DEPARTMENT OF THE ARMY TECHNICAL MANUAL

OPERATOR'S AND ORGANIZATIONAL

MAINTENANCE MANUAL

AMPLIFIER,

RADIO FREQUENCY AM-1881/U

This copy is a reprint which Includes current pages from Changes 1 through 3.

HEADQUARTERS, DEPARTMENT OF THE ARMY

28 JULY 1960

WARNING

Be careful when working on the 115-volt (or 230-volt if used) ac line connections. Serious injury or death may result from contact with these terminals.

DON'T TAKE CHANCES

This equipment contains a selenium rectifier. When selenium rectifiers fail, because of burnout or arc-over, poisonous fumes and compounds are released. The fumes have a strong odor and should not be inhaled. Provide adequate ventilation immediately and do not handle the rectifier.

Change No. 3

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, D. C., *12 February 1974*

Operator and Organizational Maintenance Manual

AMPLIFIERS, RADIO FREQUENCY AM-1881/U AND AM-3026/U

TM 11-6625-353-12, 28 July 1960, is changed as follows:

Page 3, paragraph 1.1. Delete paragraph 1.1 and substitute:

1.1. Indexes of Publications

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

b. DA Pam 310-7. Refer to DA Pam 310-7 to determine whether there are modification work orders (MWO's) pertaining to the equipment.

Paragraph 2. Delete paragraph 2 and substitute:

2. Forms and Records

a. Reports of Maintenance and Unsatisfactory Equipment. Maintenance forms, records, and reports which are to be used by maintenance personnel at all maintenance levels are listed in and prescribed by TM 38-750.

b. Report of Packaging and Handling Deficiencies. Fill out and forward DD Form 6 (Report of Packaging and Handling Deficiencies) as prescribed in AR 700-58 (Army)/NAVSUP PUB 378 (Navy)/AFR 71-4 (Air Force)/and MCO P4030. 29 (Marine Corps), and DSAR 4145.8.

c. Discrepancy in Shipment Report (DISREP) (SF 361). Fill out and forward Discrepancy in Shipment Report (DISREP) (SF 361)as prescribed in AR 5538(Army)/NAVSUPINST 4610.33/AFM 75-18/MCO P4610.19A (Marine Corps), and DSAR 4500.15.

2.1. Reporting of Errors

The reporting of errors, omissions, and recommendations for improving this publication by the individual user is encouraged. Reports should be submitted on DA Form 2028 (Recommended Changes to Publications) and forwarded direct to Commander, US Army Electronics Command, ATTN: AMSEL-MA-C Fort Monmouth, NJ 07703.

Page 5. After paragraph 6 add:

6.1. Items Comprising Operable Equipments

a. Amplifier, Radio Frequency AM1881/U (FSN 6625-092-7924) comprises an operable .equipment and is shown in figure 1.

b. Amplifier, Radio Frequency AM3026/U (FSN 6625-082-3986) comprises an operable equipment.

Page 7, paragraph 8a. Delete the second sentence.

Subparagraph *b*. Delete the second sentence.

Page 23, appendix III. Delete appendix III.

By Order of the Secretary of the Army:

CREIGHTON W. ABRAMS
General, United States Army
Chief of Staff

Official:
VERNE L. BOWERS
Major General, United States Army
Tile Adjutant General

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    Fort Carson (5)
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    TOAD (14)
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    29-1
    29-15
    29-16
    29-21
    29-25
    29-26
    29-35
    29-36
    37

NG: None
USAR: None

For explanation of abbreviations used, see AR 310-50.

Changes in force: C 1 and C 2

Operator's and Organizational Maintenance Manual

AMPLIFIERS, RADIO FREQUENCY AM-1881/U AND AM-3026/U

CHANGE
No. 2

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D. C., 9 January 1964

TM 11-6625-353-12, 28 July 1960, is changed as follows:

Change the title of the manual as shown above.

Page 3. Add the following note below the title of chapter 1:

Note

Amplifier, Radio Frequency AM3026/U is identical with Amplifier, Radio Frequency AM-1881/U except that the AM3026/U is rack-mounted. Information in this manual applied to both equipments.

By Order of the Secretary of the Army:

EARLE G. WHEELER,
General, United States Army,
Chief of Staff.

Official:

J. C. LAMBERT,
Major General, United States Army,
The Adjutant General.

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USAMSCDA (1)
USAOCDA (1)
USAQMCDA (1)
USATCDA (1)
USAADCDA (1)
USAARMCDA (1)
USAAVNCDA (1)
USAARTYCDA (1)
USASWCDA (1)
USCONARC (5)
USAMC (5)
USAECOM (7)
USAMICOM (4)
USASMCOM (1)
USASCC (4)
ARADCOM (2)
ARADCOM Rgn (2)
OS Maj Comd (3)
OS Base Comd (2)
LOGCOMD (2)
MDW (1)
Armies (1)
Corps (2)
Div (2)
Instl (2) except
Ft Monmouth (63)
Ft Huachuca (10)
Ft Gordon (5)
Ft Hancock (4)
Svc Colleges (2)
Br Svc Sch (2)
GENDEP (OS) (2)
Sig Sec, GENDEP (5)
Sig Dep (OS) (12)
Army Dep (2) except
Lexington (12)
Sacramento (28)
Tobyhanna (12)
Ft Worth (8)
USATC FA (2)
USATC AD (2)
USATC Armor (2)
USATC Engr (2)
USATC Inf (2)
USASTC (2)
USA Tml Comd (1)
Army Tml (1)
POE (1)
USAOSA (1)
1st USASA Fld Sta (5)
USA Elct Mat Agcy (9)
Chicago Proc Dist (1)
WRAMC (2)
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AMS (1)
USA Mbl Spt Cen (1)
WSMR (5)
Sig Fld Maint Shops (3)
USA Elct RD Actv (White Sands) (13)
USA Elct RD Lab, Trp Comd (10)
USA Corps (3)
Units org under fol TOE:
11-5 (2)
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11-7 (2)
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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)
29-1 (2)
29-15 (2)
29-16 (2)
29-21 (2)
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29-35 (2)
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NG: State AG (3); units-same as Active Army except allowance is one copy to each unit.
USAR: None.
For explanation of abbreviations used, see AR 320-50.

TECHNICAL MANUAL

Operator's and Organizational Maintenance Manual

AMPLIFIER, RADIO FREQUENCY AM-1881/U

TM 11-6625-353-12
CHANGES No. 1

HEADQUARTERS,
DEPARTMENT OF THE ARMY
WASHINGTON, D. C., *27 September 1963*

TM 11-6625-353-12, 28 July 1960, is changed as follows:

Page 3. Add paragraph 1.1 after paragraph 1.

1.1. Index of Publications

Refer to the latest issue of DA Pam 310-4 to determine whether there are new editions, changes, or additional publications pertaining to the equipment. DA Pam 310-4 is an index of current technical manuals, technical bulletins, supply bulletins, lubrication orders, and modification work orders available through publications supply channels. The index lists the individual parts (-10, -20, -35P, etc.) and the latest changes to and revisions of each equipment publication.

Delete paragraph 2 and substitute:

2. Forms 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 Manual Improvements. The direct reporting by the individual user of errors, omissions, and recommendations for improving this manual 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 improvements. This form will be completed in triplicate using pencil, pen, or typewriter. The original and one copy will be forwarded direct to Commanding Officer, U. S. Army Electronics Materiel Support Agency, ATTN: SEL, Fort Monmouth, New Jersey, 07703. One information copy will be furnished to the individual's immediate supervisor (e.g., officer, noncommissioned officer, supervisor, etc.).

Page 10. Delete figure 6.

Page 11. Delete paragraphs 12 and 13 and substitute:

12. Scope of Operator's Maintenance

The maintenance duties assigned to the operator of the AM-1881/U are listed below together with a reference to the paragraphs covering the specific maintenance functions.

a. Daily preventive maintenance checks and services (para. 13.2).

b. Weekly preventive maintenance checks and services (para. 13.3).

c. Cleaning (para. 13.4).

d. Visual inspection (para. 14).

e. Repairs and adjustments (para. 15).

f. Tube testing (para. 16).

13. 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 13.2, 13.3, and 13.4 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 chart (para. 13.2 and 13.3) outlines 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 chart indicates what check, how to check, and what the normal conditions are. The *references* column lists the paragraphs or manuals that contain detailed repair or replacement procedures. If the defect cannot be remedied by performing the corrective actions listed, higher echelon maintenance or repair is required. Records and reports of these checks and services must he made in accordance with the requirements set forth in TM 38-750.

13.1. Preventive Maintenance Checks and Services Periods

Preventive maintenance checks and services of the AM-1881 U are required daily and weekly.

a. Paragraph 13.2 specifies the checks and services that must be accomplished daily (or at least once each week if the equipment is maintained in standby condition).

b. Paragraph 13.3 specifies *additional* checks and services that must be performed weekly.

13.2 Daily Preventive Maintenance Checks and Services Chart

Sequence No.	Item	Procedure	Reference
1	Completeness..	See that the equipment is complete (appx III)	None
2	Cleanliness.....	Clean the exterior surface (para. 13.4). During cleaning operation, inspect for damaged, missing, or loose hardware and controls.	None
3	Operation.....	During operation, be alert for unusual response or condition	None

13.3 Weekly Preventive Maintenance Checks and Services Chart

Sequence No.	Item	Procedure	Reference
1	Cables	Inspect cords, cables, and wires for chafed, cracked, or frayed insulation. Replace connectors that are broken, arced, stripped, or worn excessively.	None
2	Handles and latches.....	Inspect handles, latches, and hinges for looseness. Replace or tighten as necessary.	None
3	Exterior surfaces.....	Inspect all exposed surfaces for chips, cracks, rust, corrosion, or mildew.	None

13.4. Cleaning

Inspect the exterior of the AM-1881/U. The exterior surfaces should be clean, and 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. D0 not use e near a flame.

b. Remove grease, fungus, and ground-in dirt from the case; use a cloth dampened (not wet) with Cleaning Compound (Federal stock No. 7930-395-9542).

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

d. Clean the front panel and control knobs; use a soft clean cloth. If necessary dampen the cloth with water; mild soap may be used.

Page 12. Delete figure 7.

Page 13, paragraph 17*b*(2). Change "(para. 19)" to: (para. 19.1).

Page 14. Delete figure 9.

Page 15. Delete paragraphs 18 and 10 and substitute:

18. Preventive Maintenance

a. Preventive maintenance is the systematic care, inspection, ad servicing of equipment to maintain it in serviceable condition, prevent breakdowns, and assure maximum operation 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 AM-1881, U at the second echelon level are made at (quarterly intervals unless otherwise directed by the commanding officer.

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

19. Quarterly Maintenance

Quarterly maintenance checks and services on Amplifier, Radio Frequency AM-1881/U are required. Periodic daily and weekly services constitute a part of the quarterly preventive maintenance checks and services and must l)e performed(l concurrently. All deficiencies or shortcomings will be recorded in accordance with the requirements of TM 38-750. Perform all the checks and services listed in the quarterly preventive maintenance checks and services chart (para. 19.1) in the sequence listed. 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 quarterly preventive maintenance checks and services performed on it. Equipment in limited storage (requires service before operation) does not require quarterly preventive maintenance.

19.1. Quarterly Preventive Maintenance Checks and Services Chart

Sequence No.	Item	Procedure	Reference
1	Pluckout items	Inspect the seating of readily accessible pluckout items; tubes, lamp, and fuse.	None
2	Interior	Clean the interior of the chassis and cabinet. Tighten switches, terminal blocks, and hardware not readily accessible from the exterior.	None
3	Terminal blocks	Inspect terminal blocks for loose connections and cracked or broken insulation.	None
4	Resistors and capacitors	Inspect the resistors and capacitors for cracks, blistering, or other detrimental defects.	None
5	Operation.....	Check the equipment according to paragraph 21	Para. 21
6	Publications	See that all publications are complete, serviceable, and current.	DA Pam 310-4
7	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.
8	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.	App. III and TM 11-6625-353-20P.

19.2. Touchup Painting Instructions

Remove rust and corrosion from metal surfaces by lightly sanding them with fine sandpaper. Brush two thin coats of paint on the b)are metal to protect it from further corrosion. Refer to the applicable (cleaning and refinishing practices specified in TM 9-213.

Page 18. Delete appendix L and substitute:

APPENDIX I
REFERENCES

Following is a list of applicable publications available to the operator and unit repairmen of the equipment:

DA Pam 310-1	Index of Technical Manuals,Technical Bulletins, Supply Bulletins, Lubrication Orders, and Modification Work Orders.	TM 9-213	Painting Instructions for Field Use.
SB 38-100	Preservation, Packaging, and Packing Materials, Supplies, and Equipment Used by the Army.	TM 11-6625 353-20P	Organizational Maintenance Rev pair Parts and Special Tools List: Amplifier, Radio Frequency AM-1881/U.
		TM 38-750	The Army Equipment Record System and Procedures.

By Order of the Secretary of the Army:

EARLE G. WHEELER,
General, United States Army,
Chief of Staff.

Official:
J. C. LAMBERT,
Major General, United States Army,
The Adjutant General.

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CofT (1)	Sig Sec, GENDEP (5)	11-16
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ARADCOM (2)	Tobyhanna (12)	11-117
ARADCOM Rgn (2)	USA Elct RD Actv, White Sands	11-155
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OS Base Comd (2)	USA Elct RD Actv, Ft Huachuca	11-500 (AA-AE) (4)
LOGCOMD (2)	(2)	11-557
USAECOM (5)	USA Trans Tml Comd (1)	11-587
USAMICOM (4)	Army Tml (1)	11-592
USASCC (4)	POE (1)	11-597
MDW (1)	USAOSA (1)	17
Armies (2)	AMS (1)	29-1
Corps (2)	WRAMC (1)	29-15
USA Corps (3)	AFIP (1)	29-16
USATC AD (2)	Army Pic Cen (2)	29-21
USATC Engr (2)	USA Mbl Spt Cen (1)	29-25
USATC Inf (2)	USA Elct Mat Agcy (12)	29-26
USATC Armor (2)	Chicago Proc Dist (1)	29-35
USASTC (5)	USARCARIB Sig Agcy (1)	29-36
	Sig Fld Maint Shop (3)	37

NG: State AG (3).
USAR: None.
For explanation of abbreviations used, see AR 320-5.

TECHNICAL MANUAL
No. 11-6625-353-12

HEADQUARTERS,
DEPARTMENT OF THE ARMY
WASHINGTON 25, D. C., 28 July 1960

AMPLIFIER, RADIO FREQUENCY AM-1881/U

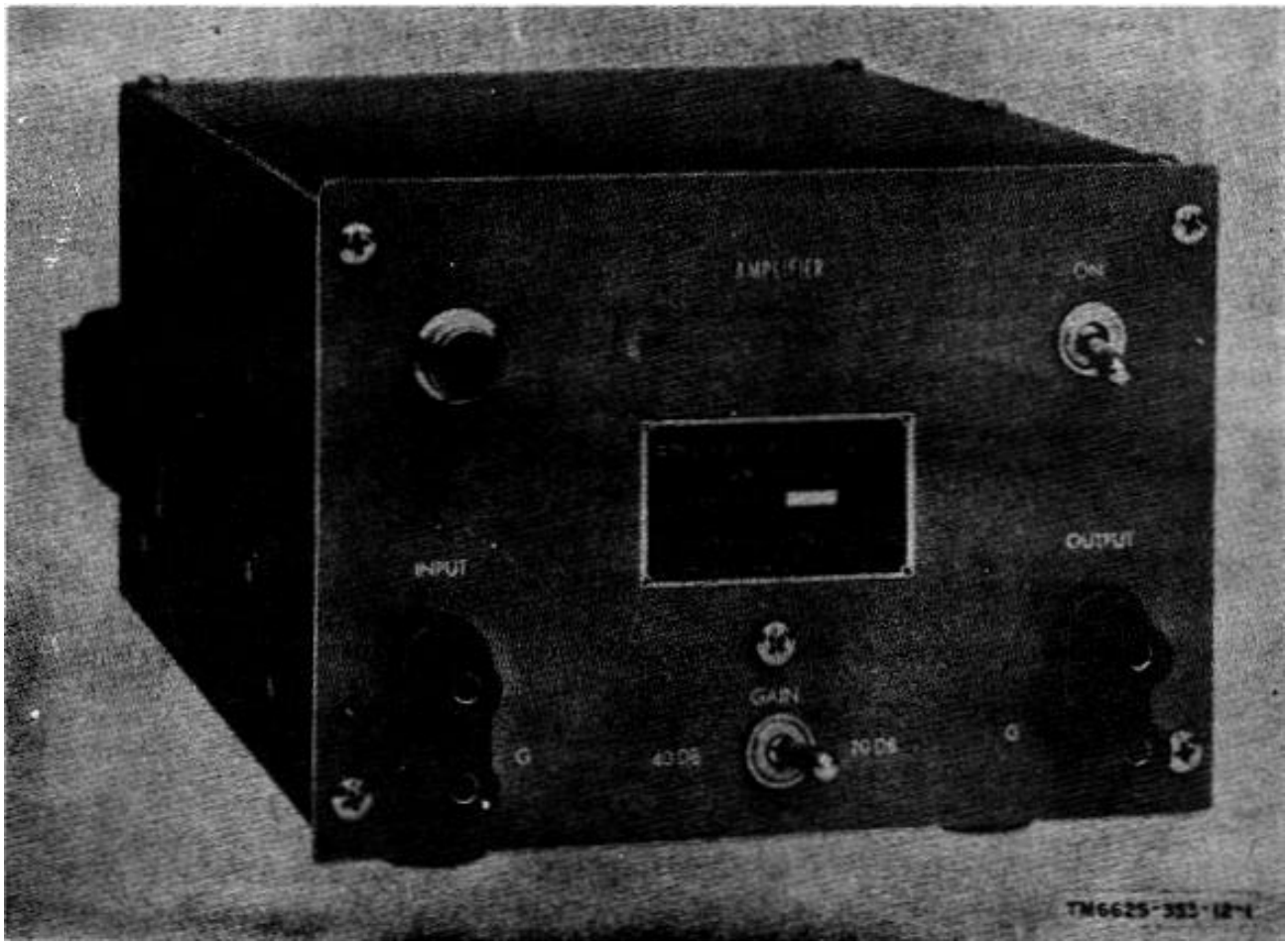


Figure 1. Amplifier, Radio Frequency AM-1881/U, less running spares.

CHAPTER 1
INTRODUCTION

Section I. GENERAL

1. Scope

This manual describes Amplifier, Radio Frequency AM-1881/U and covers its installation, operation, and operator's and organizational maintenance. It includes operation under usual conditions and replacement of parts available to first and second echelon. Throughout this manual, Amplifier, Radio Frequency AM-1881/U will be referred to as rf amplifier.

2. Forms and Records

a. Unsatisfactory Equipment Reports. Fill out and forward DA Form 468 (Unsatisfactory Equipment Report) to the Commanding Officer, U. S. Army Signal Materiel Support Agency, ATTN: SIGMS-MLM, Fort Monmouth, N. J., as prescribed in AR 700-38.

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).

c. Preventive Maintenance Forms. Prepare DA Form 11-266 (fig. 6-8) (Maintenance Checklist for Signal Equipment (Test Equipment)) in accordance with instructions on the form.

d. Parts List Form. Forward DA Form 2028 (Recommended Changes to DA Technical Manual Parts Lists or Supply Manuals 7, 8, and 9) directly to the Commanding Officer, U. S. Army Signal Materiel Support Agency, ATTN: SIGMS-MLM, Fort Monmouth, N. J. with comments on parts listings in appendixes II and III.

e. Comments on Manual. Forward any additional comments on this publication directly to the Commanding Officer, U. S. Army Signal Materiel Support Agency, ATTN: Pub Engrg Dept, Fort Monmouth, N. J.

Section II. DESCRIPTION AND DATA

3. Purpose and Use

Amplifier, Radio Frequency AM-1881/U is a wide frequency range, stable voltage gain amplifier for general-purpose use. The rf amplifier has a high input impedance and may be connected to audiofrequency (af) or radiofrequency (rf) circuits without affecting circuit operation. The rf amplifier may be operated into any external load with a resistance of at least 3,000 ohms. Low inherent noise level permits amplifying very small input voltages to give a relatively high output voltage.

4. Technical Characteristics

Frequency range	5 cps to 2 mc.
Frequency response:	
GAIN at 40 DB ...	± 0.5 decibel (db) from 10 cps to 1 mc.
	±1 db from 5 cps to 2 mc.
GAIN at 20 DB ...	± 0.5 db from 5 cps to 1 mc.
	±1 db from 2 cps to 1.2 mc.
Gain at 1,000 cps:	
GAIN at 20 DB ...	20 ±0.13 db.
GAIN at 40 DB ...	40 ±0.13 db.
Input impedance	1 megohm shunted by approximately 15 micromicrofarads (uuf).
Input voltage	600 v dc maximum.
Output	10 volts root mean square (rms) maximum into 3,000 ohms or higher resistive load.
Output impedance	Less than 150 ohms over entire frequency range.
Equivalent input noise level:	
GAIN at 40 DB ...	Approximately 40 microvolts (uv)
GAIN at 20 DB ...	Approximately 250 microvolts.
Distortion	Less than 1% from 2 cps to 100 kc; approximately 2% above 100 kc.
Line-voltage input	115 or 230 volts ±10%, 50 to 1,000 cycles.
Power consumption ..	50 watts.
Voltage regulation	+210 vdc ±2%.
Weight	10 pounds.

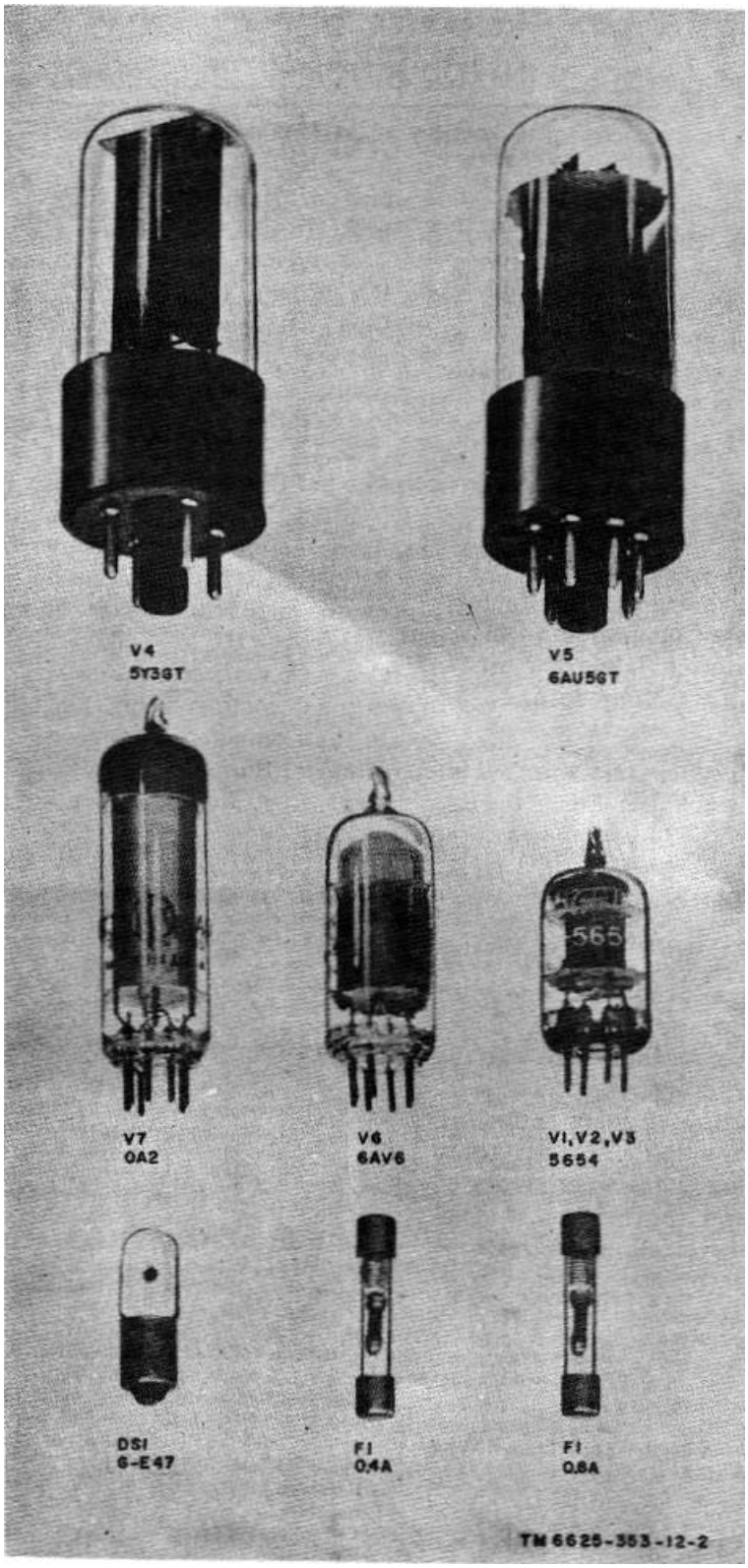


Figure 2. Running spares.

5. Components of Amplifier, Radio Frequency AM-1881/U

a. Components (fig. 1).

Quantity	Item	Height (in.)	Depth (in.)	Width (in.)	Unit Weight lb.
1	Amplifier, Radio Frequency AM-1881/U	5%	10%	8%	10
2	TM 11-6625-353-12				
1 set	Running spares (*b* below)				

b. Running spares (fig. 2).

Quantity	Item	Ref. symbol
1	Electron tube, 0A2	V7
1	Electron tube, 5Y3GT	V4
1	Electron tube, 6AU5GT	V5
1	Electron tube, 6AV6	V6
2	Electron tube, 5654	V1, V2, V3
5	Fuse, 0.8 ampere, 115 vac	F1
5	Fuse, 0.4 ampere, 230 vac	F1
1	Incandescent lamp, 6.3 vac	DS1

6. Description

The rf amplifier is of single-chassis construction. The side, rear, top, and bottom panels are removable for service. A leather handle is provided on the left side to facilitate carrying the unit. Four rubber bumpers are attached to the bottom panel. The INPUT and OUTPUT binding posts are designed for use with bare wire leads, standard test leads, or leads equipped with banana plugs. The line fuseholder is mounted on the rear panel, permitting fuse replacement without removing any of the panels. The alternating current (ac) line cord is permanently attached to the rear panel and terminates in a three-pin polarized plug.

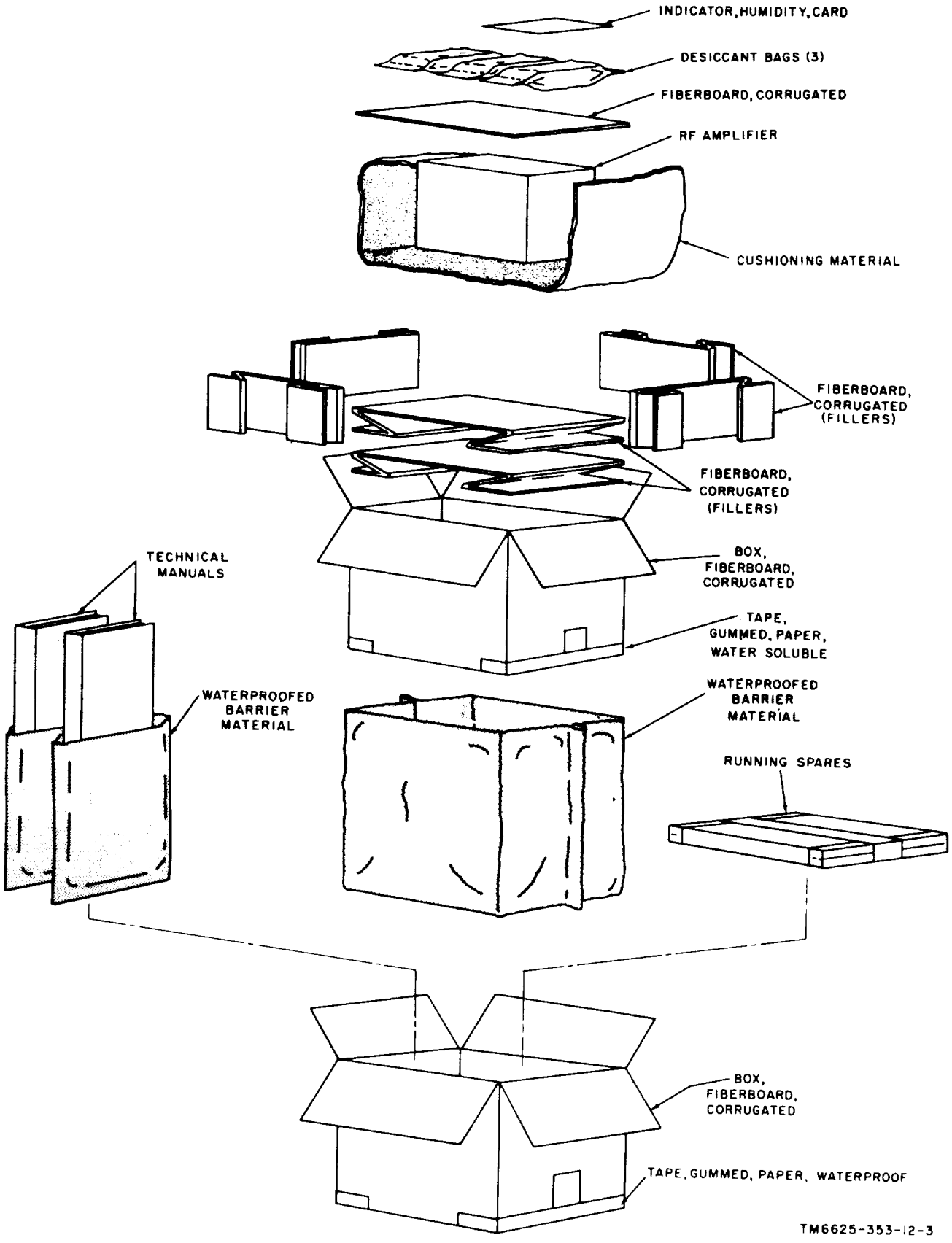


Figure 3. Typical packaging.

CHAPTER 2
INSTALLATION AND OPERATION

Section I. SERVICE UPON RECEIPT OF EQUIPMENT

7. Unpacking

a. Packaging Data. When packed for shipment, the components of the rf amplifier are packed in a corrugated fiberboard box. A typical shipping box and its contents are shown in figure 3. The dimensions and contents of the shipping box are as follows:

Dimensions (in.)	Volume (cu ft)	Unit weight (lb)	Contents	
			Qty	Item
13 1/2 x 10 7/8 x 12 1/4	1.1	18	1	Rf amplifier
			2	Technical manuals
			1 set	Running spares (para. 5*b*).

b. Removing Contents.

(1) Cut the gummed tape that seals the top of the outer box.

(2) Remove the bags that contain the two technical manuals.

(3) Remove the small carton that contains the running spares.

(4) Open the waterproof barrier bag.

(5) Open the inner fiberboard box that contains the rf amplifier.

(6) Remove the humidity indicator card.

Note.

This card contains three desiccant spots which are normally colored blue. At 77° Fahrenheit, the blue spots will turn to a pink color at the following relative humidity:

Spot	Relative humidity	Comment
Top	65%	Dry equipment thoroughly before operating.
Middle	40%	Check for condensation; change desiccant.
Bottom	30%	Check equipment for mildew.

(7) Remove the desiccant bags.

(8) Open the cushioning material.

(9) Remove the rf amplifier.

8. Checking Unpacked Equipment

a. Inspect the equipment for damage incurred during shipment. If the equipment has been damaged, refer to paragraph 2.

b. Check the equipment against the packing

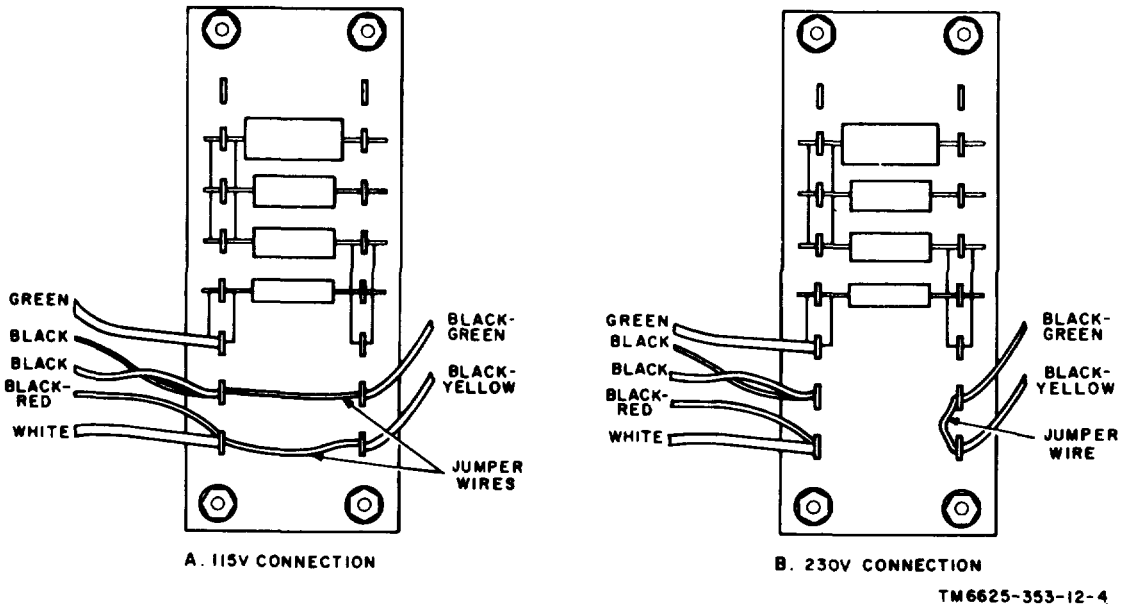


Figure 4. Transformer connection diagram.

list. When no list accompanies the equipment, use the table of components (para. 5) as a general check.

9. Installation

The rf amplifier is shipped from the factory with all tubes and the line fuse installed. The power transformer primary windings are connected for 115-volt ac operation at the factory.

a. Transformer Connections for 115-Volt Ac Operation (A, fig. 4). If the transformer has been connected for 230-volt ac operation and it becomes necessary to operate the equipment from 115 volts ac, proceed as follows:

(1) Disconnect the jumper wire from the terminal with the black-green leads, and connect it to the terminal with the black-red and white leads.
(2) Make a jumper wire from a piece of No. 18 AWG, solid, insulated hookup wire. Connect the jumper wire between the terminal with the two black leads and the terminal with the black-green lead.
(3) Change fuse F1 (fig. 5) to 0.8 ampere, 115 volts, slow-blow.

b. Transformer Connections for 230-Volt Ac Operation (B, fig. 4). When operation from a 230-volt ac power source is required, connect the power transformer primary windings in series as follows:

(1) Remove the jumper wire between the terminal with the two black leads and the terminal with the green-black lead.
(2) Disconnect the jumper wire from the terminal with the black-red and white leads.
(3) Connect the free end of the jumper ((2) above) to the terminal with the black-green lead.
(4) Change fuse F1 (fig. 5) to a 0.4 ampere, 230-volt slow-blow type.

c. Power Connections. The connector plug (fig. 5) on the three-wire (black, white, and green) power cord has a round grounding terminal. If this connector plug does not fit the ac power outlet, replace the plug with Connector Plug UP-121M or any three-terminal plug that will fit the ac power outlet.

Caution:

The black wire (hot) must be connected to the narrow ungrounded blade, and 8 the white wire must be connected to the wide (line ground) blade. The green wire is the safety ground and should be connected to a good external ground.

Warning:

Never use the white wire (line ground) as a safety ground.

d. Input Signal Connection. The rf amplifier may be connected to a signal source through a twisted pair of wire leads or a shielded cable. For convenience, the leads should be terminated in banana plugs (for connection to the rf amplifier). The other ends may be terminated in the most convenient manner for the particular application. Twisted insulated wires may be used for connection to low-impedance sources where noise pickup will not affect the signal to be amplified. Shielded cable may be used to prevent noise pickup from stray electrical fields, and is usually necessary for leads more than 3 feet in length.

Caution:

Do not connect the rf amplifier INPUT leads to any circuit having more than 600 direct-current volts (vdc) present. Higher voltages will break down the input capacitor.

e. Output Signal Connection. The rf amplifier OUTPUT leads may be connected to an external signal indicator through any convenient leads or cable. The output leads are not significantly affected by low-level electrical fields.

f. Special Connections for Low-Level Signals. When amplifying low-level signals between electronic instruments, it may be necessary to control all the electrical paths to the power line ground so that ground-seeking currents do not pass through signal leads. The chassis of any electrical instrument connected to a 115-volt ac power source can become a line-frequency signal generator. The currents from this undesired signal source seek a path to ground and develop undesirable voltages. The undesired voltages are then coupled to any other instrument or circuit that uses the same path. It is not possible to specify one system of grounding which will work best for all systems. The following general rules will eliminate undesired pickup in most cases.

(1) When connecting a signal lead between the rf amplifier and another instrument that is also operated from the same 115-volt ac power source,

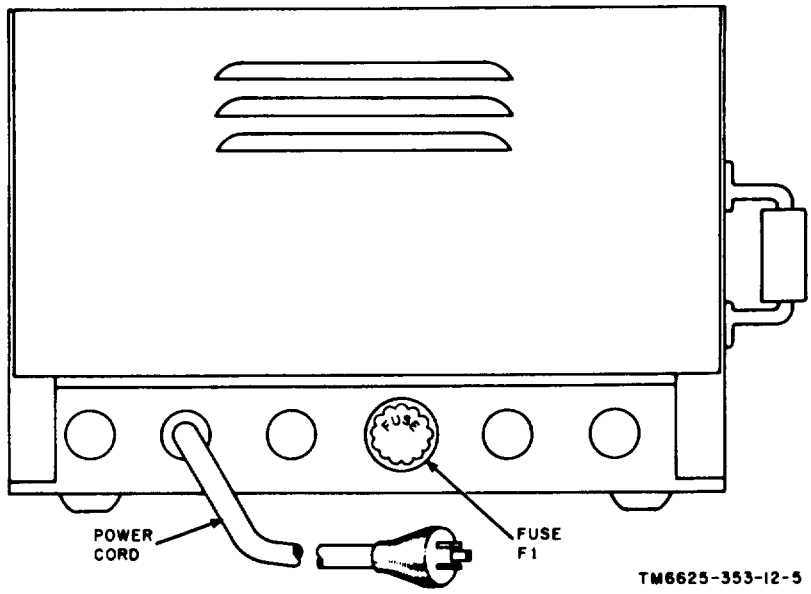


Figure 5. Rf amplifier, rear view.

select *one* route for ground currents of all circuits in the system. This route may be selected by experimentation for lowest noise level. If a second route to ground is added to any instrument, the closed-circuit loop created will permit a large increase in ground currents.

(2) If the ground side of the signal leads is in series with the ground loop (which is typically the case), there is a large attendant increase in noise level. In addition, whenever practical, reduce the resistance of the ground return path to eliminate any appreciable line-frequency voltage developed across it, and insulate the rf amplifier chassis from a metal bench.

Section II. OPERATOR'S CONTROLS AND INDICATOR

10. Amplifier, Radio Frequency AM-1881/U Operating Controls and Indicator

(fig. 1)

The operating controls and indicator and their functions are listed in the following table:

Control or Indicator	Function
Line power incandescent light.	Lights when line power switch is set to ON.
Power switch.....	In ON position, connects ac line power to rf amplifier. In off (down) position, it disconnects the line power from the rf amplifier.
GAIN switch	Selects either 20 DB or 40 DB fixed gain. (20 DB equals a voltage gain of 10; 40 DB equals a voltage gain of 100.)

11. Starting, Operating, and Stopping Procedure

Note

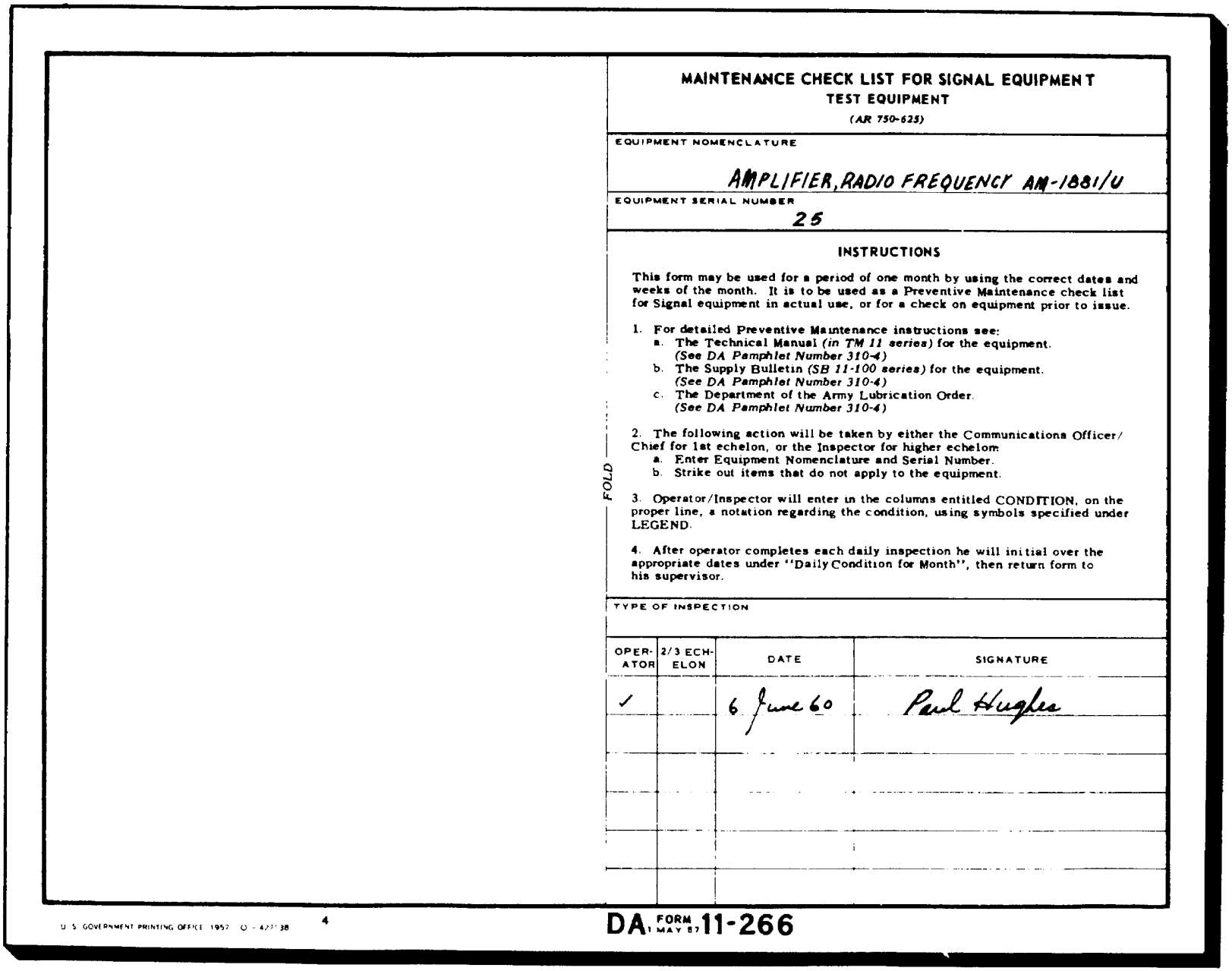
If an abnormal indication is obtained during the starting and operating procedure, refer to paragraph 14 for corrective measures.

a. The procedure for starting and operating the rf amplifier is relatively simple. For all applications, make connections to the rf amplifier as described in paragraph 9 and proceed as follows:

(1) Set the GAIN switch to either 20 DB or 40 DB, as desired.

(2) Set the power switch to ON and allow a 5-minute warmup period.

b. To stop the rf amplifier, set the line power switch off. Remove the power cord and the INPUT and OUTPUT line connections.



MAINTENANCE CHECK LIST FOR SIGNAL EQUIPMENT
TEST EQUIPMENT
(AR 750-625)

EQUIPMENT NOMENCLATURE

AMPLIFIER, RADIO FREQUENCY AM-1881/U

EQUIPMENT SERIAL NUMBER

25

INSTRUCTIONS

This form may be used for a period of one month by using the correct dates and weeks of the month. It is to be used as a Preventive Maintenance check list for Signal equipment in actual use, or for a check on equipment prior to issue.

1. For detailed Preventive Maintenance instructions see:
   a. The Technical Manual *(in TM 11 series)* for the equipment. *(See DA Pamphlet Number 310-4)*
   b. The Supply Bulletin *(SB 11-100 series)* for the equipment. *(See DA Pamphlet Number 310-4)*
   c. The Department of the Army Lubrication Order. *(See DA Pamphlet Number 310-4)*

2. The following action will be taken by either the Communications Officer/ Chief for 1st echelon, or the Inspector for higher echelon:
   a. Enter Equipment Nomenclature and Serial Number.
   b. Strike out items that do not apply to the equipment.

3. Operator/Inspector will enter in the columns entitled CONDITION, on the proper line, a notation regarding the condition, using symbols specified under LEGEND.

4. After operator completes each daily inspection he will initial over the appropriate dates under "Daily Condition for Month", then return form to his supervisor.

FOLD

TYPE OF INSPECTION

OPER-ATOR	2/3 ECH-ELON	DATE	SIGNATURE
✓		6 June 60	Paul Hughes

U. S. GOVERNMENT PRINTING OFFICE 1957 O - 427138

4

DA FORM 1 MAY 57 11-266

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Figure 6. DA Form 11-266, pages 1 and 4.

CHAPTER 3
MAINTENANCE INSTRUCTIONS

Section I. OPERATOR'S MAINTENANCE

12. Scope of Operator's Maintenance

a. The following is a list of maintenance duties normally performed by the operator of Amplifier, Radio Frequency AM-1881/U. These procedures do not require special tools or test equipment.

b. Operator's maintenance for Amplifier, Radio Frequency AM-1881/U consists of the following:

(1) Preventive maintenance (para 13).
(2) Visual inspection (para 14).
(3) Replacement of defective line power incandescent lamp (para 15).
(4) Replacement of defective fuse (para 15).
(5) Replacement of defective tubes (para 16).

13. Preventive Maintenance

a. DA Form 11-266. DA Form 11-266 (fig. 6 and 7) is a preventive maintenance checklist to be used by the operator. Items not applicable to operator's maintenance of the rf amplifier are lined out. References in the ITEM block in the figures are to paragraphs that contain additional maintenance information pertinent to the particular item. Follow the instructions on the form.

b. Items. The information shown in this paragraph supplements DA Form 11-266. The item numbers correspond to the ITEM numbers on the form.

Item	Maintenance procedures
1	Use a clean cloth to remove dust, dirt, moisture, and grease from the housing and front panel. If necessary, wet the cloth with Cleaning Compound (Federal stock No. 7930-395-9542) and then wipe the parts dry with a clean, dry cloth.
2	Tighten the round, knurled locking nut on the power ON and GAIN switches. Tighten the jewel on the line power indicating light finger-tight.
5	Repair any cuts in the power-cord insulation by covering them with rubber tape and then with friction tape.

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

14. Visual Inspection

a. When the rf amplifier fails to perform properly, remove the power connector from the ac power outlet and check all the items listed below. Do not check any item with the power on.

(1) Check to see that the GAIN switch is set to its proper position (20 DB or 40 DB).
(2) Check to see that the INPUT and OUTPUT cables are properly connected.
(3) Check for a burned-out line fuse (usually indicates some other fault).
(4) Check the associated external equipment for defects.

b. If the above checks do not locate the trouble, higher echelon repair is required.

15. Repairs and Adjustment

a. Replacement of Line Power Incandescent Lamp.

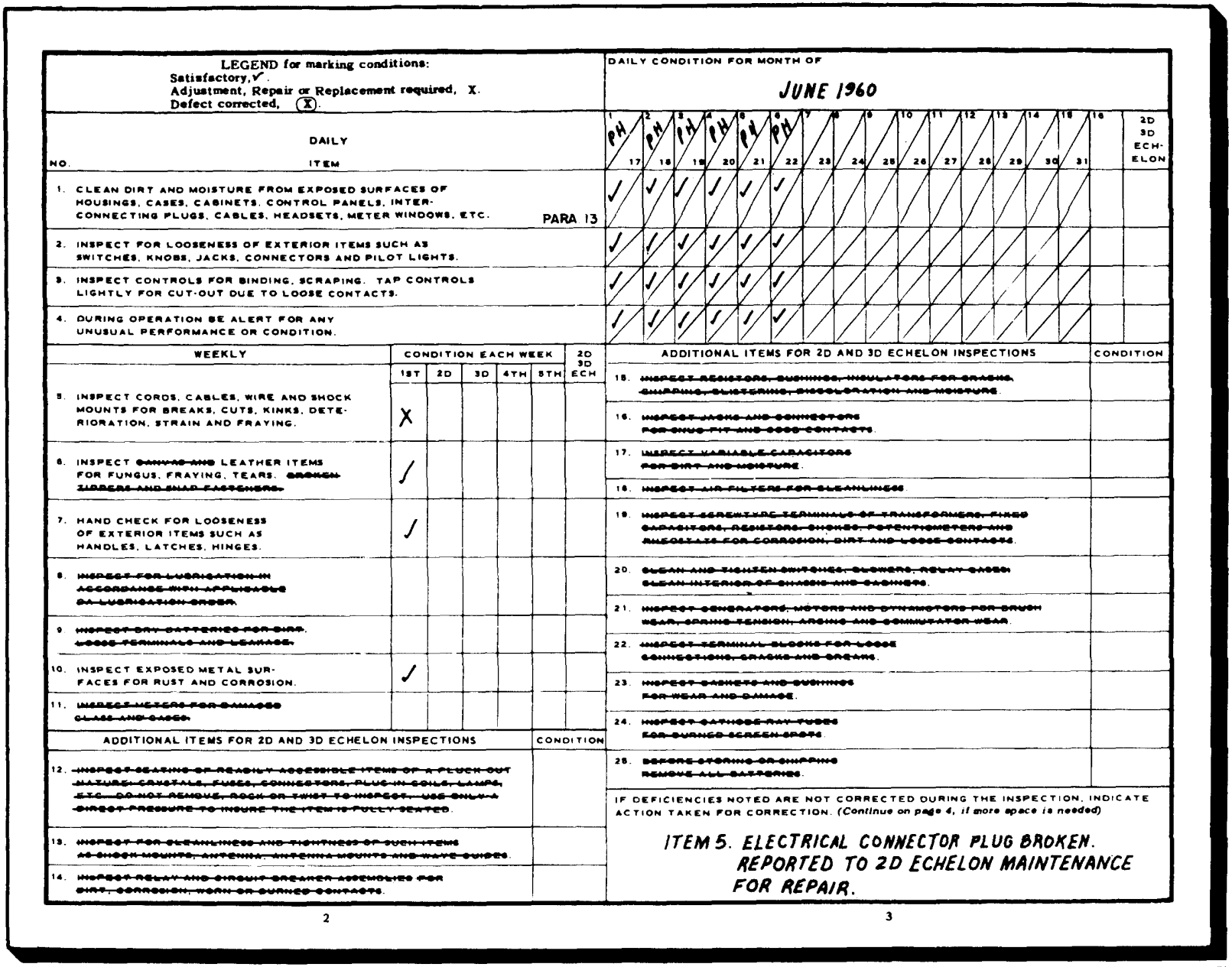
(1) Turn the lens counterclockwise and remove it from the lampholder in the front panel.
(2) Press in on the defective lamp and turn it counterclockwise to release it from the lampholder.
(3) Insert the new lamp into the lampholder. Press in on the lamp and turn it clockwise to lock it.
(4) Replace the lens on the lampholder and turn it clockwise to tighten it.

b. Replacement of Fuse.

(1) Turn the fuseholder cap counterclockwise and remove it from the fuseholder.
(2) Remove the defective fuse from the fuseholder cap.
(3) Insert a new fuse in the fuseholder cap.

Note

Be sure that the fuse is a slow-blow type of the proper rating (0.8 ampere, 115 volts, or 0.4 ampere, 230 volts).



LEGEND for marking conditions:
Satisfactory, ✓.
Adjustment, Repair or Replacement required, X.
Defect corrected, (X).

DAILY CONDITION FOR MONTH OF JUNE 1960

NO.	DAILY ITEM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	2D 3D ECHELON
1.	CLEAN DIRT AND MOISTURE FROM EXPOSED SURFACES OF HOUSINGS, CASES, CABINETS, CONTROL PANELS, INTERCONNECTING PLUGS, CABLES, HEADSETS, METER WINDOWS, ETC. PARA 13	✓	✓	✓	✓	✓	✓																										
2.	INSPECT FOR LOOSENESS OF EXTERIOR ITEMS SUCH AS SWITCHES, KNOBS, JACKS, CONNECTORS AND PILOT LIGHTS.	✓	✓	✓	✓	✓	✓																										
3.	INSPECT CONTROLS FOR BINDING, SCRAPING. TAP CONTROLS LIGHTLY FOR CUT-OUT DUE TO LOOSE CONTACTS.	✓	✓	✓	✓	✓	✓																										
4.	DURING OPERATION BE ALERT FOR ANY UNUSUAL PERFORMANCE OR CONDITION.	✓	✓	✓	✓	✓	✓																										

WEEKLY	CONDITION EACH WEEK 1ST	2D	3D	4TH	5TH	2D 3D ECH
5. INSPECT CORDS, CABLES, WIRE AND SHOCK MOUNTS FOR BREAKS, CUTS, KINKS, DETERIORATION, STRAIN AND FRAYING.	X					
6. INSPECT ~~CANVAS AND~~ LEATHER ITEMS FOR FUNGUS, FRAYING, TEARS. ~~BROKEN STRAPS AND SNAP FASTENERS.~~	✓					
7. HAND CHECK FOR LOOSENESS OF EXTERIOR ITEMS SUCH AS HANDLES, LATCHES, HINGES.	✓					
8. ~~INSPECT FOR LUBRICATION IN ACCORDANCE WITH APPLICABLE LUBRICATION ORDER.~~						
9. ~~INSPECT DRY BATTERIES FOR DIRT, LOOSE TERMINALS AND LEAKAGE.~~						
10. INSPECT EXPOSED METAL SURFACES FOR RUST AND CORROSION.	✓					
11. ~~INSPECT METERS FOR DAMAGED GLASS AND CASES.~~						

ADDITIONAL ITEMS FOR 2D AND 3D ECHELON INSPECTIONS	CONDITION
12. ~~INSPECT SEATING OF READILY ACCESSIBLE ITEMS OF A PLUG-OUT NATURE; CRYSTALS, FUSES, CONNECTORS, PLUG-IN COILS, LAMPS, ETC. DO NOT REMOVE, ROCK OR TWIST TO INSPECT. USE ONLY A DIRECT PRESSURE TO INSURE THE ITEM IS FULLY SEATED.~~	
13. ~~INSPECT FOR CLEANLINESS AND TIGHTNESS OF SUCH ITEMS AS SHOCK MOUNTS, ANTENNA, ANTENNA MOUNTS AND WAVE GUIDES.~~	
14. ~~INSPECT RELAY AND CIRCUIT BREAKER ASSEMBLIES FOR DIRT, CORROSION, WORN OR BURNED CONTACTS.~~	

ADDITIONAL ITEMS FOR 2D AND 3D ECHELON INSPECTIONS	CONDITION
15. ~~INSPECT RESISTORS, BUSHINGS, INSULATORS FOR CRACKS, CHIPPING, BLISTERING, DISCOLORATION AND MOISTURE.~~	
16. ~~INSPECT JACKS AND CONNECTORS FOR SNUG FIT AND GOOD CONTACTS.~~	
17. ~~INSPECT VARIABLE CAPACITORS FOR DIRT AND MOISTURE.~~	
18. ~~INSPECT AIR FILTERS FOR CLEANLINESS.~~	
19. ~~INSPECT SCREW-TYPE TERMINALS OF TRANSFORMERS, FIXED CAPACITORS, RESISTORS, SHUNTS, POTENTIOMETERS AND RHEOSTATS FOR CORROSION, DIRT AND LOOSE CONTACTS.~~	
20. ~~CLEAN AND TIGHTEN SWITCHES, BLOWERS, RELAY SHOCK. CLEAN INTERIOR OF CHASSIS AND CABINETS.~~	
21. ~~INSPECT GENERATORS, MOTORS AND DYNAMOTORS FOR BRUSH WEAR, SPRING TENSION, ARCING AND COMMUTATOR WEAR.~~	
22. ~~INSPECT TERMINAL BLOCKS FOR LOOSE CONNECTIONS, CRACKS AND BREAKS.~~	
23. ~~INSPECT GASKETS AND BUSHINGS FOR WEAR AND DAMAGE.~~	
24. ~~INSPECT CATHODE RAY TUBES FOR BURNED SCREEN SPOTS.~~	
25. ~~BEFORE STORING OR SHIPPING REMOVE ALL BATTERIES.~~	

IF DEFICIENCIES NOTED ARE NOT CORRECTED DURING THE INSPECTION, INDICATE ACTION TAKEN FOR CORRECTION. *(Continue on page 4, if more space is needed)*

ITEM 5. ELECTRICAL CONNECTOR PLUG BROKEN. REPORTED TO 2D ECHELON MAINTENANCE FOR REPAIR.

2 3

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Figure 7. DA Form 11-266, pages 2 and 3 (operator).

(4) Replace the fuseholder cap in the fuseholder and turn it clockwise to tighten it.

16. Tube-Testing Techniques

When trouble occurs, check all cabling before removing any tubes. If tube failure is suspected, use the applicable procedure below to check the tubes. Replace a suspected tube with a new tube. If the equipment still does not work, remove the new tube and put back the original tube. Repeat this procedure with each suspected tube until the defective tube is located.

Caution:

Do not rock or rotate a tube when removing it from a socket; pull it straight out with a tube puller.

Caution:

Do not remove V1 or V2 for testing with the power switch at ON. The filament voltage will increase if either tube is removed.

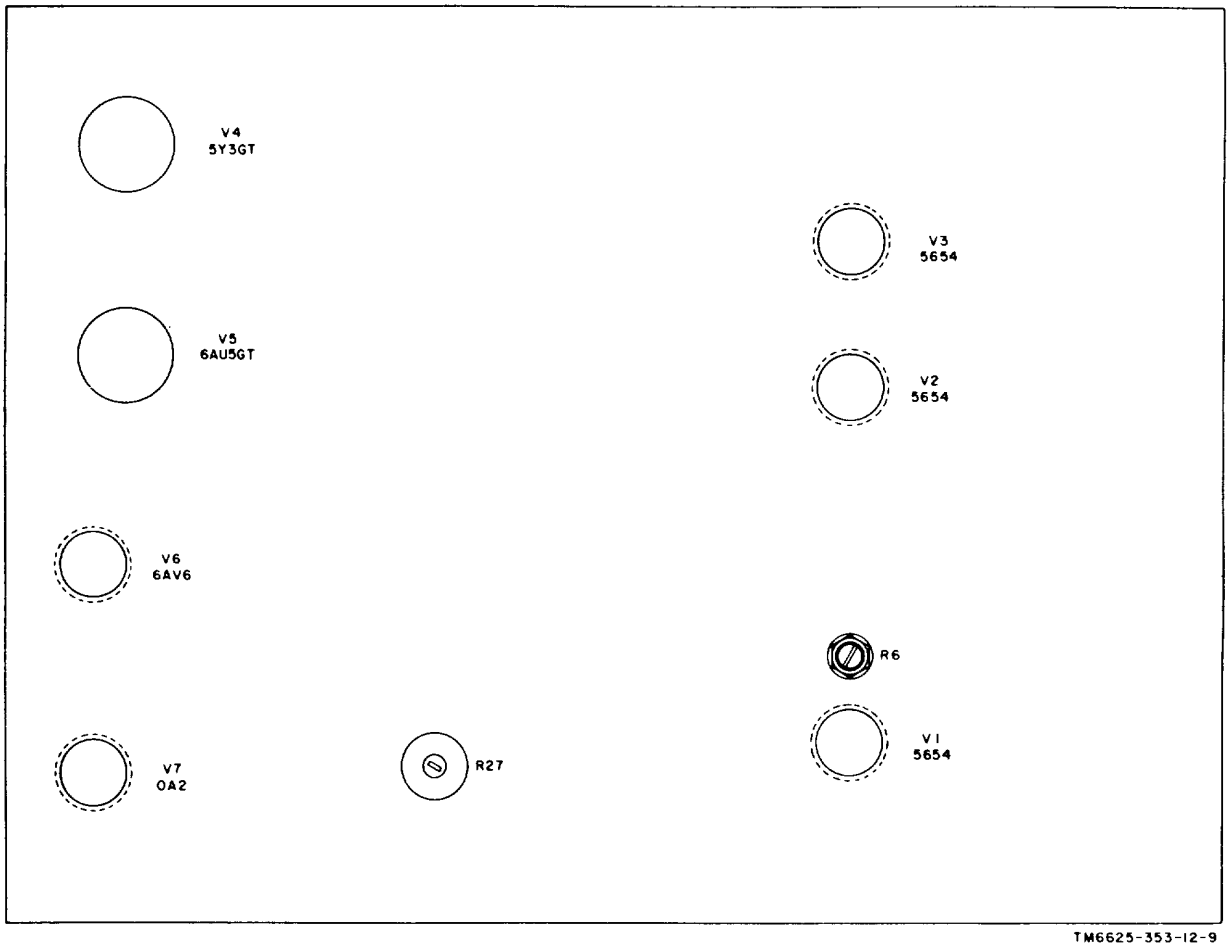

Figure 8. Tube location diagram.

Section II. ORGANIZATIONAL MAINTENANCE

17. Scope of Unit Repairman's Maintenance

a. Second echelon maintenance duties are listed in *b* below. Their scope is determined by the available tools, materials, test equipment, and spare parts available.

b. Second echelon maintenance of the rf amplifier consists of the following:

(1) Replacement of Connector, Plug, Electrical UP-121M.
(2) Preventive maintenance (para 19).
(3) Replacement of fuseholder cap.

LEGEND for marking conditions:
Satisfactory, ✓.
Adjustment, Repair or Replacement required, X.
Defect corrected, (X).

DAILY CONDITION FOR MONTH OF **JUNE 1960**

NO.	DAILY ITEM	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	2D ECHELON
1.	CLEAN DIRT AND MOISTURE FROM EXPOSED SURFACES OF HOUSINGS, CASES, CABINETS, CONTROL PANELS, INTERCONNECTING PLUGS, CABLES, HEADSETS, METER WINDOWS, ETC.																																✓
2.	INSPECT FOR LOOSENESS OF EXTERIOR ITEMS SUCH AS SWITCHES, KNOBS, JACKS, CONNECTORS AND PILOT LIGHTS.																																✓
3.	INSPECT CONTROLS FOR BINDING, SCRAPING. TAP CONTROLS LIGHTLY FOR CUT-OUT DUE TO LOOSE CONTACTS.																																✓
4.	DURING OPERATION BE ALERT FOR ANY UNUSUAL PERFORMANCE OR CONDITION.																																✓

WEEKLY	CONDITION EACH WEEK 1ST	2D	3D	4TH	8TH	2D ECH
5. INSPECT CORDS, CABLES, WIRE AND SHOCK MOUNTS FOR BREAKS, CUTS, KINKS, DETERIORATION, STRAIN AND FRAYING.						⊗
6. INSPECT ~~CANVAS AND~~ LEATHER ITEMS FOR FUNGUS, FRAYING, TEARS. ~~BROKEN ZIPPERS AND SNAP FASTENERS.~~						✓
7. HAND CHECK FOR LOOSENESS OF EXTERIOR ITEMS SUCH AS HANDLES, LATCHES, HINGES.						✓
8. ~~INSPECT FOR LUBRICATION IN ACCORDANCE WITH APPLICABLE LO LUBRICATION ORDER.~~						
9. ~~INSPECT DRY BATTERIES FOR DIRT, LOOSE TERMINALS AND LEAKAGE.~~						
10. INSPECT EXPOSED METAL SURFACES FOR RUST AND CORROSION.						✓
11. ~~INSPECT METERS FOR DAMAGED GLASS AND CASES.~~						

ADDITIONAL ITEMS FOR 2D AND 3D ECHELON INSPECTIONS	CONDITION
12. INSPECT SEATING OF READILY ACCESSIBLE ITEMS OF A PLUCK-OUT NATURE: ~~CRYSTALS~~, FUSES, CONNECTORS, ~~PLUG-IN COILS~~, LAMPS, ETC. DO NOT REMOVE, ROCK OR TWIST TO INSPECT. USE ONLY A DIRECT PRESSURE TO INSURE THE ITEM IS FULLY SEATED. PARA. 18	✓
13. ~~INSPECT FOR CLEANLINESS AND TIGHTNESS OF SUCH ITEMS AS SHOCK MOUNTS, ANTENNA, ANTENNA MOUNTS AND WAVE GUIDES.~~	
14. ~~INSPECT RELAY AND CIRCUIT BREAKER ASSEMBLIES FOR DIRT, CORROSION, WORN OR BURNED CONTACTS.~~	

ADDITIONAL ITEMS FOR 2D AND 3D ECHELON INSPECTIONS	CONDITION
15. INSPECT RESISTORS, BUSHINGS, INSULATORS FOR CRACKS, CHIPPING, BLISTERING, DISCOLORATION AND MOISTURE.	✓
16. INSPECT JACKS AND CONNECTORS FOR SNUG FIT AND GOOD CONTACTS.	✓
17. INSPECT VARIABLE CAPACITORS FOR DIRT AND MOISTURE.	✓
18. ~~INSPECT AIR FILTERS FOR CLEANLINESS.~~	
19. INSPECT SCREWTYPE TERMINALS OF TRANSFORMERS, FIXED CAPACITORS, RESISTORS, CHOKES, POTENTIOMETERS AND RHEOSTATS FOR CORROSION, DIRT AND LOOSE CONTACTS. PARA 18	✓
20. CLEAN AND TIGHTEN SWITCHES, ~~BLOWERS, RELAY CASES~~; CLEAN INTERIOR OF CHASSIS AND CABINETS.	
21. ~~INSPECT GENERATORS, MOTORS AND DYNAMOTORS FOR BRUSH WEAR, SPRING TENSION, ARCING AND COMMUTATOR WEAR.~~	
22. INSPECT TERMINAL BLOCKS FOR LOOSE CONNECTIONS, CRACKS AND BREAKS.	✓
23. ~~INSPECT GASKETS AND BUSHINGS FOR WEAR AND DAMAGE.~~	
24. ~~INSPECT CATHODE RAY TUBES FOR BURNED SCREEN SPOTS.~~	
25. ~~BEFORE STORING OR SHIPPING REMOVE ALL BATTERIES.~~	

IF DEFICIENCIES NOTED ARE NOT CORRECTED DURING THE INSPECTION, INDICATE ACTION TAKEN FOR CORRECTION. *(Continue on page 4, if more space is needed)*

2 3

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Figure 9. DA Form 11-266, pages 2 and 3 (second echelon).

(4) Replacement of electron tube shields.
(5) Visual inspection (para 20).

18. Tools and Materials Required

The tools and materials, required for organizational maintenance are listed below.

a. Tools. Tool equipment that is normally available to second echelon.

b. Materials.

(1) Cleaning compound.
(2) Cleaning cloth.

19. Preventive Maintenance

a. DA Form 11-266. DA Form 11-266 (fig. 9) is a preventive maintenance checklist to be used by the second echelon. Items not applicable to the equipment are lined out in the figure. References to the ITEM block in the figure are to paragraphs that contain additional maintenance information pertinent to the particular item. Additional preventive maintenance information concerning items 1, 2, and 5 on DA Form 11-266 will be found in paragraph 13. Follow the instructions on the form.

b. Items. The information shown in this subparagraph is supplementary to DA Form 11-266. The item numbers correspond to the ITEM numbers on the form.

Warning:

Disconnect all power before performing the following operations. After the power is disconnected, some capacitors still may retain dangerous voltages. Before touching exposed electrical parts, short-circuit the parts to ground. When maintenance is completed, replace the equipment in its case, and check for satisfactory operation (para 11).

Item	Maintenance procedure
12	Remove the top and bottom covers of the rf amplifier and inspect the seating of all tubes, tube shields, and lampholders.

Item	Maintenance procedure
19	Inspect fixed capacitors on the top side of the chassis for leaks, bulges, and discoloration; also inspect capacitors C3 and C5 on the bottom side of the chassis.

20. Visual Inspection

Inspect the rf amplifier before operating it. This will save repair time and may also avoid further damage. Inspect the following for obvious defects:

a. Check the seating of all tubes and tube shields in their sockets.

b. The selenium rectifier for burns, blistering, or other evidence of excessive heating. (If found to be burned, higher echelon maintenance is required.)

c. The wiring connections on the terminal boards.

d. The 115-volt or 230-volt connections for the power transformer (fig. 4).

e. All electroytic capacitors.

f. The wiring connections to the switches and the INPUT and OUTPUT connectors.

21. Equipment Performance Checklist

a. General. The equipment performance checklist provides a procedure for checking the equipment performance. The corrective measures that the second echelon repairman can perform are given in the *Corrective Measures* column. When using the checklist, start at the beginning and follow each step in order. If the corrective measures indicated do not fix the equipment, troubleshooting is required by higher echelon. Note on the repair tag how the equipment performed and the corrective measures that were taken.

b. Procedure. Perform the step in *c* below.

c. Equipment Performance Checklist.

Stop	Action	Normal indication	Corrective measure
1	Set power switch to ON.	Line power indicator lamp lights.	Check indicator lamp. Check fuse F1 (fig. 5). Check line power connector plug.

CHAPTER 4
SHIPMENT, LIMITED STORAGE, AND DEMOLITION TO PREVENT ENEMY USE

Section I. SHIPMENT AND LIMITED STORAGE

22. Disassembly of Equipment

To disassemble the rf amplifier, disconnect the rf amplifier INPUT and OUTPUT leads and disconnect the power cord.

23. Repackaging for Shipment or Limited Storage

The exact procedure for repackaging depends on the material available and the conditions under which the equipment is to be shipped or stored. Adapt the procedures outlined below whenever circumstances permit. The information concerning the original packaging (para 7) will also be useful.

a. Material Requirements. The following materials are required for packaging Amplifier, Radio Frequency AM-1881/U. For stock numbers of materials, consult SB 38-100.

Material	Quantity
Barrier material, waterproofed	30 sq ft
Tape, gummed, paper, waterproof	30 ft
Fiberboard, corrugated	25 sq ft
Tape, gummed, paper, water soluble	30 ft
Cushioning material	15 sq ft
Indicator, humidity, card	1 ea
Desiccant bag	4 ea
Box, fiberboard, corrugated	2 ea

b. Prepackaging. Prepackage the items of the AM-1881/U as outlined below.

(1) *Rf amplifier.*

(*a*) Completely wrap the rf amplifier in cushioning material.

(*b*) Seal the cushioning material with gummed tape.

(2) *Running spares*.

(*a*) Wrap each running spare in cushioning material.

(*b*) Place all the running spares in a small box prepared from corrugated fiberboard.

(*c*) Seal the box with gummed tape.

(3) *Technical manuals.*

(a) Place the two technical manuals in two bags prepared from the waterproof barrier material.

(b) Seal the bags with gummed tape.

c. Packaging. Package all items as follows:

(1) Place the corrugated fiberboard fillers on the bottom of the inner corrugated fiberboard box.

(2) Place the rf amplifier in the box.

(3) Place the corrugated fiberboard fillers on all four sides and top of the rf amplifier.

(4) Place the four desiccant bags and the humidity indicator card on the top of the inner box.

(5) Seal the inner box with gummed tape.

(6) Line the inside of the outer box with a bag made of waterproofed barrier material.

(7) Set the inner box into the outer box.

(8) Seal the bag with gummed tape.

(9) Place the technical manuals in the outer box.

(10) Place the running spares in the outer box.

(11) Close the box and seal it with waterproof gummed tape.

Section II. DEMOLITION OF MATERIEL TO PREVENT ENEMY USE

24. Authority for Demolition

The demolition procedures given in paragraph 25 will be used to prevent the enemy from using or salvaging this equipment. Demolition of the equipment will be accomplished only upon the order of the commander.

25. Methods of Destruction

Any or all of the methods of destruction given below may be used. The time available will be the major determining factor for the methods to be used in most instances when destruction of equipment is undertaken. The tactical situation also will determine in what manner

the destruction order will be carried out.

a. Smash. Remove the top cover and bottom plate and smash all exposed parts; use sledges, axes, hammers, crowbars, and any other heavy tools available.

b. Cut. Cut the cables in a number of places; use axes, knives, cutters, and similar tools to cut external cabling and internal wiring.

c. Burn. Burn the technical manuals first; use gasoline, oil, flamethrowers, and similar tools; pour gasoline on the bottom of the chassis and ignite it.

d. Explode. Use explosives to complete demolition or to cause maximum damage when time does not permit complete demolition by other means. Use powder charges, fragmentation grenades, or incendiary grenades. Incendiary grenades usually are most effective if destruction of small parts and wiring is desired.

Warning

Be extremely careful with explosives and incendiary devices. Use these items only when the need is urgent.

e. Dispose. Bury or scatter the destroyed parts or throw them into nearby waterways. This is particularly important if the equipment has not been completely destroyed.

APPENDIX I
REFERENCES

Following is a list of references available to first and second echelon personnel assigned to the operation and maintenance of Amplifier, Radio Frequency AM-1881/U.

DA Pam 108-1	Index of Army Motion Pictures, Film Strips, Slides, and Phono-Recordings
FM 21-5	Military Training
FM 21-6	Techniques of Military Instruction
FM 21-30	Military Symbols
SB 38-100	Preservation, Packaging, and Packing Materials, Supplies, and Equipment Used by the Army
SR 320-5	Dictionary of United States Army Terms
SR 320-50	Authorized Abbreviations and Brevity Codes

APPENDIX II
MAINTENANCE ALLOCATION CHART

Section I. INTRODUCTION

1. General

a. This appendix assigns maintenance functions and repair operations to be performed by the lowest appropriate maintenance echelon. It also specifies the tools and other equipment authorized at each echelon to perform the assigned maintenance functions.

b. Columns in the maintenance allocation chart are as follows:

(1) *Part or component.* This column shows only the nomenclature or standard item name. Additional descriptive data are included only where clarification is necessary to identify the part. Components and parts making up the major end item are listed alphabetically. Assemblies and subassemblies are in alphabetical sequence with their components listed alphabetically immediately below the assembly listing.

(2) *Maintenance function.* This column indicates the various maintenance functions allocated to the echelon capable of performing the operation.

(*a*) *Service*. To clean, to preserve, and to replenish fuel and lubricants.

(*b*) *Adjust.* To regulate periodically to prevent malfunction.

(*c*) *Inspect.* To verify serviceability and to detect incipient electrical or mechanical failure by scrutiny.

(*d*) *Test.* To verify serviceability and to detect incipient electrical or mechanical failure by use of special equipment, such as gages, meters, etc.

(*e*) *Replace.* To substitute serviceable assemblies, subassemblies, and parts for unserviceable components.

(*f*) *Repair.* To restore to a serviceable condition by replacing unserviceable parts or by any other action required, utilizing tools, equipment, and skills available, to include welding, grinding, riveting, straightening, adjusting, etc.

(*g*) *Align*. To adjust two or more components of an electrical system so that their functions are properly synchronized.

(*h*) *Calibrate.* To determine, check, or rectify the graduation of an instrument, weapon, or weapons system, or components of a weapons system.

(*i*) *Rebuild.* To restore to a condition comparable to new by disassembling the item to determine the condition of its component parts and reassembling it using serviceable, rebuilt, or new assemblies, subassemblies, and parts.

(3) *1st, 2d, 3d, 4th, and 5th echelon.* The symbol X indicates the echelon responsible for performing that particular maintenance operation, but does not necessarily indicate that repair parts will be stocked at that level. Echelons higher than the echelon marked by X are authorized to perform the indicated operation.

(4) *Tools required*. This column indicates codes assigned to each individual tool equipment, test equipment, and maintenance equipment referenced. The numbers in column 8 of the maintenance allocation chart indicate the tool, test, and maintenance equipments required to perform the maintenance function. These numbers are identified in section III, Allocation of Tools for Maintenance Functions.

(5) *Remark*s. Column 9 contains any notations necessary to clarify the data cited in the preceding columns.

c. Columns in section III are as follows:

(1) *Tools required for maintenance functions.* This column lists the tool and test equipment required to perform the maintenance functions.

(2) *1st, 2d, 3d, 4th, and 5th echelon.* A dagger (†) symbol indicates that the

tool or test equipment is allocated to that echelon.

(3) *Tool code.* This column lists the tool code assigned.

2. Maintenance by Using Organizations

When this equipment is used by signal service organizations organic to theater headquarters or communications zones, those maintenance functions allocated up to and including fourth echelon are authorized to the organization operating this equipment.

3. Mounting Hardware

The basic entries of the maintenance allocation chart do not include mounting hardware, such as screws, nuts, bolts, washers, brackets, and clamps.

Section II. MAINTENANCE ALLOCATION CHART

PART OR COMPONENT	MAINTENANCE FUNCTION	ECHELON 1ST ECH	2ND ECH	3RD ECH	4TH ECH	5TH ECH	TOOLS REQUIRED	REMARKS
AMPLIFIER, RADIO FREQUENCY AM-1881/U	service				X			
	inspect				X			
	test				X		1,2,3,4,5,6,7,8,9	7 at 5th only
	repair				X			
	rebuild					X		
ASSEMBLY, RESISTOR BOARD	replace				X			
	repair				X			
TERMINAL BOARDS	replace				X			Fabricate if required
RESISTORS	replace				X			
CAPACITORS	replace				X			
BINDING POST	replace				X			
BUMPER, RUBBER	replace				X			Order thru local procurement
CABLE, POWER	replace				X			
CONNECTOR, ELECTRICAL PLUG	replace		X					
ELECTRON TUBE	replace	X						
FUSE	replace	X						
FUSEHOLDER	replace				X			
CAP, FUSEHOLDER	replace		X					
HANDLE ASSEMBLY	replace				X			
INSULATOR, BINDING POST	replace				X			
LAMP, INCANDESCENT	replace	X						
LAMPHOLDER	replace				X			
NUTS	replace				X			Available STD hardware kits
RECTIFIER, SELENIUM	replace				X			
RIVETS	replace				X			Available in hardware kits
SCREWS	replace				X			Available in STD hardware kits
SHIELD, ELECTRON TUBE	replace		X					
SOCKET, ELECTRON TUBE	replace				X			
SPACERS	replace				X			Fabricate if required
SWITCH, TOGGLE	replace				X			
TRANSFORMERS	replace				X			
WASHERS	repair				X			Available in STD hardware kits

Section III. ALLOCATION OF TOOLS FOR MAINTENANCE FUNCTIONS

TOOLS REQUIRED FOR MAINTENANCE FUNCTIONS	ECHELON 1ST ECH	2ND ECH	3RD ECH	4TH ECH	5TH ECH	TOOL CODE	REMARKS
A15-1881/U (continued)							
ANALYZER SPECTURN TS-723/U				†	†	1	
AUDIO OSCILLATOR TS-382/U				†	†	2	
MULTIMETER AN/URM-105				†	†	3	
OSCILLOSCOPE AN/USM-50				†	†	4	
RF SIGNAL GENERATOR SET AN/URM-25				†	†	5	
TOOL EQUIPMENT TE-113				†	†	6	
TEST SET ELECTRON TUBE TV-2/U					†	7	
TEST SET ELECTRON TUBE TV-7/U				†		8	
VOLTMETER METER ME-30/U				†	†	9	

APPENDIX III
FIRST ECHELON FUNCTIONAL PARTS LIST

Section I. INTRODUCTION

1. Scope

a. This appendix lists items supplied for initial operation and for running spares. The list includes parts and material issued as part of the major item. The list includes all items authorized for basic operator maintenance of the equipment. End items of equipment are issued on the basis of allowances prescribed in equipment authorization tables and other documents that are a basis for requisitioning.

b. The columns in section II are defined as follows:

(1) *Source, maintenance, and recoverability code*. Not used.

(2) *Federal stock number*. This column lists the 11-digit Federal stock number.

(3) *Designation by model*. Not used.

(4) *Description.* Nomenclature or the standard item name and brief identifying data for each item are listed in this column. When requisitioning, enter the nomenclature and description on the requisition.

(5) *Unit of issue*. The unit of issue is the supply term applied to the smallest quantity by which the individual item is counted for procurement, storage, requisitioning, allowances, and issue purposes.

(6) *Expandability.* Expendable items are indicated by the letter X; nonexpendable items are indicated by NX.

(7) *Quantity authorized*. Under "Items Comprising an Operable Equipment" the column lists the quantity of items supplied for the initial operation of the equipment. Under "Running Spares and Accessory Items" the quantities listed are those issued initially with the equipment as spare parts. The quantities are authorized to be kept on hand by the operator for maintenance of the equipment.

(8) *Illustrations.* The "Figure No." column lists the figure on which the item is illustrated. The "Item No." column lists the reference designations that appear on the part in the equipment.

2. Critical Items

A zero slash (∅) in the "Description" column indicates items that are expected to fail during the first year; also items that will make the equipment inoperative if they fail.

Section II. FIRST ECHELON FUNCTIONAL PARTS LIST

(1) SOURCE MAINT AND RECOVER-ABILITY CODE	(2) FEDERAL STOCK NUMBER	(3) DESIGNATION BY MODEL	(4) DESCRIPTION	(5) UNIT OF ISSUE	(6) EXPEND-ABILITY	(7) QTY AUTH-ORIZED	(8) (9) ILLUSTRATIONS FIGURE NO.	ITEM NO.
			ITEM COMPRISING AN OPERABLE EQUIPMENT					
			AMPLIFIER, RADIO FREQUENCY AM-1881/U					
	6625-092-7924		AMPLIFIER, RADIO FREQUENCY t1-1881/'U	ea	NX			
			AMPLIFIER, RADIO FREQUENCY AM-1881/U (Basic component)	ea	NX	1		
			RUNNING SPARES AND ACCESSORY ITEMS					
			AMPLIFIER, RADIO FREQUENCY AM-1881/U					
	5960-188-3564		0 ELECTRON TUBE: JAN type 0A2	ea	X	1		
	5960-193-5113		0 ELECTRON TUBE: JAN type 5Y3GT	ea	X	1		
	5960-262-0151		0 ELECTRON TUBE: JAN type 6AU5GT	ea	X	1		
	5960-188-0873		0 ELECTRON TUBE: JAN type 6AV	ea	X	1		
	5960-262-1357		0 ELECTRON TUBE: JAN type 5654	ea	X	1		
			FUSE, CARTRIDGE: 0.8 amp, 125v; Littlefuse No. 313.800 ††LOSe27-8	ea	X	5		
	6240-155-8706		LAMP, INCANDESCENT: CE No. 47	ea	X	1		

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The Metric System and Equivalents

Linear Measure

1 centimeter = 10 millimeters = .39 inch
1 decimeter = 10 centimeters = 3.94 inches
1 meter = 10 decimeters = 39.37 inches
1 dekameter = 10 meters = 32.8 feet
1 hectometer = 10 dekameters = 328.08 feet
1 kilometer = 10 hectometers = 3,280.8 feet

Weights

1 centigram = 10 milligrams = .15 grain
1 decigram = 10 centigrams = 1.54 grains
1 gram = 10 decigram = .035 ounce
1 decagram = 10 grams = .35 ounce
1 hectogram = 10 decagrams = 3.52 ounces
1 kilogram = 10 hectograms = 2.2 pounds
1 quintal = 100 kilograms = 220.46 pounds
1 metric ton = 10 quintals = 1.1 short tons

Liquid Measure

1 centiliter = 10 milliters = .34 fl. ounce
1 deciliter = 10 centiliters = 3.38 fl. ounces
1 liter = 10 deciliters = 33.81 fl. ounces
1 dekaliter = 10 liters = 2.64 gallons
1 hectoliter = 10 dekaliters = 26.42 gallons
1 kiloliter = 10 hectoliters = 264.18 gallons

Square Measure

1 sq. centimeter = 100 sq. millimeters = .155 sq. inch
1 sq. decimeter = 100 sq. centimeters = 15.5 sq. inches
1 sq. meter (centare) = 100 sq. decimeters = 10.76 sq. feet
1 sq. dekameter (are) = 100 sq. meters = 1,076.4 sq. feet
1 sq. hectometer (hectare) = 100 sq. dekameters = 2.47 acres
1 sq. kilometer = 100 sq. hectometers = .386 sq. mile

Cubic Measure

1 cu. centimeter = 1000 cu. millimeters = .06 cu. inch
1 cu. decimeter = 1000 cu. centimeters = 61.02 cu. inches
1 cu. meter = 1000 cu. decimeters = 35.31 cu. feet

Approximate Conversion Factors

To change	*To*	*Multiply by*	*To change*	*To*	*Multiply by*
inches	centimeters	2.540	ounce-inches	Newton-meters	.007062
feet	meters	.305	centimeters	inches	.394
yards	meters	.914	meters	feet	3.280
miles	kilometers	1.609	meters	yards	1.094
square inches	square centimeters	6.451	kilometers	miles	.621
square feet	square meters	.093	square centimeters	square inches	.155
square yards	square meters	.836	square meters	square feet	10.764
square miles	square kilometers	2.590	square meters	square yards	1.196
acres	square hectometers	.405	square kilometers	square miles	.386
cubic feet	cubic meters	.028	square hectometers	acres	2.471
cubic yards	cubic meters	.765	cubic meters	cubic feet	35.315
fluid ounces	milliliters	29,573	cubic meters	cubic yards	1.308
pints	liters	.473	milliliters	fluid ounces	.034
quarts	liters	.946	liters	pints	2.113
gallons	liters	3.785	liters	quarts	1.057
ounces	grams	28.349	liters	gallons	.264
pounds	kilograms	.454	grams	ounces	.035
short tons	metric tons	.907	kilograms	pounds	2.205
pound-feet	Newton-meters	1.356	metric tons	short tons	1.102
pound-inches	Newton-meters	.11296			

Temperature (Exact)

°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C

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