

Issue 183

PS

1968 Series

**THE
PREVENTIVE
MAINTENANCE
MONTHLY**

WORLD
YOU
RELATIVE
... A
RECOVER
BROODING!



Dirt will do you in.
It will if you don't watch
out.

Just about the worst enemy of the Motor's fleet Army Equipment is dirt. You find it in and around your equipment in the form of dust, mud, rust, sand, leaves and trash, and things like grease mixed with mud, dirt and oil all the rest. Even water becomes "dirt" when it gets in things like fuel or oil.

So, before, during and after your battle with the enemy—especially before—you've got a big fight with dirt. And it's one fight that you've got to keep at sight and stop.

Keep your rifle clean. Keep dirt and water out of your rifle. Clean, change or clean your air, oil and fuel filters. Keep covers, ducts, plates and the like as snug as dirt won't sneak into your equipment.

Use a rag to wipe away dirt, dust, water, oil or anything else that gets where it can foul you up. Clean off dirt at every stop.

You can prevent lots of trouble if you carry on a personal war with dirt. Never let it do you or your equipment in.

It's good PM to fight dirt.

DIRT



PHOTO BY BARBARA

Remember when you need a maintenance or replacement for an article that can be PM Magazine for you? It is not a simple PM can use. PM Magazine is loaded with articles on equipment, hand-held maintenance and supply. Primary complex do it own equipments used by military units in the Army.

PS

THE PREVIOUS EDITIONS OF THE PS MAGAZINE ARE AVAILABLE IN THE STORE

ISSUES 1-20
ISSUES 21-30
ISSUES 31-40
ISSUES 41-50

ISSUES 51-60
ISSUES 61-70

ISSUES 71-80
ISSUES 81-90

ISSUES 91-100
ISSUES 101-110
ISSUES 111-120
ISSUES 121-130

ISSUES 131-140
ISSUES 141-150
ISSUES 151-160
ISSUES 161-170

ISSUES 171-180
ISSUES 181-190
ISSUES 191-200
ISSUES 201-210

ISSUES 211-220
ISSUES 221-230
ISSUES 231-240
ISSUES 241-250



M1 COLLIMATOR

GEM OF THE ARTILLERYMAN

No doubt about it . . . your M1 Infantry aiming reference collimator is a real jewel.

And why not, when with the way it's used for instant laying of tube artillery weapons by setting up an optical reference line you can read to measure deflection angles of the weapon.

Pure and simple . . . its mission is to establish an accurate reference sight or line. It does this with a special scale which can be illuminated—day and night.

In a few words, when you do it mark the number on the collimator scale to the weapon's panoramic telescope sight. The collimator deflection is set on the panoramic telescope and the scale is extended until you are sighting back on the collimator scale, with the scale's angle reading.

You're right . . . you don't need aiming post and reference when you have the M1 collimator. Add one, tho. Keep your aiming post handy. They're great for setting up a target area post through all 6000 miles.

HERE'S HOW YOU'D MAKE USE OF YOUR M1 COLLIMATOR TO GET YOUR TARGET AREA READY.

INDICATE THE COLLIMATOR BEING USED AND THE NUMBER.

MAKE SURE LIGHT SOURCE IS ON CORRECTING SIDE.



WEATHER PROOF YOUR TARGET AREA.

MOUNTING BASE

The leads screw slide below the elevation yoke changes the azimuth readings. And a knurled screw near the azimuth changing knob lets you make fine azimuth adjustments.

At the top of elevation yoke are two more knobs. When you loosen the elevation changing knob, you can elevate and depress the collimator from 11 to 91.2 mils. The other knob lets you pivot the collimator for cross-leveling.

ELEVATION CHANGING KNOB — Knob doesn't lock. When pointed, collimator is aimed down at elevation ... when turned, collimator should lock at 91.2 mils.

YOKER BEARING — Cracked pinlet mounting yoke attachment hole, wrong diameter and pin missing.

AZIMUTH ADJUSTMENT SCREW — Lock hard to turn, missing. When screw is turned, the collimator assembly ought to move about 1/16 inch to other side of its center of rotation.

LEADS SCREW HOLDING — Leads screw corroded, bent. 1/16" missing, correct lead time, loose in housing.



CROSS-LEVELING CHANGING KNOB — Knob doesn't lock. When locked, you should not be able to rotate collimator to align with average target markers ... when unlocked, the collimator should rotate.



CRAMP ASSEMBLY — Tens, missing.

AZIMUTH CHANGING KNOB — Can't be turned, doesn't lock. When unlocked, you should be able to quickly move collimator assembly on the 1/2 inch lead ... when locked, you shouldn't be able to move the collimator assembly.

"YOU DON'T WANT TO COLLIMATOR IF YOU'RE NOT IN SIGHT."

The tripod mount's job is to support the collimator assembly — once it's fixed above the ground. The tripod legs can be telescoped and set at different angles so that you can level the collimator assembly.

BASE PLATE — Cracked, strike burst. Missing plate can't be used. Missing screws and nuts loose, missing washer and pin missing.

TRIPOD — Legs bent, can't telescope in or out, can't hold up against wind. Wind vane, missing washers, nuts, missing screws and nuts loose, missing washers and pins missing.

EXTERNAL CYCLE

There are 2 ways to get electrical power to the 12-volt lamp in the collimator assembly so that you can light up the reticle. When the collimator is used with a ground weapon, the power comes from a BA 300's dry cell. In situations that go to make up the 100 heavy power supply. The 100 battery — day's each 4-100 — are hooked up in series parallel to provide 12 volts.

With self-propelled weapons like the low-number 1000 batteries, it's the vehicle that makes with the DC power. It has — or will have — a collector to plug in the ground contact light source.

Turning the lamp on and off is the job of the remote-control light switch. This is done with the pushbutton switch. And the element is used to brighten and dim the lamp light.

The connecting cables speak for themselves. They tie in the millimeter assembly, remote control light source and MY battery power supply.



MY BATTERY POWER SUPPLY—Case cracked, dented, paint missing, labels and carrying handle broken, missing, battery terminals weak, good battery connections STRIPPED, loose, dented, replace lens, etc., corroded, test OK.



REMOTE CONTROL LIGHT SOURCE—

Paint missing, case dented, cracked, rivets and screws loose, lens lens knob missing, lens yellowed and dirty, loose, missing, pushbutton switch doesn't click on and off, lamp is millimeter assembly doesn't go on when switch is pushed on or becomes brighter and dimmer when rheostat knob is turned in one direction or the other, holder on cover assembly bent out of shape, heated screws and nuts loose, missing, washers missing.

CONNECTING CABLES—Frayed, loose in case, broken, broken, connectors corroded, test OK.

USING A COLLIMATOR



HOW ABOUT YOUR SUPERVISOR? THE COLLIMATOR HERE'S HOW YOU SET IT UP!



After the weapon has been held for alignment, you usually can replace the collimator anywhere from 13 to 48 feet on the left face of the panoramic telescope. You'll probably find, though, that somewhere between 17 to 25 feet will be the best distance.



With the collimator about where you want to set it up, loosen the strap on the instrument cover and let the tripod legs go to the ground. (Watch those legs—they can't take rough handling.) Then open the latches and take off the cover.

The collimator should be replaced as steady as possible. Also try for a good leveling job, but one real screw here means the vehicle can be zero-levelled separately.



Now loosen the vehicle and direction-changing knobs . . . and move the collimator—at the same time looking down the front and rear sights—until the optical system is aligned on the panoramic sight of the weapon. Then tighten the knobs.

Next loosen the collimator changing knob and swing the collimator carefully on its axis until the vehicle pattern is cross-levelled. It is when the bubble in the cross-level vial is centered . . . tighten the changing knob.

With your covering rubber hooked up, you're all set to light up the vehicle, make final adjustments and put the collimator in use.

Want more your instrument? Do your adjusting by daylight, if you can. Take off the lamp housing and let the daylight illuminate the vehicle for you.

UPPER AND LOWER

To get accurate firing and referring, you should be able to see a vehicle area of at least a 7-mil diameter at all times. And you can usually see this much of the vehicle when the collimator is that 17 to 25 feet from the weapon telescope.

After the collimator's been aligned with the weapon's reticles, your right picture should look like the initial alignment picture on the right.

The "V" look of the picture shows you're left or right-displaced from the weapon even though you can see only a small section of the picture.

To correct the displacement, you want to sight on the collimator and match the reticle of the reticles with the collimator reticle picture. In other words, if you see 10 and 11 in the collimator and the reticle slopes up from right to left, you match the left part of the reticle with the collimator reticle picture.

If the numbers don't fit, you're on the wrong side of the collimator reticle.

Suppose the weapon jumps during firing. All you have to do to bring it back to the right direction is reverse it until the reticle is again aligned.



AMTS AND PUBLICATIONS

You'll never get bugs except from coloring collimator parts. You can replace the 11-volt lamp, P/N 4248-133-5485, for lighting the reticle with turret auxiliary . . . the 24-volt lamp, P/N 4245-136-8276, for self-propelled weapons . . . and the 28V/20 amp coil battery, P/N 4111-280-5285, for the 28V battery power supply. That's it.

As for publications, there's only one — at the moment — that has maps on the collimator, at least for firing batteries. That's TM 5-10 5-134-11 (Mar 68) — for the M103 105-MM assault light howitzer.

HOPE MEET

There are steps on the collimator to keep it from going over due to vibration or depression. Please use to light the steps.

It's been said before . . . well here it is again. When you're not using the collimator, put the cover on.

Keep all exposed parts clean and dry.

If any thing gets there on your collimator from paint peeling or getting shipped off, get out the spray can or brush and get a do-it-yourself can on it. Besides protecting the metal, this'll help keep Charlie from spoiling your work.

Any paint will do in a pinch, but try to use Enamel, silver drab available, Mo. 10887 . . . P/N 8048-207-2114—Legal can. It's listed in Change 1 to your M&E booklet's T8.

Ease up when any of the different knobs on the collimator have been turned as far as they can without more touch.

If you have the time, bury the connecting cables a few inches in the ground for protection.

Clean the optics with lens paper and alcohol. You can get 100 Tall Lite sheets of the paper from Fed Car 6880X/6882IL (J Nov 66). They come under P/N 6048-119-1143.

Although alcohol will do a real good job on the optics, Cleaning Compound, optical, lens, liquid, is also a good bet. P/N 6850-211-1887 is worth 1 quart. It's on page 444 of Fed Car 68804L (J Jul 67). One thing about the compound, though . . . it's not made for freezing weather.

You don't need an actual guard, but it pays to put something like a rope around the collimator to keep people from walking into it. The guy who usually manages to knock down or just move the collimator shouldn't put it back where he thought it was and flag it. New settings will be in order. Report it.





To help prevent this, keep these tools covered as much as possible. When not in use, keep them in their cases. If they've got to stay out on equipment, keep them protected from a direct downpour. Keep them as dry as your situation will permit.

One of the most important things to remember — no matter what part of the world you're in — is to stay away from disassembling or making adjustments that're not spelled out in your TM.

A FEW POINTERS

How to Tell How

How about connecting me?

Just what is the story on cables and how the microphone pointer is supposed to look on the M21, M20A1 and M20B1 network indicators? Does the pointer work the same for each indicator?



How to Point It

The M21 microphone pointer will follow the speaker knob around the scale when the speaker knob is in its normal (up) position. But with the M20A1 and M20B1 you have to push down on the speaker knob to raise the microphone pointer.

If things don't work this way with your network indicator, tell your sergeant.

How to Point It

AIM TO PLEASE

What do you do when the needle for your M1 stinging circle acts up—the sticking or not returning to the zero point after going all the way in one direction and just as far in the other?

Right . . . you send it up the maintenance line for a going over. Maybe the pivot or needle is dirty or the pivot point is flat or the needle is misaligned or the pivot assembly was damaged when it was made.



You say something's pulling the needle away from magnetic north? Before you send the stinging circle back for repair, check it for simple functions. Things like motors, generators and heat in the ground can make life a magnet.

And when you're not using the stinging circle, lock the needle with the locking lever and put on the cover.

BUBBLE DANCER



If you're buying your auxiliary with your Brunson Model 500 chronicle . . . and maybe it'll stretch when you have the bubble in the vial covered, the thing goes out of adjustment. The bubble just plain won't stay covered.

Hardly for a simple FM cover!

Thereas. That's right . . . the man's head can drive the chronicle out of adjustment. So . . . keep it closed.

BE REAL BOSS
WITH REALS — TRIFTS ...

DANGEROUS WHEN ARMED

Hey, you military guys
... and all you guys
who pass the ammunition
... especially
mechanical-time
repeatability (MTRQ)
and point decreasing
LPI's faces
and any faced arms
— spread this warning!

PLEASE
DON'T
FORGET
TO
CHECK
THE
MTRQ
ON
YOUR
MTRQ
...
MTRQ ...

... NEVER
WIFE OR
KIDNAP
ANY FIVE
OR FIVE
ROUND
ROUND
RAPIDLY.

Without meaning to, you could turn the face and then any rough handling or dropping after that could set it off ... with loss of life, liberty and pursuit of happiness — plus equipment.

Armory faces, y'know, require attention, or trouble — or a combination

when you screw it by hand or with a wrench.

If you spin it so that you let go of it — or if it pulls on the face — (and, dear's TRIFTS — and dangerous if any MTRQ or larger round gets spun at a rate of 500 rotations per minute — it's armed.

What you want to remember in this case of these faces is that because with enough powder in 'em or blow your hand off. They're dangerous as soon as they're armed. Others, without these features, become dangerous if armed accidentally when somebody — you, maybe — goes to assemble it in a round.

So, no fooling with faces, yep!

of both — the timing. This timing, though, must be done slowly — like



BEFORE YOU ELEVATE



It's a reminder time for you guys who do your shooting with the M107 SP 175-MM gun or M107-SPF in tow.

That is, watch what you're doing when you elevate the weapon to keep from hammering the effort on the M111 gunnery telescope, the M157 telescope mount or the main mounting bracket for the M107.

If the turret manual (or even your handbook) is in line with the scope and mount, it's going to do some shuddering when you elevate.

In other words, move the handbook out of the way before you elevate so you won't wind up being depressed.

THE STOPS STAY IN

Watch it, Max, you'll goof the mission if you take the stops off the rotatable mount of your M100 or M100A1 mortar carrier to gain extra traverse. Bad idea, buddy.

Those stops were put there to give you a safe area of fire—82° with right and 77° with left of center.

If you take out the traverse stops, you'll end up firing your 107-MM mortar at dangerous angles of traverse. No kidding, the firing pressure against the side of the hull can ruin you with loading, warping and maybe even breaking the hull welds to boot.

What's more, the stops can get themselves hot pretty fast after you elevate 'em. They're one-way ... meant to last as long as the carrier, maybe longer. Losing 'em would not make elevation.

So, lower 'em, ho, hold!



NIKE HERCULES

FOIL MOISTURE

It's mighty easy to accidentally break the foil seal on the XMS electric spools for your Nike-Hercules (MSR and BBAH) rocket motors. And if the foil spins open, moisture gets into them. Moisture-corrosion and then the electrical circuit goes to pot.

To prevent trouble for spools with caps,



CLEAN SWEEP

Nothing like heading off trouble before it starts in your Nike-Hercules AM/MPQ-TJ cluster motor.

Drawers . . . and a brush in the PFI motor assembly. Without help, the gear teeth in each yoke drive will bind and the wrap on PFI rings and flying eye tubes will flex.



You can do it by adding your support people—every 300 days—as often as 4 gear bearing lubes in each yoke drive. There's a yoke drive in each of the 3 positive interconnect gears

When your support tech gets your DA-3000 2407 Spins order, it will go to work on the gears with ready-to-hand distributive grease, MS-54-1900. Get On 42488-01. Top 01's shows PSM 9100-751-4908 in words a 1-8 can.

OIL + ARC = TROUBLE

It's one thing for you to get oil laid up over something, but when your Nike-Hercules magnet-actuating motor starts spooling, flames, that's another story.

And this is what you happen if the L1 and L2 motors and the T3 and T4

shocks and adjustments on the TR, are if there's a lube in the position and maintenance. Also be on the lookout for oil coming from the bulk head wire sealant. And look for frayed wire insulation and loose electrical connections around the trigger cables and transmitters.



blowout transformers in the modulation mechanism come apart at the seams and spill oil.

So when you make your weekly



PAYS TO SPRAY

You can come up with 12 cans of the fix in trying to take moisture across one of the motor doors on your Nike-Hercules motor.

Since that same water in the supply system are under a coating of dry film lubricant, and without this stuff, the system can just plain rust to get out.

You can spot these across too—only have a set of gold or silver balls. And before you get up to a minute, spray these with dry film lubricant. You'll find a 12oz can of it on page 44 of TR 9-140-248-100/171 (Apr 67) under the name Graphite, Colloid.



THE RIGHT KIND OF PULL

You've got to have a pull — the right kind — when you give a wire that kind of polished wiring assembly you find in electronic drawer "A" of the operator's console in your Nike-Borewin ANV MPQ-11 radar detection system.

The wrong kind of pull is the kind where you pull on the assembly with



your fingers and, at the same time, shove it up and down so that the connector pins on the plug from the jack on the drawer assembly. The guide pins can't take this kind of jiggling . . . and it's also rough on the connector pins.

The right way to remove the assembly is with your connector tool.

To grip the assembly edge . . . here you pull it straight out — easily.



The tool's also the thing to use when you want to remove an connector board from the drawer. And, you can't get



wrong in separating a wiring assembly board from an connector board by gripping the assembly with the connector, but don't do any jiggling.



If you happen to break a guide pin, don't fiddle around with the wiring assembly or connector board it was on. You manually lugger up the connector pins without the help of the guide pins when you go to put the assembly or board in the electronic drawer.

A BUSTED (OR
REMOVED) YOU NEED
A NEW ASSEMBLY
OR BOARD!

CUT IT OUT

Over 100,000.

The plastic storage bins across all our right-hand-side units feature extra thick, clear polycarbonate lids to stand up with replacement. Whether for our support unit.

102, A, B, C

Over 100,000.

There's nothing there are our ready-made covers. Your DSI has to get a sheet of plastic and run you around the yard.

102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.

Half-Off



You say you've got the new metal joints for the light fixture assemblies in your Nike-Borewin radar units . . . but you're still having bearing assemblies — like bearing and lugs!

Try this. Check the lugs. If they're 50-year-olds, switch to the 24-year ones, the kind you find under PSM 5246-145-0000 on page 50 of TM 9-1180-212-24F (Rev. 55).

THE RIGHT BOLT

Over 100,000.

Just when additional bolts are we supposed to use to secure the hydraulic pumping unit in our Nike-Borewin units — 102, 103 or 104, 105?

102, A, B, C

A KELLY
WILLIAMS
CONCRETE



Over 100,000.

You want the ANV-154 — the one that's 1 1/2 inches long . . . grade 5 PSM 1506-21-2000 . . . and it on page 24 of TM 9-1180-212-24F (Rev. 57).

Half-Off

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WELL, COME TO
MILITARY SERVICE
OUR CUPOLA FROM
THE INSIDE!

OH
THANKS!
I'VE COMED
FROM OUR
INSIDE!

In Vietnam you may have problems with the M1 cupola, that you can't get in both.

Like fungus . . . for fungus fighting you need white cloth and plenty of straps. Rub everything as often as you need to—even daily—because fungus can grow on anything that is not clean.

Trying to fix it the easy way by putting oil on the rag will definitely not work. Oil is a treat for a fungus. It makes him so happy that he multiplies by the million.



He likes oil and shiny things. What he doesn't like is dry stuff that gets rubbed down often with a dry cloth and he will not hang around a place like that.

If some of your cupola electrical equipment is not working right, to save the power it GFI, and then make this fun. (rethink) check before you bother the help.

Is it
working
right?

Is it
connected
and in the
right place?

Are wires,
connections
or terminals
grounded
or broken?

Are electrical
parts mounted
out of level
right?

Once you make sure your trouble is not in any of the above, you'll need lead for the experts. After that, though, you can fix the trouble yourself.

Your repair notebook can help with problems.

1 Take from the electrical control handle can be used as it can be to check it steps in the control hub.

A cable with correct slack can be strung up in the line clamp. Be sure to leave enough slack for the free operation of the wire-jack handle.

A replacement cable is ordered in which, correct wire-jack handle may, 800-368-555-6667, as listed on page 1-224 of TM 9-2390-206-20P (Jan 88).

Metal parts of the connector have to be wiped clean of dirt or fungus. Rubber parts of the connector need a thin film of rubber grease that comes with the electrical repair kit, or you can order it as FSM 5009-124-5177, including compound, electrical, tube, small (1) and BELL-8486. You'll find it in Ford Car CROWN-L-4 (Feb 87) on page 4-5.



WIP THE WIRE, RUBB, WIPIN GREASE AND WET.



WIP & COME
OF WIPING
HERE

THE
MATERIALS, WHICH
WEIGH 17 OUNCES ON
THE SCALE OF THE
REPAIR KIT, PROTECT
IT WITH THEM!

2

Wipe the wire under the electrical grease placed on the underside of the caplet and when the gas is fully depressed.

Run the wire under the electrical instead of on top of it. To do this you have to have the late model electrical FSM 5009-124-5004 (FAM 870-9112) because it has the wire guard that makes this possible. If you need to order it, it's on page 3-557 of your JSP TM.



To grease the electrical against water and fungus, first make sure its surface is absolutely clean and free from oil and then coat it lightly with the wackol listed on page 41 of Ford Car CROWN-L-4 (Jan 86), FSM 5010-105-7577 goes you the 1 gal can and FSM 5010-104-7575 the 5 gal can.

(Note: This is an oil-fungus wackol 881-5112 and gives off a poisonous vapor as it is being applied. So, use, keep the caplet dry and breathe lightly for the few seconds it takes you to apply it and keep it off your hands.)

AAAH



If some jokers have put an extra lead between the machine gun and the rail card, disconnect it. It is not necessary and can only do harm.

Get the rail card in a position where it won't hit anything sharp that would cut it as you swing the machine gun around.

3 Capsule slip ring and brush boards may need cleaning.

Remove the capsule until you have one of the 7 brush boards in sight. Wipe it gently with a wet cloth, check. Now do the same with the other one.



Note: These brushes are as fragile as battery strips, and you have to keep that in mind all the time you're cleaning them. If you break just one of the 7 brushes the whole harness has to be replaced. Wipe with your cloth in the direction of the brushes, not across, or you'll break 'em for sure!

If, after cleaning, you can't check the brushes and boards, wires, or otherwise get in for service, call your supplier to replace 'em.

It might be that your support standards can save the brushes by lightly furnishing them with grease cloth. This is a regular-type operation that has been outlined for, or by him do it.



Note: When taking, make sure all extra power is removed from harness before you, knowing you too, make your own safety gear. Don't drop or be off step power on the brush boards or terminal board or give you a good electrical connection!





You clean the terminal boards by gently working a soft cloth between the ring and sleeve body at the capote opening while a buddy slowly rotates the capote.

Don't be careful with the cloth and keep it from getting caught in the bracket.

After you have cleaned the terminal boards, eyeball them while your buddy rotates the capote. (You might find a flashlight will help.) Look for wear or damaged places on the rings and between the rings.

If the terminal boards seem too badly beat up, get your support to assess 'em or replace 'em.

When support replaces brush boards or terminal boards, they will also check all electrical hardware in the capote and replace any that need it.

4 Some hardware in the capote may be plain worn out.

If support does not check them, ask your company tower mechanic to help you do it.

A harness that has been painted over may have cracks in the joints where the harness has flexed. This kind of crack is OK, and should not be mistaken for a crack in the harness itself.

Be sure to flex each harness before you decide if it is OK or not.

If wires are exposed through the insulation, replace the harness at once.

When you're putting a harness together, use the insulating compound on the rubber gaskets of connectors but not on the metal gaskets which are to be wiped clean with a dry cloth.

5 Some grounding needed between capote body and craft.

Some capote machines get wet sometimes water and rain because of a temporary "open" in the electrical ground which goes through the terminal brackets.



It's a reliable ground that will work all the time, ask your selected company mechanic to make a ground strap out of these parts that are listed in TM 9-3148-104-HP (See 66).



QUANTITY	DESCRIPTION	PART NO.	PRICE PER	-EST PART NO.
1 ea	hooked	796070	796-05-440	3-171
1 ea	hooked	796070	796-05-440	3-171
1"	bolt	796470	496-05-447	3-171

It will attach around 796070 to the cradle bearing steel with two 1/2" maybe 3/4" if they are that 1/2" with nut. The other around 796070 will be fastened to the cradle by a screw that is already there for mounting a port-coupler linkage bracket.



USE A GOOD GROUND POINT
NOT ONE OF THE OTHERS.

BREAKS OF THE GAME

WE WANT TO KNOW DO WE HAVE A FUEL INJECTION SUPPLY COVER PLUMP?

There's nothing like being stuck in the middle of nowhere with a vehicle that's not going to move until you replace a part or two.

And that's just the spot you might find yourself in with a 44,000 model fuel crack if you don't take a look now and again at the cover for the fuel injection supply pump.

Loose engine mounts — or loose steering gear bolts — or a combination of these things can cause the head of one of the bolts for the steering-gear-bearing cover to beat on the pump cover. A nasty case of this beating

can beat the pump cover . . . and this means a loss of fuel pressure as the fuel runs out of the bowl.



To check these engine mounts and gear bolts if the pump cover looks like it's making a pinging, Loose! Tighten 'em. If tightening the mounts and bolts doesn't help, ask your support people to see if they can find out why the cover is getting chattered.

JOE'S
DOPE

THE UNDISCOVERED - HUMANITY'S

ENEMY

PHOTO
LABORATORY

BOBBIE!
I'M
LATE, DON'T
WASTE
MY TIME
BY
WAITING
OVERTHERE!

DO YOU
LET'S
GET THE
MONEY.
NEEDING TO
CAREER... AND DON'T
WASTE MY TIME!

BOBBIE

BOBBIE

BOBBIE



I'VE HAD A PRETTY SUCCESSFUL YEAR... THE TROOPS HAVE BEEN OPERATING IN SOME PRETTY BUSY AREAS.



...I DON'T EVEN CARE TO TRY BOMBING, MISSILE STRIKES, JETTY CANNON BATTLES, ETC.



NOT ONLY THAT... BUT LOOK AT THESE PARASOLS AND BROLLIES!



NOTICE HOW MAJID AND MAJID CRASH UP THE BRIDGE, LINGS AND CRUMBLE!



NOW... WITH THE SUN STOMPERS... ALL THE BIRD FEARS D'AND DIRT... LOOK AT WHAT HAPPENS!



SEE HOW FAST BELOW UP IN THE AIR FITTERS OF TROOP BARRON AND ELECTRONIC EQUIPMENT!

THIS UNIT... SOME OF IT
CAME UP HARD BY NOW...
TURNS A SCOUT WILL...



AND COOKS OFF AIR FROM
FILTERS - THAT'S AN OXIDE...
AND THREATS BLEW OUT FROM
LACK OF OIL!



LOOKS LIKE SOME THRU-CLOSER
ENGINE AND FILTER BURNS UP
FUEL ENGINE PARTS BY GETTING
RED OIL AND MAKING IT AN
ABRASIVE!



WTF BEST NOW
IS WHEN EQUIPMENT
AND HANG-UPS
LEAF ON THE
GROUND - I GET
IT TOUGHER UP!



EXCELLENT!
YOU MUST
HAVE OBSERVED
WEAP EQUIPMENT
THAT THE SHOOTING
WAS!

I FOLLOWED ME,
ONE... SOON I
WAS BUILDING
YOUR STORY
THEIR PART OF
THEY IS
SHORT!



MEANWHILE

UNDERMONEYST (understand?)
TO THEM...



WTF, DON'T
TALK FANG
THAT I
BARE THE
ONLY!

Joe's Dope Sheet



To your equipment
the enemy's dirt,
lock-of-lube, letso heat
-they can hurt!
So lube often
....keep em clean,
Constant care's
what we mean!!
To all conditions
you must be alert!

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

IF YOU WANT TO DISPLAY THIS ADVERTISING ON YOUR WALL OR BOARD, AFTER READING, LIFT IT OUT AND PIN IT UP.

WALK TO THE

NOTICE HOW THE "COOLERS OFF" BUILD REVERTED TO ... ARE IN-OPERATION ... HEAT FROM THE WORKING EQUIPMENT IS KEPT IN AND BUILT UP!



SEE, THEY LEAVE ENGINE SHROUDES OPEN!



AND COOLERS DON'T COOL, THEY SHUTTER BEFORE SHUT DOWN AND THE HEAT BAKES FROM HEAT!



... LET COOLING SYSTEMS GET POOLED UP!



BREWER SYSTEMS ARE ALLOWED TO COOL UP!



THEY DON'T GET JOB AND BACK TOO!

FREQUENT FAILURE TO LUBRICATE THE WAP IT USED IN THE LO... OTHERWISE LUBRICATE "EXTENSIVE" FROM SOME!



OH, WAS ALLOWED TO GET LOW IN THE COOLERS. THE SYSTEMS THE BEARING FOR OIL...





OUR METAL PARTS
SCRAMBLING AGAINST
EACH OTHER... HER,
HE'S... FRICTION
CREATES METAL
LIKE GILLY.



TO BE FORCES
WITH
THAT... DON'T
PUSH THAT.



WHEEL BEARINGS ARE LEFT
TO RIN WITH WATER AND
DIRTY GREASE.



THIS CAUSED LOTS OF SEVERE
DAMAGE TO BEARINGS,
WHEELS AND BLADES.



WE SHOULD HAVE
BE WARNED THEY WOULD
TO PUSH OUT OLD
GREASE WITH
LUBING
DISPOSAL.



HEY
FELLERS
WE'RE
FOR!

IT'S NO PROBLEM...
OUR LOOKOUT ARE!

SAFETY SOP FOR MINNIE



Dear Editor:

We've established an SOP to help prevent injury or death from accidental firing of Minnie the Gun on the M37 subsystem. It won't stop accidental firing, but we haven't had years of this still not stopping it . . . even though we've had accidental firings during basic assembly-type training.

Here's how it goes:

Just before loading, the operator moves the gun. Then he depresses the gun off down vertically with the action switch on the right. The trick is to keep the action switch pressed down while turning the system **RAPIDLY** from the **ARM** to the **OFF** position. That'll keep the gun in the down position.



After the slide locks, the gun can be rotated (using action control, etc.), elevated, uncocked, loaded and fired and the crew can exit and return safely.

The only potential danger spot is the couple of inches that directly under the gun mouth. If there is an accidental firing, the barrel will just dig holes in the ground.

—Dennis S. Schwartz

—A Top 100, Ed the Gun Doc

(Ed Note—Real life-saving idea . . . on real-type ground. Wouldn't recommend it, though, for hard-packed or rocky areas—barrel might shatter. Please. This same procedure could be used by ground crews for M37s already on the ground. The crew could have to start the engine to depress the gun. That's all.

If your Flory has the armament hydraulic control valve operated from an overhead breaker instead of the M37 switch-on-the-control-panel, use this breaker to get the gun to stay down.

IROQUOIS QUICKIES

KEEPING YOUR AIRCRAFT'S HULL IN PERFECT SHAPE IS WHAT YOU WOULD LIKE TO BE DOING, HAD YOU THE TIME, HAD YOU?



BY USING THE HULL AND HULL



Helicopters are ingenious, mechanical machines of engineering know-how. That's a heapful horsepower in figure-out when it gets all those wires, buttons, tubes, switches — and makes 'em work!

You're the P.M. expert that keeps the parts doing their job and those birds maintenance-free.

THE HULL INSURANCE

Every time in the hull hole when a beam is being from the air chanted up by downward from their whirling blades. Rough — collective pitch and cyclic hydraulic screws get jammed up with sand and dust. The pilot lights the chopper toward of Chasid!

You can't keep the junk from getting into the hull hole, but regular P.M. will keep it from jamming.



Normally, it's a nuisance deal to tear down the hull hole area. The parts were made to take a lot of shoving around. But if you're carrying a heavy load (like) you may have to make do and these tips will help.

An old hand pump (or siphon) does a neat job, but a well-filled portable fuel canister and pump with 10-GPM flow does a better one. Drill a hole in the copper that fits the fuel canister's 1-in. hose and you'll have pressure a plenty. Wear and 10-GPM advice is the danger to use.

KEEP THE HULL IN SHAPE



When you're checking the hull hole, be on the lookout for any buildup on hydraulic lines, connections and fittings. This could be a clue to a loose connection, stripped threads, a break, dirt or crack in the line.

Remember . . . every island, landing, hover, or general usage drains a gripful of sand and dust into the hull hole and the worst. To make P.M. more to keep 'em clean, use, oil-based



That 2-piece spiral cage air-liner screen-protecting your Huey engine looks brilliant—is designed to keep a smattering of gunk out of the turbine. Does a good job, too, so long as it stays put and doesn't drop down cases that whistling about slack.

That's when you get a meshed wire-mesh snag—FOO—Z-Z-P!

A little PM on screws, fasteners, flange and the wire screen could be the difference between a stay-put screen and a floppy machine.

Look for stripped threads on the screws that hold the 1/2 section of the ring assembly to the inlet ring. Eye the wire cage for broken wires. Any holes bigger than the coarse wire mesh and the screen gets the city breeze-in.



Not all the screws are easy to reach, especially those on the flange and Charlie models. It'll pay you to take off the side panel and clean out all the gunk crammed between cage and panel. Check for loose screws—left/right is foot right!



That thin 1/2 section won't be your chief troublemaker. Whatever! Most of your problems will be hole ones—H Gunk fasteners. Four hold the quarter section to the inlet screen and 4 hold the 2 sections together.

Check fasteners twice over. They lose strength and tension, especially when they've put in cockypuff! A PM tip—those holes on the quarter section and inlet ring have to be lined up exactly, otherwise your flange loosens and that quarter section drops... right onto your short-shaft sub-engine!

We need to make the braces the same when linking the square section to the big braches. Just make sure that you feel each brace run itself when the wire is tensioned. Holding the fuselage longer lines while using the screwdriver will help you get it right, right.

Don't forget to eyeball the braces on each section and the later ring for broken or cracked welds. Anything under here means more disassembly.



Checking the tube across each bay will stop the screw-clip—but good. If you're fuselage-mounting where the glue needs to fly or is at high as an elephant's eye, you should check this across before each suboff.

THE HIGH SPY

Your Huey's tail boom's not like a salamander's tail—which grows back if it's lost by accident.

Only 4 bolts, washers, and nut combinations hold the tail boom to the forward fuselage and if one or more bolts are loose or less, you've just about had it!



After you conscientiously check around the tube holes for hidden cracks, distortion, corrosion, and damage, take a good look at each bolt.

First, be sure there's a washer under each bolt, and that the bolt threads pass all around. Second, if you can't see at least one thread, better call support person. Same goes if you see more than 2 threads beyond the nut.

Guess you don't fly a torque wrench on those bolts, but when you know something's wrong, the rules of the game say join the word to your support unit that the bolts need reworking.



CR-1-02-02

WTF? MAKE A
SOUND-UP? THAT, IT'S
NOT JP-4.

Every carbide-equipped Army bird does and which has an JP-4. As long as you use this kind of gas-gas joint, low-and inspections come at regular intervals, depending on your brand of bird. Maintenance record-keeping comes first, too.

It's when you use an alternate or emergency fuel that an extra entry is made on DA Form 244-13, Aircraft Maintenance and Inspection Record.

Plus, you'll have to TOL-0 or TOL-04 equipped Brown avoid gasoline. No stress—the'll go for kerosene! But your heavy-lifting bird can run only 10 hours on this fuel between 500-hour limited inspections. If you use AVIOL you can only fuel her enough to run 10 hours between special inspections.

Straight unleaded or kerosene fuel or kerosene fuel mixed with JP-4 plays hell with turbine parts and could get your bird on the blink in a week.

So-o-o, everytime you use an alternate or emergency fuel remember the extra record-keeping and inspection that's due.

CRIP BAC ... WPL (DON'T WORRY)



That's right, friends/mechanic! When you're checking for oil slippage from the main rotor grips on your Huey you just want to wipe off the excess oil around the grip seals.

Never use anything—the maybe a feather gauge or knife blade—to cut around the seal. Rotate 'em every time.

Grease, run or wax in the seal will chafe the bird rotor's you can spot a seizure. Making like a surgeon could take that bird out of circulation in a couple hours!

Nothing goes around that grip seal but wipe rags, man. Guess you could Charlie mechanic ship this case, right? Right?

Well-o-o, you're taking care of a complex and expensive piece of hardware. Keeping that slapping bird blades clean and in tip-top condition is well nigh impossible. But pulling a little PW every chance you get will help keep that bird from coming wrenched in the air.

CORROSION?

ERASE IT!

AN ORDINARY PENCIL ERASES RUST LIKE A CHARM!

Up the airplane gear rack without a puddle—that's where you could be if the two voltage regulators in your Fleet 400-10 go on the blink.

Corrosion really gets us work on the regulator base main terminals and the female spring tabs in the regulator mounting base.

Tricky rid of corrosion on the 3 regulator prongs use an ordinary pencil eraser... works like a charm. But don't use a crocus cloth or emery paper because you'll remove the plating on the prongs.

To guard against future corrosion, lath some zinc paste insulating compound, electrical, SELL-BOND, and stick it on the prongs (except at point of contact with the spring tab). The compound is non-conductive to metals and you'll find it listed in Red Cat Catalog-B, at 11 Feb 67. P/N 5070-150-1500 will get you an 8-in tube, P/N 1070-224-1077 a 2-in tube... works wonders on contact plugs, connectors and terminals.

Try the eraser trick on the spring tabs in the regulator mounting base. If they've badly corroded check with your supplier. They'll remove the tabs for you by drilling out the remaining rivets and reinserting the terminal screw. The tabs are removed and put back with rivets, MOUNTED, and then the terminal screw is reinstalled. Covers the tabs are then bent to make contact with the regulator prongs.

Since a free flow of air helps head off corrosion, don't use the rubber backing on the regulator mounting base.

Hold it—erase that horizontal pencil, please!



ERASE CORROSION

HERE...





COMMUNICATIONS



GET
A

CHARGE

OUTTA
THIS

A nickel-cadmium battery popping out on you can be mighty aggravating, especially if you're supply-up in the air or dealing with a co-worker who's out on a tender mission.

Before head-scratching over it, check these batteries, though, think back to its care and maintenance and out of its PM was checked somewhere along the line. Make a mental note of a couple or three questions, like:

Did the battery get wet while being charged?



Was the cell dipped into an acid bath, or was it exposed to the fumes of a treatment?



Did all cells get out of the wet voltage leveling treatment, gas vent and other battery efficiency features?



Was the electrolyte level between 1/2 to 3/4 inch above the plates in each battery cell after charging?



Of course, there's a bundle of other questions you should ask yourself, but there'll shed light on how a jumbo-battery nickel-cadmium battery gas that way.

Like, if you know the battery took bad over during charge—either by wiring it or loading it, a lot of white powder on top—wink it the powder away, pronto, with a nylon or fiber bristle brush.



With the possibility of a large amount of electrolyte (EOL) coming around every week and away of the cells and plates of the battery, gas, replace the filler caps and check the tops of the cells with distilled or tap water.

By the battery as it sits with the battery vented to allow the water to drain off, then, thoroughly dry the battery. Its gassing helps.



Should the electrolyte spill-over be too much for this simple clean-out method, you might get an order from your supplier to get the cells removed for a real house-cleaning wipe-out.

When you don't get an equal voltage reading off each cell, don't push the gassing button.

Just discharge the battery and re-charge it once or twice until the voltage readings are steady. If you've completed the 800-4144V routine assembly, you can look up a 150-hour built-in compliance the discharge. Should one cell wind up weak or slow, get 'er replaced before dumping the juice in 'er the peak performance. A weak or transient cell will drain the life out of the battery quicker'n anything else.

With 3 hours after charging before adding any solution — and then make it only distilled water.

When the second quarterly PM period, or six months, rolls around, you might have to change the electrolyte and replace it with a new solution of 27% potassium hydroxide and 73% distilled water by weight. . . . That is, if the specific gravity has dropped below 1.270.

If you think and replace the 800L discharge and charge the battery 2 to 4 times for peak power proven.



Close the gas cap and run tubes in the filler caps or wires, before installing or re-installing filler caps, loose the vent doors by inserting a needle or paper clip inside the doors and use it around the cap to free the pointer before getting the cover back on the battery cell.



With springing the filler cap, use the vent pressure to keep from rubbing or blocking the cap or cell's throat.



Always replace the dipping cover with a filler cap before you get the battery into office or it'll go right on again through explosion or leakage.

To protect these essential systems from corrosion, coat 'em with a protective compound like ESN 800-400-8001.

Some tables on making sure of these nickel-cadmium batteries no longer in solid use:

- NOTE** you had the original 800L, 2000 or 4000 cell.
- NOTE** is the number of 1 to 150-hour PM battery or 100 1000 1000 1000.
- NOTE** get used, get on the 800L, 2000 or 4000 cell.
- NOTE** you had the original 800L, 2000 or 4000 cell.



Can one of these Xerox searchlights mounted on your Miniwin save or **SAVE COST**?

In 100-watt-hour candlepower you get plenty of headlights illumination — what a 4-watt bulb would call *glo-fo-fo-fo-fo-fo-fo-fo-fo-fo-fo* — but not if it's broken.

TM 11-4736-215-12 (Jul 47) was not kidding when it said you don't use the wipers for more than 15 seconds in any 7-mile period. In fact, it is better for your light if you can wait 10 minutes between "bursts" of operation.

Another thing that is causing a lot of lights to pull out on the wipers when you switch from one way of operation to another. You never need to do this.

The right way is to turn the wiper release switch without pulling out on it. When going from HD to TB wide position, the plunger must be depressed. But you will do not pull out on the switch. That'll keep your light healthy and ready to give you all its easy 100,000,000 candles when you really need 'em.

BUT LIKE A LIGHT!

SEE THE SPEC. & SERVICE
AND NOTE LIST OF ALL BULB TYPES
... DON'T GET NO BULBS—
ORDER 15-PIN BULBS
AND THE SERVICE BUCK
BOTH INSTANT

Swirl . . . swirl . . . swirl!

No . . . never use the 23-in Xerox searchlight's igniter by jumping a spark from the high-voltage cable to the clamp of the searchlight.

Besides setting up a voltage crash across the output of the igniter—making it go on the blink—you just might find out what's on the other side . . . of life!

Even there's a high-voltage power pointing that searchlight's circuit don't put you in a blackout position, pressure-free.

So, fit a warning sign across your mental mirror that says:

Keep fingers off the igniter's high-voltage cable.



No. Many times so.

They may look like handles on the front of your BT-248 and BT-418 exciter-transmitters, but they're not. Anyway . . . the word is **SPRO** is the word is applied to make 'em handle.

The word they're guards—that's what. And they protect the handles, connectors and what-have-yas on the front panels of the two components of your AN/VR-12 radio outfit too.

Pushing or lifting on the guards can bust 'em, sure enough.

GIDDY-UP OL' PAINT

Spray paint is a real good deal, but not in the hands of a guy who's not supposed to use it around electronic equipment.

Take an AN/USM-18 wellscope as one of many possible instances.

You're supposed to use a brush and some gray paint to touch up the case for the scope. When you use spray paint, the stuff you breathe the way holes and lenses in the case. If the paint hits a sensitive base, it can ruin things like the motor-generator channel components and also plug switches.

What about equipment you can't remove from its case? Same thing. You're supposed to use a brush, not spray, when touching up.



HEAD OFF HANDSET HUSH



When you're picking up or pulling out, put away the AN/TSC-24 radio set's handset.

Now, the E-50TU hang-up unit is in its cradle on the E-411 receiver when your E-20's cradling unit is ready. Then, on the go, that handset can be rolled from its cradle and locked in position.

Just store it in the CY-1112 accessory case and you'll keep it damage-free.

BRIGHTEN YOUR OUTLOOK

Are you getting glum-eyed from staring into the glowing board of your AN/TSC-43 medical imaging incorporating facility?

Well, cheer up.

Change that J68-RTA or -RRA table's 60-watt clear bulb (EOM 6246-146-1114) with a 75-watt frosted one (EOM 6246-246-1002).

The frosted lamp, good for long periods of plotting, is listed on page 44 of GSA catalog (Oct 67). However, both of 'em are getting added to TR 21-4740-259-12.



IT'S A COVER-UP

WAKE
UP TO
COVER-UP
COVER.



Hold on, AN/TSC-77C1 radio set operators!

Maybe you're not sure' that CW-605 has cover all the time. But you're not supposed to use it twice, either.

Once when the (S6-41C1) hang-up assembly's put aside for a spell or two of low-battery maintenance, its cover keeps the battery from going damaged as well as wasting all that and die.

So, hang on to it.

PM FOR FILM PACK



Are you here to take a fast photo, using rapid processing like Polaroid® Film . . . but there's a point or two you should read when using the Bolexoid load film holder #100 with your F18-47 or EE-12 cameras. These pointers could head off damage to the holder.

After you've taken the picture and re-loaded the film pack to pull out the "magical" processing:



This will help keep the inserted metal clip on the film pack from slipping and chipping the processing rollers inside the film holder.

Another thing is that when the holder is not being used for awhile, or it's being put away until the next picture taking time . . . leave the load-pressure lever in the LOAD position.

This'll take the tension off the spring and pressure off the rollers.



TAKE THE

Pledge

As the operator of an MR-20/P or MR-20/PT telephone switchboard, I will:



—Keep from talking or frowning the call and answer cards. I know this can break the wiring.



—Keep the plugs back into the switchboard. If I let 'em fly back, they might beat a signal into or out or pull the plug loose from the jack.



—Hold the cord to the plug and not by the cord to keep from breaking internal wiring.



—Think twice before playing with switches. I know they can take lots of use, but why give 'em abuse?

—Remove the MR-20 lock-keys when the switchboard's going to be out of action for a time. I don't need operators tell me that a locking feature can really wear up the works.



—Not use the switchboard as a table, seat, coffee stand or couch.

—Make sure that non-operators keep their mitts off the switchboard. I've seen what a guy who's not in the know can do to fine pieces of equipment.

TK-105/G

Some of the tools in your TK-105/G electronic equipment and kit, KSN 1188-018-8177, may get lost or small.

You can get the defective tools replaced if you'll supply:

Special Order Identification
Invent/Supply Serial
Component Operation Number ... 170
MFR. No. 1000, Form
CDA New York Avenue N.W.
Washington, D.C. 20548

Give them this:

Registration number under which the material was shipped; Component number; List of defective tools by P/N and quantity received; Address of activity to which tools were shipped.

The contractor will replace all defective tools. No need to turn in the whole kit if just a few of the tools are defective. Just send info on the tools that won't do the job they're supposed to do.

CABLE TALK

Keep them in with those transmission cables for the AN/TTC-1 or -50 telephone circuits.

There's no point in yanking off the interconnecting cables so hard that you goof up the pins.



Take time to loosen these clips on the butterfly-type connector wires all the way out. No will break connector first, and make the wire disconnected.



Then, push in the connector, parallel cable, and wires.
Pull straight out to prevent pin damage.



Now, finally, join the connectors together. Twist the pins to make sure they're lined up.

Then bring them together carefully, and—voilà!—make a good electrical connection—righten the butterfly wires.

So there, for real careful handling of connecting cables... it'll pay off.



As you're the proud owner of a new AirCat white boat, and you'd like to keep her just as ready to power on as the day you bought her...

Well, no matter whether you're an old salt or a dabbler who never even got his feet good and wet before, here's some things to watch for always.



Watch to get fresh straight-up oil—glucose like this (bearing 9-000-000) every five — about 100 hours just by doing in the pleasure and work's more.

Be honest and watch every drop of your fuel. Use a chemical skin, and be sure to stop and watch it out (good!) when it gets dark with muddy 100.



Try to use your PUP, people like rigging a motor to keep you off your feet work. These black drums work up heat from machines, don't cool and work in wet air at night. In the hot days too, the hot water in your gas.

Fill up your tanks to soon as you can in from a run, too. That way there's no space left for water-headed air. You might be able to get right at 10 gallons of 91 / 90 means in each side when empty.

...AND DON'T FORGET TO BOIL YOUR AIRCAT ON THE LUGGER BOARD ON THE HULL OF YOUR BOAT. IT'S A GREAT SAVING DEVICE!



It's smart not to use over 10 of the way down in 10-gal fuel drums. Let nobody call you around and take up money without for at least a couple hours before you draw gas.

Besides that, you'd better make an every day routine of whatever work has gotten in their self-waxing gas bugs. Your better driveway being that it's easy — but not an old way to work out the boat.

Blowing tanks with detergent alcohol to kill fungus every month (it's a bad idea). You have to take the tanks out to do it completely, so be sure your lines are right afterward.

NEED HELP?

You've also got a pair of built-in fuel system washdays. There are 2 washdays between the tanks and your outboard motor. They won't remove wax, but they do stop dirt, scale, and rust too.

CALL BOTH OF THESE DAILY SHOP 24 HOURS RETAIL MAIL





When you tow the out, not all come a small strainer, a small leak suspect, and a gasket.

Now, have a look at the center seat of your outboard. Under that, how can you append the fuel supply line you'll find another screen.

About four more holes this hole pretty one. After it's worked up, put it back snug.

What's likely to help you is, you get a bunch of good clean fuel, and for 1 week you don't find a hole of seal in those lines. You get out of the hole of draining them, then — 'What! You're notched with a hole of gas that looks like it'd been drilled from the bottom of Queen Lang Canal... In how does it find an air with a dead engine in that 100-foot swamp?

One is on the bottom of your electric fuel pump. Take a 1/4-in. hex-head wrench and turn the bottom one 1/2 left.

Close the valves with airless, nitrogen, or ethanol. Look close at one if the magnet has picked up any metal filings. If so, repeat, but less. Then put the parts back like you found them. Use your wrench to make sure, because it's a tight fit.



The dipstick's right on the oil filter cap. Add oil when it gets halfway down. Rotate the 7 screws. . . . Rotate the sign on the cap inside the red TMI — that's it in the book in for airplanes. Anyhow, check oil level before and after every run.

But don't just half the story.



This morning your gas tank looks shiny, every day.

Take the grease gun and give a shot in the fitting under the left side of your seat where your steering cable pivots. Then repeat once into the fitting on the windows at the stern. Have somebody work the cable back and forth while you clean the gun.



and now for the catch in your tale oil reservoir —

There's a half-dozen bearings and joints in that steering set-up that you can't see yourself sight. This means every place that metal rubs on metal, except on metal, or metal in a locked joint that moves.

Take the oil spray can and get 1 drop on those drive bearings, pivots, and link joints. A smooth-working rubber is half the secret of Swamp Admiral's success.



After you've lubed the thrust blocks, wipe up every drop you've spilled. Oil splashing around in your boat will water the bottom until finally it'll break your tank, or cost you the help of that mountain gnatcatcher and his friendly performance up there.



You've got to be honest and check on later. But you're lucky in having an engine that's not prying overboard. Any good 50-hp weight-mandays are out of it in the beautiful Southeast area, changing it out every 50 hours is no big deal.

NO PIPING PAN

Flows of steel on that angle is your most big help for quick power when it's got to come.

What keeps it cool? That cooling design and structure . . . are simple.



It makes it a daily check, look that cooling over and feel it over. Examine each and every bolt and nut along the joints, and see with fingers. Have a sharp eye for cracks.

Then get at the leaves. Look and feel them; make sure they're sound. A look at the motor mount assembly looking into one the ball braces is good. We insure, too.

Now look on eye at the cylinder cooling fins. That's your first because it's clean bit. Oil, dirt, wiping rag streaks, and such don't belong there.



And before you clean-clear-out of the motor, make certain your oil cooler rollers is clean. Gums, limes, scale off month work and the like collect there — but don't let 'em stay. If you can get on an air hose, blowing it out from the back is a help. Then have a guide to make sure the labor and motor hoses are healthy.

THE KILL SWITCH

So you're ready to go? Well, stand by for last word from the head shop — there's been a change in wording, these AirCams along the front models come out. Here's how — and do it in this order —



Why not? Because you might get hydraulic lock from excess oil in the cylinders.

Yes, or about the 10 or 15 minutes, with the motor is heating and get to all holding the master button down, for the 10-minute switch to 100% position. For engine about that when 2 or 3 more times.

If you don't start within 15 seconds, take that finger off the starter switch and let it run 1 to 2 minutes — otherwise you could get master blow-up.

And if the engine should cough, hiss, and not work, let up off the master and all it will — you could see starting gear not lock-up.

Then turn off that electric fuel pump as soon as you're running. You might need it for a quick start some busy day, and the engine-driven fuel pump is meant for steady use.

Then eyeball your gauges. You should get 24 PSI oil pressure inside a half minute, and 11, to 45 PSI in a good few miles, like at 550 RPM or so and your cylinder head temperature reads 100°C or so — then you're off.



WHEEL FOR BUN



Use the fuel-tank selector valve to take about equal amounts out of the tanks — first one, then the other, unless you've got a weight to make your boat unbalanced. But if you get in a tight, and there's fuel in both tanks, turn the selector valve pointer straight down — that way you get gas from both tanks and run less risk of sucking up gunk from a nasty-dry tank.



Learn nothing, but nothing, floats in the boat, and let nobody run up anything that could fly loose and propeller. That's Disaster, big O. Make a good SOP for keeping spare lines from your boat from getting that prop, too, and see that it's reinforced. Run up coils and such and hold 'em down — a loose steering gear could lead you right to Charlie's lap. Same goes for people trying to stand up in the boat while you run on the ocean — No, No!



Remember, too, that boat can launch bolts and nuts, so make a daily check on that exhaust manifold on each side of the engine. It could come off and wham that propeller. And if you do get a prop break, stop that switch like lightning. The engine could vibrate out or come over on you.

Likewise, keep clear of boat wakes — your own and other people's. Give a little burst of thrust coming in, or that wave'll get you. You go nowhere with a boardload of water.

If you get stymied, write U.S. Army Mobility Equipment Command, Surface Equipment Division, Marine Equipment Branch, ATTN: ANOME-NSM, 400 Goodfellow Blvd., St. Louis, Missouri 63126. Or phone if it's urgent — 314-269-2474.

THE MISSING LINK...

CLAMP, ROD

AND WIRE

Blocks and gips, because of an ground rod, can give generator users fits.

Older power sources TM's often didn't fit ground rods and such in the BBL. But TM 4-766 (Jul 65) and other safety tips say you have to have 'em. If they're not on your BBL, you will need the pieces in Rod-Cam CPTM-4 (May 67) and C645-B-4 (Mar 68).

These responsible items are: Rod, ground, 3 ft. 2 section, P/N 1074-021-0007; Clamp, electrical, P/N 1074-021-1001; Wire, No. 6 AWG, P/N 61 05 109-0009 (by the foot, and you need 2 to 12 ft.).

GET YOUR
CLAMP!

I'M GOING TO
TALK YOU DOWN!

**HANDS OFF
THE PANIC
BUTTON!**

You won't get many fits on your solar scope if your generator's not on the job.

Whether you've got a D&W Fan-cooled generator or something else, if you try to run it "Ransom" and don't get results, quit — hold! Unless it's a real emergency don't just push EMERGENCY RUN and go on.

When that generator won't run, it's trying to give you the word — it's trying to say something's happened. So go check the oil, have a look at the cooling — do your job.

Obviously you could turn up that rig on a late alarm, and need it real bad pretty quick when the real thing comes along. That panic button's a good thing to have close 'em you gotta go-go.

MINE DETECTOR PIN-UP



If you're operating a manufactured mine detector, but pin down pin trouble in your quick-disconnect handle coupling.

Keying pin in these couplings have been breaking, but there's a replacement in and such reliable.

You need Speed Coupling Kit, Eng. Drawing PL152142977, MCM 4000-2000-0000, and one Short Handle, Eng. Drawing 112102900, MCM 4000-2000-0000.

These new parts fit mine detectors under the general family of FSN 4001-001-0010, including Polaris (FSN 4001-001-0011), Oregon (FSN 4001-001-0012), and all made by MDM or Tynston Companies in the series covered by TM 3-2001-2015 (Jan 64).

Mark your requisition for each item "Head Process" and have it sent ATTN: AMMELSC.

THOSE ML's

Federal and Army Supply Catalog Management Data Lists—ML's (some of the old names will use "price lists") are taking on a new look.

Effective 1 Mar 65 the ML's will be labeled CML-A's (the Catalog Management Data List-A's). They list all items used by the Army, including those managed by DSA/CAS. The big change is that the stock numbers will be in FPM sequence, and they will be in only 17 volumes. The CML-A will supersede all existing DA and Federal Management Data List supply catalogs

except those published for books, electrical, clothing and articles, medical and subsistence commodities.



Your work requires all 17 volumes or do we need to do you any good. Your work's order for those Management Data Lists or DA Form 12-21 will bring you the set on pin-point allocation.

ANOTHER HOSE NEEDED

You've got the 150PSI liquid fuel filter/separator, IEM 4158-01-0008, and the hand-operated piston type dispensing pump assembly, IEM 4930-274-0007. But you still have one question — how do they go together?

Before you can use them, you'll need another 20-ft length of hose. You order this Assembly w/couplings, IEM 4150-014-2305, Part No. 500418-1, Milv Code 80140. You find it listed on page 6 of TBI 30-0930-201-237 14 pg-500.

After you get the hose assembly, remove the nozzle from the pump assembly and put it on the hose assembly. Now connect the pump assembly and the hose assembly to the filter/seperator.



EYEBROW SAVER

Dear Editor:

There's been one general complaint regarding while lighting the incandescent burner. We use 8 mils steel balls, a screen IEM 729-274-2400 from the 47467 kit unit, and 2 strips of sheet metal.

We mounted the screen inside the air conditioning/flaming pipe so that we could look into the burner compartment to see if there was a flame.

Field Miss Operations
Substance & Food Service Dept
Cokermaster School, Ft Lee, Va.



Old Man... a good idea!

FIELD BAKERY EQUIPMENT



Maintenance and lubing's a must for your equipment, and your field bakery equipment's no exception. It needs cleaning, lubing, inspecting, and adjusting at scheduled times just like your other equipment.

Using the right lube is one way to never clear a trouble. You should use Mineral oil, light, NF, FOM 310-310-008, (S grade), on the surfaces of the dough dividing machine that come in direct contact with the dough. This oil is neutral and odorless. You'll find it listed in Fed Cat. CO-88-CR11-149-07.

Never substitute salad oil for the mineral oil. The salad oil will gum up the machinery.

There are two lubes you can use on the steel conveyor chains. Use either Grease, graphite, FOM 3150-120-1008, II B grade, or Lubricating oil, industrial graphite, FOM 3110-217-0188, (S grade). They're listed in Fed Cat. CO-88-11-069-07. It's especially important to keep these chains lubed if you're using your bakery equipment where the temperature is high.

If you can't get the graphite grease or oil, then you can use a "do it your self" lube by combining 1 part of powdered graphite with 8 parts of kerosene.



Comic Road BRIEFS

WHO BLEW THE LIGHTS?

WE GOT A MAINTENANCE PROBLEM.

AFOS Series

DA Cb 110-44 (3 Nov 67), The Army Authentication Document System (AADS), covers the latest SOP on handling a Classification Table of Organization, Equipment (AFCE) and T/O, and AFDA. The circular sets up step-by-step guidance on preparing and submitting AFCE's, provides sample forms, flow charts — the works. It's to be used along with AR 310-31, AR 310-34 and AR 310-45. It supersedes some parts of these AR's.

20's The Limit

When you're loading a magazine for your M16A1 rifle, remember, it takes 20 cartridges — no more, no less. So, forget what you read in FM 7-11 about using only 19 or 19 rounds. And also watch that 40 on page 48 of the same book about loading for a firing guide on page 1820. A misplaced line of type, that.

Purge & Charge Your Gun!

Hot off the press . . . TM 750-110 (Mar 67), Organizational Substances Procedures for Purging And Charging Of Fire Control Instruments. Not only does it authorize using units to doctor their instruments right where the problem exists, but also tells you how and authorizes you the staff to do it with.

Multifuel Filter

Make sure you use the new FM when ordering filter elements for those two secondary and fuel fuel filters mounted on the left side of your truck's modified engine. For each filter you need Part No. Fuel Filter Element, FM 2110-120-8444. This goes for the 6-cyl truck with the 200 400-14 engine and also for the 2 1/2-ton truck with either the 120 417-2 or 120 461-1 engine. The new FM replaces FM 2610-1730L-9400 to Ch 3 (page 67) to TM 9-2200-211-200. And it replaces FM 2610-1730L-9400 to TM 9-2200-209-200 (page 62).

M200 This For Drive

In case you missed it, MWO 9-1043-110,3073 (8 Oct 67) will take care of any problems you've been having with premature firing and timing of the main driving shaft on your M200 100-10A LP turbine. Det 8 included . . . (1100).

New M151 Film

It's new — F 9-2852 on "Maintenance Procedures, M151 Series 1/2-Ton Truck." The M151 maintenance policy is "different," and that's why this new film is called "The System Works, Don't Put Your God To Work The System." It's of your nearest Audio-Visual Communication Center.

Would You Stake Your Life on the Condition of Your Equipment?

LEMME BREATHE, BABY!



KEEP SANDBAGS
WELL AWAY FROM
UNIT — LEAVE
VENTS FOR
AIR CIRCULATION



KEEP CANVAS
HOSE ENOUGH AWAY
AIR GETS IN ...

YOUR GENERATOR NEEDS AIR TOO!