

Issue 137

PS

1968 Series

THE  
PREVENTIVE  
MAINTENANCE  
MONTHLY



Life and material readouts —mighty important—will show these days. Vial, too.

Life, if you're not ready, you lose, and today we're talking about a bag of missiles.

It all depends on you. The biggest news to read —and remember it the best!—is the great excitement of AR 220-1 and AR 750-10. Both ARs are dated 28 Jul 67—and look as effective with the M. 16. 66. Read them right.

Check AR 220-1 and AR 750-10 out today. They're the new look for the M. 16. 66. Read them right.



There are other jobs, other assignments directly or indirectly connected with readouts, but the new revised ARs are the ones that point the way to the other two parts, so the other two could read the good where your "accuracy" was more than enough.



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Start saving today! Air Magazine that does it right.



Changes are the name for the revised AR's, and the changes go to your 4th grade 1995 Readiness Report. Because it's up to you—at both the local and company level—you get the material together for the big picture, the major changes to the AR's affect your directly.

**MAYBE**  
 The question you'll want to ask is "How can I make sure I'm doing what I need to do to be a Top Performer?"

AR 750-10 NEW!

**1. A way to measure your deployability readiness for the world against the 800 uniform rules.**

**2. Measurement of the actual readiness of critical systems.**

**3. Expansion of how to work up logistic initiatives on the Readiness Report (AR 750-10).**

**4. M 750-10 revised M 750-10 and places the "Commander's Checklist" in its proper place, logistic readiness and in the Readiness Report so it is fit for the commander and we need to support either of full level and in Congress.**

DEPLOYABILITY AND THAT HIGH AND LOW IS

The major changes are the provisions for new unit equipment profiles. Serviceability (on-hand equipment) and Deployability (TOE) authorized. Plus, a new section on initiative. The Serviceability Profile now does not include temporary load changes, limited standard and structure items. The Deployability Profile does. Now, the Serviceability Profile points the big finger at the local COO ... or away from him ... not as a disciplinary measure, but as pinpointing an area that needs attention either as a local problem or one needing action at a higher level.

Way back when, things got rough for a CO with just two profiles to explain or to explain the loading percentage of his equipment, which was no less, no more, limited standard or structure.

Getting out of the red with those handings was rough ... it was impossible. There were long-suffering wives ... which resulted in relief by their Equipment Serviceability and Deployability Profiles.



**HOW TO PROCEED:** This is a list of items that you'll need to pack for your deployment. (There may be some equipment that you don't need to take along.)



ITEM	QUANTITY	UNIT PRICE	PRICE	QUANTITY	UNIT PRICE	PRICE	PRICE	PRICE	
TENTS 4x6	175	20	3500	75	20	1500	5	75	
TENTS 7 1/2 x 7 1/2	100	75	7500	50	75	3750	5	25	
HELICOPTER Utility	10	10	100	0	0	0	10	0	
TENTS Combat Medium	100	100	10000	75	100	7500	2	0	
RADIO SB	100	100	10000	15	100	1500	5	0	
AIRPLANE C-130	1	0	0	0	0	0	65	45	
<b>TOTALS</b>			<b>445</b>		<b>395</b>		<b>285</b>	<b>65</b>	<b>50</b>

## DEPLOYABILITY PROFILE

*(Remember, Deployability consists of the 500 items, plus storage, plus certain equipment not included in 500.)*

FORMULA

Deployability Profile =  $\frac{\text{Color TCE Authorized}}{\text{TCE Authorized}}$  x 100

Like you've got 285 items in there, and your TCE authorization is 445 items. So,  $\frac{285}{445}$  gives you a 64 per cent gross profit.

Then with the entire composition, which comes out  $\frac{395}{445}$  equals 89 per cent.

However, since the 45 is the red column. Notice that you pick up the 45 red column items, less the Deployability, you also pick up the 50 item items and add them to the red column.

This gives you a formula like so:  $\frac{395}{445}$  or 89 per cent in the red. Using the 45.

Right profit, as spelled out in the AR, you come up with a Deployability reading of 445.00. Which is nothing to write home about.



# SERVICEABILITY PROFILE

FORMULA



*in Color*  
*in Honey*  $\times$  100

Just one  
ALWAYS use a  
CALCULATOR...  
& BY HAND...  
never  
take time to  
check the  
TOTALS  
YOURSELF  
(It's a GOOD  
habit to  
develop!)

CHEVROLET	10%	12%	15%	18%	10%	12%	15%	18%	10%	12%	15%	18%	10%	12%	15%	18%	10%	12%	15%	18%	10%	12%	15%	18%	10%	12%	15%	18%
FORD	10%	12%	15%	18%	10%	12%	15%	18%	10%	12%	15%	18%	10%	12%	15%	18%	10%	12%	15%	18%	10%	12%	15%	18%	10%	12%	15%	18%
BUICK	10%	12%	15%	18%	10%	12%	15%	18%	10%	12%	15%	18%	10%	12%	15%	18%	10%	12%	15%	18%	10%	12%	15%	18%	10%	12%	15%	18%
PONTOAC	10%	12%	15%	18%	10%	12%	15%	18%	10%	12%	15%	18%	10%	12%	15%	18%	10%	12%	15%	18%	10%	12%	15%	18%	10%	12%	15%	18%
CADILLAC	10%	12%	15%	18%	10%	12%	15%	18%	10%	12%	15%	18%	10%	12%	15%	18%	10%	12%	15%	18%	10%	12%	15%	18%	10%	12%	15%	18%
<b>TOTALS</b>	46%	55%	62%	70%	17%	20%	23%	27%	11%	13%	15%	18%	11%	13%	15%	18%	11%	13%	15%	18%	11%	13%	15%	18%	11%	13%	15%	18%

To get  
Serviceability,  
you take the 500  
"on-hand" column figure,  
put your 200 gross-saved  
column over it and cross out  
anything like a one, like an

$\frac{361}{500} \times 100 = 72\%$  GREEN

$\frac{85}{500} \times 100 = 17\%$  AMBER

$\frac{94}{500} \times 100 = 11\%$  RED  
\*BONUS: 100 is 100% (100%)

When you make one in the red percentage. Like, ignoring the 50 digit issue  
completely, you put your 41 red items over the 500 on-hand issue and cross out  
with 11 per cent in the red.

This gives you a six-digit profile of

**721711**

721711

It gives you an acceptable profile as far as your on-board equipment is concerned, whereas you'd be skunked out if you were encountering with the old AR 750-10.

Like was listed before, Serviceability Profiles are a boon to ease your pain. You don't include property loss damages of equipment, and limited standard and alternate items are not included in the profile. However, if you're returned out an accountable item and can't get it back within 24 hours, it has to be returned as red and added to your ESC red total.

Deployability, on the other hand, considers all conditions—and manages your material readiness condition to be deployed under TOE authorization. What means all TOE shortages count against your rating, including those items loaned out that you can't get back within 24 hours. Items you have on loan from your other unit cannot be considered as on hand.



Some of the things the new system adds include limited production items, plus limited A, B, C items as before. And, as before, you can get an amber rating with Standard C—but not higher.

The new system also makes life more breathing, too. It permits a profile on alternate items if there's no existing ESC for the substitute... or, if there's no ESC, you use the published ESC of a like item (like, an AN/FRC-6 radio or's ESC for an AN/FRC-6A).





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## GUIDED

Missile units, such as HQ and service types, provide their equipment in the prescribed way, as per para 7 and 8 of the MR.

For units get the same treatment, as per para 8. Conventional equipment of the line units gets the Unit Equipment Deployability Profile as outlined in para 7 and 8 (not set limit in the primary equipment 000000 line item number in Appendix II of TM 11-700).

The same profile is for the unit's missile system, as explained in para 10C2, and is given by the title of Missile System Indicators.

### IT WORKS LIKE AN AIRBORNE TO-AIR MISSILE

More than 10 minutes observation is considered as nonoperational time. Ten minutes or less observation is not counted.

The profile is worked up on the primary equipment and its operational time, including computing and tracking equipment, launcher and operational capability of the missile system, when:

Surface-to-Air includes the Nike Hercules and the Hawk systems. Generally, for a Green clear rating, the system must be:

Fully operational, with 100 per cent acquisition, tracking and computer capabilities ... and capable of launching operational missiles. As applicable, it includes Range Only Radar and Target Range Radar. At least half the unit's assigned missiles and launch items must be operational. Target items must be able to go on an available standard power source.



## MISSILE UNITS

FOR UNDERSTANDING COMPUTED IN THIS



FOR MORE INFORMATION CONTACT THE SALES OFFICE AT THE ADDRESS LISTED ON PAGE 7.

**NIKE-400/500**

- at least one acquisition capability 100 per cent operational.
- Computing and tracking capability 100 per cent operational.
- the target tracking capability 100 per cent operational.
- 100 per cent of launchers, launchers installed and operational normal operational.
- 100 per cent of assigned missiles, operational and able to be launched.
- its operational limited power source.

**HAWK**

- 100 acquisition rate 100 per cent operational.
- either R2 or R2C 100 per cent operational.
- 50 of its launchers 100 per cent operational.
- 50 per cent of launchers and installed normal operational.
- 50 per cent of assigned missiles, operational and able to be launched as above operational equipment.
- its operational limited power source.

Like you know, there are alternate methods of operating the missile system to track down a target. The accuracy is different, for, ratings are computed on the whole system, and not just one piece of equipment. Underneath you can launch down a target even though all capabilities are not 100 per cent operational, thanks to the built-in additional capabilities. The above cited number computed ratings, for Nike and Hawk systems, are the minimum requirements.

### UNDERSTANDING MISSILES

The Surface-to-Air systems include only the Fighting and the Targeting. You'll get criteria on nonoperational time by published DA Messages. (It's classified, that's why.)



Launcher and all other missile system ground equipment is 100 per cent operational.

Assigned missiles are 100 per cent operational and can be launched on above equipment.

Launcher and Red networks are simple. There is no launcher, profile is Red if the system don't meet criteria for Green.

## REUSE

- 1) — Equipment available 88 per cent or more of the time, during reporting period.
- 2) — Available 75 to 88 per cent, as above.
- 3) — Available 60 to 75 per cent.
- 4) — Available less than 60 per cent or per C).

THE  
MILITARY  
DEPT. OF  
DEFENSE  
WANTS TO  
KNOW HOW  
YOUR  
EQUIPMENT  
IS USED.  
CALL  
FOR  
MORE  
INFO.

### A NEW MESSAGE

Send your AR 750-18 to the spring or summer editions.

A new position, Section 11, has been added. It makes with some helpful help an reporting under AR 750-1. Also, 750-18 contains AR 750-45 of May 82.

Under the AR, if you've got a complete system with one or more complete sub-systems on it (say a quarter-ton truck with a trailer and, the complete system can be rated only as high as its lowest rated sub-system.

Note: Fixed air defense installations (such as ABADCOM) must report the Mobile System Indicator profile, but the installations don't have to report on conventional equipment under AR 750-18... because of the nature of the equipment and the assigned mission.

Because of the differences of reportable items, combined items, authorization documents and other differences between TDR 58-118 and the revised AR 750-18, neither the availability profile nor the deployability profile will give you the same picture as the availability being on DA Form 1080 (now even under Change 3 to the TDR).

## AR 750-1 NEWS

The Unit Availability Profile is conventional equipment and the Mobile System Indicator is primary mobile equipment — both available under AR 750-1 for mobile use.

AR 750-18  
has been  
revised to  
include  
the  
Mobile  
System  
Indicator  
profile.

CALL  
FOR  
MORE  
INFO!

One of the first changes you'll find in the revised AR 128-1 is in para 2c. Described there is readiness condition, actual level of readiness of a unit . . . and the clarification that REDCON C-1 is the desired condition for deployment or employment . . . under your new friend, the Deployability Profile.



Do you, like a friend, get any REDCON numbers? REDCON C-1 is the desired condition for deployment or employment . . . under your new friend, the Deployability Profile!



Under AR 128-1, REDCON C-1 is the desired condition for deployment or employment . . . under your new friend, the Deployability Profile!

Grade No less than	Anchor	Red No less than	BCOH Rating
70	20	10	C-1
80	30	11	C-2
90	40	20	C-3
above 90	above 40	above 20	C-4

(Para 7 and 8 of AR 128-1 show you how to arrive at the above percentages). To determine your rating, you've got to meet or go over the minimum percentages for Green, and meet or stay less than the maximum for Red.

Practically, you can't go below 70 Green and higher than 10 Red and get a C-1.

If you had a 75 Green, 15 Anchor and 12 Red, you'd get a C-2. Your 12 Red did you in, since it's 2 more than allowed under C-1.

Clear? Good. Demand . . .

There's a whole new section (para 2f) on Full TOE Strength and Authorized Strength (para 3g) which'll pay you to eyeball. It'll help you to see para 4, on Criteria.

In para 4, it's noted that personnel, equipment and deployment time are the critical indicators for REDCAT and REDCAP. Full TOE strengths are the basic standards for TOE units, and authorized strengths are the standard for TD units.

Para 4a now explains that each on-site air defense unit and Special Forces unit will be recommended for REDCAT-REDCAP by individual forward base, step or company.

NOTE: Para 4a of AR 128-1 is the new Deployability Profile.

Previously, Special Forces reported REDCON by Group 7 didn't quite give an accurate picture. Company REDCON reporting pinpointed the problem areas and responsibilities.

If yours is a medical unit, or your responsibility is a medical unit, kick an eyeball or some new dope which works at para 4f. It'll help you in not determining the REDCON of those units.

## NEW

Now 4 of Appendix I, REDCENT and REDCAP, is a new item which answers an old question or three.

Namely, it says that units with no mission deployment requirements can leave port and deployment time as the time required for the unit to create REDCOPY C.1.

Further, deployment time is not applicable to units already deployed or to air defense units in CONUS not scheduled to deploy.



AR 711-140 (Jan 65) is the master list of selected items which go in the Equipment on Hand block, Block 40, of Form 3715. The AR lists approximately 5,000 items, which, in addition to combat-related items, include selected items on which management supply data is desired.

Which means, in English, that along with the hard-core mission essential items, many of the 5,000 are relatively unimportant TOE items.

That was a real administrative back-breaker for reporting units . . . and it could possibly direct your unit's material readiness plans regarding "on hand" items.

Concerning Block 40, or any other appropriate block on the Form 3715, if the reason for a condition is not shown, or the time period is not shown, feel free to check out in the adjoining block given under block. That's what the blocks are there for.

### WATCH YOUR 1

The AR 711-40 list was reduced to "Store, Issue and Consumption" items, and the 5,000 items shrank to about 1,700. The resulting 840 growth items are now the Code 1 items of AR 711-140.

They also are published in DoD Cir. 711-2 dated 21 Jul 89.

Persons of the P&E team, naturally, it is provide a more meaningful basis for comparing the "Equipment on Hand" of Block 40, Form 2715.

Footnote g, on Line 7, Appendix II of AR. 220-1 draws your attention to this significant change.

Further emphasis for Block 40: Only Standard A, B, C or Limited Production items are counted as "on hand" items when listed as a submission for the particular TOE item.

Developmental items, listed on the TOE but not yet listed, cannot be counted as equipment on hand until the item has been classified as standard.

#### YOUR P&E COUNTS

Another important change . . . REDCON criteria as listed in Appendix II, Item 10. Unit loads—and explained in Footnote j of the appendix.

This concerns criteria change for Class II and IV repair parts, in Authorized Storage List (ASL) and Prescribed Load List (PLL). It reads like so:

<u>RECON 4-1</u>	<u>4-2</u>	<u>4-3</u>	<u>4-4</u>
AR. 7 days of supply, on hand	7 days of supply on hand	14 days of supply on hand	Last three 1 days of supply on hand
AR. 81.5% of authorized list items of inventory	81.5% of authorized list items of inventory	81.5% of authorized list items of inventory	More than 87% of authorized list items of inventory

The average of the REDCONs of authorized units are used to compare the REDCON of divisions and separate brigades under Class II and IV units load PLL.



# WHEN THE HEAT'S ON

PHOTO BY  
MARTIN SCHEER

VISIT

EXOTIC MYSTERIES-HEADLINES

SOUTH-EAST  
ASIA

Chances!  Heat is  
about time  looking  
and nothing  to  
mean  and, just  
to say things  saying, a  
gotta  make  
to talk 

The heat that waits the travel  
plunged almost to sea!

Right now all  waiting and a  
company is having the side, with a  
look, with  you! I don't see  
little, but, not about  slide  
and  you  
you'll  looking! I don't see  
you in  you  
you'll  you  
you'll  you  
you'll  you

ON stages, you're not expected to do everything you see here while you're busy  
and in being busy at you... just doing things that have you to be done to keep  
you in the light.

That's when you're pulled back into a quieter area to before you head off for  
a week or more of much-needed R & R. Be sure to get caught up on all of these  
things—and others that you'll see in your employer's USA.



# PERSONAL

# MAINTENANCE



"I've never felt better in any outfit I've worn. I'm sure you'll like it. It's light, it's cool, it's comfortable. It's just what you need for the summer." —A Soldier's Friend

"I've never felt better in any outfit I've worn. I'm sure you'll like it. It's light, it's cool, it's comfortable. It's just what you need for the summer." —A Soldier's Friend

The best way to survive in the heat is to eat and drink. You just don't let any food or water pass your lips unless you know the stuff is OK.

Don't let your outfit let a small wet area decide to get familiar with you.

**12** **13** **14** **15** **16** **17** **18** **19** **20** **21** **22** **23** **24** **25** **26** **27** **28** **29** **30** **31** **32** **33** **34** **35** **36** **37** **38** **39** **40** **41** **42** **43** **44** **45** **46** **47** **48** **49** **50** **51** **52** **53** **54** **55** **56** **57** **58** **59** **60** **61** **62** **63** **64** **65** **66** **67** **68** **69** **70** **71** **72** **73** **74** **75** **76** **77** **78** **79** **80** **81** **82** **83** **84** **85** **86** **87** **88** **89** **90** **91** **92** **93** **94** **95** **96** **97** **98** **99** **100**

Don't let your outfit let a small wet area decide to get familiar with you.

Don't let your outfit let a small wet area decide to get familiar with you.

- 12** **13** **14** **15** **16** **17** **18** **19** **20** **21** **22** **23** **24** **25** **26** **27** **28** **29** **30** **31** **32** **33** **34** **35** **36** **37** **38** **39** **40** **41** **42** **43** **44** **45** **46** **47** **48** **49** **50** **51** **52** **53** **54** **55** **56** **57** **58** **59** **60** **61** **62** **63** **64** **65** **66** **67** **68** **69** **70** **71** **72** **73** **74** **75** **76** **77** **78** **79** **80** **81** **82** **83** **84** **85** **86** **87** **88** **89** **90** **91** **92** **93** **94** **95** **96** **97** **98** **99** **100**



"I've never felt better in any outfit I've worn. I'm sure you'll like it. It's light, it's cool, it's comfortable. It's just what you need for the summer." —A Soldier's Friend

Those shoes might not have gone over as a fashion you gulp it down, but if it gets to your mouth by way of dirty nose gear, you could be in trouble. In other words, everything you've learned about the importance of clean nose gear goes down the drain. This can't be too awful.



"I've never felt better in any outfit I've worn. I'm sure you'll like it. It's light, it's cool, it's comfortable. It's just what you need for the summer." —A Soldier's Friend

Make sure that you might forget about in other parts of the world are nothing to fool with in the tropics. Get them cleaned out and then processed while they're hot.



"I've never felt better in any outfit I've worn. I'm sure you'll like it. It's light, it's cool, it's comfortable. It's just what you need for the summer." —A Soldier's Friend

If you should pick up a fungus somewhere along the line, use your friendly sniffs. Go along with what he says—down to the bone.



"I've never felt better in any outfit I've worn. I'm sure you'll like it. It's light, it's cool, it's comfortable. It's just what you need for the summer." —A Soldier's Friend

You can't take a shower every day on the boat, but sticky hands with soap and tap balls to water in them is just too, taking the parts of you where the sweat flows the most.



"I've never felt better in any outfit I've worn. I'm sure you'll like it. It's light, it's cool, it's comfortable. It's just what you need for the summer." —A Soldier's Friend

Wash only enough clothing to keep bugs, fleas and the like from your skin. And the clothing has to be loose so that air can get through to you.



# PERSONAL EQUIPMENT MAINTENANCE

**WASHING** Wash things like shoes and canteens in soap and warm water.



Get the sun and air on them all you can... don't put them away while they're warm damp... and repair holes and eye pieces.

Mosquitoes biting give the same kind of treatment.

**PERSONE** Get in shape and warm when they show up. Clean your ponchos with mild soap and water, followed by a thorough rinsing. Dry it away from direct heat.



**SHOES** Wash the soles with kerosene and scrub your boots, along with your socks, at least once a day. Soapy water is what you use, but keep the soles away from direct heat.



**SHOES** Mud won't do to wrangle all boots as much as possible, with water used for the final cleaning.



These made of leather and care can get dried in the shade to slow rotting... nothing stronger.



Clean the leather in oil, rub in some shoe polish, or wax's good, too.



**WET EQUIPMENT** Wet gear, canvas bags and packs are washed in a puddle of warm soapy water (soak soap) or grid of soldiers, dirt and rainwater. But use with a clean water shoe.



Before hanging wet equipment in the shade or indoors to dry, pull it back to shape.



Damage wet equipment that you can't fix, when to be stored in the camp or equipment. Don't feed with it.



Don't wear with it unless you're sure it's... "YUCK!"



And all that!



# CANVAS

# and other things



Don't fold or roll the canvas when it's wet. If you have to roll it up, wrap the canvas the first chance you get . . . and dry it.

If mold does get on your tent, work on it with a stiff brush and water. And don't dip in to clean your light.



Don't use a brush on the canvas.

Use bars you applied to your water and there are dried out good. And get them out when you get to your tent.



Pins and poles that have been in the ground pick up mold . . . so keep them away from canvas until they're dry.



Don't use a brush on the canvas.



By the way . . . if . . . there's any mold on the inside of your tent, in it . . . brush your tent and keep the tent dry . . .



Wash out in between water and mold . . . if you can, don't use hot water when drying . . . let it get out of the sun . . .

Don't use a brush on the canvas.



Don't use a brush on the canvas.

Don't use a brush on the canvas.

## COOLING SYSTEM:

Always check antifreeze level before starting. If you're using a 50/50 mix of antifreeze and water, check every 100 miles. If you're using a 60/40 mix, check every 50 miles. Always check for leaks and top up if necessary. If you're using a 50/50 mix, you'll need to top up every 100 miles. If you're using a 60/40 mix, you'll need to top up every 50 miles.



Starting under a constant load, like in a city traffic, or under the full load will wear it out.

If you never want to check or replace antifreeze, you can use a 50/50 mix of antifreeze and water. This mix will last for 100,000 miles. If you want to check or replace antifreeze, you can use a 60/40 mix of antifreeze and water. This mix will last for 50,000 miles.



There's no shortage of help, but it's better to be ready than sorry. Check for loose belts, air filters, cooling fans and radiators.



# VEHICLES

## BATTERIES

Check the battery level. If low, add distilled water ... leading should be 1.260 to 1.280 in hot weather.



Check out the 12-lead 200-15 12V battery for weight savings on the bus.

Antifreeze is for weather when hot. It's for engine protection when cold.

Check the battery level. If low, add distilled water ... leading should be 1.260 to 1.280 in hot weather.

Check out the 12-lead 200-15 12V battery for weight savings on the bus.

Check battery level. Clean and inspect if necessary.

Regular use of the oil will help a lot against the wear of the engine. It will help the whole operation by making an oil change easier.

Keep the oil level above the top of the dipstick, and make sure your system stays in an eye.

Not keeping your radiator clean and full, the belt and water pump trouble will make it hard for you to be confident ... to check you will.





# WEAPONS

Don't trust a gun in anyone's hands.

Don't forget that in University you'll have to handle your personal life.

Don't make people feel like you.

**OWN WEAPONS:** Check the reputation and responsibility resources often to make sure the GI levels are where the weapon's TM says they should be.



It all has to be solid, or destined because of how, always or whatever. You get to trade with your support people like you.

**ARMED:** Don't have weapons in your hands. You'll be a target.

**OWN GUNS:** Like when someone needs guns, there is your small one used to be held. And if your theory is one with machine guns, you want to give in the case of an emergency. There is a way. But in the end with the kind of your hand and mind by studying with a clean eye. What do I know and I know that you can't see up.

# AMMO



Keep it in condition and it's ready to go!

Keep track of the use.



Don't make...

**ARMED:** Don't clean up to get rid of weapons or weapons, or clean up when you find them. Forget to enough on working parts.



Don't make people feel like you.

**OWN GUNS:** There are... Don't make the best. In other words, there are things in the market that are the best. If there is a replacement in your hands, and in the working film... if you can get them for it.

Don't make people feel like you.

# FOODS

We have you here this, but...

Keep it in the market and you'll see... Don't make people feel like you.



Don't make people feel like you.

Heat and humidity kills electronic gear of all kinds. If you let it . . . heat makes all



to use power tube vacuum components are tight . . .

If getting equipped is costing, better to replace

Lower electronic gear looks like. Check your Wheat to be sure. Especially when you don't . . .



ELECTRONIC GEAR? YOU'VE UNDERSTOOD SOME OF WHAT IT MEANS. BUT YOU'VE NEVER HEARD OF A WHEATSTONE BRIDGE.

Dry cells get it rough in hot weather — even when being used . . . In other words when it's used and dry . . . depends only when you are gonna use 'em.

## OPTICAL GEAR

If any longer gets to suggest, amplifiers or transmitters . . . It's good idea, don't play with 'em. At suggest better the job



YOU'VE GOT TO BE CAREFUL WITH OPTICAL GEAR.



WHEN A LIGHT SOURCE IS USED FOR OPTICAL GEAR, THE LIGHT SOURCE MUST BE STABLE.

And remember that direct rays of the sun are rough — an optical gear, with rubber cylindrical making a focusing lens that too ball in the sky.



When you do to get rid of rot, mildew, corrosion and other junk is pretty much the same for an already in the other equipment. It's doubly important that you do a good job on already, though, because you don't get a second chance to repair something like a control cable that has got because of rot—rot when you're 700 feet up, that is.

You have many spells when things won't dry out . . . and even with the sun shining, you need a little heat to dry things like leather boots (if you'll be a heavy), leather camera case and optical instruments, or maybe power electrical or electronic equipment during a stage of high humidity. The answer is what you might call a dryer, dry locker or drying cabinet.

The dryer can be something as simple as a parking box and a 40-watt bulb. Or you can "move up" to a cabinet with such things as dehumidifying and ventilating holes.

**JOE'S  
DOPE**

You've gotta  
CARE  
to do your  
VERY BEST.

*Twice the night before Christmas,  
and in Santa's house*

*No creature was worried,  
not one man did groan.*

*They'd searched thru jungles  
just passed-by-a-hor*

*Oh, they delivered the work  
... but they just didn't care.*



WORTH CHECKING  
TWO-FOUR. THIS IS  
NORTH HILL CONTROL. YOU  
ARE CLEARED FOR LEFT-ON  
ON SHERBURY SIX-SEVEN, WIND  
SEVEN EIGHTS, DIRECTION ZERO  
SEVEN ZERO, CALL ALL THE  
WAY... OVER!

A-ROGER!  
AND MOVING  
HO!



HEAR, HEAR,  
WOW!!

AND THAT  
WAS DOPE!

THE OLD  
BOY JUST  
CRASHED!



*As* over the world, kids wrap in their beds, whilst  
dreams of big feet descend in their heads,

*While* Santa is there on that polar ice cap,  
Near closed the whole lot — in a singular flap!



*So* hardly had planes around their elf relatives  
When there was a bang — to check on the matter.



SOMEONE HAS TO DO MAINTENANCE ON  
ESSENTIAL EQUIPMENT THAT PEOPLE  
DEPEND UPON MUST PRODUCE GEAR  
IN RELIABILITY...



AND THE MENTORS AND THE MAINTENANCE GUY THE  
ONES WHO BUILD IT IS...  
...THEY HAVE A TRUST  
BETWEEN THEM AND THE PEOPLE  
THEY SERVE... THE GUYS  
WHO USE THE GEAR.



LIKE IN THE ARMY... THE USER TRUSTS THE  
PROGRAMMER HAS NEITHER THE TIME NOR INCENTIVE  
TO QUESTION WHETHER THE GROUND JOB IS  
GOOD OR SO-SO... HE WON'T REALLY KNOW  
LATE, HE'S IN THE THICK OF THINGS... WHICH  
IS GENERALLY TOO LATE!



OH LIKE THE USER WHO MUST CARRY  
OUT AN ASSIGNMENT—BE IT SHOOT, BOOM,  
OR COMMUNICATE... IF HE DOES A HALF-  
SOUND JOB OF IT—SOMEBODY  
GETS KILT!

WANT ME TO  
POST THIS  
DISE-LIP,  
SARGE?



**Joe's** Dope Sheet



**DO IT RIGHT  
THE FIRST TIME!**  
... BECAUSE,  
**THERE MAY NOT BE  
A SECOND TIME!**



**PAULSON  
PAULSON**

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

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









*So over the rooftops the world-of-Us they flew  
With a sleighful of love and St. Nicholas too...*

*And just as a twinkling from roof-top to roof  
Distributing toys that had never it good*

*Some kind of him exclaims as he drops out of sight,  
"Merry Christmas to all, and let's ALL DO IT RIGHT"  
(TAS PART TIME)*



A selected list of recent publications of interest to engineers and technologists. The list includes books, monographs, reports, and technical papers. The list is intended to provide a comprehensive overview of the latest developments in the field.

#### GENERAL ENGINEERING

1. **Engineering Materials**, by J. E. Shigley, McGraw-Hill, 1969, \$12.50. A comprehensive text on the properties and uses of various engineering materials.

2. **Strength of Materials**, by R. C. Hibbeler, Wiley, 1969, \$10.00. A classic text on the mechanics of materials, covering stress, strain, and failure.

3. **Machine Design**, by J. E. Shigley, McGraw-Hill, 1969, \$12.50. A practical guide to the design of machine elements, including shafts, gears, and bearings.

4. **Fluid Mechanics**, by R. C. Hibbeler, Wiley, 1969, \$10.00. A text on the principles of fluid mechanics, covering both statics and dynamics.

5. **Thermodynamics**, by R. C. Hibbeler, Wiley, 1969, \$10.00. A text on the laws of thermodynamics and their applications in engineering.

6. **Heat Transfer**, by R. C. Hibbeler, Wiley, 1969, \$10.00. A text on the mechanisms of heat transfer, including conduction, convection, and radiation.

7. **Mass Transfer**, by R. C. Hibbeler, Wiley, 1969, \$10.00. A text on the principles of mass transfer, covering both steady-state and unsteady-state conditions.

8. **Transport Phenomena**, by R. C. Hibbeler, Wiley, 1969, \$10.00. A text on the coupled phenomena of heat, mass, and momentum transfer.

9. **Electromagnetic Fields**, by R. C. Hibbeler, Wiley, 1969, \$10.00. A text on the fundamentals of electromagnetism, covering both static and dynamic fields.

10. **Antennas and Propagation**, by R. C. Hibbeler, Wiley, 1969, \$10.00. A text on the design and analysis of antennas and the propagation of electromagnetic waves.

11. **Optics**, by R. C. Hibbeler, Wiley, 1969, \$10.00. A text on the principles of optics, covering both geometric and physical optics.

12. **Acoustics**, by R. C. Hibbeler, Wiley, 1969, \$10.00. A text on the principles of acoustics, covering both sound waves and ultrasonics.

13. **Vibrations**, by R. C. Hibbeler, Wiley, 1969, \$10.00. A text on the principles of vibrations, covering both free and forced vibrations.

14. **Control Systems**, by R. C. Hibbeler, Wiley, 1969, \$10.00. A text on the principles of control systems, covering both classical and modern control theory.

15. **Robotics**, by R. C. Hibbeler, Wiley, 1969, \$10.00. A text on the principles of robotics, covering both kinematics and dynamics.

16. **Computer-Aided Design**, by R. C. Hibbeler, Wiley, 1969, \$10.00. A text on the use of computers in the design process, covering both 2D and 3D modeling.

17. **Finite Element Analysis**, by R. C. Hibbeler, Wiley, 1969, \$10.00. A text on the principles of finite element analysis, covering both static and dynamic problems.

18. **Computational Mechanics**, by R. C. Hibbeler, Wiley, 1969, \$10.00. A text on the use of computers in the analysis of mechanical systems, covering both structural and fluid mechanics.

19. **Engineering Optimization**, by R. C. Hibbeler, Wiley, 1969, \$10.00. A text on the principles of optimization, covering both linear and nonlinear programming.

20. **Engineering Statistics**, by R. C. Hibbeler, Wiley, 1969, \$10.00. A text on the principles of statistics, covering both descriptive and inferential statistics.

21. **Probability and Statistics**, by R. C. Hibbeler, Wiley, 1969, \$10.00. A text on the principles of probability and statistics, covering both discrete and continuous distributions.

22. **Linear Algebra**, by R. C. Hibbeler, Wiley, 1969, \$10.00. A text on the principles of linear algebra, covering both vector spaces and matrix operations.

23. **Differential Equations**, by R. C. Hibbeler, Wiley, 1969, \$10.00. A text on the principles of differential equations, covering both ordinary and partial differential equations.

24. **Integral Equations**, by R. C. Hibbeler, Wiley, 1969, \$10.00. A text on the principles of integral equations, covering both Fredholm and Volterra equations.

25. **Complex Analysis**, by R. C. Hibbeler, Wiley, 1969, \$10.00. A text on the principles of complex analysis, covering both analytic functions and conformal mappings.

26. **Group Theory**, by R. C. Hibbeler, Wiley, 1969, \$10.00. A text on the principles of group theory, covering both finite and infinite groups.

27. **Representation Theory**, by R. C. Hibbeler, Wiley, 1969, \$10.00. A text on the principles of representation theory, covering both finite and infinite groups.

28. **Algebraic Geometry**, by R. C. Hibbeler, Wiley, 1969, \$10.00. A text on the principles of algebraic geometry, covering both curves and surfaces.

29. **Number Theory**, by R. C. Hibbeler, Wiley, 1969, \$10.00. A text on the principles of number theory, covering both elementary and advanced topics.

30. **Combinatorics**, by R. C. Hibbeler, Wiley, 1969, \$10.00. A text on the principles of combinatorics, covering both counting and graph theory.

## A Complete Bird Book

Mr. Types should take a peak at AS 750-1300-3 (12 Sep 64) an individual gets for almost free to find out what's in a "complete" no-boundary book, included in the Equipment Reliability Criteria Sheets, Daily, Intermediate and Periodic PM Checklists and Oil, Forms 240B, 240B-1, -12, -13, -14, -18.

## A Classy Number

A slipped digit'll leave you in a bind when you're trying to locate units or fixed paper dielectric capacitor for your Ford-Car Model CE 15AC-WHP gasoline engine generator set. So, use FM 2414-134-1008 to enlighten 'er out instead of FM 2414-134-1008 which is listed in SAC-01 13-209-207 (Sep 64).





### FIREPOWER

82 (786) 483 583788

# KEEP 'EM FIRING!

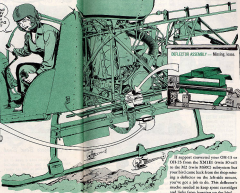
Keep your M2HB firing! Because you know you'll need it, you'll want to keep it working when you need it. That's why you'll want to take care of it before you take it. Here's how to take care of it before you take it. Here's how to take care of it before you take it.

Keep an eye peeled for the following trouble-free conditions and make sure you're not getting them straight off:

**SWITCHACTUATOR** — Feet and toe should be held back, and foot, hand controls won't divide the way it should.



You want to be real careful of the switch actuator arms which with the arm's side catches on late production M2's . . . or ones that've been damaged by impact. Call (800) 547-3647 150 Jul 89. These arms can go wrong in your shoes or get bent over while you're working around one, so be real alert . . . especially when you're installing the machine gun mount.



**DEFLECTOR ASSEMBLY** — Mounting base.

If support covered your M2HB or M2HB from the 3M181 (with 3000 to the 302 (with 3000) adjustment that five (5) come back from the shop making a deflector on the left-side mount, you've got a job to do. This deflector's made to keep your magazine and belt from hanging up the feed.

So, here's what you do: Requisition the deflators under P/N 1009-062-1250 through supply channels, using Change 1 Cap 041 to your TM 5-1009-107-12 in your authority.

Then install it yourself . . . just screw it in place on the subsequent adapters. Para 1 (b)(1) and (4) and fig 57 of your book TM will guide you.

Someone or others, the deflators were shipped when they put together M700 5-1009-100-3072 17 Aug 60. The second M700's pick it up, of course, but in the meantime . . .

### HYPERBOLIC CHAIR POFF —



Some dinky dwee might use it for a step . . . besides, it'll get noisy.



Any model M2 deflators mounted on CM-17's and CM-17's have a new type handle with a filling valve separate from the outer assembly. If you want more one of them, you'll need a connector part (P/N 1009-006-1248 — P/N 04-00027) and adapter (P/N 0730-209-0508 — P/N AM 010-4-484 to replace the coupling on the regulator changed you already have in order to change the new handle. Requisition these parts through normal supply channels.

### OUR REMOVAL —

Always remember to disconnect the external cable from the master line before you remove the gun from the mount. It'll be supplied later after some parts'll just pick up the gun and start walking off—cables and plugs and valve-like take an awful beating this way.



### LOADING —

Improper loading and linking of wires can ruin more vehicles than anything else. There's no shortcut on this deal. Stick to the routine in para 18 of your -12 TM. Especially, don't step on the links or get 'em on. You're stepping into a heap of trouble if you do.



### DEFYING —

It's great to be able to function your weapon without climbing on the ship by jacking this external on the structure normally, but if you're stuck, be mighty sure you screw this into the barrel end. The barrel's got to be in—no you'll do serious damage to the weapon's innards.

**CHUTE ASSEMBLIES AND GASKET RINGS —** Some detail, help, this catches best, won't attach to some lines or another gun.

Any dent or kink that can't be fixed means you'd better replace the line pronto. Otherwise, your M20C's gone, and up with double feed. . . which means less pulling for the operator.

## NEW TYPE CHARGE BOTTLE

Here's the way the new pieces of the charger handle fit together!



When it's installed, you open and close the filling valve assembly by loosening or tightening the valve nut, turning to the left to loosen it and to the right to tighten it.

Keep the quick-break coupling from the old bottle just in case you'll need it some time.

Of course, you fill the new bottle the same way as the old, following the prep in para 47 of your -12 TM.

Incidentally, the pub says you only nitrogen in those bottles, but in the land of the free public this may have a hard time to fill. A lot of guys use compressed air. No sweat. BUT, don't ever use anything except nitrogen or compressed air. Got it?

You'll also notice that the TM says it, so you'll know about not marking markings or splinter that or shapes or anything else when you're trying to find a container with nitrogen in it. Save the PNM's 6810-254-9000, but somebody could've goofed.

Play it safe all the way. No matter what the markings say — or what anybody else tells you — check the contents of every 15 liter before you start using it.

Here's a couple of simple tests you can make — after you move the cylinder away from areas, heat and other stuff that'll harm. A cigarette or splinter's all you need to make these tests.

Here's what's in the cylinder: \_\_\_\_\_ If this happens:

Carbon dioxide \_\_\_\_\_ Cylinder valve turns white or gets very cold.

Nitrogen \_\_\_\_\_ Cylinder or splinter glows slightly at first, then goes out.

Helium \_\_\_\_\_ Cylinder or splinter just goes out — no glow.

Oxygen \_\_\_\_\_ Cylinder or splinter glows intensely and then bursts into flame.

Hydrogen \_\_\_\_\_ Smokey gas splinter and bursts with a blue or white-blue flame.

Acetylene \_\_\_\_\_ Big flame on the splinter won't fit your eye, white gas appears, or don't let around any bottles.



Here's a couple other tips on the charger system.

Any time you have to remove the hose from the charger handle, first turn off the charger handle valves. Then put a piece of tape over the hose end of the hose to keep dust and dirt out. Oh, if you remove the hose from the charger assembly end, put tape over the charger valves. If dirt gets in the hose and works its way into the valves or charger system, your MROC's in for a hard time.



**MISSED BLAST SHIELD** — Cross-check screws loose, missing, shield bent.

If your ship has 'em, fix 'em, OK, make sure they're in good condition. However, if your ship doesn't have 'em, don't give 'em a second thought. The shields were authorized under the original MWO 51-1128-204-5478 11 Aug 611 but were not even mentioned in the 11 July 1968 revision of the MWO. Shields are not in the supply system and can't be requisitioned, but say you still feel a need for 'em, you can go ahead and make 'em locally.

**HEATER CHECKS** — Check hot leads on machine gun's receiver and ammo.

If the heater cabinet being fed any, get support to replace it with the new type. It shows in 178 150-44-104 . . . P-10 1084.

see also: 1084

**ELECTRICAL CABLE PLUGS** — Fix dirty, bent, wrong plug adapter fitting.

If your ship's M101 or M101A "C" has a 4-pin plug, and the internal kit "A" has been wired according to MWO 51-1128-204-547 22 018 Jan 65, you'll need an adapter to connect it up to the

MROC gun's 14-pin system. Ask for adapters, internal connectors (1084015 . . . 150-1001-013-7115) and you're still in business.



AM MOUNTAIN

I COVER FOR ALL  
KINDS OF ...

Wet weather and cold climates require the extra attention — dry weather and warm climates make it necessary for waterproofing. The solution is CYA plastic floor sheets which you're out in the wilds of tomorrow.

Intrepid Camouflage-painted cargo chutes can do a good job of hiding loads from your sky allies. To camouflage the Snow (C44-1A, Brown (C44-2A) or Red (C44-3), you only need a couple-dozen of these chutes. For larger aircraft, just keep on adding more chutes . . . or mix 'em together with some of the camouflage netting sold above in EM 5-15 (see 56). Just be sure you don't accidentally load the extra netting when you're wrapping up for a cold, frosty day. Make — or damage — any mistakes.

In most covered areas, you'll find all-white cargo chutes better for camouflage. But you may be forced to use the orange and white striped variety if an all-white set is available . . . and stay on a little white paint to keep up the strips.

Since most and few temperatures go together, camouflage covers can also serve as maintenance shelters in cold weather areas. Just tie the chutes directly to the fuselage and throw a little slack in the lines for a snow anchor — unless you prefer to weight it down with

net chutes, snow boots or a similar — and you're got a perfect winterized.

When in doubt, leave a portable heater and start shelter because warm enough to allow you to work under it in a T-shirt, even during subzero temperatures. After all, you can't make



an aircraft with hand-bled fuel for longer and a dull wind to cool your muscles. Concentrating the heater close at hand

ideal spots will speed up preheating, too, by directing all the heat at engine, battery, oil pumps and instrument panels while you're working the aircraft.

For Shortest FJ-6A1 and larger aircraft, you can combine cargo chutes with the new maintenance shelter and

use the maintenance tent for three aircraft, you'd have an extra day saved from a few feet off the ground to view the new assembly.

When protection from wind, rain and cold is more important than camouflage, you can fabricate something like this engine area compartment work shelter made up by this Shortest (C44-11) outfit.



COVER

by pushing the flap aside and tucking the nylon in the gully at the top of the new frame. The rear of the aircraft, with the EM antenna removed, will fit under the covers of the tent and the plastic extension can be spread over the wing tips and tail section. These weights close the chutes with five-gallon buckets of oil, or something even heavier, to anchor the chutes against the wind.

The same setup will cover the Shortest FJ-1A, except that you add more nylon to make use of the bigger fuselage and tail assembly. But if you're working on even larger manned wings — like the Mitchell (C47-1) or Caribou (C47-2), overlap several cargo chutes so as to cover the entire aircraft. In order to



MAKING THE SHED

It was made in a day by cutting open a piece of ultralight tent to fit the contour of the fuselage belly surrounding the engine area of the ship. A 10-in. overlap was allowed to drape on the ground in order to form a snow anchor over it. Two heavier flaps were sewed to both sides to attach the shelter to the fuselage. A zipper was left loose for a rear entrance.

These four will-CYA in combination with the camouflage and maintenance shelter provided the heavy loads you. Another thought to keep in mind here is: When somebody stops at you, it's time to ditch your aircraft.



When it comes to moving a heavy load in the maintenance area, your first thought is probably to hitch on one heavy pair of ground handling wheels.

But if you have to scrounge around before you find a pair, there's good reason maybe somebody's not giving a thought, here or there, to the maintenance of all the wheels.

It can happen in this type of an aircraft inventory (EAA Fleet 2400-17) even in temporary storage . . . out of sight — out of mind!

## KEEP 'EM ROLLING!



you want...



The page in the file sheet of the EAA Fleet 2400-17 is 24-40-40 and the CD-1000-17-05 of Apr. 63.

In addition to the facts service the size pictures should agree with those figures:



That's about all the preventive maintenance the wheels need to be kept in the pink. But there's another mighty important angle to keep in mind. Proper use — use abuse — of the wheels.

Like — you don't want to let the axle drop so that the support pin and spring get jammed with dirt, or, you don't want to leave the wheels out in the weather to rust take-over and jam up the works.

After all, when a wheel is put on the landing that you want the spring-loaded locking pin to pop out. It has to be flush with double anchoring hole. A slip of the ship could be enough on the next.





NOTE — It's very important to PLU the landing gear to make sure that the landing gear is properly secured. If you don't, you could be in trouble!

The two stabilizing bars have to be locked up, otherwise the aircraft will have a flight ... wouldn't matter for a routine landing!

When you put the bar pins in the slots, be sure that you just take up the slack with the hydraulic pump. If you force on the handle you can actually force the bar into the slot, forcing it to the point where the bar is distorted for a cold-charge.

Remember ... whether the ground handling which can do off your bird, remember to keep 'em rolling, via the preventive maintenance crew.



## A SICK STICK

Give a little more muscle behind the double lines of your Strac POM-113 hydraulic hose system and it's apt to show up in the cockpit — in the form of cyclic control oscillation.

This feedback can show up as either lateral or fore-aft oscillations and can throw the pilot off coordination — particularly if he's nervous.

By lowering the hose through the irreversible valves, and moving the valves in the direction that will take out any kink in the lines, you can correct this situation. Be sure to tighten the nuts when you've got the right bend in those lines, though.



## STRAC HAT TRICK

STRAC HAT TRICK  
STRAC HAT TRICK  
STRAC HAT TRICK  
STRAC HAT TRICK

Since POM-113 cockpit space has never allowed for anything more than room enough to put your feet down, the STRAC eyes have a choice of holding their combat helmets in their laps while wearing the flight headsets or... whumping up a STRAC fix like this after taking permission from Big Sis.







**KNOW THE KYCFOI AREAS**

Do you've a question to an M114 or M114A1 command and control? Well, get your knut and call your knut "Knutty!"

There's a lot for a good M114 version to know including where the KYCFOI areas are.

The KYCFOI areas (Keep Your Control Fiddle) Hands-Off It) are places you for your knut or support mechanics worry about.

Some M114-series engines have been failing just because someone swapped with the governor or changed the ignition timing. This caused over-speeding

and raised the engine.

In just when you want to get straight in the woods. Let the mechanic do this job... they need the work.

Company mechanics have to do KYCFOI areas, too. They change the ignition timing if needed, and they check the way the customer governor works... but they don't adjust the governor.



**KEEP  
YOUR  
KNUIT  
ON  
DEFENSIVE  
AND  
OFFENSIVE**



**FIRST KNOW THEN TOW SLOW**

Ground your knut on your brand new M114 knut which have been getting knut because the vehicles were towed wrong.



To keep your ground knut in good health you know how to tow. This doesn't it a question of a knut and not a knut. If you're trying to tow-knut and the wrong vehicle won't fit up vehicle 1-quart-knut, something else is wrong so call knut and clear the your company mechanic. If your M114 is broken down and you're going for knut, don't tow over a quarter-knut unless the knut shackle are pulled free.

The mechanic will pull the shackle and use to it that the splined ends are protected by rope against banging around or end getting less than. Also, he will use rope or rope to plug both knut-holes to keep dirt and stuff out.



When the mechanic put back the shackle after making he'll spread a knut coating of sealing compound. FOR M114-100-1000, spread the shackle area on the opposite knut. This water is listed on page 10 of JFC 00000.1. Page 100. If he can't get the compound, at least he'll make sure the shackle don't cover and knut making sure knut are clean.



When the mechanic install the right shackle on each side don't cover, he'll get a knut to and then cross-knut, tightening up each knut a knut or a knut and he get a knut tightness of 110 to 120 pounds-foot.





How about that M300L model? It can have any one of three different types of brake slave cylinders.

All three types work differently as you have to replace 'em in pairs.

What else is to know?

How to tell 'em apart as you won't scramble the different brands which are —

1. **PN 220-000-940**, 1989 Fiat's, found in the old -HP but not found now for the M30L. So order it searched out.
2. **PN 220-024-963** and
3. **PN 220-024-970**, found in page 3-102 of the P-220-21 -HP User M3.

You can't tell these two apart by the cylinder housing because they both have the same one, marked 1071638. In fact, they are identical except that 1. has a bigger spring than 2. The 3. brake cylinder were put in all M30A's with serial number 1988 and higher.

For replacement cylinders order the 3's and put 'em on in pairs only.

If you need a repair kit, your direct supplier can order **PN 2150-000-9007** (1705500). This kit includes the bigger spring and you use it on either the 2. or 3. cylinders.

If you notice a loss of brake fluid in the master cylinder and you can't find





any leak in that area, possibly the leak is at your slave cylinder. You can check by pulling out the plug in the bottom of the brake housing attached to each side of the transmission, like it says in TM P-2200-211-20 (Feb 81) on page 3-312.

**YOU NEED  
TWO  
SETS**

Any new bar steering missing from your M116 tank recovery vehicle's ODM? You should have two sets aboard — one that'll hook your new bar to tank-type track vehicles, and another for vehicles like the M115 and M114.

The new bar steering set shown on page 184 (item 18) of TM 9-2320-212-20 (Nov 60), if you need any replacements, order 'em like this . . .

LEFT SET			RIGHT SET		
Dist.		PN 2540-207-201	Dist.		PN 2540-207-202
Dist. Pk.		PN 5013-208-204	Dist. Pk.		PN 1429-204
Op. Pk. locking		PN 5013-208-211	Op. Pk. locking		PN 772362

## M116 TORSION BAR TERMS



You all wound up trying to get the right ODM's to order torsion bars for your M116 cargo carrier?

Well, what is the fix . . . the most-  
best one:

- PN 2540-207-103, torsion bar, expansion, left hand (229101 2)
- PN 2540-207-104, torsion bar, expansion, right hand (229101 2)

You might want to remember these numbers for page 81 of your TM 9-2320-212-20F (Jul 62).

## BOOT COMES ALONE

Now you can get just the top dust boot for the gear shift lever on your 1971 1/2-ton truck instead of the whole kit, which includes several other boots you may not need.

The top boot, identified as Item 2.1 on page 60 in TM 9-2100-218-20P (Dec 61), comes under P/N 2120-079-0008.

This boot gets a lot of action, so it usually has to be replaced more than the others. You can still get this boot and others in one kit, tho, by P/N 2120-087-1343.

WANT TO GET THE TOP DUST BOOT FOR THE GEAR SHIFT LEVER ON YOUR 1971 1/2-TON TRUCK?



## MIST HEAD BOLTS

**Dear Half-Mast,**

"What gives with those M11 1/2-in. mist headbolts? When tightening down on the bolts when replacing an head gasket, I find the threads stripping on the No. 1 and 2 intake bolts. They can't take the 60-ft lbs. torque called out in FM 7-8008-214-04.

How can I keep 'em from stripping?"

SMC J. L. M.

Dear Sergeant J. L. M.,

You need new headbolts.

Those old heavy colored bolts can't stand the gaff. For this reason, a stronger bolt using the same EOM (1540-000-0011) is being issued for the job.



OLD BOLT



LARGER, THICKER  
HEAD

NEW  
BLACKEN

You'll be able to spot the new headbolts because of its darker (blacklike) color and larger and thicker head.

This new headbolt can take the 60-ft lbs. torque that's needed.

When installing this new bolt put it on unless the number.

*Half-Mast*

## GRABBY GAS CAP

A few swipes with a file will take the sharp corners off your M111 Motor truck's gas cap ears. Then you can slide out without having part of your belt buckle and maybe part of something else — behind.

FILE CORNERS OFF CAP EAR



You don't have to file them into clean off the cap — just enough to dull 'em. Cut down to about 1/4-inch high with about 1/4-inch off the corners, and round 'em.

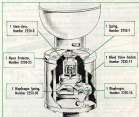
It's hard to hold the cap in a vice when you're working on it so you only hit what you want to hit.

That's how you position the cap on the tank opening makes a difference, too, in how grabby it is.

## VALVE KIT AVAILABLE

Need replacement parts for the automatic dump valve in your M49C tank truck's fuel segregator? They're making their way into the supply system but stay for now there yet. Meanwhile, there's a commercial kit you can get.

It can be bought from the Warner Lewis Company, Box 8000, Tulsa, Oklahoma under Warner Lewis Number 2090-B. It's priced at \$112.50 (FOB Tulsa, Oklahoma) and contains the following parts:



1 Stem Shim,  
Number 2090-4

1 Spring,  
Number 2090-1

1 Base Flange,  
Number 2090-20

1 Float Valve Inlet,  
Number 2090-11

1 Diaphragm Spring,  
Number 2090-10

1 Diaphragm,  
Number 2090-14

The float assembly includes float and counterweights. It's available under Warner Lewis Part Number 2090-1 float, 2090-20 counterweights, 2090-20 cover and 2090-54 set screw. The price is \$69.75.

The complete automatic dump valve is Part Number 2090-A with a price tag of \$66.00.

Your support supply people can purchase the items under AR 711-56. This will authorize them to buy drilled type oil-to-diesel lines.

# 2 1/2 TON

## SEGREGATOR SEAL



Need the ring-type rubber seal that's used in the 2 1/2 ton Grove-Drip segregators of your M49C tankers? Then ask for Seal, Rubber, Special Shaped Section, PNY 1498-97A-97C. You'll find this seal used in DOD Drawing C2950-M1-4 (1 July 69).

## GOOD STARTER



Page 155 in TM 5-1588-125-20P (The old line number R99 209-940-2091 for the 6742 series tankers. This R99 is only for the tanker that has since been renamed Fleck tankers; it won't fit any 2 1/2-ton tankers.)

The regular 6742-series tank tanker is on page 287 of the TM. But don't use improved water to supply for the M16A1, M16C1, M16A1, M16A1, M16A1, M16A1 and M16C1A1 trucks. It's FM 2008-703-2046. Check out your nearest supplyhouse or the next you'll get a steamer you can use.

## COMMUNICATIONS

BY  
TIM  
MORRIS

# KISS YOUR

# SIGNAL GOODBYE

Trying to communicate with your enemies is like shouting at a closed window. The effort's being made but

you can't hear any sound—no matter how loudly you shout. You can't see your opponent, no matter how hard you squint. You can't hear any sound—no matter how loudly you shout.

### AT-102 SIGNAL

In the AT-102 like other antennas of the new FM radio series, most of the bottom is pulled back-out toward the ground so you can hang inside the spring of the AT-102 antenna support base.



And while your organizational radio company is at it, be sure you get the correct wire size inside the spring with a few feet of white electrical insulation tape (EIA-102-102-102). The tape'll make the wire longer and last longer.



having your best gut feel (message isn't getting through).

### IF DRIVING COOPER

While you're high up on the antenna, here's a tip that'll help you from getting too up when things get hot. Remember to hang your feet or handgrip objects.

Buy a fresh pair of 10-inch black electrical insulation tape (EIA-102-102-102) around the AT-102 in order from the upper end.



Then, slip a 1-inch long rubber tube over the end of the antenna section and fit it snug over the insulation tape. The rubber is able to hold your feet against out of a place of the "tooth" inside diameter being off or simply with your center.

If the tubing's on way, you should have no luck if it sliding down the antenna section. Hanging off out and longer and take a lot of the heating ground of the antenna.

### AT-102 SIGNAL

You'll need reasonable up on your FM if you have an AT-102 antenna for about 10-100 meters.

Keep the antenna out of the antenna closest to the antenna length. The antenna's the end handle coming out. After clearing, a bit of white electrical insulation tape (EIA-102-102-102) around the AT-102 antenna section. You'll also have to remove the AT-102 and AT-102 antenna.



By the way, your organizational support can get a 2-in. (EIA-102-102-102) or 2-in. (EIA-102-102-102) size of the compressed air of D-102-102-102 (EIA-102-102-102, 4 and 1 Aug 85).

Leave your AT-102 up in the 1000 open space. Be—do it down and leave it clear to prevent fire from or anywhere in night back overhead situations.

It's no secret, though, if you keep down some debris on the M-102A, -107A, and -108A sections clean and lightly coated with silicone grease. The grease'll help keep the sections from freezing together.



Another important tip for cleaning the inside of the engine is to use a spray-on degreaser. This will help to break down the oil and grease that has built up on the engine's internal parts. Just spray it on and let it do its work.

Remember - the T-40 is made of aluminum. So, be careful not to use any harsh or alkaline cleaners on the T-40. Always use a pH of 7-9. 40-42.



Another thing that'll make these jobs stick up is a technique using a wedge or plug to force the two valves together. That right is right enough.

Also, when the various sections are done and out of the boat, slip the various hose cap (PN 3009-304-001) over the rubber sleeve of the hose section. In case you've built out of a cap, cut off the end of the sleeve with a piece of tape until you get another cap.



A good place for storing these little old caps when your section's up is over one of the tube connections of your M-102 or M-104 receiver-transmitter or tube connections of your M-101.

Last, but not least, keep an eye peeled for loose hanging objects and you'll avoid a lot of tears.



BRAND NEW...  
ALL NEW,  
**LINE ITEM NUMBERS**

You heard right,  
it's here at last.  
A single, simple  
line-item number-  
ing system for all  
Army equipment.

The new system  
starts from scratch,  
and gives us from  
a line-item number,  
which will stick to  
it throughout the  
life of the item.

This means that  
maintenance direc-  
tions (TOE's,  
TDA's, etc.),  
property records  
and supply status  
reports (AR 711-5,  
AR 711-148) will  
all use one and  
the same LIN for  
any item. The  
same LIN may also  
apply to maintenance records  
(TM 58-758) at a  
later date.

The big change-  
over is effective  
when DA Head-  
quarters gives the  
word — or waits  
for a circular on its  
implementation.



Most likely . . . you'll be working the new LHM's gradually and changing your records according to your local RHP.

But, your big buddy in the change-over operation is IRS 700-10 (June 69). If you didn't get it thru pipeline distribution, you'd best order copies right away on DA Form 17.

Then, to make sure you get future changes and revisions on pipeline, grab a copy of DA Form 11-54 and write the number of copies your outfit will need in the block marked "This List of Adopted Items."

The 10 lists the new LHM's for all items, and it's loaded with all kinds of vital cross-reference info. For example, it provides an index for cross-referencing the old LHM's to the new ones. It also covers the FG's to new LHM's.

HERE'S A SUMMARY OF SOME OF THE MOST-LOOKED-FOR CHANGES ON THE 700-10.



CROSS-REFERENCE OLD LHM TO NEW LHM				
NEW	OLD	NEW	OLD	NEW
11-11	11-11	11-11	11-11	11-11
11-12	11-12	11-12	11-12	11-12
11-13	11-13	11-13	11-13	11-13
11-14	11-14	11-14	11-14	11-14
11-15	11-15	11-15	11-15	11-15
11-16	11-16	11-16	11-16	11-16
11-17	11-17	11-17	11-17	11-17
11-18	11-18	11-18	11-18	11-18
11-19	11-19	11-19	11-19	11-19
11-20	11-20	11-20	11-20	11-20

ADMIT ADOPTED ITEMS (if needed)	
LHM	QTY
11-11	100
11-12	50
11-13	25
11-14	10
11-15	5
11-16	2
11-17	1
11-18	1
11-19	1
11-20	1

ADDED	REMOVED
11-11	11-11
11-12	11-12
11-13	11-13
11-14	11-14
11-15	11-15
11-16	11-16
11-17	11-17
11-18	11-18
11-19	11-19
11-20	11-20

HERE'S A SAMPLE OF A SUPPLEMENTAL IDENTIFICATION OF A FORMER EMPLOYEE'S DATA.

**SUPPLEMENTAL IDENTIFICATION DATA WITH CROSS-INDEX**

EMP. IDENT. NUMBER	LN	EMP. NO.	EMP. PREV. NUMBER	EMP. PREV. NO.
00000000000000000000	00000	00	00000	00000
00000000000000000000	00000	00	00000	00000
00000000000000000000	00000	00	00000	00000
00000000000000000000	00000	00	00000	00000
00000000000000000000	00000	00	00000	00000
00000000000000000000	00000	00	00000	00000

**NEW LN MAKE-UP**

The new numbering system uses a basic six character identification number which is made up of four letters and two numbers.

The numbering system must be sequential, like so:



**A00001 to Z99999**

Simple as that.

The only letters it skips are I and O. This is so in data processing the cap I won't get mixed with the figure 1 and the O with the zero 0's.

The new system allows equipment listings and records to be easily set up in alphabetical and numerical sequence.

Basically, of course, all the new identification documents (TOI's, TID's, ICI) will show only the new LN's, but until the documents are revised, get yourself a copy of the new SR and bring us to it . . . until the old system is completely updated you'll be living mighty close to the new SR.



# DD 314

## RE-SCHEDULING



Dear Mail-About,

Some say I should re-schedule periodic PM services on DD Form 314 each time I fail to get a service completed on the day it was scheduled. Others say there's no need to change the schedule when a service is completed a day or two early or late.

Who's right? I'm in a haze on this.

Signed M. E. C.

Dear Sergeant M. E. C.,

Just keep within the rule in para 3-4.2.2 of TM 38-750, and don't turn your tail into a whiplig in a whirlwind.

As long as the service due is completed within the allowable 10 percent variance (early or late), just leave the next service scheduled as is.

If a scheduled service is advanced or delayed more than 10 percent because of emergency or other special conditions, then re-schedule the next service due.

*Handwritten signature:* Handwritten signature in green ink.



## Connie Rodd's BRIEFS



### Amuse Pals

FM 9-4 (Jan 65) "Amusement Service in the Theater of Operations" superseded FM 9-3. And, W 9-2348 (Apr 65) "Amusement Storage and Handling" was replaced by 9-2120. Make a note of these changes in the list of amendments on page 26, of PG 121.

### 4-87 Movie

You can increase your low-voltage circuit tester know-how with TF 9-2350, "Low Voltage Circuit Tester." The 33-minute black and white film explains the construction, use and care of circuit testers you're authorized to use. Get it from your local radio-visual club section.

### What's the Score?

When using your Beaver (314) according to TM 35-1518-103-1000C take an automatic 10 points on the generator until it's taken out of the ESC. The generator's set a fine change heat, but not. That's the gump in Col. Storage TM 361 (9 Aug 65).

### The Best Is Right

When it comes to saving time, nothing beats 33 P-128 (8 Feb 65)—and you supply types don't have a moment to lose! The 33 says until 8 Feb 65 all communications wire watches, messages, telegrams, FM 4641-203-2007, are to be returned through supply channels to Frontford Arsenal, Philadelphia. There, the engineer types can give you a going-over to see how they can be improved. They read all the watches they can get. The 33 gives you the details and the advice.

### WSP Storage Kit

New 41 21 16 has tracks that did not get certain and down as part of their basic issue items (CIB), can get them as outlined in 33 P-16 (Feb 65). This 33 DC's using self-top (Stora) kits in areas where the average winter temperature is  $-40^{\circ}$  to  $-57^{\circ}$ ... when authorized by (WAB) your command. When ordering the kit, check on materials, use the FM's given in Change No. 1 (Apr 65) to TM 3-2000-218-2007 (Dec 63).

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

A woman with blonde hair, wearing a red Santa suit with white trim and a matching hat, stands in a snowy landscape. She is holding two generators. The one in her right hand is yellow and has 'GOOD' written on its side. The one in her left hand is green and has a sad face on its side. A speech bubble above her head contains the text 'EVERYTHING NEEDS A LITTLE SOMETHING... AND SOMEBODY!'.

EVERYTHING  
NEEDS A LITTLE  
SOMETHING... AND  
SOMEBODY!

*And that goes  
DOUBLE for  
things like  
Generators,  
Battery Chargers,  
Pumping Units  
and such, which get the  
short end of the  
maintenance stick  
unless somebody's  
in charge.*

WHY NOT TALK IT OVER WITH THE 'OLD MAN' ABOUT  
GETTING EVERY PIECE OF EQUIPMENT ASSIGNED TO SOMEBODY  
FOR OPERATION AND MAINTENANCE.