the wrecker's hook.

As you lift and covered the boom you lift the truck's front end, and you can hold it so it won't ram the wrecker as you drive along.

Unless you have a tow, or tie bar, it's best to stop and check the vehicle first, for any special towing instructions, before you make your tie-up.

WRECK AND MOVE WITH ANCHORS



Then, if you're near the right kind, make dandy anchors. If there aren't any healthy, good-sized trees nearby, you can tie on to two or more smaller ones. But, whichever kind you use always tie your lines close to the base of a tree where it can take the most strain. If you have to use several smaller trees loop your line around them and adjust the line so the pull is even on all the trees.



If you're pulling with the front winch you can hook up to a good tree and tie the truck's hitch hook to the tree. Or, better the front, or the rear, of your recovery vehicle against one or two trees for a front, or rear, winching job.



Lay a heavy log across the front wheel(s) of the pulling vehicle and chain the log to the front bumper. This easy method is called a "snatch anchor".



...AND IT'S IMPORTANT!
A SNATCH ANCHOR
IS THE BEST WAY TO
ANCHOR YOUR LOG.

REARVIEW

IF YOU TRUCK IS 4' HIGH, ...
MAKE SURE SHOULDER IS 12'



Stick a strong log in a deep trench, and tie on to it. You need a T-shaped trench, and the wider the ground the deeper the trench should be. Make the

wall which will take the pull about away from the back. The log of the T is an upward slanting slot to take the cable. And the longer and deeper the slot the stronger and stronger the pull will be on the log.

A good rule of thumb for digging the cable slot is four-to-one. If the log trench is four feet deep, the cable slot should run out at least 16 feet.

Then make the distance with strong pitons and place a smaller log under the cable where it comes out of the trench.

THE OTHER
END SHOULD
BE SAFE ...



...THE OTHER END
SHOULD BE SAFE ...
THE OTHER END SHOULD
BE SAFE ...

SNATCH ANCHOR

When you're in soft sand (it won't hold a deadman) your best bet is a sand parson. Take a really big hole with the heaviest tarp you can find, then fill the tarp with sand. Pull the tarp corners together, and secure just inside the to the post.

For a stronger hold, tie the anchor cable to a spare wheel or any other heavy object that's handy and heavy is under the parson. With the cable under-

ground, though, you'll need a pathway for the cable. Start with the top dead-center, and slip a log under the cable where it comes out of the nozzle. With this set-up you won't be bother tying the trap covers.

THE SINK TRAP



PIKET HOLD-UP

Strong wooden pickets (about 5 feet long and 3 inches in diameter... of oak, if possible) make good anchors. Drive a row of pickets into the ground, about 2 or 3 feet apart, and loop them together with rope... from the top of the line to the bottom of the next, and so on down the row. With a strong cable, run the rope between the pickets, then make the cable fast to the ground on the rope's top edge.

For a stronger anchor, make two or three pickets close together in a tight group, bind them with rope, then loop the rope from that set of pickets to the next. You can combine sets of pickets and single pickets in a row, if need be.

The holding-power of a picket hold-fast depends a lot on the strength of the line: (a) anchor's picket, (b) two or three pickets in a group, (c) pickets close together and bound tightly below they're roped to the other pickets in your hold-fast, are better when you're anchoring for a heavy pull.

TWO ROPE BETWEEN PICKETS



CHISEL END INTO GROUND

PUT A CHISEL POINT ON THE END OF A PICKET AND DRIVE IT INTO THE GROUND.



LOG AND PICKET HOLD-FAST

Use the anchor cable as a heavy log, and make three or six strong pickets right in front of the log. Lay the tops of the pickets in another row of pickets (or some other anchor) behind the log.



WOMAN BEING HELD UP

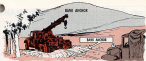


If you're fresh out of trees, let's hope somebody within yelling distance can loan you a Holmes general anchor set. This ready-made, portable, hold-fast is a set of six metal anchors (frames and stakes). You simply stake the frames to the ground to make your anchors, and you can set up as many frames as you need. The stakes should be driven so their tops are only 4- or 6 inches above the frames.

When you're done with the anchors, the stakes may be a bit stubborn about breaking loose, but in fair ground a solid blow at the base should do the trick. If it doesn't, though, don't head off and hit them sideways at the top... that'll head 'em. When they're really stuck fast, use the warden's crane to pull them out safely. Pull 'em straight up, and over at a time.

SET UP 44 HAWK
FRAMES IN ROWS





When your work is sitting on hard ground that, off the road, you can dig in its rear wheels for holding power. Make a straight embankment across the rear to block the pull, and by a slight

cramp its front to let you back in and pull out any like.

That's about it. Some of these ideas should help you get lines—even by yourself, if you have to.



DON'T FORGET!
TRAILER AND DRIVER'S
TM, AND TRUCK
TM.



Well, don't forget, your equipment's TM and your driver's TM (TM 21-561 for the wheeled vehicle driver and TM 21-562 for the tracked vehicle driver), which are always handy to you, also when you're in some field recovery situation.

If you think you need an additional volume that contains all the things you'll see "mentioned" below, a 100-page manual, TM 21-563, has been developed for you. It's called "FIELD RECOVERY AND TOWING PROCEDURES—TRUCKERS AND TRUCKERS' DRIVERS." It's yours for \$1.00. Write to: THE PENTAGON, WASHINGTON, D.C. 20315. (See the back cover for details.)





M113 CHANGE CHART

HERE'S THE WHEEL
THAT'S BEARING THE
LITTLE WATERBULL.

This is for you if you have an M113 powered carrier or any of the M113 family including the XM60-62, XM 671 or XM680.

The TM 9-1500-224-series manual covers all of these vehicles, but you have to know how to use the changes in the manual.

Actually, it is real simple.

Just remember there are two different kinds of changes in the book manual. There are changes that apply to all the vehicles in the family and there are changes that apply to only one of the XM vehicles.

For any of the XM vehicles you use the changes that apply to all the vehicles but your main information will come from the changes that applies only to the vehicle you have. You use the change and you refer to the book TM only when the change tells you to.

Here's the whole thing in a easy-to-remember:



XM103

If you have an M113 or any of the book TM's and M113 these changes don't apply.



XM60-62

If you have an XM60-62 use the changes but your main guide will be the Change 1 to local the XM-62ed above the Change 1 to apply M113 to this vehicle. Read the Change 1 and refer to the book manual only when the Change 2 tells you to.



XM671

For the XM671 all the changes apply but your main guide will be the Change 4 to all the XM-671ed. They were written only for this vehicle. Read your Change 4 and refer to the book TM only when the Change 4 tells you to.



XM680

With the XM680 use the changes but your main guide will be Change 7 to the XM-680ed. Read and refer to the book TM only when they tell you to.

If you have an M113 or any member of its family you use Changes 1, 2, 3, 4 & 6 to TM 9-2300-234-10; Changes 1, 2, 3, 4, 5, 6 & 8 to TM 9-2000-224-20; and Changes 1 & 2 to TM 9-2300-234-20. Read the changes shown for the individual vehicles in the spaces below.

M60A1

Parking Pool



The brake system on the M60A1 tank makes a nice difference from the M48 or any other tank you ever drove. First-time—yes, the heavy's firm on the brake pedal so you get lots of (good), and you can just sit on it as long as you want to get it back off again.

Don't hurry or worry or sweat or fret. Follow this brake setup/supper... and you get it made in the shade.

SETTING ON THE BRAKE

1. With your vehicle completely stopped, make sure the shift lever is in N (neutral).

2. Keeping your feet steady to hold the steering on the page, push the shift lever down, but gently, from N (neutral) to F (park). If there's a lot of dirt and grit in the transmission shift lever housing, you may have to tap the ball of the shift lever with the palm of your hand a couple of times to get it to move.



3. Now push on the remote brake pedal till you get a reading on the brake line pressure gauge of between 120 and 150 PSI. That's what the gauge is for: the ball of the pedal is for, to let you know when you're pressing your foot down hard enough.



4. When you get the shift lever into F (park), take your foot off the brake. The gauge will rezero/return to zero for the parking brake will be set.



LOWE! NUN NUN NUN!

Achtung

ATTENTION ALL HANDS!

WATCH IT!

Just want to make sure everybody is awake in the back of the room... When you set the parking brake, you never... lost never... NEVER push on your brake pedal so the gauge goes over 200 PSI, no amount of this can lock the brake so hard you can't get it unhooked. Course, this won't apply for ordinary loading when you are not trying to F (Park). For that, press down as hard as you like, you can't hurt anything.



The step-by-step for releasing the parking brake is like so...

1. Push on the brake pedal until the pressure gauge registers about 1000 PSI. In this case, a steady pressure, that's just the pedal because it won't work or push if you do.



2. Holding the pressure at 1000 PSI, move the shift lever from F (park) into N (neutral). The shifter's take any weight. If it won't move, try pressing down harder with your foot, but don't leave the shift lever. If you get a little that and push in the shift lever, leaving your foot firm to top the shift lever with the palm of your hand a couple times to make it move.



The reason you don't pump the brake pedal when you want to release it is because, on a hydraulic system like this, the more you pump the brake, you'll have to push to get the brake off.

If you have pumped on it, just back off and take a break for a minute or two so the master cylinder don't leak from the unapplied position.

EMERGENCY METHOD

Now supposing you get an M500s and some muscle-bound driver has got the shift lever into P (park) while he had over 1000 PSI on the brake pedal? This is what you can try . . .

1. Push in on the brake pedal with all your might, pressing your left foot on the left side of the pedal.



2. While you keep on pressing down with your left foot, take the shift lever in your right hand and with a three-foot gentle pressure try to move it from P (park) to R (reverse). If this won't do it, rapping the shift lever with the palm of your right hand a couple of times may move it over.



You may have to do this, particularly if there is dirt and ice in the lever housing. If none of this works, go on to the next step.

3. Keep on pressing down with your left foot and try to move the lever with your right hand. At the same time take your right foot and give the foot brake a gentle kick. If this won't go P (park), give it a harder kick.



Generally, the brake will unlatch with this treatment. If it won't, call for help from your support mechanics . . . because it's less easier to keep inside the 110-000 PSI pressure range so you don't have this trouble.

"Well said."

WRECKER TORCH SET



Dear Staff Sergeant,

Hi there! We just received our new copy of TM 9-2330-211-10 (Rev. 6-57) that covers the operation and O&M of our 3-ton M34 wrecker.

There's only one snag that cropped up with the new TM. It's the Welder's Torch Kit and the Cutting and Welding Torch Set listed on pages 114 and 115.

The previous O&M list in Change No. 1 to TM 9-2330-211-10 authorized a Welder's Torch Kit and Torch Set for an M34. The new TM only authorizes these items for the M35 wrecker. And besides that it gives the M35 two sets. Doesn't our M34 wrecker rate this equipment any more?

SFC M. G. B.

Dear Sergeant M. G. B.,

Keep your Welder's Torch Kit and Torch Set. The M34 uses this equipment as part of its O&M. The TM is needed to give you the same welding equipment as listed in the referenced TM.

Your M34 wrecker and the M35 only rate one torch set, one set. The one torch set are listed in the TM as you use acquisition component parts for the set you now have.

Here's how you work the info given. If you have a torch set manufactured

by the National Cylinder Gas Co., 1 Milg No. 143, then you get your replacement parts by using the FN's listed under the first set. The torch set that has eleven (11) components.

If you have a set manufactured by the Ytter Equipment Co., (Mfg No. WCK2), then you use the FN's listed under the second set. The set that has FN's for eleven (11) components.

The correct FN for both Torch Sets is FN 9411-294-6741, just like the TB had it.

Goodyear

SLIDE, KELLY!

Dear Mr. Editor,

What's the right way to remove a road front wheel when you park the housing?

We feel the wheel-and-tire assembly should be removed first and then the hub removed separately.

This method would reduce the weight of the entire assembly and decrease the possibility of damaging the inner-hub seal.

Others say that the entire wheel-and-hub assembly should be removed as one unit—what do you say?

Capt. A. P. W.

Dear Captain A. P. W.,

Whether you remove the front wheel and hub as one unit or separately depends on the size of the vehicle.

On light vehicles up to 2½-ton, removing the drum-and-hub assembly wouldn't be too much of a problem after you remove the wheel. This assembly doesn't weigh too much and can be handled without any great strain.

With heavy trucks (three and up), it's another story. If you take off the wheel first, you'll still have a tough job removing the hub and drum because of its size and weight. It weighs over 150

pounds and would pose a handling and safety problem.

On the other hand, if you don't remove the wheel, handling would be much safer and easier on your back when a crane or plank is placed under the tire . . . and the complete assembly slid off as one unit.

Many mechanics remove the tire and wheel before they pull the hub. When they can't do that, they use the crane or plank method.

You have more danger of seal or thrust damage if the assemblies are

BODY

Your body cracking? DON'T let one body, does it?

Identify the cracks that appear before the rear black-out-marker and where the headlamp joints up near the hood.

To bond 'em off at the joint and stop them from spreading, you welders have to rub bond with your wet welder in the No. 2 Supplemental Top Kit. Better yet, if you happen to be near a support-rod with a helium tank, the crack can be bonded up

SLIDE

one handled carefully, whether you take off the tire and wheel or not.

If you're not familiar with the "plank" method, here's how it's done:

1. Get a 2 x 4 (thick) board that long and cut it a 1 x 4 wood strip along the top edge of the plank. Then strip keep the fire on the board when you slide the assembly along.

4. In the undercuts of the plank, put two pieces of 2 x 4, one nailed at each end. These end pieces can be supported but help you feel the wheel when it's under the wheel.

3. When you're ready to use the plank, press the top ends down, lean it under the parking wheel and right angle. Then lower the ends so the wheel is just touching the ground surface.

Now all you have to do is remove the hub-drive flange, adjusting link and nut. Then pull the wheel, hub and drum assemblies straight out of the axle, sliding the body back along the ground plank. This method has saved many hubs and prevented axle drums from being damaged.

Next, wipe off the grease from the axle.

Half-After

CRACKING?

with a brass rod in the feeder.

You have to be careful not to use any loose welding; it sweeps the metal. Your M-11 has a thin, lightweight, strong, extra-duty construction that won't take kindly to a hot flame being put directly onto it.

Once the cracks are welded up, bond everything off, the same primer and compound, take one more extra-galvanic mixture or install a DA Power Coat (E-10), primer.



TANK TRAPS

If you're a tank driver with a good hand on your shoulder . . . this'll help you keep it there.

Not trying to scare anybody but, best tank drivers have been killed in the last 2 or 3 years because they had their heads in the wrong place at the right

time.

You can get killed if your head is sticking through the turret basket when the turret's rotated. Likewise, you can get killed if your head is stuck over the driver's hatch when the gun is traversed. ▽



You can get killed—that sure has already proved true—so there's no need for you to make the list.

The one of these accidents would have happened if the tank commander or tank gunner had given warning—like he's supposed to—before moving the turret or the gun.



Work up your own operational signals. The tank commander and tank gunner should make this a habit like breathing—it may be your tank driver keep on breathing.

But you tank driver . . . nobody has

as much interest in your head as you have. Nobody else will (or should) go to so much trouble to keep it from getting disassembled off your shoulders.

Every tank driver knows the backrest is in the way when he has to climb in and out of his seat, so lots of them take it off and leave it off.

This is a mistake.

For those tank drivers it was a fatal mistake.

With the backrest off you can lose back bone the turret for strength to get stopped in case if somebody moves the turret.

So to keep that beautiful head of yours and that beautiful body of yours at one complete assembly . . . never drive your tank without the backrest in place.

Take it off when you leave the tank and don't put it back until you're seated, because that's handy, but don't drive without it. With the backrest in place you'll be all right no matter what wild swings the turret takes.

Likewise, never pop your head up through your hatch unless you know it's all right to do so.

KNOW BEFORE YOU HAUL

Anybody using fuel in a tank-truck or tank-trailer for without knowing all the job details sure must have rocks in his head.

Of course, you wouldn't operate your M40, M40C, M100, M100C tank-truck or M111-series tank-trailer until you get real friendly with all the details in the Petroleum Tank Vehicle TM. It's TM 30-1111 (Sep 64) and its Change 1 (May 65). The change gives a lot of new steps.

This TM is not just a "manual-book" job . . . it's a "go-around" for every fuel transporter. If distribution missed your work, send in your order (Get Form 121 for a copy right now.

JOE'S DOPE

Dream of Gene
with the ESC

WANT TO KNOW IF WE'RE
RELIABLE? ASK OUR CUSTOMERS.

WELL, OF COURSE... THAT'S
WHERE WE'RE AT THE WORK.

WELL, TO KNOW IF WE'RE
RELIABLE, ASK OUR CUSTOMERS FOR
THE OLD MAN'S EQUIPMENT
PROFILE.

THEY'RE ALWAYS ASKING
US TO HELP OUT TO HELP
US. YOU WILL BE ABLE
TO GET A BROTHER
AND ALL THE OTHER
EQUIPMENT AND THE EQUIP-
MENT SERVICEABILITY
CRITERIA (ESC)
CHECKUP.

WELL, WE'RE WITH
THE ESC?

WELL, WE'RE WITH
THE ESC? IT'S SOME OTHER
EQUIPMENT SERVICEABILITY
CRITERIA.

DON'T YOU HEAR ABOUT
RELIABLE? ASK OUR CUSTOMERS. IF
THE OTHER DOESN'T DO IT,
WE'RE GOING TO BE ALL
BLACK AND BLUE.

A circular logo with the word "Joe's" in a stylized, white, outlined font on a red background.

Dope Sheet

A rectangular sign with the text "ESC PUBS" in white, bold, sans-serif font on a red background, mounted on a structure.A comic book illustration showing a man in a military uniform sitting at a typewriter on the left, looking at a document. In the center, a large red mechanical component is mounted on a platform. On the right, a woman in a blue outfit is adjusting the component. A speech bubble from the woman contains text. The background is a simple green wall with a white light source behind the platform.

These pubs shed a new kind
of light.
On your unit's mobility and
might:
● The check points will show.
Which equipment is "go."
And which is not ready
to fight.

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

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

ALL THIS FIGHTING COMES
 IN FEARSOME THE
 COMBAT SITUATIONS OF
 YOUR EQUIPMENT!
 RIGHT!

YOU, THE
 ARMY AND
 COMPANY'S
 THE EQUIP-
 MENT—AND
 THAT IS ON THE
 CHANGES IN
 ARMED.

THE CHECK
 YOUR EQUIP-
 MENT IS THE
 MAIN IT
 STANDS.

THE SYSTEMS ARE,
 SPECIAL AND DIFFERENT
 IN YOUR EQUIPMENT OF
 WEAPON—POLY-ARMED
 TO NEW, ARMED—
 READY TO COMBAT BUT
 COMPLEX AND—NOT
 READY TO
 FIGHT!

AND YOU—ARMED—
 ARE IN THE—A—THE—
 WEAPON—THEY ARE THE
 OF A—ARMED!

IS THERE
 WITH YOU
 READY—
 TO
 FIGHT?

YOU'RE A
 MARTIN II
 MARTIN II
 MARTIN II?

SAFETY

YOU... YOU!
 YOU NEVER REALLY BELIEVE
 THE MARTIN II... THE
 MARTIN II... YOU KNOW
 I AM... YOU KNOW YOU
 KNOW YOU KNOW YOU
 KNOW YOU KNOW YOU

YOU'RE A
 MARTIN II
 MARTIN II
 MARTIN II?

YOU SEE, DURING THAT
"WAC" ON THE MESS AND
A LOT OF ENTERTAINERS
THAT YOU COULD GET
LIVE SHOWS, COMEDY,
MUSICIANS,
CONVERSATIONS.



AND THEN COMEDY AND A
MUSICIAN ENTERTAINERS WOULD
COME OUT AND A MUSIC TROOP TO
SEE THE ENTERTAINERS WOULD APPEAR
TO BRING AROUND ON THE MESS
ENTERTAINERS' SCORE IS CALLED
AS THAT UNIT'S SCORE.



WELL, NOW?

WELL, I
WAS NOT SURE
HOW... LET US SEE
AN ENTERTAINERS
COMING.



WELL,
I'M NOT
SURE.



WELL, I
WAS NOT SURE
HOW... LET US SEE
AN ENTERTAINERS
COMING.



WELL,
I'M NOT
SURE.





**KEEP IT
CLOSED!**

FIREPOWER

A real trying shame how a tiny piece like a weak brassback closing spring can get someone like the M10 tank and the M191 and M100 self-propelled howitzer out of the fight.

For it can happen if you leave the breech mechanism open while those weapons're on a marching team or standing idle in a gun or vehicle park.

Here's what happens: The tension spring forces on these ordnance, just like the coil type closing springs on some of



the other weapons, take an amount when they're twisted or compressed like that for a long while. Of course, you can adjust 'em a couple times, but after that they need replacing . . . and this calls for a time-killing job-by-jobs support guy.

So, be strict. Develop a dry habit or pattern all this week. Once the breech every time your weapon's gonna be idle for a spell.

Well, well!

**SAVE SPRING AND A BUNCH
JOB FOR YOUR SUPPORT . . .**

**... ELSE BRICK WHEN YOU
DON'T USE YOUR WEAPON**



HAWK NOTES

THE POSITION COUNTS



Fastened and fastid.

That's the deep-seated Black Inca's first contraption: base plate springs and pins are in.

And why?

It's something so simple as not having the base plate in the right position when you go to complete the franchise.

The wrong way is with the spring facing away from the franchise.

The right way is with the spring facing toward the franchise. And with the sticks removed.

And don't forget that you want to level the franchise before you ground the spikes through the base plate and into the ground. If you don't, the movement of the contraption will raise the

NOTHING BUT THE FACTS ABOUT THE FRANCHISE ARE THE SAME EVERYWHERE



down with the pins and spring, soiling's base there's no movement of the base plates once they're held in place by the spikes.

As a matter of fact . . . it's a good idea to include paragraph 113 in THE 5-1400-500-1271 (Aug 61) whenever you complete the franchise.

WATER KEEPER-OUTER



Just in case—if the wet season is just back of the woods is on the way. That's what WPKO 5-1400-500-507 15

(It's 4:00 in the WPKO days—when it's been applied by your support unit—in waterproof your franchise contract. Course . . . the WPKO is a good deal more if you don't see any rain for months on end and some might even spray you in the sun.

PLAY IT STRAIGHT

AND THEY SAID
THEY HAD BETTER
ALIGNMENT

Straight shooters always win. So somebody once said.

And straight shooters (like not pulling the wheel over a guy's axle) will give a Hawk truck a lot better chance of shooting straight.

Working on heavy alignment is a good investment. Maybe the alignment just won't work out. So you slip the spacers in different places of equipment to get the readings you want.

Things look good, but you still don't love heavy alignment. And if the

ballast ever comes up, you'd know you didn't.

You're a lot better off when you go along with what your TM's say about heavy alignment. That is, if you don't get the readings you should on the first go-around, repeat the alignment steps. And when you're convinced that you can't get the alignment, call your support people for help.

Don't play around with these systems.

A LOT
EASIER . . .



That's what it's gonna be when it comes to mounting and replacing the tracks on your Hawk loader now that you have a tool to help you do the job. It's a fact. The tool shows up in *Future-Track*, coming on page 112.1 of *Ch 1*, #7 Jan 88, or TM # H48-900.30P.

HANDS OFF

If you're one of the guys guilty of playing with the signal computer (SCS) (777-541-5031) part of your HAWK, remember not to do the word is DON'T! Maintenance on this unit is expensive at anything less than depot level. So, if you find something wrong with yours, talk it back quickly to your support.

NOT AUTOMATIC



Dear Half-Man,

Do these markings that say a Nike or Hawk guided missile system automatically gets a complete overhaul after being in the field for a certain length of time?

OWO T. E.

Dear Misses T. C.,

Ms. Ms.

The separate condition and similar condition of a system play a major part in deciding whether it needs a major overhaul.

The idea is that an Army area commander starts the ball rolling by asking that a particular piece of equipment be sent to a depot for overhaul or rebuilt when it's figured the item has had the usage. The field maintenance people who are supporting the equipment send a team of specialists from the depot make a detailed inspection of the item. Based on the inspection, the support people decide whether the work is needed.

Half-Man

FIT TO BE TAPED

It never was given looking mighty odd.

This developer for the base assembly that's put on the Nike-Hercules launcher by AF80-875-W364 and Y80-71. The base assembly really goes into a shipping set after a spell.

It wouldn't be bad if the assembly just dropped. Trouble is . . . the base developer takes in the base, making it tough to pull hot air away from the pressure guidance set in the missile.

There's a way to beat the problem, tho' . . . and all it takes is some electrical insulation tape.

What you do when you're not using the base assembly is bend it back and then run about four turns of the tape around the lip of the base and the pipe.



AS REQUESTED



Dear Half-Man,

New come into 4 in LO 3-440-230-084 says to clean the leveling blocks on our Nike-Hercules launcher with metal polish and then coat 'em with grease? I mean it seems like polish would foul up the accuracy of the blocks.

The way I see it, the best thing would be to keep a light coat of grease on the blocks . . . and then wipe it off before using the blocks.

OWO R. E.

Dear Sergeant H. C.,

It looks like things have come around full circle.

The old LO did call for using grease on the blocks. The people on the side didn't buy this. They said the grease rubbed off on their clothing or whatever else it touched. And they also had a few words to say about the way they said that would reflect in the grease.

Grease has water's share, as you know, and an open invitation for an impromptu tea around a few pipes.



The artillery people didn't just say the grease was giving 'em fits . . . they suggested that varnish be used instead.

The people up the maintenance line bought this idea . . . and the LO was changed.

You're right about the varnish maybe fouling up the accuracy of the blocks. It will—if you put on a couple thick coats. The industry team's change, tho', if you brush on one real light one.

Half-Man



A NEW TUBE

Electric tube type T40E is the latest to hit the scene for use in the different power supplies in your Mini-Mercury BC and BC-100. The T40E's 12M 2500-800V P22A, work better in cold weather than the tube now in the power supplies—the 6X4—and need to be used in place of the 6X4 when you touch on the fan. The T40E is listed in three of your support unit's PM's—9-1-430-240-22P (70-71) Over-500 ... 9-4940-221-22P (2-1 Oct 68) ... and 9-4940-220-22P (2-1 Jul 68).



TOOLS AVAILABLE

Don't let anyone tell you ... the tools you need to replace the permanent brush-wear wear millimeter tube in your Improved Mini-Mercury target ranging scope are listed in a publication. The 3/16-in and 1/8-in hex-type socket head screw keys needed for the job are part of Key Set P.1 M 41-39-24 (7-80), PM 21 22-224-8972 (2A), authorized on page 5 of the 9-1430-120-12P (8-71), dated 4 Aug 68.

LOADED WITH SCOOP



That's what the 9-1430-120-12 (21 Jul 68) is all right. So if you like your boat with some good information on preventive maintenance, keep the 28 handy—and loaded deep in a bin.



NO, NO, NOT THAT!



Word's filtered in that some types are using the brake handle on their 240-433 Mercury heavy section truck as a lever to lift the wheels for service operations. That's bad! The handle's only for locking and keeping the wheels in place on the truck—not for anything else. So, pass the warning keep-off-center-pickin' note off to all who see it.

DON'T 'UGH' THIS PLUG



Dear Half-Mast,
What's the best way
to remove
an M1C's
gas cylinder plug
that's done just as
you sight
or get frozen in
by combat?
My buddy ducted
his right's truck
trying to
wrench it off.
SFC J. P. B.



Dear Private J. P. B.

Prevention's the best cure in a case like this, of course, but for that, hold on.

First off, if you have a frozen or over-tightened plug that won't yield to your combination tool, don't mess around with it. Turn it in quick to your com-

pany armorer. He has a vice and lever clamps to hold the M1C while he works on it.

And now, prevention:

When you're installing the plug, tighten it in snug only—just tight enough to hold. No muscle required.





THE IRON SKEL...

WHEN SAND BLOWS



Dear Windy,

Blowing sand has a nasty way of chewing up the tape on the leading edge of our *Diaper* (P&E) made water blankets. It starts out at the southeast end and just keeps eating away until the blankets are finally blown out of track. They just get faster to make this tape stick!

L. B. S. R.

Dear Mr. Robert S. R.:

Blowing sand and rotating water blankets make one tough combination for any tape job. It's best to check it up to P&E and replace as necessary... like it says in para 7-21 of TSM 95-1128-204-28 (Feb 50).

However, there's a new 4-in wide tape now which may hold up longer. It's a mineral-reinforced tape (marketed Mo. 591) which sticks to the substrate and leading edge much better than the old pressure sensitive tape. You need adhesive A-2 (Cyto-Bond) to apply it.

This tape is listed in Federal Supply Catalog C8200-51 and C8000-02, under P&E 5070-054-4054 as a 4-in wide 90-yd long roll.



THE AIR-RESISTANT MO. 591 TAPE... IS A MINERAL-REINFORCED TAPE... WHICH STICKS TO THE SUBSTRATE AND LEADING EDGE MUCH BETTER THAN THE OLD PRESSURE SENSITIVE TAPE. YOU NEED ADHESIVE A-2 (CYTO-BOND) TO APPLY IT.

BY THE NUMBERS

Normally you'll get the best results if you put this tape on correctly. And there's a great dressing procedure you can follow:

1. Thoroughly clean the leading edge with slight rags. Use wipe dry with a clean cloth.



2. Cut the tape to the right length (2' for the 50-15 and by 1' on a 4-in substrate with the paper backing facing up.



Rolling it off the end and peeling backing off is quick, getting maximum life pulling a piece of tape off your chest. Peeling too freely can leave you with an uneven surface looking on the tape and a poor bond.



3. Generate a full exposure in a piece of the substrate, blurring all the excess substrate on a clean cloth. Now remove the entire tape surface using parallel strokes with the squeegee. Be sure each stroke covers the one before it by approximately a half inch. Working in the substrate with the other method will give you an uneven line.



4. Use up the corner of the tape with the corners of the leading edge. Then use a plastic corner to work the tape back along the blank surface... In case of rips and tears, you really stink.



5. Buckets are topped on water with a jet and work out the air with three pumps. All air bubbles should be worked out P&E and no later than 5 minutes after you apply the adhesive to the tape.



REMOVE IMMEDIATELY

The first sign of a tear in the tape is the right time for replacing. If an replacement is available immediately, you're better off replacing than to have blisters. Flapping strips of tape just help to introduce the blisters and set up the high-pitched whistling whine.

Handwritten signature



There's no doubt about it. The power cylinders in the Inquest (LH-1) tail rotor control system give a pilot an important advantage. He needs less muscle on the controls.

But it's possible that high frequency vibrations, which tell the pilot a tail rotor is out of track, will not always be felt on the controls. They may be dampened out by the cylinder servo.

Caution, with the tail rotor out of

TRACK, MAN, TRACK!



track (and nobody else's) something's got to give—maybe the tail rotor blades, the hub grip, or the hub yoke!

No, anytime you take the tail rotor blades off, track them in a month after you put them back. That's the pump in TM 15-1128-113-20 (14 Mar 65), Chap 2, Item VIII, page 8-21, para 8-26, and TM 11-1128-113-30 (9 Apr 65), Chap 2, Item VIII, page 8-26, para 8-41.

CANNIBALIZE WITH 2410



Every cannibalization is an aircraft control and installation action. So 2410 is! You can find up ANMMOM records at the local if there's an "Consumption Removal and Repair/Overhaul Record" on file to cover the action.

A LONG DAILY



Felling a daily inspection on a bird isn't always a daily deadline can be longer. The maintenance pilot say you can check your bird after the last flight of the day, or before the next day's flying if the day that's actually scheduled is 241.

AVOID THE BUST

CRASHCOURSE!
EASY AND SAFE
TELESCOPIC
WIRE ...

Maybe it's never happened to you. But it's not 'till you've a headache to a lot of your buddies in Vietnam and elsewhere on both sides of the Big Pond.

Mainly, busted wires leading from the power lines of the subcoid case to the base connections on your XM30-Series helicopter-mounted submachine.

The way these wires get busted is the way the soldier's nervous.

DISCONNECT
THE SUBCROID
WIRE FROM THE
MACHINE **BEFORE**



Just like when your eyes have to go to remove the M30C machine gun mount from their birds, they just pull the locking handle and unlock the gun from the mounting bracket and start walking off. And that—snap!—another gun's out of business.

So, make this your No. 1 rule in the forest:

Always disconnect the subcoid wire from the mount **BEFORE** you remove the machine gun.

Trust me, there's no quick-change connector available yet, which means you have to take a full second to make the connector to-unlock it.

But, it'll be worth the trouble, believe it!

STOP THAT

VILLAIN!



You say that you just pulled a Daily in your Rembrandt (DR) in record time, Fergus Murphy? Congratulations.

But hold on there! How about that next-over-tightly you gave the flight control surface when landing for clearance?

The suspension rollers, elevators and ailerons are highly vulnerable to the "scrubbed" villain, you know. He's the WFO you can't spot in a glance.

Take the Rembrandt villain. Careless you so fast in the clearance loop that the local bird is to get in rapid for landing.



Do you know what led to it and as the landing slip of the clearance when the villain hit into your in work.



Do know do you keep him for good? You can't, Murphy.

When unlike metals such as steel tube, aluminum housing and base suspension parts go together, you have a natural landing ground for "get-back" clearance.

You can show the villain up, this, by making your bird in the work each regularly. Careless birds in flies.

You also want to keep any base metal open painted. Clipped paint, or paint that becomes soft, is a natural landing ground. Design holes also want to be kept clear so that they won't be collected in them.

All the good in clearance and results in painting in in TIM 10-1110-201.20 (1 May 61) ... Chapter 2, Section 5, starting on page 1-48.

Course if you become spotted under control surface and you spot that early, penalty within, you don't have much of a choice.

That's the trick, Murphy. Call the maintenance (your support).

GOOD-TO THE LAST OUNCE



WHY EVEN TRY TO MAKE THE BEST OF IT? I'VE GOT TO GET OUT OF HERE!

Dear Editor:

It's surprising how much grease gets thrown away in "sloppy" cans. No matter what we used to scrape grease with, we never could get it all out of the tin. Then we hit upon the idea of making this simple compound about half scrapes for use in the one-pot-and-one-of-each-kind grease.

This little gem did such a clean job we soon had a demand for it from mechanics in other units. So we made up some more scrapes and passed them around.

William Walls
Air Mail Squad
Fort Lewis, Wash.

Ed Note—Good going, just be sure the scraper is thoroughly cleaned after use to prevent contamination of one grease with another. No doubt a similar tool could be made to fit just about any size grease can that comes across the job!



GOOD FOR YOU, GARDNER! YOU'VE WON THE PRIZE FOR THE LAST OUNCE! END, TALK!



A COILED END WITH A BEARING PLUG TAKES A WELL-LOOKING NUT. A WELL-LOOKING NUT TAKES THE PLACE OF A COILED END. BUT NOT PETER MURPHY.

USE THE



Most nuts you know take a coiled end and cover pin. They also know that a well-looking nut doesn't take the place of a coiled end, but not Peter Murphy.

He's been spotted putting well-looking nuts on right threads, where they ought to be coiled end and cover pins.

You'd think he'd know, for example, a nut on a shaft where the cover with

RIGHT NUT



A COILED END WITH A BEARING PLUG TAKES A WELL-LOOKING NUT. A WELL-LOOKING NUT TAKES THE PLACE OF A COILED END. BUT NOT PETER MURPHY.



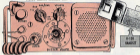
cover surface takes a coiled end and cover pin, a well-looking nut could work off.

He should also know that a red nut with a bearing in it takes a well-looking nut. That's because the bearing takes the stress—over the nut.

If you spot Murphy, tell him to check his parts manual, will ya? That's the only way to tell which nut goes where.

ADONS TO YOUR AIR IT'S THE NEW RADIO SET

E-1208 REMOTE CONTROL UNIT



You might say it's exactly as stated on the AN/URC-11 and AN/PKC-20 series radio sets . . . or that it's simply another example of the similar equipment in the field.

You can add that it's new, a little different, and essential in normal use of the recently introduced FM-series radios. . . In any case, and you'll be right. And, incidentally, you'll be talking about the new AN/GRA-39 radio air control group.

Why is it needed? Because, now, the radio accessories of the new FM radios won't fit or work with the AN/GRA-6 control group of the AN/URC-11 series and AN/PKC-20 series radio sets.

So let's dig in a right now for a hard look at the GRA-39. It has three purposes:

1. Telephone between local and remote unit operation.
2. Local radio operation via a link of 4 miles.
3. Remote radio operation.

One big difference is that you can't turn the radio on and off with the GRA-39. However, when you use it as a telephone, it does not control radio reception . . . a big improvement.

REMOTE UNIT

A good clue that the control group and the E-1208 remote unit are in



working order, is that the batteries are in good shape, the PTT switch of the H-15M/20 handset and beam, if you get a high-pitched squeal, you're in business.

AN/GRA-39 CONTROL GROUP

E-1209 LOCAL CONTROL UNIT



LOCAL UNIT

Another improvement: The E-1209 local unit features a spring-loaded switch which always snaps back to REMOTE position from the TEL or RADIO position. You have to hold



the switch in place on TEL or RADIO, and you can't go off and leave it in those positions. While, normally, it always ensures remote operation . . . the prime purpose of the GRA-39.

Just don't put the muscle on the switch, though. You can break it or break a cable . . . and that ain't good. Give it enough pressure to slide it to the white line of the TEL or RADIO position, and hold it on the line. Period.

ADDS ACCESSORIES

All radio accessories used on the GRA-39, including the H-15M handset, M-20/20B mike, H-14/16B handset-chassis and H-100 handset, snap on easily to some vital items with the local unit in the REMOTE position. Namely, when the remote unit operator talks over the phone to the local unit operator, his voice can be heard by the radio transmitter.

REMOTE RADIO



To avoid this, the local operator should switch to the TEL position when he's talked by the remote operator.

The high volume also can help detect leaks, when concerning the local unit in the radio, turn the radio set's RF volume control as high as the midpoint. On the remote unit, first



connect the WD-1 wire to the unit's binding post, and then turn the unit's volume control to about midpoint.



A reminder on the binding posts. These TM warnings (TM 11-5820, 477-12) aren't kidding. You can get a nasty shock if you intentionally or accidentally press the single button while touching the binding posts.

ATTENTION

Six BA-30 (P/N 4115-120-1001) batteries power each control unit. The operator replaces them, checks for corrosion and leakage, and removes them when the control group's not in use to avoid damage to the case.

Inspect the contacts for tarnish, remove files or dirt with a rubber eraser if you find it, and, to further insure



good contact, install the batteries two at a time, beginning with the first set of two batteries with your fingers while they're in place.



Before you install the batteries, turn the power off on both units (the WD-1/ME switch on the remote unit and POWER switch on the local unit).

Remember this when connecting to the RT-500 of the PBC-25 series set: You can't have two-way action with the Function switch of the RT-501 in SQUELCH position. The switch must be in the ON position.



And, finally, just keep your speech protected for voice staff on the GR-400 in speaking format of PB.



Capal Hyman... and Ah, Sol!

You just flipped the selector switch on your GM/FOR-50 voltmeter to BATT and the indicating meter needle didn't stop in the BATT position on the meter. The needle just bawled around, or just kept right on going and came to rest to the right of the BATT lines.



So you're thinking maybe this is not so good since TM 11-55144 (Jul 50) says the needle should remain on the BATT position when you're testing the battery. And when it comes to detecting

cases of Gamma rays you just can't be too careful about the way your voltmeter is positioned to do the job.

You know that if the needle won't go up to BATT then you've got to replace the battery. But what's the story when the needle goes past?

Well, you can just ignore it, that's not. The battery test circuit is rigged to give you a BATT reading anywhere between .55 volts and 1.15 volts. But a fresh BIL-CITY-70 battery can put out as much as 1.15 volts... and run the needle way far right.

But this extra charge and deflection of the needle—so long as it's to the right of the BATT markings—won't affect the accuracy or reading of your voltmeter at all. So don't worry it. After all, it's not too often you get a little extra charge for free.

POWER PILFERER



There's a power sucker on the loose in some areas, in need of ear if you want to keep him out of your neighborhood.

This critter's got a kinda split personality. It was built to give with the power, but the way some guys put it to make it a high order power pilferer.

To put your nose out of the humeral your AM-GBC-260 mobile-unit, focus on the transmitting antenna, and hang on. If the power cable (CC-11457U or CC-44817U, depending on the switch or position box) is looped around the antenna and insulator, you've been victim by the snake. You may have been sliced and sliced.

If the antenna is unobstructed, here's how you keep the power sucker away:

DO NOT WRAP OR HANG THE POWER CABLE ON OR AROUND THE ANTENNA.

Using the antenna for a hanger puts your power points. It sucks power from the antenna on just about every frequency. On some frequencies, you can't find the antenna still.

In some, if the strain of the hanging power cable appears to be damaging,

in connector and respects, back your antenna relief gadget—the Grip, Power Cable, FSN 5120-776-9917. Or, make you yourself from wrap field wire.



The field wire fix is a neat trick which can be used on power cables besides those used with the Angry-26.

Like, loop the end of the wire into a figure 8, secure the end. Feed the cable through the ends of the 8 till you get about a foot or so from the antenna. Attach the other end of the field wire to an overhead support, like a nearby tree limb, not the antenna!



Fractal You've taken care of the cable, and the antenna does a no-worry job.

AN/GRC-46 HEATERS

HEY, BOSS,
I'M HAVING TROUBLE
LOCATING THE
PARTS FOR THE
HEATERS FOR THIS
THING.



Dear Half-Mast,

We're having a bit of trouble trying to locate the PDM and responsible support center for the heaters mounted in the AN/GRC-46 radio/teletype unit. The heaters we have are General Warner. What's the deal on these?

Sgt M. E. H.

Dear Sergeant M. E. H.,

It turns out there're two General Warner heaters being used in these shelters.

The 3-144 or lightweight shelter has a model 81X200717 heater, with PDM 4128-000-0049.

The 509C shelter has a model 81X204068 heater, with PDM 4128-000-0050.

Both of these General Warner models, as well as the Heater model found in some units, are Engineer items. The Warner model included in TM 3-4520-286-15 is just G-1.

There's no TM's listed for the General Warners, but you can have your support unit submit a TM-6 requesting any commercial-type parts and parts lists to:

U.S. Army Military Support Center
200, Box 119
ATTN: General Warner
Columbus, Ohio 43214

THANK YOU FOR
YOUR PROMPT
REPLY.

Half-Mast

FILAMENT FILL-IN



Ready VI and VII tubes in your E1-66 have -68 vacuum-transmitters can be super mean when . . . like a lot of you radio types know.

To the satisfaction, that means a bad VI or VII can throw you way off base with your filament circuitry readings on the MHO meter. The VI (RF amplifier tube) or VII (transmitter power amplifier tube) can give you a high reading for all filament (which is what you don't want).

Most radio-mechanics also know that you check the VI and VII with an open-ball inspection, as per TRF 11.285. If the tube filament lights, then you assume the tubes are good.

But—and even you guys in the know may not know this—there's another way to check and suspect the VI, and even a third way . . . which you look the VI and VII. If certain symptoms show here, it's time to think about new tubes—even if the VI and VII filament just put out with a slight glow.

Oh, as Connie Kroll might say, "The glow you know may be no go."

Interested?

OK. Next time your filament con-

stantly readings aren't up to par, but you feel they should be, think about this:

When the VI has had it, or just about had it, the meter will pull in local signals. But, the meter won't pull in signals of low or medium power—like from way out. That's the time to start thinking that maybe you need a new VI.

Here's a clue that applies equally to the VI and the VII:

Suspect they are gone or going when the panel meter (MHO) needle also slightly above the red on the meter, and, in a couple' seconds, drops back into or below the red. This'll happen when you're checking the transmitter filament positions (Pos. 2-6 on the 50H1 switch).





Also, grab a look at Change 4 (2B Mar '71 or TM 11-389, which adds an important note on page 124, para 6B (last). The M501 owner may read outside the red for other reasons. So, check labels by substitution before you dispose of them.

Turn it up, your eyes and your ears, look, see that you when your V1 or Y11 have gone. That they're tied into the tube filament circuitry, and since you can't check 'em with the M501, use your eyes and ears to keep the tubes from playing tricks on the owner.

DON'T DO IT

Turning your AMVBC-18 roller roller on power on and pressing the pressure-talk switch on the handle at the same time is easy to do if you have two hands.

**DON'T TURN
ON POWER...**



**... WHEN PRESSING
POWER ON TALK SWITCH**

But if the old guy stuff in your skull is bugging away on allright, it's something you don't want to do. You don't want to, that is, unless you're looking for a fast way to burn out filaments and blow fuses. The filaments and fuses just can't take the sudden surge of power that develops when you turn on the power and press the talk switch at the same time.

To play it smart... turn the power on and then wait a minute or two before you squeeze the switch or manually



KNOW THE DIFFERENCE



There's a difference between the Scam model and the Fluid Power model M15 compressed air breathing apparatus. Some organizational maintenance can be done on the Fluid Power model that can't be done on the Scam.

FROM THE SCAM MODEL

The safety related valves can be adjusted or replaced on the Fluid Power model.

Before you do any adjusting or replacing, better have a copy of the 1-800-234-11 Green Book in your hands.

DO NOT ADJUST

It's "DO NOT ADJUST" on the Fluid Power.

GETTING TO THE POINT



PHILLIPS
Screwdriver
1937



Flat-Head
Screwdriver
1864



There's no one looking around the millinery trade. Let's get right to the point. Many screwdrivers and screws have been thrown up because the wrong screwdriver was used on the screw.

Take, for instance, the Phillips and the Reed & Prince screwdrivers. You may think these two screwdrivers are interchangeable. That's not the case at all.

Take a gander at the picture on these "look-alike" screwdrivers. One screwdriver will not fit right in the other screwhead.



If your tool kit calls for one kind of screwdriver and you've been around the store, are your supply men always getting the right one. Give 'em the big eyeball when it comes to make sure it's right.

Also, if your kit does not call for the types or amounts of tools you need, fill out an EIR (EIA Form 2087) to get that kit set up like it ought to be.

FIRM IN THE SADDLE



It's not that anybody wants to curb your imagination or anything like that. But when it comes to mounting the fuel extinguisher on your PL-200, 170 generator set, there's really only one satisfactory position.



You can easily see that it allows for a solid and deep insertion of the extinguisher, with the nozzle overhanging the aft end of the control box as you face up to it.

The arm of the extinguisher bracket extends a firm grasp on the extinguisher and keep it from popping out when the unit's in motion.

Experience has shown that all other methods of positioning the bracket or inserting the extinguisher can be mighty frustrating, damaging and dangerous. When the extinguisher pops out in other than the factory's right balance it can run around a floor that could cause a fire.

If the extinguisher bracket on your set is mounted with the stop-flange to the right as you face the control panel, take it off and mount it around.



V-BELTS FOR MHE 164



Refrain from fruitless trying to get a replacement Van belt for your 6000 lb Baker rough terrain forklift? Baker, ISM 2654-714-841, it will get it for you. It's an Engineer's eye from.

The new V-belt is in the latest evidence in TM 18-1030-212-20P (Jan 60) and TM 18-1030-212-20P (Apr 65), but it's listed in the 20P only by the military standard number (5000) 18X1800-92.

THE RIGHT CABLE

You say you need a replacement electrical cable for your MHW Holdingsworth Model JHCW38 generator?

OK, but don't use ISM 3008-871-4028 listed in TM 5-6115-276-20P (28 Jun 61). It'll get you a cable that's too big and has the wrong string for connecting into the magnets.

The same goes for the cable listed in TM 5-6115-206-20P (12 May 61) on the Holdingsworth Model JHCW34.



Coventry Rodd's BRIEFS



THIS ONE'S A MUST!

... Looking for ESC (see page 29) needs a little help. Our Cleveland 740-1 (Feb 04) is hot off the press and it's loaded with info on the Equipment Serviceability Criteria guide. There's a list of the new Tru-ESC parts to look for and how to get 'em. Don't miss it!

LOCATING SCHEMATICS

That light locating indicator equipment you like because people love you is distributed by a distributor with a 9996180 part number. Right? But you don't have any schematics for the base. Your supplier can help you out on this score. There's a schematic in Fig. 247-27 of CA 4 to Tel. 8-1-490-290-32.

HOLD YOUR ORDER

If the toll wheel on your Beaver 12-04 has the shakers and you're fighting on putting in a replacement for reason #1... #199 7400.8.10.90071... don't let salesmen special tools, not authorized at organizational levels, to put in new bushings and bearings. So, a stamp to RA 12-1110 200 200 (29 Nov 03) is in the works to remove the toll and put it into the field maintenance parts pub.

NOT MANY LEFT

The only old issues of PE Magazine left on the shelf are Issues 1, 2, 6, 14, 18, 19, 20, 21, 103, 104, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134 and 135. If you need any of these, drop Sgt. Hal Mast a note.

FOR WISH DRIVERS

W 50-1412... let's proceed... it's already filed with some fine tips on operation of the M151 1/4-ton truck. Reports are still trickling in on driving and. Check with the 321. Just contact your nearest Audio Visual Communications Center (see name for Army files for change) if your center got the M151.

PE. ORDER ENOUGH

Does everybody in your outfit get a chance to read PE Magazine? If not, get a new RA Form 12-04 filled out and forward it through to:

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