

DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

**OPERATOR AND ORGANIZATIONAL PERIODIC
PREVENTIVE MAINTENANCE SERVICES FOR
TEST SETS, TELEGRAPH AN/PGM-1 AND AN/PGM-1A**

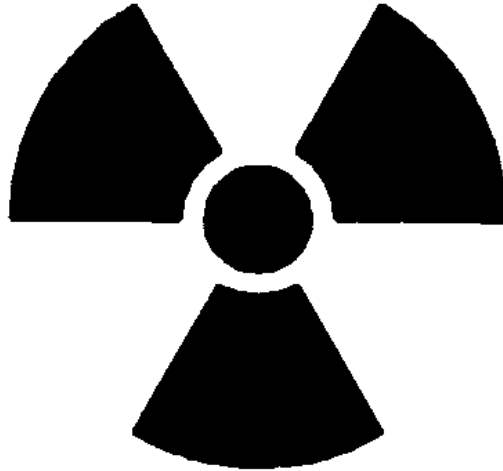
Headquarters, Department of the Army, Washington, D.C.
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		Paragraph	Page
SECTION I.	INTRODUCTION		
	General.....	1	3
	Index of publications.....	2	3
	Forms and records.....	3	3
	Handling, storage, and disposal of radioactive material.....	4	3
II.	OPERATOR'S MAINTENANCE		
	Scope of operator's maintenance.....	5	3
	Preventive maintenance.....	6	3
	Preventive maintenance checks and services periods.....	7	4
	Daily preventive maintenance checks and services chart.....	8	4
	Weekly preventive maintenance checks and services chart	9	4
	Cleaning	10	5
III.	ORGANIZATIONAL MAINTENANCE		
	Scope of organizational maintenance	11	5
	Tools, materials, and test equipment required.....	12	5
	Organizational preventive maintenance	13	5
	Monthly maintenance.....	14	5
	Monthly preventive maintenance checks and services chart	15	5
	Cleaning and touchup painting instructions	16	6
APPENDIX. REFERENCES.....		--	6

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TAGO 7159A-December

RADIATION HAZARDS



STO- RW-2

Co 60 (0.0067 MICROCURIES PER TUBE)

Tube types OB2 used in the equipment contain radioactive material. These tubes are potentially hazardous when broken; see qualified medical personnel and the Safety Director if you are exposed to or cut by broken tubes. Use extreme care in replacing these tubes and follow safety procedures in their storage and disposal (par. 4).

Never place a radioactive tube in your pocket.

Use extreme care not to break radioactive tubes while handling them.

Never remove radioactive tubes from cartons until ready to use them.

Refer to paragraph 4 on handling, storage, and disposal of radioactive material.

AGO 7159A

SECTION I. INTRODUCTION

1. General. This bulletin describes the periodic preventive maintenance services (including inspection and cleaning) of Test Sets, Telegraph AN/PGM-1 and AN/PGM-1A. Throughout this bulletin, Test Sets, Telegraph AN/PGM 1 and AN/PGM-1A will be referred to as the test set. The instructions in this bulletin apply to all organizations and will be performed, periodically in accordance with these instructions, by first and second echelon maintenance personnel. Records and reports are made under the provisions of TM 38-750.

2. Index of Publications. Refer to the latest issue of DA Pamphlet 310-4 to determine whether there are new editions, changes, or additional publications pertaining to the equipment.

3. forma and Records. *a. Reports of Maintenance and Unsatisfactory Equipment.* Use equipment forms and records in accordance with instructions in TM 38-750.

b. Report of Damaged or Improper Shipment. Fill out and forward DD Form 6 (Report of Damaged or Improper Shipment) as prescribed in AR 700-58 (Army),

NAVSANDA Publication 378 (Navy), and AFR 71-4 (Air Force).

c. Reporting of Equipment Bulletin Improvements. The direct reporting by the individual user of errors, omissions, and recommendations for improving this equipment bulletin is authorized and encouraged. DA Form 2028 (Recommended Changes to DA Technical Manual Parts Lists or Supply Manual 7, 8, or 9) will be used for reporting these improvement recommendations. DA Form 2028 will be completed in triplicate, using pencil, pen, or typewriter, and forwarded by the individual using the bulletin. The original and one copy will be forwarded direct to Commanding Officer, U. S. Army Electronics Materiel Support Agency, ATTN: SELMS-MP, Fort Monmouth, N.J. 07003. One information copy will be furnished to the individual's immediate supervisor (officer, noncommissioned officer, supervisor, etc).

4. Handling, Storage, and Disposal of Radioactive Material. Follow the procedures for safe handling, storage, and disposal of radioactive materials as directed by TB SIG 225, AR 40580, and AR 755380.

SECTION II. OPERATOR'S MAINTENANCE

5. Scope of Operator's Maintenance. The maintenance duties assigned to the operator of the equipment are listed below together with a reference to the paragraphs covering the specific maintenance functions. No special tools are required. Test Set, Electron Tube TV-7/U is required for testing tubes which are suspected of being defective.

a. Daily preventive maintenance checks and services (par. 8).

b. Weekly preventive maintenance checks and services (par. 9).

c. Cleaning (par. 10).

d. Fuse (ac input, 2 amperes) replacement.

e. Replacement of defective tubes.

6. Preventive Maintenance. Preventive maintenance is the systematic care, servicing, and inspection of equipment to prevent the occurrence of

trouble, to reduce downtime, and to assure that the equipment is serviceable.

a. Systematic Care. The procedures given in paragraphs 7 through 10 cover routine systematic care and cleaning essential to proper upkeep and operation of the equipment.

b. Preventive Maintenance Checks and Services. The preventive maintenance checks and services charts (pars. 8 and 9) outline functions to be performed at specific intervals. These checks and services are to maintain Army electronic equipment in a combat serviceable condition; that is, in good general (physical) condition and in good operating condition. To assist operators in maintaining combat serviceability, the charts indicate what to check, how to check, and what the normal conditions are; the References column lists the illustrations, paragraphs, or manuals that contain

AGO 7159A

supplementary information. If the defect cannot be remedied by the operator, higher echelon maintenance or repair is required. Records and reports of these checks and services must be made in accordance with the requirements set forth in TM 38-750.

7. Preventive Maintenance Checks and Services Periods. Preventive maintenance checks and services of the equipment are required daily and weekly.

a. Paragraph 8 specifies the checks and serv

ices that must be accomplished daily and under the conditions listed below.

- (1) When the equipment is initially installed.
- (2) When the equipment is reinstalled after removal for any reason.
- (3) At least once each week if the equipment is maintained in standby condition.

b. Paragraph 9 specifies *additional* checks and services that must be performed on a weekly basis.

8. Daily Preventive Maintenance Checks and Services Chart.

Seq No.	Item	Procedure	Reference
1	Test set.....	Inspect equipment for completeness, power cord and two test leads are contained in the detachable cover lid.	TM 11-6625-370-12P.
2	Exterior surfaces.....	Clean exterior surfaces, including panel and meter glass. Check all meter glass for cracks.	Par. 10.
3	Connectors.....	Check tightness of the power cord and test set connectors.	
4	Controls and indicators.....	While making operating checks (items 5-9), observe that mechanical action of each knob and switch is smooth and free of external or internal binding, and that there is no excessive looseness. Also, check meter for sticking or bent pointer. During operation, be alert for any unusual signs or conditions.	
5	Test leads.....	Connect the test leads (red lead is plus (+), black lead is minus (-)) between the external binding posts of the test set and a known dc voltage source, under 300 vdc.	
6	Meter changeover switch.....	Operate the meter changeover switch to external and then to internal position; meter should indicate the voltage at the external dc source, then zero.	
7	Power cord.....	Connect the power cord between the test set connector and a 115 vac, 50- or 60-cycle source.	
8	Ac input and dc output	Operate to on; test set meter should indicate switches. between 175 and 275 volts dc.	
9	Output voltage control.....	Vary the output voltage control; test set meter should indicate a variation from 175 to 275 volts de.	

9. Weekly Preventive Maintenance Checks and Services Chart.

Seq No.	Item	Procedure	Reference
1	Cables.....	Inspect power cord and test leads for chafed, cracked, or frayed insulation. See that connectors are not broken, stripped, or worn excessively.	AGO 7159A
2	Handles and latches.....	Inspect handles, latches, and hinges for looseness. Tighten as necessary.	

10. Cleaning. Inspect the exterior of the equipment. The exterior surfaces should be free of dust, dirt, grease, and fungus.

a. Remove dust and loose dirt with a clean, soft cloth.

Warning: Cleaning compound is flammable and its fumes are toxic. Provide adequate ventilation. Do not use near a flame.

b. Remove grease, fungus, and ground-in dirt from the cases; use a cloth dampened (not wet) with cleaning compound.

c. Remove dust or dirt from plugs and jacks with a brush.

Caution: Do not press on the meter face (glass) when cleaning; the meter may become damaged.

d. Clean the front panels, meters, and control knobs; use a soft clean cloth. If dirt is difficult to remove, dampen the cloth with water; mild soap may be used.

SECTION III. ORGANIZATIONAL MAINTENANCE

11. Scope of Organizational Maintenance.

a. This section contains instructions covering second echelon maintenance of the equipment. It includes instructions for performing preventive and periodic maintenance services, basic theory, and repair functions to be accomplished by the organizational repairman.

b. Second echelon maintenance of the test set includes:

- (1) Preventive maintenance (pars. 13-16).
- (2) Replacement of cable plug and test lead connectors (TM 11-662537012P).

12. Tools, Materials, and Test Equipment Required. A list of parts authorized for second echelon maintenance appears in TM 11-6625370-12P. No special tools or test equipment are required for organizational maintenance. Materials required are listed below:

- a. Cleaning compound (Federal stock No. 7930-395-9542).
- b. Cleaning cloth.
- c. Fine sandpaper.

13. Organizational Preventive Maintenance.

a. Preventive maintenance is the systematic care, inspection, and servicing of equipment to maintain it in serviceable condition, prevent breakdowns, and assure maximum operational capability. Preventive maintenance is the responsibility of all echelons concerned with the equipment and includes the

inspection, testing, and repair or replacement of parts, subassemblies, or units that inspection and tests indicate would probably fail before the next scheduled periodic service. Preventive maintenance checks and services of the equipment at the second echelon level are made at monthly intervals unless otherwise directed by the commanding officer. The preventive maintenance checks and services should be scheduled concurrently with the periodic service schedule of the carrying vehicle for all vehicular installations.

b. Maintenance forms and records to be used and maintained on this equipment are specified in TM 38-750.

14. Monthly Maintenance. Perform the maintenance functions indicated in the monthly preventive maintenance checks and services chart (par. 15) once each month. A month is defined as approximately 30 calendar days of 8-hour-per-day operation. If the equipment is operated 16 hours a day, the monthly preventive maintenance checks and services should be performed at 15-day intervals. Adjustment of the maintenance interval must be made to compensate for any unusual operating conditions. Equipment maintained in a standby (ready for immediate operation) condition must have monthly preventive maintenance checks and services performed on it. Equipment in limited storage (requires service before operation) does not require monthly preventive maintenance.

15. Monthly Preventive Maintenance Checks and Services Chart.

Seq No.	Item	Procedure	Reference
1	Pluckout items.....	Inspect seating of tubes and fuse. Make certain that tube clamps grip tube bases tightly.	

Seq No.	Item	Procedure	Reference
2	Transformer terminals.....	Inspect terminals on power transformer. All nuts must be tight. There should be no evidence of dirt or corrosion.	
3	Terminal blocks.....	Inspect terminal blocks for loose connections and cracked or broken insulation.	
4	Resistors and capacitors.....	Inspect resistors and capacitors for cracks, blistering, or other detrimental defects.	
5	Gaskets and insulators.....	Inspect gaskets, insulators, bushings, and sleeves for cracks, chipping, and excessive wear.	
6	Interior.....	Clean interior of chassis and cabinet.	
7	Publications.....	See that all publications are complete, serviceable, and current.	DA Pam 310-4.
8	Modifications.....	Check DA Pam 310-4 to determine if new applicable MWO's have been published. All URGENT MWO's must be applied immediately. All NORMAL MWO's must be scheduled.	TM 38-750 and DA Pam 310-4.
9	Spare parts.....	Check all spare parts (operator and organizational) for general condition and method of storage. There should be no evidence of overstock, and all shortages must be on valid requisitions.	TM 11-6625-370-12P.
10	Preservation.....	Check all surfaces for evidence of fungus. Remove rust and corrosion and spot-paint bare spots.	Par. 16.
11	Fuses.....	See that the operating fuse is of correct value (2 amperes). Check spare fuses for proper value and quantity.	TM 11-6625-370-12P.
12	Mounting.....	See that all bolts, nuts, and washers are correctly positioned and properly tightened. Check for cracked, bent, or broken brackets.	

16. Cleaning and Touchup Painting Instructions. Remove rust and corrosion from metal surfaces by lightly sanding them with fine sand-paper. Brush two

thin coats of paint on the bare metal to protect it from further corrosion. Refer to the applicable cleaning and refinishing practices specified in TM 9-213.

APPENDIX. REFERENCES

Following is a list of references available to the operator and organizational maintenance personnel of the test set:

AR 40-580	Medical Service, Control of Hazards Health from Radioactive Materials.
AR 755380	Disposal of Supplies and Equipment, Disposal of Unwanted Radioactive Material.
DA Pam 310-4	Index of Technical Manuals, Technical Bulletins, Supply Manuals (Types 4, 6, 7, 8, and 9), Supply Bulletins, Lubrication Orders, and Modification Work Orders.
TB Sig 225	Identification and Handling of Radioactive Signal Items.
TM 9-213	Painting Instructions for Field Use.
TM 11-6625-274-12	Operator's and Organizational Maintenance Manual: Test Sets, Electron Tube TV-7/U, TV-7A/U, TV-7B/U, and TV-7D/U.
TM 11-6625-370-12P	Operator and Organizational Maintenance Repair Parts and Special Tools List and Maintenance Allocation Chart: Test Set, Telegraph AN/PGM-1A.
TM 38-750	The Army Equipment Record System and Procedures.

AGO 7159A

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Army Tml (1)
USASCC (4)
USAOSA (1)
USA Elet Mat Agcy (9)
USA 1st Fld Sta (5)
USASTC (3)
WRAMC (1)
Army Pic Cen (2)
USA Mob Spt Cen (1)
Chicago Proc Dist (1)
AMS (1)
Sig Dep (OS) (12)
AFIP (1)
POE (1)
Sig Fld Maint Shops (3)
Yuma PG (2)
WSMR (5)
USAERDA (White Sands) (13)
USAERDL Trp Comd (10)
Units org under fol TOE:
 11-7 (2)
 11-16 (2)
 11-57 (2)
 11-97 (2)
 11-98 (2)
 11-117 (2)
 11-155 (2)
 11-157 (2)
 11-500 (AA-AE) (4)
 11-557 (2)
 11-587 (2)
 11-592 (2)
 11-597 (2)

NG: None.

USAR: None.

For explanation of abbreviations used, see AR 320-50.

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AGO 7159A

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