NAVSHIPS 93319 (A) *(Non-Registered)*

TECHNICAL MANUAL

for

RADIO TRANSMITTING SET AN/WRT-2

WESTINGHOUSE ELECTRIC CORPORATION
ELECTRONICS DIVISION FRIENDSHIP PLANT
P.O. Box 1897 Baltimore 3, Maryland

DEPARTMENT OF THE NAVY
BUREAU OF SHIPS

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LIST OF EFFECTIVE PAGES

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2-8 to 2-10	Original	5-34A, 5-34B	Change 1	6-69, 6-70	Original
2-11	Change 1	5-35 to 5-40	Original	6-71, 6-72	Change 1
2-12 to 2-14	Original	5-40A, 5-40B	Change 2	6-73 to 6-78	Original
2-15, 2-16	Change 1	5-41 to 5-44	Original	6-79 to 6-80B	Change 1
2-16A, 2-16B	Change 3	5-44A, 5-44B	Change 3	6-81, 6-82	Original
2-17, 2-18	Change 1	5-45 to 5-54	Original	6-82A to 6-84	Change 1
3-1 to 3-5	Original	5-55 to 5-56B	Change 2	6-84A, 6-84B	Change 2
3-6 to 3-8	Change 1	5-57 to 5-58B	Change 3	6-85, 6-86	Original
3-9 to 3-16B	Change 2	5-59, 5-60	Change 2	6-87, 6-88	Change 2
3-17, 3-18	Original	5-61 to 5-62B	Change 1	6-89, 6-90	Original
3-19, 3-20	Change 1	5-62C, 5-62D	Change 2	6-90A, 6-90B	Change 2
3-21	Original	5-62E, 5-62F	Change 3	6-91, 6-92	Original
4-0 to 4-6	Original	5-63, 5-64	Change 1	6-92A, 6-92B	Change 2
4-7, 4-8	Change 2	5-64A, 5-64B	Change 2	6-93, 6-94	Original
4-9	Change 1	6-1 to 6-13	Original	6-95, 6-96	Change 1
4-10 to 4-13	Original	6-14	Change 2	6-97 to 6-100	Original
4-14, 4-15	Change 2	6-15 to 6-18	Change 3	7-0A to 7-0N	Change 3
4-16	Change 3	6-18B	Change 2	7-1 to 7-106	Original
4-16A, 4-16B	Change 2	6-19 to 6-21	Change 1	i-1, i-2	Change 2
4-17	Change 3	6-22 to 6-24	Change 3	i-3, i-4	Change 1

Temporary Correction T-17 To

TECHNICAL MANUAL FOR RADIO TRANSMITTING SET AN/WRT-2

NAVSHIPS 0967-073-3010 (Formerly 93319A)

The ordering number for this change is: NAVSHIPS 0967-073-3205

This change revises the manual to reflect the equipment changes made by Field Change 22 AN/WRT-2. The purpose of this field change is to prevent freezing of the clamp assembly components due to dissimilar metals and to minimize corrosive deterioration of the retainer straps. The field change applies to AN/WRT-2, all serial numbers.

When this correction is included in the manual it shall cover the equipment as though Field Change 22 AN/WRT-2 had been accomplished. This correction does not supersede any other corrections or changes.

Maintenance support activities shall make this correction in the technical manual immediately but shall keep the superseded data intact for support of equipment which has not been modified.

Holders of equipment shall not make this correction in the manual until the field change has been accomplished.

Insert revised pages as indicated below:

PAGE		REPLACE PAGE	
6-47A	Fig. 6-23A	6-47	Fig. 6-23
7-104A	Table 7-1	7-104	Table 7-1

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST---Continued
TUNER. RADIO FREQUENCY TN-342/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
MP 3367	F.C.# 22	STRAP, Austenitic corrosion resisting steel, A.I.S.I. Type 304 NAVSECNORDIV Drawing 1921-26	Used on Shock Mount Bracket.
MP 3368	F.C.#22	BLOCK, Austenitic corrosion resisting steel, A.I.S.I. Type 304 NAVSECNORDIV Drawing 1921-27	Used on Shock Mount Bracket.
MP 3369	F.C.#22	ROD, Austenitic corrosion resisting steel, A.I.S.I. Type 304 NAVSECNORDIV Drawing 1921-28	Used on Shock Mount Bracket.
MP 3370	F.C.#22	SCREW, CAP, hexagon head, slotted. Corrosion resisting steel, Type 304, per Fed Spec. FF-S-85A, size 3/8" X 16, 2" long, length of thread 1½".	Used on Shock Mount Bracket.
MP 3371	F.C.#22	WASHER, FLAT, corrosion resisting steel, A.I.S.I. Type 304, 7/16" inside diameter, 5/8" outside diameter, .067" thick, Type A, Grade 1, Fed Spec FF-W-92.	Used on Shock Mount Bracket.
MP 3372	F.C.#22	WASHER, LOCK(SPRING), corrosion resisting steel, A.I.S.I. Type 304, bolt size 3/8", Style 2, Medium.	Used on Shock Mount Bracket.
MP 3373	F.C.#22	SCREW, PAN HEAD, 8/32 X 1/2" long, Type 1 Style 95, Fed Spec FF-S-92A.	Used on Shock Mount Bracket.
MP 3374	F.C.#22	WASHER, FLAT, corrosion resisting steel, A.I.S.I. Type 304, for Size 8 screw Type A, Grade 1, light, Fed Spec FF-W-92.	Used on Shock Mount Bracket.
MP 3375	F.C.#22	WASHER, LOCK, corrosion resisting steel, A.I.S.I. Type 304, Size 8, Style 1, light, Fed Spec FF-W-84.	Used on Shock Mount Bracket.

TEMPORARY CORRECTION T-(13) to TECHNICAL MANUAL FOR
RADIO TRANSMITTER AN/WRT-2, NAVSHIPS 0967-073-3010
(Formerly 93319(A))

The ordering number for this temporary correction is 0967-073-3201.

This temporary change revises the manual to reflect the equipment changes made by Field Change (18)-AN/WRT-2. The purpose of this field change is to increase loop current on TTY panel when loop is patched to the AN/WRT-2 and to insure sufficient voltage at the base of Q1401. Also to provide a method of equalizing the MARK and SPACE outputs. This field change applies to all AN/WRT-2 Radio Transmitters.

Maintenance support activities shall make this change to the technical manual immediately, but shall keep superseded data intact for support of equipments that have not been modified.

Holders of AN/WRT-2 transmitters should make the following corrections to the Technical Manual, NAVSHIPS 0967-073-3010, after Field Change (18)-AN/WRT-2 has been accomplished.

Make the following pen-and-ink corrections:

ITEM	FIGURE/TABLE	PAGE	ACTION
1		4-30B	Delete 2000 and add 1000 in paragraph 4-3b(2)a. It appears twice.
2		4-32 4-32A	Change the values of R1401 and R1402 to 39K and 180K respectively. Change the value of C1401 to 2uf.
3	5-50 5-50A	5-61, 5-62 5-62A, 5-62B 5-62C, 5-62D 5-62E, 5-62F	Change the value of R508 to 1K. Change the FSK termination marking 2000 to 1000. Change the value of R393 to 150K. Change the values of R1401, R1402 and C1401 as listed in Item 2.
4	6-26 6-26A	6-51, 6-52 6-51A, 6-52B	Change the value of R393 to 150K.

ITEM	FIGURE/TABLE	PAGE	ACTION
5	6-28 6-28A 6-28B	6-55, 6-56 6-56A, 6-56B 6-56C, 6-56D	Change the values as follows: R508 to 1000 ohms 14 watts, R1401 to 39K, R1402 to 180K, and C1401 to 2uf. Draw a variable resistor with one end connected to terminal 7 of E1401 and the center arm jumper to other end and connect to ground. Mark resistor R1543. Draw a variable resistor as above, except connect to terminal 6 of E1401 (terminal 6 of E1401 is connected to terminal 5 of T-1403). Mark resistor R-1542.
6	6-45 6-45A	6-89, 6-90 6-90A, 6-90B	Draw two potentiometers above E-1401 (use R1482 as an example). Jumper the center arm on each potentiometer to the left terminal and jumper the two center arms together. Draw a connection from the center arms to terminal 1 (gnd) E1401. Mark the potentiometer on the right R1542 and the one on the left R1543. Draw a connection from right hand end of R1543 to terminal 7 of E1401. Draw a connection from the right hand end of R1542 to terminal 6 of E1401.
7	Change 3 Supplementary 7-1A	7-OM	Add R1543 under R1542 in table. In Name and Description column, add: Same as R927. In Locating Function column, add: Mark Resistor Fig. 6-45A, opposite R1542. Add: Space Resistor Fig. 6-45A, opposite R1543. Add: 1544 through 1599 not used.

TEMPORARY CHANGE T-11 to TECHNICAL MANUAL for Radio Transmitting Set AN/WRT-2 NAVSHIPS 0967-073-3010 (Formerly NAVSHIPS 93319(A)).

This temporary change revises the manual to reflect the equipment changes made by Field Change 15-AN/WRT-2 which appeared in EIB 699.

When this change is included in the manual, the manual shall cover the equipment as though Field Change 15-AN/WRT-2, NAVSHIPS had been accomplished on the equipment. This change does not supersede any other changes or corrections.

Maintenance Support Activities shall make this change in the technical manual immediately but shall keep the superseded data intact for support of equipments that have not been modified.

Holders of equipment accompanied by technical manuals shall not make this change in the manual until accomplishment of the field changes referenced above.

Insert this temporary change in the manual immediately after the front cover and preceding the title page or prior changes or temporary corrections in effect. Make pen-and-ink changes in the manual as follows:

Item	*Fig/Table*	*Page*	*Action*
1	6-28	6-55	Delete the line from S-508A-2 to ground.
	6-28A	6-56	Add a line between terminals S-508A-2 and S-508A-3.
		6-55A	same as above
		6-56B	same as above
2	6-45	6-91	Delete line from S-508A-1 to S-508A-2.
		6-92	Add a line between S-508A-2 and S508A-3.

V

TEMPORARY CHANGE T-12 to TECHNICAL MANUAL for Radio Transmitting Set, AN/WRT-2, NAVSHIPS 0967-073-3010, (Formerly NAVSHIPS 93319A)

This temporary change contains information originally published as separate articles (Technical Manual Corrections) in the Electronics Information Bulletin, (EIB), number 632.

The instructions, described herein, for making these changes shall be followed only if they have not been previously accomplished at the time the EIB, in which the information appeared, was received.

The purpose of this Temporary Change is to assure that publications drawn from stock, subsequent to publication of this information in the EIB, can be corrected.

Insert this temporary change in the technical manual immediately behind the front cover and preceding the title page or preceding the latest change or corrections in effect.

Make pen-and-ink corrections or changes to the technical manual as follows:

Table 7-1A, Pages 7-0H and 7-0I, change drawing numbers as follows:

E1304 Alt A	37[redacted]A349H03
Z1301 Alt A	37[redacted]A349H01
Z1302 Alt A	37[redacted]A349H02
A1301 Matched Set	37[redacted]A349G01

(Proportional Oven and Oven Control Unit)

TEMPORARY CORRECTION T-10 TO TECHNICAL MANUAL FOR RADIO TRANSMITTING SET AN/WRT-2 NAVSHIPS 0967-073-3010 (Formerly 93319A)

The ordering number for this change is: NAVSHIPS 0967-073-3018

This temporary correction revises the manual to reflect the equipment changes made by Field Change 17 AN/WRT-2. The purpose of this field change is to protect RF Tuner TN-342/WRT-2 against arcing in its most inefficient operating condition. The field change applies to AN/WRT-2, all serial numbers.

When this correction is included in the manual it shall cover the equipment as though Field Change 17 AN/WRT-2 had been accomplished. This correction does not supersede any other corrections or changes.

Maintenance support activities shall make this correction in the technical manual immediately but shall keep the superseded data intact for support of equipment which has not been modified.

Holders of equipment shall not make this correction in the manual until the field change has been accomplished.

Insert this temporary correction in the technical manual immediately after the front cover. Make the following pen and ink corrections.

1. Page 4-47, paragraph 4-4b(6)(b), line 6, change L3302 to read L3302 ALT A.

2. Page 4-47, paragraph 4-4b(6)(c), line 10, change L3302 to read L3302 ALT A.

3. Page 4-47, paragraph 4-4b(7)(a), line 4, change L3302 to read L3302 ALT A.

4. Page 4-47, paragraph 4-4b(7)(b), line 3, change L3302 to read L3302 ALT A. Line 4, change .064 inch to read .087 inch.

5. Page 4-48, figure 4-29, change L3302 to read L3302 ALT A.

6. Page 4-49, paragraph 4-4b(7)(b), line 1, change 16 to read 14. Delete the period after inches and delete the last sentence. Add "of turns wound at a pitch of 5 tpi."

7. Page 4-50, paragraph 4-4b(7)(d)2, line 11, change L3302 to read L3302 ALT A.

8. Page 5-45, figure 5-39, change L3302 to read L3302 ALT A.

9. Page 6-44, paragraph 6-3h(3) delete the sentence following DISASSEMBLY OF RF TUNER and add "for disassembly procedure of RF section of tuner refer to field change number."

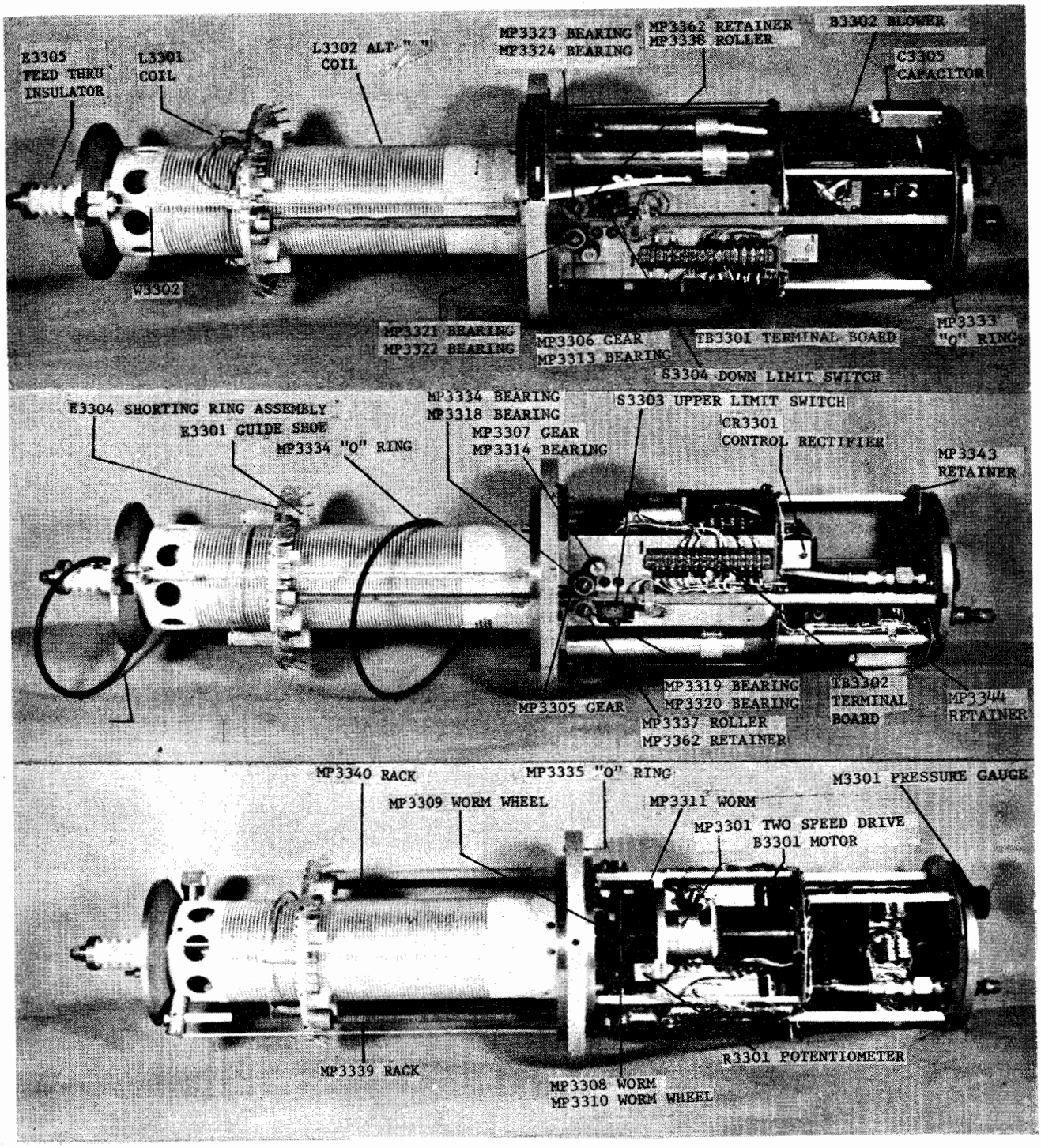
10. Page 6-45, paragraph 6-3h(4), line 10, change L3302 to read L3302 ALT A.

11. Page 6-48, figure 6-24, include page 6-48A, figure 6-24A.

12. Page 6-59, figure 6-30, bottom left corner, change L3302 to read L3302 ALT A.

13. Page 6-97, figure 6-48, bottom right corner, change L301 to read L3301 and change L302 to read L3302 ALT A.

14. Page 7-101, table 7-1, under Reference Designation column, change L3302 to read L3302 ALT A. Under Name and Description column for L3302 ALT A, change 16 to 14, change 0.064 to 0.087, change 12 to 14, change 10 to 5, delete all after 5 tpi and add NAVSHIPS Drawing 450-4302325.


E3305
FEED THRU
INSULATOR
L3301
COIL
L3302 ALT " "
COIL
MP3323 BEARING
MP3324 BEARING
MP3362 RETAINER
MP3338 ROLLER
B3302 BLOWER
C3305
CAPACITOR
W3302
MP3321 BEARING
MP3322 BEARING
MP3306 GEAR
MP3313 BEARING
TB3301 TERMINAL BOARD
MP3333
"O" RING
S3304 DOWN LIMIT SWITCH
E3304 SHORTING RING ASSEMBLY
E3301 GUIDE SHOE
MP3334 "O" RING
MP3334 BEARING
MP3318 BEARING
MP3307 GEAR
MP3314 BEARING
S3303 UPPER LIMIT SWITCH
CR3301
CONTROL RECTIFIER
MP3343
RETAINER
MP3305 GEAR
MP3319 BEARING
MP3320 BEARING
MP3337 ROLLER
MP3362 RETAINER
TB3302
TERMINAL
BOARD
MP3344
RETAINER
MP3340 RACK
MP3335 "O" RING
M3301 PRESSURE GAUGE
MP3309 WORM WHEEL
MP3311 WORM
MP3301 TWO SPEED DRIVE
B3301 MOTOR
R3301 POTENTIOMETER
MP3339 RACK
MP3308 WORM
MP3310 WORM WHEEL

VIII

NAVSHIPS 0967 073 3017

TEMPORARY CHANGE T-9 to TECHNICAL MANUAL for Radio Transmitting Set AN/WRT-2, NAVSHIPS 0967-073-3010 (formerly NAVSHIPS 93319A).

This temporary change revised the manual to reflect the equipment changes made by Field Change 10-AN/WRT-2 which appeared in EIB 652.

When this change is included in the manual, the manual shall cover the equipment as though Field Change 10-AN/WRT-2, NAVSHIPS 0967-050-5080 had been accomplished on the equipment. This change does not supersede any other changes or corrections.

Maintenance Support Activities shall make this change in the technical manual immediately but shall keep the superseded data intact for support of equipments that have not been modified.

Holders of equipment accompanied by technical manuals shall not make this change in the manual until accomplishment of the field changes referenced above.

Insert this temporary change in the manual immediately after the front cover and preceding the title page or prior changes or temporary corrections in effect. Make pen-and-ink changes in the manual as follows:

1. Figure 5-47, Primary Power Distribution Diagram: Delete capacitor C862, 1μf. Draw a direct connection from junction labeled TB801-32 up to the junction near the contact of K804.

2. Figures 5-51 and 5-51A, Power Amplifier Circuits, Functional Schematic Diagram: Delete capacitor C862. Draw a direct connection from TB801-32 up to the junction near K804B.

3. Figures 6-25 and 6-25A, Radio Frequency Amplifier AM-2121/WRT-2, Schematic Diagram: Delete capacitor C862. Draw a direct connection from TB 801-32 up to the junction near K804B.

4. Figure 6-30, Radio Frequency Tuner TN-342/WRT-2, Schematic Diagram: X-out the lead from J3301-T to TB3301-14. Redraw this lead, inserting a capacitor symbol between the two points. Label the capacitor "C3305, 1 μf."

5. Figures 6-32 and 6-32A, Radio Frequency Amplifier AM-2121/WRT-2, Power Amplifier Wiring Diagram: Draw a direct connection between the two wires going to terminals 1 and 2 of capacitor C862. Delete C862.

6. Figure 6-48, Radio Frequency Tuner TN-342/WRT-2, Wiring Diagram: Draw in a capacitor just above the upper right corner of TB3301. X-out the lead from J3301-T(A91) to terminal TB3301-14. Redraw this lead, inserting the capacitor in series between the two terminal points.

7. Table 7-1. Maintenance Parts List:

a. On page 7-53, transfer the information opposite C862 in the Name and Description column to page 7-99 in appropriate column opposite C3305. Also enter the following information in the LOCATING FUNCTION column: "Phase Splitter for Tuner Blower Fig. 6-48."

b. On page 7-53, delete C862 from Reference Designation column and pertaining information in Name and Description and Locating Function columns.

c. On page 7-99 in column 1 just below C3305, add "C3306 thru C3399."

T-9

IX

TEMPORARY CORRECTION T-5 TO TECHNICAL MANUAL FOR RADIO TRANSMITTING SET AN/WRT-2 NAVSHIPS 93319(A)

The ordering number for this change is: NAVSHIPS 0280-515-7011

This temporary correction revises the manual to reflect the equipment changes made by Field Change 11-AN/WRT-2. The purpose of this field change is to replace the RG-58/U neutralizing cable with RG-141A/U cable to prevent cable failures due to high temperatures. The field change applies to AN/WRT-2 sets, Serials 1 through 702, B1 through B151, and C1 through C20. All other AN/WRT-2 sets were corrected by an identical production change.

When this change is included in the manual, the manual shall cover the equipment as though Field Change 11-AN/WRT-2 had been accomplished. This correction does not supersede any other corrections or changes.

Maintenance Support Activities shall make this correction in the Technical Manual immediately but shall keep the superseded data intact for support of equipments which have not been modified.

Holders of equipments shall not make this correction in the manual until accomplishment of the field change.

Insert this temporary correction in the technical manual immediately after the front cover. Make the following pen-and-ink corrections:

1. Fig. 6-31 (Change 2) page 6-61/6-62, at the extreme left center of page, change "RG-58/U" to read "RG-141A/U."

2. Fig. 6-32 (Change 1) page 6-63/6-64, in area 4D near the words "to Driver" add "RG-141A/U."

3. Fig. 6-32A (Change 2) page 6-64A/64B, in area 4D near the words "to Driver" add "RG-141A/U."

4. Note the completion of this temporary correction on the RECORD OF CORRECTIONS MADE page in NAVSHIPS 93319(A).

X

TEMPORARY CHANGE TO TECHNICAL MANUAL FOR RADIO TRANSMITTING SET AN/WRT-2

NAVSHIPS 93319(A)

This temporary change revises the manual to include information on Serial Numbers A1 through A178 and D1 through D327 manufactured by Cosmos Industries, Inc.

This correction does not supersede other corrections or changes unless specifically so stated.

Information in the manual that is applicable to series 600 transmitters is also applicable to Serial Numbers A1 through A178 and D1 through D327, unless otherwise stated in the temporary change.

This temporary change is in effect on Sets, Serial Numbers A1 through A178 and D1 through D327.

Pages 5-42A, 5-42B; 6-54G/D and 7-OQ through 7-O-- are added by this temporary change. These pages are applicable to Sets, Serial Numbers A1 through A178; D1 through D327.

This temporary change shall be inserted in the manual immediately under the front cover, and on top of previous temporary corrections.

1. In Table 1-4A page 1-8:

Under symbol add: "For Sets A1 through A178 and D1 through D327, 2N95 is replaced by 2N1323."

Under symbol add: "For Sets A1 through A178 and D1 through D327, 3N34 and 2N338 are replaced by seven 2N335."

Under symbol ** add: "Sets A1 through A178 and D1 through D327, use 2N1122."

2. Page 4-16A/B, Paragraph 4-2b(7) insert after step (i) "For Sets Serial Nos. A1 through A178 and D1 through D327, refer to T-6, 3".

3. Addition to paragraph 4-2b(7):

(j) For sets A1 through A178 and D1 through D327, a different type of one megacycle oscillator and proportional oven control is used. However the oscillator is interchangeable with Sets Serials 295 and up. The proportional over Z1301 and proportional oven control Z1302 are a matched set and they are interchangeable as a set with the matched set used in set serials 295 and up.

4. Page 4-16 Figure 4-10. 10:1 Frequency Divider Circuits, Simplified Schematic Diagram.

Make following corrections:

Change: Q1313 from 2N1128 to 2N1122

R1371 from .00 ohms to 470 ohms

CR1346, CR1345 to 1N756A

R1362 from 56K to 5.6K

R1334 from 15K to 1.5K

5. Page 4-21. Paragraph 4-2b(10).

The discussion of the interpolation oscillator gear train in this paragraph is not applicable to sets Serial Numbers A1 through A178 and D1 through D327. The interpolation oscillator gear train in these sets is interchangeable with those in sets serial number 600 and up. This gearing is not covered in NAVSHIPS 93319(A) and differs from that shown in figure 4-13 in the use of an improved counter which permits deletion of the Geneva gearing and simplifies the entire gearing.

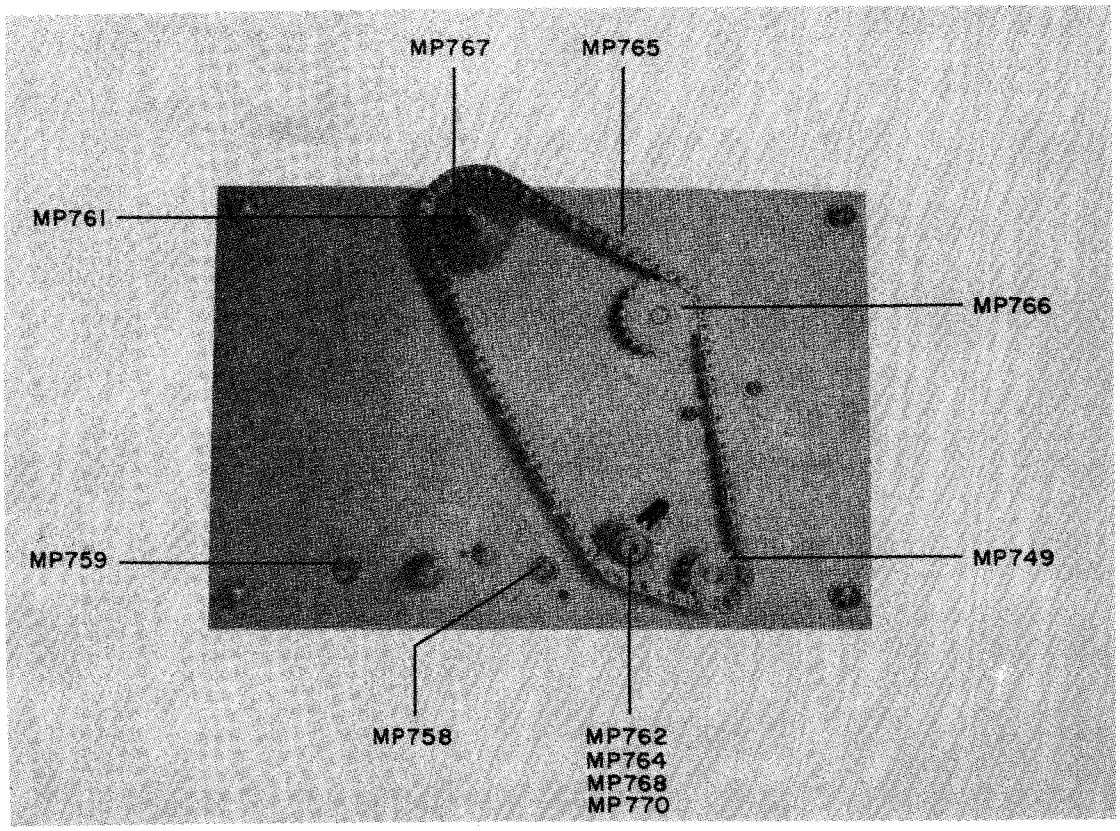


Figure 5-35A. Electrical Frequency Control C-2764/WRT-2, Location of Parts on Back Plate of Gear Box, Sets, Serial Nos. A1 thru A178, D1 thru D327.

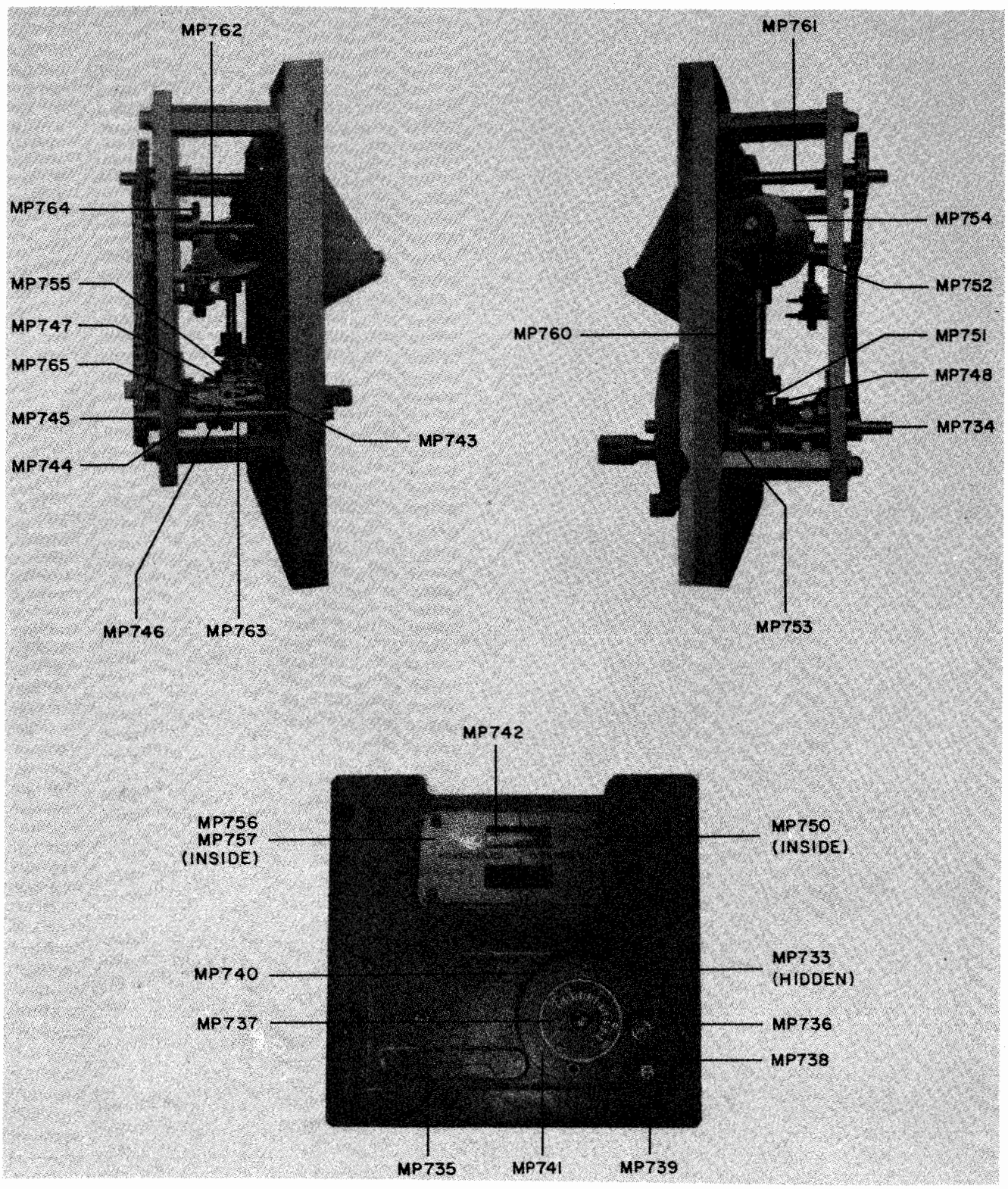


Figure 5-36A. Electrical Frequency Control C-2764/WRT-2, Location of Parts in Gear Box, Sets, Serial Nos. A1 thru A178, D1 thru D327.

6. Page 5-41, Figure 5-33. Add following NOTE:

   "NOTE: MP603 not used in Sets, Serial Numbers A1 through A178; D1 through D327."

7. Page 5-41, Figure 5-35. Add following NOTE:

   "NOTE: Not applicable to Sets, Serial Numbers A1 through A178; D1 through D327. See temporary illustration Figure 5-35A."

8. Page 5-42, Figure 5-36. Add following NOTE:

   "NOTE: Not applicable to Sets, Serial Numbers A1 through A178; D1 through D327. See T-6 Figure 5-36A."

9. Page 5-56A/B. Add following to title, "and A1 through A178, D1 through D327."

10. Page 5-58A/B. Add following to title "and A1 through A178, D1 through D327." Add following note to schematic: "Check part values in Supplementary Parts List Table 7-1C for Sets, Serial Numbers A1 through A178, D1 through D327."

11. Page 5-62E/F, Figure 5-50C. Add following to figure title: "and Serial Numbers A1 through A178, D1 through D327." In field of schematic add following NOTE: "NOTE: Check part values in Supplementary Parts List, Table 7-1C for Sets, Serial Numbers A1 through A178, D1 through D327." In field of schematic (13C) change terminal numbers on T1206 for Sets, Serial Numbers A1 through A178, D1 through D327 as follows: terminal "5", now "7"; terminal "8", now "3"; terminal "3", now "1"; terminal "1", now "2"; terminal "2", now "3"; terminal "3", now "5"; terminal "4", now "6"; terminal "4", now not used.

12. Page 5-64A, Figure 5-51A. Add following to figure title: "and Serial Numbers A1 through A178, D1 through D327." In field of schematic add following: "NOTE: Check part values in Supplementary Parts List, Table 7-1C, for Sets, Serial Numbers A1 through A178, D1 through D327."

13. Page 6-18, paragraph 6-2f(1), insert the following: "For test equipment required for Sets, Serial Numbers A1 through A178, D1 through D327, refer to T-6, paragraph 14.

14. Paragraph 6-2f(1) "TEST EQUIPMENT AND SPECIAL TOOLS" - The test equipment and special tools required for adjustment of Radio Frequency Amplifier AM-2121/WRT-2 (Sets, Serial Numbers A1 through A178, D1 through D327), consists of:

    a. Vacuum Tube Voltmeter - Hewlett Packard Model 410B.

    b. Dummy Load, 1,000 Watts, 50 ohms, non-inductive, Bird, Model 8833 or equivalent, with "N" type (male) QC Connector.

    c. R-F Wattmeter; Bird, Model 43 "Thruline" (1,000 watt element) or equivalent, equipped with QC type "N" female connectors.

    d. Eight foot cable of RG8/U coaxial with one UG573A/U connector on one end and type UG21B/U (series N, male) on the other.

    e. Long insulated screw driver to fit vacuum capacitors adjustment screws.

NOTE:

The R-F Wattmeter is connected between the dummy load and the cable. One end of the cable connects to J103 on the transmitter and the other end connects to the R-F Wattmeter.

15. Page 6-20. Paragraph 6-2f (5). Insert the following: "Refer to T-6, paragraph 16 for POWER AMPLIFIER ALIGNMENT applicable to Sets, Serial Numbers A1 through A178, D1 through D327."

16. The following is paragraph 6-2f (5) applicable to Sets, Serial Numbers A1 through A178, D1 through D327:

(5) POWER AMPLIFIER ALIGNMENT (Sets Serial Numbers A1 through A178, D1 through D327:

Step 1. De-energize the transmitter by placing EMERGENCY STOP switch S201 in the OFF position.

WARNING

EXTREME CAUTION MUST BE EXERCISED WHEN MAKING TEST CONNECTIONS AND MEASUREMENTS AROUND THE FINAL, AMPLIFIER TANK ASSEMBLY. BE SURE TO SET THE EMERGENCY STOP SWITCH ON THE FRONT PANEL OF THE HIGH VOLTAGE POWER SUPPLY IN THE OFF POSITION AND THEN DISCHARGE THE FILTER CAPACITORS BY WITHDRAWING THE POWER SUPPLY DRAWER FROM THE CABINET FAR ENOUGH TO ALLOW SHORTING SWITCH S202 TO OPERATE.

Step 2. Pull out the drawer containing Radio Frequency Amplifier AM-2121/WRT-2 and engage the foul-weather latch.

Step 3. Set the P.A. COUPLING (H) to 50 and rotate P.A. TUNING (G) counter-clockwise to its full stop. The frequency indication of 2MC should be approximately 3/8-inch above the two center screws of the window cover. If the 2MC indication is not in this position, remove the window screws

and window, then gently pull the tape out from the sprocket and set in the correct position. Re-install the window.

Step 4. Remove cover marked "AM-2121, RIGHT SIDE" and inspect the positions of the trolley wheels with respect to the coil windings of L804, L805. On coil L804 the front wheel should be on the last winding before the winding enters the hole in the coil form. The rear trolley wheel should be on the first turn of the coil (to the left side of the observer). On coil L805, front wheel should be on the ninth turn of the coil and the rear wheel should be on the ninth turn from the front of the transmitter (observer's left side).

Step 5. Rotate P.A. TUNING (G) clockwise to its full stop. A frequency indication of 30 MC should appear in the center of the window. If tape position is now out of adjustment, the gearing must be re-set as described in paragraph 6-3g(4)(c).

Step 6. Ckeck the positions of the trolley wheels with respect to the coil windings. On coil L805, the front wheel should be not more than 3/4-inch from the zero point (vee) of the coil winding. The rear wheel of L805 should be on the first winding from center (or left section of coil). On coil L804, the front wheel should be on the first winding of the right hand section of the coil (1/4-inch towards coil center). The rear wheel of L804 should be directly at zero point (vee of coil windings). Using an inspection mirror, check the trolley wheels on coil L803. The front wheel should be on the last winding of the left section of the coil. The rear wheel should be within 1/4-inch of the zero point (vee of coil windings).

Step 7. Using an open end wrench, release the lock-nut on the top of vacuum variable capacitor C837. Adjust the hex nut lead screw to withdraw the concentric plates of the capacitor so there is approximately 3/64-inch clearance between the movable plate and the fixed plate.
(Note: A dime is approximately 3/64-inch thick).

Step 8. Engage the top drawer interlock switch and energize the transmitter. Tune up the transmitter at an operating frequency of 15MC using the procedure outlines in paragraph 3-2b(2). DO NOT GO FURTHER THAN STEP 16 WITH THE TUNING PROCEDURE. POWER SELECTOR SWITCH ON AMPLIFIER-SUPPLY AM-2122/WRT-2 MUST BE IN "ADJUST" POSITION.

Step 9. Set P.A. TUNING (G) control so 15MC indication on the dial tape is approximately in the center of the window. Set P.A. COUPLING (G) to "47".

Step 10. Set DRIVE ADJUST to full counter-clockwise position.

Step 11. On Amplifier-Power Supply AM-2122/WRT-2, set POWER SELECTOR to 500W position.

Step 12. Set P.A. CATHODE CURRENTS knob to TOTAL CURRENTS position and adjust P.A. BIAS CONTROL potentiometer R914 until a reading of 500 ma is obtained.

Step 13. Advance the DRIVE ADJUST control and check for output power indications on the Bird R-F Wattmeter. Observe the TOTAL, P.A. CATHODE CURRENT meter which should be no more than the red line indication. At the same time observe TEST AMMETER with the control knob set in P.A. SCREEN CURRENT. The P.A. screen current should be in the green area.

Step 14. Using a long screwdriver, adjust C836 for a peak in output power as indicated on the external R-F Wattmeter. If P.A. CATHODE CURRENT tends to exceed the red line, reduce DRIVE ADJUST until reading is below the red line position.

Step 15. Adjust C837 for maximum power output and minimum P.A. SCREEN CURRENT. These two variables may not be coincident, therefore the capacitor adjustment must be varied until the optimum setting is obtained.

Step 16. Re-peak C836 for maximum output as described in Step 14.

Step 17. Advance the DRIVE ADJUST control and adjust P.A. OVERLOAD control R864 so that the H.V. OVERLOAD indicator does not light.

Step 18. The Power Amplifier must now be adjusted to obtain maximum power output (650 watts on external R-F Wattmeter), with SCREEN CURRENT indication well in the negative region (green area on TEST AMMETER), and TOTAL cathode current below the red line. This is accomplished by a series of repetitious adjustments of the DRIVE ADJUST control and capacitors C836 and C837 in the following sequence:

a. Advance DRIVE ADJUST control clockwise while observing SCREEN CURRENT and TOTAL cathode current meters and the external R-F Wattmeter. If screen current indicator moves out of the green area and starts to go positive or the cathode current exceeds the red line indication, immediately reduce the drive to bring the indicators back into tolerance.

b. Peak C836 for maximum power indication on the R-F Wattmeter while observing the TEST AMMETER for screen current. If the meter starts to move toward the positive region, adjust C837 to bring the screen current well into the green area.

c. Again advance the DRIVE ADJUST control clockwise while observing the meters. Stop and repeat the adjustments of C836, C837 each time the screen and cathode currents move towards out of tolerance indications.

d. Advance the DRIVE ADJUST control and repeat the above procedures in as many increments as it takes to reach an indication of maximum power output (650 watts) on the R-F Wattmeter, with the SCREEN CURRENT well in the green area and the TOTAL cathode current just below the red line. An indication of correct screen current alignment occurs at the "turn-around point". This is defined as the point when the DRIVE ADJUST control is rotated clockwise and the TEST AMMETER needle first starts to go negative, then moves in the opposite direction (towards positive region), but comes to rest in the green area.

Step 19. Reduce the drive by turning the DRIVE ADJUST in the counter-clockwise direction and adjust P.A. TUNING (G) and P.A. COUPLING (H) to achieve 500 watts output with screen current in the green area and TOTAL cathode current below the red line. This is done as follows:

a. Reduce DRIVE ADJUST so power output indication is approximately 500 watts. Set TUNE COUP to TUNE and rotate P.A. COUPLING (G) for maximum power output indication on the R-F Wattmeter. Set TUNE COUP to COUP and tune P.A. COUPLING for 500 watts output.

b. Rock back and forth between P.A. TUNING and P.A. COUPLING until the desired indication of 500 watts power output (with screen and cathode currents within tolorance) is observed on the external R-F Wattmeter.

c. At the correct power output and current indications, the 15 MC reading on the tape should be approximately in the same position achieved in Step 18 and the P.A. COUPLING should be at a reading of approximately 47 on the dial.

Step 20. Before aligning for other frequencies, perform the P.A. Amplifier neutralization procedure as follows:

a. Turn off high power and place POWER SELECTOR in ADJUST position.

b. Rotate drawer containing Radio Frequency Amplifier AM-2121/WRT-2 so that the top capacitor compartment is easily accessible.

WARNING

BE SURE POWER IS OFF BEFORE MAKING ANY ADJUSTMENTS. A MINIMUM OF 2,000 VOLTS, RF PRESENT IN THE CAPACITOR COMPARTMENT WHEN POWER IS ON.

c. Connect VTVT, Hewlett-Packard Model 410B to output of driver (plate connection of V802).

d. Turn on power and turn I.P.A. TUNING (F) to 26 MC. Rock P.A. TURNING control (G) above and below resonant point while turning adjustment on C909. The setting for proper neutralization occurs at the setting of C909 indicated by minimum deflection of the voltmeter while rocking P.A. TUNING (G) above and below the resonant point.

Step 21. Turn off high power, place POWER SELECTOR on AM-2122/WRT-2 in ADJUST position. Tune up transmitter for 30 MC with P.A. COUPLING (H) set to "47".

Step 22. Turn on high power, advance DRIVE ADJUST clockwise and tune for maximum power output (500 watts on R-F Wattmeter). Observe the SCREEN CURRENT indication. If 30 MC indication can be seen in the window, P.A. COUPLING (H) reads from 40-55, averaging 45; and screen current "turn around" (refer to Step 18,d) occurs, the alignment is considered satisfactory at 30 MC.

Step 23. If the requirements of Step 22 are not met, turn off power and proceed as follows:

a. Set P.A. TUNING (G) to a position where 30 MC indication is slightly above the center of the window. Set P.A. COUPLING (H) to "47". Using P.A. TUNING (G) tune for peak on R-F Wattmeter. If maximum power output point occurs at a point where 29 MC is indicated in the window centers, TURN OFF POWER and adjust coil L813 by compressing the coil turns. If power output is increasing but 500 watts is not indicated before the P.A. TUNING hits the full stop above 30 MC, then TURN OFF POWER and expand the coils of L813.

b. Re-check alignment at 30 MC as described in Step 22.

NOTE

At 30 MC some slight adjustment of C837, C836 may be necessary to bring screen and cathode currents within tolerances. When tuning any frequency, once 400 watts power output is reached, adjustment of I.P.A. FINE TUNING should increase power output.

Step 24. With POWER SELECTOR set to ADJUST, rotate P.A. TUNING (G) to 2 MC and tune for maximum power output. At 500 watts output, the dial tape should read approximately 2.05 and P.A. COUPLING (H) should read between "40" and "55".

Step 25. With POWER SELECTOR set to ADJUST, rotate P.A. TUNING (G) to 10 MC and tune for maximum power output. At this point, the dial tape should read between 9.7 and 10 MC in the center of the window.

Step 26. In every case where the transmitter is tuned for a particular frequency, and the drive adjust is tuned clockwise, increasing the power output to 500 watts the screen current should be going negative. When 500 watts output is passed, the "turn around" point should occur with the screen current starting to go less negative, but still staying within the green area.

17. Page 6-50A/B, Figure 6-25A: Add following to figure title: "and Serial Numbers A1 through A178, D1 through D327." In the field of schematic make the following corrections applicable to Serial Numbers A1 through A178, D1 through D327:

Reference Designation	Area	Change to
C803	B-3	"25-500"
C832	A-3	"25-500"
CR804	A-6	"1N933"
CR803	B-6	"1N933"
CR802	C-6	"1N933"
CR801	C-6	"1N933"
CR806	B-7	"1N933"
CR812	B-7	"1N933"
CR813	B-8	"1N933"
CR807	B-8	"1N933"
CR808	B-8	"1N933"
CR809	C-9	"1N933"
CR811	C-9	"1N933"
CR805	B-8	"1N933"
CR810	A-8	"1N933"
CR820	D-7	"1N933"
CR825	B-10	"1N483B"

18. Page 6-52A, Figure 6-26A. Add following to figure title: "and Serial Numbers A1 through A178; D1 through D327." Add following NOTE in field of schematic: "NOTE: On Serial Numbers A1 through A178, D1 through D327, all 1N198 diodes are replaced with 1N933." Make following corrections applicable to Serial Numbers A1 through A178, D1 through D327:

Reference Designation	Location	Change
T1206	C-6	Change terminal as follows: Was → Now 5 → 7 7 → 1 1 → 2 2 → 3 3 → 5 4 → 6 No. 4 not used
C316	8-A	Change "1466" to "147 pf"
R317	E-13	Change "33K" to "22K"

19. Page 6-54A/B, Figure 6-27A: Add following to figure title: "and Serial Numbers A1 through A178, D1 through D327."

A. Add following NOTE in field of schematic: "NOTE: All 1N198 diodes, replaced by 1N933 in Serial Numbers A1 through A178, D1 through D327, unless otherwise specified."

B. Make following corrections applicable to Serial Numbers A1 through A178, D1 through D327:

Reference Designation	Location	Change
Q1305, Q1306	B-6	Change "T-1720" to "2N1122"
Q1315, Q1361	C-6	Change "T-1720" to "2N1122"
Q1307, Q1308	D-6	Change "T-1720" to "2N1122"
Q1313, Q1314	E-6	Change "T-1720" to "2N1122"

Reference Designation	Location	Change
CR1311 thru CR1314	D-8	Change "SV2007" to "1N2986BSA"
CR601 thru CR604	A-3 B-3 C-3	Change "1N198" to "S86 (MATCHED QUAD)"
CR610 thru	C-3 D-3	Change "1N198" to "S86 (MATCHED QUAD)"

C. Proportional Oven and Oven Control Unit (Location C-10) are not applicable to Serial Numbers A1 through A178, D1 through D-327. Refer to T-6 (Figure 6-27C) as corrected by this change.

20. Page 6-54C/D, Figure 6-27B. Z1302 Oven Control schematic not applicable to Serial Numbers A1 through A178, D1 through D327. Both Z1301 and Z1302 are sealed units and are only repairable by the manufacturer. The Oven and Control Unit must be replaced as a matched set. See the schematic figure 6-27C for reference only. Add NOTE on field of schematic as follows: "For schematic of Z1301 and Z1302 applicable to Sets, Serial Nos. A1 through A178; D1 through D327, see T-6."

21. Page 6-56C/D, Figure 6-28B. Add following to figure title: "and Serial Numbers A1 through A178, D1 through D327."

    A. Add following note in field of schematic "NOTE: For Sets, Serial Numbers A1 through A178; D1 through D327, all 1N198 diodes are changed to 1N933; 1N1226 diodes are changed to 1N547; 1N547 diodes are changed to 1N483B." Activities using these sets should make corrections on field of schematic.

    B. At drawing location D-11 change "C1426" to "C1421A" for Sets, Serial Numbers A1 through A178, D1 through D327.

22. Page 6-57/58, Figure 6-29, change value of "R217" for Sets, Serial A1 through A178, D1 through D327 from "800" to "2,500."

23. Page 7-OA, AN/WRT-2 PARTS LIST, SECTION 7A.

    A. Paragraph 7-O,b: Delete "and" after Table 7-1 and insert comma and add the following: ", 7-1B and 7-1C."

    B. Add the following, after "14": "15 - Used only on AN/WRT-2 equipments with Serial numbers A1 through A178, D1 through D327."

    C. After paragraph 7-O, C, add the following: "Refer to T-6, 19d for paragraph d."

    D. The following is paragraph 7-O, d: "d. Sets, Serial Numbers A1 through A178 and D1 through D327 are interchangeable with Serial Number 600. Notes "6", "14" and "15" are applicable, as well as common parts used on all AN/WRT-2 equipments. Cosmos Industries Inc. part numbers are given in Table 1-C for identification purposes and do not indicate non-interchangeability.

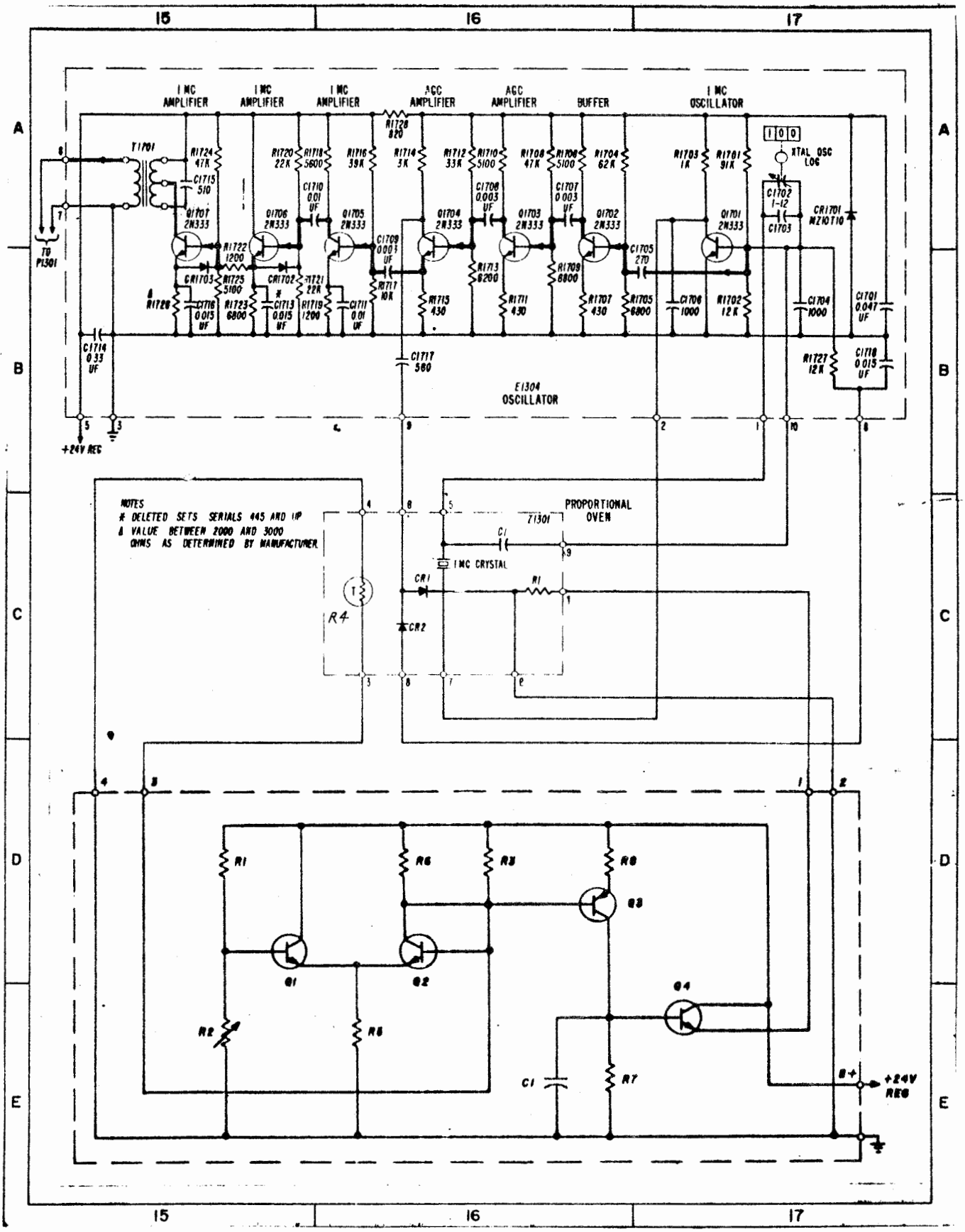


Figure 6-27C. Electrical Frequency Control C-2764/WRT-2, One MC Oscillator, Schematic Diagram, Sets Serials A1-A178, D1-D327.

SUPPLEMENTARY TABLE 7-1C. RADIO TRANSMITTING SET AN/WRT-2, SUPPLEMENTARY MAINTENANCE PARTS LIST--Continued

CABINET, ELECTRICAL EQUIPMENT CY-2558/WRT-2 (Sets A1-A178, D1-D327)

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
C103 Thru C134	15	CAPACITOR, FIXED: CERAMIC DIELECTRIC: 10,000 pf, +100, -20%, 500 Vdc working, CK63AW103X, spec MIL-C-11015.	Filter Capacitor Fig. 6-47
E103 ALT A	15	BOARD, MOUNTING: c/o 24 Capacitors mounted on a printed board, mfr 94486, dwg 279-C-AE-1325.	Component Mrg. Board Fig. 6-47
MP101 ALT A	15	CLEANER ELEMENT: Air impringement type, aluminum, anodized, non-replaceable element, mfr 94486, dwg 279-C-1120.	Air Cleaner Element Fig. 5-31
MP132 ALT A Thru MP139 ALT A	15	TRACK, DRAWER SLIDE: mfr 94486, dwg 279-D-1111.	Drawer Slide Track Fig. 5-31
MP140 ALT A Thru MP143 ALT A	15	HINGE, RIGHT HAND: ASSY: Mfr, 94486, dwg 279-D-AM-1190.	Drawer Hinge Fig. 5-31
MP144 ALT A THRU MP147 ALT A	15	HINGE, RIGHT HAND: ASSY: Mfr. 94486, dwg 279-D-AM-1195.	Drawer Hinge Fig. 5-31
MP148 ALT A	15	ANGLE, FILTER: Mfr 94486, dwg 279-B-1119.	Filter Support Fig. 5-31
MP149 ALT A Thru MP158 ALT A	15	BLOCK, ROLLER: Mfr 94486, dwg 279-B-1134.	Drawer Slide Block Fig. 5-31
MP159 ALT A Thru MP168 ALT A	15	RADIO FREQUENCY SHIELDING, GASKET: woven metallic, mfr 94486, dwg 279-B-1142.	R-F Shielding Gasket Fig. 5-31
POWER SUPPLY PP-2222/WRT-2 (Sets Serial A1-A178, D1 thru D327)			
E201 ALT A	15	TERMINAL BOARD ASSY: 24 stud terminals, 1 feedthrough insulator; mfr 94486, dwg 279-D-AE-7165.	Common Terminal Board for H.V. Transformers Fig. 6-46
E202 ALT A	15	RESISTOR AND TERMINAL BOARD, mfr 94486, dwg 279-C-AE-7175.	Resistor Mounting Board Fig. 6-46
E218 ALT A	15	BOARD, MOUNTING: For fuzes F201, F202, mfr 94486, dwg 279-C-7136.	Fuze Mounting Board

SUPPLEMENTARY TABLE 7-1C. RADIO TRANSMITTING SET AN/WRT-2, SUPPLEMENTARY MAINTENANCE PARTS LIST--Continued

POWER SUPPLY PP-2222/WRT-2 (Sets Serial A1 thru A178, D1 thru D327)

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
E219 ALT A	15	BOARD, MOUNTING: For fuzes F203, F205, mfr 94486, dwg 279-C-7141.	Fuse Mounting Board
K207 ALT A	15	RELAY, ARMATURE: 4 pdt, single break, 6.0 Vdc, 214 ma. Mfr 70309, type SKH-CC-CC-37A.	+125OV D.C. Overload Fig. 6-46
L201 ALT A	15	REACTOR, FIXED INDUCTANCE: 1 coil, 0.4 henry min, 1.25 amp dc, 4.4 ohms +15%, dc resistance 3-2 kv rms test, Mfr 94486, dwg 279-B-7192.	+125OV dc Filter Fig. 6-46
M201 ALT A	15	METER TIME TOTALIZING, ELECTRIC: Calibrated in hours 9999.9 hrs max, 0.1 hr smallest increment, 115V ac 60 cps synchronous motor, mfr 45402 type MP51005-1.	Filament Hours Meter Fig. 6-46
S202 ALT A	15	SUBASSEMBLY, SWITCHING: c/o bracket, mtg. base, plunger, spring, grounding strap, shorting bar and associated hardware; mfr 94486, dwg 279-C-AE-7180.	+125OV dc Grounding Switch Fig. 6-46
T201 ALT B	15	TRANSFORMER, POWER, STEP UP: 4 primary windings 115V. 60 cps ± 5%, single phase; 1 secondary winding 803V, tapped at 3734, 5754, rating 785VA, MIL-T-27A Class 5. Mfr 94486, dwg 279-A-7051.	H.V. Rectifier Plate Transformer Fig. 6-46
T202 ALT B	15	Same as T201, ALT B.	H.V. Rectifier Plate Transformer Fig. 6-46
T203 ALT B	15	Same as T201, ALT B.	H.V. Rectifier Plate Transformer Fig. 6-46
T204 ALT A	15	TRANSFORMER, POWER, STEP-DOWN: 1 primary winding, 115V, 60 cps ± 5%, single phase, 4 secondary windings 2.5V. MIL-T-27A, Class 5; Mfr 94486, dwg 279-B-7196.	H.V. Filament Transformer Fig. 6-46

SUPPLEMENTARY TABLE 7-1C. RADIO TRANSMITTING SET AN/WRT-2, SUPPLEMENTARY MAINTENANCE PARTS LIST--Continued

OSCILLATOR, RADIO FREQUENCY 0-581/WRT-2 (Sets Serial A1-A178, D1-D327)

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
C301 ALT A	15	CAPACITOR, FIXED, MICA DIELECTRIC: 39 pf ± 1%, 500 V dc working, mfr 72136, type DM15E390F(±0.5 pf).	Band #1 Coupling Capacitor Fig. 6-26A-9A
C302 ALT A	15	CAPACITOR, VARIABLE: piston type, 1-10pf capacity range, ±1%, 1000V dc working; Mfr 73899, type VCJ858 (94486, dwg. 279-A-4084).	Band #1 Trimmer Fig. 6-37 Fig. 6-26A-8C
C303 ALT A	15	CAPACITOR, FIXED, MICA DIELECTRIC: 36 pf ± 1%, 500 V dc working, mfr 72136, type DM15E360F.	Band #2 Coupling Capacitor Fig. 6-37 Fig. 6-26A-9A
C304 ALT A	15	Same as C302.	Band #2 Trimmer Fig. 6-37, Fig. 6-26A-9C
C305 ALT A	15	Same as C301.	Band #3 Coupling Capacitor, Fig. 6-37 Fig. 6-26A-9A
C306 ALT A	15	Same as C302.	Band #3 Trimmer Fig. 6-37 Fig. 6-26A-9B
C307 ALT A	15	CAPACITOR, FIXED, MICA DIELECTRIC: 43 pf ± 1%, 500 V dc working; Mfr 72136, type DM15E430F.	Band #4 Coupling Capacitor Fig. 6-37 Fig. 6-26A-9B
C308 ALT A	15	Same as C302.	Band #4 Trimmer Fig. 6-37 Fig. 6-26A-9C
C309 ALT A	15	CAPACITOR, FIXED, MICA DIELECTRIC: 56 pf ± 1%, 500V dc working, mfr 72136, type DM15F560FO.	Band #5 Coupling Capacitor Fig. 6-37 Fig. 6-26A-9B
C310 ALT A	15	Same as C302.	Band #5 Trimmer Fig. 6-37 Fig. 6-26A-9C
C311 ALT A	15	CAPACITOR, FIXED, MICA DIELECTRIC: 72 pf ± 1%, 500V dc working, mfr 72136, type DM15F720FO.	Band #6 Coupling Capacitor Fig. 6-37 Fig. 6-26A-9B
C312 ALT A	15	Same as C302	Band #6 Trimmer Fig. 6-37 Fig. 6-26A-9C
C313 ALT A	15	CAPACITOR, VARIABLE, AIR DIELECTRIC: Gear driven, 71.25 pf-81.5 pf, Mrf 94486, dwg 279-D-4085.	R-F Oscillator Main Tuning Fig. 6-37 Fig. 6-26A-9C
C314 ALT A	15	CAPACITOR, FIXED, MICA DIELECTRIC: 330pf±2%, 500 V dc working, Mfr. 72136, type DM15F331GO.	R-F Oscillator Feedback Fig. 6-37 Fig. 6-26A-9A

SUPPLEMENTARY TABLE 7-1C. RADIO TRANSMITTING SET AN/WRT-2, SUPPLEMENTARY MAINTENANCE PARTS LIST--Continued

OSCILLATOR, RADIO FREQUENCY 0-581/WRT-2 (Sets Serial A1-A178, D1-D327)

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
C315 ALT A	15	CAPACITOR, FIXED, MICA DIELECTRIC: 130 pf ± 2%, 500V d-c working, mfr 72136, type DM15G131G	R-F Oscillator Feedback - Fig. 6-37 Fig. 6-26A-OA
C316 ALT A	15	CAPACITOR, FIXED, MICA DIELECTRIC: 1470 pf ±1% 500V, d-c working. CM06F147F03, spec MIL-C-5.	Band #1 Padder Fig. 6-37 Fig. 6-26A, 8-B
C327 ALT A	15	CAPACITOR, FIXED, MICA DIELECTRIC: 1300 pf ±1%, 500 V d-c working, CM06F132F303 spec MIL-C-5.	Band #4 Padder Fig. 6-26A-9B
C329 ALT A	15	CAPACITOR, FIXED, MICA DIELECTRIC: 400 pf ±1%, 500 V, d-c working, mfr 72136, type DM15F401FD.	Band #5 Padder Fig. 6-37 Fig. 6-26A-9B
C331 ALT A	15	CAPACITOR, FIXED, MICA DIELECTRIC: 255 pf ±1%, 500V, d-c working, mfr 72136, type DM15F2550FO.	Band #6 Padder Fig. 6-37 Fig. 6-26A-9C
C341 ALT A	15	CAPACITOR, VARIABLE, AIR DIELECTRIC: mfr 94486, dwg 279-C-4528.	Double Tuning For V302, V303, V304 Fig. 6-36, Fig. 6-26A, -11B, -12C, -14C
C380 ALT A	15	CAPACITOR, FIXED, MICA DIELECTRIC: 5100 pf ±1%, 500V, d-c working, CM07F512F03. spec MIL-C-5.	Band #5 Padder Fig. 6-37 Fig. 6-26A-9A
C381 ALT A	15	CAPACITOR, FIXED, MICA DIELECTRIC: 20 pf ±2%, 500V d-c working, mfr 72136, type DM15E2060.	Band #1 Control Decoupling Fig. 6-37
C382 ALT A	15	Same as C381 ALT A.	Band #2 Control Decoupling Fig. 6-37 Fig. 6-26A-8B
C383 ALT A	15	CAPACITOR, FIXED, MICA DIELECTRIC: 18 pf ±2%, 500 V d-c working, mfr 72136, type DM15C180GO.	Band #3 Control Decoupling Fig. 6-37 Fig. 6-26A-8B
C384 ALT A	15	CAPACITOR, FIXED, MICA DIELECTRIC: 15 pf ±2%, 500 V d-c working, mfr 72136, type DM15C150G0.	Band #4 Control Decoupling Fig. 6-37 Fig. 6-26A-8B
C385 ALT A	15	Same as C384 ALT A.	Band #5 Control Decoupling Fig. 6-37 Fig. 6-26A-8B

SUPPLEMENTARY TABLE 7-1C. RADIO TRANSMITTING SET AN/WRT-2, SUPPLEMENTARY MAINTENANCE PARTS LIST--Continued

OSCILLATOR, RADIO FREQUENCY 0-581/WRT-2 (Sets Serial A1-A178, D1-D327)

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
C386 ALT A		Same as C384 ALT A.	Band #6 Control Decoupling Fig. 6-37 Fig. 6-26A-8B
C387 ALT A	15	CAPACITOR, SILICON, TYPE 1N950.	M.O. Control Reactance Fig. 6-37
CR301 Thru CR304 ALT A	15	SEMICONDUCTOR DEVICE, DIODE: 1N933, spec MIL-S-19500.	Frequency Doubling Diodes for T301, T302 Fig. 6-26A, 11E, 12E
E310 ALT A	15	BOARD, MOUNTING; mfr 94486, dwg. 279-B-AM-4125A.	Component Mounting Fig. 6-37
E320 ALT A	15	BOARD, MOUNTING: mfr 94486, dwg. 279-C-AE-4495A	Component Mounting Fig. 6-38
E335 ALT A	15	KNOB, ALUMINUM: Flatted knurled sides 1-1/2 inch dia. skirt, 2-6-32 tapped holes in skirt, for 1/4 in. dia. shaft.	Control Knob Fig. 5-37
E340 ALT A	15	DIAL, BARREL TYPE: Scales at top and bottom; mfr 94486, dwg. 279-C-4325	Calibration Dial Fig. 5-37
FL301 ALT A	15	FILTER, BAND-PASS: 1KC, mfr 94486, dwg. 279-A-4034.	1 KC Trap Fig. 6-37 Fig. 6-26A-10D
FL302 ALT A	15	FILTER, BAND-PASS: 2-Channel, 20-25 MC and 25-30 MC, mfr 94486, dwg. 279-A-4533.	Filter For V303 Fig. 6-36 Fig. 6-26A-13C
H301 Thru H306 ALT A	15	HEATER: 4-in w by 4 1/2-in lg., 160 ohms 57.5V, mfr 94486, dwg. 279-A-4182C.	Oven Heaters Fig. 6-35
L301 ALT B	15	COIL, RADIO FREQUENCY; 1 winding, close-wound, 101 turns at 0.0080 dia wire, 76.2 uh inductance, Q or 70 at 1.50 mc (min) and 2.00 mc (max), mfr 94486, dwg. 279-C-AE-4120A	Band #1 R-F Oscillator Fig. 6-37 Fig. 6-26A-8A
L302 ALT B	15	COIL, RADIO FREQUENCY: 1 winding, space-wound, 73 turns 0.01 wire, 41.9 uh inductance, Q 70, mfr 94486, dwg. 279-C-AE-4120B.	Band #2, R-F Oscillator Fig. 6-37 Fig. 6-26A-8A

SUPPLEMENTARY TABLE 7-1C. RADIO TRANSMITTING SET AN/WRT-2
SUPPLEMENTARY MAINTENANCE PARTS LIST--Continued

OSCILLATOR, RADIO FREQUENCY O-581/WRT-2 (Sets Serial A1-A178, D1-D327)

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
L303 ALT B	15	COIL, RADIO FREQUENCY: 1 winding, space-wound, 55 turns 0.0126 wire, 22.3 uh inductance, Q70, mfr 94486, dwg. 279-C-AE-4120C.	Band #3 R-F Oscillator Fig. 6-37 Fig. 6-26A-8A
L304 ALT B	15	COIL, RADIO FREQUENCY: 1 winding, space wound, 40 turns, 0.0159 wire, 12.2 uh Q70, mfr 94486, dwg. 279-C-AE-4120D.	Band #4 R-F Oscillator Fig. 6-37 Fig. 26A-8B
L305 ALT B	15	COIL, RADIO FREQUENCY: 1 winding, space wound, 30 turns 0.0159 wire, 7.02 uh Q70, mfr 94486, dwg. 279-C-AE-4120E.	Band #5, R-F Oscillator Fig. 6-37 Fig. 6-26A-8B
L306 ALT B	15	COIL, RADIO FREQUENCY: 1 winding, space wound, 24 turns 0.0159 wire, 4.42 uh, Q70, mfr 94486, dwg 279-C-AE-4120F.	Band #6, R-F Oscillator Fig. 6-37 Fig. 6-26A-8B
L327 ALT A	15	COIL, RADIO FREQUENCY, VARIABLE: 5.75 to 8.05 uh, Q110 at 7.5mc, mfr 94486, dwg. 279-A-AE-4556A.	Load for V303 Fig. 6-26 Fig. 6-26a-11C
L328 ALT A	15	COIL RADIO FREQUENCY, VARIABLE: 3.4 to 7 uh, Q110 at 7.5mc, mfr 94486 dwg 279-A-AE-4556B.	Load for V303 Fig. 6-36 Fig. 6-26A-11C
L329 AFT A	15	COIL, RADIO FREQUENCY, VARIABLE: 2.1 to 3.0 uh, Q125 at 12.5mc, mfr 94486 dwg 279-A-AE-4556C	Load for V303 Fig. 6-36 Fig. 6-26A-11C
MP305	15	Not used.	
MP306	15	Not used.	
MP309 ALT A	15	SPROCKET WHEEL: mfr 94486, dwg. 279-B-5063.	Drive Sprocket Fig. 5-32
R317	15	RESISTOR, FIXED: Composition, 22,000 ohms, RC20GF223K, spec MIL-R-11.	Screen Decoupling for V304, Fig. 6-36 Fig. 6-26A-13E
C421	15	CAPACITOR, FIXED, MICA DIELECTRIC: 62 pf ±1%, 500V d-c, mfr 72136, type DM15F620F0.	Band #5 Ratio Fig. 6-26A-9B
C1258	15	Not used.	
CR1201 ALT A	15	SEMICONDUCTOR DEVICE, DIODE: 1N933, spec MIL-S-19500.	2.0 MC Generator Fig. 6-34 Fig. 6-26A
CR1202 ALT A	15	SEMICONDUCTOR DEVICE, DIODE: 1N933, spec MIL-S-19500.	1.5 MC Generator

SUPPLEMENTARY TABLE 7-1C. RADIO TRANSMITTING SET AN/WRT-2
SUPPLEMENTARY MAINTENANCE PARTS LIST--Continued

OSCILLATOR, RADIO FREQUENCY 0-581/WRT-2 (Sets Serial A1-A178, D1-D327)

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
FL1201	15	FILTER, BAND PASS: 2MC, upper sideband filter, mfr 94486, dwg. 279-A-4380A.	Upper Sideband Filter Fig. 6-34
FL1202 ALT A	15	FILTER, BAND PASS: 2MC, lower sideband filter, mfr 94486, dwg. 279-A-4380B.	Lower Sideband Filter
FL1203 ALT A	15	FILTER, RADIO INTERFERENCE: 2MC, 10K ohms input, mfr 94486, 279-A-4381.	Carrier Reject Filter Fig. 6-34

AMPLIFIER-POWER SUPPLY, AM2122/WRT-2 (Sets Serial A1-A178, D1-D327)

CR521 Thru CR523	15	SEMICONDUCTOR DEVICE, DIODE: 1N933, spec MIL-S-19500	Blocking Diode Fig. 6-45
FL501 ALT A	15	FILTER, LOW PASS: 0-10,000 cps, 600 ohms input, 600 ohms output, mfr 94486, dwg 279-A-6034.	Filter, Low Pass Line AM and USB Fig. 6-45
FL502 ALT A	15	Same as FL501 ALT A.	
K501 ALT A	15	RELAY, ARMATURE: 4 pdt, single break, 6V d-c, 214 ma, mfr 82415, dwg. 5724-179HSX	+350V Overload Relay Fig. 6-45
K502 ALT A	15	RELAY, ARMATURE: 4 pdt, single break, 24V d-c, 57 ma., mfr 82415, dwg. 5724-180HSX	-350V Overload Relay Fig. 6-45
K506	15	Same as K502 ALT A.	Overload Aux. Relay Fig. 6-45
K507 ALT A	15	RELAY, ARMATURE: 4 pdt, single break, 15.5V d-c, 60.4 ma., mfr 82415, dwg. 5724-177HSX	Bias Keying Relay Fig. 6-45
K509 ALT A	15	Same as K507.	Break-in Follower Relay, Fig. 6-45
K510 ALT A	15	RELAY, ARMATURE: 4 pdt. single break, 10.13V d-c, 91.2 ma., mfr 82415, dwg 5724-178HSX	Push-to-Talk AM & USB Relay Fig. 6-45
K511 ALT A	15	Same as K510.	Push-to-Talk LSB Relay Fig. 6-45

SUPPLEMENTARY TABLE 7-1C. RADIO TRANSMITTING SET AN/WRT-2
SUPPLEMENTARY MAINTENANCE PARTS LIST--Continued

AMPLIFIER-POWER SUPPLY, AM2122/WRT-2 (Sets Serial A1-A178, D1-D327)

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
L501 ALT A	15	REACTOR: 2.5 henries 0.55 amps, 175V at 120 cps, 17.6 ohms d-c resistance, mfr 94486, dwg 279-A-AE-6205.	Filter +350V Supply Fig. 6-45
L502 ALT A	15	Same as L501 ALT A.	Filter +350V Supply Fig. 6-45
L503 ALT A	15	REACTOR: 10 henries, 0.10 amp, 175V at 120 cps, 140 ohms d-c resistance, mfr 94486, dwg 279-A-6020.	Filter, -350V Supply Fig. 6-45
L504 ALT A	15	Same as L503 ALT A.	
L505 ALT A	15	REACTOR: 0.63 henries, 6V at 120 cps, 0.10 amp, 1.73 ohms d-c resistance, mfr 94486, dwg 279-A-6021.	Filter, 12V Supply Fig. 6-45
L506 ALT A	15	REACTOR: 0.63 henries, 12V, 120 cps, 0.3 amp, 1.91 ohms at d-c resistance, mfr 94486, dwg 279-A-6022.	Filter 24V Supply Fig. 6-45
M502 ALT A	15	METER, AUDIO LEVEL: 0 to +3VU, 0 to -20VU, mfr 94486, dwg 279-B-7110.	Modulation Level Meter Fig. 6-45
Q501 ALT A	15	TRANSISTOR: 2N119(USN), spec MIL-S-19500.	Meter Amplifier for M502
Q502 ALT A	15	TRANSISTOR: 2N1323, spec MIL-S-19500.	Switching Transistor Fig. 6-45
R514		RESISTOR, FIXED: Wirewound, 50 ohms ± 10%, 10W, RW316500, spec MIL-R-26.	Bleeder 12V Supply
T501 ALT	15	TRANSFORMER, POWER, STEP-UP AND STEP-DOWN: 3 input voltages, 16 output voltages, mfr 94486, dwg 279-6036.	Input Power Step-Down Fig. 6-45
T502 ALT A	15	TRANSFORMER, POWER: Step-up, 1 primary 220V, 2 secondaries 420V and 425V, mfr 94486, dwg 279-A-6037.	+350V, -350V Plate Transformers Fig. 6-45B
T503 ALT A	15	TRANSFORMER, POWER: Step-down, 1 primary, 6 secondaries, 535V working, mfr 94486, dwg 279-A-6038.	12 and -24V Rectifier Fig. 6-45B
C1421A	15	CAPACITOR, FIXED, PAPER DIELECTRIC: 0.1 pf, 200V d-c, CP05A1EB104K, spec MIL-C-25.	By-pass Capacitor Fig. 6-28B-120 (Also C1446)
CR1401 ALT A	15	SEMICONDUCTOR DEVICE, DIODE: 1N933, spec MIL-S-19500.	Reference Diode for flip flop Fig. 5-21

SUPPLEMENTARY TABLE 7-1C. RADIO TRANSMITTING SET AN/WRT-2
SUPPLEMENTARY MAINTENANCE PARTS LIST--Continued

AMPLIFIER-POWER SUPPLY, AM2122/WRT-2 (Sets Serial A1-A178, D1-D327)

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
CR1402 ALT A Thru CR1409 ALT A	15	SEMICONDUCTOR DEVICE, DIODE: 1N483B, spec MIL-S-19500.	Switching diodes for electronic switch Fig. 5-21
CR1420	15	Same as CR1401.	A.G.C. Detector Fig. 5-23A
CR1421	15	Same as CR1401.	A.G.C. Detector Fig. 5-23A
E1401 ALT A	15	ELECTRONIC SWITCH ASSEMBLY: Printed circuit, mfr 94486, dwg 279-D-AE-6330B.	Flip-Flop P.C. Board Fig. 6-45A
E1407 ALT A	15	A.G.C. PRINTED CIRCUIT: mfr 94486, dwg 279-C-AE-6385B	A.G.C. Amplifier L.S.B. Fig. 5-23B
E1408 ALT A	15	A.G.C. PRINTED CIRCUIT: mfr 94486, dwg 279-C-AE-6395A.	A.G.C. Amplifier U.S.B. Fig. 5-23A
E1409 ALT A	15	AUDIO AMPLIFIER, PRINTED CIRCUIT: mfr 94486, dwg 279-C-AE-6405B	Audio Amplifier Fig. 5-23B
E1411 ALT A	15	BOARD, COMPONENT MOUNTING: mfr 94486, dwg 279-B-AM-6340.	Resistor Board Fig. 6-45A
E1412		TEST OSCILLATOR, PRINTED CIRCUIT ASSY: mfr 94486, dwg 279-C-AE-6420A	Test Oscillator Fig. 5-23A
FL1401	15	FILTER, BANDPASS: 2 channel, 300-3500 cps pass band, mfr 94486, dwg 279-A-6257.	Bandpass Filter for Speech Amplifier Fig. 6-45
R1469	-	RESISTOR, FIXED, COMPOSITION: 270 ohms ±10%, 1/2W. RC20GF271K, spec MIL-R-11.	Input Attenuator USB Fig. 6-45
R1470	-	Same as R1469.	Attenuator Fig. 6-45
R1473	-	Same as R1469-	Attenuator Fig. 6-45
R1474	-	Same as R1469.	Attenuator Fig. 6-45
R1475 ALT A	15	RESISTOR, VARIABLE: mfr 71450, Type AW-1040.	T-Pad, USB Fig. 6-45
R1476 ALT A	15	Same as R1475 ALT. A.	T-Pad, Q1406 Fig. 6-45
R1477 ALT A	15	Same as R1475 ALT. A.	T-Pad, Q1406 Fig. 6-45

SUPPLEMENTARY TABLE 7-1C. RADIO TRANSMITTING SET AN/WRT-2
SUPPLEMENTARY MAINTENANCE PARTS LIST--Continued

AMPLIFIER-POWER SUPPLY, AM2122/WRT-2 (Sets Serial A1-A178, D1-D327)

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
R1478 ALT A	15	Same as R1475 ALT. A.	T-Pad, Q1406 Fig. 6-45
R1479 ALT A	15	RESISTOR, VARIABLE, WIREWOUND: 5 K ohms +10%, SPST Switch, mfr 71450, type 83-119	Voltage Divider Base Q1408, Fig. 6-45
R1480 ALT A	15	Same as R1479 ALT. A.	Variable Attenuator Fig. 6-45
T1401 ALT A	15	TRANSFORMER, AUDIO FREQUENCY: 1 primary 42 ohms dcr, 25V, mfr 94486, dwg. 279-A-6333.	Input Transformer Electronic Switch Fig. 5-21
T1402 ALT A	15	TRANSFORMER, AUDIO FREQUENCY: 1 primary 19.9 ohms dcr, 1 secondary 48.3 ohms dcr, 25V, mfr 94486, dwg 279-A-6332.	Output Transformer LSB Electronic Switch Fig. 5-21
T1403 ALT A	15	Same as T1402 ALT. A.	Output Transformer USB Electronic Switch Fig. 5-21
T1406 ALT A	15	TRANSFORMER, AUDIO FREQUENCY: 1 primary 1260 ohms dcr, 1 secondary, 284 ohms dcr, mfr 94486, dwg 279-A-6422.	Emitter Load Transformer Q1412 Fig. 5-24
T1407 ALT A	15	TRANSFORMER, AUDIO FREQUENCY: 1 primary 600 ohms C.T. dcr, other primary 35 ohms, 1 secondary 600 ohms, mfr 94486 dwg 279-A-6256.	Input Transformer USB Speech Amplifier Fig. 6-45
T1408 ALT A	15	Same as T1407 ALT. A.	Input Transformer LSB Speech Amplifier Fig. 6-45
T1409 ALT A	15	Same as T1407 ALT. A.	Collector Load Q1405. Fig. 6-45
T1410 ALT A	15	Same as T1407 ALT. A.	Collector Load Q1409. Fig. 6-45

SUPPLEMENTARY TABLE 7-1C. RADIO TRANSMITTING SET AN/WRT-2
SUPPLEMENTARY MAINTENANCE PARTS LIST--Continued

CONTROL ELECTRICAL FREQUENCY C-2764/WRT-2 (Sets Serial A1-A178, D1-D327)

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
C621 ALT A	15	CAPACITOR, FIXED, MICA DIELECTRIC: 670.5 pf ± 1% 300V dc working, mfr 53021, type CM20D670.5 pf.	Phase Shift Network Fig. 6-41
C659 ALT A	15	CAPACITOR, FIXED, MICA DIELECTRIC: 1128pf ±1%, ±300V dc, CM06F11280F03, spec MIL-C-5.	Coupling, Grid to Cathode V606
C664 ALT A	15	CAPACITOR, FIXED, MICA DIELECTRIC: 2438pf ±1%, 500V dc working, CM06F11280F03, spec MIL-C-5.	Fixed Padder 60 to 70 KC Band
C655 ALT A	15	CAPACITOR, FIXED, MICA DIELECTRIC: 1084pf ±1%, 500V dc working, CM06F10480F03, spec MIL-C-5.	Fixed Padder 70 to 80 KC Band
C666 ALT A	15	CAPACITOR, FIXED MICA: 789 pf ± 1%, 500V dc working, CM06F7890F03, spec MIL-C-5.	Fixed Padder 80 to 90 KC Band
C667 ALT A	15	CAPACITOR, FIXED, MICA: 609 pf ± 1%, CM06F609F03, spec MIL-C-5.	Fixed Padder 90 to 100 KC
CR601 Thru CR604	15	SEMICONDUCTOR DEVICE, DIODE, 3 MATCHED QUAD: mfr 09213, type S86.	Mixer Dioded Fig. 5-29 (Matched Set)
CR605	15	SEMICONDUCTOR DEVICE, DIODE: type 1N933, spec MIL-S-19500.	A.G.C. Rectifier
CR606 Thru CR608	15	Same as CR605.	Master Oscillator Phase Detector Fig. 6-41
CR609	15	Same as CR605.	Oscillator Phase Detector Fig. 6-41
CR610 Thru CR613	15	Same as CR601-CR604.	100KC Phase Detector, Matched Quad Fig. 6-40
CR615 Thru CR618	15	Same as CR605.	Interpolation Oscillator Phase Detector Diode. Fig. 6-40
CR619	15	Same as CR605.	Interpolation Oscillator AGC Rectifier Fig. 6-41

SUPPLEMENTARY TABLE 7-1C. RADIO TRANSMITTING SET AN/WRT-2
SUPPLEMENTARY MAINENANCE PARTS LIST--Continued

CONTROL ELECTRICAL FREQUENCY C-2764 (Sets Serial A1-A178, D1-D327)

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
CR621	15	Same as CR605.	Meter Rectifier M601, Fig. 6-40
CR622	15	Same as CR605.	Meter Rectifier M601, Fig. 6-40
CR623	15	Same as CR605.	1KC Alarm Detector Fig. 6-40
CR632	15	Same as CR605.	1KC Phase Detector Fig. 6-40
CR633	15	Same as CR605.	1KC Phase Detector Fig. 6-40
CR637	15	Same as CR605.	1MC Phase Detector Fig. 6-40
CR638	15	Same as CR605.	1MC Phase Detector Fig. 6-40
E601 ALT A	16	PRINTED CIRCUIT ASSEMBLY, DIODE MIXER: mfr 94486, dwg 279-C-AE-5265.	Input Mixer Fig. 6-41
FL601 ALT A	15	FILTER BAND PASS: 40 to 110 KC, mfr 94486, dwg 279-A-5242.	Bandpass Filter V601A. Fig. 6-41
FL602	15	Same as FL601 ALT. A.	Bandpass Filter V601B. Fig. 6-41
FL603 ALT B	15	NETWORK PHASE SHIFT: 1.5 to 30 MC, 90 degree phase network, mfr 94486, dwg 279-B-5255.	Phase Shift Network Fig. 6-41
HR601 Thru HR604 ALT A	15	HEATING ELEMENT, ELECTRICAL: 230 ohms ± 7%, 115V, mfr 94486, dwg 279-C-5416A.	Oven Heating Element Fig. 6-43
L608 L609 ALT A	15	COIL, RADIO FREQUENCY: 5.0 mh, 41 ohms, 125 ma, mfr 94486, dwg 279-A-5474B.	Plate Decoupling V605 Fig. 6-40
L610 ALT A	15	COIL, RADIO FREQUENCY: 60 mh, 200 ohms, 100 ma, mfr 94486, dwg 279-A-5602.	Interpolation Oscillator Phase Detector Filter Fig. 6-42

SUPPLEMENTARY TABLE 7-1C. RADIO TRANSMITTING SET AN/WRT-2
SUPPLEMENTARY MAINTENANCE PARTS LIST--Continued

CONTROL ELECTRICAL FREQUENCY C-2764 (Sets Serial A1-A178, D1-D327)

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
L611 ALT A	15	Same as L610.	Interpolation Oscillator Phase Detector Filter Fig. 6-42
L612		Not Used.	
L613		Not Used.	
L614 ALT A	15	COIL, RADIO FREQUENCY: 31 uh, 3.3 ohms dcr at 25 deg C. mfr 94486, dwg 279-A-5476.	Pulse Forming Fig. 6-40
L615 ALT A	15	COIL, RADIO FREQUENCY: 1 winding, 3 pie universal wound, 1155 turns, signal silk insulation, q of 40 min at 79 kc, mfr 94486, dwg 279-C-AE-5710F.	Interpolation Oscillator Tank 50 to 60 KC Band Fig. 6-42
L616 ALT A	15	COIL, RADIO FREQUENCY: 1 winding 3 pie universal wound, 1080 turns, signal silk insulation, q of 50 min at 79 kc, mfr 94486, dwg 279-C-AE-5710A.	Interpolation Oscillator Tank 60 to 70 KC Band Fig. 6-42
L617 ALT A	15	COIL, RADIO FREQUENCY: 1 winding, 3 pie universal wound, 975 turns, signal silk insulation, q of 45 min at 79 kc, mfr 94486, dwg 279-C-AE-5710B.	Interpolation Oscillator Tank 70 to 80 KC Band Fig. 6-42
L618 ALT A	15	COIL, RADIO FREQUENCY: 1 winding, 3 pie universal wound, 900 turns, signal silk insulation, q of 45 min at 79 kc, mfr 94486, dwg 279-C-AE-5710C.	Interpolation Oscillator Tank 80 to 90 KC Band Fig. 6-42
L619 ALT A	15	COIL, RADIO FREQUENCY: 1 winding, 3 pie universal wound, 825 turns, signal silk insulation, q of 45 at 79 kc, mfr 94486, dwg 279-C-AE-5710E.	Interpolation Oscillator Tank 90 to 100 KC Band Fig. 6-42
L620 ALT A	15	COIL, RADIO FREQUENCY: 65 deg C max ambient temperature, 100% duty cycle, mfr 94486, dwg 279-A-5929.	Interpolation Oscillator Cathode Choke V604 Fig. 6-42
L621 ALT A	15	COIL, RADIO FREQUENCY: 20 mh, 100 ohms, 125 ma, mfr 94486, dwg 279-A-5474A.	Master Oscillator Phase Detector Filter Fig. 6-40

SUPPLEMENTARY TABLE 7-1C. RADIO TRANSMITTING SET AN/WRT-2
SUPPLEMENTARY MAINTENANCE PARTS LIST--Continued

CONTROL ELECTRICAL FREQUENCY C-2764/WRT-2 (Sets Serial A1-A178, D1-D327)

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
L622 ALT A	15	CHOKE, RADIO FREQUENCY: 3 mh ± 10% at 1000 cps, 73 ohms dc resistance, mfr 94486, dwg 279-C-5566A.	Master Oscillator Phase Detector Filter Fig. 6-40
L623 ALT A	15	REACTOR FIXED INDUCTANCE: 16 h min at 60 cycles, 0.004 amp dc, 560 ohms ± 15% dc resistance 1.5 5 v rms test. mfr 94486, dwg 279-A-5483.	Feedback Amplifier Filter V607B Fig. 6-40
M603 ALT A		COUNTER, MECHANICAL: Eight wheels numbered 0-9, 1 bank ccw rotation, mfr 94486, dwg 279-C-5099.	Frequence interpretation
M604 Thru M699		Not used.	
MP601 ALT A	15	GEAR, SPUR: 64 pitch, 20 deg pressure angle, 128 teeth, 2.00 nom pitch dia, mfr 94486, dwg 279-B-5645.	Drive Gear Fig. 5-33
MP602 ALT A	15	GEAR, SPUR: 64 pitch, 20 deg pressure angle, 64 teeth, 1.00 nom pitch dia, mfr 94486, dwg 279-B-5644.	Drive Gear Fig. 5-33
MP603 ALT A	15	GEAR, SPUR: 64 pitch, 20 deg pressure angle, 64 teeth, 1.00 nom pitch dia, mfr 94486, dwg 279-B-5643.	Drive Gear Fig. 5-33
MP604 ALT A	15	Not Used.	
MP605 ALT A	15	GEAR, BEVEL: (Pair), 32 pitch, 20 deg pressure angle, 24 teeth, 0.750 pitch dia, mfr 94486, dwg 279-C-5597.	Fig. 5-33
MP605A		Part of MP605. Listed for reference only.	Drive Gear
MP605B		Part of MP605. Listed for reference only.	Drive Gear
MP608 Thru MP699	15	Not used.	
S601 ALT A	15	SWITCH, ROTARY: 4 pole, 12 position, shorting type contacts, rotor and contacts solid silver alloy, mfr 81716, type 195067-DH5C.	Band Selector Fig. 6-42

SUPPLEMENTARY TABLE 7-1C. RADIO TRANSMITTING SET AN/WRT-2
SUPPLEMENTARY MAINTENANCE PARTS LIST--Continued

CONTROL ELECTRICAL FREQUENCY C-2764/WRT-2 (Sets Serial A1-A178, D1-D327)

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
S605 ALT A	15	SWITCH, SENSITIVE: SPDT, 3 screw type terminals MS25253-1, spec MIL-S-6743.	Sideband K602 Energize Fig. 6-44
S606 ALT A	15	SWITCH, ROTARY: 4 pole, 4 position, non-shortening type contacts, mfr 94486, dwg 279-C-6117B.	Meter M601 Selection Switch Fig. 6-44
S607 ALT A	15	SWITCH, ROTARY: 2 position, 4 pole, 3 amp, 250 v ac/dc, mfr 94486, dwg 279-A-5166.	Intermediate Tuning Fig. 6-44
S608 Thru S699		Not Used.	
T601		Not Used.	
T602 ALT A	15	TRANSFORMER, RADIO FREQUENCY: 1 primary, 1 secondary, center tapped, 25 v working, mfr 94486, dwg 279-A-5245.	Modulator Fig. 6-41
T603 ALT A	15	Same as T602. ALT A.	Modulator, Fig. 6-41
T604 ALT A	15	TRANSFORMER, RADIO FREQUENCY: 1 primary, 1 secondary, center tapped, mfr 94486, dwg 279-A-AE-5370.	Plate V602B Fig. 6-41
T605 ALT A	15	Same as T604. ALT A.	Plate V603B Fig. 6-41
T606 ALT A	15	TRANSFORMER, RADIO FREQUENCY: 1 primary, 1 secondary, center tapped, 35 v working, mfr 94486, dwg 279-A-5477.	Phase Detector Fig. 6-40
T607 ALT A	15	Same as T606. ALT A.	Phase Detector Fig. 6-40
T608 ALT A	15	TRANSFORMER, RADIO FREQUENCY: 1 primary, 260 v, tapped, 1 secondary, 2 v, mfr 94486, dwg 279-A-5478.	Plate V605 Fig. 6-40
T609 ALT A	15	TRANSFORMER, RADIO FREQUENCY: 50 kc to 100 kc, 2 windings, primary winding, 32 mh min at 1000 cycles, 300 turns, 0.0063 in. dia (No. 34 wire), secondary winding 30 turns 0.0179 in. dia (No. 25 wire), mfr 94486, dwg 279-A-5700.	Grid V606 Fig. 6-42
T610 ALT A	15	TRANSFORMER, RADIO FREQUENCY: 50 kc to 100 kc, 2 windings, center tapped primary winding, 100 mh min at 1000 cycles, mfr 94486, dwg 279-A-5705.	Cathode V603B Fig. 6-42

SUPPLEMENTARY TABLE 7-1C. RADIO TRANSMITTING SET AN/WRT-2
SUPPLEMENTARY MAINTENANCE PARTS LIST--Continued

CONTROL ELECTRICAL FREQUENCY C-2764/WRT-2 (Sets Serial A1-A178, D1-D327)

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
T611 ALT A	15	TRANSFORMER, POWER STEP-DOWN: Primary 115 v, 60 cycles ± 5%, single phase, 1 secondary winding, 6.3 v at 3.0 amps, mfr 94486, dwg 279-A-5032.	Filament Fig. 6-44
T612 ALT A	15	TRANSFORMER, RADIO FREQUENCY: 1.5 to 30 mc, 90 ohms, source resistance feed 180 ohms balanced load, 7.07 v working, mfr 94486, dwg 279-A-5267.	Comparison Signal Fig. 5-29
T613 ALT A	15	Same as T612 ALT A.	Comparison Signal Fig. 5-29
T614 ALT A	15	TRANSFORMER PULSE: 3 windings, 10, 12, 13 ohms respectively, 25 deg C dc resistance 100% duty cycle, mfr 94486, dwg 279-A-5479.	Blocking Oscillator Transformer For V604B Fig. 6-40
T615 ALT A	15	Same as T614 ALT A.	Blocking Oscillator Transformer For V610A Fig. 6-40
T616 ALT A	15	Same as T614 ALT A.	1 KC Phase Detector Fig. 6-40
T617 ALT A	15	TRANSFORMER, POWER STEP-DOWN: 115 v, 60 cps primary, 25 v, 18.4 and 76 v, 300 ma, mfr 94486, dwg 279-A-5021.	Plus 24-6V Regulated Fig. 6-44
T618 ALT A	15	Not Used.	
T619 ALT A	15	Same as T614 ALT A.	4:1 Frequency Divider Fig. 6-40
T620 ALT A	15	Same as T614 ALT A.	1 MC Phase Detector Fig. 6-40
T621 Thru T699	15	Not Used	
Z601 ALT A	15	RINGING CIRCUIT: Two tuned circuits, resonant at 47.5 kc and 30.0 kc respectively, mfr 94486, dwg 279-A-5482.	Ringing Grid of V604B Fig. 6-40
Z602 ALT A	15	RINGING CIRCUIT: Two tuned circuits, resonant at 9.4 kc and 6.0 kc respectively, mfr 94486, dwg 279-A-5481.	Ringing Cathode of V610A Fig. 6-40

SUPPLEMENTARY TABLE 7-1C. RADIO TRANSMITTING SET AN/WRT-2
SUPPLEMENTARY MAINTENANCE PARTS LIST--Continued

CONTROL ELECTRICAL FREQUENCY C-2764/WRT-2 (Sets Serial A1-A178, D1-D327)

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
Z603 ALT A	15	RINGING CIRCUIT: Two tuned circuits, resonant at 1.5 kc and 2.35 kc respectively, mfr 94486, dwg 279-A-5480.	Ringing Cathode of V610B Fig. 6-40
Z604 ALT A	15	RINGING CIRCUIT: One tuned circuit, resonant at 927 cps, mfr 94486, dwg 279-A-5484.	Ringing Grid of V608 Fig. 6-40
MP701 Thru MP732	15	Not Used.	
MP733	15	VERNIER, DIAL DRIVE: mfr 94486, dwg 279-B-5136.	Vernier Dial Drive Unit Fig. 5-36A
MP734	15	SHAFT, STAINLESS STEEL: 3.56 inches long, 0.2497 inces dia, both ends chamfered, mfr 94486, dwg 279-B-5137.	Vernier and Dial Drive Shaft Fig. 5-36A
MP735	15	NAMEPLATE, TUNING: mfr 94486, dwg 279-B-5058.	Marked Tuning A&B Fig. 5-36A
MP736	15	CRANK TUNING DRIVE: knurled, 1 inch long, 1 2 inch dia.	Tuning Drive Crank Fig. 5-36A
MP737	15	DIAL, VERNIER: -50 cycles to +50 cycles, zero center, mfr 94486, dwg 279-B-5155.	Vernier Tuning Dial Fig. 5-36A
MP738	15	BRACKET, LOCK: 0.94 inches long, 0.44 inches wide, right angle bend 0.30, mfr 94486, dwg 279-B-5083.	Tuning Drive Lock
MP739	15	POST, LOCK: 1.42 inches long, 0.375 inch dia, knurled, mfr 94486, dwg 279-B-5084.	Tuning Drive Locking Post Fig. 5-36A
MP740	15	FLANGE, VERNIER MOUNTING: 3 inch dia, brass, nickel plated, mfr 94486, dwg 279-C-5087.	Vernier Drive Mounting Fig. 5-36A
MP741	15	PLATE, COVER: 4.31 inches long, by 2.69 inches wide, two rectangular cutouts, mfr 94486, dwg 279-B-5086.	Counter Cover Plate Fig. 5-36A
MP742	15	WINDOW, COUNTER: 2 inches wide by 2-1/8 inches high, painted black except for 2 window areas.	Counter Window Fig. 5-36A
MP743	15	GEAR, SPUR: 48 pitch, 20 deg pressure angle, 75 teeth, mfr 94486, dwg 279-B-5069.	Drive Gear Fig. 5-36A

SUPPLEMENTARY TABLE 7-1C. RADIO TRANSMITTING SET AN/WRT-2
SUPPLEMENTARY MAINTENANCE PARTS LIST--Continued

CONTROL ELECTRICAL FREQUENCY C-2764/WRT-2 (Sets Serial A1-A178, D1-D327)

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
MP744	15	COLLAR STOP: 1/2 inch dia, 1/4 inch wide, (7 used), mfr 94486, dwg 279-A-2245B.	Drive Shaft Stop Collar Fig. 5-36A
MP745	15	BEARING, THRUST: Oilite, 0.500 inch O.D. 0.255 I.D., 1/16 thick (17 used) mfr 94486, dwg 279-C-2247Q.	Shaft Bearing Fig. 5-36A
MP746	15	BEARING, THRUST: Oilite, 0.500 inch O.D. 0.255 inch I.D., 0.028 inch thick, mfr 94486, dwg 279-C-2247DD.	Shaft Bearing Fig. 5-36A
MP747	15	COLLAR, STOP #2: Stainless steel, mfr 94486, dwg 279-B-5121.	Tuning Drive Stop Collar Fig. 5-36A
MP748	15	COLLAR, STOP #1: Stainless steel, mfr 94486, dwg 279-B-5116.	Tuning Drive Stop Collar Fig. 5-36A
MP749	15	SPROCKET, WHEEL: 15 teeth, 3/16 inch pitch, 0.876 inch dia., mfr 94486, dwg 279-B-5063.	Drive Sprocket Fig. 5-35A
MP750	15	GEAR, SPUR: 48 pitch, 20 deg pressure angle, 42 teeth, 0.8750 inch pitch dia., mfr 94486, dwg 279-B-5098.	Counter Drive Gear Fig. 5-36A
MP751	15	GEAR, BEVEL: 48 pitch, pressure angle 20 deg, 28 teeth, pitch dia. 0.5833, mfr 94486, dwg 279-B-5105.	Drive Gear Fig. 5-36A
MP752	15	GEAR, BEVEL: 48 pitch, pressure angle 20 deg, 42 teeth, pitch dia. 0.870, mfr 94486, dwg 279-B-5104.	Drive Gear Fig. 5-36A
MP753	15	GEAR, SPUR: 48 pitch, 20 deg pressure angle, 36 teeth, pitch dia. 0.750, mfr 94486, dwg 279-B-5097.	Drive Gear Fig. 5-36A
MP754	15	GEAR SPUR: 48 pitch, 20 deg pressure angle, 84 teeth, pitch dia. 1.750, mfr 94486, dwg 279-B-5068.	Drive Gear Fig. 5-36A
MP755	15	GEAR, SPUR: 48 pitch, 20 deg pressure angle, 75 teeth, pitch dia. 1.5625, mfr 94486, dwg 279-B-5070.	Drive Gear Fig. 5-36A

SUPPLEMENTARY TABLE 7-1C. RADIO TRANSMITTING SET AN WRT-2
SUPPLEMENTARY MAINTENANCE PARTS LIST--Continued

CONTROL ELECTRICAL FREQUENCY C-2764/WRT-2 (Sets Serial A1-A178, D1-D327)

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
MP756	15	GEAR, BEVEL: 48 pitch, 20 deg pressure angle, 24 teeth, pitch dia. 0.500, mfr 94486, dwg 279-B-5106.	Drive Gear Fig. 5-36A
MP757	15	GEAR, BEVEL: 48 pitch, 20 deg pressure angle, 24 teeth, pitch dia. 0.500, mfr 94486, dwg 279-B-5107.	Drive Gear Fig. 5-36A
MP758	15	SHAFT, STAINLESS STEEL: 2.31 inches long, 0.2497 dia, mfr 94486, dwg 279-B-5076C.	Drive Shaft
MP759	15	SHAFT, STAINLESS STEEL: 2.56 inches long, 0.2497 inch dia., mfr 94486, dwg 279-B-5076B.	Drive Shaft Fig. 5-36A
MP760	15	SHAFT, STAINLESS STEEL: 3.00 inch long, 0.2497 inch dia, mfr 94486, dwg 279-B-5076D.	Drive Shaft Fig. 5-36A
MP761	15	SHAFT, STAINLESS STEEL: 3.03 inch long, 0.2497 inch dia, mfr 94486, dwg 279-B-5080.	Drive Shaft Fig. 5-36A
MP762	15	SHAFT, STAINLESS STEEL: 3.12 inch long, dia. #1 - 0.2497 inch, dia #2 - 0.1874 inch, mfr 94486, dwg 279-B-5096.	Drive Shaft Fig. 5-36
MP763	15	SHAFT, STAINLESS STEEL: 3.49 inch long, 0.2497 inch dia, mfr 94486, dwg 279-B-5082.	Drive Shaft Fig. 5-36A
MP764	15	CAM, SWITCH ACTUATOR: mfr 94486, dwg 279-B-5109.	Switch Cam Fig. 5-36A
MP765	15	WASHER, STOP: 0.750 O.D., 0.250 I.D., stop .036 inch high (11 used), mfr 94486, dwg 279-B-2244.	Tuning Drive Stops Fig. 5-36A
MP766	15	CHAIN, ROLLER: 86 pitches, 3/16 inch pitch, 5/32 inch wide, side flanged, stainless steel, mfr 94486, dwg 279-A-2215M.	Drive Chain Fig. 5-36A
MP767	15	SPROCKET, WHEEL: for 3/16 inch pitch 5/32 inch wide chain, 20 teeth, mfr 94486, dwg 279-B-2209.	Drive Sprocket Fig. 5-36A

SUPPLEMENTARY TABLE 7-1C. RADIO TRANSMITTING SET AN/WRT-2
SUPPLEMENTARY MAINTENANCE PARTS LIST--Continued

CONTROL ELECTRICAL FREQUENCY C-2764/WRT-2 (Sets Serial A1-A178, D1-D327)

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
MP768	15	SPROCKET, WHEEL: For 3/16 inch pitch, 5/32 inch chain, 24 teeth, mfr 94486, dwg 279-B-2210.	Drive Sprocket Fig. 5-35A
MP769	15	SPROCKET, IDLER: For 3/16 inch pitch, 5/32 inch chain, 0.602 dia, 15 teeth, mfr 94486, dwg 279-B-5111.	Idler Sprocket Fig. 5-35A
MP770	15	SLEEVE, STUD IDLER: 0.447 inch long, 0.2495 inch O.D., 0.190 inch I.D. stainless steel, mfr 94486, dwg 279-B-5061.	Idler Sprocket Stud Sleeve Fig. 5-35A
MP771 Thru MP779	15	Not Used	
A1301	15	PROPORTIONAL OVEN AND CONTROL UNIT: c/o of proportional oven unit Z1301 and control unit Z1302, furnished as a matched set, mfr 94486, dwg 279-A-5735.	
C1301 Thru C1317	15	Not Used.	
C1322	15	Not Used.	
CR1301 Thru CR1304		Not Used.	
CR1305 ALT A Thru CR1308 ALT A	15	SEMICONDUCTOR DEVICE, DIODE: 1N933 spec MIL-S-19500.	6V Bias Supply Diodes Fig. 5-28
CR1311 ALT A Thru CR1314	15	SEMICONDUCTOR DEVICE, DIODE: 1N2986BSA, mfr 81483.	Zener Diode
E1301 ALT A	15	PRINTED CIRCUIT ASSEMBLY: 10:1 frequency divider, mfr 94486, dwg 279-D-AE-5375A.	Binary No.1 Feedback Counter, -100KC Amp. Fig. 6-42
E1302 ALT A	15	PRINTED CIRCUIT ASSEMBLY: -6V bias supply mfr 94486, dwg 279-C-AE-5185A.	-6V dc Regulated Fig. 6-44

SUPPLEMENTARY TABLE 7-1C. RADIO TRANSMITTING SET AN/WRT-2
SUPPLEMENTARY MAINTENANCE PARTS LIST--Continued

CONTROL ELECTRICAL FREQUENCY C-2764/WRT-2 (Sets Serial A1-A178, D1-D327)

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
E1303 ALT A	15	PRINTED CIRCUIT ASSEMBLY: 10:1 frequency divider, mfr 94486, dwg 279-D-AE-5388.	Binary No. 2 and 3 Fig. 6-42
E1304 ALT B	15	PRINTED CIRCUIT ASSEMBLY: 1MC oscillator, mfr 94486, dwg 279-D-AE-5750.	1 MC Oscillator and 1 MC Fig. 6-42
FL1301	15	FILTER, LOW PASS: Rejection at 120 cps, 32 db rated 0.12 hy min, includes coils and capacitors, hermetically sealed, mfr 94486, dwg 279-A-5717.	
L1301	15	REACTOR: 0.63 hy, 20 v at 120 cps, 0.41 amp dc, mfr 94486, dwg 279-A-5031.	
Q1305 ALT A Thru Q1308 ALT A	15	TRANSISTOR, HIGH FREQUENCY: 2N1122, spec MIL-S-19500.	Binary Counters Fig. 5-25, 5-26
Q1313 Thru Q1316	15	Same as Q1305 ALT A.	Binary No. 3 And Feedback Counters Fig. 5-25, 5-26
T1301 Thru T1303	15	Not Used	
T1304 ALT A	15	TRANSFORMER, RADIO FREQUENCY: 100KC, 1 primary, 1 secondary, pie wound, mfr 94486 dwg 279-A-5379.	1 MC Coupling Transformer Fig. 5-25
Z1301	15	PROPORTIONAL OVEN: Part of A1301.	
Z1302	15	OVEN CONTROL: Part of A1301.	
1700 Series, 1 Megacycle Oscillator, P/O Control, Electrical Frequency C-2764/WRT-2			
C1701	15	CAPACITOR, FIXED, PAPER, DIELECTRIC: .047 uf + 20%, 400V dc working, CP09A1KB473M, spec MIL-C-25.	By-Pass Fig. 5-27B
C1702	15	CAPACITOR, VARIABLE, GLASS: 1 to 12 pf, mfr 19644, type LRC682048.	1 MC Tuning Capacitor Fig. 6-27B
C1703	15	CAPACITOR, FIXED, MICA, DIELECTRIC: 12 pf +5%, 1000V dc working, mfr 72136, type VCM-20-120.	1 MC Tuning Padder Fig. 6-27B
C1704	15	CAPACITOR, FIXED, MICA, DIELECTRIC: 1000pf +5%, 1000V dc working, mfr 72136, type DM15-102.	By-Pass Capacitor Fig. 6-27B
C1705	15	CAPACITOR, FIXED, MICA, DIELECTRIC: 270 pf+5%, 1000V dc working, mfr 72136, type VCM-20-271.	Coupling Capacitor Fig. 6-27B
C1706	15	Same as C1704.	By-Pass Capacitor Fig. 6-27B
C1707	15	CAPACITOR, FIXED, MICA, DIELECTRIC: 3000pf+ 5%, 500V dc working, mfr 72136, type DM19-302.	Coupling Capacitor
C1708	15	Same as C1707	Coupling Capacitor Fig. 6-27B
C1709	15	Same as C1707	Coupling Capacitor Fig. 6-27B
C1710	15	CAPACITOR, FIXED, CERAMIC, DIELECTRIC: 10,000 pf+100, -20%, 500V dc working, CK63AW103X, spec MIL-C-11015.	Coupling Capacitor Fig. 6-27B
C1711	15	CAPACITOR, FIXED, PAPER: 0.01uf+20%, 500Vdc working, CP08A1KB103M, spec MIL-C-25.	By-Pass Capacitor Fig. 6-27B

SUPPLEMENTARY TABLE 7-1C. RADIO TRANSMITTING SET AN/WRT-2
SUPPLEMENTARY MAINTENANCE PARTS LIST--Continued

CONTROL ELECTRICAL FREQUENCY C-2764/WRT-2 (Sets Serial A1-A178, D1-D327)

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
C1712 and C1713	15	Not Used	
C1714	15	CAPACITOR, FIXED, PAPER DIELECTRIC: 0.33 uf ± 20%, CP08A1KB334M, spec MIL-C-25.	By-Pass Capacitor Fig. 6-27B
C1715	15	CAPACITOR, FIXED, MICA DIELECTRIC: 510 pf ± 10%, 300V dc working, mfr 72136, type DM15-511.	By-Pass Capacitor T1701 Fig. 6-27A
C1716	15	CAPACITOR, FIXED, PAPER DIELECTRIC: 0.015 uf ± 20%, 500V dc working, CP08A1K153M, spec MIL-C-25.	By-Pass Capacitor Q1707 Fig. 6-27B
C1717	15	CAPACITOR, FIXED, MICA, DIELECTRIC:	Blocking Capacitor Fig. 6-27B
C1718	15	Same as C1716.	Blocking Capacitor Fig. 6-27B
CR1701	15	SEMICONDUCTOR DEVICE: Zener 10V type MZ10T10, spec MIL-S-19500.	Voltage Regulator Fig. 6-27B
CR1702	15	SEMICONDUCTOR, DEVICE, DIODE: 1N483B Spec MIL-S-19500.	Clamping Diode Q1707
CR1703	15	Same as CR1702.	Clamping Diode Q1706 Fig. 6-27B
Q1701	15	TRANSISTOR: 2N333(USN), spec MIL-S-19500.	IMC Oscillator Fig. 6-27B
Q1702	15	Same as Q1701.	Buffer Stage Fig. 6-27B
Q1703	15	Same as Q1701.	AGC Amplifier Fig. 6-27B
Q1704	15	Same as Q1701.	AGC Amplifier Fig. 6-27B
Q1705	15	Same as Q1701.	1 MC Amplifier Fig. 6-27B
Q1706	15	Same as Q1701.	1 MC Amplifier Fig. 6-27B
Q1707	15	Same as Q1701.	1 MC Amplifier Fig. 6-27B

SUPPLEMENTARY TABLE 7-1C. RADIO TRANSMITTING SET AN/WRT-2
SUPPLEMENTARY MAINTENANCE PARTS LIST--Continued

CONTROL ELECTRICAL FREQUENCY C-2764/WRT-2 (Sets Serial A1-A178, D1-D327)

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
R1701	15	RESISTOR, FIXED, COMPOSITION: 91 K ohms ± 5%, 1/2 W, RC20GF913J, spec MIL-R-11.	Voltage Divider for Q1701 Base Fig. 6-27B
R1702	15	RESISTOR, FIXED, COMPOSITION: 12 K ohms ± 5%, 1/2 W, RC20GF123J, spec MIL-R-11.	Voltage Divider for Q1701 Base Fig. 6-27B
R1703	15	RESISTOR, FIXED, COMPOSITION: 1 K ohms ± 5%, 1/2 W, RC20GF102J, spec MIL-R-11.	Collector Load Q1701 Fig. 6-27B
R1704	15	RESISTOR, FIXED, COMPOSITION: 62K ohms ± 5%, 1/2 W, RC20GF523J, spec MIL-R-11.	Voltage Divider Base Q1702 Fig. 6-27B
R1705	15	RESISTOR, FIXED, COMPOSITION: 6,800 ohms ± 5%, 1/2 W, RC20GF682J, spec MIL-R-11.	Voltage Divider Base Q1702 Fig. 6-27B
R1706	15	RESISTOR, FIXED, COMPOSITION: 5,100 ohms ± 5%, 1/2 W, RC20GF512J, spec MIL-R-11.	Collector Load Q1702 Fig. 6-27B
R1707	15	RESISTOR, FIXED, COMPOSITION: 430 ohms ± 5%, 1/2 W, RC20GF431J, spec MIL-R-11.	Emitter Bias Q1702 Fig. 6-27B
R1708	15	RESISTOR, FIXED, COMPOSITION: 47K ohms ± 5%, 1/2 W, RC20GF473J, spec MIL-R-11.	Voltage Divider Base Q1704 Fig. 6-27B
R1709	15	Same as R1705.	Voltage Divider Base Q1704 Fig. 6-27B
R1710	15	Same as R1706.	Collector Load Q1703 Fig. 6-27B
R1711	15	Same as R1707.	Emitter Bias Q1703 Fig. 6-27B
R1712	15	RESISTOR, FIXED, COMPOSITION: 33K ohms ± 5%, 1/2 W, RC20GF333J, spec MIL-R-11.	Voltage Divider Base Q1704 Fig. 6-27B
R1713	15	RESISTOR, FIXED, COMPOSITION: 6200 ohms ± 5%, 1/2 W, RC20GF622J, spec MIL-R-11.	Voltage Divider Base Q1704 Fig. 6-27B
R1714	15	RESISTOR, FIXED, COMPOSITION: 3K ohms ± 5%, 1/2 W, RC20GF302J.	Collector Load Q1704 Fig. 6-27B
R1715	15	Same as R1707.	Emitter Bias Q1704 Fig. 6-27B

SUPPLEMENTARY TABLE 7-1C. RADIO TRANSMITTING SET AN/WRT-2
SUPPLEMENTARY MAINTENANCE PARTS LIST--Continued

CONTROL ELECTRICAL FREQUENCY C-2764/WRT-2 (Sets Serial A1-A178, D1-D327)

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
R1716	15	RESISTOR, FIXED, COMPOSITION: 39 K ohms ± 5%, 1/2 W, RC206GF393J, spec MIL-R-11.	Voltage Divider Base Q1705 Fig. 6-27B
R1717	15	RESISTOR, FIXED, COMPOSITION: 10 K ohms ± 5%, 1/2 W, RC20GF103J, spec MIL-R-11.	Voltage Divider Base Q1705 Fig. 6-27B
R1718	15	RESISTOR, FIXED, COMPOSITION: 5,600 ohms ± 5%, 1/2 W, RC20GF562J, spec MIL-R-11.	Collector Load Q1705 Fig. 6-27B
R1719	15	RESISTOR, FIXED, COMPOSITION: 1,200 ohms ± 5%, 1/2 W, RC20GF122J, spec MIL-R-11.	Emitter Biax Q1705 Fig. 6-27B
R1720	15	RESISTOR, FIXED, COMPOSITION: 22 K ohms ± 5%, 1/2 W, RC20GF223J, spec MIL-R-11.	Voltage Divider Fig. 6-27B
R1721	15	Same as R1720.	Voltage Divider Base Q1706 Fig. 6-27B
R1722	15	Same as R1719.	Coupling Q1707 and Q1706 Fig. 6-27B
R1723	15	Same as R1705.	Emitter Bias Q1706 Fig. 6-27B
R1724 and R1725		Not Used	
R1726	15	Same as R1714.	Emitter Bias Q1707 Fig. 6-27B
R1727	15	RESISTOR, FIXED, COMPOSITION: 12 K ohms ± 5%, 1/2, RC20GF123J, spec MIL-R-11.	Voltage Regulator Fig. 6-27B
R1728	15	RESISTOR, FIXED, COMPOSITION: 820 ohms ± 5%, 1/2 W, RC20GF812J, spec MIL-R-11.	Voltage Regulator Fig. 6-27B
R1729 Thru R1799		Not Used.	
T1701	15	TRANSFORMER, RADIO FREQUENCY: 1 primary 14.5 uh, 1 secondary C-T, 40 ± 10 uh, mfr 94486, dwg 279-A-5764.	Output to 10:1 Dividers Fig. 6-27B

SUPPLEMENTARY TABLE 7-1C. RADIO TRANSMITTING SET AN/WRT-2
SUPPLEMENTARY MAINTENANCE PARTS LIST--Continued

AMPLIFIER, RADIO FREQUENCY AM-2121/WRT-2 (Sets Serial A1-A178, D1-D327)

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
AT801 ALT A	15	RESISTOR ASSEMBLY: C/O nine 2 watt resistors, a cable and standoff disk, mfr 94486, dwg 279-B-3130.	Terminates T804 Fig. 6-33A
AT802 ALT A	15	DUMMY LOAD ASSEMBLY: mfr 94486, dwg 279-C-AM-2840.	
B801 ALT A	15	FAN, CENTRIFUGAL COUNTER: Clock wise rotation 12 o'clock blast 115/230V, mfr 94486, dwg 279-D-2926A.	Blower Motor Fig. 6-32
C803 ALT A	15	CAPACITOR, VARIABLE, AIR DIELECTRIC: 25 pf to 500 pf, 750V dc working, mfr 94486, dwg 279-C-2251.	Plate Tuning for V951 Fig. 6-31
C832 ALT A	15	Same as C803 ALT A.	Main Tank Plate Tuning V801 Fig. 6-31
C836 ALT A	15	CAPACITOR, VARIABLE, VACUUM DIELECTRIC: 7 to 750 pf, 5000V dc working, mfr 94486, dwg 279-C-2482.	Plate Tank Tuning P.A. Fig. 6-32
C837 ATL A	15	CAPACITOR, VARIABLE, VACUUM DIELECTRIC: 20 to 1500 pf, 3000V dc working, mfr 94486, dwg 279-B-2481.	Plate Tank Tuning P.A. Fig. 6-32
CR801	15	SEMICONDUCTOR DEVICE DIODE: 1N933	PA Cathode Overload Circuit Fig. 6-32
CR802	15	Same as CR801.	PA Cathode Overload Circuit Fig. 6-32
CR803	15	Same as CR801.	PA Cathode Overload Circuit Fig. 6-32
CR804	15	Same as CR801.	PA Cathode Overload Circuit Fig. 6-32
CR805	15	Same as CR801.	PA Cathode Fig. 6-33
CR806	15	Same as CR801.	Directional Coupler Fig. 6-33
CR807	15	Same as CR801.	Directional Coupler Fig. 6-33
CR808	15	Same as CR801.	Directional Coupler Fig. 6-33

SUPPLEMENTARY TABLE 7-1C. RADIO TRANSMITTING SET AN/WRT-2
SUPPLEMENTARY MAINTENANCE PARTS LIST--Continued

AMPLIFIER, RADIO FREQUENCY AM-2121/WRT-2 (Sets Serial A1-A178, D1-D327)

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
CR809	15	Same as CR801	Directional Monitor Fig. 6-33
CR810	15	Same as CR801.	Directional Monitor Fig. 6-33
CR811	15	Same as CR801.	Directional Monitor Fig. 6-33
CR812	15	Same as CR801.	Directional Coupler Fig. 6-33
CR813	15	Same as CR801.	Directional Coupler Fig. 6-33
CR820	15	Same as CR801.	Bias Rectifier K810 Fig. 6-33A
CR825	15	SEMICONDUCTOR DEVICE, DIODE: 1N483B, spec MIL-S-19500/18A.	Emitter Bias Q803 Fig. 6-33A
E895 ALT B	15	PRINTED CIRCUIT ASSEMBLY: Consists of various components mounted on a printed board, mfr 94486, dwg 279-C-AE-3280.	High SWR Alarm Control Fig. 6-33A
E897 ALT A	15	PRINTED CIRCUIT ASSEMBLY: Consists of various components mounted on a printed board, mfr 94486, dwg 279-B-3127.	RF Rectifier for Control Circuit Fig. 6-33A
E898 ALT A	15	RESISTOR BOARD ASSEMBLY: C/O 2 resistors 2 diodes and a transistor, mfr 94486, dwg 279-B-2077.	High SWR Alarm Light Control Fig. 6-33A
E899 ALT A	15	RESISTOR BOARD ASSEMBLY: C/O 3 resistors and 3 diodes, mfr 94486, dwg 279-B-AE-2830.	Plate Power Alarm Circuitry Fig. 6-33A
K810 ALT A	15	RELAY ARMATURE: 500 ohms ± 10% coil resistance at 25 deg c, 115V ac, non induction mfr 94486, dwg 279-C-2058B.	PA Overload Fig. 6-32
K811 ALT A Thru K899 ALT A		Not Used.	
K899 ALT A		Cont. See K901.	
L801 ALT A	15	CHOKE, RADIO FREQUENCY: 1 winding, close wound, 20 turns 0.032 in. dia wire, single silk insulation, 7 uh, phenolic coil form, mfr 94486, dwg 279-B-AE-2178.	RF Filter Filament V801 Fig. 6-31

SUPPLEMENTARY TABLE 7-1C. RADIO TRANSMITTING SET AN/WRT-2
SUPPLEMENTARY MAINTENANCE PARTS LIST--Continued

AMPLIFIER, RADIO FREQUENCY AM-2121/WRT-2 (Sets Serial A1-A178, D1-D327)

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
L802 ALT A	15	Same as L801.	RF Filter Filament V801 Fig. 6-31
L803 ALT A	15	COIL ROTOR ASSEMBLY: Wound wire 305 inches coil wire on a barrel shape coil form, combination phenolic and metal shaft, 0.33 uh to 33 uh, mfr 94486, dwg 279-C-AE-2585A.	PA Plate Tuning Fig. 6-32
L804 ALT A	15	COIL ROTOR ASSEMBLY: Wound with 344 inches coil wire on a barrel shape coil form, combination phenolic and metal shaft, 0.33 uh to 33 uh, mfr 94486, dwg 279-C-AE-2585B.	PA Plate Tuning Fig. 6-32
L805 ALT A	15	COIL ROTOR ASSEMBLY: Wound with 344 inches coil wire on a barrel shape coil form, combination phenolic and metal shaft, 0.33 uh to 33 uh, mfr 94486, dwg 279-C-AE-2605.	PA Plate Tuning Fig. 6-32
L806 ALT A	15	Same as L801.	RF Filter Filament V802 Fig. 6-31
L807 ALT A	15	Same as L801.	RF Filter Filament V802 Fig. 6-31
L808 ALT A	15	COIL, RADIO FREQUENCY: Wound with 60 ft of 0.0159 in. dia wire, 0.350 uh, mfr 94486, dwg 279-B-AE-3046.	Decoipling For PA Plate Voltage
L809 ALT A	15	COIL, RADIO FREQUENCY: 1 winding, variable, 0.2 un to 13 uh, mfr 94486, dwg 279-C-AM-2270.	V951 Plate Tank Main Tuning Fig. 6-31
L810 ALT A	15	COIL, RADIO FREQUENCY: Wound with 0.010 in. dia silk covered enamel wire, 360 uh, mfr 94486, dwg 279-B-AE-3052.	PA Grid RF Filter Fig. 6-32
L811 ALT A	15	COIL, RADIO FREQUENCY: 750 uh inductance, 50 ma max current, 17 ohms dcr, hermetically sealed in glass envelope, mfr 94486, type R33, 750 uh, dwg 279-A-4086.	Modulation Monitor Fig. 6-33
L812		Not Used.	
L813 ALT A	15	COIL ASSEMBLY: Wound with 37 inches of 0.102 in. dia wire, silver plated coil form, pie wound, 1.25 uh, mfr 94486, dwg 279-B-AE-2690.	PA Tank Fig. 6-32
L814 ALT A	15	COIL ASSEMBLY: 1.0-1.2 uh inductance at 7.9 mc, cw winding, silver plated wire, mfr 94486, dwg 279-B-AE-2685.	PA Tank Fig. 6-32

SUPPLEMENTARY TABLE 7-1C. RADIO TRANSMITTING SET AN/WRT-2
SUPPLEMENTARY MAINTENANCE PARTS LIST--Continued

AMPLIFIER, RADIO FREQUENCY AM-2121/WRT-2 (Sets Serial A1-A178, D1-D327)

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
L815 ALT A	15	COIL ASSEMBLY: 5 turns of 0.040 in. dia copper wire, variable, 0.16 uh to 0.22 uh, mfr 94486, dwg 279-B-AE-2363A.	Trimmer Coil V951 Plate Tank Fig. 6-31
L816		Not Used.	
L817 ALT A	15	COIL ASSEMBLY: 6 turns of 0.040 in. dia copper wire, variable, 0.22 uh to 0.29 uh mfr 94486, dwg 279-B-AE-2363B.	Trimmer Coil V801 Plate Tank Fig. 6-31
L818 ALT A	15	Same as L809	Main Tuning V801 Tank Fig. 6-31
L819		Not Used	
L820 ALT A	15	Same as L809.	Main Tuning V802 Tank Fig. 6-31
L821		Not Used	
L822 ALT A	15	COIL, RADIO FREQUENCY: Wound with 0.102 in. dia copper wire, variable, mfr 94486, dwg 279-B-AE-2171.	V802 Tank Output Control Fig. 6-31
L823 ALT A	15	COIL, RADIO FREQUENCY: Powdered iron form, 300 ma, 28 ohms dcr, q of 85 at 2.5 mc, mfr 94486, dwg 279-C-2137C.	Decoupling Plate V802 Fig. 6-31
L824	15	Not Used.	
L825 ALT A	15	Same as L801.	Filament RF Filter V951 Fig. 6-31
L826 ALT A	15	Same as L801.	Filament RF Filter V951 Fig. 6-31
L827		Not Used.	
L828 ALT A	15	Same as L811 ALT A.	RF Filter Choke For CR801 Fig. 6-32
L829 ALT A	15	Same as L811 ALT A.	RF Filter Choke CR802 Fig. 6-32
L830 ALT A	15	Same as L811 ALT A.	RF Filter Choke For CR803, Fig. 6-32
L831 ALT A	15	Same as L811 ALT A.	RF Filter Choke CR803
L832 ALT A	15	Same as L811 ALT A.	Filter For Mixer Input Keying Fig. 6-31
L833 ALT A Thru L899 ALT A		Not Used.	

SUPPLEMENTARY TABLE 7-1C. RADIO TRANSMITTING SET AN/WRT-2
SUPPLEMENTARY MAINTENANCE PARTS LIST--Continued

AMPLIFIER, RADIO FREQUENCY AM-2121/WRT-2 (Sets, Serial Nos. A1-A178, D1-D327)

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
M801 ALT B	15	AMMETER: 0-150 ma, white face with black markings, mfr 94486, dwg 279-B-2809.	Test Ammeter Fig. 6-32
M802 ALT B	15	AMMETER: 0-15 amp and 0-300 ma, white face with black markings, mfr 94486, dwg 279-B-2810.	PA Cathode Current Fig. 6-32
M803 ALT B	15	VOLTMETER, 0-2 kv and 0-500 v, white face with black markings, mfr 94486, dwg 279-B-2811.	HV Plate Meter Fig. 6-32
M804 ALT A	15	INDICATOR: Standing wave ratio, dc movement, mfr 94486, dwg 279-B-2812.	Standing Wave Ratio Indicator Fig. 6-32
M805 ALT B	15	WATTMETER: 0-600 w and 120% modulation, white face with black markings, mfr 94486, dwg 279-B-2813.	Power Output Meter Fig. 6-32
MP806 ALT A	15	GEAR, SPUT: 48 pitch, 42 teeth, 20 deg pressure angle, 0.8750 pitch dia, mfr 94486, dwg 279-B-2331.	Drive Gear Fig. 5-40
MP807 ALT A		Same as MP806 ALT A.	Drive Gear Fig. 5-40
MP808 ALT A	15	GEAR, SPUR: 48 pitch, 24 teeth 20 deg pressure angle, 0.500 pitch dia, mfr 94486, dwg 279-B-2332.	Drive Gear Fig. 5-40
MP818 ALT A	15	SPROCKET WHEEL: For 3/16 in. pitch 5/32 in. w, side flanged, link belt chain, 17 teeth, 1.020 pitch dia. mfr 94486, dwg 279-B-2208.	Drive Sprocket Fig. 5-42
MP819 ALT A	15	Same as MP818 ALT A.	Drive Sprocket Fig. 5-42
MP820 ALT A	15	Same as MP818 ALT A.	Drive Sprocket Fig. 5-42
MP821 ALT A	15	SPROCKET, WHEEL: For 3/16 in. pitch, 5/32 in. w, side flanged, link belt chain, 20 teeth, mfr 94486, dwg 279-B-2009.	Drive Sprocket Fig. 5-40
MP822 ALT A	15	SPROCKET, WHEEL: For 3/16 in. pitch, 5/32 in. w, side flanged, link belt chain, 24 teeth, mfr 94486, dwg 279-B-2210.	Drive Sprocket Fig. 5-40

SUPPLEMENTARY TABLE 7-1C. RADIO TRANSMITTING SET AN/WRT-2
SUPPLEMENTARY MAINTENANCE PARTS LIST--Continued

AMPLIFIER, RADIO FREQUENCY AM-2121/WRT-2 (Sets Serial A1-A178, D1-D327)

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
MP823 ALT A	15	SPROCKET, WHEEL: For 3/16 in. pitch, 5/32 in. w, side flanged, link belt silent chain, 17 teeth, 1.020 pitch dia, mfr 94486, dwg 279-B-AM-2760.	Drive Sprocket Idler Fig. 5-40
MP824 ALT A		Same as MP823 ALT A.	Drive Sprocket Idler Fig. 5-40
MP825 ALT A	15	SPROCKET, WHEEL: 26 teeth, 1.548 pitch dia, stainless steel, accommodates 1/4 in. shaft, mfr 94486, dwg 279-B-2122.	Drive Sprocket Fig. 5-42
MP826 ALT A	15	CHAIN: 70 pitches, 3/16 in. pitch 5/32 in. wide, side flange, stainless steel, mfr 94486, dwg 279-A-2215E.	Drive Chain Fig. 5-41
MP827 ALT A	15	CHAIN, ROLLER: 84 pitches, 3/16 in. pitch 5/32 in. wide, side flanged, Steel, mfr 94486, dwg 279-A-2215D.	Drive Chain Fig. 5-40
MP828 ALT A	15	GEAR, WORM: 64 pitches, 0.500 pitch dia, 14 1/2-deg pressure angle, stainless steel, mfr 94486, dwg 279-B-2216.	Drive Worm Fig. 5-40
MP829 ALT A	15	GEAR, WORM WHEEL: 64 pitch, 60 teeth 14 1/2 deg pressure angle, 0.937 pitch dia, mfr 94486, dwg 279-B-2217.	Drive Gear Fig. 5-40
MP830 ALT A	15	GEAR, HELICAL: 64 pitch, 15 teeth, 20 deg pressure angle, 0.331 pitch dia, 45 deg helix angle rh, mfr 94486, dwg 279-B-2218.	Helical Drive Gear Fig. 5-42
MP831 ALT A	15	GEAR, HELICAL: 64 pitch, 30 teeth 20 deg pressure angle 0.663 pitch dia, 45 deg helix angle rh, mfr 94486, dwg 279-B-2219.	Helical Drive Gear Fig. 5-41
MP832 ALT A	15	GEAR, SPUR: 48 pitch, 21 teeth, 20 deg pressure angle, 0.4375 pitch dia, mfr 94486, dwg 279-B-2220.	Drive Gear Fig. 5-40
MP839 ALT A	15	GEAR, SPUR: 48 pitch, 65 teeth, 20 deg pressure angle, 1.3541 pitch dia, mfr 94486, dwg 279-A-2258.	Drive Gear Fig. 5-41
MP840 ALT A	15	Same as MP839 ALT A.	Drive Gear Fig. 5-40
MP841 ALT A	15	Same as MP839 ALT A.	Drive Gear Fig. 5-40

SUPPLEMENTARY TABLE 7-1C. RADIO TRANSMITTING SET AN/WRT-2
SUPPLEMENTARY MAINTENANCE PARTS LIST--Continued

AMPLIFIER, RADIO FREQUENCY AM-2121/WRT-2 (Sets Serial A1-A178, D1-D327)

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
MP845 ALT A	15	GEAR, SPUR: 48 pitch, 48 teeth, 14 1/2 deg pressure angle, 1.000 pitch dia, mfr 94486, dwg 279-B-2226.	Drive Gear Fig. 5-41
MP848 ALT A	15	SPLINE EXTENSION: 0.365 in. dia, mfr 94486, dwg 279-B-AM-2357A.	Couples Rotation Fig. 5-41
MP849 ALT A	15	SPLINE EXTENSION: 0.365 in. dia, mfr 94486, dwg 279-B-AM-2357B.	Couples Rotation Fig. 5-41
MP850 ALT A	15	SPLINE EXTENSION: 0.365 in. dia, mfr 94486, dwg 279-B-AM-2357C.	Couples Rotation Fig. 5-41
MP851 ALT A	15	SHAFT, STAINLESS STEEL: 4-7/8 in. lg 0.2497 in. dia, 1/32 in. chamfer both ends, mfr 94486, dwg 279-B-2228K.	Transmits Rotation Fig. 5-41
MP852 ALT A	15	SHAFT, STAINLESS STEEL: 1-5/8 in. lg, 0.2497 in. dia, 1/32 in. chamfer both ends, mfr 94486, dwg 279-B-2333A.	Transmits Rotation Fig. 5-41
MP853 ALT A	15	SHAFT, STAINLESS STEEL: 3-1/8 in. long, 0.2497 in. dia, 1/32 in. chamfer both ends. mfr 94486, dwg 279-B-2228F.	Transmits Rotation Fig. 5-41
MP854 ALT A	15	SHAFT, STAINLESS STEEL: 1-7/8 in. lg, 0.2497 in. dia, 1/32 in. chamfer both ends, mfr 94486, dwg 279-B-2228D.	Transmits Rotation Fig. 5-41
MP855 ALT A	15	SHAFT, STAINLESS STEEL: 4.12 in. lg, 0.2497 in. dia, 0.020 in. chamfer both ends, flatted one end, mfr 94486, dwg 279-B-2230.	Transmits Rotation Fig. 5-41
MP856 ALT A	15	SHAFT, STAINLESS STEEL: 1.82 in. lg, 0.2497 in. dia, 0.020 in. chamfer, both ends, mfr 94486, 279-B-2231.	Transmits Rotation Fig. 5-41
MP857 ALT A	15	SHAFT, STAINLESS STEEL: 2 1/4 in. lg, 0.1872 in. dia. 1/64 in. chamfer both ends, mfr 94486, dwg 279-B-2232A.	Transmits Rotation Fig. 5-41
MP858 ALT A	15	SHAFT, STAINLESS STEEL: 1-3/4 in. lg, 0.1872 in. dia, 1/64 in. chamfer both ends, mfr 94486, dwg 279-B-2232B.	Transmits Rotation Fig. 5-41
MP859 ALT A	15	SHAFT, STAINLESS STEEL: 1 1/4 in. lg, 0.1872 in. dia, 1/64 in. chamfer both ends, mfr 94486, dwg 279-B-2232C.	Transmits Rotation Fig. 5-41

SUPPLEMENTARY TABLE 7-1C. RADIO TRANSMITTING SET AN/WRT-2
SUPPLEMENTARY MAINTENANCE PARTS LIST--Continued

AMPLIFIER, RADIO FREQUENCY AM-2121/WRT-2 (Sets A1-A178, D1-D327)

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
MP883 ALT A	15	SPROCKET, WHEEL: For 3/16 pitch, 5/32 w, side flanged, link belt silent chain, 28 teeth, 1.674 pitch dia, mfr 94486, dwg 279-B-2415.	Drive Sprocket Fig. 5-45
MP884 ALT A	15	Same as MP883, ALT A.	Drive Sprocket Fig. 5-45
MP885 ALT A	15	Same as MP818 ALT A.	Drive Sprocket Fig. 5-46
MP886 ALT A	15	Same as MP823 ALT A.	Drive Sprocket Idler Fig. 5-46
MP887 ALT A	15	Same as MP823, ALT A.	Drive Sprocket Idler Fig. 5-46
MP888 ALT A	15	Same as MP823 ALT A.	Drive Sprocket Idler Fig. 5-46
MP889 ALT A	15	Same as MP823 ALT A.	Drive Sprocket Idler Fig. 5-43
MP890 ALT A	15	GEAR, SPUR: 32 pitch, 24 teeth, 20 deg pressure angle, 0.750 pitch dia, mfr 94486, dwg 279-B-2416.	Drive Gear Fig. 5-44
MP891 ALT A	15	GEAR, SPUR: 32 pitch, 48 teeth, 20 deg pressure angle, 1.500 pitch dia, 2 stop pins located 100 deg apart, mfr 94486, dwg 279-B-AM-2765.	Drive Gear Fig. 5-45
MP895 ALT A	15	GEAR, HELICAL: 48 pitch, 28 teeth, 20 deg pressure angle, 0.8249 pitch dia, 45 deg helix angle 1h, mfr 94486, dwg 279-B-2419.	Drive Gear Fig. 5-45
MP896 ALT A	15	GEAR, HELICAL: -48 normal pitch, 40 teeth, 0.2498 in. bore, mfr 94486, dwg 279-B-2420.	Drive Gear Fig. 5-44
MP897 ALT A ALT A	15	GEAR, SPUR: 32 pitch, 48 teeth, 20 deg pressur angle, 1.500 pitch dia, mfr 94486, dwg 279-B-2421.	Drive Gear Fig. 5-43
MP898 ALT A	15	GEAR, SPUR: 32 pitch, 28 teeth, 20 deg pressure angle, 0.8750 pitch dia, mfr 94486, dwg 279-B-2422.	Drive Gear Fig. 5-43
MP899 ALT A	15	GEAR, SPUR: 32 pitch, 56 teeth, 20 deg pressure angle, 1,7500 pitch, dia, mfr 94486, dwg 279-B-2423.	Drive Gear Fig. 5-44

SUPPLEMENTARY TABLE 7-1C. RADIO TRANSMITTING SET AN/WRT-2
SUPPLEMENTARY MAINTENANCE PARTS LIST--Continued

AMPLIFIER, RADIO FREQUENCY AM-2121/WRT-2 (Sets Serial A1-A178, D1-D327)

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
MP860 ALT A	15	SHAFT, STAINLESS STEEL: 8-3/8 in. lg, 0.2497 in. dia, 1/32 in. chamfer both ends, mfr 94486, dwg 279-B-2228J.	Transmits Rotation Fig. 5-40
MP861 ALT A	15	SHAFT, SPROCKET, STAINLESS STEEL: 1 1/2 in. lg, 0.250 in. dia sprocket end, 10-32 thd 3/8 in. lg other end, mfr 94486, dwg 279-B-2234.	Transmits Rotation Fig. 5-40
MP862 ALT A	15	SHAFT, SPROCKET, STAINLESS STEEL: 1-11/16 in. lg, one end threaded 10-32, other end 8-32, mfr 94486, dwg 279-B-2235.	Transmits Rotation Fig. 5-42
MP869 ALT A	15	SPACER, STAINLESS STEEL: 1-15/16 in. lg, 8-32 thd both ends, mfr 94486, dwg 279-B-AM-2239.	Spaces Mounting Plates Fig. 5-42
MP870 ALT A	15	WASHER, THRUST: Phosphor bronze, 7/16 in. od, 0.196 in. id, 0.032 in. thk, mfr 94486, dwg 279-A-2240.	Thrust Bearing Fig. 5-41
MP871 ALT A	15	WASHER, THRUST: Brass, 3/8 in. od, 0.191 in. id, 0.090 in. thk, mfr 94486, dwg 279-A-2241.	Thrust Bearing Fig. 5-40
MP872 ALT A	15	WASHER, THRUST: Brass, 1/2 in. od, 1/4 in. id, 0.090 in. thk, mfr 94486, dwg 279-A-2242.	Thrust Bearing Fig. 5-40
MP873 ALT A	15	TAPE, DIAL: Black numerals and index lines on white background, numbered 2.0 to 30.0 mfr 94486, dwg 279-D-2214.	Provides Frequency Settings Fig. 5-41
MP874 ALT A	15	ROLLER, DIAL ALUMINUM: 1.120 in. lg, 1 in. dia flanges, 5/8 in. dia spool, 1/4 in. bore, mfr 94486, dwg 279-B-2213.	Stores Dial Fig. 5-41
MP876 ALT A	15	PIN, SPRING: Stainless steel, 3/4 in. lg, 0.094 in. dia, mfr 94486, dwg H-690-11-12.	Attach Gearing Fig. 5-40
MP879 ALT A	15	PIN, SPRING: Stainless steel, 1/2 in. lg, 0.094 in. dia, mfr 72962, dwg 79-022-135-075.	Attach Gearing Fig. 5-40
MP880 ALT A	15	WASHER, THRUST: Oilite bronze, 1/2 in. od, 3/16 in. id, 1/8 in. thk, mfr 94486, dwg 279-A-2250.	Thrust Bearing Fig. 5-40

SUPPLEMENTARY TABLE 7-1C. RADIO TRANSMITTING SET AN/WRT-2
SUPPLEMENTARY MAINTENANCE PARTS LIST--Continued

AMPLIFIER, RADIO FREQUENCY AM-2121/WRT-2 (Sets Serial A1-A178, D1-D327)

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
MP901 ALT A	15	GEAR, SPUR: 56 teeth, 32 pitch, 20 deg pressure angle, mfr 94486, dwg 279-B-2424.	Drive Gear Figl. 5-44
MP902 ALT A	15	Same as MP901 ALT A.	Drive Gear Fig. 5-44
MP903 ALT A	15	GEAR ASSEMBLY: Pair 1 spur gear, 32 pitch, 52 teeth and 1 bevel gear 32 pitch, 32 pitch, 32 teeth, mfr 94486, dwg 279-B-2424.	Drive Gear Assembly Fig. 5-43
MP904 ALT A	15	GEAR, BEVEL: 32 pitch, 32 teeth, 20 deg pressure angle, 1.000 pitch dia, mfr 94486, dwg 279-C-2447.	Drive Bevel Pinion Fig. 5-43
MP905 ALT A	15	GEAR, BEVEL: Pair 32 pitch, 18 teeth, 20 deg pressure angle, 0.5625 pitch dia mfr 94486, dwg 279-C-2476.	Drive Bevel Pinion Fig. 5-43
MP906 ALT A	15	SPROCKET AND GEAR ASSEMBLY: Consists of a sprocket with 22 teeth and a bevel gear with 32 pitch, 32 teeth, mfr 94486, dwg 279-B-AM-2730.	Drive Sprocket and Gear Assembly Fig. 5-43
MP907 ALT A	15	CHAIN ROLLER: 82 pitches, 3/16 in. pitch, 5/32 in. wide, side flanged, stainless steel, mfr 94486, dwg 279-A-2215A.	Drive Chain Fig. 5-44
MP908 ALT A	15	CHAIN, ROLLER: 94 pitches, 3/16 in. pitches, 5/32 in. wide, side flanged, stainless steel, mfr 94486, dwg 279-A-2215L.	Drive Chain Fig. 5-44
MP909 ALT A	15	CHAIN ROLLER: 100 pitches, 3/16 in. pitch 5/32 in. w, side flanged, stainless steel, mfr 94486, dwg 279-A-2215B.	Drive Chain Fig. 5-44
MP910 ALT A	15	CHAIN, ROLLER: 102 pitches, 3/16 in. pitch, 5/32 in. w, side flanged, stainless steel, mfr 94486, dwg 279-A-2215J.	Drive Chain Fig. 5-44
MP911 ALT A	15	BEARING, BALL, THRUST: Single row stainless steel balls and race, 1/4 in. id, 9/16 in. od, mfr 71041, type SA-05.	Thrust Bearing Fig. 5-43
MP912 ALT A	15	Same as MP911 ALT A.	Thrust Bearing Fig. 5-43

SUPPLEMENTARY TABLE 7-1C. RADIO TRANSMITTING SET AN/WRT-2
SUPPLEMENTARY MAINTENANCE PARTS LIST--Continued

AMPLIFIER, RADIO FREQUENCY AM-2121/WRT-2 (Sets A1-A178, D1-D327)

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
MP913 ALT A	15	Same as MP911 ALT A.	Thrust Bearing Fig. 5-43
MP914 ALT A	15	WASHER, THRUST: 1-1/8 in. od, 1/4 in. thk, mfr 94486, dwg 279-B-AM-2775.	Adjustable Drive Fig. 5-44
MP915 ALT A	15	Same as MP911 ALT A.	Thrust Bearing Fig. 5-46
MP916 ALT A	15	Same as MP911 ALT A.	Thrust Bearing Fig. 5-45
MP917 ALT A	15	Same as MP911 ALT A.	Thrust Bearing Fig. 5-45
MP918 ALT A	15	Same as MP911 ALT A.	Thrust Bearing Fig. 5-45
MP919 ALT A	15	GEAR, WORM: 36 pitch, 20 deg. pressure, 0.5307 pitch dia, 1h single thread, mfr 94486, dwg 279-B-2458.	Drive Worm Fig. 5-45
MP920 ALT A	15	Same as MP883 ALT A.	Drive Sprocket Fig. 5-44
MP921 ALT A	15	GEAR, HELICAL: 36 pitch, 34 teeth, 20 deg pressure angle, 0.9457 pitch dia, 3 deg helix angle 1h, mfr 94486, dwg 279-B-2459.	Helical Drive Gear Fig. 5-44
MP922 ALT A	15	CAM, CONTROL: Stainless steel, 0.2498 in. bore, mfr 94486, dwg 279-D-AM-2514.	Tuning Cam Assembly Fig. 5-44
MP923 ALT A	15	BEARING, BALL: Annular corrosion resistant steel, mfr 96906, dwg FF-B-171A.	Support Bearing Fig. 5-44
MP924 ALT A	15	Same as MP923 ALT A.	Support Bearing Fig. 5-44
MP925 ALT A	15	SPROCKET, WHEEL: 16 teeth, 0.7561 pitch, for 0.1475 pitch sierra roller chain, mfr 94486, dwg 279-B-2465.	Drive Sprocket Fig. 5-44
MP926 ALT A	15	Same as MP925.	Drive Sprocket Fig. 5-44
MP927 ALT A	15	SPROCKET, WHEEL: 16 teeth, 0.7561 pitch for 0.1475 pitch sierra roller chain, mfr 94486, dwg 279-B-AM-2520.	Sprocket Idler Fig. 5-44
MP928 ALT A	15	GEAR, WORM: Single thd, 48 pitch, 20 deg pressure angle, 0.4775 pitch dia, mfr 94486, dwg 279-B-2466.	Drive Worm Fig. 5-46

SUPPLEMENTARY TABLE 7-1C. RADIO TRANSMITTING SET AN/WRT-2
SUPPLEMENTARY MAINTENANCE PARTS LIST--Continued

AMPLIFIER, RADIO FREQUENCY AM-2121/WRT-2 (Sets A1-A178, D1-D327)

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
MP929 ALT A	15	SPROCKET, WHEEL: 22 teeth, 1.317 pitch for 3/16 pitch, 5/32 w, side flanged link belt silent chain, mfr 94486, dwg 279-B-2467.	Drive Sprocket Fig. 5-44
MP930 ALT A	15	GEAR, HELICAL: 50 teeth, 48 pitch, 20 deg pressure angle, mfr 94486, dwg 279-B-2468.	Helical Drive Gear Fig. 5-44
MP931 ALT A	15	GEAR, SPUR: 48 pitch, 36 teeth, 20 deg pressure angle, 0.7500 pitches dia, mfr 94486, dwg 279-B-2469.	Drive Gear Fig. 5-44
MP932 ALT A	15	Same as MP391 ALT A.	Drive Gear Fig. 5-44
MP933 ALT A	15	Same as MP806 ALT A.	Drive Gear Fig. 5-44
MP934 ALT A	15	Same as MP806 ALT A.	Drive Gear Fig. 5-44
MP935 ALT A	15	Same as MP806 ALT A.	Drive Gear Fig. 5-44
MP936 ALT A	15	Same as MP808 ALT A.	Drive Gear Fig. 5-44
MP953 ALT A	15	FRONT CUP ASSEMBLY: Mfr 94486, dwg 279-B-AM-2860.	Front Cup Assembly
MP954 ALT A	15	REAR CUP ASSEMPLY: Mfr 94486, dwg 279-B-AM-2870.	Rear Cup Assembly
MP955 ALT A	15	BEARING, SLEEVE: Oilite bronze, 0.377 in. od, 0.2505 in. id, 3/8 in. lg, mfr 94486, dwg 279-B-2265D.	Sleeve Bearing Fig. 5-41
MP956 ALT A	15	Same as MP955, ALT A.	Sleeve Bearing Fig. 5-41
MP957 ALT A	15	Same as MP955, ALT A.	Sleeve Bearing Fig. 5-42
MP958 ALT A	15	Same as MP955, ALT A.	Sleeve Bearing Fig. 5-42
MP959 ALT A	15	Same as MP955, ALT A.	Sleeve Bearing Fig. 5-41
MP960 ALT A	15	Same as MP955, ALT A.	Sleeve Bearing Fig. 5-41

SUPPLEMENTARY TABLE 7-1C. RADIO TRANSMITTING SET AN/WRT-2
SUPPLEMENTARY MAINTENANCE PARTS LIST--Continued

AMPLIFIER, RADIO FREQUENCY AM-2121/WRT-2 (Sets Serial A1-A178, D1-D327)

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
MP961 ALT A	15	Same as MP955, ALT A.	Sleeve Bearing Fig. 5-41
MP962 ALT A	15	Same as MP955, ALT A.	Sleeve Bearing Fig. 5-41
MP963 ALT A	15	Same as MP955, ALT A.	Sleeve Bearing Fig. 5-40
MP964 ALT A	15	BEARING, SLEEVE: Oilite bronze, 0.377 in. od, 0.2505 in. id, 1/4 in. lg, mfr 94486, dwg 279-B-2265B.	Sleeve Bearing Fig. 5-42
MP965 ALT A	15	BEARING, SLEEVE: Oilite bronze, 0.3145 in. od, 0.1885 in. id, 5/16 in. lg, mfr 94486, dwg 279-A-2266F.	Sleeve Bearing Fig. 5-41
MP966 ALT A	15	Same as MP965 ALT A.	Sleeve Bearing Fig. 5-41
MP967 ALT A	15	Same as MP965 ALT A.	Sleeve Bearing Fig. 5-41
MP968 ALT A	15	Same as MP965 ALT A.	Sleeve Bearing Fig. 5-41
MP969 ALT A	15	Same as MP965 ALT A.	Sleeve Bearing Fig. 5-41
MP970 ALT A	15	Same as MP965, ALT A.	Sleeve Bearing Fig. 5-41
MP971 ALT A	15	BEARING, SLEEVE: Oilite bronze, 0.377 in. od, 0.2505 in. id, 5/16 in. lg, mfr 94486, dwg 279-A-2265A.	Sleeve Bearing Fig. 5-42
MP982 ALT A	15	BEARING, SLEEVE: Oilite bronze, 0.377 in. od, 0.2505 in. id, 7/16 in. lg, mfr 94486, dwg 279-A-2265E.	Sleeve Bearing Fig. 5-41
MP991 ALT A	15	SPROCKET, WHEEL: 17 teeth, 1.020 pitch, for 3/16 in. pitch, 5/32 in. w, side flanged link belt silent chain, mfr 94486, dwg 279-B-2572.	Drive Sprocket Fig. 5-31
MP992 ALT A	15	GEAR AND SPROCKET ASSEMBLY: Mfr 94486, dwg 279-B-AM-2670.	Drive Sprocket Fig. 5-46
MP994 ALT A	15	GEAR, SPUR: 24 teeth, 32 pitch, 20 pressure angle, mfr 94486, dwg 279-B-2672.	Drive Gear Fig. 5-31

SUPPLEMENTARY TABLE 7-1C. RADIO TRANSMITTING SET AN/WRT-2
SUPPLEMENTARY MAINTENANCE PARTS LIST--Continued

AMPLIFIER, RADIO FREQUENCY AM-2121/WRT-2 (Sets Serial A1-A178, D1-D327)

REFERENCE DESIGNATION	NOTES	NAMD AND DESCRIPTION	LOCATING FUNCTION
MP996		Not Used.	
MP997 ALT A	15	COLLAR, STOP: 1-1/8 in. lg, 1/4 in. thk, pin pressed in, mfr 94486, dwg 279-B-2337.	Stops Rotation Fig. 5-42
MP1001 ALT A	15	SHAFT, STAINLESS STEEL: 1-1/32 in. lg, 0.2497 in. dia, 1/32 in. chamfer both ends, mfr 94486, dwg 279-B-2325.	Transmits Rotation Fig. 5-40
MP1002 ALT A	15	SHAFT, BRASS: 1-1/8 in. lg, 0.313 in. dia, 0.078 in. wide groove 0.070 in. from 1 end, 1/64 chamfer both ends, mfr 94486, dwg 279-B-2326.	Transmits Rotation Fig. 5-40
MP1003 ALT A	15	SHAFT, STAINLESS STEEL: 2-11/16 in. lg, 0.2497 in. major dia, 0.1872 in. minor dia, 1/16 in. by 0.010 in. deep undercut 1/2 in. from one end, mfr 94486, dwg 279-B-2327.	Transmits Rotation Fig. 5-41
MP1004 ALT A	15	SHAFT, STAINLESS STEEL: 2-3/32 in. lg, 0.249 in. dia, 1/64 in. chamfer both ends, mfr 94486, dwg 279-B02328.	Transmits Rotation Fig. 5-42
MP1005 ALT A	15	SHAFT, 2-1/8 in. lg, 0.2497 in. dia, 1/32 in. chamfer both ends, mfr 94486, dwg 279-B-2226.	Transmits Rotation Fig. 5-40
MP1006 ALT A	15	DIFFERENTIAL DRIVE ASSY: c/o one housing with gears, bearings, shafts and necessary hardware, mfr 94486, dwg 279-C-AM-2322.	Transmits Rotation Fig. 5-40
MP1007 ALT A	15	GEAR, SPUR: Includes two stop pins, extending 0.039 in. from face, mfr 94486, dwg 279-B-AM-2676.	Drive Gear Fig. 5-46
MP1008 ALT A	15	GEAR, SPUR: 21 teeth, 48 pitch, includes shaft and retaining pin, mfr 94486, dwg 279-B-AM-2775.	Drive Gear Fig. 5-44
MP1009	15	Not Used.	
MP1010 Thru MP1015		Not Used.	

SUPPLEMENTARY TABLE 7-1C. RADIO TRANSMITTING SET AN/WRT-2
SUPPLEMENTARY MAINTENANCE PARTS LIST--Continued

AMPLIFIER, RADIO FREQUENCY AM-2121/WRT-2 (Sets Serial A1-A178, D1-D327)

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
MP1016 ALT A	15	POST AND LEVER ASSEMBLY: Stainless steel, lever 2-5/8 in. lg, 1/4 in. w, 3/16 in. thk, incl 1/4 in. dia post one end, mfr 94486, dwg 279-B-AM-2745.	Used with MP1019 Fig. 5-44
MP1017 ALT A	15	Not Used.	
MP1018 ALT A	15	SPRING, HELICAL, EXTENSION: Stainless steel wire, 19 turns close wound, 1-9/64 in. lg, 1/4 in. dia coil ea end, mfr 94486, dwg 279-B-2429.	Gearing Assembly Tension Fig. 5-44
MP1019 ALT A	15	CAM, LEVEL, LOCKING: Stainless steel 7/8 in. lg, 1/2 in. od hub, accommodates 1/4 in. shaft, mfr 94486, dwg 279-B-2430.	Drive Cam Fig. 5-44
MP1022 ALT A	15	SHAFT, DIFFERENTIAL: Stainless steel, 3-11/32 in. lg, 0.2497 in. dia shaft ea end, 1/32 in. chamfer ea end, 1/2 in. od by 0.418 in. lg center hub w 0.2498 in. thru hole, mfr 94486, dwg 279-B-2431.	Transmits Rotation Fig. 5-44
MP1023 ALT A	15	SHAFT, Stainless steel, 0.2497 in. od, 1-3/4 in. lg, 1/32 chamfer both ends, 0.028 in. w, groove one end, mfr 94486, dwg 279-B-2432.	Transmits Rotation Fig. 5-44
MP1024 ALT A	14	SHAFT, Stainless steel, 3-7/8 in. lg, 0.2497 in. od, 1/32 in. chamfer both ends, mfr 94486, dwg 279-B-2433.	Transmits Rotation Fig. 5-44
MP1025 ALT A	15	SHAFT, Stainless steel, 2-7/8 in. lg, 0.2497 in. dia, 1/32 in. chamfer ea end, mfr 94486, dwg 279-B-2433B.	Transmits Rotation Fig. 5-44
MP1026 ALT A	15	SHAFT, Stainless steel, 4 in. lg, 0.2497 in. dia, 1/32 in. chamfer ea end, mfr 94486, dwg 279-B-2424.	Transmits Rotation Fig. 5-43
MP1027 ALT A	15	SHAFT, Stainless steel, 2-3/4 in, lg, 0.2497 in. dia, 1/32 in. chamfer ea end, mfr 94486, dwg 279-B-2433M.	Transmits Rotation Fig. 5-44
MP1028 Thru MP1030	15	Not Used.	

SUPPLEMENTARY TABLE 7-1C. RADIO TRANSMITTING SET AN/WRT-2
SUPPLEMENTARY MAINTENANCE PARTS LIST--Continued

AMPLIFIER, RADIO FREQUENCY AM-2121/WRT-2 (Sets Serial A1-A178, D1-D327)

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
MP1031 ALT A	15	SHAFT, Stainless steel, 0.2497 in. od, 2 in. lg, mfr 94486 dwg 279-B-2228H.	Transmits Rotation Fig. 5-43
MP1032 ALT A	15	STUD, Idler stainless steel, 1-1/2 in. lg, 1/2 in. across hex flats, mfr 94486, dwg 279-B-2435.	Support Sprocket Fig. 5-43
MP1033 ALT A	15	ROLLER, DIAL: Aluminum 1.184 in. lg, 5/8 in. dia spool, 1 in. dia hubs, mfr 94486, dwg 279-B-2414.	Support Sprocket Fig. 5-44
MP1034 ALT A	15	Same as MP1033 ALT A.	Support Dial Tape Fig. 5-44
MP1035 ALT A	15	DIAL, TAPE: Black numerals and index lines on white background, numbered 2.0 to 30.0, mfr 94486, dwg 279-D-2755.	Support Dial Tape Fig. 5-44
MP1036 ALT A	15	COLLAR, Stainless steel, 1/2 in. od, 7/32 in. thk, 1/4 in. bore, mfr 94486, dwg 279-A-2426.	Stops Rotation Fig. 5-43
MP1037 ALT A	15	Same as MP998 ALT A.	Attach Gearing Fig. 5-44
MP1038 ALT A	15	COLLAR, STOP, assembly, stainless steel 1-1/8 in. dia, collar, 1/4 in. thk, incl 2-7/32 in. lg, pins, mfr 94486, dwg 279-B-AM-2740.	Stops Rotation Fig. 5-43
MP1047 ALT A	15	CAM, CONTROL: Stainless steel, 0.2498 in. dia bore, mfr 94486, dwg 279-D-2472.	Control Cam Fig. 5-44
MP1048 ALT A	15	SPRING, HELICAL, COMPRESSION: 10 turns of 0.135 in. dia, stainless steel wire, 14 lbs force required to close spring, mfr 94486, dwg 279-B-2473.	Retains Capacitor Fig. 5-45
MP1049 ALT A	15	Same as MP814 ALT A.	Attach Gearing Fig. 5-45
MP1050 ALT A	15	SWIVEL: Stainless steel, 0.359 in. od hub, mfr 94486, dwg 279-B-2509.	Retains Linkage To Capacitor Fig. 5-45
MP1051 ALT A	15	RETAINER, SWIVEL: Stainless steel, mfr 94486, dwg 279-B-2058.	Retains Linkage To Capacitor Fig. 5-45

SUPPLEMENTARY TABLE 7-1C. RADIO TRANSMITTING SET AN/WRT-2
SUPPLEMENTARY MAINTENANCE PARTS LIST--Continued

AMPLIFIER, RADIO FREQUENCY AM-2121/WRT-2 (Sets Serial A1-A178, D1-327)

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
MP1052 ALT A	15	CHAIN, ROLLER: 21 pitches, 0.147 in. pitch, mfr 94486, dwg 279-A-2476.	Drive Chain Fig. 5-31
MP1053 ALT A	15	CHAIN, ROLLER: 31 pitches, 0.147 in. pitch, mfr 94486, dwg 279-A-2477.	Drive Chain Fig. 5-31
MP1054 and MP1055		Not Used.	
MP1056 ALT A	15	SHAFT, Stainless steel, 0.2497 in. od, 2-1/2 in. lg, mfr 94486, dwg 279-B-2228A.	Transmits Rotation Fig. 5-44
MP1057		Not Used.	
MP1058 ALT A	15	SHAFT: Stainless steel, 0.2497 in. od, 1-1/2 in. lg, mfr 94486, dwg 279-B-2228C.	Transmits Rotation Fig. 5-44
MP1059		Not Used.	
MP1060 ALT A	15	SHAFT, Stainless steel, 2-9/16 in. lg, 0.2497 in. dia, 1/32 in. chamfer both ends, mfr 94486, dwg 279-B-2551.	Transmits Rotation Fig. 5-44
MP1061		Not Used	
R843 ALT A	15	RESISTOR, FIXED, FILM: 196 ohms ± 1%, 1/2 watt, RN70D196OF	Directional Coupler Fig. 6-33A
R844 ALT B	15	RESISTOR, FIXED, COMPOSITION: 680 ohms ± 10%, 1 W, RC32GF681K	Directional Coupler Fig. 6-33A
R845 ALT B	15	Same as R844 ALT B.	Directional Coupler Fig. 6-33A
R848	15	RESISTOR, FIXED, COMPOSITION: 1000 ohms ± 10%, RC20GF102K.	Standing Wave Ratio M804 Fig. 6-32
R879	15	RESISTOR, FIXED, COMPOSITION: 1500 ohms ± 10%, 1/2 W, RC20GF151K.	Voltage Dropping For M804 Fig. 6-32
R884	15	RESISTOR, FIXED, COMPOSITION: 100 ohms ± 5%, 2 w, RC42GF100J.	Current Limiting for T803 Fig. 6-33
S801 ALT A	15	SWITCH, ROTARY: 2 pos 2 pole, non-shorting type contacts, mfr 94486 dwg 279-C-2816.	Meter Switch M801 Fig. 6-32A
S802 ALT A	15	SWITCH WAVER: 1 section, 5 position, non-shorting type contacts, mfr 94486, dwg 279-C-2824.	Meter Switch M802 Fig. 6-32A
S803 ALT A	15	SWITCH, WAVER: 1 section, 3 position, non-shorting type contacts, mfr 94486, dwg 279-C-2823.	Meter Switch M803 Fig. 6-32A

SUPPLEMENTARY TABLE 7-1C. RADIO TRANSMITTING SET AN/WRT-2
SUPPLEMENTARY MAINTENANCE PARTS LIST--Continued

AMPLIFIER, RADIO FREQUENCY AM-2121/WRT-2 (Sets Serial A1-A178, D1-D327)

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
S804	15	SWITCH, PUSH: SPST, contact rating 28 v dc, 20 amp, mfr 94486, dwg 279-C-2806.	Overload Reset Fig. 6-32
S805	15	SWITCH, AIRFLOW: Snap action switching, enclosed, normally open, 50 v ac max, 5 amp max, mfr 94486, dwg 279-C-2038.	Air Interlock Fig. 6-32
S806 ALT B	15	SWITCH, ROTARY, TWO SECTIONS: 25 terminals panel mtd, mfr 94486, dwg 279-B-2807.	Antenna Coupler Control Fig. 6-32
S807	15	SWITCH: 3 pdt, normally open or normally closed, black button, panel mounted, mfr 94486, dwg 279-7115C.	Antenna Wave Ratio Meter Fig. 6-32
S808	15	SWITCH, PUSH, MOMENTARY ACTION: Rated 30 v dc, 2 amp inductive, mfr 94486, dwg 279-C-7115A.	Antenna Tuner UP Switch Fig. 6-32
S809	15	Same as S808.	Antenna Tuner Down Switch Fig. 6-32
S815	15	SWITCH, ROTARY: 3 position, 2 pole, mfr 94486, dwg 279-C-2808.	Meter Switch M805 Fig. 6-32
T803	15	TRANSFORMER, RADIO FREQUENCY: 1 primary 1 turn, 1 secondary 20 turn 50 uh at 2.5 mc, mfr 94486, dwg 279-B-AE-3230.	Voltage Step-Down Transformer Fig. 6-33
T804	15	TRANSFORMER, RADIO FREQUENCY: 1 primary 1 turn, 1 secondary, 20 turns center-tapped, mfr 94486, dwg 279-B-AE-3200.	Reflectometer Current Transformer Fig. 6-33
T805		Not Used.	
T806	15	TRANSFORMER, POWER, STEP-DOWN: Open frame, 1 primary winding, 115 v, 50/160 cycles single phase, 3 secondary windings, 6 v, 10.4 amp, 6.3 v, 2.5 amp, 6.3 v, 2.1 amp, 2000 v insulations air-cooled, impregnated, mfr 94486, dwg 279-B-AE-3062.	Filament Transformer Fig. 6-32
T807	15	TRANSFORMER, POWER: Step-Down primary winding, 115 v, 50 to 60 cycles, single phase, 1 secondary winding, 27 v, 0.015 amp, mfr 94486, dwg 279-A-AE-3057.	Bias Supply For Reflectometer Rectifiers Fig. 6-32

SUPPLEMENTARY TABLE 7-1C. RADIO TRANSMITTING SET AN/WRT-2
SUPPLEMENTARY MAINTENANCE PARTS LIST--Continued

TUNER, RADIO FREQUENCY TN-342/WRT-2 (Sets Serial A1-A178, D1-D327)

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
3300 Series		TUNER, RADIO FREQUENCY: Sliding short tuning 1 section, 2 to 30 mc frequency range, 1 band, 16-15/32 in. by 13-3/8 in. by 48-7/8 in. overall dim, provides a means for tuning and matching an antenna to a 50 ohm transmission line, mfr 94486, dwg 279-D-AM-8000, Navy type TN-342/WRT-2.	Matches Angenna To A 50 ohm Transmission Line
A3301 ALT A	15	MOUNT, VIBRATION: Round mtg, 40-65 lb load rating, 2 in. sq by 1-1/2 in. h o/a, natural rubber cushion, mild steel case, mfr 94486, dwg 279-A-8022C.	Shockmount For RF Tuner Fig. 5-38
A3302 ALT A	15	Same as A3301 ALT A.	Shockmount For RF Tuner Fig. 5-38
A3303 ALT A	15	Same as A3301 ALT A.	Shockmount For RF Tuner Fig. 5-38
A3304 ALT A	15	Same as A3301 ALT A.	Shockmount For RF Tuner Fig. 5-38
A3305 ALT A Thru A3399 ALT A		Not Used.	
B3301 ALT A	15	MOTOR, ALTERNATING CURRENT SERVO MOTOR: 10 w max output, 115 v, 60 cycles, 4 poles, 2 phase, mfr 81496, dwg FPE49-107-1.	Tuning Drive Motor Fig. 6-48
B3302 ALT A	15	BLOWER, CENTRIFUGAL: Dual centrifugal type, motor integral, 115 v, 60 cycles, ccw rotation, ambient temp range -28 deg to -120 deg C, mfr 94486, dwg 279-C-8162.	Blower Fig. 6-48
B3303 ALT A	15	ACTUATOR, ELECTROMAGNETIC: Rotary type with interruptor switch and anti-over travel latch mechanism, 85 v dc continuous duty coil, 223 ohms, 20 position homing wafer, mfr 94486, dwg 279-C-8097.	Antenna Transfer And Tuner Loading Switch Drive Fig. 5-39
CR3301 ALT A	15	RECTIFIER, SELENIUM SIGNAL PHASE FULL WAVE BRIDGE: Convection cooling 130 v rms max ac input, dc output 80 v dc min at 125 deg C at 115 v ac input, 0.4 amp dc resistive or inductive load, mfr 81483, dwg 61-5838.	Rectifier For B3303 Fig. 6-48

SUPPLEMENTARY TABLE 7-1C. RADIO TRANSMITTING SET AN/WRT-2
SUPPLEMENTARY MAINTENANCE PARTS LIST--Continued

TUNER, RADIO FREQUENCY TN-342/WRT-2 (Sets Serial A1-A178, D1-D327)

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
CR3302 ALT A Thru CR3399 ALT A		Not Used.	
E3301 ALT A	15	CONTACT ASSEMBLY, ELECTRICAL: c/o spring fingers, 0.010 in. thk beryllium copper material silver plated, 15 contacts, mfr 94486, dwg 279-B-AM-8440.	Housing Contact Fingers Fig. 5-39
E3302 ALT A	15	Same as E3301 ALT A.	Housing Contact Fingers Fig. 5-39
E3303 ALT A	15	CONTACT, ELECTRICAL: Laminated material, 0.007 beryllium copper, .003 coin silver, mfr 94486, dwg 279-A-8406.	Rod Contact Fingers Fig. 5-39
E3304 ALT A	15	CONTACT ASSEMBLY, ELECTRICAL: c/o silver alloy contact fingers, formed brass silver plated rings, 6 nylon feet, mfr 94486, dwg 279-D-AM-8425.	Coil Contact Fingers Fig. 5-39
E3305 ALT A	15	TERMINAL, FEEDTHRU: Insulated teflon body, center conductor, retaining ring, and two o rings, mfr 94486, dwg 279-B-AM-8045.	RF Output Terminal Fig. 6-48
E3306 ALT A	15	CONTACT, ELECTRICAL: Liminated material, 0.007 beryllium copper, .003 coin silver, mfr 94486, dwg 279-A-8405.	Rod Contact Fingers Fig. 5-39
E3399 ALT A	15	CONNECTOR, RECEPTACLE, ELECTRICAL: 6 size 12 contacts, 24 size 16 contacts, male round, polarized, mfr 91577, type BFH-32-8P-002.	Connects Control Cable Fig. 2-5
J3302 ALT A	15	CONNECTOR, RECEPTACLE, ELECTRICAL: Special construction, UG-271/U and UG-287/U modified per mfr 04677, dwg 2010916.	RF Input Connector Fig. 2-5
J3303 ALT A Thru J3399 ALT A		Not Used.	
K3301 ALT A	15	RELAY, ARMATURE: DPDT, ac coil data 115 v, 0.045 amp, 445 ohms, mfr 94486, dwg 279-A-8085.	RF Keying Interlock Fig. 6-48
K3302 ALT A	15	RELAY, ARMATURE: 4 PDT, dc coil data -24 v, 0.097 amp, 275 ohms, mfr 04677, dwg 2012033.	Transfer Switch Control Fig. 6-48

SUPPLEMENTARY TABLE 7-1C. RADIO TRANSMITTING SET AN/WRT-2
SUPPLEMENTARY MAINTENANCE PARTS LIST -- Continued

TUNER, RADIO FREQUENCY TN-324/WRT-2 (Sets Serial A1-A178, D1-D327)

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
K3303 ALT A	15	RELAY, ARMATURE: DPDT, dc coil data -24 v, 0.146 amps, 164 ohms, mfr 70309, dwg DB1210-24VOC.	Top And Bottom Limit Relay Fig. 6-48
L3301 ALT A	15	COIL SPECIAL CONSTRUCTION: Varying dia helix, 1 turn, 0.144 in. od copper wire silver plated, mfr 94486, dwg 279-D-8401.	Coupling Coil Fig. 6-48
L3302 ALT A	15	COIL ASSEMBLY SPECIAL CONSTRUCTION: 16 in. winding length, wound with 0.064 in. od silver clad copper wire on fiberglass 5-5/8 in. dia coil from 12 in. at 10 tpi, 4 in. at 7 tpi, mfr 94486, dwg 279-D-AM-8460.	Main Coil Fig. 6-48
L3303 ALT A	15	COIL, ACTUATOR: Par of B3303. Listed for reference only.	Solenoid Coil Fig. 6-48
M3301 ALT A	15	GAUGE, PRESSURE GAS: Dial and pointer type, 0 to 30 psi, brass case, 5/8 in. lg pipe with 1/8 in. pipe thd 3/8 in. lg. mfr 94486, dwg 279-A-8062.	Pressure Gauge Fig. 2-5
MP3301 ALT A	15	DRIVE ASSEMBLY: 2 speed, 8.4 to 1, 1 to 1, mfr 94486, dwg 279-C-AM-8115.	Tuning Drive Fig. 5-39
MP3302 ALT A	15	ACTUATOR, SENSITIVE SWITCH: Stainless steel material mfr 74059, type JV-5.	Actuates Top Limit Switch Fig. 5-39
MP3303 ALT A	15	Same as MP3302 ALT A.	Actuates Bottom Limit Switch Fig. 5-39
MP3304 ALT A	15	GEAR, SPUR: Steel material, 24 teeth, mfr 94486, dwg 279-A-8075.	Drive For Rack Gear Fig. 5-39
MP3305 ALT A	15	Same as MP3304 ALT A.	Drive For Rack Gear Fig. 5-39
MP3306 ALT A	15	GEAR, SPUR: Steel material, 18 teeth, mfr 94486, dwg 279-A-AM-8300.	Drive Gear Mates With MP3304 Fig. 5-39
MP3307	15	Not Used	
MP3308 ALT A	15	GEAR, WORM: Steel material, 4 threads mfr 94486, dwg 279-A-8078.	Drive Gear Mates with MP3309 Fig. 5-39

SUPPLEMENTARY TABLE 7-1C. RADIO TRANSMITTING SET AN/WRT-2
SUPPLEMENTARY MAINTENANCE PARTS LIST--Continued

TUNER, RADIO FREQUENCY TN-342/WRT-2 (Sets Serial A1-A178, D1-D327)

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
MP3309 ALT A	15	GEAR, WORM: Bronze material, 100 teeth, mfr 94486, dwg 279-A-8079.	Drive Gear Mates With MP3310 Fig. 5-39
MP3310 ALT A	15	GEAR, WORM: Bronze material, 40 teeth, mfr 94486, dwg 279-A-8080.	Drive Gear Mates With MP3307 Fig. 5-39
MP3311 ALT A	15	GEAR, WORM: Hard steel material, signal thread, mfr 90150, type HLTH.	Output Shaft Gear Mates MP3308 Fig. 5-39
MP3312		Not Used	
MP3313 ALT A	15	BEARING, BALL: Single row radial unshielded, mfr 86174, type 38K.	Shaft Bearing Fig. 5-39
MP3314 ALT A	15	Not Used.	Shaft Bearing Fig. 5-39
MP3315		Not Used.	
MP3316		Not Used.	
MP3317 ALT A	15	BEARING, BALL: Single row radial, unshielded, mfr 86174, type 36K.	For General Purpose Use Fig. 5-39
MP3318 ALT A	15	Not Used.	For General Purpose Use Fig. 5-39
MP3319 ALT A	15	Not Used.	For General Purpose Use Fig. 5-39
MP3320 ALT A	15	Not Used.	For General Purpose Use Fig. 5-39
MP3336	15	Not Used.	
MP3337 ALT A	15	ROLLER: Stainless steel material, mfr 94486, dwg 279-A-8073.	Rack Gear Roller Fig. 5-39
MP3338	15	Not Used.	
MP3339 ALT A	15	GEAR: Rack steel material, mfr 94486, dwg 279-A-8366.	Shorting Ring Drive Fig. 5-39
MP3340 ALT A	15	GEAR: Rack steel material, mfr 94486, dwg 279-B-8066.	Shorting Ring Drive Fig. 5-39
MP3341 ALT A	15	VALVE: Relief 30 $\pm$ 5 psi working pressure, 1/8 in. male pipe thd, mfr 94486, dwg 279-B-8099.	Pressure Relief Valve
MP3342 ALT A	15	VALVE: Air charge valve for nitrogen brass, nickel plated, includes dome cap, mfr 94486, dwg 279-A-8060.	Air Valve Fig. 5-38

SUPPLEMENTARY TABLE 7-1C. RADIO TRANSMITTING SET AN/WRT-2
SUPPLEMENTARY MAINTENANCE PARTS LIST--Continued

TUNER, RADIO FREQUENCY TN-342/WRT-2 (Sets Serial A1-A178, D1-D327)

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
MP3363 ALT A	15	BALL, NYLON: 1/4 od ball with .0635 hole drilled thru center, mfr 94486, dwg 279-A-8167.	Part of S3306 Centrifugal Switch Fig. 5-39
MP3364 ALT A	15	SHAFT AND WEIGHT PLATE ASSEMBLY: c/o shaft, base and 2 weight plates assembled with rivets, mfr 94486, dwg 279-B-AM-8175.	Part of S3306 Centrifugal Switch Fig. 5-39
MP3365 ALT A	15	ADAPTER, SWITCH: Coupling keyway and clamp one end, slot other end, mfr 94486, dwg 279-B-AM-8035.	Couples B3303 To S3301 Fig. 5-39
S3301 ALT A	15	SWITCH, ROTARY: 5 position, non-shorting 3 section, ceramic wafers and rotors shaft, high RF voltage and current type, mfr 94486, dwg 279-D-AE-8290.	Tuner Loading Switch Fig. 6-48
S3306 ALT A	15	SWITCH ASSEMBLY CENTRIFUGAL: Type, c/o E3313, E3313, E3315, E3316, E3317, MP3363, MP3364, mfr 94486, dwg 279-A-8165.	Blower And Protective Switch Fig. 6-48

0280-515-7010
NAVSHIPS 93319(A)

0967-073-3013 Formerly 0280-515-7010

SUPPLEMENT 2

to

TECHNICAL MANUAL NAVSHIPS 93319(A)

for

RADIO TRANSMITTING SET AN/WRT-2

When used with

TRANSMITTER GROUP AN/WRA-3

as Exciter

Manufactured by
HOFFMAN ELECTRONICS CORPORATION
MILITARY PRODUCTS DIVISION
EL MONTE, CALIFORNIA

DEPARTMENT OF THE NAVY
BUREAU OF SHIPS

CONTRACT NObsr 91345
NS 0280 515 7010

25 March 1965

1-1. GENERAL INFORMATION.

Transmitter-Transfer Control C-6562/WRA-3 (figure 1) adapts Radio Transmitting Set AN/WRT-2 for operation at an average power output of 500 watts while receiving rf drive from Transmitter Group AN/WRA-3. These instructions are applicable only to those transmitting sets which have been modified according to Field Change Bulletin NAVSHIPS 0285 075 5000.

2-1. INSTALLATION.

Transmitter-Transfer Control C-6562/WRA-3 is installed in accordance with the instructions contained in Field Change Bulletin NAVSHIPS 0285 075 5000.

3-1. OPERATOR'S SECTION.

The only control on Transmitter-Transfer Control C-6562/WRA-3 is the TRANSMITTER EXCITATION switch 6S1, located on the front panel. When the switch is set to the WRT-2 (INT) position, Radio Transmitting Set AN/WRT-2 operates independently. Refer to Technical Manual NAVSHIPS 93319(A) for operation of Radio Transmitting Set AN/WRT-2. When the switch is set to the WRA-3 (EXT) position, Radio Transmitting Set AN/WRT-2 uses Transmitter Group AN/WRA-3 as the exciting unit. Refer to Technical Manual NAVSHIPS 0967 031 9010 for operation of Transmitter Group AN/WRA-3.

4-1. PRINCIPLES OF OPERATION.

Transmitter-Transfer Control C-6562/WRA-3 couples Transmitter Group AN/WRA-3 to Radio Transmitting Set AN/WRT-2, allowing Transmitter Group AN/WRA-3 to be used as the exciting unit. See figure 2. When the transmitter-transfer control switch is set to the WRT-2 (INT) position, relay K1, installed in AM-2121/WRT-2, opens disconnecting the rf excitation from Transmitter Group AN/WRA-3, and the AN/WRT-2 operates in a normal manner. When the transmitter-transfer control switch is set to the WRA-3 (EXT) position, the remote keyline of Radio Transmitting Set AN/WRT-2 is disconnected, through the transmitter-transfer control, and remote keying is removed from all remote stations. When the switch is in this position, keying for Radio Transmitting Set AN/WRT-2 is accomplished only at Transmitter Group AN/WRA-3 through connector 6J1 of the transmitter-transfer control. Rf drive from Transmitter Group AN/WRA-3, via connector 3J1, coaxial cables W2 and W8, is switched through coaxial relay K1 to the grid circuit of second driver amplifier V802 of Radio Frequency Control AM-2121/WRT-2 of Radio Transmitting Set AN/WRT-2. See schematic, figure 6-25 of Technical Manual NAVSHIPS 93319(A).

The DRIVE ADJUST control on the front panel of Radio Frequency Amplifier AM-2121/WRT-2 of Radio Transmitting Set AN/WRT-2 must be set to zero (fully counterclockwise) when the transmitter-transfer control switch is in the WRA-3 position. The drive level is than adjusted at the RF DRIVE control on the front panel of Radio Frequency Amplifier

AM-2819/WRA-3 of Transmitter Group AN/WRA-3. Reset the DRIVE ADJUST control of Radio Frequency Amplifier AM-2121/WRT-2 of Radio Transmitting Set AN/WRT-2 to mid-position, and set the RF DRIVE control on Radio Frequency Amplifier AM-2819/WRA-3 of Transmitter Group AN/WRA-3 fully counterclockwise when the transmitter-transfer control switch is in the WRT-2 position. Also, the AN/WRA-3 must be placed in standby mode, or it may be completely deenergized, if desired.

In the terminal junction box at the bottom rear of Electrical Equipment Cabinet CY-2558/WRT-2 of Radio Transmitting Set AN/WRT-2, the connection for remote key line of AN/WRT-2 is transferred from terminal 6 of TB101A to terminal 2 of TB1 by Field Change Bulletin NAVSHIPS 0285 075 5000.

5-1. TROUBLESHOOTING.

No special troubleshooting procedures have been prepared for Transmitter-Transfer Control C-6562/WRA-3. Because of its simplicity, malfunctions may be localized quickly with reference to the schematic diagram, figure 2.

6-1. REPAIR.

No repair instructions are required for Transmitter-Transfer Control C-6562/WRA-3. Replacement parts are listed in table 7-1.

7-1. PARTS LIST.

Table 7-1 lists the maintenance parts of Transmitter-Transfer Control C-6562/WRA-3. These parts appear on the schematic diagram, figure 2. Table 7-2 lists those maintenance parts which were added to Radio Transmitting Set AN/WRT-2 by Field Change Bulletin NAVSHIPS 0285 075 5000. These parts also appear on the schematic diagram, figure 2.

TABLE 7-1. PARTS LIST

Transmitter-Transfer Control C-6562/WRA-3

REF DESIG	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
J1		CONNECTOR, RECEPTACLE, ELECTRICAL: MIL-C-5015 type MS3102R-18-1P	Keying input Figures 1 and 2
J2		Not used	
J3		Not used	
J4		Not used	
R1		Not used	
R2		Not used	
R3		Not used	
R4		Not used	
R5		Not used	
S1A		SWITCH, ROTARY: 2 pole, 2 position, HMPD part/dwg 8050001679	WRT-2 selector switch Figures 1 and 2
S1B		Not used	

TABLE 7-2. PARTS LIST

Field Change Bulletin NAVSHIPS 0285 075 5000

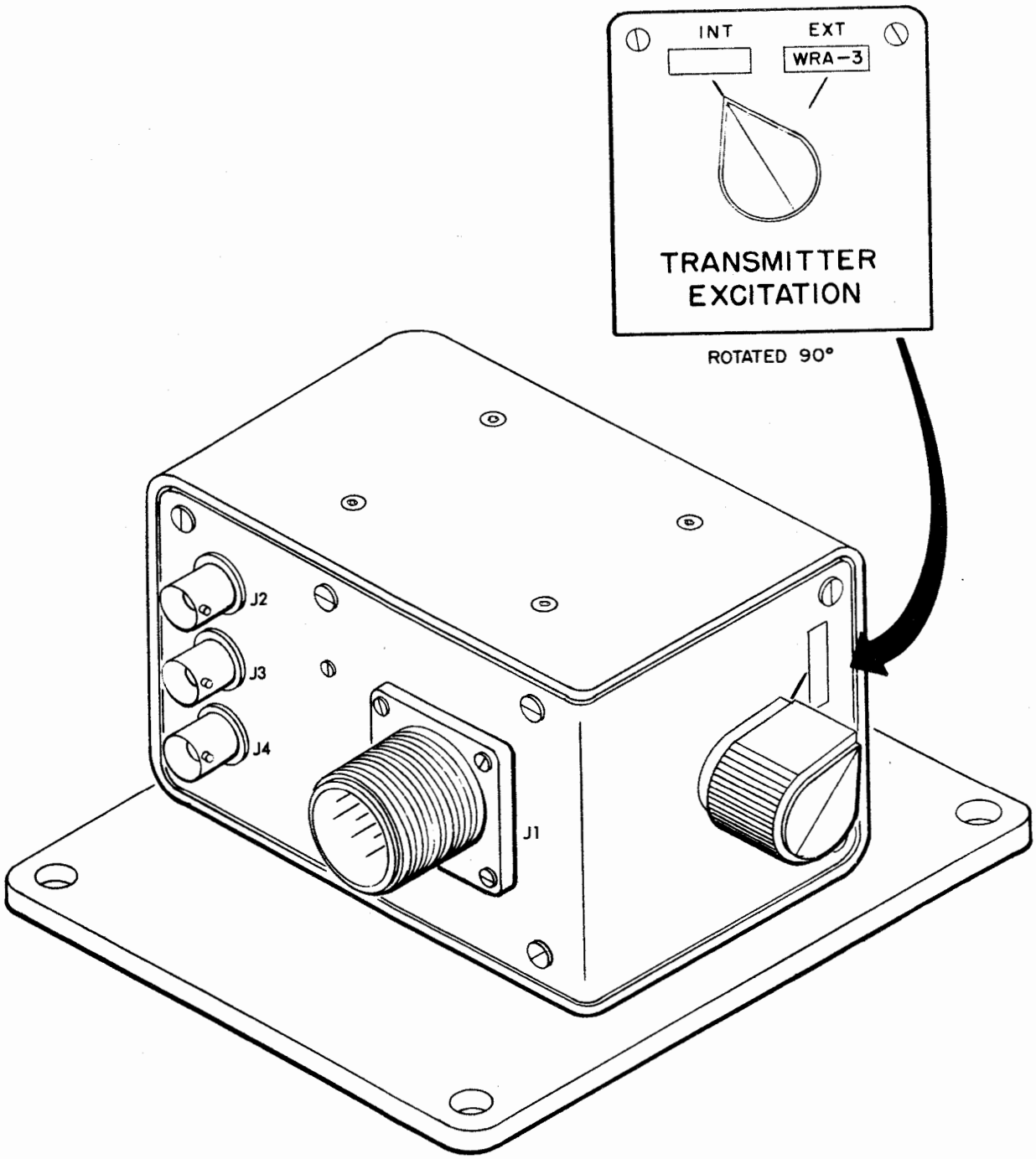
REF DESIG	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
C1A*		CAPACITOR, FIXED, GLASS DIELECTRIC: 5.1 uuf ±0.25 uuf, 500 wvdc, MIL-C-11272/1 type CY10C5R1C	AN/WRT-2 grid resonating
C1B*		CAPACITOR, FIXED, MICA DIELECTRIC: 33 uuf ±5%, 500 wvdc, CM15C330JN3 per MIL-C-5/1	AN/WRT-2 grid resonating
CP1		ADAPTER, COAXIAL: BNC type, MS35173-274B per MIL-C-3608	Rf connector in AN/WRT-2
CP2		ADAPTER, COAXIAL: BNC type, MS35368-306B per MIL-C-3608	Rf connector in AN/WRT-2
E1		COAXIAL (50 ohm nominal) TERMINATION: HMPD part/dwg 8030000167	Part of resistive termination pad
J5		CONNECTOR, RECEPTACLE, ELECTRICAL: Aviel part 02-629, HMPD part/dwg 1199900656	Rf connector from AN/WRA-3
K1		RELAY, COAXIAL: SPDT, BNC, 26 vdc, nominal coil resistance 280 ohms, HMPD part/dwg 2039900134	Rf drive switching
P1		CONNECTOR, PLUG, ELECTRICAL: 10-109618-IS per BuShips dwg RE49D769	Control line connector
P2		CONNECTOR, PLUG, ELECTRICAL: BNC type, MS35168-88E per MIL-C-3608	Rf input to AN/WRA-3

* Capacitor C1A replaces Capacitor C834 in AM-2121/WRT-2. Since C834 may vary, C1A has been selected to give the proper value needed when the field change has been accomplished. Other value capacitors may also be found, other than the two furnished above.

TABLE 7-2. PARTS LIST

Field Change Bulletin NAVSHIPS 0285 075 5000

REF DESIG	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
P5		Same as P2	Rf output from AN/WRA-3
P8		CONNECTOR, PLUG, ELECTRICAL: BNC type, Dage Electric Co. part 1-150-4, HMPD part/dwg 1199900589	Rf input to relay K1
P9		CONNECTOR, PLUG, ELECTRICAL: BNC type, Dage Electric Co. part 4982-2; HMPD part/dwg 1199900738	Rf output from relay K1
TB1		TERMINAL BOARD: MIL-T-16784 type 8TB8	Control line termination



657-1

Figure 1. Transmitter-Transfer Control C-6562/WRA-3

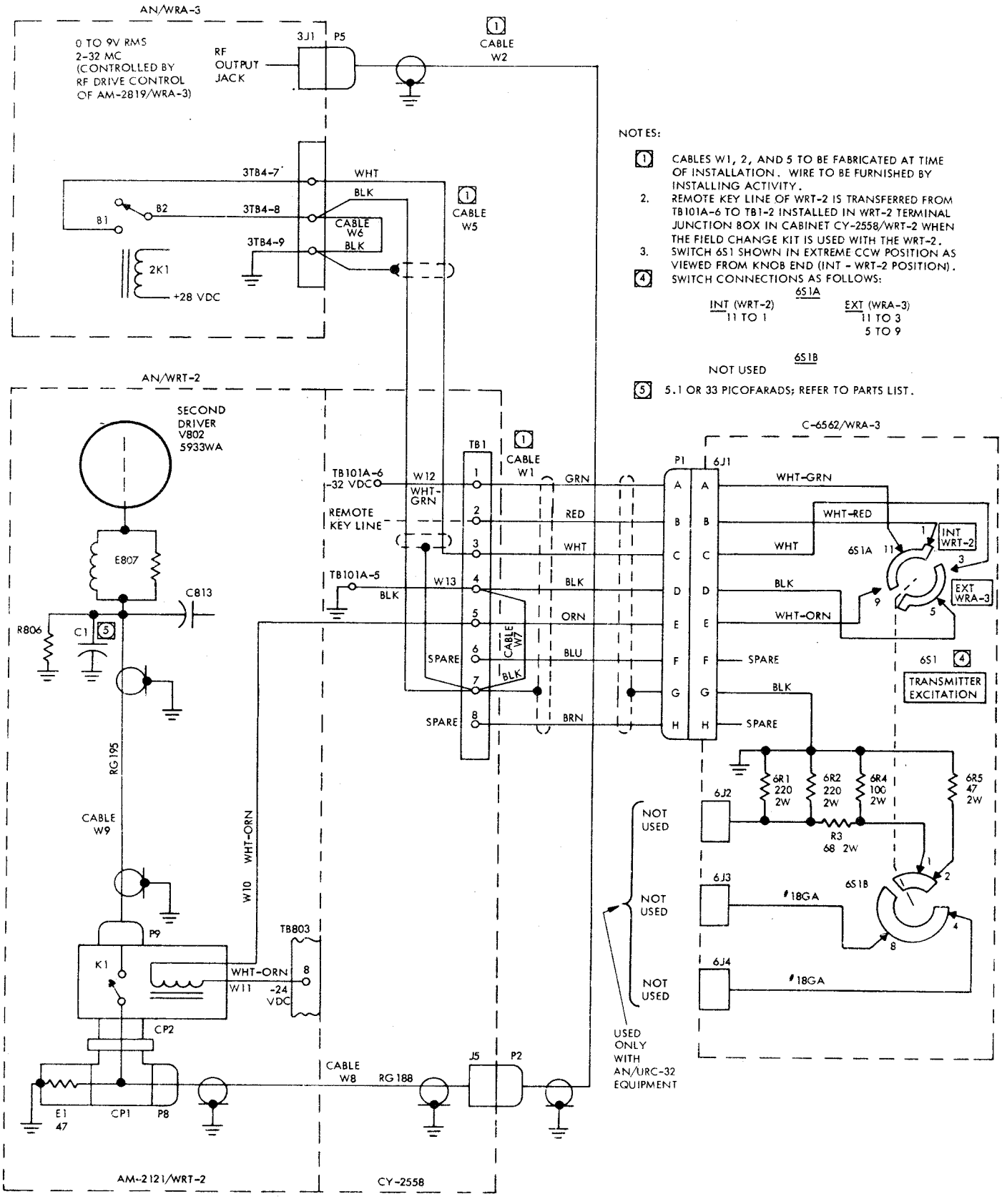


Figure 2. Schematic/Interconnecting Diagram for AN/WRT-2

Change 4 -
Stock number 0967-073-3011

INSTRUCTION SHEET 11 December 1963

CHANGE 4 to Technical Manual for Radio Transmitting Set AN/WRT-2
NAVSHIPS 93319(A)

This permanent change revises the technical manual to reflect changes made in the equipment and errors found after publication of the original manual and Changes 1, 2, and 3.

Maintenance Support Activities shall insert this change in the technical manual immediately upon receipt. When this change is included in the manual, the manual shall cover the equipment with all the changes made up to the date of this instruction sheet.

1. Remove the superseded pages and insert revised pages as indicated below:

Page	Remove	Insert
T. P./ii	Ch. 3/Ch. 3	Ch. 4/Ch. 4
x/xi	Ch. 2/Ch. 3	Ch. 4/Ch. 4
1-7/1-8	Ch. 3/Ch. 3	Ch. 3/Ch. 4
4-16A/4-16B	Ch. 3/Ch. 2	Ch. 4/Ch. 4
5-36A/5-36B	-/-	Ch. 4/Blank
5-58C/5-58D	-/-	Ch. 4/Blank
6-54E/6-54F	-/-	Ch. 4/Blank
6-56C/6-56D	Ch. 2/Blank	Ch. 4/Blank
6-68A/6-68B	Ch. 3/Blank	Ch. 4/Blank
6-84A/6-84B	Ch. 2/Blank	Ch. 4/Blank
6-92A/6-92B	Ch. 2/Blank	Ch. 4/Blank
7-0O/7-0P	-/-	Ch. 4/Ch. 4
7-23/7-24	Orig/Orig	Orig/Ch. 4
7-27/7-28	Orig/Orig	Orig/Ch. 4

2. Destroy superseded pages but not until the complete manual has been checked against the "List of Effective Pages".

3. Insert this Instruction Sheet just behind the front cover immediately above the Instruction Sheet of Change 3.

4. Make appropriate entry on Correction Page.

CHANGE 3 TO TECHNICAL MANUAL FOR RADIO TRANSMITTING SET AN/WRT-2 NAVSHIPS 93319(A)

This permanent change revises this technical manual to reflect the changes made in the equipment and the errors found after publication of the original manual, Change 1 and Change 2.

Maintenance Support Activities shall insert this change in the technical manual immediately upon receipt. When this change is included in the manual, the manual shall cover the equipment with all the changes made up to the date of this instruction sheet.

1. Remove superseded pages and insert revised pages as indicated below:

Page	*Remove*	*Insert*	*Page*	*Remove*	*Insert*
T.P./ii	Ch. 2/Ch. 2	Ch. 3/Ch. 3	5-58A/5-58B	Ch. 2/Ch. 2	Ch. 3/Ch. 3
iiA/iiB	-/-	Ch. 3/Ch. 3	5-62E/5-62F	Ch. 2/Ch. 2	Ch. 3/Ch. 3
vii/viii	Ch. 2/Ch. 2	Ch. 2/Ch. 3	6-15/6-16	Ch. 2/Ch. 2	Ch. 3/Ch. 3
xi/xii	Ch. 2/Ch. 2	Ch. 3/Ch. 3	6-17/6-18	Ch. 2/Ch. 2	Ch. 3/Ch. 3
xiiA/xiiB	Ch. 2/Ch. 2	Ch. 2/Ch. 3	6-21/6-22	Ch. 1/Ch. 1	Ch. 1/Ch. 3
1-1/1-2	Orig/Orig	Ch. 3/Ch. 3	6-23/6-24	Ch. 1/Ch. 1	Ch. 3/Ch. 3
1-2A/1-2B	-/-	Ch. 3/Ch. 3	6-45/6-46	Orig/Orig	Ch. 3/Ch. 3
1-5/1-6	Orig/Orig	Ch. 3/Orig	6-47/6-48	Orig/Orig	Ch. 3/Ch. 3
1-7/1-8	Ch. 1/Ch. 1	Ch. 3/Ch. 3	6-50A/6-50B	Ch. 2/Ch. 2	Ch. 3/Ch. 3
2-1/2-2	Orig/Orig	Ch. 3/Orig	6-52A/6-52B	Ch. 2/Ch. 2	Ch. 3/Ch. 3
2-3/2-4	Orig/Orig	Orig/Ch. 3	6-53/6-54	Ch. 2/Ch. 2	Ch. 3/Ch. 3
2-5/2-6	Orig/Orig	Ch. 3/Orig	6-54A/6-54B	Ch. 2/Ch. 2	Ch. 3/Ch. 3
2-16A/2-16B	-/-	Ch. 3/Ch. 3	6-54C/6-54D	Ch. 2/Ch. 2	Ch. 3/Ch. 3
4-15/4-16	Ch. 2/Ch. 2	Ch. 2/Ch. 3	6-57/6-58	Orig/Orig	Ch. 3/Ch. 3
4-17/4-18	Orig/Orig	Ch. 3/Orig	6-68A/6-68B	Ch. 2/Ch. 2	Ch. 3/Ch. 3
4-35/4-36	Orig/Orig	Ch. 3/Orig	7-0A to 7-0L	Ch. 2/Ch. 2	-/-
5-44A/5-44B	-/-	Ch. 3/Ch. 3	70A to 7-0N	-/-	Ch. 3/Ch. 3
5-57/5-58	Ch. 2/Ch. 2	Ch. 3/Ch. 3			

2. Make the following pen-and-ink corrections and mark "Ch. 3" adjacent to the pen-and-ink corrections.

First Issued In	*Page No.*	*Change in Effect*	*Column or Figure*	*Line or Location*	*Action*
Ch. 3	4-49	Ch. 1	4-30	Lower Right	At T807 change reference from "17V AC" to "25V AC". Change valve of C857 from "4700" to "0.01 UF".
Ch. 3	4-50	Orig	2	(9) (b) Line 2 and Line 4	Change "17 volts" to "25 volts".
Ch. 3	4-50A	Ch. 2	4-30A	Lower Right	At T807 change reference from "17V AC" to "25V AC". Change valve of C857 from "4700" to "0.01 UF".

First Issued In	*Page No.*	*Change in Effect*	*Column or Figure*	*Line or Location*	*Action*
Ch. 3	5-35	Orig	5-25	Upper Right	Delete "CR1342" and "CR1343".
				Lower Left	Delete "C1348".
				Lower Right	Delete "C1322".
Ch. 3	5-36	Orig	5-26	Left	Delete "C1328".
				Right	Delete "C1342".
Ch. 3	5-40	Orig	5-32	Bottom	Add reference "MP361" to tool inserted in clip.
Ch. 3	5-53	Orig	5-47	Zone 3D	Change valve of R523 from "25K" to "2.5K".
				Zone 7C	At T807 change reference from "17V AC" to "25V AC".
Ch. 3	5-59	Ch. 2	5-49	Zone 13C	At R748 add "▲".
				Notes	Add "▲" set serials 264 and up value is 133K.
Ch. 3	5-61	Ch. 1	5-50	Zone 8C	Add resistor "R1246 150"' between T1210 and J1201.
					At T1210 interchange terminals "3" and "4".
				Apron	Change "R1246 9C" to "R1246 8C".
Ch. 3	5-62A	Ch. 1	5-50A	Zone 8C	Add resistor "R1246 150" between T1210 and J1201.
					At T1210 interchange terminals "3" and "4".
				Apron	Add "R1246 8C".
Ch. 3	5-62C	Ch. 2	5-50B	Zone 8C	Add resistor "R1246 150"' between T1210 and J1201.
					At T1210 interchange terminals "3" and "4".
				Apron	Add "R1246 8C".
Ch. 3	5-63	Ch. 1	5-51	Zone 1A and 1B	At T201, T202 and T203 change reference voltage from "820V AC" to "803V AC" and "550 V AC" to "545V AC".
				Zone 8C	At junction of R844 and R845 change reference voltage from "17V AC" to "25V AC".
				Zone 8D	Change valve of C857 from "4700" to "0.01 UF".
Ch. 3	5-64A	Ch. 2	5-51A	Zone 1A and 1B	At T201, T202 and T203 change reference voltage from "820V AC" to "803V AC" and "550V AC" to "545V AC".
				Zone 8C	At junction of R844 and R845 change reference voltage from "17V AC" to "25V AC".
				Zone 8D	Change valve of C857 from "4700" to "0.01 UF".

First Issued In	*Page No.*	*Change in Effect*	*Column or Figure*	*Line or Location*	*Action*
Ch. 3	6-49	Ch. 1	6-25	Zone 7D	At T807 change reference voltage from "17V AC" to "25V AC".
Ch. 3	6-51	Orig	6-26	Zone 14A	At T306 remove terminal "5" from ground.
				Below Caption	Add "Sets Serials 1 to 444".
				On Apron	Add "V1202 2B" and "V1208 4C".
Ch. 3	6-67	Orig	6-34	Upper Left	Interchange leads between T1201 and XV1201.
Ch. 3	6-81	Orig	6-41	Below Caption	Add "Sets Serials 1 to 263".
Ch. 3	6-84A	Ch. 2	6-42A	Left	At TB601 delete "see note 2", and at terminals 1, 5, 6 and 7 delete "*".
Ch. 3	7-8	Orig	NAME AND DESCRIPTION	Opposite T201	Change "550V" to "803V" change "tapped at 355V" to tapped at "266V and 545V".
Ch. 3	7-19	Orig	NAME AND DESCRIPTION	Opposite S301	Delete entire description.
Ch. 3	7-55	Orig	Notes	Opposite CR815	Insert "5".
Ch. 3	7-55	Orig	Notes	Opposite E810	Insert "5".
Ch. 3	7-65	Orig	Notes	Opposite S825	Insert "5".
Ch. 3	7-66	Orig	Notes	Opposite S826, S827, S828	Insert "5".
Ch. 3	7-67	Orig	NAME AND DESCRIPTION	Opposite C905	Change "CE1F100F" to "CE1F100R".
Ch. 3	7-82	Orig	Notes	Opposite R1246	Insert "13".
Ch. 3	7-85	Orig	Notes	Opposite C1351, C1352	Insert "13".
Ch. 3	7-87	Orig	Notes	Opposite CR1344	Insert "5".
Ch. 3	7-91	Orig	Notes	Opposite R1369	Insert "5".
Ch. 3	7-93	Orig	Notes	Opposite E1402	Insert "3".
Ch. 3	7-94	Orig	Notes	Opposite E1403, E1404, E1405	Insert "3".
Ch. 3	7-94	Orig	Notes	Opposite FL1401	Insert "5".
Ch. 3	7-94	Orig	Notes	Opposite L1401	Insert "3".
Ch. 3	7-98	Orig	Notes	Opposite T104, T1405	Insert "2".

3. Destroy superseded pages after the complete manual has been checked against the "List of Effective Pages."

4. Insert this Instruction Sheet just behind the front cover immediately above the Instruction Sheet of Change 2.

5. Make appropriate entry on correction page.

AUGUST 1963

TEMPORARY CORRECTION T-4 TO TECHNICAL MANUAL FOR RADIO TRANSMITTING SET AN/WRT-2

NAVSHIPS 93319 (A)

This temporary correction revises the manual to reflect the equipment changes made by Field Change 7-AN/WRT-2. The purpose of this field change is to replace the Thermostatic Switches S-305 and S-602 with encapsulated Thermostatic Switches to preclude possible atmospheric contamination due to free flowing mercury in the case of a broken thermostatic switch. This field change applies to all AN/WRT-2 Radio Transmitting Sets now installed in nuclear powered submarines and to all AN/WRT-2 Radio Transmitting Sets intended for installation in nuclear powered submarines.

This correction does not supersede any other corrections or changes.

Holders of equipment accompanied by technical manuals shall not make this correction in the manuals until accomplishment of the field change.

Make the following pen-and-ink corrections in NAVSHIPS 93319(A). Insert this temporary correction in the technical manual immediately after the front cover.

1. In Table 7-1, Radio Transmitting Set AN/WRT-2 Maintenance Parts List, refer to Reference Designation S-305. Under Name and Description, delete all after "mercury in glass", and substitute "encapsulated in a square aluminum block 9" long x 1/2" sides, with a slip-size hole for # 6 screw centered 1/2" from bottom, mfr 48620, mfr dwg. A010826-1".

2. In Table 7-1, Radio Transmitting Set AN/WRT-2 Maintenance Parts List, refer to Reference Designation S-602. Under Name and Description, delete all after "mercury in glass" and substitute "encapsulated in a square aluminum block 9" long x 1/2" sides, with a slip-size hole for # 6 screw centered 1/2" from bottom, mfr 48620, mfr dwg. A010826-1".

TEMPORARY CORRECTION T-3 to TECHNICAL MANUAL FOR RADIO TRANSMITTING SET AN/WRT-2

This temporary correction contains information originally published in EIB 551 and shall be accomplished only if these errors were not corrected at the time the EIB was published or were not corrected in a subsequent change or revision of the particular equipment publication.

The purpose of this temporary correction is to assure that publications drawn from stock subsequent to publication of this information in the EIB can be corrected.

Make the following pen and ink corrections and insert this temporary correction in the publication immediately behind the front cover.

An error appears in the footnote at bottom of page 1-3 of the Technical Manual. This should read "For 115-volt ships supply, multiply current values by 2; and for 440-volt ships supply, divide current values by 2."

TEMPORARY CORRECTION T-2 to TECHNICAL MANUAL FOR RADIO TRANSMITTING SET AN/WRT-2 NAVSHIPS 93319(A)

This temporary correction revises the manual to reflect the equipment changes made by Field Change 2-AN/WRT-2. The purpose of this field change is to remove diodes CR1342 and CR1343 in order to reduce the amplitude of in-band spurious signals and noise. This field change applies to sets serials 1 through 355.

When this change is included in the manual, the manual shall cover the equipment as though Field Change 2-AN/WRT-2 had been accomplished on the equipment. This correction does not supersede any other corrections or changes.

Maintenance Support Activities shall make this correction in the technical manual immediately after Field Change 2-AN/WRT-2 has been accomplished.

Holders of equipment accompanied by technical manuals shall not make this correction in the manual until accomplishment of the Field Change

Make the following pen and ink corrections. Insert this temporary connection in the technical manual immediately after T-1.

1. On Figure 4-10 10:1 Frequency Divider Circuits, Simplified Schematic Diagram, in the lower left hand quarter delete CR1342 and CR1343.

2. On Figure 5-49 (Sheet 1) R-F Generating Circuits, Functional Schematic Diagram at location 5C and on Figure 5-25, E1301, Binary No. 1, Feedback Counter, 100 kc Amplifier, Location of Parts, upper right hand corner and on Figure 6-27 and 6-27A Electrical Frequency Control C-2764/-WRT-2, Schematic Diagram, at location 5C delete diodes CR1342 and CR1343.

3. In paragraph 4-2b(8)(d) on page 4-17 delete the first sentence.

4. On page 7-87 opposite CR1342 and CR1343 in NAME AND DESCRIPTION column delete "Same as CR1316" and insert "Not Used". In LOCATING FUNCTION column delete all information opposite CR1342 and CR1343.

TEMPORARY CORRECTION T-1 TO TECHNICAL MANUAL FOR RADIO TRANSMITTING SETS AN/WRT-2 NAVSHIPS 93319

This temporary correction revises the manual to reflect the equipment changes made by Field Change 1-AN/WRT-2. The purpose of this field change is to modify the printed circuit board in order to improve the performance at operating temperatures of 65°C. The field change applies to serial numbers 1 through 234 only.

When this change is included in the manual, the manual shall cover the equipment as though Field Change 1-AN/WRT-2 had been accomplished on the equipment. This correction does not supersede any other corrections or changes.

Holders of equipment accompanied by technical manuals shall not make this correction in the manual until accomplishment of the field change. Maintenance Support Activities shall make corrections in the technical manual immediately upon receipt.

Make the following pen-and-ink corrections. Insert this temporary correction in the technical manual immediately after the front cover and preceding the title page.

Figure 4-10, 10:1 Frequency Divider Circuits, Simplified Schematic Diagram, should be corrected as follows:

(1) Delete all symbols and lettering for C1322, C1328, C1342, and C1348.

(2) Under symbol number R1321, change "10" to "51".

(3) Under symbol numbers R1364, R1345, and R1355, change "10" to "100".

Figure 5-49 (Sheet 1), R. F. Generating Circuits, Functional Schematic Diagram, and Figure 6-27, Electrical Frequency Control C-2764/WRT-2, Schematic Diagram, should both be corrected with pen-and-ink in the same manner as for Figure 4-10.

Table 7-1, Maintenance Parts List, should be corrected with pen-and-ink as follows:

(1) For C1322, C1348, C1328, and C1342, detete all information under Name and Description and Locating Function. Substitute the words "Not used" for the former name and description.

(2) For R1321, change 10 ohms ±10% to 51 ohms ± 5%, change RC20GF100K to RC20GF101K. Delete "Same as R381".

(3) For R1345, delete "Same as R1321" and insert the following: RESISTOR, FIXED COMPOSITION: 100 ohms ± 10%, ½ W, RC20GF101K, spec. MIL-R-11.

(4) For 1355 and R1364, change "Same as R1321" to "Same as R1345".

TEMPORARY CORRECTION T-1 TO TECHNICAL MANUAL FOR RADIO TRANSMITTING SETS AN/WRT-2 NAVSHIPS 93319

This temporary correction revises the manual to reflect the equipment changes made by Field Change 1-AN/WRT-2. The purpose of this field change is to modify the printed circuit board in order to improve the performance at operating temperatures of 65°C. The field change applies to serial numbers 1 through 234 only.

When this change is included in the manual, the manual shall cover the equipment as though Field Change 1-AN/WRT-2 had been accomplished on the equipment. This correction does not supersede any other corrections or changes.

Holders of equipment accompanied by technical manuals shall not make this correction in the manual until accomplishment of the field change. Maintenance Support Activities shall make corrections in the technical manual immediately upon receipt.

Make the following pen-and-ink corrections. Insert this temporary correction in the technical manual immediately after the front cover and preceding the title page.

Figure 4-10, 10:1 Frequency Divider Circuits, Simplified Schematic Diagram, should be corrected as follows:

(1) Delete all symbols and lettering for C1322, C1328, C1342, and C1348.

(2) Under symbol number R1321, change "10" to "51".

(3) Under symbol numbers R1364, R1345, and R1355, change "10" to "100".

Figure 5-49 (Sheet 1), R. F. Generating Circuits, Functional Schematic Diagram, and Figure 6-27, Electrical Frequency Control C-2764/WRT-2, Schematic Diagram, should both be corrected with pen-and-ink in the same manner as for Figure 4-10.

Table 7-1, Maintenance Parts List, should be corrected with pen-and-ink as follows:

(1) For C1322, C1348, C1328, and C1342, detete all information under Name and Description and Locating Function. Substitute the words "Not us d" for the former name and description.

(2) For R1321, change 10 ohms ±10% to 51 ohms ± 5%, change RC20GF100K to RC20GF101K. Delete "Same as R381".

(3) For R1345, delete "Same as R1321" and insert the following: RESISTOR, FIXED COMPOSITION: 100 ohms ± 10%, ½ W, RC20GF101K, spec. MIL-R-11.

(4) For 1355 and R1364, change "Same as R1321" to "Same as R1345".

TEMPORARY CORRECTION T-2 to TECHNICAL MANUAL FOR RADIO TRANSMITTING SET AN/WRT-2 NAVSHIPS 93319(A)

This temporary correction revises the manual to reflect the equipment changes made by Field Change 2-AN/WRT-2. The purpose of this field change is to remove diodes CR1342 and CR1343 in order to reduce the amplitude of in-band spurious signals and noise. This field change applies to sets serials 1 through 355.

When this change is included in the manual, the manual shall cover the equipment as though Field Change 2-AN/WRT-2 had been accomplished on the equipment. This correction does not supersede any other corrections or changes.

Maintenance Support Activities shall make this correction in the technical manual immediately after Field Change 2-AN/WRT-2 has been accomplished.

Holders of equipment accompanied by technical manuals shall not make this correction in the manual until accomplishment of the Field Change

Make the following pen and ink corrections. Insert this temporary connection in the technical manual immediately after T-1.

1. On Figure 4-10 10:1 Frequency Divider Circuits, Simplified Schematic Diagram, in the lower left hand quarter delete CR1342 and CR1343.

2. On Figure 5-49 (Sheet 1) R-F Generating Circuits, Functional Schematic Diagram at location 5C and on Figure 5-25, E1301, Binary No. 1, Feedback Counter, 100 kc Amplifier, Location of Parts, upper right hand corner and on Figure 6-27 and 6-27A Electrical Frequency Control C-2764/-WRT-2, Schematic Diagram, at location 5C delete diodes CR1342 and CR1343.

3. In paragraph 4-2b(8)(d) on page 4-17 delete the first sentence.

4. On page 7-87 opposite CR1342 and CR1343 in NAME AND DESCRIPTION column delete "Same as CR1316" and insert "Not Used". In LOCATING FUNCTION column delete all information opposite CR1342 and CR1343.

TEMPORARY CORRECTION T-3 t TECHNICAL MANUAL FOR RADIO TRANSMITTING SET AN/WRT-2

This temporary correction contains information originally published in EIB 551 and shall be accomplished only if these errors were not corrected at the time the EIB was published or were not corrected in a subsequent change or revision of the particular equipment publication.

The purpose of this temporary correction is to assure that publications drawn from stock subsequent to publication of this information in the EIB can be corrected.

Make the following pen and ink corrections and insert this temporary correction in the publication immediately behind the front cover.

An error appears in the footnote at bottom of page 1-3 of the Technical Manual. This should read "For 115-volt ships supply, multiply current values by 2; and for 440-volt ships supply, divide current values by 2."

AUGUST 1963

TEMPORARY CORRECTION T-4 TO TECHNICAL MANUAL FOR RADIO TRANSMITTING SET AN/WRT-2

NAVSHIPS 93319 (A)

This temporary correction revises the manual to reflect the equipment changes made by Field Change 7-AN/WRT-2. The purpose of this field change is to replace the Thermostatic Switches S-305 and S-602 with encapsulated Thermostatic Switches to preclude possible atmospheric contamination due to free flowing mercury in the case of a broken thermostatic switch. This field change applies to all AN/WRT-2 Radio Transmitting Sets now installed in nuclear powered submarines and to all AN/WRT-2 Radio Transmitting Sets intended for installation in nuclear powered submarines.

This correction does not supersede any other corrections or changes.

Holders of equipment accompanied by technical manuals shall not make this correction in the manuals until accomplishment of the field change.

Make the following pen-and-ink corrections in NAVSHIPS 93319(A). Insert this temporary correction in the technical manual immediately after the front cover.

1. In Table 7-1, Radio Transmitting Set AN/WRT-2 Maintenance Parts List, refer to Reference Designation S-305. Under Name and Description, delete all after "mercury in glass", and substitute "encapsulated in a square aluminum block 9" long x 1/2" sides, with a slip-size hole for # 6 screw centered 1/2" from bottom, mfr 48620, mfr dwg. A010826-1".

2. In Table 7-1, Radio Transmitting Set AN/WRT-2 Maintenance Parts List, refer to Reference Designation S-602. Under Name and Description, delete all after "mercury in glass" and substitute "encapsulated in a square aluminum block 9" long x 1/2" sides, with a slip-size hole for # 6 screw centered 1/2" from bottom, mfr 48620, mfr dwg. A010826-1".

CHANGE 3 TO TECHNICAL MANUAL FOR RADIO TRANSMITTING SET AN/WRT-2 NAVSHIPS 93319(A)

This permanent change revises this technical manual to reflect the changes made in the equipment and the errors found after publication of the original manual, Change 1 and Change 2.

Maintenance Support Activities shall insert this change in the technical manual immediately upon receipt. When this change is included in the manual, the manual shall cover the equipment with all the changes made up to the date of this instruction sheet.

1. Remove superseded pages and insert revised pages as indicated below:

Page	*Remove*	*Insert*	*Page*	*Remove*	*Insert*
T.P./ii	Ch. 2/Ch. 2	Ch. 3/Ch. 3	5-58A/5-58B	Ch. 2/Ch. 2	Ch. 3/Ch. 3
iiA/iiB	-/-	Ch. 3/Ch. 3	5-62E/5-62F	Ch. 2/Ch. 2	Ch. 3/Ch. 3
vii/viii	Ch. 2/Ch. 2	Ch. 2/Ch. 3	6-15/6-16	Ch. 2/Ch. 2	Ch. 3/Ch. 3
xi/xii	Ch. 2/Ch. 2	Ch. 3/Ch. 3	6-17/6-18	Ch. 2/Ch. 2	Ch. 3/Ch. 3
xiiA/xiiB	Ch. 2/Ch. 2	Ch. 2/Ch. 3	6-21/6-22	Ch. 1/Ch. 1	Ch. 1/Ch. 3
1-1/1-2	Orig/Orig	Ch. 3/Ch. 3	6-23/6-24	Ch. 1/Ch. 1	Ch. 3/Ch. 3
1-2A/1-2B	-/-	Ch. 3/Ch. 3	6-45/6-46	Orig/Orig	Ch. 3/Ch. 3
1-5/1-6	Orig/Orig	Ch. 3/Orig	6-47/6-48	Orig/Orig	Ch. 3/Ch. 3
1-7/1-8	Ch. 1/Ch. 1	Ch. 3/Ch. 3	6-50A/6-50B	Ch. 2/Ch. 2	Ch. 3/Ch. 3
2-1/2-2	Orig/Orig	Ch. 3/Orig	6-52A/6-52B	Ch. 2/Ch. 2	Ch. 3/Ch. 3
2-3/2-4	Orig/Orig	Orig/Ch. 3	6-53/6-54	Ch. 2/Ch. 2	Ch. 3/Ch. 3
2-5/2-6	Orig/Orig	Ch. 3/Orig	6-54A/6-54B	Ch. 2/Ch. 2	Ch. 3/Ch. 3
2-16A/2-16B	-/-	Ch. 3/Ch. 3	6-54C/6-54D	Ch. 2/Ch. 2	Ch. 3/Ch. 3
4-15/4-16	Ch. 2/Ch. 2	Ch. 2/Ch. 3	6-57/6-58	Orig/Orig	Ch. 3/Ch. 3
4-17/4-18	Orig/Orig	Ch. 3/Orig	6-68A/6-68B	Ch. 2/Ch. 2	Ch. 3/Ch. 3
4-35/4-36	Orig/Orig	Ch. 3/Orig	7-0A to 7-0L	Ch. 2/Ch. 2	-/-
5-44A/5-44B	-/-	Ch. 3/Ch. 3	70A to 7-0N	-/-	Ch. 3/Ch. 3
5-57/5-58	Ch. 2/Ch. 2	Ch. 3/Ch. 3			

2. Make the following pen-and-ink corrections and mark "Ch. 3" adjacent to the pen-and-ink corrections.

First Issued In	*Page No.*	*Change in Effect*	*Column or Figure*	*Line or Location*	*Action*
Ch. 3	4-49	Ch. 1	4-30	Lower Right	At T807 change reference from "17V AC" to "25V AC". Change valve of C857 from "4700" to "0.01 UF".
Ch. 3	4-50	Orig	2	(9) (b) Line 2 and Line 4	Change "17 volts" to "25 volts".
Ch. 3	4-50A	Ch. 2	4-30A	Lower Right	At T807 change reference from "17V AC" to "25V AC". Change valve of C857 from "4700" to "0.01 UF".

First Issued In	*Page No.*	*Change in Effect*	*Column or Figure*	*Line or Location*	*Action*
Ch. 3	5-35	Orig	5-25	Upper Right	Delete "CR1342" and "CR1343".
				Lower Left	Delete "C1348".
				Lower Right	Delete "C1322".
Ch. 3	5-36	Orig	5-26	Left	Delete "C1328".
				Right	Delete "C1342".
Ch. 3	5-40	Orig	5-32	Bottom	Add reference "MP361" to tool inserted in clip.
Ch. 3	5-53	Orig	5-47	Zone 3D	Change valve of R523 from "25K" to "2.5K".
				Zone 7C	At T807 change reference from "17V AC" to "25V AC".
Ch. 3	5-59	Ch. 2	5-49	Zone 13C	At R748 add "▲".
				Notes	Add "▲" set serials 264 and up value is 133K.
Ch. 3	5-61	Ch. 1	5-50	Zone 8C	Add resistor "R1246 150"' between T1210 and J1201.
					At T1210 interchange terminals "3" and "4".
				Apron	Change "R1246 9C" to "R1246 8C".
Ch. 3	5-62A	Ch. 1	5-50A	Zone 8C	Add resistor "R1246 150" between T1210 and J1201.
					At T1210 interchange terminals "3" and "4".
				Apron	Add "R1246 8C".
Ch. 3	5-62C	Ch. 2	5-50B	Zone 8C	Add resistor "R1246 150"' between T1210 and J1201.
					At T1210 interchange terminals "3" and "4".
				Apron	Add "R1246 8C".
Ch. 3	5-63	Ch. 1	5-51	Zone 1A and 1B	At T201, T202 and T203 change reference voltage from "820V AC" to "803V AC" and "550 V AC" to "545V AC".
				Zone 8C	At junction of R844 and R845 change reference voltage from "17V AC" to "25V AC".
				Zone 8D	Change valve of C857 from "4700" to "0.01 UF".
Ch. 3	5-64A	Ch. 2	5-51A	Zone 1A and 1B	At T201, T202 and T203 change reference voltage from "820V AC" to "803V AC" and "550V AC" to "545V AC".
				Zone 8C	At junction of R844 and R845 change reference voltage from "17V AC" to "25V AC".
				Zone 8D	Change valve of C857 from "4700" to "0.01 UF".

First Issued In	*Page No.*	*Change in Effect*	*Column or Figure*	*Line or Location*	*Action*
Ch. 3	6-49	Ch. 1	6-25	Zone 7D	At T807 change reference voltage from "17V AC" to "25V AC".
Ch. 3	6-51	Orig	6-26	Zone 14A	At T306 remove terminal "5" from ground.
				Below Caption	Add "Sets Serials 1 to 444".
				On Apron	Add "V1202 2B" and "V1208 4C".
Ch. 3	6-67	Orig	6-34	Upper Left	Interchange leads between T1201 and XV1201.
Ch. 3	6-81	Orig	6-41	Below Caption	Add "Sets Serials 1 to 263".
Ch. 3	6-84A	Ch. 2	6-42A	Left	At TB601 delete "see note 2", and at terminals 1, 5, 6 and 7 delete "*".
Ch. 3	7-8	Orig	NAME AND DESCRIPTION	Opposite T201	Change "550V" to "803V" change "tapped at 355V" to tapped at "266V and 545V".
Ch. 3	7-19	Orig	NAME AND DESCRIPTION	Opposite S301	Delete entire description.
Ch. 3	7-55	Orig	Notes	Opposite CR815	Insert "5".
Ch. 3	7-55	Orig	Notes	Opposite E810	Insert "5".
Ch. 3	7-65	Orig	Notes	Opposite S825	Insert "5".
Ch. 3	7-66	Orig	Notes	Opposite S826, S827, S828	Insert "5".
Ch. 3	7-67	Orig	NAME AND DESCRIPTION	Opposite C905	Change "CE1F100F" to "CE1F100R".
Ch. 3	7-82	Orig	Notes	Opposite R1246	Insert "13".
Ch. 3	7-85	Orig	Notes	Opposite C1351, C1352	Insert "13".
Ch. 3	7-87	Orig	Notes	Opposite CR1344	Insert "5".
Ch. 3	7-91	Orig	Notes	Opposite R1369	Insert "5".
Ch. 3	7-93	Orig	Notes	Opposite E1402	Insert "3".
Ch. 3	7-94	Orig	Notes	Opposite E1403, E1404, E1405	Insert "3".
Ch. 3	7-94	Orig	Notes	Opposite FL1401	Insert "5".
Ch. 3	7-94	Orig	Notes	Opposite L1401	Insert "3".
Ch. 3	7-98	Orig	Notes	Opposite T104, T1405	Insert "2".

3. Destroy superseded pages after the complete manual has been checked against the "List of Effective Pages."

4. Insert this Instruction Sheet just behind the front cover immediately above the Instruction Sheet of Change 2.

5. Make appropriate entry on correction page.

LIST OF PEN-AND-INK CORRECTED PAGES

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4-23	5-63/5-64	7-13	7-38	7-68	7-89
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5-36	7-7	7-32	7-64	7-85	

NAVSHIPS 93319 (A) *(Non-Registered)*

TECHNICAL MANUAL

for

RADIO TRANSMITTING SET AN/WRT-2

WESTINGHOUSE ELECTRIC CORPORATION
ELECTRONICS DIVISION FRIENDSHIP PLANT
P.O. Box 1897 Baltimore 3, Maryland

DEPARTMENT OF THE NAVY
BUREAU OF SHIPS

Contract: NObsr 75360 and 75775 *Approved by BuShips: 19 Jan. 1960*
Change 3: 26 January 1962

LIST OF EFFECTIVE PAGES

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iii to vi	Original	4-21	Change 1	6-29 to 6-44	Original
vii	Change 2	4-22 to 4-25	Original	6-45 to 6-48	Change 3
viii	Change 3	4-26 to 4-32	Change 1	6-49, 6-50	Change 1
ix, x	Change 2	4-32A to 4-34	Change 2	6-50A, 6-50B	Change 3
xi, xii	Change 3	4-35	Change 3	6-51, 6-52	Original
xiiA, xiiB	Change 3	4-36	Original	6-52A to 6-54D	Change 3
xiii	Change 1	4-37, 4-38	Change 1	6-55, 6-56	Original
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1-1 to 1-2B	Change 3	4-43, 4-44	Change 1	6-56C, 6-56D	Change 2
1-3, 1-4	Original	4-44A	Change 2	6-57, 6-58	Change 3
1-5	Change 3	4-44B	Change 1	6-59, 6-60	Original
1-6	Original	4-45 to 4-48	Original	6-61, 6-62	Change 2
1-7, 1-8	Change 3	4-49	Change 1	6-63, 6-64	Change 1
2-1	Change 3	4-50	Original	6-64A, 6-64B	Change 2
2-2, 2-3	Original	4-50A, 4-50B	Change 2	6-65, 6-66	Change 1
2-4, 2-5	Change 3	4-51 to 4-52B	Change 1	6-66A, 6-66B	Change 2
2-6	Original	4-53, 4-54	Original	6-67, 6-68	Original
2-7	Change 1	5-1 to 5-34	Original	6-68A, 6-68B	Change 3
2-8 to 2-10	Original	5-34A, 5-34B	Change 1	6-69, 6-70	Original
2-11	Change 1	5-35 to 5-40	Original	6-71, 6-72	Change 1
2-12 to 2-14	Original	5-40A, 5-40B	Change 2	6-73 to 6-78	Original
2-15, 2-16	Change 1	5-41 to 5-44	Original	6-79 to 6-80B	Change 1
2-16A, 2-16B	Change 3	5-44A, 5-44B	Change 3	6-81, 6-82	Original
2-17, 2-18	Change 1	5-45 to 5-54	Original	6-82A to 6-84	Change 1
3-1 to 3-5	Original	5-55 to 5-56B	Change 2	6-84A, 6-84B	Change 2
3-6 to 3-8	Change 1	5-57 to 5-58B	Change 3	6-85, 6-86	Original
3-9 to 3-16B	Change 2	5-59, 5-60	Change 2	6-87, 6-88	Change 2
3-17, 3-18	Original	5-61 to 5-62B	Change 1	6-89, 6-90	Original
3-19, 3-20	Change 1	5-62C, 5-62D	Change 2	6-90A, 6-90B	Change 2
3-21	Original	5-62E, 5-62F	Change 3	6-91, 6-92	Original
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4-7, 4-8	Change 2	5-64A, 5-64B	Change 2	6-93, 6-94	Original
4-9	Change 1	6-1 to 6-13	Original	6-95, 6-96	Change 1
4-10 to 4-13	Original	6-14	Change 2	6-97 to 6-100	Original
4-14, 4-15	Change 2	6-15 to 6-18	Change 3	7-0A to 7-0N	Change 3
4-16	Change 3	6-18B	Change 2	7-1 to 7-106	Original
4-16A, 4-16B	Change 2	6-19 to 6-21	Change 1	i-1, i-2	Change 2
4-17	Change 3	6-22 to 6-24	Change 3	i-3, i-4	Change 1

DEPARTMENT OF THE NAVY
BUREAU OF SHIPS
WASHINGTON 25, D. C.

IN REPLY REFER TO
Code 240N-100

From: Chief, Bureau of Ships
To: All Activities concerned with the Installation, Operation, and Maintenance of the Subject Equipment

Subj: Technical Manual for Radio Transmitting Set AN/WRT-2, NAVSHIPS 93319(A)

1. This is the Technical Manual for the subject equipment and is in effect upon receipt. It supersedes NAVSHIPS 93319. Upon receipt hereof, NAVSHIPS 93319 shall be destroyed.

2. When superseded by a later edition, this publication shall be destroyed.

3. Extracts from this publication may be made to facilitate the preparation of other Department of Defense publications.

4. Errors found in this publication (other than obvious typographical errors), which have not been corrected by means of Temporary Corrections or Permanent Changes should be reported. Such report should include the complete title of the publication and the publication number (short title); identify the page and line or figure and location of the error; and be forwarded to the Electronics Publications Section of the Bureau of Ships.

5. All Navy requests for NAVSHIPS electronics publications listed in the current issue of NAVSANDA Publication 2002 "Requisitioning Guide and Index of Forms and Publications", Cognizance Symbol I, or in a subsequent issue of the Electronics Information Bulletin should be directed to the appropriate Forms and Publications Supply Point.

R. K. JAMES
Chief of Bureau

RECORD OF CORRECTIONS MADE

CHANGE NO.	DATE	FIELD CHANGE NO.	SIGNATURE

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SECTION 2—INSTALLATION

SECTION 3—OPERATOR'S SECTION

SECTION 4—PRINCIPLES OF OPERATION

TABLE OF CONTENTS—Continued

SECTION 4—PRINCIPLES OF OPERATION (Conclud d)

SECTION 5—TROUBLESHOOTING

SECTION 6—REPAIR

TABLE OF CONTENTS—Continued

SECTION 6—REPAIR (Continued)

TABLE OF CONTENTS—Concluded

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SECTION 4—PRINCIPLES OF OPERATION (C nclud d)

SECTION 5—TROUBLESHOOTING

LIST OF ILLUSTRATIONS—Continued

SECTION 5—TROUBLESHOOTING (C ntinu d)

SECTION 5—TROUBLESHOOTING (C ntinu d)

LIST OF ILLUSTRATIONS—Continued

SECTION 5—TROUBLESHOOTING (Continued

SECTION 5—TROUBLESHOOTING (C nclud d)

SECTION 6—REPAIR

LIST OF ILLUSTRATIONS—Continued

SECTION 6—REPAIR (Continu d)

SECTION 6—REPAIR (C ntinu d)

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SECTION 6—REPAIR (Continued)

SECTION 6—REPAIR (Concluded)

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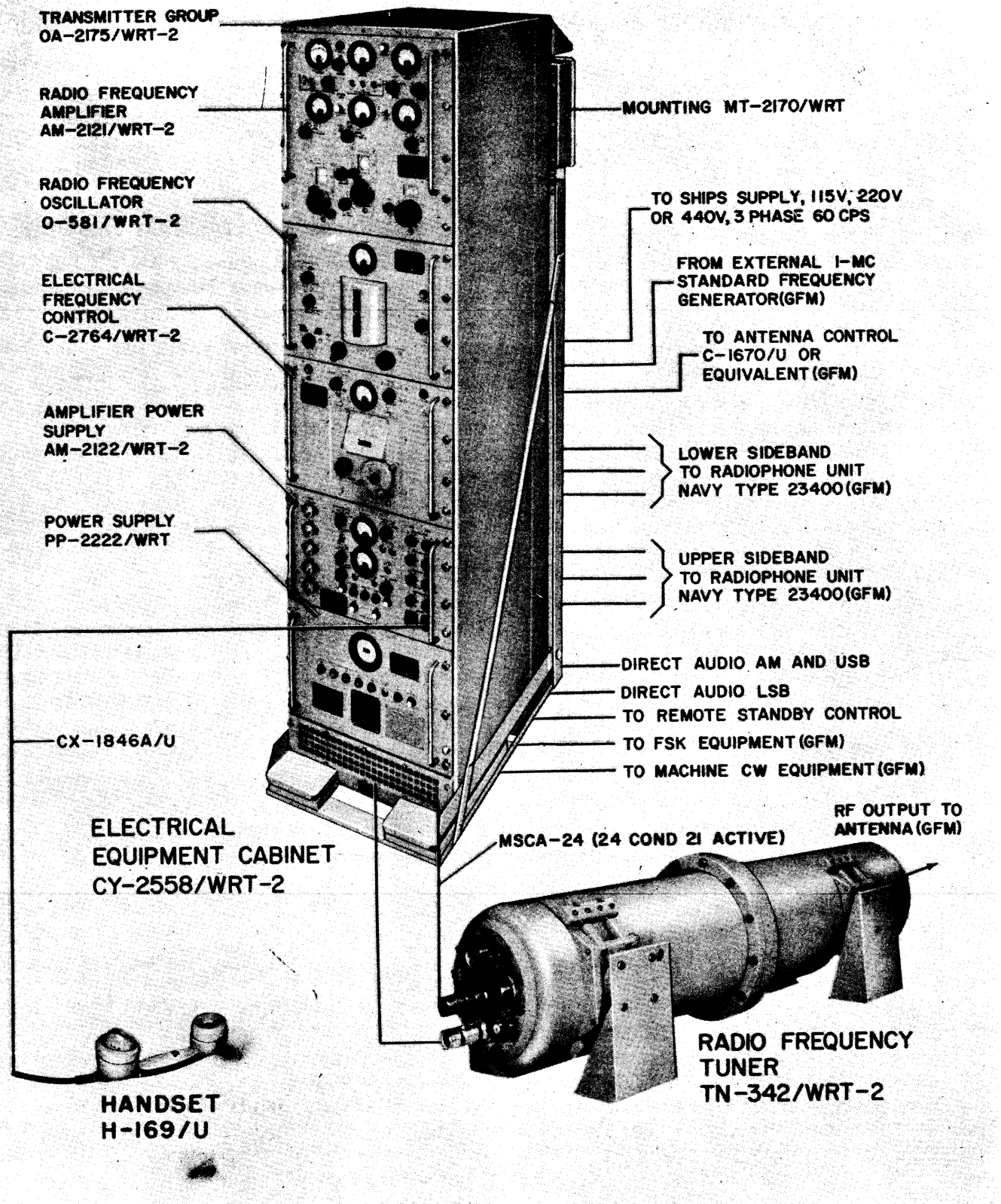
SECTION 5—TROUBLESHOOTING (C ntinued)

SECTION 5—TROUBLESHOOTING (Conclud d)

SECTION 7A—SUPPLEMENTARY PARTS LIST

SECTION 7—PARTS LIST



Figur 1-1. Radi Transmitting Set AN/WRT-2, R lati nship f Units

SECTION 1
GENERAL INFORMATION

Note

References and illustrations have been changed throughout the book only to the extent needed for clarity. Unless otherwise stated references to Mounting MT-2170/WRT apply equally to MT-2170A/WRT.

1-1. SCOPE.

a. This technical manual covers the description, operation and maintenance of Radio Transmitting Set AN/WRT-2. Figure 1-1 is an illustration showing an overall view of the equipment described in this manual. Instructions for government furnished equipment, (GFM), are not covered in this manual.

1-2. FUNCTIONAL DESCRIPTION.

a. GENERAL.—Radio Transmitting Set AN/WRT-2 is a communication equipment designed to be installed aboard surface and undersurface vessels. The transmitter provides complete frequency coverage in one-kc steps over the frequency range of 2.0 to 30.0 megacycles. The equipment is capable of delivering a nominal average power output of 500 watts and a peak envelope power (PEP) of 1000 watts into a 50-ohm, non-reactive load, with a voltage standing wave ratio (VSWR) lower than 4 to 1. The transmitter is capable of continuous full load operation under ambient temperature conditions ranging from 0°C to plus 50°C (32°F −122°F) and a relative humidity of up to 95 percent. Radio Transmitting Set AN/WRT-2 provides CW, ISB (independent sideband), SSB (single sideband), AM phone, machine (MACH) CW, and FSK (frequency shift keying) emission. The transmitter can be used for facsimile emission by use of the following government furnished terminal equipment: XCVR, Facsimile 1B—TT-41B/TXC-1B and Radio, Modulator 1B plus T-1 MD-168/UX. The set, as shown in figure 1-1, consists of Transmitter Group OA-2175/WRT-2, Radio-Frequency Tuner TN-342/WRT-2. Handset H-169/U, and Mounting MT-2170/WRT.

b. TRANSMITTER GROUP OA-2175/WRT-2.

(1) Transmitter Group OA-2175/WRT-2 consists of Electrical Equipment Cabinet CY-2558/WRT-2, Radio Frequency Amplifier AM-2121/WRT-2, Radio Frequency Oscillator O-581/WRT-2, Electrical Frequency Control C-2764/WRT-2, Amplifier Power Supply AM-2122/WRT-2 and Power Supply PP-2222/WRT. The maximum overall dimensions including knobs, handles and front panel projections are 72 inches height, 21¼ inches width and $29\frac{5}{16}$ inches depth. Electrical Equipment Cabinet CY-2558/WRT-2 houses five removable drawers. The drawers are mounted on a roller mechanism for ease of withdrawal from the cabinet. Each drawer is provided with stops and appropriate locking devices to limit its outward travel on its track, and to prevent movement of the drawers due to roll or pitch of the ship. After withdrawal to its fullest extent, each drawer, with the exception of Power Supply PP-2222/WRT, may be rotated about its longitudinal horizontal axis, to a minimum of 90 degrees in either direction. Provisions are made for locking the drawers in the 90 degree positions. Interlocks are provided at each drawer to remove all d-c and a-c potentials in excess of 150 volts (except line input power) when one or more of the drawers are withdrawn.

(2) For cooling, the equipment is provided with a blower, having a reusable filter. The blower, installed at the base of Electrical Equipment Cabinet CY-2558/WRT-2, circulates air upward through the drawers and out through the exhaust openings at the top of the cabinet. The transmitter may be operated from a three-phase, 60 cps ship's supply of 115 volts, 220 volts or 440 volts.

(3) Transmitter Group OA-2175/WRT-2 is coupled to an antenna through Radio Frequency Tuner TN-342/WRT-2 and Antenna Control C-1670/U (GFM). The circuitry for operation and control of the antenna tuner is included in Transmitter Group OA-2175/WRT-2. Antenna Control C-1670/U contains an antenna transfer relay for break-in operation, when Radio Transmitting Set AN/WRT-2 is installed on under surface vessels.

(4) Provision is made for a total of 6 audio inputs. A front panel handset jack is furnished for local phone operation of the equipment, with Handset H-169/U. Remote phone and/or hand key operation is also possible through interconnection to a maximum of two radiophone units. Provision is made for interconnection to teletype and telegraphy equipment and to a remote transmitter standby control. An internal dummy load is provided for transmitter tune-up.

(5) Radio Frequency Oscillator O-581/WRT-2, the second drawer from the top of the cabinet, contains an oven, a master oscillator, frequency multiplier circuits, USB and LSB modulators and a +250 volt d-c regulator. The master oscillator and frequency multiplier circuits produce signals in the range of 1.5 to 30 mc which are combined with the modulator subcarrier to produce operating output frequencies of 2.0 to 30 mc. The operating frequency is set through front panel tuning controls and is indicated by a drum type indicator on the front panel of Radio Frequency Oscillator

O-581/WRT-2. The elements which determine the frequency of the master oscillator are mounted in a temperature-controlled oven to improve stability.

(6) Electrical Frequency Control C-2764/WRT-2, the third drawer from the top of the cabinet, contains a frequency comparator chassis, a standard frequency generator chassis, and an oven for maintaining the frequency determining components at the proper operating temperature. The circuits in Electrical Frequency Control C-2764/WRT-2 impart overall accuracy and stability to the master oscillator by comparing its output with the output of a crystal-stabilized frequency standard. When the four digits of the counter on the front panel are set to the tens, hundreds, thousands and ten thousands digits of the output frequency, a correction voltage is generated whenever the master oscillator departs from the assigned frequency. The setting is accomplished by rotating tuning controls until the desired frequency is indicated on the veeder counters located on the front panel. Frequency settings are thereby shown directly and no calibration charts are needed. The circuits in Electrical Frequency Control C-2764/WRT-2 provide for locking in the operating frequency at multiples of one kc throughout the frequency range of the transmitter. They also continuously sample and control the radiating frequency in telephony, CW, and FSK operation.

(7) Radio Frequency Amplifier AM-2121/WRT-2 is the first drawer from the top of the cabinet. The unit contains input mixer circuits, driver circuits, power amplifier circuits and r-f monitor circuits. The r-f amplifier circuits accept the outputs of the master oscillator and modulators; the outputs are mixed to create the desired operating frequency. The converted signal is then raised to the operating power level by linear amplifiers which are capable of delivering a nominal average power of 500 watts into a 50-ohm non-inductive load. The tuning and coupling controls of the power amplifier as well as the controls and indicators for remote operation of the tuner are mounted on the front panel of Radio Frequency Amplifier AM-2121/WRT-2. The r-f monitor circuit is used for measuring the r-f output standing wave ratio and percentage of modulation. Provision is also made for measuring supply voltages and operating currents. The power amplifier circuits are maintained at a safe operating temperature by a blower mounted in the r-f amplifier drawer. Driver tuning and power amplifier tuning are accomplished through a driver gear train and a P.A. tuning and coupling mechanism gear train.

(8) Amplifier-Power Supply AM-2122/WRT-2, the fourth drawer from the top, contains the low voltage power supplies, the transmitter control circuitry, the speech amplifier and keying circuits. With the exception of the high voltage for the power amplifiers, all d-c voltages are developed in Amplifier-Power Supply AM-2122/WRT-2. Protective relays are provided to disable the low voltage rectifiers in case an overload occurs. The front panel of Amplifier-Power Supply AM-2122/WRT-2 contains the controls for selecting the type of emission, power level, local or remote operation as well as the controls for energizing the filament and plate power circuits. Likewise, front panel level controls are provided for modulation, sidetone and input levels, and for AGC.

(9) Power Supply PP-2222/WRT, the bottom drawer, contains the high voltage transformers, the high voltage rectifiers and the high voltage control relays. Plate voltage for Radio Frequency Amplifier AM-2121/WRT-2 is supplied from the rectifiers in Power Supply PP-2222/WRT. Movable links are provided to connect the primary windings of each transformer for 115 volt, 220 volt or 440 volt three-phase primary input power. An elapsed time meter is mounted on the front panel of the power supply to indicate operating hours. An emergency stop switch is also provided on the front panel to disconnect all power to the circuits of the transmitting set in case of an emergency. Overload control circuits disable the high voltage power supply automatically in case of an overload.

c. RADIO FREQUENCY TUNER TN-342/WRT-2. —Radio Frequency Tuner TN-342/WRT-2 enables Transmitter Group OA-2175/WRT-2 to deliver the maximum power, to a fixed antenna, at a minimum standing wave ratio, for any frequency within the range of 2.0 mc to 30.0 mc. Maximum power at a minimum standing wave ratio, is delivered when the antenna appears as a purely resistive load. Since the antenna dimensions are fixed, the impedance presented to the transmitter will vary with frequency. Radio Frequency Tuner TN-342/WRT-2 effectively changes the antenna impedance by inserting or removing inductance or capacitance according to the frequency variations. Radio Frequency Tuner TN-342/WRT-2 is contained in a shockmounted, pressurized cylinder which houses the electrical and mechanical parts of the unit. One connector, for control circuits, and one r-f input connector together with a pressure gage, relief valve and a valve for pressurizing the equipment are mounted at one end of the cylinder. The r-f output connection is made at the opposite end.

d. HANDSET H-169/U.—Handset H-169/U is provided for phone operation at the transmitter site. Handset H-169/U consists of a handle switch, dynamic receiver, a dynamic noise cancelling microphone incorporating a transistor amplifier; all assembled into a plastic handset painted in navy gray. Handset H-169/U also includes a cable assembly with a plug for insertion into the provided jack on the front panel of Transmitter Group OA-2175/WRT-2.

e. MOUNTING MT-2170/WRT. — Mounting MT-2170/WRT is provided to support and protect Transmitter Group OA-2175/WRT-2 from excessive shocks and vibrations. Mounting MT-2170/WRT consists of a frame and stainless steel springs to be assembled at the installation site.

1-3. FACTORY OR FIELD CHANGES.

The field changes listed in Table 1-0 have been incorporated in this manual. For the serial numbers not listed in Table 1-0, the changes have been incorporated at the factory.

TABLE 1-0. RADIO TRANSMITTING SET AN/WRT-2 FIELD AND FACTORY CHANGES

FIELD CHANGE NUMBER	FIELD CHANGE TITLE AND PURPOSE	SERIAL NUMBER OF EQUIPMENT AFFECTED	FIELD CHANGE ACCOMPLISHED IF:
1-AN/WRT-2	Replace four resistors and delete four capacitors. Improve performance of 10:1 frequency divider circuit.	Radio Sets 1 through 234	Resistor R1321 is 51 ohms, and resistors R1345, R1355 and R1364 are 100 ohms.
2-AN/WRT-2	Delete diodes CR1342 and CR1343. Reduce amplitude of in-band spurious signals.	Radio Sets 1 through 355	Diodes CR1342 and CR1343 are removed.

1-4. QUICK REFERENCE DATA.

a. FREQUENCY RANGE.—Radio Transmitting Set AN/WRT-2 provides complete frequency coverage in one-kc steps over the frequency range of 2.0 mc to 30.0 mc.

b. FREQUENCY CONTROL.—Frequency Control in Radio Transmitting Set AN/WRT-2 is accomplished by phase-comparison circuits in conjunction with an interpolation oscillator. In addition a frequency control feature is provided to lock in the master oscillator to a crystal reference, in one-kc steps, across the entire operating frequency range.

c. TYPES OF EMISSION.—Radio Transmitting Set AN/WRT-2 is capable of operation with the following types of emission: machine (MACH) or break-in CW, (hand keyed) telegraphy, frequency-shift-keyed (FSK) teletype, amplitude modulation (AM) speech, single sideband suppressed carrier (SSB), independent sideband (ISB), and facsimile by terminal equipment.

d. CW CHARACTERISTICS.—On-Off keying up to 600 words per minute is provided by a transistor type keyer. The keyer operates when actuated by a d-c keying voltage (negative side grounded) of 30 to 135 volts ±5%.

e. FSK CHARACTERISTICS.—When operating directly from a teletypewriter, Radio Transmitting Set AN/WRT-2 is capable of accepting neutral zero to 30-volt (up to 135-volt) keying signals with a voltage tolerance of plus or minus five percent. Zero voltage causes the transmitter to transmit a space signal. Any voltage between 30 and 135 volts causes the transmitter to transmit a mark signal. Two input impedances are provided for the frequency shift keyer. One input is a 20 milliampere current loop with an input of 6000 ohms and the other input is a 60 milliampere current loop with an input impedance of 2000 ohms. The amount of frequency shift provided by the frequency shift keying circuits is maintained at 850 cps, plus or minus ten percent, over the entire frequency range of the transmitter.

f. MODULATION CHARACTERISTICS.

(1) Radio Transmitting Set AN/WRT-2 is capable of 100 percent modulation when operating with dynamic handset H-169/U. The equipment may be modulated from a 600-ohm audio input circuit at a six milliwatt (0.006 watts) level.

(2) Each audio input is provided with an automatic gain control (AGC) amplifier capable of maintaining the rated output of the transmitter, within plus or minus ten percent, for variations of input levels over the range of minus 15 db to plus 5 db. A switch is provided to disable the AGC.

g. POWER OUTPUT.

(1) Radio Transmitting Set AN/WRT-2 is designed for nominal continuous power output as follows:

(*a*) ISB OPERATION.—1000 watts peak envelope power (PEP, four equal tones modulation).

(*b*) SSB OPERATION.—1000 watts peak envelope power (PEP, two equal tones modulation, either upper or lower sideband).

(*c*) CW OPERATION. — 500 watts average power under locked key conditions.

(*d*) FSK OPERATION.—500 watts average power.

(*e*) AM PHONE EMISSION.—400 watts average with one sideband and carrier reinsertion.

(2) Radio Transmitting Set AN/WRT-2 is capable of continuous full-load operation under any ambient temperature conditions from 0° to plus 50°C (32°F to 122°F) and any relative humidity up to 95 percent, or any combination thereof.

h. FREQUENCY STABILITY.

(1) The overall frequency stability of Radio Transmitting Set AN/WRT-2 is within one part in 10^8 per day of nominal frequency when operated at nominal line voltage and frequency within an ambient temperature ranging from (4.4°C to 32.2°C) +40°F to +90°F and relative humidity range of 40 to 90 percent.

i. POWER SUPPLY.

(1) Radio Transmitting Set AN/WRT-2 is capable of taking power from a three-phase, 60-cps (±5%) source of 115 volts, 220 volts, or 440 volts (±10%). The voltage, current, power in kw and kva for various operating conditions are as follows:

OPERATING CONDITION	LINE VOLTAGE	LINE CURRENT**			POWER KW	KVA
		L1	L2	L3		
NORMAL OFF*	115 v 220 v 440 v	0	1.85	1.91	0.41	0.44

*Only oven heaters energized.
**For 115-volt ship's supply, ~~divide~~ current values by 2.
For 440-volt ship's supply, ~~multiply~~ current values by 2.

OPERATING CONDITION	LINE VOLTAGE	LINE CURRENT**			POWER KW	KVA
		L1	L2	L3		
STANDBY-100 WATT	115 v 220 v 440 v	0.20	3.7	3.78	.790	0.93
OPERATE-100 WATT						
CW	115 v 220 v 440 v	1.6	5.1	5.25	1.38	1.52
FSK	115 v 220 v 440 v	1.6	5.1	5.25	1.38	1.52
TELEPHONE A3	115 v 220 v 440 v	1.7	5.1	5.3	1.40	1.53
TELEPHONE A3a (SB)	115 v 220 v 440 v	1.7	5.1	5.3	1.41	1.54
STANDBY-500 WATT	115 v 220 v 440 v	.37	3.9	3.8	.800	1.01
OPERATE-500 WATT						
CW	115 v 220 v 440 v	4.0	7.1	7.5	2.18	2.36
FSK	115 v 220 v 440 v	4.1	7.2	7.5	2.19	2.37
TELEPHONE A3	115 v 220 v 440 v	4.0	7.1	7.5	2.18	2.36
TELEPHONE A3a (SB)	115 v 220 v 440 v	4.0	7.1	7.5	2.18	2.36

**For 115-volt ship's supply, divide current values by 2.
For 440-volt ship's supply, multiply current values by 2.

1-5. EQUIPMENT LISTS.

Radio Transmitting Set AN/WRT-2 consists of the major units listed in Table 1-1. Equipment and publications required but not supplied are itemized in Table 1-2. Shipping data is given in Table 1-3. The electron tube and transistor complement is listed in Table 1-4.

1-6. EQUIPMENT SIMILARITIES.

Power Supply PP-2222/WRT and Mounting MT-2170/WRT in Radio Transmitting Set AN/WRT-2 may be interchanged with Power Supply PP-2222/WRT and Mounting MT-2170/WRT, respectively, in Radio Transmitting Set AN/WRT-1.

TABLE 1-1. RADIO TRANSMITTING SET AN/WRT-2, EQUIPMENT SUPPLIED

QTY. PER EQUIP.	NOMENCLATURE		**OVERALL DIMENSIONS			**VOLUME	**WEI HT
	NAME	DESIGNATION	HEIGHT	WIDTH	DEPTH		
1	Radio Transmitting Set, consisting of:	AN/WRT-2					
1	Transmitter Group	OA-2175/WRT-2	72	21	29½	26.25	1030
1	Radio Frequency Tuner	TN-342/WRT-2	13⅜	16 15/16	48⅞	8	135
1	Handset	H-169/U	*	*	*	*	*
1	Connector P101	MS/3106B-32-7P	*	*	*	*	*
1	Connector P102	MS/3106B-20-27P	*	*	*	*	*
1	Connector P103	UG-943A/U	*	*	*	*	*
1	Connector P104	UG-943A/U	*	*	*	*	*
1		54B7237H04	*	*	*	*	*
1		UG-635/U	*	*	*	*	*
1		AN/3106E-32-8S	*	*	*	*	*
1	Connector P3301	UG-154/U	*	*	*	*	*
	Connector P3302						
	Maintenance Parts Kit						
2	Instruction Books	MT-2170/WRT	12	9	1	.07	3
1	Mounting		0	0	0	0	0
1	Mounting	MT-2170A/WRT Serials 445 and up	0	0	0	0	0

**Unless otherwise stated, dimensions are in inches, volume in cubic feet and weight in pounds.
*Has relative negligible dimensions and weight.
0 Packed disassembled in a separate case.

TABLE 1-2. RADIO TRANSMITTING SET AN/WRT-2, EQUIPMENT AND PUBLICATIONS REQUIRED BUT NOT SUPPLIED

QTY. PER EQUIP.	NOMENCLATURE		REQUIRED USE	REQUIRED CHARACTERISTICS
	NAME	DESIGNATION		
1	Antenna		R. F. Radiation	35-foot Navy Type C-66047 or a single wire antenna and ground system having a length of between 60 and 130 feet and being at least 40 feet high.

TABLE 1-2. RADIO TRANSMITTING SET AN/WRT-2, EQUIPMENT AND PUBLICATIONS REQUIRED BUT NOT SUPPLIED—C ncluded

QTY. PER EQUIP.	NOMENCLATURE		REQUIRED USE	REQUIRED CHARACTERISTICS
	NAME	DESIGNATION		
	Radiophone Unit	23400 or Equivalent	Remote radio telephone control operation.	To meet requirements of MIL-C-946.
	Telegraph Key	26012	Telegraphy transmission.	Suitable for use with Radiophone Unit 23400 or equivalent.
	Machine Telegraphy Equipment		Machine CW transmission.	Neutral keying 0 to 30 −135 volts, 20,000 ohms termination to ground.
	Teletypewriter (and auxiliary equipment)		FSK operation.	Neutral keying 60 ma, 2000 ohms or 20 ma, 6000 ohms to ground.
	Antenna Tuning Group	AN/BRA-3	Provide for matching the antenna to the r-f output line of Radio Transmitting Set AN/WRT-2.	Input of 500 watts at 50 ohm nominal impedance and a standing wave ratio not to exceed 4:1. Frequency Range 2.0 to 30.0 mc.
	Antenna Tuning Group	AN/BRA-5	Provide for matching the antenna to the r-f output line of Radio Transmitting Set AN/WRT-2.	Input of 500 watts at 50 ohm nominal impedance and a standing wave ratio not to exceed 4:1. Frequency Range 2.0 to 30.0 mc.
	Antenna Control	C-1670/U (or equivalent)	CW Break-in and automatic transfer function.	
	XCVR Facsimile 1B Radio, Modulator 1B plus T-1.	TT-41B/TXC-1B MD-168/UX	Facsimile operation.	Variable frequency modulation and 600 ohms impedance.

In addition to the items in Table 1-2, the following bulk cables are required: MSCA-19, MHFA-7, RG-10/U, TSGA-14, TTHFWA-1½, MHFA-10, MSCA-24 standard copper conductor size 2 (7).

TABLE 1-3. RADIO TRANSMITTING SET AN/WRT-2, SHIPPING DATA

NO. OF BOXES	NOMENCLATURE		*OVERALL DIMENSIONS			*VOLUME	*WEIGHT
	NAME	DESIGNATION	HEIGHT	WIDTH	DEPTH		
1	Transmitter Group	OA-2175/WRT-2	87	35	41¾	76	1600
1	Radio Frequency Tuner 1	TN-342/WRT-2	54	21	19¾	14	195
1	Assorted Items and Handset	H-169/U	15	11½	11½	1.25	
1	Equipment Spares		18½	13½	13¼	1.65	
3	Mounting	MT-2170/WRT	31½ 21 61	22 18½ 5¾	5 5 3½	2.3 .6	
3	Mounting	MT-2170A/WRT Serials 445 and up	32 21 64	21 15 4	4 5 4	2.5 1.2 0.7	76 44 34

*Unless otherwise noted, dimensions are in inches, volume in cubic feet, and weight in pounds; equipment crated and ready for shipment.

TABLE 1-4. RADIO TRANSMITTING SET AN/WRT-2, ELECTRON TUBE AND TRANSISTOR COMPLEMENT, SETS SERIALS 1 TO 122

UNIT	NUMBER OF TUBES AND TRANSISTORS OF TYPES INDICATED														
	3B28	2N119	2N95	2N117	6AU6WA	3N34	2N1122	5933WA	5670	4CX300A	6080WA	5651WA	12AT7WA	2N338	TOTAL
Power Supply PP-2222/WRT	6														6
Radio Frequency Oscillator O-581/WRT-2					8				4		2	1	2		17
Amplifier Power Supply AM-2122/WRT-2		8	1	5											14
Electrical Frequency Control C-2764/WRT-2		1			2	1	8		1				7	3	23
Radio Frequency Amplifier AM-2121/WRT-2		1		1				2	1	4					9
Total Number of Each Type	6	10	1	6	10	1	8	2	6	4	2	1	9	3	69

TABLE 1-4A. RADIO TRANSMITTING SET AN/WRT-2, ELECTRON TUBE AND TRANSISTOR COMPLEMENT, SETS SERIALS 123 AND UP

UNIT	NUMBER OF TUBES AND TRANSISTORS OF TYPES INDICATED														
	3B28	2N119	2N95	2N117	6AU6WA	3N34	2N1122	5933WA	5670	4CX300A	6080WA	5651WA	12AT7WA	2N338	TOTAL
Power Supply PP-2222/WRT	6														6
Radio Frequency Oscillator O-581/WRT-2					8				4		2	1	2		17
Amplifier Power Supply AM-2122/WRT-2		17▲	1△	4▲											22
Electrical Frequency Control C-2764/WRT-2		1			2	1△△	8**		1				7	3△△	23
Radio Frequency Amplifier AM-2121/WRT-2		1*		1*				2	1	4					9
Total Number of Each Type	6	19	1	5	10	1	8	2	6	4	2	1	9	3	77

*For sets serials 264 and up, transistors 2N119 and 2N117 are replaced by transistors 2N396A and 2N1039 in the R. F. Amplifier.
△For sets serials 264 and up, transistor 2N95 is replaced by 2N1330.
▲For sets serials 264 and up, quantity is 16 and 3 respectively.
**For sets serials 264 and up, transistor 2N1122 is replaced by T1720.
△△For sets serials 295 and up, transistors 3N34 and 2N338 are replaced by seven 2N333.

SECTION 2

INSTALLATION

2-1. UNPACKING AND HANDLING.

Radio Transmitting Set AN/WRT-2 consists of Transmitter Group OA-2175/WRT-2, Radio Frequency Tuner TN-342/WRT-2, Handset H-169/U, Mounting MT-2170/WRT, and the boxes containing accessories and equipment spare parts. Transmitter Group OA-2175/WRT-2 consists of Electrical Equipment Cabinet CY-2558/WRT-2 and five internally housed drawers. The five drawers, from top to bottom are: Radio Frequency Amplifier AM-2121/WRT-2, Radio Frequency Oscillator O-581/WRT-2, Electrical Frequency Control C-2764/WRT-2, Amplifier-Power Supply AM-2122/WRT-2 and Power Supply PP-2222/WRT. Transmitter Group OA-2175/WRT-2 is shipped, lying on its rear side, completely assembled, in a packing case lined with moisture-proof barriers. Electrical Equipment Cabinet CY-2558/WRT-2 is strapped to a cradle which is bolted to the bottom of the packing case. Radio Frequency Tuner TN-342/WRT-2 is also completely assembled at the factory and shipped in a separate case. Handset H-169/U in packed in one of the cases containing the equipment spares. Mounting MT-2170/WRT is packed, disassembled, in three separate cases. Extreme care must be exercised while handling and unpacking the equipment to prevent damage.

CAUTION

DO NOT LEAVE TRANSMITTER GROUP OA-2175/WRT-1 IN AN UPRIGHT POSITION WITHOUT STEADYING SUPPORT, WHEN IT IS NOT RESTING ON MOUNTING MT-2170/WRT. WHEN LIFTING TRANSMITTER GROUP OA-2175/WRT-1 INTO AN UPRIGHT POSITION, SEPARATE THE SHOCKMOUNTS FROM THE CRADLE LEAVING THE CRADLE STRAPPED TO THE UNIT. HOIST THE UNIT TO AN UPRIGHT POSITION BEFORE REMOVING FROM THE CRADLE.

Hoists used in moving the equipment should be equipped with a sling. No special tools are required for opening the packing cases. A hammer, nail bar, a ten inch adjustable wrench, a pair of shears and a large screwdriver are all the needed tools for opening the packing cases. The protective packing should not be removed from controls, meters or other parts until the unit is secured and connected.

2-2. POWER REQUIREMENTS AND DISTRIBUTION.

a. Radio Transmitting Set AN/WRT-2 may be operated from a ship's three-phase, 60-cps ($\pm 5\%$), supply of 115 volts, 220 volts or 440 volts ($\pm 10\%$). The primary power source must be capable of suppying a minimum of 2.7 kva.

b. Power distribution to the units of Radio Transmitting Set AN/WRT-2 is shown in the primary power distribution diagram, figure 5-31. As shown in figure 5-31, the primary winding of transformer T501, located in Amplifier-Power Supply AM-2122/WRT-2, as well as the primary windings of transformers T201, T202, T203, located in Power Supply PP-2222/WRT must be connected according to the ship's supply voltage.

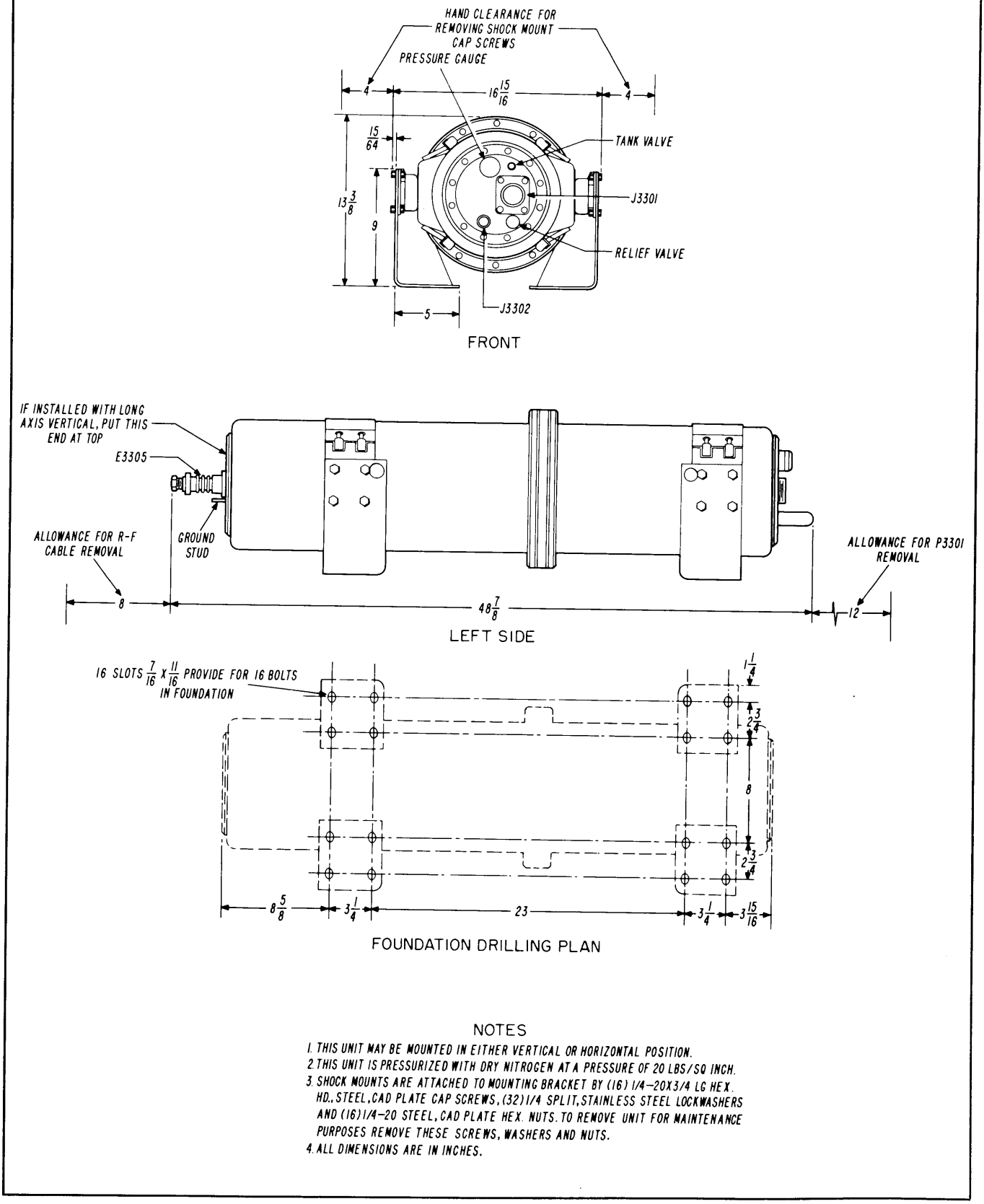
Note

For information on the installation of government furnished equipment, used with Radio Transmitting Set AN/WRT-2, refer to the instruction book pertaining to that equipment.

2-3. INSTALLATION LAYOUT.

a. Figure 2-7 or 2-7A shows Transmitter Group OA-2175/WRT-2 installed on Mounting MT-2170/WRT or MT-2170A/WRT. In selecting the location for the equipment in the radio room, reference should be made to figure 2-7 or 2-7A to determine the space required. The space requirements also include ventilation considerations, clearance for removal and servicing of each drawer, shockmount deflection and cable bends.

b. Figure 2-1 is an outline drawing of Radio Frequency Tuner TN-342/WRT-2. Radio Frequency Tuner TN-342/WRT-2 should be mounted as close as possible to the antenna. It may be mounted outdoors upon the superstructure, close to the antenna. Location of Radio Frequency Tuner TN-342/WRT-2 is restricted primarily by limitations on the length of cables connecting the unit to the antenna and to Transmitter Group OA-2175/WRT-2. The total length of the r-f cable used between the output of Radio Frequency Tuner TN-342/WRT-2 and the antenna should not exceed five feet. Likewise the two control cables connecting Radio Frequency Tuner TN-342/WRT-2 to Transmitter Group OA-2175/WRT-2 and to Antenna Control C-1670/U should not exceed 450 feet. After taking these limitations into consideration a suitable place where Radio-Frequency Tuner TN-342/WRT-2 may be



NOTES

1. THIS UNIT MAY BE MOUNTED IN EITHER VERTICAL OR HORIZONTAL POSITION.
2. THIS UNIT IS PRESSURIZED WITH DRY NITROGEN AT A PRESSURE OF 20 LBS/SQ INCH.
3. SHOCK MOUNTS ARE ATTACHED TO MOUNTING BRACKET BY (16) 1/4–20X3/4 LG HEX. HD., STEEL, CAD PLATE CAP SCREWS, (32) 1/4 SPLIT, STAINLESS STEEL LOCKWASHERS AND (16) 1/4–20 STEEL, CAD PLATE HEX. NUTS. TO REMOVE UNIT FOR MAINTENANCE PURPOSES REMOVE THESE SCREWS, WASHERS AND NUTS.
4. ALL DIMENSIONS ARE IN INCHES.

Figur 2-1. Radi Frequency Tuner TN-342/WRT-2, Outline Drawing

installed in a horizontal or vertical plane should be selected. In either case, the pressurizing valve and the pressure gauge on Radio Frequency Tuner TN-342/WRT-2 must be accessible at all times.

2-4. INSTALLATION REQUIREMENTS.

a. INSTALLATION POINTERS.—The installation of Radio Transmitting Set AN/WRT-2 requires the installation of two major units, Transmitter Group OA-2175/WRT-2 and Radio Frequency Tuner TN-342/WRT-2. Both of these units have been completely assembled at the factory. Radio Frequency Tuner TN-342/WRT-2 is to be used only for installation on surface vessels. When Transmitter Group OA-2175/WRT-2 is to be installed on undersurface vessels follow the same procedure as that described for installation on surface vessels. For the installation of Radio Frequency Tuners AN/BRA-3 and AN/BRA-5 (not supplied) or their equivalent refer to the instruction book of the respective equipment for installation instructions. The procedure which follows outlines the steps required prior to the actual installation of Radio Transmitting Set AN/WRT-2. Electrical Equipment Cabinet CY-2558/WRT-2 may be lowered through a circular hatch 25 inches in diameter, if necessary. Under such a condition the drawers containing the five major units of Transmitter Group OA-2175/WRT-2, the Power Supply PP-2222/WRT roller tracks, and the rear section of Electrical Equipment Cabinet CY-2558/WRT-2 must be removed as described in steps 1 through 11 of the procedure. If Transmitter Group OA-2175/WRT-2 may be transported directly to its final location steps 3 and 5 through 9 may be eliminated (except, do not install Power Supply PP-2222/WRT and Radio Frequency Amplifier AM-2121/WRT-2, at this time).

Step 1. Pull out the top drawer, containing Radio Frequency Amplifier AM-2121/WRT-2, to its extreme traveling limit.

Step 2. Disconnect all wiring to the chassis and remove the four bolts holding the chassis to the mounting plate portion of the chassis support bearing. (The bolts are accessible from the rear of the mounting plate.) Lift and pull out the chassis. Push the interconnection cabling out through the rear of the chassis.

Step 3. Repeat steps one and two for the removal of the second, third and fourth drawers.

Step 4. Pull out the bottom drawer containing Power Supply PP-2222/WRT, to its extreme limit of travel. Disconnect all wires and remove the six bolts holding the chassis to the sliding tracks. Remove the drawer.

Step 5. Remove the nine screws, holding each of the two tracks, of Power Supply PP-2222/WRT, to the cabinet frame and remove the tracks. (Four of the set screws are located above the rail and five screws are located below the track.)

Step 6. Disconnect the rear section of the cabinet by removing the two top bolts and the 40 nut and bolt assemblies holding the rear section in place.

Step 7. Lower all the component parts of Transmitter Group OA-2175/WRT-2 through the 25 inch hatch.

Step 8. Transport all the components to a point near the final location.

Step 9. Reassemble Transmitter Group OA-2175/WRT-2 at its final location by reversing steps one, two, three and six. Do not install Power Supply PP-2222/WRT and Radio Frequency Amplifier AM-2121/WRT-2 at this time.

Step 10. Locate the terminal junction box at the bottom rear of Electrical Equipment Cabinet CY-2558/WRT-2.

Step 11. Detach the terminal junction box from the cabinet.

Note

The terminal junction box is attached to two stud bars by means of eight nuts (four per stud bar). The stud bars are held to the cabinet by eight nuts (four per stud bar). When final installation makes the terminal junction box inaccessible from the rear, it should be left fastened to the stud bars, and the assembly should be removed by removing the eight nuts which hold the stud bars to the cabinet and are therefore located inside the cabinet. When the terminal junction box is accessible from the rear, it should be removed from the stud bars and the stud bars should be left fastened to the cabinet.

Step 12. Refer to figure 2-2 and disconnect terminal boards TB101A and TB101B mounted in the terminal junction box.

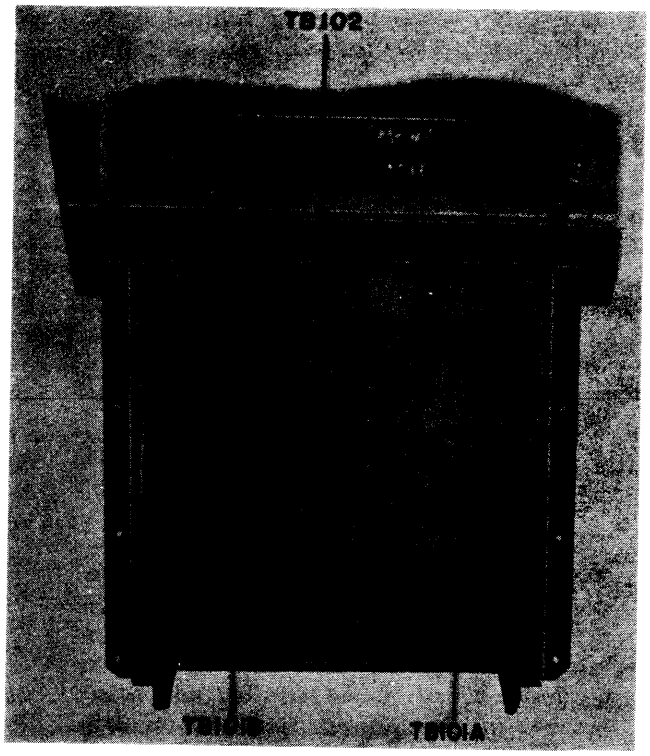
Step 13. Remove protective cover from TB102 and disconnect the three leads.

Note

The external cables may be brought into Electrical Equipment Cabinet CY-2558/WRT-2 either through the rear or through the bottom of the terminal junction box, preferably through the rear. The distribution and size of cable entrance holes should be determined in accordance with the size of the cables shown on the interconnection diagram, figure 2-8. Allow sufficient slack in the cables to compensate for transmitter deflection. Stuffing tubes cannot be used.

Step 14. Drill all the necessary holes for the entrance of external cables into the junction box.

Step 15. Move the junction box to its approximate installed position and insert all interconnecting wires and cables to associated units through the holes drilled in step 14.



Figur 2-2. Electrical Equipment Cabinet CY-2558/WRT-2, Terminal Junction Box

Step 16. Refer to the interconnection diagram, figure 2-8, and determine the necessary cables. Determine the exact distance from Radio Frequency Tuner TN-342/WRT-2 to Transmitter Group OA-2175/WRT-2, Radiophone Unit 23400 and Radio, Modulator 1B plus T-1 MD-168/UX and to the antenna. Determine and obtain the length of each cable. (Cables to be supplied by installing activity.)

Step 17. Place the cables in their final position and introduce one end of each cable through the holes drilled in step 14.

Step 18. Fabricate cable connectors P101, P102, P103 and P104 to the end of the multiconductor and coaxial cables (introduced into the terminal junction box) as described in paragraph 2-4*b*. Also fabricate cable connector P3301 to the other end of the multiconductor cable shown in figure 2-8.

b. CABLE ASSEMBLY.

(1) The fabrication of multiconductor and coaxial cables to connectors should follow the procedures in Electronic Installation Practices Manual, NAVSHIPS 900171, chapters 5 and 10. Also, reference should be made to Armed Services Index of R. F. Transmission Lines and Fittings, NAVSHIPS 900-102B. *When determining cable lengths, allowances should be made for sufficient slack in cable runs to prevent damage from shock or vibration.* All cable runs should be kept as short as possible to prevent excessive voltage drop and noise pick-up in cabling. Some of the interconnecting cables to Transmitter Group OA-2175/WRT-2 are connected directly to terminal boards in the junction box at the rear of Electrical Equipment Cabinet CY-2558/WRT-2. To prepare this type of multiconductor cable for termination, proceed as follows:

Step 1. Determine the maximum radius to which the conductors are to be fanned out by measuring the distance from the cable to the remotest terminals on terminal boards TB101A and TB101B.

Step 2. Cut away the neoprene jacket (and armor) to the fanning radius plus approximately three quarters of an inch.

Step 3. Cut away the cloth jacket enclosing each conductor and dielectric for a distance of approximately three inches from the end of the conductor.

Step 4. If a metallic braid exists betwen the dielectric and cloth jacket, comb the braid as far back as the jacket. Twist the strands of the braid into a round conductor, and terminate it in a solder lug. If there is an insufficient number of ground terminals for individually connecting each lug, solder two of the conductors to a common lug. Cut back about one inch of the exposed conductor, being careful not to nick the inner conductor. Terminate the inner conductor with a solder lug.

c. INSTALLATION SEQUENCE.

(1) TRANSMITTER GROUP OA-2175/WRT-2 and mounting MT-2170/WRT or mounting MT-2170A/WRT. To install Transmitter Group OA-2175/WRT-2 and Mounting MT-2170/WRT or Mounting MT-2170A/WRT refer to figure 2-7 or 2-7A and proceed as follows:

Note

Allow a minimum of ½ inch clearance on all sides, back, and top of Electrical Equipment Cabinet CY-2558/WRT-2 for shockmount deflection.

Step 1. Refer to figure 2-7 for mounting MT-2170/WRT or to figure 2-7A for mounting MT-2170A/WRT and install the equipment as recommended.

Note

Do not weld the mounting to the deck or bulkhead.

Step 2. Check and make sure the lockout has been disengaged and that the transmitter is freely supported by the shockmounts.

Step 3. Remove the protective packing from all controls and meters on the front panels of Transmitter Group OA-2175/WRT-2.

Step 4. Place EMERGENCY STOP switch, on Power Supply PP-2222/WRT, in the OFF position.

Step 5. Pull out Radio Frequency Amplifier AM-2121/WRT-2 and remove the center plate on top of the drawer. Remove the two blocks which have been installed at the factory to protect vacuum capacitors C836 and C837 during shipment. Replace the cover plate and push the drawer back into the cabinet.

(2) RADIO FREQUENCY TUNER TN-342/WRT-2.

(*a*) Figure 2-1 is an outline drawing of Radio Frequency Tuner TN-342/WRT-2. Reference to figure 2-1 should be made in the installation procedure described in the following steps. Radio Frequency Tuner TN-342/WRT-2 may be installed in a horizontal or vertical position. In either case the pressurizing valve and pressure meter must be accessible at all times. After selecting the site as described in paragraph 2-3 of this section, transport the tuner to the installation site and proceed in the following manner.

Step 1. Taking into consideration the limitations described in paragraph 2-3, refer to figure 2-1 and draw an outline of Radio Frequency Tuner TN-342/WRT-2 on the deck or bulkhead. Mark the location of each hole to be drilled.

Step 2. Drill and tap 16-½ inch holes at the places marked in step 1.

Step 3. Using the 16 bolts supplied with the equipment secure Radio Frequency Tuner TN-342/WRT-2 to the deck or bulkhead.

Step 4. Attach one end of the grounding strap, supplied with the equipment, to the ground stud shown in figure 2-1. Connect the other end of the strap to a clean unpainted portion of the superstructure.

(*b*) After Radio Frequency Tuner TN-342/WRT-2 is installed, it must be pressurized. For this purpose the following equipment and materials are required:

one No. 3 bottle of pre-purified nitrogen (or equivalent), a single stage regulator (No. 10 for use with pre-purified nitrogen), and 30 feet of number 9587 air hose ¼ inch inside diameter and ⅝ inch outside diameter (Shrader and Son, Brooklyn 17, N. Y.). The hose must be fitted with a Shrader 5495 air chuck (for ¼ inch inside-diameter hose) on one end and a Shrader No. 7643 female coupling on the other end.

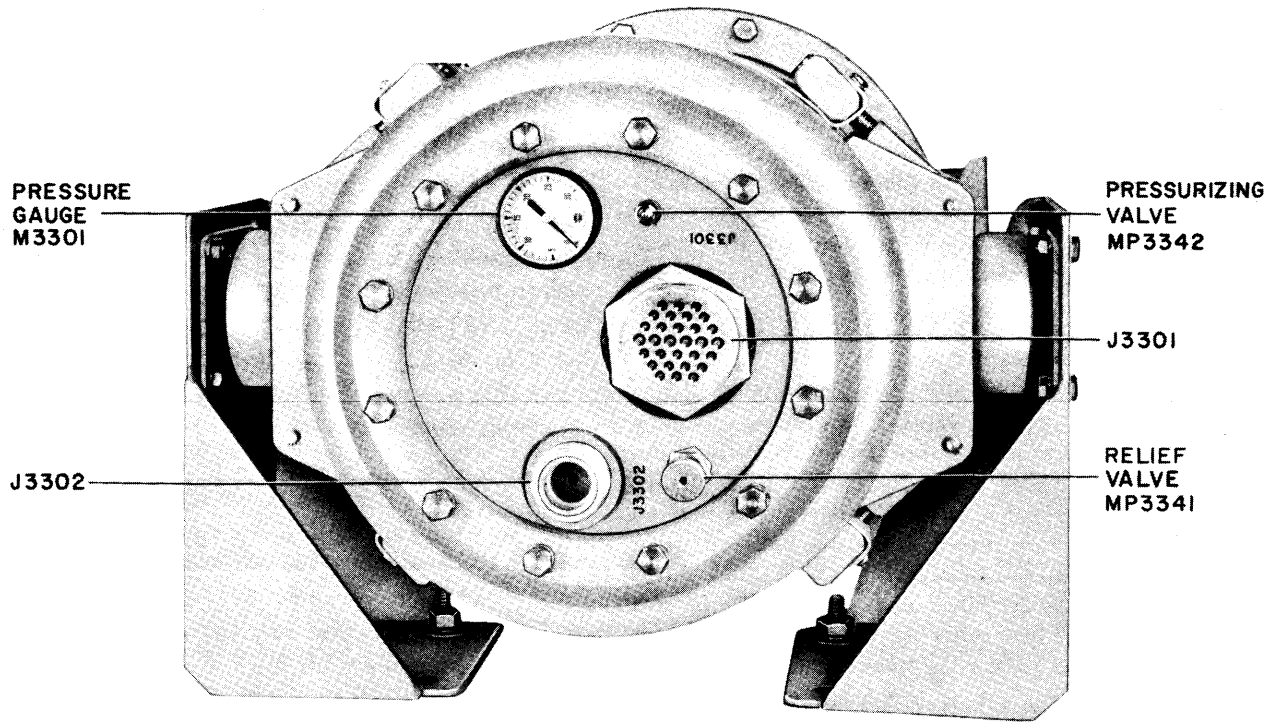


Figure 2-3. Radio Frequency Tuner TN-342/WRT-2, Pressurizing Adjustments

After obtaining these materials, refer to figure 2-3 and proceed in the following manner:

Step 1. Check Radio Frequency Tuner TN-342/WRT-2 and make sure there are no loose connections, nuts, bolts, etc.

Step 2. Refer to figure 2-3, and open relief valve MP3341.

Step 3. Attach the regulator to the nitrogen bottle and adjust it to 25 psi.

Step 4. Connect the female coupling, attached to No. 9587 hose, to the regulator coupling.

Step 5. Refer to figure 2-3 and connect the air chuck (attached to the other end of No. 9587 hose) to pressurizing valve MP3342.

Step 6. Flush Radio Frequency Tuner TN-342/WRT-2 for 30 seconds at 25 psi. (This step purges the tuner of air).

Step 7. Remove the air chuck from pressurizing valve MP3342.

Step 8. Close relief valve MP3341.

Step 9. Reconnect the air chuck to pressurizing valve MP3342.

Step 10. Observe the pressure reading on pressure gauge M3301.

Step 11. When pressure gauge M3301 indicates 25 psi, remove the air chuck from the pressurizing valve.

Step 12. Release nitrogen through relief valve MP3341 until pressure gauge M3301 indicates 20 psi.

Step 13. Close relief valve MP3341.

Step 14. Check Radio Frequency Tuner TN-342/WRT-2 for leakage by observing pressure gauge M3301. If leakage is noted, inform maintenance personnel.

CAUTION

BEFORE MAKING INTERCONNECTIONS, MAKE SURE THAT EMERGENCY STOP SWITCH S201 ON THE FRONT PANEL OF POWER SUPPLY PP-2222/WRT IS IN ITS OFF POSITION.

d. INTERCONNECTION.

(1) Figure 2-8 at the end of this section is an interconnection diagram showing the cables which connect Transmitter Group OA-2175/WRT-2 to the units that

work in conjunction with this equipment. Cable clamps should be used at all locations where there is undue strain on the connections. Interconnecting cables should be enclosed in a conduit whenever practical. Reference should be made to the Electronic Installation Practices Manual, NAVSHIPS 900171, chapter 9 for general interconnection instructions. After cable connectors and the multiconductor cables have been fabricated as directed in paragraph 2-4*b* in this section, refer to the interconnection diagram, figure 2-8, and proceed in the following manner:

Step 1. Refer to figure 2-2 and reconnect terminal boards TB101A and TB101B, to the junction box.

Step 2. Refer to figure 2-8 and attach the fanning strip portion of the incoming cable to the corresponding terminals on TB101A and TB101B and the fanning strip at the other end of the cable to Radiophone Unit 23400 and to Radio, Modulator 1B plus T-1 MD-168/UX.

Step 3. Connect the three power supply leads to TB102.

Step 4. Refer to the wiring diagram of Electrical Equipment Cabinet CY-2558/WRT-2, figure 6-47, and check to see if all wires and cables between all drawers (excluding the bottom drawer), and terminal junction box are reconnected.

Step 5. Attach Power Supply PP-2222/WRT to its sliding tracks in Electrical Equipment Cabinet CY-2558/WRT-2 and also reinstall Radio Frequency Amplifier AM-2121/WRT-2.

Step 6. Reconnect all wiring to the chassis and push the drawer back into the cabinet.

Step 7. Attach the junction box to Electrical Equipment Cabinet CY-2558/WRT-2.

Step 8. Connect the interconnecting cable plugs P101, P102, P103 and P104 to the respective jacks. These jacks are located at the rear of Electrical Equipment Cabinet CY-2558/WRT-2 just above the junction box as shown in figure 2-7.

2-5. INSPECTION AND ADJUSTMENTS.

a. GENERAL INSPECTION. — Before inspecting the equipment of Radio Transmitting Set AN/WRT-2 make sure that EMERGENCY STOP switch on the front panel of Power Supply PP-2222/WRT is in the OFF position. Then make a visual inspection of all the units of Radio Transmitting Set AN/WRT-2 as follows:

Step 1. Inspect all incoming and outgoing lines for proper terminal placement and secure connections.

Step 2. Examine all terminal boards for signs of solder or other foreign material that could cause shorts.

Step 3. Check cables and make sure they are in their proper receptacles.

Step 4. Examine all external switches and controls for signs of damage. Make sure all indicating meters and controls have no broken glass covers or any other signs of damage.

Step 5. Check all indicator lamps and make sure they are intact.

Step 6. Check all tubes for signs of damage, for proper location and for secure seating in their sockets.

Step 7. Open each drawer to its full length of travel and then close it. There must be no undue binding or sticking.

Step 8. Close all five drawers, and secure them.

b. LINE FUSES AND PRIMARY POWER TERMINATIONS.—Radio Transmitting Set AN/WRT-2 may be operated from either a 115-volts, a 220-volts, or a 440-volts 3-phase, 60-cps, power supply. Primary power connections and line fuses must therefore be adjusted. To perform the adjustments proceed as follows:

Step 1. Pull out Amplifier-Power Supply AM-2122/WRT-2 (fourth drawer from the top).

Step 2. On the front panel of the drawer observe the current values for fuses F501, 155-volts 5A; F502, 115-volts 3A, F503, 115-volts 5A; F504, 24-volts 4A and F505, 12-volts 2A. For sets serials 1 to 263 these fuses are the pop-up type; for sets serials 264 and up they are the indicator lamp type.

Step 3. Check to make sure that the value of the fuses corresponds to the values noted in step 2. If fuses are missing select from the set of fuses supplied with the equipment five fuses with the values noted in step 2 and proceed with steps 4 and 5. If fuses are installed, check their values and omit steps 4 and 5.

Step 4. Insert the five fuses in the proper fuse clips on the back of the front panel according to the values shown on the front panel.

Step 5. Refer to figure 2-4 and from the fuses supplied with the equipment insert the four spare fuses according to the values stamped next to each fuse clip.

Step 6. Determine the ship's supply voltage.

Step 7. Refer to figure 2-4, and on the righthand side of the drawer locate the cover board stamped CAUTION 440 VAC INPUT POWER ADJUSTMENTS.

Step 8. Remove the top board by loosening the two screws and expose terminal board E506.

Step 9. On E506 connect the link in the manner indicated by the voltage stenciled between the terminals and according to the particular supply voltage.

Step 10. Replace the cover board and tighten the screws.

Step 11. Push the drawer back into the cabinet.

Step 12. Pull out Power Supply PP-2222/WRT.

Step 13. Refer to Table 2-1 and figure 2-5 and determine the fuse rating for fuses F201, F202, F203, F205 and F206, as dictated by the ship's supply voltage.

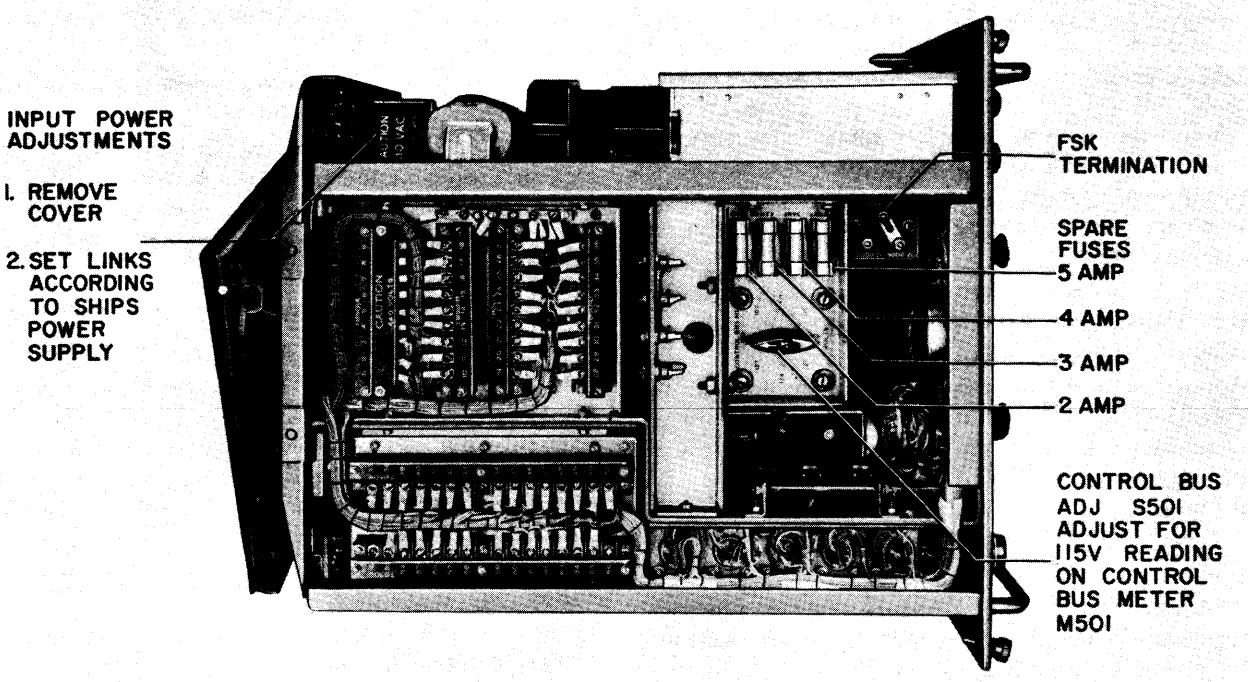
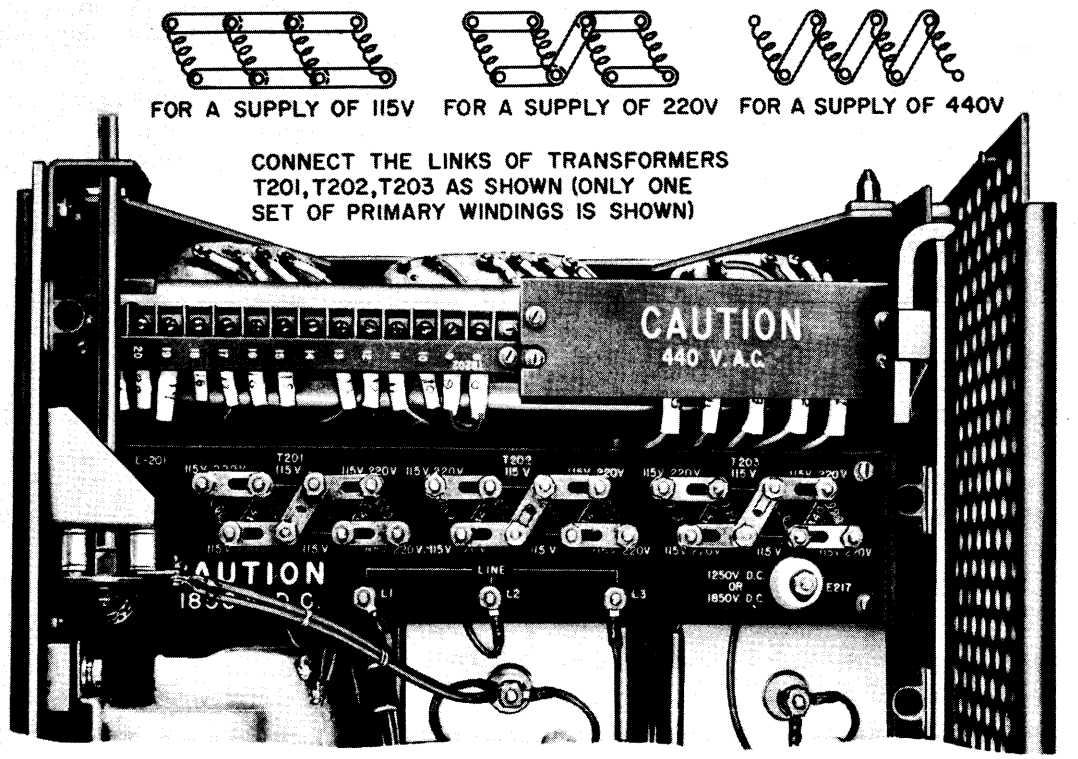


Figure 2-4. Amplifier-Power Supply AM-2122/WRT-2, Electrical Adjustments and Location of Spare Fuses



Figur 2-5. Power Supply PP-2222/WRT, P w r Input Adjustments

TABLE 2-1. FUSE CURRENT RATING VERSUS LINE VOLTAGE

FUSE SYMBOL	LINE VOLTAGE		
	115V	220V	440V
F201	12A	6A	3A
F202	12A	6A	3A
F203	12A	6A	3A
F205	20A	10A	5A
F206	20A	10A	5A

Step 14. From the set of fuses supplied with the equipment select the seven line fuses (five active and two spares) of the rating determined from Table 2-1.

Step 15. Insert the seven fuses in the proper fuse clips located on the back of the front panel of Power Supply PP-2222/WRT as shown in figure 2-5.

Note

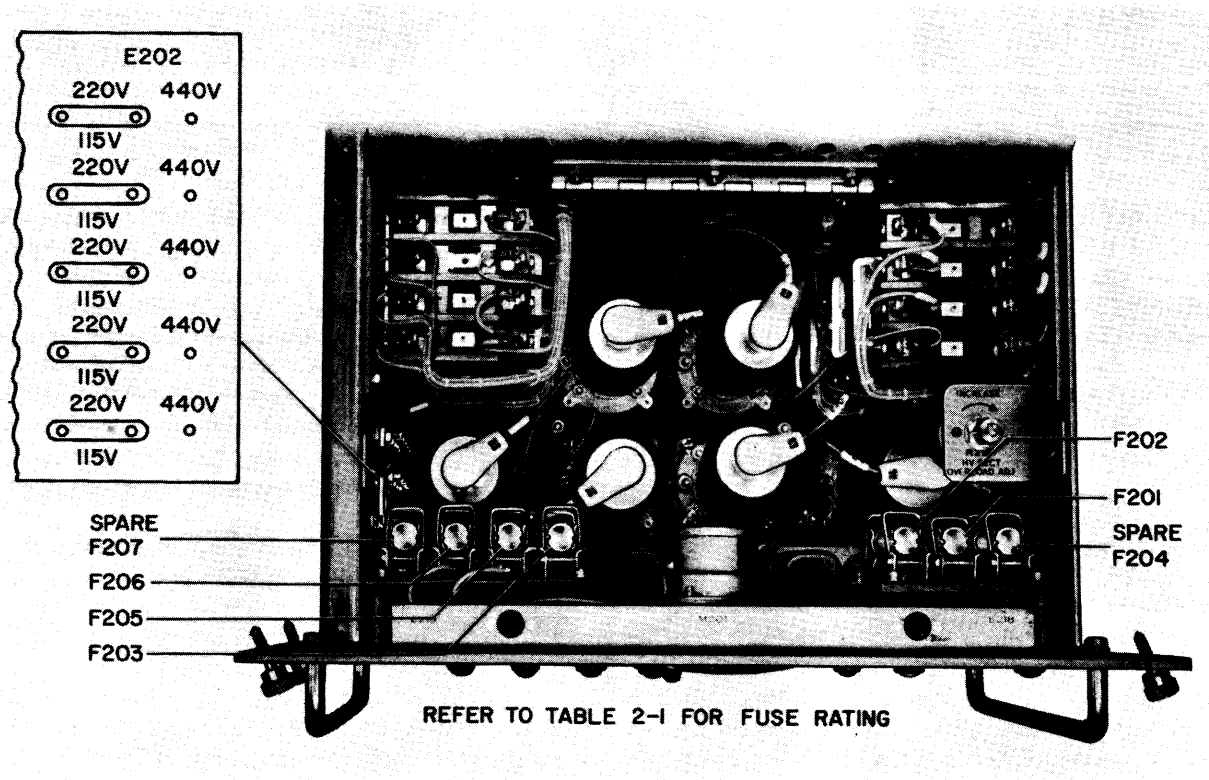
The fuse warning indicating lamp circuit must also be set according to the ship's supply voltage. The adjustment for the indicating lamp circuit is located on board E202. E202 is mounted on the left side of Power Supply PP-2222/WRT near the front of the drawer as shown in figure 2-5.

Step 16. Refer to figure 2-6 and locate the link connections on board E202 according to the ship's supply.

Step 17. Refer to figure 2-5 and locate interconnection boards E201 on top of Power Supply PP-2222/WRT toward the rear of the drawer.

Step 18. Connect the links on E201 as shown in figures 2-6, 5-47 and 6-29 according to the voltage supplied. Link positions are stenciled on the board for each of the three possible supply voltages.

Step 19. Push the drawer containing Power Supply PP-2222/WRT back into the cabinet to its extreme travel limit.



Figur 2-6. P wer Supply PP-2222/WRT, P wer Input Connections and Fuse L cations

c. OPERATIONAL TESTS AND ADJUSTMENTS.

—After performing all steps described in paragraphs 2-4, 2-5*a* and 2-5*b*, certain operational tests and adjustments must be performed before the equipment is turned over to the operating personnel. These tests and adjustments, described in the following paragraphs, must also be performed after the equipment has been repaired or has been out of service for an extended period of time. If the performance of Radio Transmitting Set AN/WRT-2 is other than that described in the following paragraphs, maintenance personnel should be informed.

Step 1. Refer to figures 3-1 through 3-5 and set the controls on the front panels of Radio Transmitting Set AN/WRT-2 as listed in Table 2-2.

TABLE 2-2. OPERATIONAL TESTS CONTROL SETTINGS

CONTROL NAME	SYMBOL	CONTROL LOCATION	CONTROL POSITION
EMERGENCY STOP	S201	Power Supply PP-2222/WRT	OFF
FILAMENT POWER	S502	Amplifier-Power Supply AM-2122/WRT-2	OFF
POWER SELECTOR	S510		ADJ
EMISSION SELECTOR	S508		CW
REMOTE-LOCAL	S507		LOCAL
6 WIRE REMOTE-2 WIRE REMOTE	S509		6 WIRE
OVEN	S304	(Inside drawer) Radio Frequency Oscillator O-581/WRT-2	ON
FSK TEST	S309		LINE
CARRIER REINSERT SET TO CORRESPOND WITH EMISSION SELECTOR	S1201		CW
CARRIER TEST KEY	S812	Radio Frequency Amplifier AM-2121/WRT-2	OFF
TUNER CONTROL	S810		TUNER IN

Step 2. Energize the three-phase line to Radio Transmitting Set AN/WRT-2.

Step 3. On Power Supply PP-2222/WRT place EMERGENCY STOP switch S201 in the ON position.

Step 4. Observe OVEN HEATERS lamp DS301 located on the front panel of Radio Frequency Oscillator O-581/WRT-2 and OVEN HEATERS lamp DS601 located on the front panel of Electrical Frequency Control C-2764/WRT-2. Both lamps should be glowing.

Step 5. On the front panel of Amplifier Power Supply AM-2122/WRT-2 place FILAMENT POWER switch S502 in the ON position. FILAMENT POWER ON indicator lamp DS502 should be glowing.

Step 6. Check the operation of the interlock switches for each of the five drawers by withdrawing and closing each drawer. As each drawer is withdrawn, DOOR INT indicating lamp DS501, on the front panel of Amplifier-Power Supply AM-2122/WRT-2 should cease to glow. However when the drawer is pushed back into Electrical Equipment Cabinet CY-2558/WRT-2, DOOR INT indicating lamp DS501 should glow. Also check the operation of the interlock switches manually by pulling the interlock actuating bolt to the test (pulled out) position. Observe DOOR INT indicating lamp DS501. DS501 should be glowing while the acuating bolt is in test position.

Step 7. On the front panel of Amplifier-Power Supply AM-2122/WRT-2 observe CONTROL BUS meter M501. The meter should indicate 115 volts. If meter M501 indicates more or less than 115 volts, proceed to step 8. If the meter indicates 115 volts omit steps 8, 9, 10 and 11.

Step 8. Pull out the drawer containing Amplifier-Power Supply AM-2122/WRT-2 and place the interlock actuating bolt in the test (pulled out) position.

Step 9. On the top of the drawer locate CONTROL BUS switch S501. (See figure 2-4.)

Step 10. If meter M501 indicates more than 115 volts, place switch S501 in the next lower position until meter M501 indicates 115 volts. If M501 indicates less than 115 volts, place switch S501 in the next higher position until M501 indicates 115 volts or the nearest indication to 115 volts.

Step 11. Push the drawer containing Amplifier-Power Supply AM-2122/WRT-2 back into the cabinet.

Step 12. Check the settings of +350V OL. ADJ potentiometer R502 and that of −350V OL. ADJ potentiometer R504 as outlined in paragraph 6-2*c*(3) in Section 6 of this technical manual.

Step 13. Check the setting of +250V DC ADJUST potentiometer R332 as outlined in paragraph 6-2*d*(6) in Section 6 of this technical manual.

Step 14. Refer to paragraph 6-2*b* in Section 6 of this handbook, and check the adjustment of HV RECT OVERLOAD ADJ potentiometer R218.

Step 15. Refer to paragraph 6-2*f*(4) in Section 6 of this handbook and check the adjustment of PA OVLD SET potentiometer R864. (SET A for sets serials 264 and up).

Step 16. Check the settings of SWR RELAY ADJUST potentiometer R927, TRIP ADJUST potentiometer R928 (and for sets serials 264 and up CATHODE CURRENT OVLD SET R895 and PA OVLD SET B Potentiometer R896) as outlined in paragraph 6-2*f* (6) in Section 6 of this handbook. During the checks in steps 14, 15 and 16 observe that H.V. OVERLOAD indicator DS208 and HV OVERLOAD PUSH TO RESET indicator DS801 glow when any circuit is tripped. Also check to verify that HV OVERLOAD PUSH TO RESET SWITCH S804, L. V. RECT OVLD RESET switch S505 and OVERLOAD RESET switch S203 reset the circuit and extinguish the overload indicators.

Step 17. On Radio Frequency Amplifier AM-2121/WRT-2 disconnect P182 from J802 and attach T-adapter, UG-566/U to J802. Connect a 500 watt dummy load (Bird Electronics Corp. Model 62A or Equivalent) to one end of the T-adapter.

Step 18. Refer to Section 3 (Operators Section) and tune Transmitter Group OA-2175/WRT-2 for CW emission at an output frequency of 2.0 mc.

Step 19. Place POWER SELECTOR switch S510 on Amplifier Power Supply AM-2122/WRT-2 in the 500W position.

Step 20. Place TEST VOLTMETER switch S803 in the LV SUPPLY (500V) position. TEST VOLTMETER M803 should indicate 315 to 385 volts.

Step 21. Place TEST VOLTMETER switch S803 in the GRID BIAS (200V) position.

Step 22. Adjust P.A. BIAS CONTROL R914 until TEST VOLTMETER M803 indicates 46-54 volts.

Step 23. Place TEST VOLTMETER switch S803 in the PLATE SUPPLY (2 KV) position. TEST VOLTMETER M803 should indicate 1810 to 1890 volts.

Step 24. Place TEST AMMETER switch S801 in the P.A. NEG. SCREEN CURRENT position. TEST AMMETER M801 should indicate approximately −15 ma.

Step 25. Place TEST AMMETER switch S801 in the DRIVER CATHODE (150 MA) position. TEST AMMETER M801 should indicate approximately +45 ma.

Step 26. Place TEST AMMETER switch S801 in the P.A. POS. SCREEN CURRENT position. TEST AMMETER M801 should indicate below zero.

Step 27. Place P.A. CATHODE CURRENTS switch S802 first in 1, then in 2, 3, and 4 position. In each position P.A. CATHODE CURRENTS meter M802 should indicate 185 to 195 ma.

Step 28. Place P.A. CATHODE CURRENTS switch S802 in the TOTAL position.

Step 29. Adjust P.A. BIAS CONTROL R914 for a 520 ma reading on P.A. CATHODE CURRENTS meter M802.

Step 30. Adjust DRIVE ADJUST potentiometer R986 until P.A. CATHODE CURRENTS meter M802 indicates between 750 and 780 ma.

Step 31. Place POWER SELECTOR switch S519 on Amplifier-Power Supply AM-2122/WRT-2 in the 100W position.

Step 32. Place TEST VOLTMETER switch in the GRID BIAS (200V) position.

Step 33. Adjust P.A. BIAS CONTROL R914 until TEST VOLTMETER M803 indicates 50 to 60 volts.

Step 34. Place TEST VOLTMETER switch S803 in the PLATE SUPPLY (2KV) position. TEST VOLTMETER M803 should indicate 1250 to 1350 volts.

Step 35. Place TEST AMMETER switch S801 in the P.A. NEG. SCREEN CURRENT position. TEST AMMETER M801 should indicate 13 to 17ma.

Step 36. Place TEST AMMETER switch S801 in the DRIVER CATHODE (150 MA) position. TEST AMMETER M801 should indicate 53 to 63 ma.

Step 37. Place TEST AMMETER switch S801 in the P.A. POS. SCREEN CURRENT position. TEST AMMETER M801 should indicate below zero.

Step 38. Place P.A. CATHODE CURRENTS switch S802 first in 1, then in 2, 3, and 4 position. In each position P.A. CATHODE CURRENTS meter M801 should indicate between 135 and 145 ma.

Step 39. Place P.A. CATHODE CURRENTS switch S802 in the TOTAL position.

Step 40. CATHODE CURRENTS meter M802 should indicate between 540 and 580 ma.

Step 41. Repeat steps 19 through 40 with an output frequency of 7.5 mc.

Step 42. Repeat steps 19 through 40 with an output frequecy of 8 mc.

Step 43. Repeat steps 19 through 40 with an output frequency of 30 mc.

Step 44. Place EMISSION SELECTOR switch S508 in the ISB position and SIDEBAND SELECTOR R1208 control to DUAL position.

Step 45. Refer to Section 3 of this manual and tune Radio Transmitting Set AN/WRT-2 for 2.0 mc output frequency.

Step 46. Place POWER SELECTOR switch S510 in the 500W position.

Step 47. Place TEST TONE switch S511 in the USB, LSB position.

Step 48. Set USB MOD LEVEL DIRECT control R1475 for a reading of −3 db on MOD LEVEL meter M502.

Step 49. Set LSB MOD LEVEL DIRECT control R1476 for a reading of −3 db on MOD LEVEL meter M502.

Step 50. Adjust DRIVE ADJUST control R986 for a reading of 500 watts on R-F OUTPUT meter M805.

Step 51. Repeat steps 20 through 40.

Step 52. Place SIDEBAND SELECTOR control R1208 in LOWER position and repeat steps 45 through 51.

Step 53. Place POWER SELECTOR switch S510 in 100W position and adjust the power output for 100 watts minimum.

Step 54. Repeat steps 45 through 51 for an output frequency of 7.5 mc with TEST TONE switch S511 in the LSB position.

Step 55. Repeat steps 45 through 51 for an output frequency of 8 mc with TEST TONE switch S511 in the USB position.

Step 56. Repeat steps 45 through 51 for an output frequency of 30 mc with TEST TONE switch S511 inserted first in the LSB position and then in the USB position.

Step 57. Place POWER SELECTOR switch S510 in the 500W position.

Step 58. On the front panel of Amplifier-Power Supply AM-2122/WRT-2 place EMISSION SELECTOR switch S508 in the AM position.

Step 59. Refer to Section 3 of this handbook and tune up Radio Transmitting Set AN/WRT-2 for an output frequency of 2.0 mc.

Step 60. Place TEST TONE switch S511 in the USB position.

Step 61. Place OUTPUT METER switch S815 in R-F OUTPUT position and adjust DRIVE ADJUST control R986 for a reading of 330 watts on R-F OUTPUT meter M805.

Step 62. Adjust USB MOD LEVEL DIRECT control R1476 for a reading of 500 watts on R-F OUTPUT meter M805.

Step 63. On Amplifier-Power Supply PP-2122/WRT-2 press USB MOD LEVEL switch S512. MOD LEVEL meter M502 should indicate −3 db.

Step 64. On Radio Frequency Amplifier AM-2122/WRT-2 place OUTPUT METER switch S815 in the % MOD position. R-F OUTPUT meter M505 should indicate between 95 and 100%.

Step 65. Repeat steps 20 to 30.

Step 66. Repeat steps 60 to 65 for an output frequency of 30 mc.

Step 67. On Amplifier-Power Supply AM-2122/WRT-2 place POWER SELECTOR switch S510 in the 100W position and EMISSION SELECTOR control S508 in the AM position.

Step 68. Place TEST TONE switch S511 in the USB position.

Step 69. Adjust DRIVE ADJUST control R986 for a minimum reading of 67 watts on R-F OUTPUT meter M805.

Step 70. Adjust USB MOD LEVEL DIRECT control R1476 for a reading of 100 watts on R-F OUTPUT meter R805.

Step 71. Repeat steps 32 through 40 at 30 mc.

Step 72. Place EMISSION SELECTOR switch S508 in the FSK position.

Step 73. Place CARRIER REINSERT switch S1201 in the FSK, ISB ($-\infty$) position.

Step 74. Place FSK TEST switch S309 in the MARK position.

Step 75. Repeat steps 18 through 40.

Step 76. Repeat steps 72 through 75 with the transmitter tuned at 30 mc.

Step 77. Place FSK TEST switch S309 on Radio Frequency Oscillator O-581/WRT-2, in the SPACE position, and repeat steps 18 through 40.

Step 78. Repeat steps 18 through 40 with Radio Transmitting Set AN/WRT-2 tuned for 30 mc.

Step 79. Refer to Section 3 of this handbook and tune up Radio Transmitting Set AN/WRT-2 for CW operation at 10 mc.

Step 80. Connect Keying Simulator, Boehme Varispeed Keyer, Type 66-M or equivalent to terminals 5 and 6 of TB101 on Electrical Equipment Cabinet CY-2558/WRT-2.

Step 81. On Amplifier-Power Supply AM-2122/WRT-2 place POWER SELECTOR switch S510 in the 500W position.

Step 82. Place the probe of Oscilloscope AN/USM-24 at the open end of the T-adapter UG-566/U connected in Step 17 to J802 on Radio Frequency Amplifier AM-2121/WRT-2.

Step 83. Key the transmitter between 5 and 40 wpm.

Step 84. Observe the waveform on Oscilloscope AN/USM-24 Series or Equivalent and position it until the center line divides the height of the wave in half.

Step 85. Measure the width of the pulse along the center line. The rise and fall time of the pulse should be symmetrical. The top of the waveform should not be smaller than the width at the center line minus 10%. The base of the waveform should not be wider than the width of the waveform at the center line plus 10%. Likewise the height of the waveform should not vary more than ± 10% of the height of the waveform under locked key conditions.

Step 86. Repeat steps 83 through 85 with POWER SELECTOR switch in the 100W position.

Step 87. Connect a mechanical keyer capable of supplying 0-45V between ground and terminal 18 on TB101 on Electrical Equipment Cabinet CY-2558/WRT-2.

Step 88. Place EMISSION SELECTOR switch S508, in the MACH. CW position.

Step 89. Key the transmitter between 100 and 600 wpm and repeat steps 84 and 85.

Step 90. Repeat step 89 with POWER SELECTOR switch in the 500W position.

Step 91. Place EMISSION SELECTOR switch S508 in the AM position.

Step 92. Place CARRIER REINSERT switch S1201 in the AM, ISB (0db) position.

Step 93. Connect Handset H-169/U to USB HANDSET jack J501 on the front panel of Amplifier-Power Supply AM-2122/WRT-2. Speak into the Handset H-169/U in a normal voice. Listen with a suitable receiver to determine that Radio Transmitting Set AN/WRT-2 radiates a clear intelligible signal.

Step 94. Repeat step 93 with POWER SELECTOR switch S510 in the 100W position.

Step 95. Place EMISSION SELECTOR switch S508 in the ISB position.

Step 96. Connect Handset H-169/U to LSB HANDSET jack J502 on the front panel of Amplifier-Power Supply AM-2122/WRT-2. Speak into the handset in a normal voice. Listen with a suitable receiver to determine that the transmitter radiates a clear, intelligible signal.

Step 97. Disconnect the 500-watt dummy load connected in step 17 and Oscilloscope AN/USM-24 connected in step 82.

Step 98. Remove T-adapter UG-566/U from J802 and reconnect P182 to J802.

Step 99. Push the drawer, containing Radio Frequency Amplifier AM-2121/WRT-2, back into the cabinet and tighten the six fasteners on the front panel.

d. INTERFERENCE REDUCTION. — Transmitter Group OA-2175/WRT-2 has been completely shielded, both externally and internally. If the installation of Radio Transmitting Set AN/WRT-2 is completed according to instructions, no objectionable interference should be evident in the equipment. Noise interference may be encountered from a poor coaxial cable connection. To reduce noise interference, check all coaxial connections and tighten any loose connection.

2-6. PREPARATION FOR RESHIPMENT.

a. DISASSEMBLY. — If Radio Transmitting Set AN/WRT-2 is to be shipped to another location, disassemble the equipment by reversing the installation instructions described in this section.

b. PACKING. — When Radio Transmitting Set AN/WRT-2 is to be packed for reshipment, it should be packed in accordance with the procedure used for shipment of delicate electronic equipment. In the event a qualified packaging and packing facility is not available, the following steps should be taken:

(1) Secure the equipment firmly to prevent movement during shipping.

(2) Wrap each unit with waterproof paper and secure the edges of the paper with waterproof tape.

(3) Cushion all projections.

(4) Set the unit in a properly dimensioned box.

(5) Use corrugated board where necessary to prevent movement or chafing.

(6) Crate and secure the box.

(7) Secure the crate with strap-iron bands in accordance with good shipping practice.

(8) Mark the box and crate indicating top, bottom and face.

(9) Mark the crate containing TRANSMITTER GROUP OA-2175/WRT-2 on all sides: KEEP IN UPRIGHT POSITION AT ALL TIMES.

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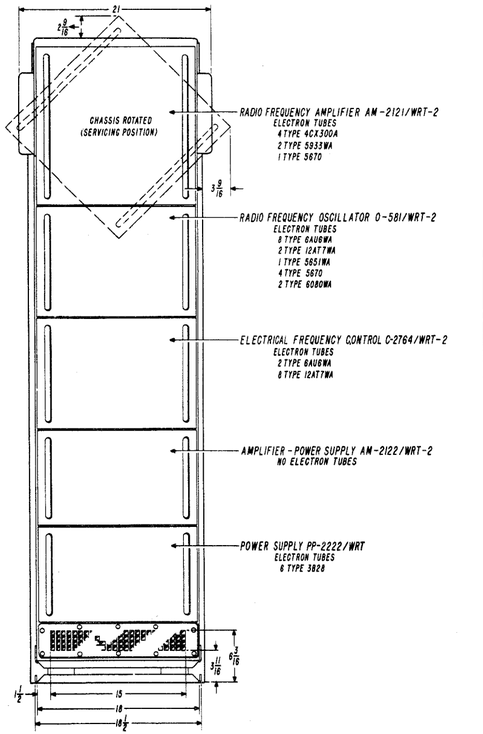
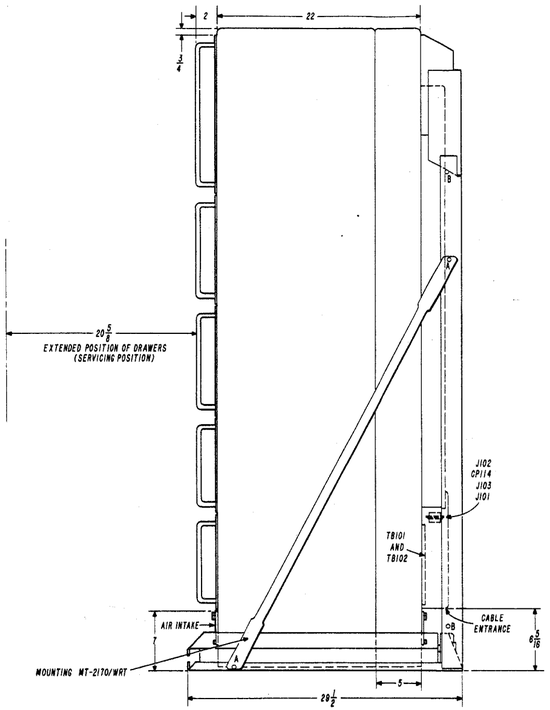
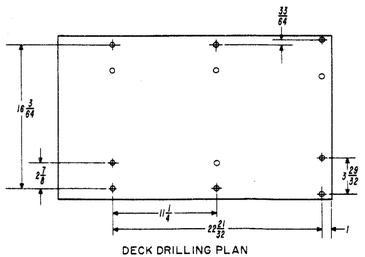


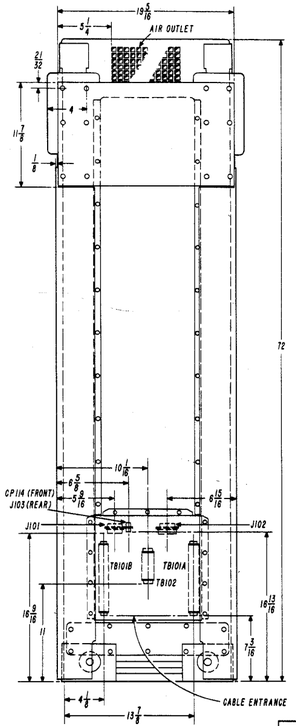
FRONT VIEW



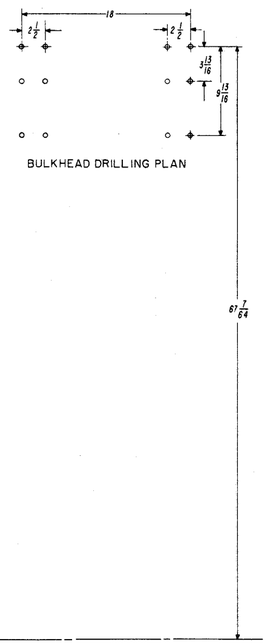
RIGHT SIDE VIEW



DECK DRILLING PLAN



REAR VIEW



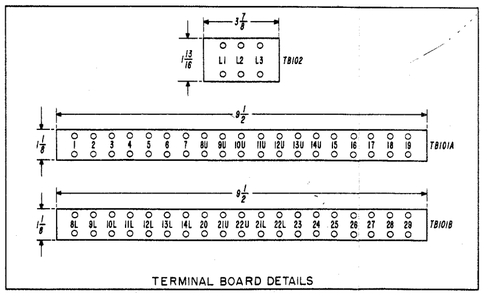
BULKHEAD DRILLING PLAN

RECOMMENDED INSTALLATION PROCEDURE

A. IT IS RECOMMENDED THAT MOUNTING SYSTEM BE COMPLETELY ASSEMBLED AND INSTALLED IN SHIP PRIOR TO TRANSMITTER INSTALLATION.
B. BEGIN MOUNTING SYSTEM ASSEMBLY BY LAYING BASE MOUNT ON DECK. ATTACH SPACER CHANNELS TO REAR OF BASE MOUNT USING 1/4 INCH BOLTS PROVIDED. NOTE THAT FLANGES FACE TOWARD FRONT OF MOUNT.
C. ATTACH STABILIZER TO UPPER END OF SPACER CHANNELS USING 1/4 INCH BOLTS PROVIDED.
D. ALIGNMENT RODS ARE NOW TEMPORARILY INSTALLED AS DIAGONAL BRACE BETWEEN SPACER CHANNELS AND BASE MOUNT. ONE END OF ALIGNMENT ROD ATTACHES TO HOLE "A" IN OUTER FLANGE OF LOWER PORTION OF BASE, OTHER END OF ALIGNMENT ROD ATTACHES TO HOLE "A" IN OUTER FLANGE OF SPACER CHANNELS AND USING 1/4 INCH BOLTS PROVIDED.
E. MOUNTING SYSTEM IS NOW READY TO BE INSTALLED IN SHIP. SLIDE MOUNTING SYSTEM ASSEMBLY INTO POSITION MAKING SURE THAT REAR FACE OF STABILIZER IS IN CONTACT WITH FLAT ATTACHMENT SURFACE ON BULKHEAD. NOTE: BULKHEAD MUST OFFER FLAT UNBROKEN SURFACE FOR ATTACHMENT OF STABILIZER. IF THIS CONDITION DOES NOT EXIST, A 3/8 INCH MINIMUM THICKNESS STEEL PLATE 20 INCHES WIDE BY 12 INCHES HIGH (MINIMUM DIMENSIONS) MUST BE WELDED TO BULKHEAD AND ADEQUATELY SUPPORTED TO SERVE AS MOUNTING SURFACE. SHIMS MUST BE USED IN THE EVENT THE REAR FACE OF THE STABILIZER IS NOT FLUSH WITHIN 1/32 INCH WITH THE BULKHEAD. DO NOT ATTEMPT TO CLOSE UP ANY GAPS BY EXCESSIVE TIGHTENING OF ATTACHMENT BOLTS.
F. TWELVE (12) CLEARANCE HOLES (33/64 INCH DIA.) FOR 1/2 INCH DIAMETER ATTACHMENT BOLTS ARE NOW DRILLED IN DECK USING BASE MOUNT AS DRILL TEMPLATE. DO NOT WELD BASE TO DECK. ALL TWELVE (12) MOUNTING POINTS MUST BE USED. IF DECK IS MINIMUM OF 1/2 INCH STEEL, HOLES MAY BE TAPPED. THINNER DECK PLATES REQUIRE USE OF NUTS AND WASHERS ON UNDERSIDE OF DECK.
G. TWELVE (12) CLEARANCE HOLES (.386 DIA.—W DRILL) FOR 3/8 INCH ATTACHMENT BOLTS ARE NOW DRILLED IN BULKHEAD PLATE USING STABILIZER AS DRILL TEMPLATE. DO NOT WELD STABILIZER TO BULKHEAD. ALL TWELVE (12) MOUNTING POINTS MUST BE USED. IF BULKHEAD IS MINIMUM OF 3/8 INCH THICK STEEL, HOLES MAY BE TAPPED. THINNER BULKHEAD PLATES REQUIRE USE OF NUTS AND WASHERS ON REAR FACE OF BULKHEAD.
H. CHECK TIGHTNESS OF ALL TWENTY-FOUR (24) ATTACHMENT BOLTS.
I. REMOVE ALIGNMENT RODS AND STORE BY BOLTING THEM TO THE INSIDE SURFACE OF THE SPACER CHANNELS USING HOLES "B".
J. THE TRANSMITTER MAY NOW BE INSTALLED AS FOLLOWS: (SEE TRANSMITTER INSTRUCTION MANUAL ALSO.) SET CABINET IN PLACE ON MOUNT. FOUR (4) 1/2—13 UNC-2B TAPPED HOLES ARE PROVIDED IN THE BASE MOUNT FOR ATTACHMENT OF THE TRANSMITTER. IN ADDITION, THERE ARE SIXTEEN (16) 3/8—16 UNC—2B AND TWO (2) 3/4—10 UNC—2B TAPPED HOLES PROVIDED IN THE STABILIZER. ALL HOLES MUST BE USED. REQUIRED BOLT LENGTHS ARE AS FOLLOWS:
   1/2 INCH DIAMETER BOLTS—1 INCH TO 1-1/4 INCH LONG THREADED TO WITHIN 3/8 INCH OF HEAD (4 REQUIRED.) USE FLAT WASHER UNDER HEAD.
   3/4 INCH DIAMETER BOLTS—1-1/4 INCH TO 1-1/2 INCH LONG THREADED TO WITHIN 3/8 INCH OF HEAD (2 REQUIRED.) USE FLAT WASHER UNDER HEAD.
   3/8 INCH DIAMETER BOLTS—1-3/8 INCH TO 1-7/8 INCH LONG THREADED TO WITHIN 3/4 INCH OF HEAD (16 REQUIRED.) USE 9/32 INCH THICK SPACER WASHER UNDER HEAD.
   NOTE: STABILIZER IS EQUIPPED WITH LOCKOUT TO FACILITATE INSTALLATION. LOCKOUT IS AUTOMATICALLY DISENGAGED WHEN PROPER LENGTH BOLTS ARE INSTALLED.
K. WHEN TRANSMITTER HAS BEEN COMPLETELY INSTALLED, CHECK TO MAKE SURE LOCKOUT HAS BEEN DISENGAGED AND TRANSMITTER IS FREELY SUPPORTED BY MOUNTS.
L. THE TRANSMITTER SHOULD BE MOUNTED TO DECK IN SUCH A MANNER THAT THE BOTTOM OF THE MOUNTING IS SUPPORTED OVER ITS ENTIRE SURFACE. IF THE TRANSMITTER IS TO BE MOUNTED UP FROM THE DECK, ON ANGLES, CHANNELS ETC., A 1/2 INCH STEEL BED PLATE SHOULD BE PROVIDED AS A MOUNTING SURFACE. DRILLING ON THE BED SHOULD BE PERFORMED IN ACCORDANCE WITH THE "DECK DRILLING PLAN" SHOWN.

NOTES

1. WEIGHT OF UNIT CRATED — 1130 LBS.
   WEIGHT OF UNIT UNCRATED — 930 LBS. WITHOUT MOUNT (SEE NOTE 6)
   OVERALL DIMENSIONS CRATED (EST.) — 33 X 23 1/2 X 78 1/2
   CUBIC CONTENT CRATED (EST.) — 35.3 CU. FT.
   POWER INPUT — 440/220/115, 3 PHASE, 60 CPS, 2.7 KVA, 85% PF
   HEAT DISSIPATION (EST.) — 1500 WATTS
   AMBIENT TEMPERATURE RANGE — 0°C TO 50°C (32°F TO 122°F)
   ANY RELATIVE HUMIDITY — TO 95%
2. ALLOW 1/2 INCH MINIMUM CLEARANCE ON ALL SIDES, BACK, AND TOP OF TRANSMITTER FRAME FOR SHOCKMOUNT DEFLECTION.
3. THE DISTRIBUTION AND SIZE OF CABLE ENTRANCE HOLES IS DETERMINED BY THE INSTALLING ACTIVITY. STUFFING TUBES CAN NOT BE USED.
4. ALL DIMENSIONS ARE IN INCHES.
5. ULTIMATE DISPLACEMENT OF INSTALLED EQUIPMENT IS .50 IN ALL DIRECTIONS FOR INSTALLATION CLEARANCE DETERMINATION.
6. THE WEIGHT OF THE COMPLETE MOUNTING SYSTEM IS 100 LBS. (EST.)
7. STRUCTURAL MEMBERS ARE STEEL; RESILIENT MEMBERS ARE STAINLESS STEEL.
8. EXTERNAL FINISH: STEEL—GRAY PAINT PER MIL-E-15090, CLASS 2 TYPE III. STAINLESS STEEL—PASSIVATE.



TERMINAL BOARD DETAILS

Figure 2-7. Transmitter Group OA-2175/WRT-2 and Mounting MT-2170/WRT, Outline Drawing

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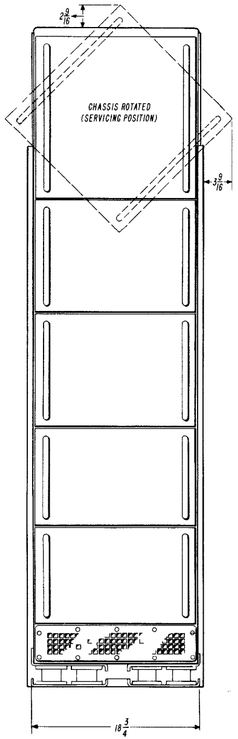
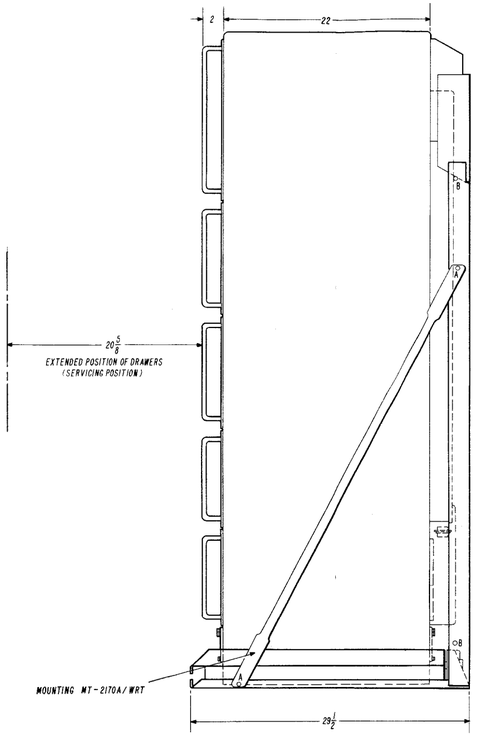
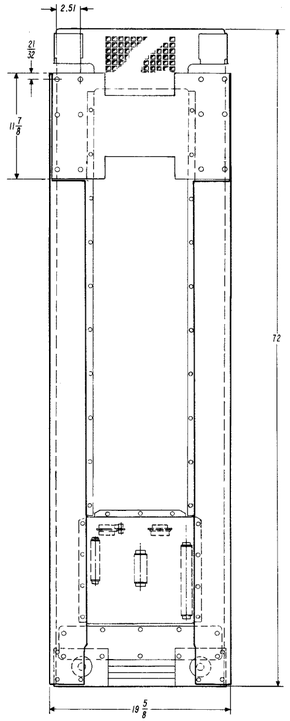


FRONT VIEW



RIGHT SIDE VIEW



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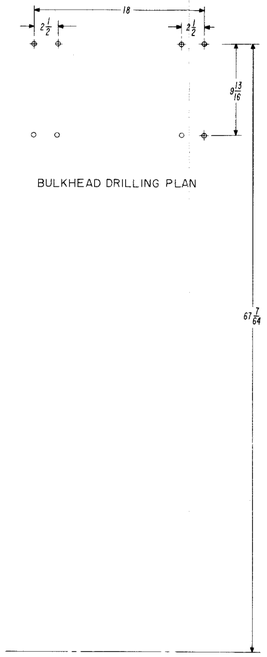
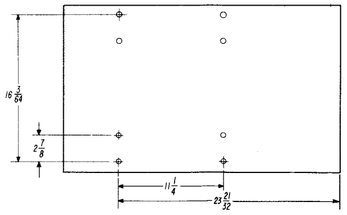


BULKHEAD DRILLING PLAN



DECK DRILLING PLAN

RECOMMENDED INSTALLATION PROCEDURE

A. IT IS RECOMMENDED THAT MOUNTING SYSTEM BE COMPLETELY ASSEMBLED AND INSTALLED IN SHIP PRIOR TO TRANSMITTER INSTALLATION.
B. BEGIN MOUNTING SYSTEM ASSEMBLY BY LAYING BASE MOUNT ON DECK. ATTACH SPACER CHANNELS TO REAR OF BASE MOUNT USING 1/4 INCH BOLTS PROVIDED. NOTE THAT FLANGES FACE TOWARD FRONT OF MOUNT.
C. ATTACH STABILIZER TO UPPER END OF SPACER CHANNELS USING 1/4 INCH BOLTS PROVIDED.
D. ALIGNMENT RODS ARE NOW TEMPORARILY INSTALLED AS DIAGONAL BRACE BETWEEN SPACER CHANNELS AND BASE MOUNT. ONE END OF ALIGNMENT ROD ATTACHES TO HOLE "A" IN OUTER FLANGE OF LOWER PORTION OF BASE, OTHER END OF ALIGNMENT ROD ATTACHES TO HOLE "A" IN OUTER FLANGE OF SPACER CHANNELS USING 1/4 INCH BOLTS PROVIDED.
E. MOUNTING SYSTEM IS NOW READY TO BE INSTALLED IN SHIP. SLIDE MOUNTING SYSTEM ASSEMBLY INTO POSITION MAKING SURE THAT REAR FACE OF STABILIZER IS IN CONTACT WITH FLAT ATTACHMENT SURFACE ON BULKHEAD. NOTE: BULKHEAD MUST OFFER FLAT UNBROKEN SURFACE FOR ATTACHMENT OF STABILIZER. IF THIS CONDITION DOES NOT EXIST, A 3/8 INCH MINIMUM THICKNESS STEEL PLATE 20 INCHES WIDE BY 12 INCHES HIGH (MINIMUM DIMENSIONS) MUST BE WELDED TO BULKHEAD AND ADEQUATELY SUPPORTED TO SERVE AS MOUNTING SURFACE. SHIMS MUST BE USED IN THE EVENT THE REAR FACE OF THE STABILIZER IS NOT FLUSH WITHIN 1/32 INCH WITH THE BULKHEAD. DO NOT ATTEMPT TO CLOSE UP ANY GAPS BY EXCESSIVE TIGHTENING OF ATTACHMENT BOLTS.
F. EIGHT (8) CLEARANCE HOLES (33/64 INCH DIA.) FOR 1/2 INCH DIAMETER ATTACHMENT BOLTS ARE NOW DRILLED IN DECK USING BASE MOUNT AS DRILL TEMPLATE. DO NOT WELD BASE TO DECK. ALL EIGHT (8) MOUNTING POINTS MUST BE USED. IF DECK IS MINIMUM OF 1/2 INCH THICK STEEL, HOLES MAY BE TAPPED. THINNER DECK PLATES REQUIRE USE OF NUTS AND WASHERS ON UNDERSIDE OF DECK.
G. EIGHT (8) CLEARANCE HOLES (.386 DIA.—N DRILL) FOR 3/8 INCH ATTACHMENT BOLTS ARE NOW DRILLED IN BULKHEAD PLATE USING STABILIZER AS DRILL TEMPLATE. DO NOT WELD STABILIZER TO BULKHEAD. ALL EIGHT (8) MOUNTING POINTS MUST BE USED. IF BULKHEAD IS MINIMUM OF 3/8 INCH THICK STEEL, HOLES MAY BE TAPPED. THINNER BULKHEAD PLATES REQUIRE USE OF NUTS AND WASHERS ON REAR FACE OF BULKHEAD.
H. CHECK TIGHTNESS OF ALL SIXTEEN (16) ATTACHMENT BOLTS.
I. REMOVE ALIGNMENT RODS AND STORE BY BOLTING THEM TO THE INSIDE SURFACE OF THE SPACER CHANNELS USING HOLES "B".
J. THE TRANSMITTER MAY NOW BE INSTALLED AS FOLLOWS. (SEE TRANSMITTER INSTRUCTION MANUAL ALSO) SET CABINET IN PLACE ON MOUNT. FOUR (4) 1/2-13 UNC-2B TAPPED HOLES ARE PROVIDED IN THE BASE MOUNT FOR ATTACHMENT OF THE TRANSMITTER. IN ADDITION, THERE ARE EIGHT (8) 3/8-16 UNC-2B TAPPED HOLES PROVIDED IN THE STABILIZER. ALL HOLES MUST BE USED. REQUIRED BOLT LENGTHS ARE AS FOLLOWS:
1/2 INCH DIAMETER BOLTS - 1 INCH TO 1 1/4 INCH LONG, THREADED TO WITHIN 3/8 INCH OF HEAD (4 REQUIRED) - USE FLAT WASHER UNDER HEAD.

3/8 INCH DIAMETER BOLTS - 13/8 INCH TO 17/8 INCH LONG, THREADED TO WITHIN 3/4 INCH OF HEAD (16 REQUIRED) - USE 9/32 INCH THICK SPACER WASHER UNDER HEAD.
NOTE: STABILIZER IS EQUIPPED WITH LOCKOUT TO FACILITATE INSTALLATION. LOCKOUT IS AUTOMATICALLY DISENGAGED WHEN PROPER LENGTH BOLTS ARE INSTALLED.
K. WHEN TRANSMITTER HAS BEEN COMPLETELY INSTALLED, CHECK TO MAKE SURE LOCKOUT HAS BEEN DISENGAGED AND TRANSMITTER IS FREELY SUPPORTED BY MOUNTS.
L. THE TRANSMITTER SHOULD BE MOUNTED TO DECK IN SUCH A MANNER THAT THE BOTTOM OF THE MOUNTING IS SUPPORTED OVER ITS ENTIRE SURFACE. IF THE TRANSMITTER IS TO BE MOUNTED UP FROM THE DECK, ON ANGLES, CHANNELS ETC., A 1/2 INCH STEEL BED PLATE SHOULD BE PROVIDED AS A MOUNTING SURFACE. DRILLING ON THE BED SHOULD BE PERFORMED IN ACCORDANCE WITH THE "DECK DRILLING PLAN" SHOWN.

NOTES

1. WEIGHT OF UNIT CRATED — 154 LBS.
WEIGHT OF UNIT UNCRATED — 100 LBS.
OVERALL DIMENSIONS CRATED (EST.) — 3 CARTONS — 32 X 21 X 4, 21 X 15 X 5, 64 X 4 X 4
CUBIC CONTENT CRATED (EST.) — 4.4 CU. FT.
2. ALLOW 1/2 INCH MINIMUM CLEARANCE ON ALL SIDES, BACK, AND TOP OF TRANSMITTER FRAME FOR SHOCKMOUNT DEFLECTION.
3. ALL DIMENSIONS ARE IN INCHES.

Figure 2-7A. Mounting MT-2170A/WRT, Installation Diagram

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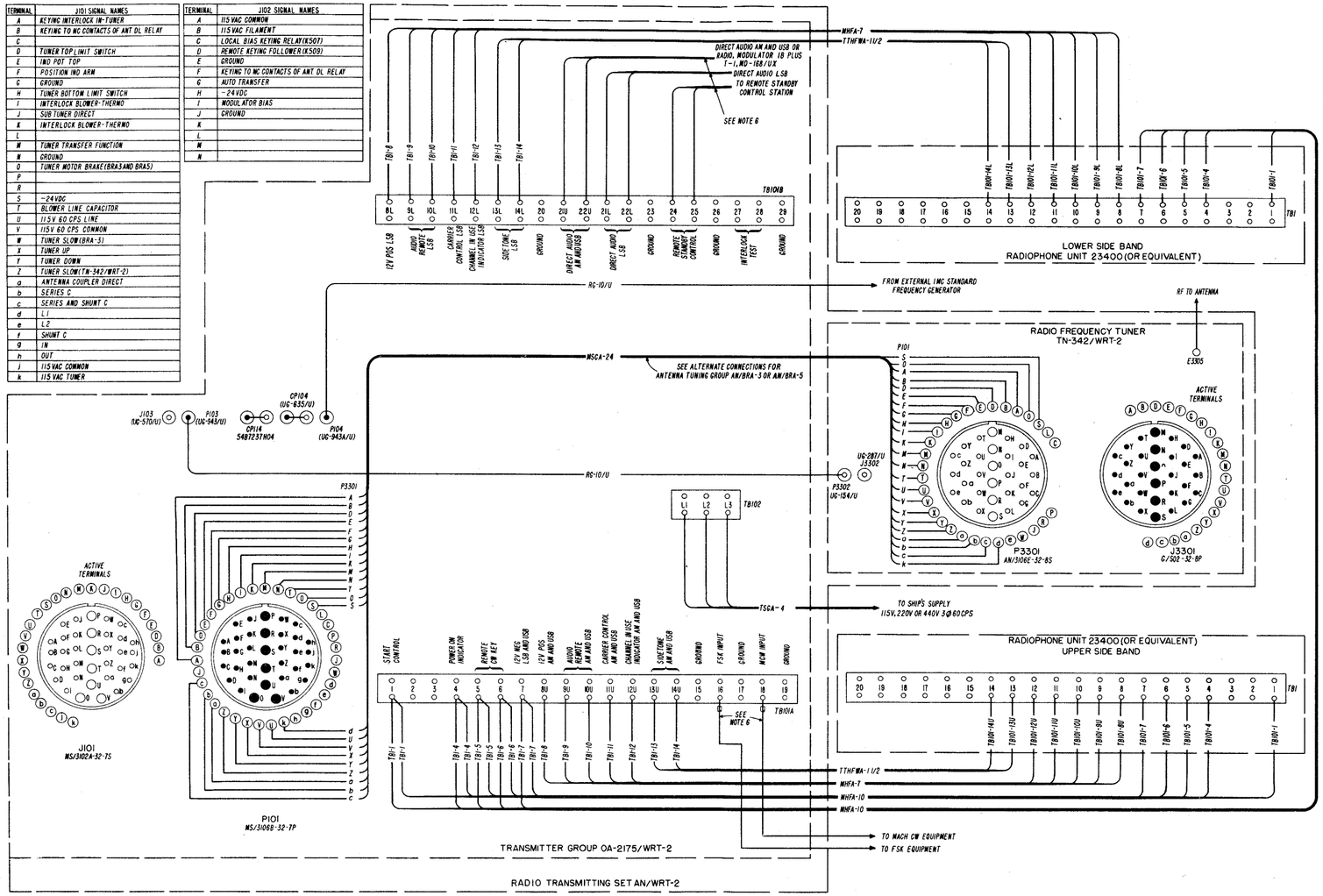
TERMINAL	J101 SIGNAL NAMES
A	KEYING INTERLOCK IM-TUNER
B	KEYING TO NC CONTACTS OF ANT DL RELAY
C	
D	TUNER TOP LIMIT SWITCH
E	IND POT TOP
F	POSITION IND ARM
G	GROUND
H	TUNER BOTTOM LIMIT SWITCH
I	INTERLOCK BLOWER-THERMO
J	SUB TUNER DIRECT
K	INTERLOCK BLOWER-THERMO
L	
M	TUNER TRANSFER FUNCTION
N	GROUND
O	TUNER MOTOR BRAKE(BRA3 AND BRA5)
P	
R	
S	-24 VDC
T	BLOWER LINE CAPACITOR
U	115 V 60 CPS LINE
V	115 V 60 CPS COMMON
W	TUNER SLOW(BRA-5)
X	TUNER UP
Y	TUNER DOWN
Z	TUNER SLOW(TN-342/WRT-2)
a	ANTENNA COUPLER DIRECT
b	SERIES C
c	SERIES AND SHUNT C
d	L1
e	L2
f	SHUNT C
g	IN
h	OUT
j	115 VAC COMMON
k	115 VAC TUNER

TERMINAL	J102 SIGNAL NAMES
A	115 VAC COMMON
B	115 VAC FILAMENT
C	LOCAL BIAS KEYING RELAY(K507)
D	REMOTE KEYING FOLLOWER (K509)
E	GROUND
F	KEYING TO NC CONTACTS OF ANT DL RELAY
G	AUTO TRANSFER
H	-24 VDC
I	MODULATOR BIAS
J	GROUND
K	
L	
M	
N	



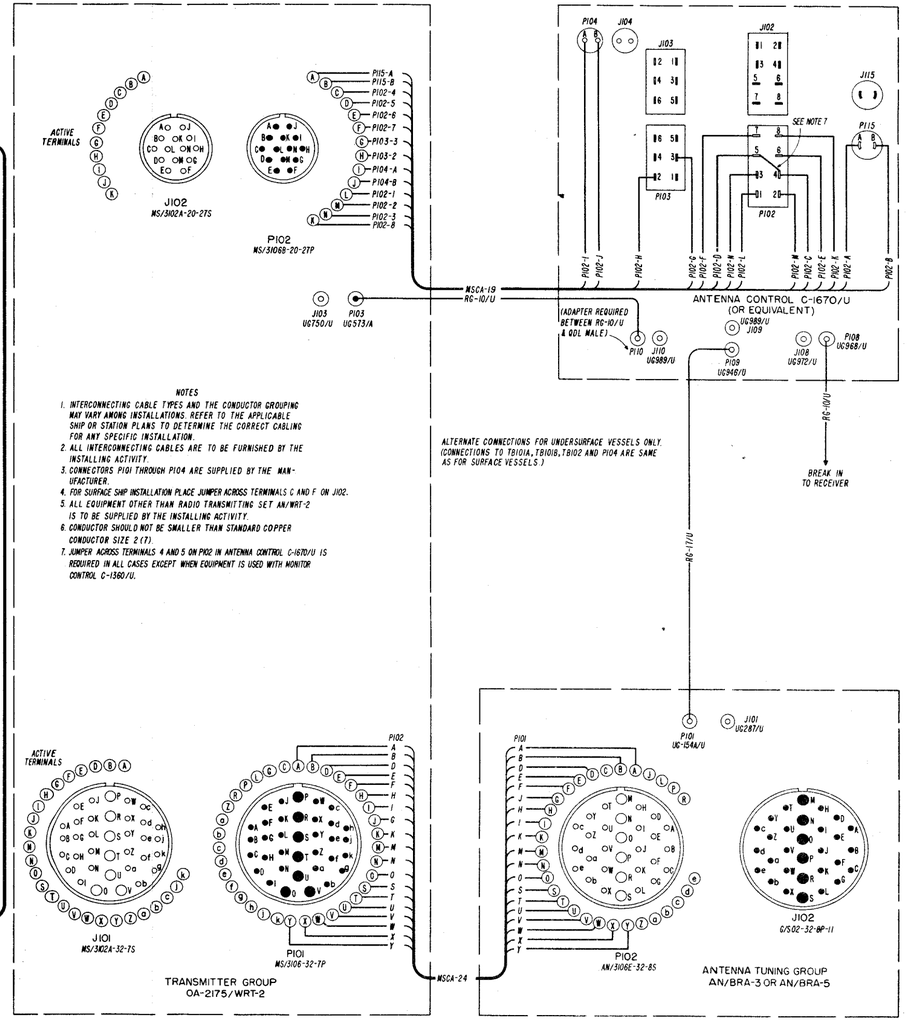


Figure 2-8. Radio Transmitting Set AN/WRT-2, Interconnecting Diagram

SECTION 3

OPERATOR'S SECTION

3-1. FUNCTIONAL OPERATION.

a. Radio Transmitting Set AN/WRT-2 is a communication equipment designed for installation aboard surface and undersurface vessels. The equipment consists of Transmitter Group OA-2175/WRT-2, Mounting MT-2170/WRT, Handset H-169/U, and Radio Frequency Tuner TN-342/WRT-2. Transmitter Group OA-2175/WRT-2 consists of the following units: Electrical Equipment Cabinet CY-2558/WRT-2, Power Supply PP-2222/WRT, Amplifier-Power Supply AM-2122/WRT-2, Radio Frequency Oscillator O-581/WRT-2, Electrical Frequency Control C-2764/WRT-2 and Radio Frequency Amplifier AM-2121/WRT-2. The latter five units are drawer-type chassis. Transmitter Group OA-2175/WRT-2 is tunable over the frequency range of 2.0 to 30.0 megacycles in one-kc steps and has the following emission capabilities:

(1) ISB operation at 1000 watts peak envelope power (four equal tones modulation).

(2) SSB operation at 1000 watts peak envelope power (two equal tones modulation, either upper or lower sideband).

(3) CW operation at 500 watts average power under locked key conditions.

(4) FSK operation at 500 watts average power.

(5) AM phone emission at 500 watts average with one sideband and carrier reinsertion.

b. Transmitter Group OA-2175/WRT-2 controls Radio Frequency Tuner TN-342/WRT-2, which must be located at a point near the remote antenna. Radio Frequency Tuner TN-342/WRT-2 is capable of satisfactory continuous operation when used in conjunction with a 35 foot Navy type C-66047 antenna or with a single wire antenna and ground system having a length of between 60 and 130 feet and being at least 40 feet high.

c. Transmitter Group OA-2175/WRT-2 is designed to work also in conjunction with the following government furnished equipment.

(1) Antenna Control Unit Navy type C-1670/U.
(2) Radiophone Unit 23400, or equivalent.
(3) Telegraph Key 26012.
(4) Handset (carbon) H-51/U.
(5) Antenna Tuning Group AN/BRA-3.
(6) Antenna Tuning Group AN/BRA-5.

d. The operation of Radio Transmitting Set AN/WRT-2 is accomplished through the use of controls located on the front panels of the five drawer type units of Transmitter Group OA-2175/WRT-2. The five drawers are mounted in Electrical Equipment Cabinet CY-2558/WRT-2 in the following order from top to bottom: Radio Frequency Amplifier AM-2121/WRT-2, Radio Frequency Oscillator O-581/WRT-2, Electrical Frequency Control C-2764/WRT-2, Amplifier-Power Supply AM-2122/WRT-2 and Power Supply PP-2222/WRT. Routine operating adjustments may be made from the front panel controls which are convenient to operating personnel.

e. Transmitter Group OA-2175/WRT-2 incorporates a stabilizer (Electrical Frequency Control C-2764/WRT-2) to hold a master oscillator precisely on frequency. When tuning the transmitter to the desired frequency keep in mind the following important factors: The master oscillator frequency must first be set up approximately, the stabilizing frequency precisely tuned, and finally, the master oscillator must be retuned slightly until the stabilizer locks up the frequency control system. The lock-up of the system is evidenced by the absence of hunting on the FREQUENCY ZERO ADJUST meter on the front panel of Radio Frequency Oscillator O-581/WRT-2, as the master oscillator is tuned through the lock-up range of Electrical Frequency Control C-2764/WRT-2.

3-2. OPERATING PROCEDURE.

a. DESCRIPTION OF CONTROLS.—The function of the controls and indicators used in the operation of Transmitter Group OA-2175/WRT-2 is provided in the following paragraphs, classified according to the drawers on which they are located.

(1) POWER SUPPLY PP-2222/WRT.

(*a*) The Power Supply PP-2222/WRT controls and indicators are located on the front panel of this unit and are shown in figure 3-1.

1. EMERGENCY STOP. This switch functions as the master line switch for all primary power to Radio Transmitting Set AN/WRT-2.

2. OVERLOAD RESET. This pushbutton-type switch is one of the three OVERLOAD RESET switches of Transmitter Group OA-2175/WRT-2. The switch permits the operator to reset the high or low voltage overload protective circuits after an overload has occurred.

3. HV RECT LINE BLOWN FUSE IND F201, F202 and F203. These lamps function as blown fuse indicators for the three-phase lines that supply power to the high voltage transformers in Power Supply PP-2222/WRT.

4. LV RECT FIL LINE BLOWN FUSE IND F205 and F206. These lamps function as blown fuse indicators for the line that supplies all single-phase power to the various circuits in Transmitter Group OA-2175/WRT-2.

5. HV ON. This indicator lamp glows when the high voltage supply is delivering voltage.

6. HV OVERLOAD. This indicator lamp glows whenever the high voltage supply overload circuit is tripped by an unbalance in the power amplifier cathode currents, by an excessive SWR, or by a high voltage current overload.

7. OPERATING HOURS. This meter indicates the total number of hours that the transmitter has been in operation with plate voltage applied to the final amplifier stage.

(2) AMPLIFIER-POWER SUPPLY AM-2122/WRT-2.

(*a*) The controls and indicators of Amplifier-Power Supply AM-2122/WRT-2 described in the following paragraphs are located on the front panel of this unit and are shown in figure 3-2.

1. PLATE POWER ON-OFF. These switches control the application of plate power to the transmitter circuits when LOCAL-REMOTE switch is in the LOCAL position. When LOCAL-REMOTE switch is in the REMOTE position the START-STOP switches on the remote radiophone unit control the application of plate power.

2. FILAMENT POWER ON-OFF. This switch controls the application of filament power to all tubes and is interlocked with a time delay circuit to prevent simultaneous application of plate and filament voltages.

3. POWER SELECTOR. This switch has four positions: ADJ, TUNE, 100W and 500W. The ADJ position is used when setting up the transmitter on the assigned frequency. The TUNE position is used when tuning up the transmitter into a dummy load. The 100W or 500W position is used when feeding the transmitter output into a radiating antenna. The selection of the 100W (100 watts) position or 500W (500 watts) position depends upon the output power desired.

4. EMISSION SELECTOR. This switch has five positions: MACH CW, FSK, CW, AM, and ISB. The setting of the switch selects the appropriate signal and control paths for the emission selected.

5. LOCAL REMOTE. This switch transfers the point of transmitter control to the remote radiophone unit when remote CW or telephony operation is required.

6. LV RECT OVLD RESET. This switch is one of three identical overload reset switches in the transmitter which permit the operator to reset the high or low voltage overload protective circuits.

7. 6 WIRE REMOTE-2 WIRE REMOTE. This switch is used in conjunction with the LOCAL REMOTE switch. The 6 WIRE REMOTE position provides for operation of the transmitter by remote radiophone. The 2 WIRE REMOTE position provides for start-stop control of the transmitter in remote FSK operation.

8. TEST TONE. This switch has four positions: LSB, USB, USB-LSB, and OFF. In each position except OFF, this switch substitutes the output of a 425-cycle oscillator for that of the speech amplifiers, for test purposes.

9. USB and LSB MOD LEVEL. These switches, when depressed, serve to monitor on the MOD LEVEL meter the audio signal levels appearing at the input of either the USB or LSB modulator.

10. TRANSMITTER 115V 5A. This fuse is a 115-volt, 5 amp fuse which protects the 115-volt, a-c transmitter filament and control bus.

11. TUNER 115V 3A. This fuse is a 115-volt, 3 amp fuse which protects the 115-volt, a-c line to Radio Frequency Tuner TN-342/WRT-2.

12. OVEN 115V 5A. This fuse is a 115-volt, 5 amp fuse which protects the 115-volt, a-c line to Radio Frequency Oscillator O-581/WRT-2, and to Electrical Frequency Control C-2764/WRT-2.

13. CONTROL 24V 4A. This fuse is a 24-volt, 4 amp fuse which protects the 24-volt d-c control bus.

14. RADIOPHONE 12V 2A. This fuse is a 12 volt, 2 amp fuse which protects the 12-volt, d-c microphone circuits.

15. DOOR INT. This indicator lamp lights when all five drawers are closed.

16. FILAMENT POWER ON. This indicator lamp lights when FILAMENT POWER switch is placed in the ON position to indicate the application of filament power.

17. RECTIFIER ON. This indicator lamp lights when PLATE POWER ON switch has been pressed and indicates that all transmitter power supplies are energized.

18. LV RECT ON. This indicator lamp lights when all low voltage power supplies are energized.

19. LV RECT OVLD. This indicator lamp lights when either the +350 volt or −350 volt power supply is overloaded.

20. USB and LSB CHANNEL IN USE. These indicator lamps light when the USB or LSB channels are used.

21. HANDSET USB-LSB. These two panel jacks provide connections for USB and LSB push-to-talk handsets for phone operation at the transmitter cabinet.

22. MOD LEVEL DIRECT USB-LSB. These front panel adjustments control the audio voltage levels for either direct speech inputs or test oscillator signals.

23. MOD LEVEL AMP USB-LSB. These front panel adjustments determine the amount of audio signal voltage appearing at the input of the USB and LSB modulators.

24. INPUT LEVEL AMP USB-LSB. These front panel adjustments provide input level control for the speech amplifiers.

25. SIDETONE LEVEL USB-LSB. These front panel adjustments serve as master gain controls for the sidetone signal to the local or remote handsets.

26. CONTROL BUS. This front panel meter measures the filament line voltage at all times.

(3) RADIO FREQUENCY OSCILLATOR O-581/WRT-2.

(*a*) The controls and indicators of Radio Frequency Oscillator O-581/WRT-2, described in the following paragraphs, are located on the front panel of this unit and are shown in figure 3-3.

1. CARRIER REINSERT SET TO CORRESPOND WITH EMISSION SELECTOR. This control is a switch which selects various levels of carrier signal for independent sideband emission and the proper level for all other types of emission. Attenuation settings are FSK, ISB ($-\infty$), ISB (−20db), ISB (−10db), AM, ISB (0db) and CW, MCW (+3db).

2. SIDEBAND SELECTOR. This dual potentiometer enables the operator to adjust the amount of power apportioned to the LOWER and UPPER sidebands in ISB operation.

3. AUXILIARY RANGE SWITCH (C2). This switch selects the 2-8 mc and 8-30 mc range of operation.

4. RANGE (C1). This control selects the band of master oscillator frequencies.

5. FREQUENCY (D). This control positions the tuning capacitors of the master oscillator and those of the frequency multipliers to vary the frequency within each band selected by RANGE (C1) control.

6. FSK TEST. This three-position switch serves to connect the fsk line to the transmitter when placed in the LINE position and to simulate a mark or space input when placed in MARK or SPACE positions.

7. FREQUENCY ZERO ADJUST. This meter is used to zero the oscillator tuning after the last 100-kc portion of the assigned operating frequency is set up on Electrical Frequency Control C-2764/WRT-2.

8. OVEN HEATERS. This indicator lamp when lighted indicates that power is being applied to the oven heaters.

9. The white numbers appearing in the vertical window in the center of the front panel indicate the frequency bands as selected by RANGE (C1) control. The black numbers indicate the frequency as set by FREQUENCY (D) control.

(4) ELECTRICAL FREQUENCY CONTROL C-2764/WRT-2.

(*a*) The controls and indicators of Electrical Frequency Control O-581/WRT-2 described in the following paragraphs are located on the front panel of this unit and are shown in figure 3-4.

1. METER INDICATION. This switch has four positions: OPERATE A, OPERATE B, 1 MC CAL A, 1 MC CAL B. When in OPERATE A position MICROAMPERE meter M601 indicates the control current from the 1-kc lock-in circuit. When in OPERATE B position it accomplishes the same thing but disables the 100 kc balancing circuit. When in 1 MC CAL A position it enables meter M601 to indicate the output of the 1 MC phase detector. When in 1 MC CAL B position it acomplishes the same thing as in 1 MC CAL A position but disables the 100 kc balancing circuit.

2. MICROAMPERES meter M601. This meter is used in conjunction with METER INDICATION switch.

3. 1 MC STD FREQ INPUT. This jack is provided on the front panel for an external 1 mc standard input.

4. 1 KC ALARM. This is an indicator lamp which lights whenever the 100:1 frequency divider circuits fail to function properly.

5. OVEN HEATERS. This is an indicator lamp which lights when power is applied to the oven heaters.

6. INT. OSC. TUNING PUSH TO TURN. This switch has two positions, CONTINUOUS and 1 KC steps. When in CONTINUOUS position, transmission is possible on any frequency between 2 and 30 MC. When in 1 KC STEPS position transmission is possible only at intervals of one kc.

7. TUNING (A). This control rotates switch S601 in the interpolation oscillator circuit to select 10 kc range steps. At the same time the switch positions the lefthand digit that appears on the front panel counters. The lefthand digit on the lower counter changes from 1 through 4 as the knob is rotated clockwise. Further clockwise rotation activates shutters which cover up the lower counter and uncover the top counter and the lefthand digit on the top counter changes from 5 through 9.

8. TUNING (B). This control positions interpolation oscillator tuning capacitor C662 which varies the oscillator frequency between the 10-kc range steps selected by TUNING (A) control. TUNING (B) control sets the three righthand digits on the uncovered counter. The four counter digits in the window indicate frequency directly from 00.01 to 99.99 kc. A vernier control is mounted at the center of TUNING (B) control. This control allows a ±50-cps change in the frequency of the interpolation oscillator from that indicated on the counter, in calibrated divisions of five cps.

9. The upper counter indicates the tens, hundreds, thousands and ten thousands digits of frequency when the ten thousands and thousands digits are 50 or greater. When the two digits are less than 50 the indication appears on the lower counter.

(5) RADIO FREQUENCY AMPLIFIER AM-2121/WRT-2.

(*a*) The controls and indicators of Radio Frequency Amplifier AM-2121/WRT-2, described in the following paragraphs, are located on the front panel of this unit and are shown in figure 3-5.

1. I.P.A. TUNING (F). This control is used to tune the plate tank circuits of the intermediate power amplifiers to resonance at the assigned frequency.

2. The window above the I.P.A. TUNING (F) control indicates the frequency to which the driver amplifier circuits have been tuned.

3. I.P.A. FINE TUNING. This vernier type control in conjunction with the I.P.A. TUNING (F) adjustment precisely sets the intermediate amplifier stages to the desired frequency.

4. P.A. TUNING (G). This control tunes the plate tank circuit of the power amplifier to resonance at the assigned operating frequency between 2.0 and 30.0 mc. The control also maintains a constant degree of coupling as determined by the P.A. COUPLING (H) control.

5. The window above the P.A. TUNING (G) control indicates the frequency to which the power amplifier circuits have been tuned.

6. TUNE-COUP. This mechanism when in TUNE position permits operation of P.A. TUNING (G) control or P.A. COUPLING (H) control when in COUP. position. When in LOCKED position it locks the tuning and coupling mechanism.

7. P.A. COUPLING (H). This control is used to vary the amount of r-f energy coupled from the power amplifier plate tank circuit to the antenna and at the same time maintain tank circuit resonance.

8. The window above the P.A. COUPLING (H) contains a dial with an arbitrary scale which indicates the position of the coupling coil relative to the maintaining control coils and is set normally at 50.

9. TEST AMMETER. This meter indicates the cathode current of the driver amplifier and the total screen current of the four power amplifiers.

10. TEST AMMETER switch. This three position switch selects pertinent circuit currents, as designated on the front panel, for measurement by the TEST AMMETER. The three positions of the switch are P.A. NEG. SCREEN CURRENT, DRIVER CATHODE (150MA) and P.A. POS. SCREEN CURRENT for sets serials 1 to 263. For sets serials 264 and up TEST AMMETER switch has only two positions, P. A. SCREEN CURRENT and DRIVER CATHODE (150 M A).

11. TEST VOLTMETER. This meter indicates various supply voltages as selected by the TEST VOLTMETER switch.

12. TEST VOLTMETER switch. This three position meter selector switch enables measurement of the power amplifier GRID BIAS, PLATE SUPPLY and LV SUPPLY voltages.

13. P.A. CATHODE CURRENT meter. This meter indicates each of the power amplifier cathode currents as well as their total current.

14. P.A. CATHODE CURRENT switch. This switch selects for measurement by the P.A. CATHODE CURRENT meter the four individual power amplifier cathode currents when in the 1, 2, 3, or 4 position. When in the TOTAL position the sum of the power amplifier cathode currents is measured.

15. ANTENNA TUNER POSITION CONTROL-UP (K) -DOWN (L), SLOW-READ SWR (M) switches. These pushbutton switches energize the drive motor in Radio Frequency Tuner TN-342/WRT-2 (or equivalent) and deenergize the clutch brake. The UP (K) button permits the motor to drive the sliding short and coupling coil mechanism up the main coil towards the output end (shortening the length of the variable line in series with the antenna). The function of DOWN (L) button is similar to that of the UP (K) button except that the direction of motor drive is reversed. The SLOW READ SWR (M) button allows the drive motor governor to limit the motor speed when the UP (K) or DOWN (L) buttons are pressed and also energizes the SWR circuits.

16. POSITION INDICATOR meter. This indicator is a 0-100 microammeter with an arbitrary calibration (0-100) which corresponds to the travel of the sliding short and coupler coil mechanism in the tuner. An indication of 100 corresponds to the full travel of the sliding short and coupler coil mechanism in the tuner (when least inductance is inserted in series with the antenna).

17. COUPLER ANTENNA (J) switch. This three position switch controls the amount of fixed capacitance inserted in the antenna circuit. When this switch is placed in A position, a capacitor is placed in series with the antenna. When in B position two capacitors are placed in parallel with the antenna. When the switch is placed in DIRECT position, no capacitance is inserted in the antenna circuit.

18. TUNER CONTROL switch. This three position switch controls the insertion of the tuning elements in the tuner circuits while POSITION CONTROL switches and COUPLER ANTENNA switch set up the tuning conditions. When the switch is in the TUNER IN position, all selected tuning elements are permanently connected in the antenna circuit. When in AUTO position, the selected elements are automatically connected while transmitting and disconnected (after a short delay) while receiving. When in BYPASS position, the antenna is connected directly to the transmitter or receiver.

19. TUNER IN indicator. This indicator lamp lights whenever the selected tuner or coupler tuning elements are connected in the antenna circuit.

CONTROL NAME	LOCATION	FREQUENCY IN MC	POSITION
P. A. CATHODE CURRENTS	Radio Frequency Amplifier AM-2121/WRT-2		TOTAL
TUNER CONTROL	Radio Frequency Amplifier AM-2121/WRT-2		TUNER IN
SWR CALIBRATE	Radio Frequency Amplifier AM-2121/WRT-2		4:1
COUPLER ANTENNA J	Radio Frequency Amplifier AM-2121/WRT-2	2.0 to 4.0 3.5 to 4.5 4.0 to 5.0 4.5 to 6.5 5.5 to 7.5 7 to 30	DIRECT B (parallel) A (series) DIRECT * DIRECT

*Set TUNER CONTROL to BYPASS position.

(*b*) After the controls have been preset as outlined in paragraph 3-3*b*(1)(*a*), allow the transmitter tubes to warm up for 30 seconds before proceeding.

(2) CW OPERATION. To set up the equipment for CW operation proceed as follows:

Step 1. Place EMISSION SELECTOR switch in the CW position.

Step 2. Set CARRIER REINSERT switch to CW, MCW (+3db).

Step 3. Press PLATE POWER ON switch.

Step 4. Place AUXILIARY RANGE SWITCH C2 in the desired frequency range.

Step 5. Using TUNING (A) and TUNING (B) controls, on Electrical Frequency Control C-2764/WRT-2, set the tens, hundreds, thousands, and ten-thousands digits of the assigned operating frequency. As an example of how to set the controls, assume that an operating frequency of 6,353,000 cps has been selected. The ten-thousands digit in this case is 5 and TUNING (A) control should be rotated in the clockwise direction until 5 appears in the extreme left window of the upper counter. TUNING (B) control sets the remaining digits shown in the counter windows. In the present case, the thousands, hundreds, and tens digits are, respectively, 3, 0, 0. TUNING (B) control should be rotated in the clockwise direction until these three digits appear at the counter windows.

Note

If the assigned frequency is multiple of 10,000 cps (such as 2130 kc, 3240 kc, 15,080 kc) set TUNING (A) control at one digit less than the desired ten-thousands digit and set TUNING (B) control to 9999. Then adjust the vernier dial in the center of TUNING (B) control for a zero indication on the deviation calibrate zero adjust meter. The vernier adjustment is necessary because the counter on Electrical Frequency Control C-2764/WRT-2 cannot be set to an exact multiple of 10,000 cps. However, it can be set to within 10 cycles of that multiple. To increase the frequency when operating in the 50-100 kc region, the vernier TUNING (B) dial is moved clockwise. To increase the frequency when operating in the 0-50 kc region, the vernier TUNING (B) dial is moved counterclockwise. Always return the vernier dial to zero before setting up a new assigned frequency.

Step 6. Place METER INDICATION switch in OPERATE A position and readjust TUNING (B) control for zero indication on MICROAMPERES meter M601. When operating at multiples of exactly even 100 kc, place METER INDICATION switch in OPERATE (B) position to zero M601. Lock TUNING (B) control in this position.

standby condition (PA plate voltage off) is desired press the STOP button on the remote radiophone unit.

Step 25. To operate the transmitter from the remote station push the START button and key the transmitter with the remote telegraph key. To turn the transmitter to standby after completing a message press the STOP button at the remote station.

Step 26. If it is desired to operate on a new assigned frequency with CW operation, place LOCAL-REMOTE switch in the LOCAL position. Place POWER SELECTOR switch in the ADJ. position and repeat previous steps using the new assigned frequency.

Step 27. If break-in CW operation is desired, TUNER CONTROL switch on the front panel of Radio Frequency Amplifier AM-2121/WRT-2 must be placed in the AUTOMATIC position.

(3) TELEPHONY OPERATION.

(*a*) AM. For phone emission the transmitter is tuned-up in CW operation and then switched to AM operation. To set up the transmitter, proceed as follows:

Step 1. Refer to paragraph 3-2*b*(2) and perform steps 1 through 22.

Step 2. Set DRIVE ADJUST control for an output indication of about 330 watts, on R-F OUTPUT meter.

Step 3. Place EMISSION SELECTOR switch in the AM position. Set CARRIER REINSERT switch to the AM, ISB (0db) position. Place TEST TONE switch in the USB position.

Step 4. Adjust USB MOD LEVEL DIRECT for 400 watts indication on the RF OUTPUT meter.

Step 5. Hold OUTPUT METER switch in the RF SET position and adjust RF SET FOR MOD control until RF OUTPUT meter deflects to the RF SET scale marker.

Step 6. Place OUTPUT METER switch in % MOD position. RF OUTPUT meter should read between 80-120% (within green area on sets serials 264 and up).

Step 7. Turn TEST TONE switch to OFF. Place CARRIER TEST KEY in the OFF position.

Step 8. If the AGC (automatic gain control) is to be used, rotate USB INPUT LEVEL AMP fully clockwise.

Step 9. Press PUSH TO TALK button on USB Handset H-169 (or equivalent). Press USB MOD LEVEL switch and talk into the handset at normal speech level. Adjust USB MOD LEVEL AMP until the average deflection level of the MOD LEVEL meter is between the voice and −5VU marking.

Step 10. Talk into the handset at normal speech level. RF OUTPUT meter should indicate between 40-60% modulation.

Step 11. If more power is desired, place the OUTPUT METER switch in the RF OUTPUT position. Talk into the handset and increase DRIVE ADJUST up to a maximum reading of 500 watts average power on the RF OUTPUT meter. (Increased power may cause interference on adjacent frequencies.)

Step 12. To place the transmitter in local standby after completion of a message, press PLATE POWER OFF switch.

Step 13. If phone operation is desired at a remote station, place LOCAL-REMOTE switch in the REMOTE position. Push the START button at the remote station and operate break-in phone using the push-to-talk switch on the remote handset. Adjust USB MOD. LEVEL DIRECT control for the desired level as outlined in steps 8 and 14. After completion of the message, press the STOP button at the remote station to return the transmitter to standby.

Step 14. If it is desired to operate on a new assigned frequency with phone emission, place POWER SELECTOR switch in ADJ. position and repeat steps 1 through 13 of this paragraph using the new assigned frequency.

(4) INDEPENDENT SIDEBAND (ISB) OR SINGLE SIDEBAND (LSB or USB) OPERATION.

(*a*) The choice of independent or single sideband operation is made through the SIDEBAND SELECTOR control, located on the front panel of Radio Frequency Oscillator O-581/WRT-2. With the SIDEBAND SELECTOR control in the DUAL position the r-f power output of the transmitter is shared equally by each sideband and two independent channels of intelligence are emitted containing the same power. When the SIDEBAND SELECTOR control is in the LOWER position, all available r-f power is placed in the lower sideband channel. When in the UPPER position all available power is placed in the upper sideband channel. Any intermediate setting of the SIDEBAND SELECTOR control causes the output to be divided proportionately between the two sidebands according to the setting of the control. When using independent sideband operation do not tune the power output in either channel for full power.

(*b*) To operate in the single or independent sideband, proceed as follows:

Step 1. Place EMISSION SELECTOR switch in ISB position. Place CARRIER REINSERT control to FSK, ISB ($-\infty$).

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OPERATING INSTRUCTIONS

RADIO TRANSMITTING SET AN/WRT-2

These instructions are not intended to replace instruction books, but to provide ready reference to standard operating procedures.

Read your instruction book.

I. STARTING THE EQUIPMENT NORMALLY

To start Radio Transmitting Set AN/WRT-2 for any type of emission, set the controls as indicated in the accompanying table.

Note

FOR BEST FREQUENCY STABILITY, THE OVEN SWITCH SHOULD BE IN THE ON POSITION FOR AT LEAST SIX HOURS BEFORE OPERATING THE TRANSMITTER.

CONTROL NAME	LOCATION	FREQUENCY IN MC	POSITION
EMERGENCY STOP	Power Supply PP-2222/WRT		ON
FILAMENT POWER	Amplifier-Power Supply AM-2122/WRT-2		ON
POWER SELECTOR	Amplifier-Power Supply AM-2122/WRT-2		ADJ
EMISSION SELECTOR	Amplifier-Power Supply AM-2122/WRT-2		CW
PLATE POWER ON	Amplifier-Power Supply AM-2122/WRT-2		Press
LOCAL-REMOTE	Amplifier-Power Supply AM-2122/WRT-2		LOCAL
FSK TEST	Radio Frequency Oscillator O-581/WRT-2		LINE
OVEN	Radio Frequency Oscillator O-581/WRT-2 (inside top of drawer)		ON
CARRIER TEST KEY	Radio Frequency Amplifier AM-2121/WRT-2		OFF
P. A. CATHODE CURRENTS	Radio Frequency Amplifier AM-2121/WRT-2		TOTAL (1.5A)
TUNER	Radio Frequency Amplifier AM-2121/WRT-2		TUNER IN
INT. OSC. TUNING	Electrical Frequency Control C-2764/WRT-2		1 KC STEPS
COUPLER ANTENNA Ⓙ	Radio Frequency Amplifier AM-2121/WRT-2	2.0 to 4.0 3.5 to 4.5 4.0 to 5.0 4.5 to 6.5 5.5 to 7.5 7 to 30	DIRECT B (parallel) A (series) DIRECT * DIRECT

*Set TUNER CONTROL to BYPASS position.

Chart 1 (of 5)

Figur 3-6. Summary of Op rating Pr c dur s (Sh t 1 of 5)

STEP 18 On Radio Frequency Amplifier AM-2121/WRT-2 alternately press POSITION CONTROL UP (K) and DOWN (L) switches for a maximum indication of R-F OUTPUT meter.

STEP 19 Press SLOW READ SWR (M) switch and alternately press POSITION CONTROL UP (K) switch and POSITION CONTROL DOWN (L) switch for most leftward indication on SWR INDICATOR scale. Rotate SWR CALIBRATE to keep SWR INDICATOR needle from going off scale. When the antenna is properly tuned, the SWR ratio should be less than 4:1.

STEP 20 Check P.A. TUNING (G) control for peak on R.F. OUTPUT meter.

STEP 21 Place POWER SELECTOR switch (on Amplifier-Power Supply AM-2121/WRT-2) in 500 W position.

CAUTION

TOTAL P.A. CATHODE CURRENT MUST NOT EXCEED 825 MA FOR 500-WATT OPERATION. FOR NO OUTPUT THE TOTAL MAXIMUM P.A. CATHODE CURRENT IS 500 MA. REPEAT STEPS 13 THROUGH 20 IF CURRENT LIMITS ARE EXCEEDED.

STEP 22 Check output on R-F OUTPUT meter (on Radio Frequency Amplifier AM-2121/WRT-2) and if necessary reset DRIVE ADJUST control for 500-watts reading on R-F OUTPUT meter. Alternately adjust P.A. COUPLING (H) and P. A. TUNING (G) until a reading of 500 watts is obtained on R-F OUTPUT meter with a reading of 0 to 15 MA on TEST AMMETER when TEST AMMETER switch is in the P.A. NEG. SCREEN CURRENT position (in the P.A. SCREEN CURRENT position on sets serials 264 and up). A reading of 700 to 750 MA should be obtained on P.A. CATHODE CURRENTS meter when P.A. CATHODE CURRENTS switch is in TOTAL (1.5A) position. The P.A. TUNING (G) control should always be adjusted for maximum power reading on R-F OUTPUT meter and must always be the last control adjusted. Place CARRIER TEST KEY in the OFF position.

STEP 23 For AM emission only, place EMISSION SELECTOR switch (on Amplifier-Power Supply AM-2122/WRT-2) in AM position. Set CARRIER REINSERT switch (on Radio Frequency Oscillator O-581/WRT-2) to AM, ISB (0 db) position and place TEST TONE switch (on Amplifier-Power Supply AM-2122/WRT-2) in the OFF position. Rotate DRIVE ADJUST control (on Radio Frequency Amplifier AM-2121/WRT-2) for an indication of 330 watts on R-F OUTPUT meter. (If 100-watt operation is desired, place POWER SELECTOR switch in the 100 W position.)

STEP 24 Place CARRIER TEST KEY in the OFF position.

STEP 25 Refer to the following table and choose the type of emission desired. Read down the TYPE OF EMISSION column, and perform the indicated steps. The front panels on which the controls are located are indicated in the LOCATED ON THE FRONT PANEL OF column.

DIRECTION TO OPERATOR	LOCATED ON THE FRONT PANEL OF	TYPE OF EMISSION				
		CW	AM	ISB	MACH CW	FSK
1. For operation with Remote Radiophone Unit 23400, place LOCAL-REMOTE control in the REMOTE position and 6 WIRE-2 WIRE REMOTE control in 6 WIRE REMOTE position.	AM-2122/WRT-2		X	X		
2. For FSK operation from a remote station, place LOCAL-REMOTE control on REMOTE and 6 WIRE- 2 WIRE REMOTE control on 6 WIRE REMOTE.	AM-2122/WRT-2					X

Chart 3 (of 5)

Figure 3-6. Summary of Operating Pr cedures (Sheet 3 of 5)

DIRECTION TO OPERATOR	LOCATED ON THE FRONT PANEL OF	TYPE OF EMISSION				
		CW	AM	ISB	MACH CW	FSK
10. Talk into the handset at normal speech level (with speech level adjustments made in direction 5 and DRIVE ADJUST setting in step 22). R-F OUTPUT meter should indicate an average power of 100 watts, with the OUTPUT METER switch in the R-F OUTPUT position. If additional power output is desired, increase the DRIVE ADJUST control up to a maximum of 500-watts average power on the R-F OUTPUT meter. MOD LEVEL AMP control may also be used to increase the power output if 500 watts cannot be obtained using the DRIVE ADJUST control.	AM-2121/WRT-2 AM-2122/WRT-2			X		
11. Set CARRIER REINSERT switch to desired level.	O-581/WRT-2	X	X	X	X	X
12. For local standby operation press PLATE POWER OFF switch.	AM-2122/WRT-2	X	X	X		
13. Place EMISSION SELECTOR in MACH CW position.	AM-2122/WRT-2				X	
14. Place EMISSION SELECTOR in FSK position.	AM-2122/WRT-2					X
15. To change frequency, or type of emission place POWER SELECTOR control in ADJ position, LOCAL REMOTE in LOCAL position and repeat all steps.	AM-2122/WRT-2	X	X	X	X	X
16. If break-in CW operation is desired place TUNER CONTROL on AUTOMATIC.	AM-2121/WRT-2	X				
17. For facsimile emission tune up transmitter with EMISSION SELECTOR switch in ISB position, LOCAL-REMOTE control in REMOTE position, 6 WIRE-2 WIRE REMOTE in 6 WIRE REMOTE position, SIDEBAND SELECTOR in the UPPER position and CARRIER TEST KEY in the ON position.	AM-2122/WRT-2 O-581/WRT-2 AM-2121/WRT-2			X		

III. STOPPING THE EQUIPMENT

To shut down Radio Transmitting Set AN/WRT-2, press PLATE POWER OFF switch and place FILAMENT POWER switch in the OFF position. Both controls are located on Amplifier-Power Supply AM-2122/WRT-2. When the transmitter is to be shut down for an extended period of time, place EMERGENCY STOP switch (on Power Supply PP-2222/WRT) in the OFF position.

IV. EMERGENCY OPERATION

Failure in the Electrical Frequency Control C-2764/WRT-2 is indicated by continuous sweeping of the FREQUENCY ZERO ADJUST meter on Radio Frequency Oscillator O-581/WRT-2. The frequency stability of Radio Transmitting Set AN/WRT-2 is impaired but continued operation is still possible by performing the following steps:

STEP 1 Pull out the drawer containing Electrical Frequency Control C-2764/WRT-2 and disconnect plugs P161 and P162 from jack J614 and J615 on the right-hand side of drawer.

STEP 2 Repeat Part II of this operating chart but omit steps 2, 3, 4, and 6.

If a failure occurs in Radio Frequency Tuner TN-342/WRT-2, it may be bypassed by placing the TUNER CONTROL switch on Radio Frequency Amplifier AM-2121/WRT-2 in the BYPASS position.

To operate Radio Transmitting Set AN/WRT-2 with an external exciter remove P181 from J801 and P183 from J951. Rotate MOD. BALANCE ADJ. potentiometer R955 fully clockwise and connect external input to J801. The drive level must then be controlled from the external exciter and Radio Frequency Amplifier AM-2121/WRT-2 tuned as described in the above operating instructions.

Chart 5 (f 5)

Figure 3-6. Summary f Op rating Pr c dures (Sheet 5 of 5)

3-4. EMERGENCY OPERATION.

a. OTHER THAN NORMAL.

(1) Conditions may exist when due to an overload in the circuits, the high voltage overload relay will trip. When such a condition occurs, reduce DRIVE ADJUST control, on Radio Frequency Amplifier AM-2121/WRT-2, to zero and press one of the following overload switches: H.V. OVERLOAD PUSH TO RESET switch, on Radio Frequency Amplifier AM-2121/WRT-2, OVERLOAD RESET switch, on Power Supply PP-2222/WRT or LV RECT OVLD switch on Amplifier Power Supply AM-2122/WRT-2. If after pressing the overload switches, the overload relay still opens, maintenance personnel should be called immediately to determine the circuits at fault as described in Section 5 of this manual.

(2) If a failure occurs in Electrical Frequency Control C-2764/WRT-2 such a failure will be indicated by continuous sweeping on the FREQUENCY ZERO ADJUST meter located on the front panel of Radio Frequency Oscillator O-581/WRT-2. The frequency stability of Radio Transmitting Set AN/WRT-2 will be impaired but, in an emergency, continued operation is still possible by performing the following steps:

Step 1. Pull out the drawer containing Electrical Frequency Control C-2764/WRT-2 and disconnect plugs P161 and P162 from jacks J614 and J615, located on the righthand side of the drawer.

Step 2. Repeat Part II in figure 3-6 but omit steps 2, 3 and 4.

(3) If a failure occurs in Radio Frequency Tuner TN-342/WRT-2 it may be bypassed by placing TUNER CONTROL switch, on Radio Frequency Amplifier AM-2121/WRT-2, in the BYPASS position.

(4) If an external exciter is available, Radio Transmitting Set AN/WRT-2 may be operated even with a failure in all the units with the exception of Radio Frequency Amplifier AM-2121/WRT-2. In such a case proceed as follows:

Step 1. Remove plug P181 from jack J801 and plug P183 from jack J951, both located on the lefthand side of Radio Frequency Amplifier AM-2121/WRT-2.

Step 2. Rotate MOD BALANCE ADJ potentiometer R955 fully clockwise and connect the external exciter to J801.

Step 3. Set the drive level from the external exciter.

Step 4. Tune-up Radio Frequency Amplifier AM-2121/WRT-2 as directed in paragraph 3-2*b*.

(5) In an emergency, Radio Transmitting Set AN/WRT-2 may be shutdown by placing the EMERGENCY STOP switch in the OFF position. Under this type of shutdown, all power to the transmitter is turned off and all indicator lamps will cease to glow.

Note

After an emergency shutdown the transmitter cannot be put into normal service without a warm-up period of approximately six hours.

b. JAMMING.—No controls are provided on Radio Transmitting Set AN/WRT-2 for reducing the effects of jamming.

3-5. OPERATOR'S MAINTENANCE.

The maintenance that may be performed by the operator of Radio Transmitting Set AN/WRT-2 should be limited to those checks and adjustments which can be accomplished by means of the front panel controls and indicators as indicated in paragraph 3-6*a*. However, in case of emergency, the emergency maintenance described in paragraph 3-6*b* may be undertaken by the operator. Any further tests, checks, adjustments or replacement must be done by maintenance personnel as outlined in Section 6 of this manual.

a. OPERATING CHECKS AND ADJUSTMENTS.

(1) Specific operating checks and adjustments for each type of emission are covered in paragraph 3-2*b*. A list of general routine operating checks is provided in the following steps.

Step 1. Place EMERGENCY STOP switch in the ON position.

Step 2. Place FILAMENT POWER switch in the ON position.

Step 3. Observe FILAMENT POWER ON lamp. It should be lighted.

Note

All indicator lamp assemblies in Radio Transmitting Set AN/WRT-2 feature screw-on lenses and bayonet base lamps. To replace a lamp unscrew the lens cap, press the lamp inward, give a one quarter turn counter clockwise, and withdraw the lamp. Replace with a new lamp by reversing the above procedure.

Step 4. If the lamp does not glow, replace it with a new lamp.

Step 5. Observe DOOR INT. lamp. Lamp should glow when all drawers are properly closed.

Step 6. If the lamp does not glow, replace it with a new one.

Step 7. Observe OPERATING HOURS meter. The meter should be counting. If the meter does not count, inform maintenance personnel.

Step 8. Observe OVEN HEATER indicator lamp on Radio Frequency Oscillator O-581/WRT-2 and on Electrical Frequency Control C-2764/WRT-2. Both indicators should be glowing intermittently.

Step 9. If the indicators do not glow, check the lamps and the OVENS fuse.

TABLE 3-1. FUSE REPLACEMENT DATA

FUSE SYMBOL	LINE VOLTAGE 440V	220V	115V	VOLTS	LOCATION	INDICATION OF FUSE FAILURE	PROTECTED CIRCUIT
	FUSE RATING AMPERES						
F201	3	6	12	500	Back of the front panel of Power Supply PP-2222/WRT.	F201 H. V. RECT. F202 LINE BLOW F203 IND lamp glows. F205 L. V. RECT. F206 FIL LINE BLOWN FUSE IND lamp glows.	High Voltage Rectifier Plate Transformers Low Voltage Power Supply Transformer
F202	3	6	12	500			
F203	3	6	12	500			
F205	5	10	20	500			
F206	5	10	20	500			
F501		5		115	Front panel of Amplifier Power Supply AM-2122/WRT-2	Transmitter F501 Tuner F502 Oven F503 Control F504 Radio Phone F505 — Red Fuse button projects. For sets serials 264 and up, lamp glows.	Transmitter filament 115V Tuner 115V Oven -24V Control 12V Radio-phone
F502		3		115			
F503		5		115			
F504		4		24			
F505		2		12			

CAUTION

THE RATING OF THE FUSES USED IN POWER SUPPLY PP-2222/WRT DEPENDS ON WHETHER THE EQUIPMENT IS BEING OPERATED FROM A 115-VOLT, 220-VOLT, OR 440-VOLT SOURCE. BE SURE TO USE THE CORRECT REPLACEMENT AND SEE THAT THE SPARE FUSES ARE OF THE CORRECT RATING FOR THE POWER SOURCE USED. REFER TO FUSE REPLACEMENT DATA IN TABLE 3-1.

(*b*) The five active fuses and the two spare fuses in Power Supply PP-2222/WRT are mounted on the back of the front panel with spring clips. If a lamp glows replace the associated fuse.

(*c*) Figure 3-7 is an illustration showing the location of fuse and indicator lamps on the front panel of Radio Transmitting Set AN/WRT-2. As shown in figure 3-7 the five active fuses in Amplifier Power Supply AM-2122/WRT-2 are located on the front panel of this drawer. Failure of one of these fuses is indicated by a red button protruding from the front of the fuse. To replace the fuse unscrew the transparent cap and insert the new fuse from the spare fuse holder located inside, on top of the drawer containing Amplifier-Power Supply AM-2122/WRT-2. When inserting the new fuse be sure to locate the indicating end of the fuse so that it is visible through the transparent cap. Replace the transparent cap and insert a new fuse of same rating in the spare fuse holder.

Note

For sets serials 264 and up, if lamp glows, replace fuse.

(3) REPLACEMENT OF TUBES.

(*a*) In emergencies it may be necessary for operating personnel to replace defective tubes. A glass tube may be considered defective if the heater does not glow; a tube may also be checked by substitution if test equipment is not available. The tubes in Transmitter Group OA-2175/WRT-2 may be located from figure 3-8. Reference symbols are stenciled adjacent to each tube in the equipment. Figure 3-8 illustrates the location of all the tubes in Radio Transmitting Set AN/WRT-2.

WARNING

DANGEROUS VOLTAGES EXIST IN THE EQUIPMENT WHEN POWER IS ON. MAKE SURE THAT POWER IS OFF COMPLETELY BY PLACING THE EMERGENCY STOP SWITCH IN THE OFF POSITION BEFORE STARTING TO REPLACE ANY TUBE. DO NOT REPLACE ANY TUBES THAT HAVE A CAP CONNECTION AT THE TOP OF THE GLASS ENVELOPE SUCH AS POWER AMPLIFIER TUBES V804, V805, V806 AND V807 UNTIL THE CAPS OR ANODE CONNECTIONS HAVE BEEN GROUNDED FOR APPROXIMATELY ONE MINUTE BY

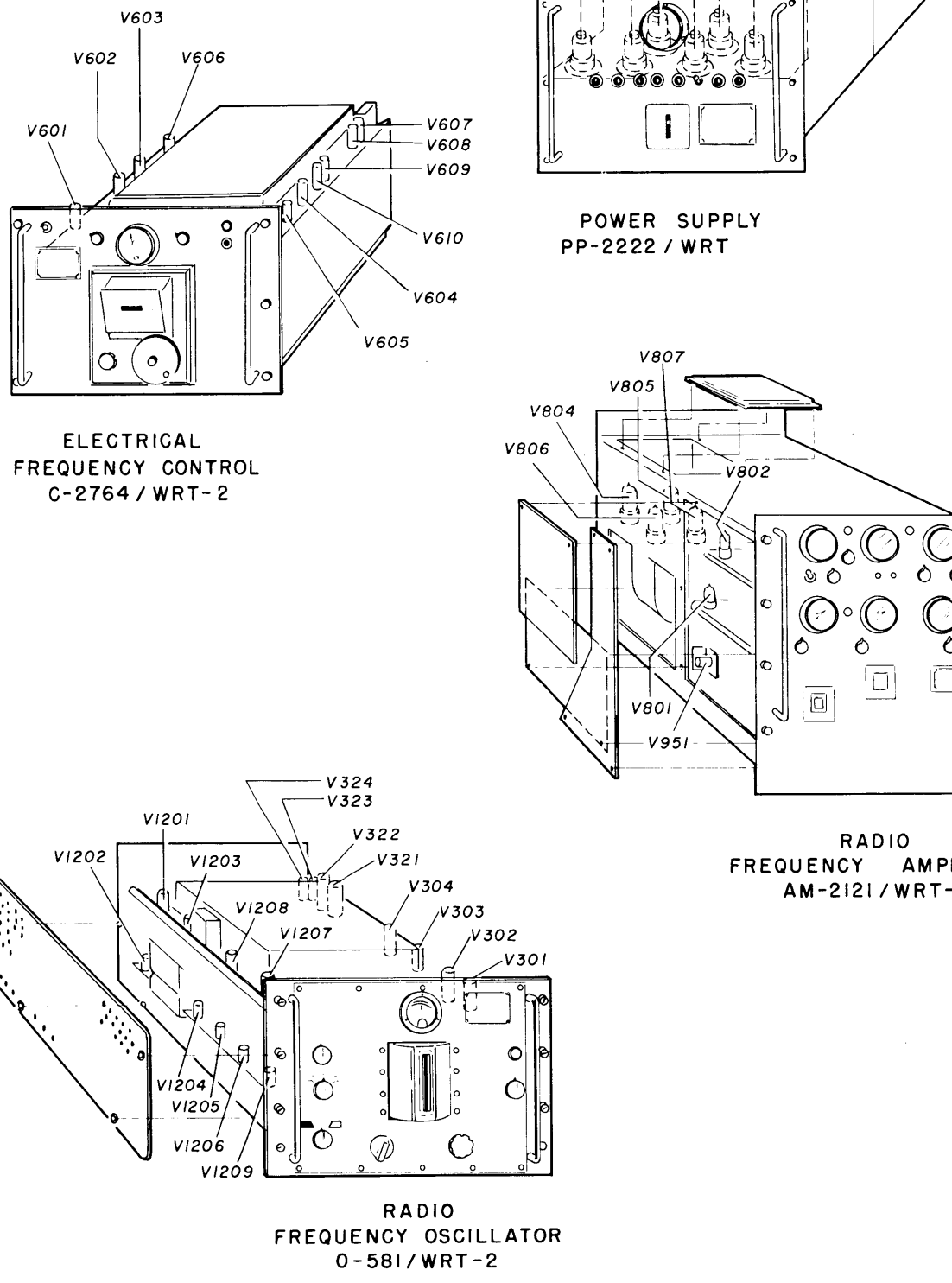


Figure 3-8. Transmitter Gr up OA-2175/WRT-2, L cati n f Tub s

SECTION 4

PRINCIPLES OF OPERATION

4-1. OVERALL FUNCTIONAL DESCRIPTION.

a. Radio Transmitting Set AN/WRT-2 is a communication equipment designed for installation aboard surface and undersurface vessels. The transmitter covers the frequency spectrum from 2.0 mc to 30.0 mc in 14 bands of varying widths. It is designed for simplicity of tuning and ease of maintenance. Radio Transmitting Set AN/WRT-2 provides the following types of emission: on-off keyed carrier (CW), frequency shift keying (FSK), MACH CW, standard AM telephony (AM), single sideband telephony (SSB) and independent sideband telephony (ISB).

b. Figure 4-1 is a functional block diagram of Radio Transmitting Set AN/WRT-2. As shown in figure 4-1, the AN/WRT-2 consists of the following functional sections: the r-f generating functional section, the modulating functional section, the power amplifier functional section, the primary power functional section, and the low voltage power supply functional section.

c. The r-f signal is generated by a master oscillator in the r-f generating functional section and fed through frequency multiplier circuits to the power amplifier. The master oscillator is slaved to the assigned operating frequency by the frequency control circuits. A sample of the master oscillator r-f output is fed to the frequency control circuits. Crystal oscillator circuits in the frequency control provide harmonics of 100 kc which are mixed with the r-f signal from the master oscillator in a balanced modulator (mixer). The output from the mixer is a comparison i-f signal. This i-f signal is compared with the frequency of an interpolation oscillator. When the two frequencies are the same, the master oscillator is operating at the proper frequency. When the two frequencies differ, the control circuit returns the master oscillator to the proper frequency. The operating frequency of Radio Transmitting Set AN/WRT-2 is also stabilized by slaving the interpolation oscillator to a one-kc, lock-in circuit. In this case the output of the interpolation oscillator is compared with one-kc reference signals in a phase detector circuit. A d-c correction voltage is then applied to the interpolation oscillator to lock it in with the one-kc, crystal-stabilized reference signals.

d. The keying circuits in the modulating functional section provide the proper modulation signals for CW keying and frequency shift keying. For phone operation, the audio input is amplified by speech amplifiers. The audio signal is then applied to the modulator circuit when single or independent sideband signals with suppressed carrier or an AM signal with upper sideband and carrier are to be generated. The output of the modulator circuit is applied to the input mixer in the power amplifier circuits as shown in figure 4-1.

e. The power amplifier functional section consists of the high voltage power supply circuits, the input mixer and driver circuits, the r-f amplifier circuits, the r-f monitor circuits and the r-f tuner circuits. The high voltage power for the r-f amplifiers is provided by a three phase rectifier circuit. The r-f signals from the r-f generating section and the modulating section are applied to the input mixer in the power amplifier section. The output of the input mixer is a modulated r-f signal which is the sum of the two input signal frequencies. The modulated signal from the input mixer is then applied through a driver stage to the r-f amplifier. The power amplifiers raise the r-f signal to the desired operating power level. The output of the power amplifier is then fed to the antenna circuits through the r-f tuner circuits. The r-f monitor circuits in the power amplifier functional section consist of a modulation monitor for measuring the modulation percentage and a reflectometer for measuring the output power level and voltage-standing-wave-ratio on the line feeding the antenna circuit.

f. The primary power functional section contains all the circuits which supply the a-c power to Radio Transmitting Set AN/WRT-2. The transformers in the primary power functional sections have taps, allowing for input voltages of 115 volts, 220 volts and 440 volts at 60 cps.

g. The low voltage functional section contains all the circuits which supply the d-c voltages to Radio Transmitting Set AN/WRT-2, with the exception of the high voltage rectifiers. Thus, the low voltage functional section contains the plus and minus 350V power supplies, the −24V power supply, the +250V, −24V and −6V regultors. The low voltage functional section also contains the 12V POS and 12V NEG power supplies for use in the microphone circuits. The +350V and −350V supplies are used as bias and plate voltages for the tubes in the transmitting set. The −24V supply is used in the d-c control circuits. The +250V regulated supply is used in the critical circuits of the master oscillator and the frequency control circuits in the r-f generating functional section. The +24V regulated voltage is used in the circuits of the one-mc oscillator in the r-f generating functional section and those of the speech amplifiers in the modulating functional section. The −6V regulated voltage is used in the circuits of the one-mc oscillator in the r-f generating functional section.

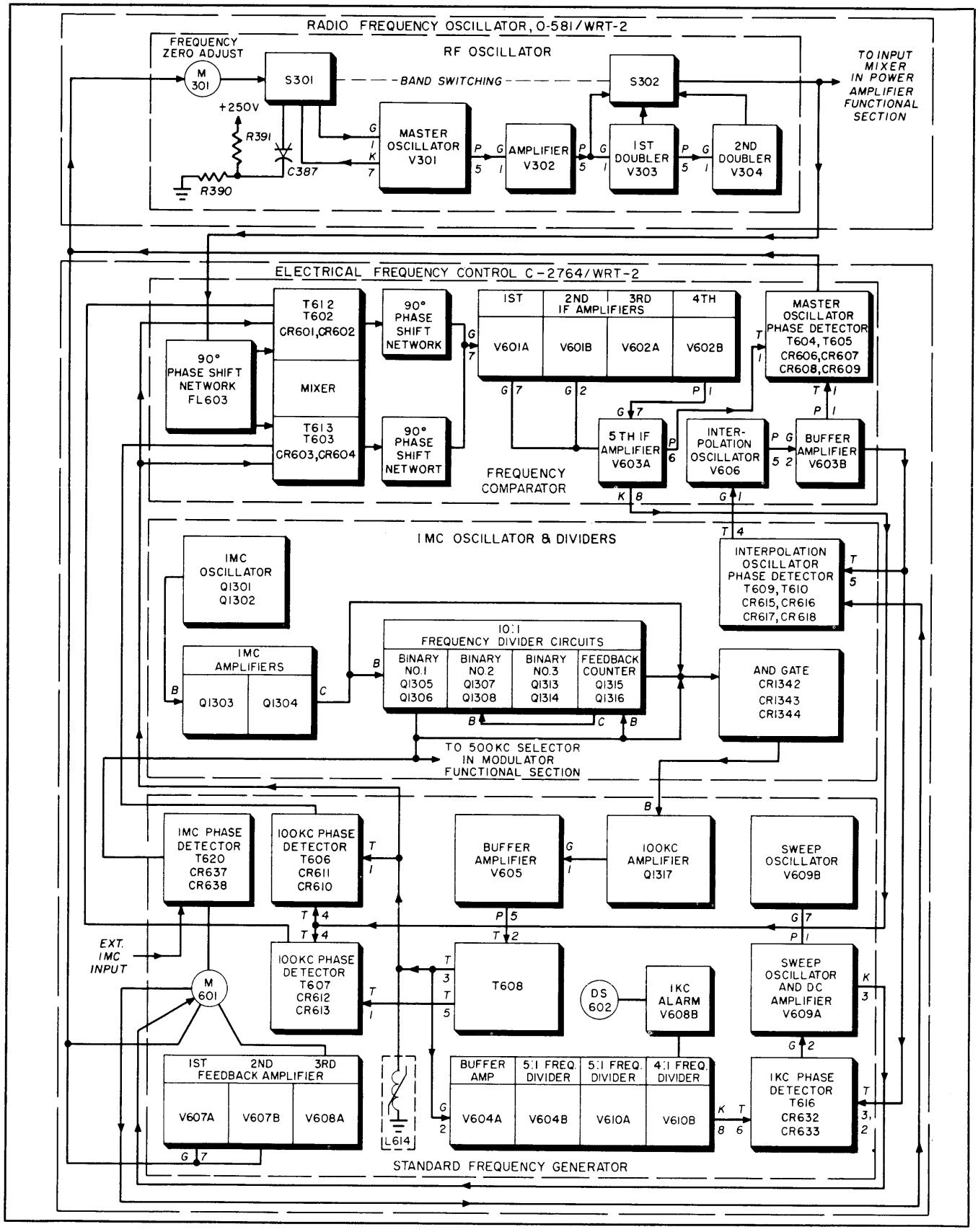


Figure 4-2. RF Generating Section, Functi nal Block Diagram

amplifiers V607A, V607B and V608A amplify the spurious signal and feed it degeneratively through feedback path number one. The d-c correction voltage is not affected by the feedback path because the amplifier does not pass d-c. Meter M601 is used to zero the interpolation oscillator tuning and to measure the amount of deviation between the one megacycle crystal oscillator and an external one megacycle standard frequency.

(14) In order to keep the frequency control loop as stable and rapid-acting as possible, it is necessary to keep the total a-c loop gain approximately constant. However, at higher operating frequencies a given d-c control signal to voltage sensitive capacitor C387 produces a greater amount of frequency correction. In order to overcome the resultant great change in sensitivity, feedback path number two is used to provide an input impedance to the feedback amplifiers which is about one-tenth the resistance of the r-f oscillator. In addition, a divider circuit in the r-f oscillator reduces the feedback signal as the frequency is increased. The circuits of feedback path number two effectively slow down the correction response as operating frequency is increased.

(15) Feedback path number three provides an automatic searching function for initial lock-in. This feedback is regenerative, and is effective only at low frequencies. With the system locked in, any voltage change at the output of the low-pass filter changes the frequency of the master oscillator, which in turn generates a control voltage that opposes the initial change. Thus, a very low source impedance is provided at the output of the phase detector and low-pass filter which renders feedback path number three ineffective. However, with the system unlocked, the low impedance is not present and the amplifier oscillates at approximately two cps, sweeping the frequency of the master oscillator until it generates the proper frequency and locks in.

(16) As stated in paragraph 4-2*a*(4) the stability of the interpolation oscillator is also controlled by a one-kc, lock-in circuit. The control is accomplished by comparing the output of the interpolation oscillator with a one k-c crystal stabilized reference signal and developing a correction voltage. For this purpose the 100-kc pulse signal, derived from the one-megacycle crystal oscillator and the subsequent 10:1 frequency divider circuits, is applied to buffer amplifier V604A as shown in figure 4-2. The 100-kc signal is coupled out at cathode 8 of V604A and fed to a 5:1 frequency divider circuit consisting of V604B and associated components. The output of this divider circuit is a 20-kc signal which is further divided by a second 5:1 frequency divider circuit consisting of V610A and associated components. The 4-kc output signal from V610A is fed to the last divider stage consisting of 4:1 frequency divider V610B. The one-kc signal from V610B is delivered to a one-kc phase detector circuit consisting of transformer T616 and crystal diodes CR632 and CR633. Here it is compared with the signal from the interpolation oscillator and a d-c correction voltage is developed. This correction voltage is applied to sweep oscillator and d-c amplifier circuit V609A and V609B. When the interpolation oscillator is not locked-in, V609A and V609B function as a sweep oscillator and a sweep voltage is generated. The sweep voltage is applied through meter M601 to the interpolation oscillator reactance modulator circuit consisting of transformers T609, T610 and crystal diodes CR615 through CR618 and causes the interpolation oscillator to lock-in with a multiple of the one-kc pulse signal. When the interpolation oscillator is locked in, the sweep oscillator is disabled and V609A and V609B function as degenerative feedback amplifiers. The d-c correction voltage is fed from the cathode of V609A to meter M601. Meter M601 measures the control current from the one-kc, lock-in circuit.

b. DETAILED OPERATION.

(1) MASTER OSCILLATOR.

(*a*) Figure 4-3 is a simplified schematic diagram of the master oscillator circuit. For a clearer understanding of this circuit only the tank circuits of bands 4, 7 and 10 are shown in figure 4-3. As shown in figure 4-3, the master oscillator circuit consists of master oscillator V301, buffer amplifier V302 and switches S301 and S302. All the frequency determining elements of the master oscillator circuit are mounted in a temperature controlled oven. The frequency determining elements consist of voltage sensitive capacitor C387, coil L304 and all the capacitors in the grid circuit of V301. Coil L307 in the cathode circuit of V301 presents a high impedance to the r-f signal so that cathode 7 of V301 is essentially returned to the junction of capacitors C314 and C315. Tuning within the selected bands is accomplished by FREQUENCY (D) capacitor C313. Variable capacitor C308 provides a tuning control for the high end of the frequency band. Thus, the range of band 4 is 3.75 mc to 5 mc and C308 is used to set the high end of the frequency at exactly 5 mc. Variable coil L304 is used to set the low end at 3.75 mc. The band capacitors are carefully selected so that the oscillator frequency tracks across the band in accordance with the drum type calibrated dial. The other bands have similar components as can be seen in the overall schematic diagram of Radio Frequency Oscillator O-581/WRT-2, figure 6-26.

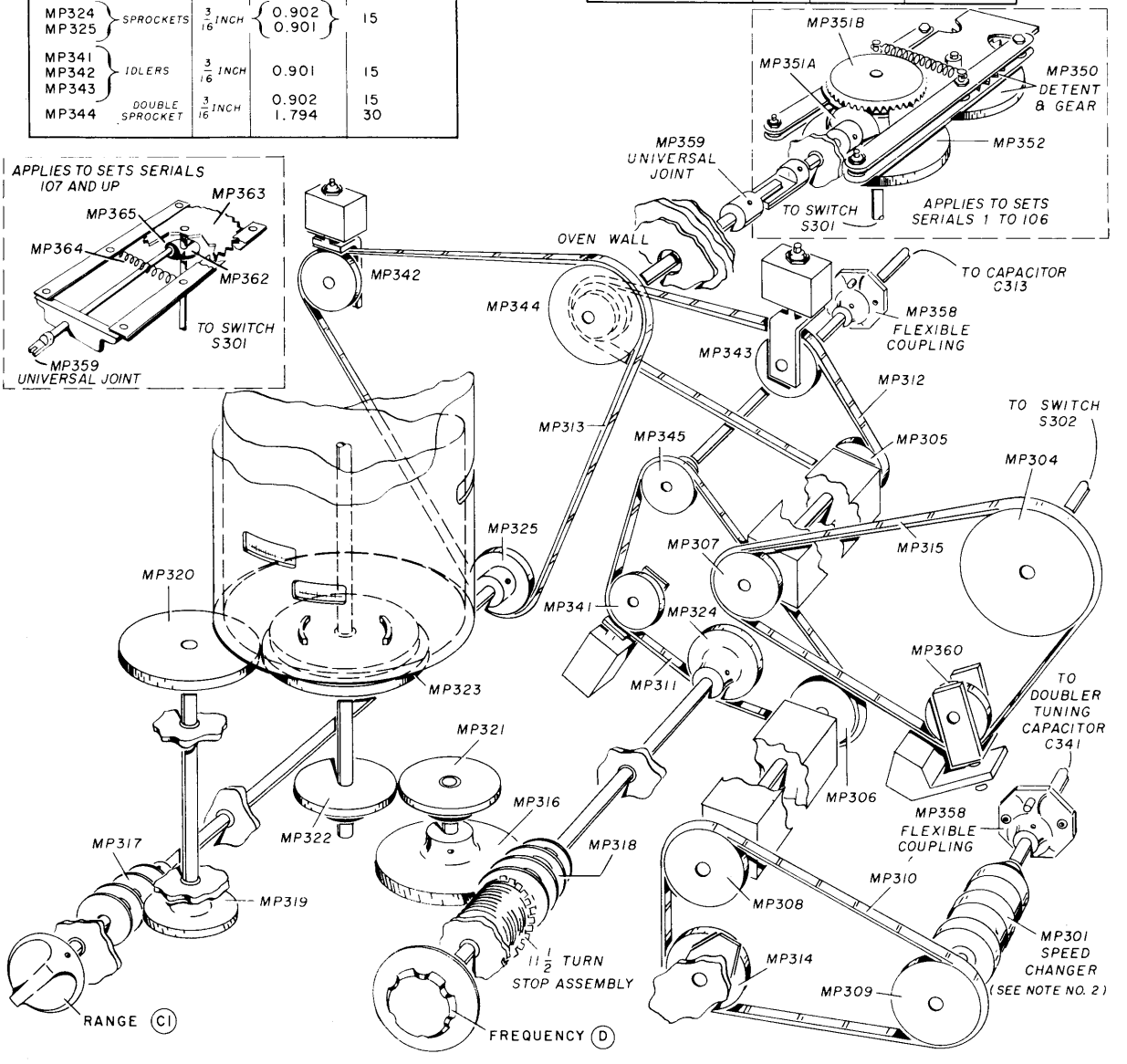
(*b*) The r-f energy appearing at plate 5 of master oscillator V301 is coupled through capacitor C337 to grid 1 of amplifier V302. Resistors R304 and R305, coils L315 and L316 and capacitor C337 provide the plate load for V301. Capacitor C336 provides an r-f bypass for the +250V supply. Resistor R302 serves as a voltage dropping element from the +250V supply to grid 6 of V301. Capacitor C334 is the bypass capaci-

GEAR SYMBOL		PITCH	PITCH DIAMETER	NO. OF TEETH
MP304	SPROCKET	3/16 INCH	1.794	30
MP305, MP306, MP307, MP308, MP309	SPROCKETS	3/16 INCH	0.901	15
MP310	CHAIN	3/16 INCH	5/32 WIDE	42 PITCHES
MP311	CHAIN	3/16 INCH	5/32 WIDE	52 PITCHES
MP312	CHAIN	3/16 INCH	5/32 WIDE	70 PITCHES
MP313	CHAIN	3/16 INCH	5/32 WIDE	114 PITCHES
MP314	IDLER	3/16 INCH	0.901	15
MP315	CHAIN	3/16 INCH	5/32 WIDE	50 PITCHES
MP316	HELICAL WORM	24	1.8333	44
MP317	WORM	16	0.9646	4 THREAD
MP318	WORM	24	1.3594	4 THREAD
MP319	HELICAL	16	1.0354	16
MP320	SPUR	48	1.500	72
MP321, MP322	SPURS	64	1.1250	72
MP323	SPUR	48	1.5000	72
MP324	SPROCKETS	3/16 INCH	0.902	15
MP325	SPROCKETS	3/16 INCH	0.901	15
MP341, MP342, MP343	IDLERS	3/16 INCH	0.901	15
MP344	DOUBLE SPROCKET	3/16 INCH	0.902	15
			1.794	30

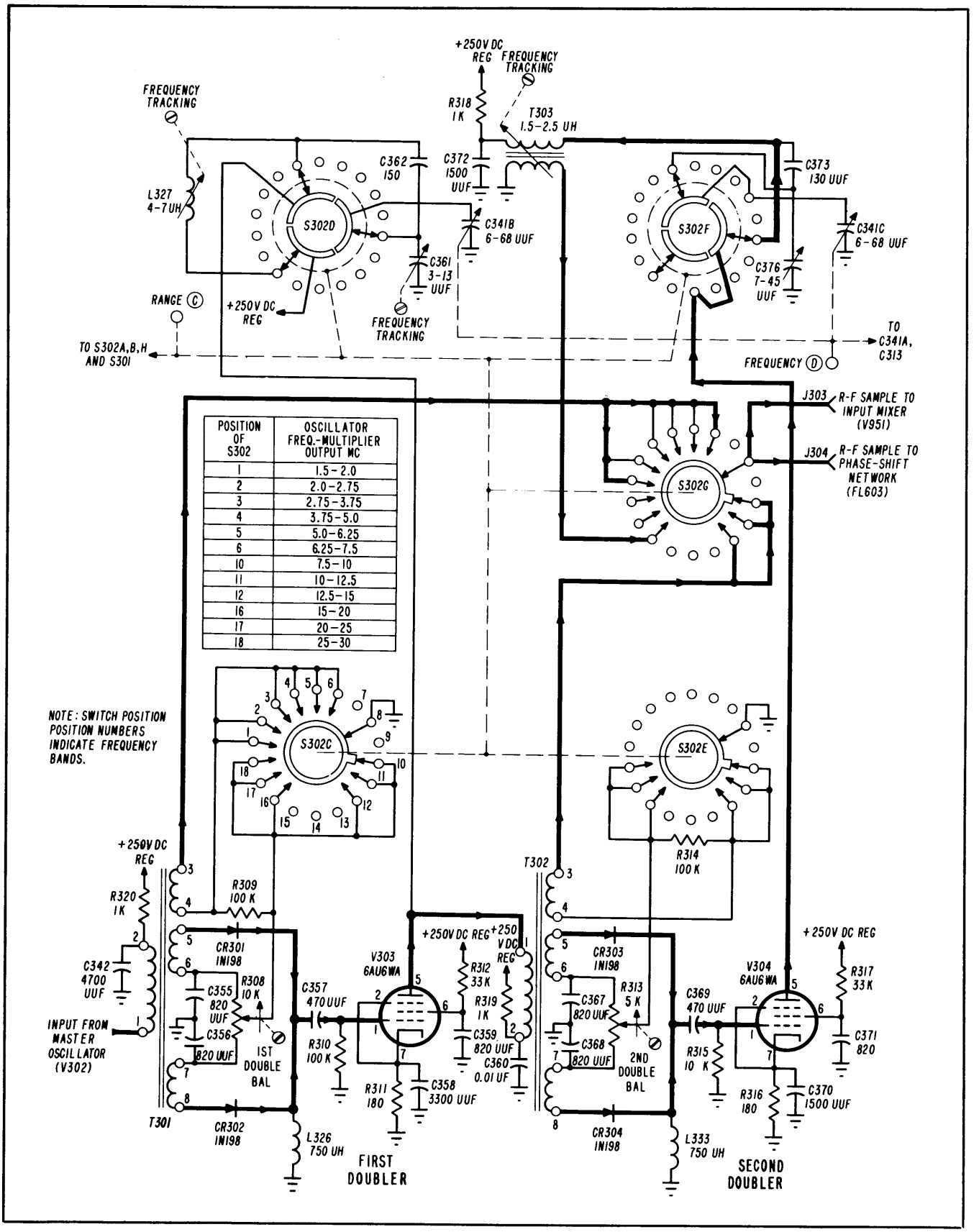
NOTES

1. COMPONENTS ARE SHOWN SCHEMATICALLY & DO NOT NECESSARILY DUPLICATE PHYSICAL POSITIONS.
2. SPEED RATIO 24 TO 1. OUTPUT ROTATION SAME AS DIRECTION OF INPUT ROTATION.

GEAR SYMBOL		PITCH	PITCH DIAMETER	NO. OF TEETH
MP345	SPROCKET	3/16 INCH	0.901	15
MP350	DETENT & GEAR	24	1.750	12 DETENTS, 42
MP351A	PINION (BEVEL)	24	1.000	24
MP351B	GEAR (BEVEL)	24	2.000	48
MP352	SPUR	24	2.625	63
MP360	IDLER	3/16 INCH	0.901	15
MP362	BEVEL GEAR	32	1.000	32
MP363	DETENT		2.252	12 DETENTS
MP365	BEVEL GEAR	32	0.750	24



Figur 4-4. Master Oscillator G ar Train, Simplified Schematic Diagram



Figur 4-5. Fr qu ncy Multipli r Circuits, Simplifi d Sch matic Diagram

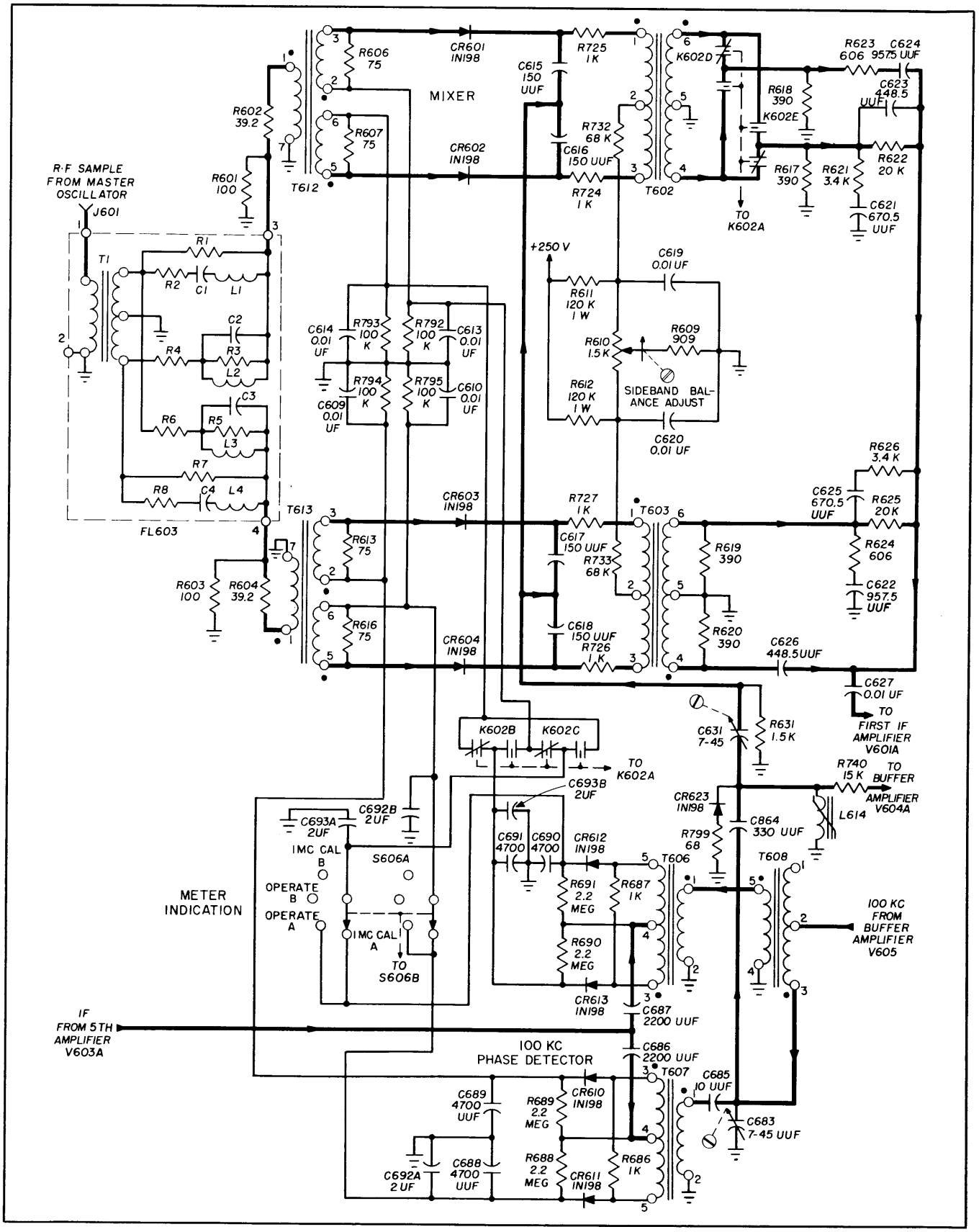


Figure 4-6. Frequency C ntrol Mixer and 100 kc Phase Detector, Simplified Schematic Diagram

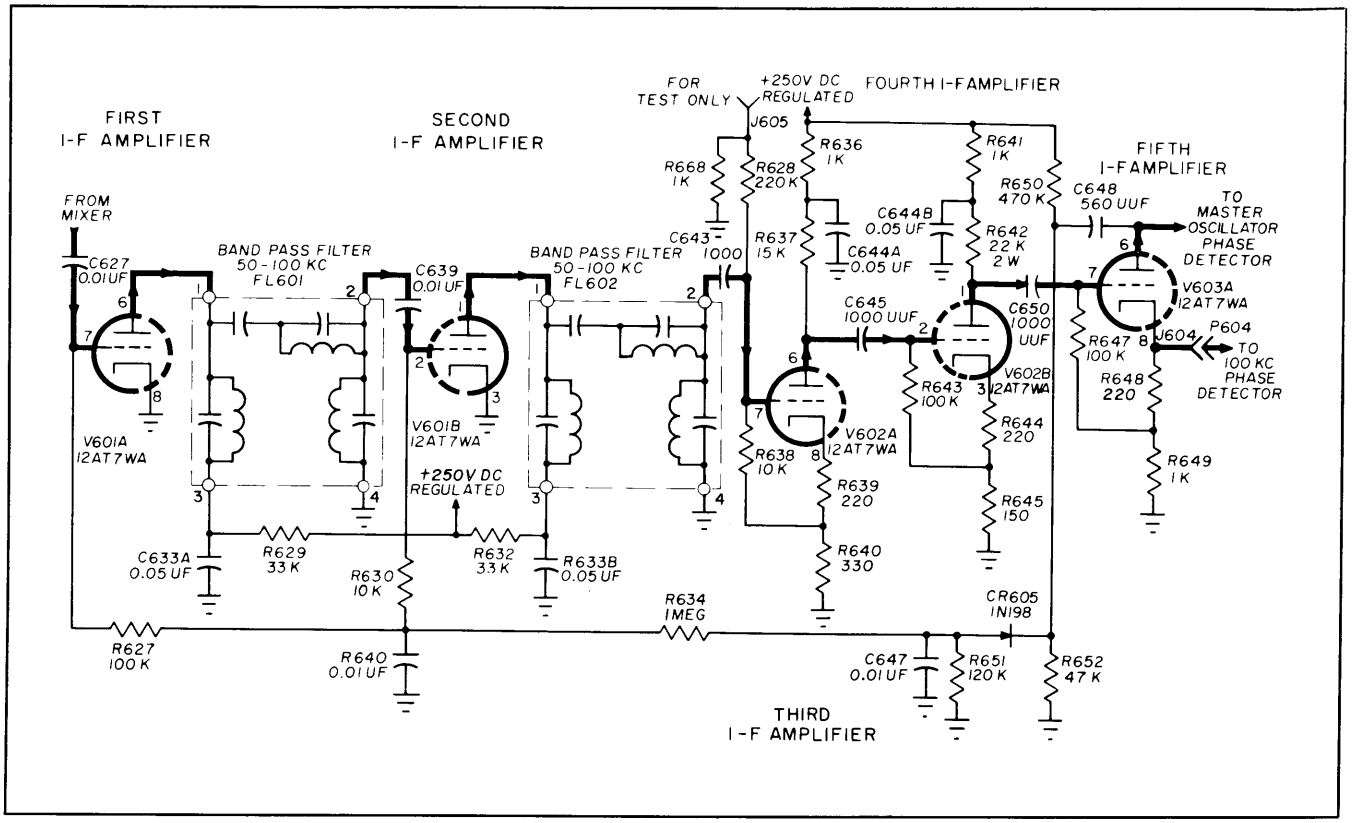


Figure 4-7. I-F Amplifier Circuits, Simplified Schematic Diagram

in turn decreases the forward resistance of CR602. Relay contacts K602C and K602B interchange the bias connections to the diodes of mixer number one when the output voltage polarity of T602 is reversed on the 0- to 50-kc band of operation.

(*h*) If the mixer containing transformer T602 is unbalanced, a 100-kc signal develops across T602. This signal, amplified by the i-f amplifiers, is coupled through capacitor C687 to terminal 4 of transformer T606 and is in phase with the voltage of the reference signal received through terminal 1 of T606. This phase detector operates in an identical manner with the detector described in the preceding paragraph (*g*). When relay K602 is energized, the polarity of the unwanted 100-kc signal is reversed and the bias voltage is also reversed. Thus, contacts K602B and K602C, shown in figure 4-6, are provided to reverse the connections of the correction signal applied to terminals 4 and 5 of transformer T612.

(*i*) The sidebands in the frequency range of 50 kc to 100 kc appear in phase at coupling capacitor C627 and are applied to the i-f amplifier circuit.

(6) I-F AMPLIFIER CIRCUITS.

(*a*) Figure 4-7 is a simplified schematic diagram of the i-f amplifier circuits. As shown in figure 4-7, the output from the balanced mixers is applied through coupling capacitor C627 to grid 7 of first i-f amplifier V601A. The signal appearing at plate 6 of V601A is fed through band-pass filter FL601 and capacitor C639 to grid 2 of second i-f amplifier V601B. The output of V601B is also filtered by FL602 and coupled through capacitor C643 to third i-f amplfiier V602A. Band-pass filters FL601 and FL602 pass only signals in the frequency range of 50 kc to 100 kc. From the junction of C643 and grid resistor R638 the signal is also developed across resistors R628 and R668. The fraction of the signal developed across R668 is connected to test point jack J605. The output at plate 6 of V602A is coupled through capacitor C645 to grid 2 of fourth i-f amplifier V602B. The signal is then coupled, from the plate of V602B to grid 7 of fifth i-f amplifier V603A through capacitor C650. The output at plate 6 of V603A is applied to the master oscillator phase detector. The i-f signal appearing at the cathode of fifth i-f amplifier V603A is also fed to the 100 kc phase detector. The i-f signal is compared with the 100-kc reference signal and a correction voltage is developed to null out any spurious i-f signal to 100 kc.

(b) An automatic bias is applied to the first and second i-f amplifiers to change their transconductance characteristics and provide automatic gain control. Thus, as shown in figure 4-7, bias is applied to the cathode of crystal diode CR605 by the voltage divider con-

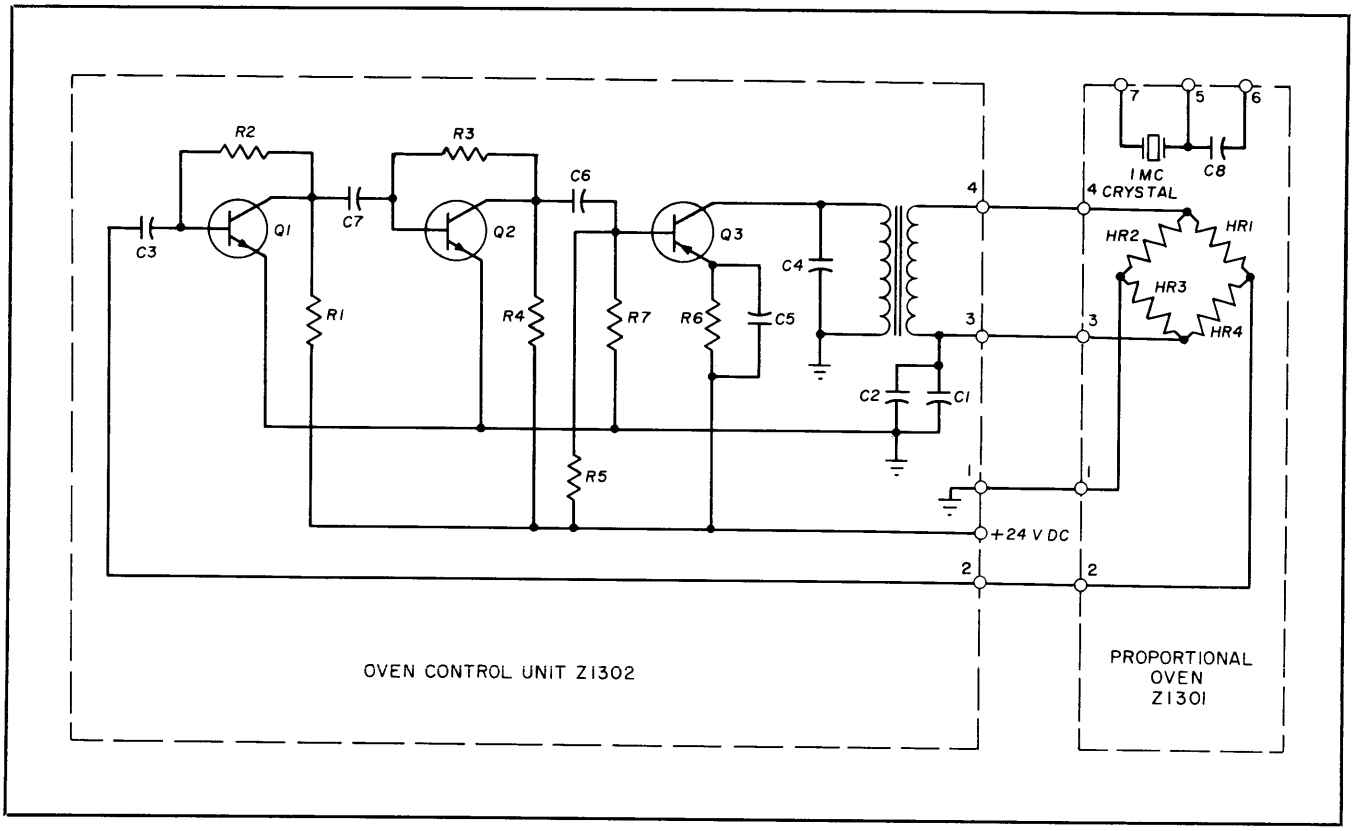


Figure 4-9. One MC Oscillator Crystal Oven and Control, Simplified Schematic Diagram, Sets Serials 1 to 294

(*d*) As shown in figure 4-9, the oven control unit, Z1302, consists of three transistor amplifiers, Q1, Q2, and Q3. Voltage developed across heater elements HR1, HR2, HR3, and HR4 in the proportional oven, Z1301 is coupled back to amplifier Q1 through capacitor C3 and the three transistor stages act as an oscillator with a frequency of approximately 5000 cps. The magnitude of the feedback voltage depends on the temperature of the heaters. The power output of amplifier Q3 increases when the heater temperature declines.

(*e*) The following discussion of the one megacycle oscillator and proportional oven shown in Figure 6-27B, applies only to sets serials 295 and up. As shown in Figure 6-27B, the one-mc crystal controlled oscillator Q1701 is a modified Pierce circuit. The one-mc crystal is mounted inside proportional oven Z1301 and connected between the collector and base of Q1701. Capacitor C1702 tunes the one-mc oscillator. The output of the collector of AGC amplifier Q1704 provides negative feedback to the one megacycle oscillator. The feedback is rectified by diodes Z1301CR1 and Z1301CR2. Only the negative portion of the feedback reaches the base of the one megacycle oscillator Q1701. The feedback reduces the base to emitter bias of NPN transistor Q1701. Thus, the output of the one megacycle oscillator and current flow through the one-mc crystal are kept constant. The one-mc output signal is coupled to the 10:1 frequency divider, from transformer T1701.

(*f*) The temperature sensitive elements of the one megacycle oscillator are mounted inside proportional oven Z1301. Z1301R1 is a heater element and thermistor Z1301RT1 is the temperature control element. Oven temperature is kept constant at 75°C (167°F) in the following manner: transistors Z1302Q1, Z1302Q2, and Z1302Q3 in oven control unit Z1302 are part of a temperature control circuit that oscillates at a constant frequency of 2,000 cycles. Thermistor Z1301RT1 determines the amplitude of the oscillations in the control circuit. If the temperature in the proportional oven decreases, the resistance of Z1301RT1 decreases, thereby increasing the amplitude of the oscillations in the control circuit. Therefore, the amplitude of the oscillations appearing at transformer Z1302T4 will increase. Rectifying diodes Z1302CR7 through Z1302CR9 will reduce the charge on capacitor Z1302C4. The emitter to base bias of PNP transistor Z1302Q4 increases. Z1302Q4 conducts more heavily, more current passes through heater Z1301R1 and the oven temperature is returned to the

correct level. The current flow through heater Z1301R1 is in one direction and fairly constant so that the one-mc output from the crystal is not modulated.

(8) 10:1 FREQUENCY DIVIDER CIRCUITS.

(*a*) Figure 4-10 is a simplified schematic diagram of the 10:1 frequency divider circuits. The 10:1 frequency divider is essentially a counting stage which gates a positive output pulse on every tenth cycle of the input signal from the one-mc crystal oscillator. As shown in figure 4-10, the 10:1 frequency divider consists of four bistable multivibrator stages. If the stages were connected together in a simple cascade arrangement, an output would occur for every sixteenth input pulse. A ten count is achieved by interrupting the normal counting sequence for binary #2. The interruption is accomplished by the feedback counter, Q1315 and Q1316.

(*b*) The operation of binary #1 is identical to that of binary #2, binary #3, and the feedback counter. Therefore the discussion of circuit detail will be confined to binary #1, and subsequent paragraphs will discuss the overall operation. To simplify the analysis, assume a stable state with transistor Q1306 cut off and Q1305 conducting. Since Q1306 is nonconducting, its collector (point A) is at approximately +16 volts. Diode CR1322 is conducting and thus point B is at the same potential as A. On the other hand, with Q1305 conducting, its collector (point C) is at approximately +21 volts, diode CR1318 is conducting and point D is at the same potential as C. Therefore gate diodes CR1321 and CR1317 are reverse-biased by, respectively, +16 volts and +21 volts. As shown in figure 4-10, capacitor C1318, diode CR1316, and resistor R1316 form a d-c restorer which clamps the zero axis of the one-mc sine wave input to a positive voltage level. Positive clamping is necessary in order that the small amplitude oscillator signal may overcome the reverse bias on the gate diode. As the one-mc signal changes from a minimum to a maximum positive value, gate diode CR1321, having less reverse bias than

CR1316, conducts first and the change in voltage at point B is coupled through capacitor C1323 to the base of Q1305. (Note that the positive-going input has been *steered* to the conducting transistor. CR1318 and CR1322 are often referred to as *steering diodes.*) The decrease in current through Q1305 due to the base trigger causes point C to become less positive and the change is coupled to the base of Q1306 through C1320. When Q1306 begins to conduct, point A becomes more positive and the change is coupled through capacitor C1321, to the base of Q1305, driving it further toward cutoff. Thus the regenerative action following the application of the initial input pulse causes the multivibrator to change state almost instantaneously. Clamping diodes CR1320 and CR1319 are forward-biased at +16 volts by zener diodes CR1345 and CR1346; therefore the collector voltage of Q1305 (and Q1306) can drop no lower than +16 volts. In sets series 264 and up zener diode CR1345 has been omitted, and zener diode CR1346 has been changed from SV5 to 1N756A. The action of the steering diodes brings point B and point D, to respectively, +21 volts and +16 volts, so that the next positive-going cycle of the one-mc signal will be coupled to the base of the conducting transistor, Q1306.

(*c*) Figure 4-11 shows the waveforms necessary for an understanding of the overall operation of the 10:1 frequency divider shown in figure 4-10. Every positive-going edge (bold lines) of waveform 2 would trigger binary #2 in the manner described in paragraph 4-2*b*(8), and every positive edge of waveform 3 would then trigger binary #3 if it were not for the action of the feedback counter. Point C in waveform 3 indicates the critical reset point. As shown in figure 4-11, prior to the arrival of the positive-going edge of waveform 2 , Q1315 is conducting. The cathode of gate diode CR1329, (see figure 4-10) is thus held at +21 volts and the positive edge of waveform 2 cannot turn off Q1308. The delay in switching Q1315 is sufficient to insure that the normal operation of Q1308 is interrupted.

(*d*) For every tenth input cycle from the one-mc oscillator, a negative pulse is coupled to the base of 100 kc amplifier Q1317. The pulses of collector current through the primary of T1304 maintain a 100-kc sinusoidal oscillation in the output tank circuit composed of the secondary of T1304 and capacitors C1353 and C1354.

(*e*) The 100-kc signal is applied through capacitor C738 to buffer amplifier V605 as shown in figure 4-10. The buffer amplifier is a self-biased stage which isolates the 10:1 frequency divider and one-mc oscillator stages from succeeding circuits. Resistor R685 and capacitor C682 form a filter to decouple the buffer stage from the regulated +250 volt d-c supply. Choke L609 and capacitor C694 provide additional filtering. The signal appearing at plate 5 of buffer amplifier V605 is applied to transformer T608 where it is developed and fed to the 100-kc phase-detectors.

(9) INTERPOLATION OSCILLATOR.

(*a*) Figure 4-12 is a simplified schematic diagram of the interpolation oscillator and master oscillator phase detector circuits. As shown in figure 4-12 the interpolation oscillator circuit consists of the master oscillator phase detector, the interpolation oscillator phase detector, buffer amplifier V603B and interpolation oscillator V606. The interpolation oscillator provides a stable reference signal which is compared in a phase detector with the output signal of the i-f amplifier circuit. Any difference in frequency between the output of the interpolation oscillator and that of the i-f circuit amplifier results in a correction voltage. The correction voltage is applied to the master oscillator circuit. Thus, the comparison i-f signal is brought into step with the interpolation oscillator signal. The two signals are held closely together so that any tendency toward deviation results in phase differences which are rapidly corrected. The frequency determining elements of the interpolation oscillator circuit are housed in a temperature controlled oven.

(*b*) Interpolation oscillator V606 is a modified Colpitts circuit. Only the circuits of one band are shown in figure 4-12. The frequency determining elements for the 90 to 100-kc range are coil L619 and capacitors C667, C715, C672, C662 and C710. TUNING B control varies the setting of capacitor C662. The feedback voltage is developed across cathode choke L619 and applied to the junction of capacitors C667 and C715. Resistor R666 in the grid circuit of V606 is a parasitic suppressor. The r-f signal appearing at plate 5 of V606 is coupled through capacitor C654 to buffer amplifier V603B. The output at plate 1 of V603B is developed across the primary winding of transformer T605 and fed to the master oscillator phase detector. The cathode of buffer amplifier V603B is returned to ground through transformer T610. The signal coupled through capacitor C657 and resistor R661 is rectified by crystal diode CR619 and provides the bias for grid one of interpolation oscillator V606. Thus, the voltage is developed across resistor R662, filtered by capacitor C655 and fed, through resistor R663 to grid one of V606. The bias on crystal diode CR619 is provided by a voltage divider consisting of resistors R659 and R660.

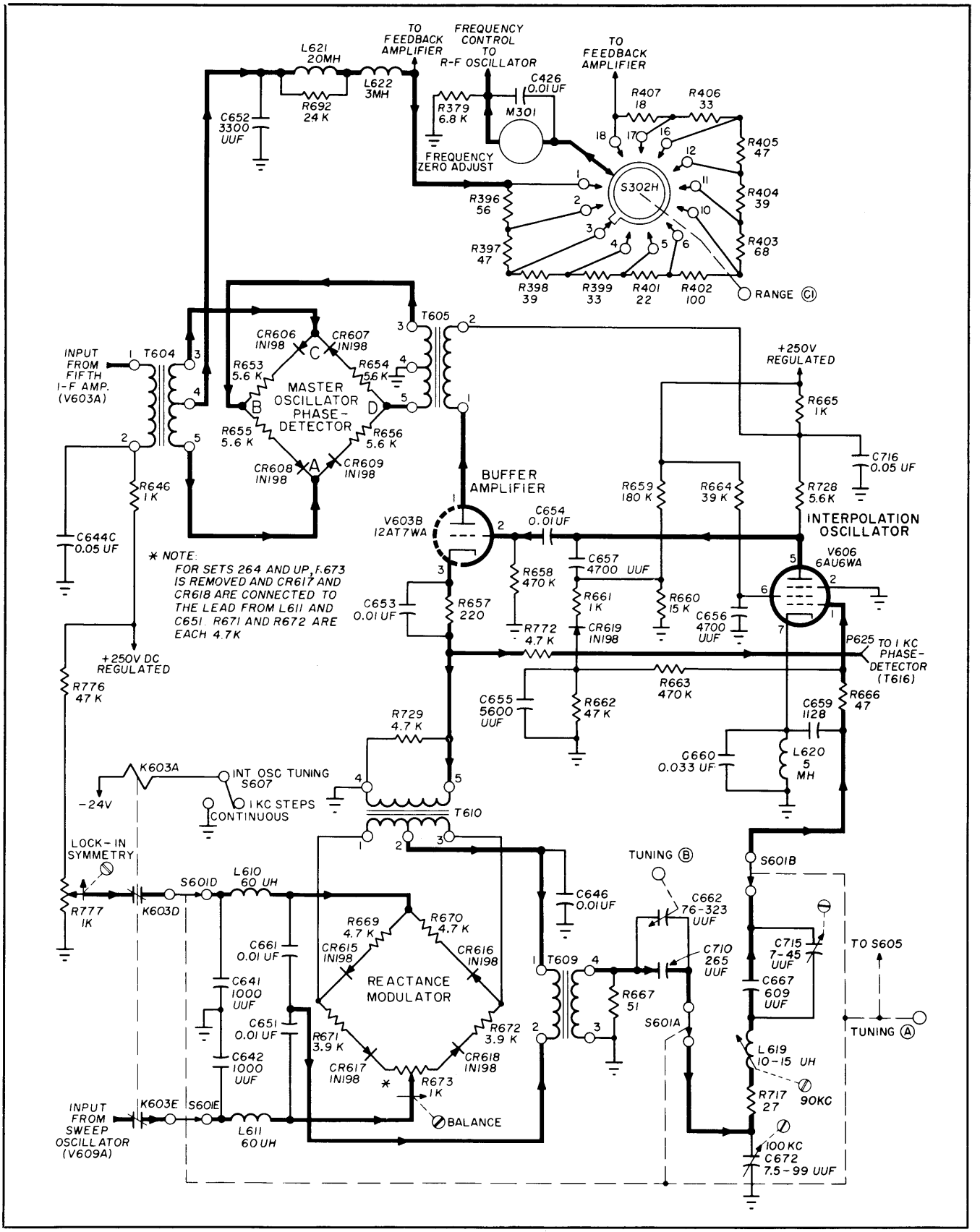


Figure 4-12. Interpolation Oscillator and Master Oscillator Phase Detector Circuits, Simplifi d Sch matic Diagram

determining elements of the interpolation oscillator. This out-of-phase current develops a voltage across resistor R667 which shifts the oscillator frequency by an amount directly proportional to the amplitude of the correction signal. When the polarity of the correction signal is reversed, that is, the arm of potentiometer R673 is made positive in respect to the junction of R669 and R670, the other section of transformer T610 provides the out-of-phase current. On one half cycle, the net current flows from terminal 2 of T610 through the primary of T609, C661, R670 and CR616 to terminal 3 of T610. On the other half cycle the net current flows from terminal 3 of T610 through R672, CR618, C651 and T609 back to terminal 2 of T610. Since the two currents are 180 degrees out of phase, the correction signal causes the interpolation oscillator to increase frequency in one case and decrease it in the other. In one case, the feedback current leads the oscillator tank current by 90 degrees and in the other case, the feedback current lags the oscillator tank current by 90 degrees. The out-of-phase signal developed across R667 has the effect of inserting inductive or capacitive reactance in the oscillator tank circuit in order to change its frequency. For sets serials 264 and up, balance potentiometer R673 is removed and CR617 and CR618 are connected to the lead from L611 and C651. R671 and R672 are each 4.7 K. However, the operation of the reactance modulator is the same as previously described.

(10) INTERPOLATION OSCILLATOR GEAR TRAIN.

(*a*) A schematic diagram of the gear train used to vary the interpolation oscillator frequencies, through the setting of tuning capacitor C662 and the rotary switch S601, is shown in figure 4-13. The gear train also drives the counters of counter assembly M603 to visually indicate the interpolation oscillator frequency settings.

(*b*) The TUNING (B) control knob, E628, and its vernier control, E627, are directly coupled to tuning capacitor assembly C662 in the oven through a slide coupling between the gear box and the oven. The tuning capacitor assembly includes its own speed reduction assembly, which is not considered as a part of the oscillator gear train. The TUNING (A) knob, E626, is coupled to rotary band switch S601 through a sprocket and chain assembly in the gear train housing, and a pair of miter gears in the oven.

(*c*) The setting of tuning capacitor C662 is indicated in KILOCYCLES on the counters of counter assembly M603. The gears MP618, MP617, MP616, MP615 and MP614, miter gear set MP625 and MP626 and the counter assembly reduction gears MP611, MP612, and MP613, which follow TUNING (B) knob E628, permit an indication on the three righthand digits of the counter assembly of frequency changes from 0.01 to 9.99 kc. The eleven turn stop assembly MP689 associated with this gear linkage limits the tuning of capacitor C662 to this range of frequencies.

(*d*) Rotary band switch S601, is operated from TUNING (A) knob E626 through sprocket MP629 and chain MP633 to sprocket MP631 and miter gears

GEAR SYMBOL		PITCH	PITCH DIAMETER	NO. OF TEETH
MP605A, MP605B	MITER GEAR SET	32	.750	24
MP610	GENEVA DRIVER	16	.9375	15
MP611	SPUR	64	.500	32
MP612	SPUR	64	.500	32
MP613	SPUR	64	1.000	64
MP614	SPUR	64	.5938	38
MP615	SPUR	64	1.7187	110
MP616	SPUR	64	2.7813	178
MP617	SPUR	64	1.7187	110
MP618	SPUR	64	1.7187	110
MP619	SPUR	64	.7500	48
MP620	SPUR	64	.7500	48
MP621	SPUR	64	.7500	48
MP622		16	1.500	24
MP623, MP624, MP625, MP626	MITER GEAR	32	.9375	30
MP627	BEVEL	48	1.3750	66
MP628	IDLER SPROCKET	3/16 INCH	.901	15
MP629	SPROCKET	3/16 INCH	.902	15
MP630	SPROCKET	3/16 INCH	1.199	20
MP631	SPROCKET	3/16 INCH	1.793	30
MP632	CHAIN	5/32 WIDE		90 PITCHES
MP687	GENEVA POSITIONER	16	.9375	15
MP695	BEVEL	48	1.3750	66

NOTES
1. REMOVE 14 TEETH.
2. COMPONENTS ARE SHOWN SCHEMATICALLY & DO NOT NECESSARILY DUPLICATE PHYSICAL POSITIONS.
3. ALL DIMENSIONS ARE IN INCHES.

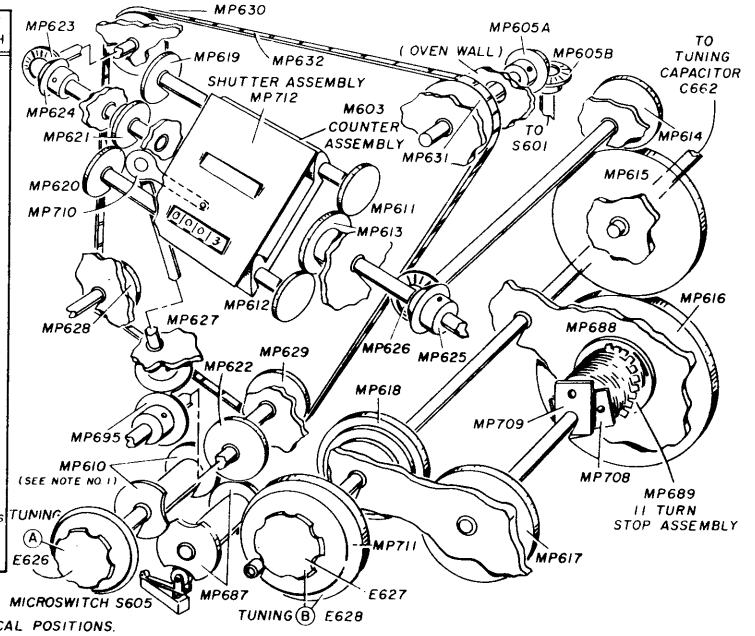


Figure 4-13. Interp lati n Oscillator Gear Train, Simplified Schematic Diagram

(12) FEEDBACK AMPLIFIER CIRCUITS.

(*a*) The circuit of the feedback amplifiers is part of the standard frequency generator assembly in Electrical Frequency Control C-2764/WRT-2. Figure 4-14 is a simplified schematic diagram of the feedback amplifier circuits. The feedback amplifiers respond only to transients in the correction signal. As shown in figure 4-14 the circuit provides three feedback paths. Each feedback path fulfills a special function. Feedback path number one prevents spurious control signals from affecting the frequency of the master oscillator. Feedback path number two stabilizes the control loop gain for the entire frequency range of the oscillator. Feedback path number three provides a signal which sweeps the master oscillator through a limited frequency range, so that the control circuits can lock in at the proper frequency.

(*b*) Any spurious signal appearing at the output of L622 is fed through switch section S302H, resistor R693 and capacitor C696B to grid 7 of first feedback amplifier V607A. Capacitor C696A limits the high frequency response of V607A. The spurious signal appearing at plate 6 of V607A is fed through a phase-shift network consisting of capacitors C702 and C703 and resistors R698 and R699, to grid 2 of second feedback amplifier V607B. Capacitor C699 and resistor R695 in the plate circuit of V607A as well as capacitor C701 and resistor R701 in the plate circuit of V607B, form low frequency compensating networks which further limit the high frequency response of the feedback amplifiers. At high frequencies, capacitors C699 and C701 effectively bypass R695 and R701, decreasing the plate load resistance and the gain of the amplifiers. The signal appearing at plate 1 of V607B is coupled through capacitor C704 to grid 2 of third feedback amplifier V608A. From plate 1 of V608A the signal is coupled through capacitors C697B, C697A and resistor R710 back to the junction of L622 and resistor R395 to close the negative feedback path number one. The negative feedback path causes the effective input impedance for spurious signals to be very low so that they do not appear across voltage sensitive capacitor C387. The d-c control voltage is not affected by the feedback path because the amplifier does not pass d-c.

(*c*) Meter M601 is connected across feedback path number one as shown in figure 4-14. The feedback signal is always equal to the spurious signal and thus, meter M601 effectively measures the spurious output of the phase detector. On positive half cycles the current flows through resistor R711 and crystal diode CR621. On negative half cycles of the spurious signal, current flows through R712 and CR622. The rectified spurious output signal is displayed on meter M601 whenever relay K603 is energized by placing INT OSC TUNING switch S607 in the CONTINUOUS position.

(*d*) Feedback path number two limits the a-c frequency response of the feedback amplifiers. The negative feedback loop from cathode 3 of V607B

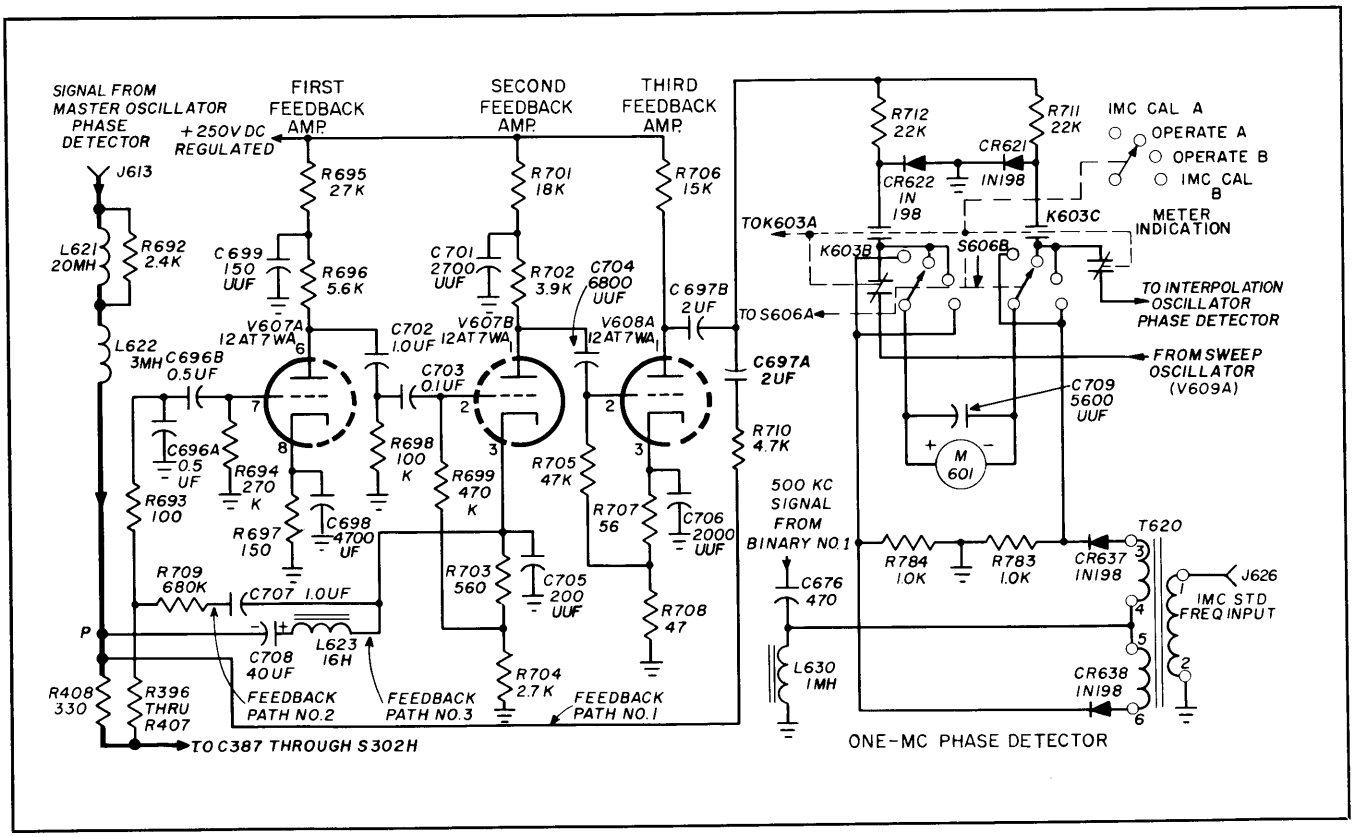


Figure 4-14. F edback Amplifier, Simplified Schematic Diagram

(*b*) The first 5:1 frequency divider, V604B, is a single swing blocking oscillator. The repetition rate of V604B is determined by the r-c time constant of C722 and R748. Capacitor C722 is charged to a high negative value after V604B conducts by the accumulation of electrons on the grid of the tube. The negative charge keeps the tube cut off until the charge on capacitor C722 leaks off through resistor R748. The discharge time is calculated to coincide with the occurrence of every fifth 100-kc pulse as the 100-kc pulses travel along the top of the composite wave formed by the mixing of 30-kc and 50-kc in Z601, the instantaneous voltage at the occurrence of the fifth pulse from V604A is very high. The high voltage occurs at the time when the charge on capacitor C722 is least negative and causes tube V604B to conduct. When V604B conducts, capacitor C722 is reset for the next cycle. Thus, the process repeats and V604B becomes an intermittent oscillator. In this manner, the 100-kc frequency is divided by five to produce 20 kc.

(*c*) The second stage is also a 5:1 frequency divider, as shown in figure 4-15. The second 5:1 divider, V610A, operates in the same manner as V604B except that its ringing circuit is in the cathode. The two ringing frequencies are 6 kc and 10 kc and are determined by the circuit constants of the two sections of Z602. The composite wave formed by the mixing of these two frequencies delivers a negative peak to the cathode of second 5:1 divider V610A, simultaneously with the application of the positive 20-kc pulse to the grid. Thus, a pulse frequency of 4-kc is delivered to 4:1 frequency divider V610B.

(*d*) The 4:1 frequency divider, V610B, operates also as a blocking oscillator. The two ringing frequencies are determined by the circuit constants of the two sections of Z603. One section rings at 1.5 kc and the other at 2.35 kc. The ringing circuit is in the cathode as in the second 5:1 divider. The output of the 4:1 divider at plate 6 of V610B is exactly one kc.

(*e*) A visual indication in case of a failure in the 100:1 frequency divider circuits is provided by 1 KC ALARM light, DS602, mounted on the front panel of Electrical Frequency Control C-2764/WRT-2. As shown in figure 4-15, the neon bulb is connected across resistor R791 in the plate circuit of V608B. If the one-kc signal is present in the output of the 4:1 frequency divider stage, a voltage exists across the inductor of resonant filter Z604, and the rectifier composed of diode CR639 and resistor R787 maintains a negative voltage at the grid of V608B which is sufficiently large to keep the tube from conducting. Should the one-kc signal fail, the bias on V608B decreases, the tube conducts, and the alarm light flashes as capacitor C737 charges and discharges.

(14) ONE-KC, LOCK-IN CIRCUITS.

(*a*) The purpose of the one-kc, lock-in circuit is to develop a d-c correction voltage which opposes any change from the locked-in position of the interpolation oscillator. Figure 4-16 is a simplified schematic diagram of the one-kc, lock-in circuit. As shown in figure 4-16 the one-kc, lock-in circuit consists of the one-kc phase detector and sweep oscillator and d-c amplifier V609. The positive one-kc pulses from 4:1 frequency divider V610B are applied to the one-kc phase detector through terminal 6 of transformer T616 causing diodes CR632 and CR633 to conduct during the pulse interval. When CR632 and CR633 conduct, capacitors C728 and C729 charge to a value sufficient to cut off the diodes between pulses. The sine wave input to the one-kc phase detector, from the interpolation oscillator, is therefore blocked for the interval between the one-kc pulses. For the interval of pulse duration the diodes conduct and an instantaneous voltage is impressed on capacitor C734. The voltage level to which capacitor C734 charges varies with the phase relationsip between the one-kc pulse and the sine wave input from the interpolation oscillator.

(*b*) When the frequency of the interpolation oscillator is an exact multiple of one kc, the one-kc pulses at terminal 6 of T616 occur at the zero voltage point of the sine wave. Thus, for all practical purposes, no voltage is conducted through the phase detector and no voltage is impressed on capacitor C734. The interpolation oscillator is then considered to be locked-in. Any deviation in the frequency of the interpolation oscillator shifts the zero voltage point of the sine wave and a voltage is impressed upon C734. The level of the voltage impressed on C734 depends on the phase difference of the sine wave and the one-kc phase. The voltage impressed on C734 is utilized as a correction voltage and is applied through the sweep oscillator and d-c amplifier, V609A, to the control circuit of the interpolation oscillator. Thus, when the interpolation oscillator is not locked in tubes V609A and V609B function as a sweep oscillator and a half cycle per second sweep voltage is generated in the plate circuit of V609A. The sweep voltage is applied to the interpolation oscillator reactance modulator, as shown in figure 4-14, and causes the interpolation oscillator to lock-in at exact multiples of one-kc. When the interpolation oscillator is locked in to a multiple of the one-kc pulse signal, the sweep oscillator is disabled and tubes V609A and V609B function as degenerative feedback amplifiers. The d-c correction voltage is fed from the cathode of sweep oscillator and d-c amplifier V609A to meter M601 in order to obtain an indication of the amount of correction voltage applied to the interpolation phase detector.

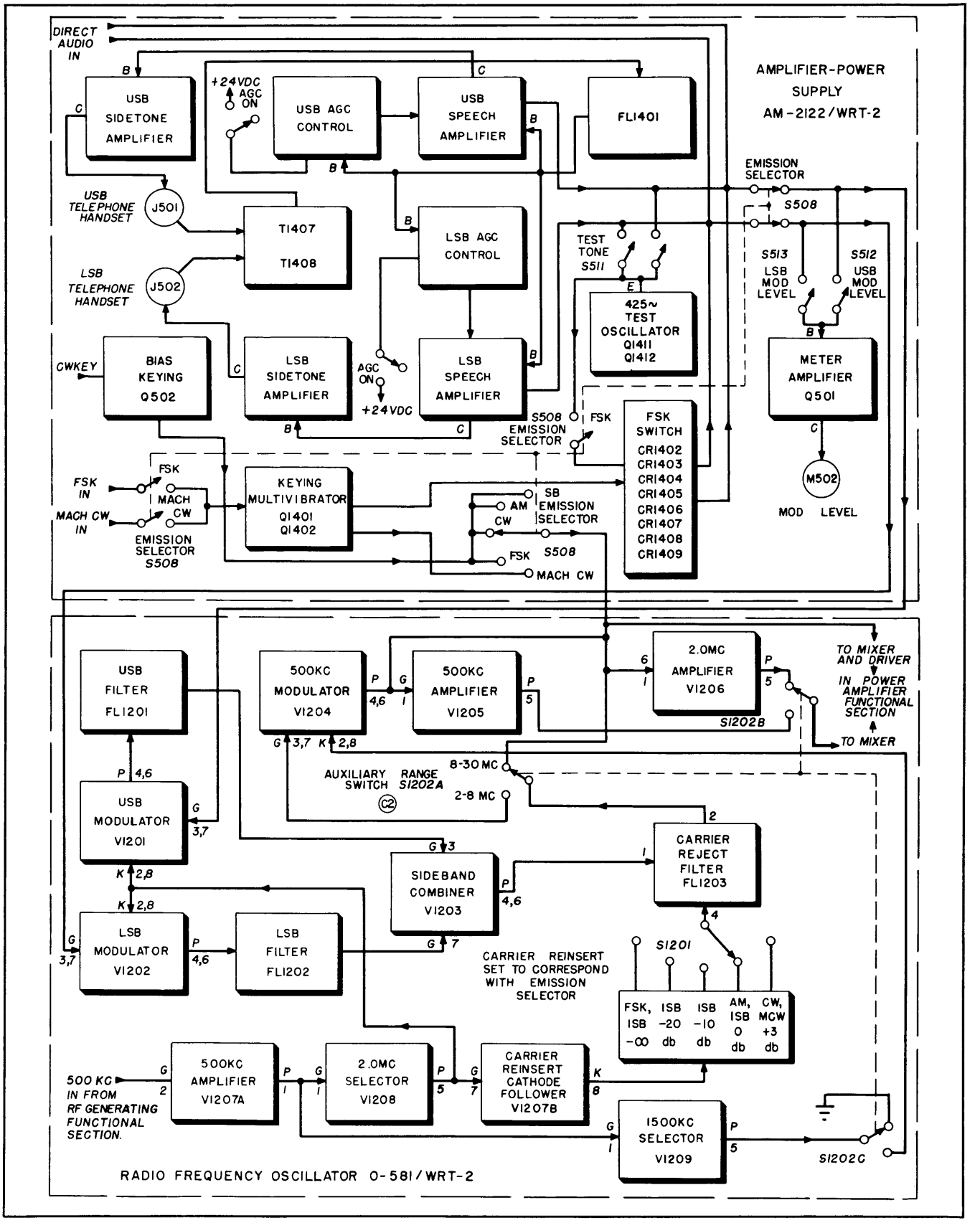


Figure 4-17. M dulating S ction, Functional Block Diagram

(12) The use of the fundamental master oscillator frequencies (1.5 to 7.5 kc) for bands one through six (2.0 to 8.0 mc) necessitates the inclusion of the 1500-kc selector circuitry and the 500-kc modulator, V1204. On the lowest range, the master oscillator frequency is only 1.5 kc. Therefore, a 500-kc signal must be introduced at the input mixer if the transmitter output frequency is to be in the specified 2 to 8-mc range. When the desired transmitter output frequency is above the 8-mc range (bands 7 through 12), the 500-kc signal is no longer suitable for mixer use because the 1.0-mc spread between the desired signal frequency and its image is no longer sufficient for adequate discrimination at the receiver. The 2.0-mc level signal components are then used directly.

(13) As shown in figure 4-17, AUXILIARY RANGE SWITCH (C2) sections S1202A and S1202C apply the sideband combiner output and the output of 1500-kc selector V1209 to the 500-kc modulator V1204 when the transmitter operating frequency is in the 2.0 to 8.0-mc range. The 500-kc modulator circuit is identical in operation to the USB modulator described above. The push-pull output of V1204 suppresses the 1500-kc signal and a tuned tank in the grid circuit of the 500-kc amplifier V1205 selects only the difference frequency components generated by the modulator. After amplification, the 500-kc signal passes through AUXILIARY RANGE SWITCH (C2) section S1202B to the mixer in the power amplifier functional section. When the transmitter operating frequency is above 8.0 mc, AUXILIARY RANGE SWITCH (C2) S1202 diverts the output of the sideband combiner to 2.0-mc amplifier V1206 and grounds the output of the 1500-kc selector circuit.

b. DETAILED OPERATION.

(1) SPEECH AMPLIFIERS.

(*a*) The speech amplifiers supply audio signals of suitable characteristics to drive the USB and LSB modulators in Radio Frequency Oscillator O-581/WRT-2. Two identical speech channels are provided for simultaneous transmission of two independent audio signals when independent sideband operation is desired. Sidetone amplifiers and AGC control circuitry are incorporated in each speech channel. Filters are employed to limit the frequency response to signals in the range of 300 to 3500 cycles. A simplified schematic diagram of the speech amplifiers, AGC control, and sidetone amplifier of the USB speech channel is shown in figure 4-18. The circuits are contained in Amplifier-Power Supply AM-2122/WRT-2. Only USB operation will be considered in the discussion which follows.

(*b*) A dynamic microphone (part of Handset H-169/U) is utilized to generate the speech input signal. As shown in figure 4-18, when the push-to-talk button is depressed, a 12 volt supply is connected across

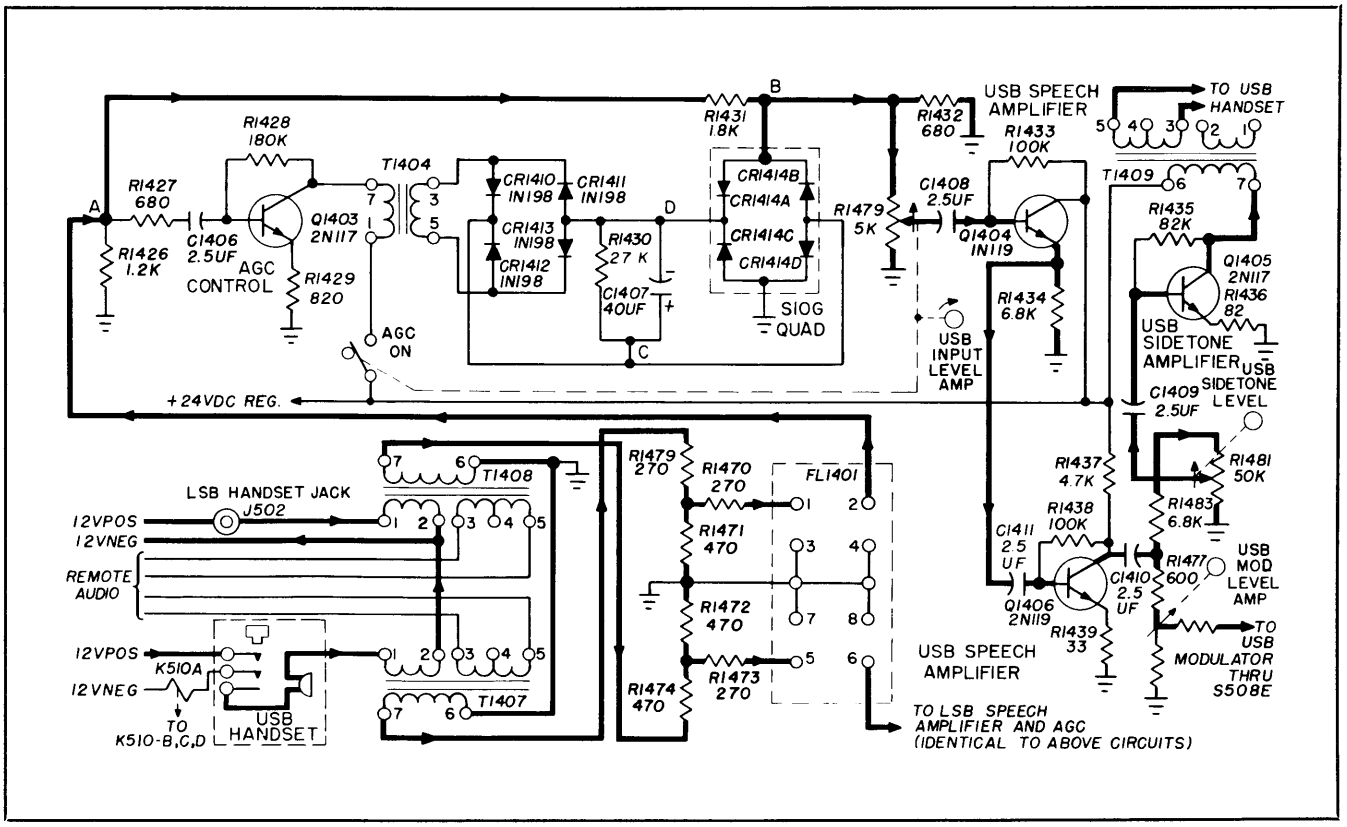


Figure 4-18. Sp ech and Sid t ne Amplifier, Simplified Schematic Diagram, Sets Serials 1 t 122

resistor and form a voltage divider at the input to audio amplifier Q1415. The speech signals appearing at the junction of R1487 and the collector of Q1413 are coupled through capacitor C1422 to the base of the first amplifier stage. The speech signals are further amplified by stages Q1416 and Q1417. The third audio amplifier, Q1417, has two outputs: the signal voltage developed across emitter resistor R1499 is applied through the AGC ON switch to speech amplifier Q1419; the signal voltage across collector resistor R1498 is applied through capacitor C1428 to the AGC detector consisting of diode CR1420, resistor R1503, and capacitor C1429. Reverse bias for diode CR1420 is provided by the voltage dropping network consisting of resistors R1502 and R1504. The purpose of the reverse biased diode is to delay the action of the AGC until the audio signal level has reached the reverse-bias level—approximately three volts peak. Until the negative peaks of the audio signal exceed the bias on CR1420, capacitor C1429 develops no net charge. When the negative peaks exceed the reverse bias level, clipping occurs and, since the positive peaks are not affected, a net positive charge develops on capacitor C1429. The capacitor charges through resistor R1503, and the time constant is such that the AGC responds only to average changes in the audio signal level and does not follow momentary peaks. The d-c voltage of capacitor C1429 is applied through d-c amplifier Q1418 to the base of AGC transistor Q1413. The collector resistance of Q1413 is a function of the base bias voltage. Thus, an increase in audio signal level at the input of the first audio amplifier is coupled back to the AGC transistor as an increase in positive base bias and the consequent decrease in collector resistance reduces the amount of audio voltage coupled to the base of audio amplifier Q1415.

(*f*) As shown in figure 4-18A, the signal voltage developed across collector resistor R1491 of speech amplifier Q1419 is coupled through capacitor C1424 to T-pad attenuator R1477. The attenuator is adjusted by means of USB MOD LEVEL AMP control located on the front panel of Amplifier-Power Supply AM-2122/WRT-2. The amount of audio signal voltage appearing at the input of the USB modulator in Radio Frequency Oscillator O-581/WRT-2 is determined by the setting of the attenuator.

(*g*) The signal voltage developed across emitter resistor R1493 of speech amplifier Q1419 is also impressed across resistor R1483 and USB SIDETONE LEVEL potentiometer R1481. The portion of the speech amplifier output appearing at the center arm of R1481 is coupled through capacitor C1430 to the base of sidetone amplifier Q1414. The primary winding of T1409 serves as the collector load for Q1414. Audio signals induced in the secondary of T1409 are applied through USB HANDSET jack J501 to the USB handset for monitoring purposes or to remote lines through LOCAL-REMOTE switch S507.

(*h*) For sets serials 1 to 122 when USB INPUT LEVEL AMP control, located on the front panel of Amplifier-Power Supply AM-2122/WRT-2, is rotated to its fully clockwise position, R1479 is bypassed and +24 volts d-c is connected through transformer T1404 to the collector of Q1403, the AGC control amplifier. To understand the action of the AGC control circuit, refer to points A and B in figure 4-18. If a variable resistance were placed from point B to ground, the magnitude of which was an inverse function of the magnitude of the audio signal appearing from point A to ground, then the amount of signal coupled to the base of Q1404 would remain nearly constant despite the signal variation at point A. Precisely this result is accomplished by the AGC control circuit. AGC control amplifier Q1403 is a common-emitter stage with R1428 providing base bias when the USB INPUT LEVEL AMP control is in the AGC ON position and +24 volts regulated d-c is applied to the collector. As shown in figure 4-18, the collector load consists of the primary winding of transformer T1404. The audio voltage induced in the secondary winding of T1404 is rectified by a fullwave bridge rectifier consisting of germanium crystal diodes CR1410, CR1411, CR1412, and CR1413. The rectifier output is developed across load resistor R1430 and is filtered by capacitor C1407. The magnitude of the d-c voltage appearing across R1430 is proportional to the average amplitude of the audio signal induced in the secondary winding of T1404 and the polarity is such that point C in figure 4-18 is made positive with respect to point D. The presence of the variable d-c potential between C and D provides forward bias for the matched silicon crystal diodes of the sealed quad unit. Though the diodes are forward-biased they do not operate in the fully-conducting region of their characteristic curves, but operate in the curved non-linear region. If the average level of the audio signal increases, a larger d-c potential develops across R1430, the forward bias on the diodes increases, and the impedance from point B to ground decreases. If the average level of the audio signal decreases, the opposite effect occurs. Thus the amount of audio voltage coupled to the base of speech amplifier Q1404 remains constant though the amplitude of the input from point A to ground may vary considerably.

(*i*) As shown in figure 4-18, Q1404 is connected as an emitter-follower stage. Resistor R1434 in the emitter circuit serves as the output load and R1433 provides base bias. The signal voltage appearing across R1434 is coupled to the base of the second speech amplifier, Q1406, through coupling capacitor C1411. The circuit of the second speech amplifier is a common-emitter configuration. Amplified audio signals are coupled from collector load resistor R1437 through capacitor C1410 to T-pad attenuator R1477 and USB SIDETONE LEVEL potentiometer R1481. The amount of audio signal voltage appearing at the input of the USB modulator in Radio Frequency Oscillator

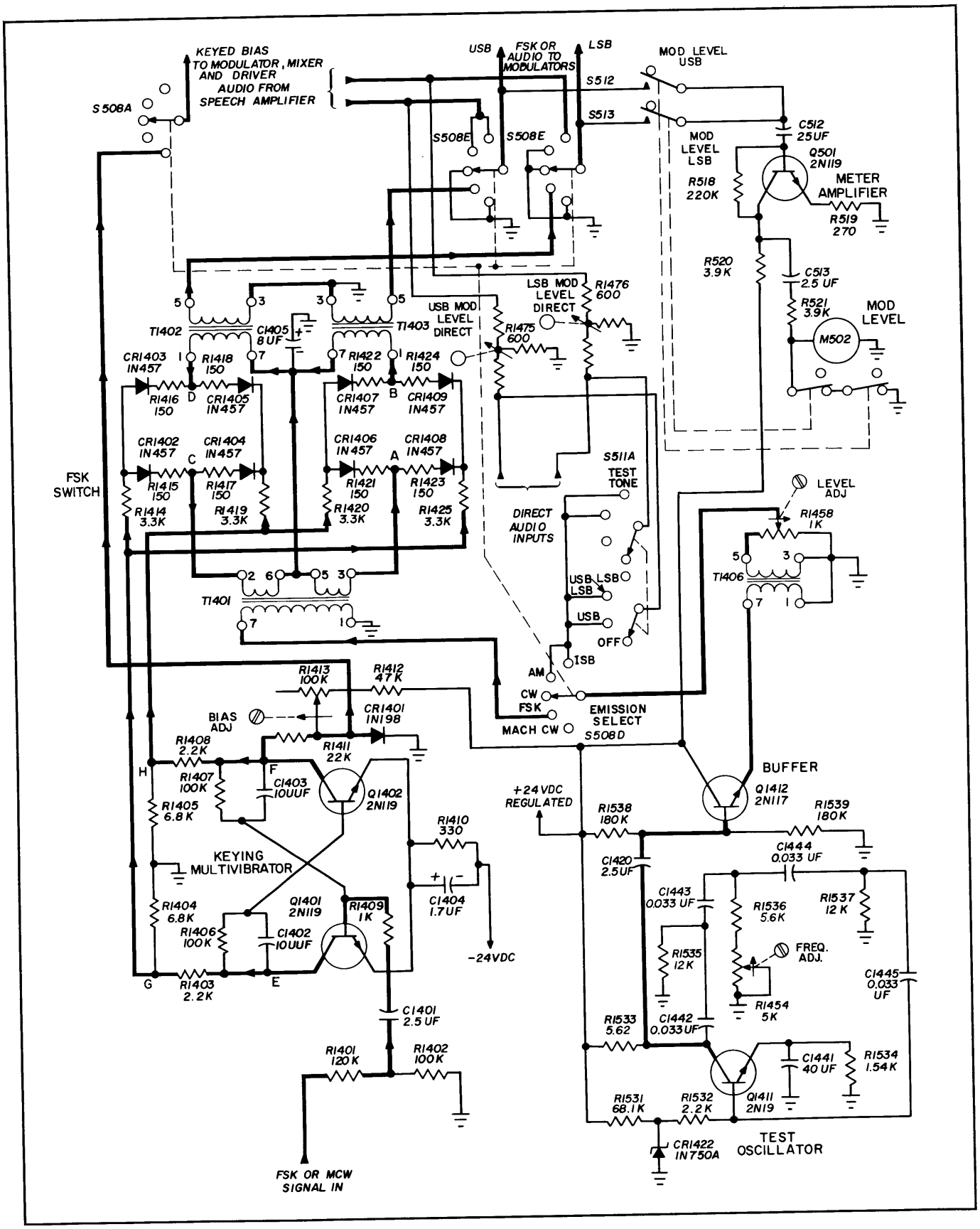
spect to ground. The negative step change is coupled to the base of Q1402 through C1402, and Q1402 ceases conduction. A transition from the space to a mark signal causes Q1401 to cease conduction and Q1402 to begin conduction. Thus, for a space signal, point H is negative with respect to point G, and for a mark signal, the opposite voltage condition exists. Point G is coupled through R1414 to the top of the diode bridge formed by CR1402, CR1403, CR1404, and CR1405, and through R1425 to the bottom of the diode bridge formed by CR1406, CR1407, CR1408, and CR1409. Point H is coupled through R1419 and R1420 to the other ends of the diode bridges as shown in figure 4-19. When point G is negative with respect to point H (Q1401 conducting), the lower bridge circuit diodes are foreward-biased and the impedance between points A and B becomes low whereas the upper bridge circuit diodes are reverse-biased and the impedance between points C and D is very high. The 425-cycle signal path is completed from point A through the arms of the bridge to point B and thence to the primary of T1403, but the signal level in the primary of T1402 is 60 db less due to the high impedance between points C and D. The voltage induced in the secondary of T1403 is applied through EMISSION SELECTOR switch S508 to the USB modulator. When the keying multivibrator changes state, bias conditions for the diode bridges are interchanged and the 425-cycle signal voltage appears across the secondary of T1402 for application through S508 to the LSB modulator.

(*d*) For sets serials 1 to 154 the 425-cycle signal used in FSK operation is derived from R-L-C phase-shift oscillator, Q1411. As shown in figure 4-19, a portion of the output signal developed across collector load reactor L1401 is fed back to the base of Q1411 through two phase-shift networks composed of C1418-R1454, R1455 and C1419-R1457. The phase of the voltage across L1401 leads that of the collector current and additional leading phase shift is provided by the r-c networks. Adjustment of FREQ.-ADJ potentiometer R1454, determines the total amount of phase shift any given signal will undergo when coupled back from collector to base. At some setting of R-1454, a 425-cycle signal is fed back in phase and oscillations ar sustained. LEVEL-ADJ potentiometer R1458, controls the magnitude of the emitter current and hence the magnitude of the collector or output current. The oscillator output is coupled to the base of emitter-follower Q1412 through capacitor C1420 and resistor R1460. Q1412 serves to isolate the oscillator from loading effects, and to provide a low level output impedance. Signal current in the primary of T1406 induces a current in the secondary which develops a voltage across load resistor R1462. The voltage appearing at pin 3 of T1406 is connected through EMISSION SELECTOR switch S508 to the primary of T1401 when S508 is in the FSK position. When S508 is in the AM or ISB position, the oscillator output is connected to TEST TONE switch S511 and may be applied to either the USB or LSB modulators for test purposes. MOD LEVEL DIRECT adjustments R1475 and R1476 are located on the front panel of Amplifier-Power Supply AM-2122/WRT-2, and are provided to adjust the audio voltage levels for either direct speech inputs or test oscillator signals.

(*d*) A. For sets serials 155 and up the 425-cycle signal used in FSK operation is derived from R-C phase-shift oscillator Q1411. The oscillator is shown in figure 4-19A. The feedback network between collector and base of Q1411 consists of capacitors C1442 through C1445, resistors R1535 through R1537, and FREQ. ADJ. potentiometer R1454. Since the signal at the collector of Q1411 is 180 degrees out of phase with the base signal, the feedback network must provide 180 degrees of phase shift to sustain oscillations. FREQ. ADJ. potentiometer R1454 is provided for adjusting the total phase shift so that the stage will oscillate at approximately 425 cycles. The signal developed across collector load resistor R1533 is coupled through capacitor C1420 to the base of emitter-followers Q1412. Q1412 serves to isolate the oscillator from loading effects, and to provide a low level output impedance. The emitter load impedance is the primary of transformer T1406. The voltage inducted in the secondary of T1406 is coupled from the center arm of LEVEL ADJ potentiometer R1458 to EMISSION SELECTOR switch S508. When S508 is in the FSK position, the oscillator signal is applied to the primary of T1401. When S508 is in the AM or ISB position, the oscillator output is connected to TEST TONE switch S511 and may be applied to either the USB or LSB modulators for test purposes. MOD LEVEL DIRECT adjustments R1475 and R1476 are located on the front panel of Amplifier-Power Supply AM-2122/WRT-2, and are provided to adjust the audio voltage levels for either direct speech inputs or test oscillator signals.

(*e*) Audio signal levels appearing at the input of either the USB or LSB modulator may be monitored by means of USB and LSB MOD LEVEL switches, S512 and S513, and the constant-gain meter amplifier circuit of Q501. When either MOD LEVEL switch is pressed, the short circuit across MOD LEVEL meter M502 is removed and the audio signal is coupled to the base of Q501 through coupling capacitor C512. Q501 is connected in the common-emitter configuration with R518 providing base bias and R520 serving as the collector load. The audio signal appearing across R520 is coupled through C513 to M502.

(*f*) For MACH CW operation, the keying multivibrator is utilized to provide a keying bias for application to the grids of the 2.0-mc and 500-kc amplifiers in the modulator, and the mixer and driver stages in Radio Frequency Amplifier AM-2121/WRT-2. When EMISSION SELECTOR switch S508 is placed in the MACH CW position, the encoder signal developed across resistor R530 in Amplifier-Power Supply AM-2122/WRT-2, is applied through the switch to the



Figur 4-19A. FSK and Mach CW Multivibrator, Simplifi d Sch matic Diagram, Sets S rials 155 and up

(*b*) For sets serials 1 to 444 as shown in figure 4-20, the output of the 2.0-mc selector stage, V1208, is coupled through transformer T1213 to load resistors R1256 and R1255, and the reinsert divider network composed of resistors R1260 through R1263. The 2.0-mc voltage appearing at the arm of 2.0 MC MOD LEVEL ADJUST potentiometer R1256 is coupled through capacitors C1203 and C1213 to the cathodes of the USB and LSB modulators, V1201 and V1202; the amount of carrier voltage applied to the modulators is determined by the setting of R1256. Audio signals from the USB speech amplifier channel are induced in the secondary of transformer T1201 and the voltages developed across load resistors R1201 and R1202 drive the grids of twin-triode V1201 in 180 degree phase opposition. Cathode drive from the 2.0-mc carrier is applied across R1204 to each triode section in the same phase. Reference to figure 4-20 reveals that the plates of V1201 are connected in a push-pull configuration. With a common cathode drive, the 2.0-mc currents in the primaries of T1202 create opposing magnetic flux and under ideal conditions no net flux links the secondary windings of the transformer. Thus, no 2.0-mc carrier voltage is present at the input to USB filter FL1201. On the other hand, with audio grid signals applied 180 degrees out of phase, carrier signals plus and minus the audio frequencies (sidebands) appear across the secondary winding of T1202 because unbalanced currents through the primaries create a net magnetic flux. The degree of carrier suppression depends upon the uniformity of the characteristics of the two triode sections of V1201. USB CARRIER BAL adjustments R1203 and R1206 compensate for differences in tube characteristics.

(*c*) The output of USB modulator V1201 which appears across the terminals of T1202 consists of upper and lower sideband components spaced symmetrically about a carrier of negligible magnitude. The pass band of USB filter FL1201 is 2,000,300 to 2,008,000 cycles; therefore only upper sideband components appear across load potentiometers R1207 and R1208A. Capacitor C1208 and coil L1201 are used to provide a proper terminating impedance for the filter network and capacitor C1207 tunes the secondary of T1202.

(*d*) When EMISSION SELECTOR switch S508, in Amplifier-Power Supply AM-2122/WRT-2, is in the ISB position, sideband level selector relay K1201 is energized and contacts K1201B and K1201C are opposite from those shown in figure 4-20. USB sideband components appearing at the arm of R1208A and LSB sideband components appearing at the arm of R1208B are coupled to the grids of the sideband combiner, V1203. A SIDEBAND SELECTOR control, located on the front panel of Radio Frequency Oscillator O-581/WRT-2, enables the operator to adjust the relative amounts of power present in the two sidebands. As shown in figure 4-20, clockwise rotation of the SIDE-

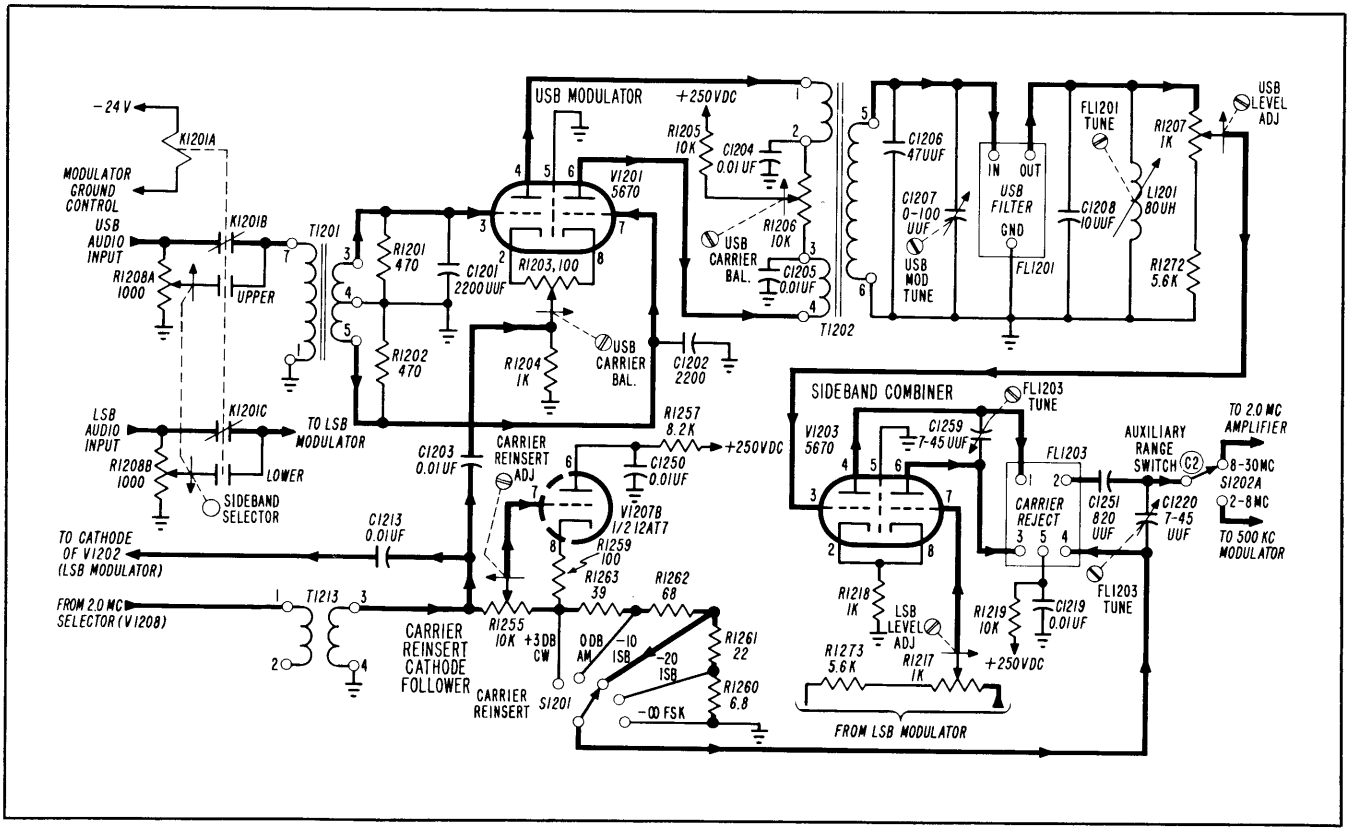


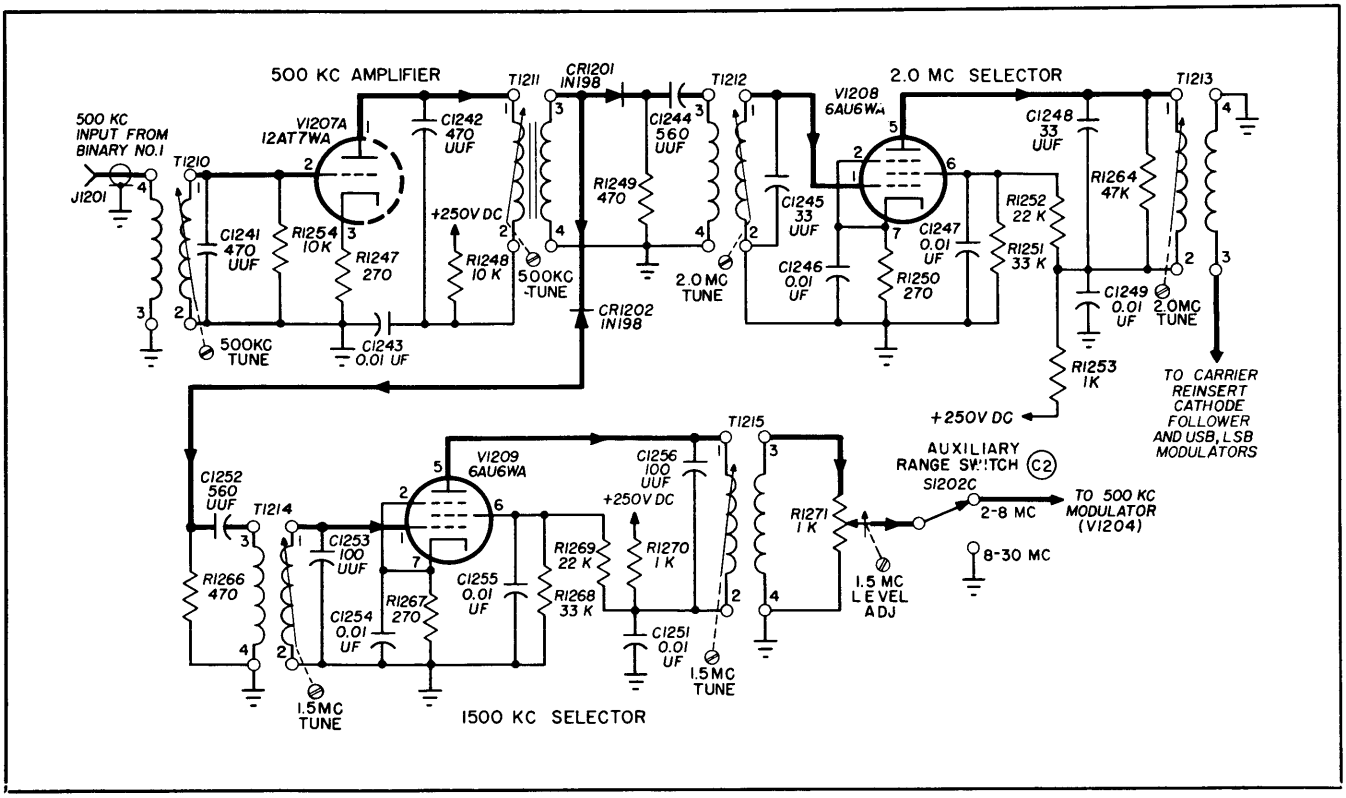
Figure 4-20A. USB Modulator and Sideband Combiner Circuits, Simplified Schematic Diagram, S/s Serials 445 and up

The circuits of the 500-kc amplifier and 2.0-mc and 1500-kc selector amplifiers are contained in Radio Frequency Oscillator O-581/WRT-2. A simplified schematic of the circuits is shown in figure 4-21.

(*b*) As shown in figure 4-21, the 500-kc square wave signal from binary #1 appears at pin 4 of tuned transformer T1210. Capacitors C1241 and C1242 form parallel resonant circuits with the grid input and plate output transformers. After amplification by V1207A, the 500-kc signal at the secondary of T1211 is impressed across two harmonic generators: Crystal diode CR1201, resistor R1249, capacitor C1244, and the inductance of the primary of T1212 and crystal diode CR1202, resistor R1266, capacitor C1252, and the inductance of the primary of T1214. The parallel tank consisting of the secondary of T1212 and capacitor C1245 in the grid circuit of V1208 selects the fourth harmonic output of the harmonic generator. In sets serials 445 and up a 2.0 MC LEVEL ADJ control R1256 has been inserted between transformer T1212 and the control grid of the 2.0 mc selector V1208. This 2.0 MC LEVEL ADJ control adjusts the level of the 2.0 mc signal at the plate of the 2.0 mc selector. The 2.0 mc signal current appearing in the plate tank of V1208 induces a voltage across the secondary winding of T1213 which is applied to the USB and LSB modulators and the carrier reinsert cathode follower as described previously. The tuned tank circuit consisting of the secondary of transformer T1214 and capacitor C1253 in the grid circuit of V1209 selects the third harmonic output from the other harmonic generator as shown in figure 4-21. The 1500-kc signal current appearing in the plate tank of V1209 induces a current in the secondary of tuned transformer T1215. Voltages developed across load potentiometer R1271 are coupled through AUXILIARY RANGE SWITCH C2 S1202 to the cathode of the 500-kc modulator V1204. Adjustment of 1.5 MC LEVEL ADJ potentiometer R1271 determines the amount of 1500-kc signal voltage applied to the modulator.

(5) 500-KC MODULATOR, 2.0-MC AND 500-KC AMPLIFIERS.

(*a*) When the transmitter output frequency lies within the range of 2.0 to 8.0-mc, the master oscillator fundamental frequency range is only 1.5 to 7.5-mc. To obtain the desired output frequencies, a 500-kc level signal must be introduced at the input mixer in Radio Frequency Amplifier AM-2121/WRT-2. When AUXILIARY RANGE SWITCH C2 S1202 is placed in its 2-8 MC position, the 2.0 mc level sideband signal components and the output of the 1500-kc selector are applied to a balanced modulator. Only difference frequency components are selected from the modulator output; thus the desired 500-kc signals are produced for application to the input mixer. When the transmitter output frequency lies in the frequency range above 8.0 mc, AUXILIARY RANGE SWITCH C2 S1202 is placed on its 8-30 MC position and the nominal 2.0-mc sideband components are applied to the input



Figur 4-21. 2 MC and 1.5 MC Select r Circuits, Simplifi d Sch matic Diagram

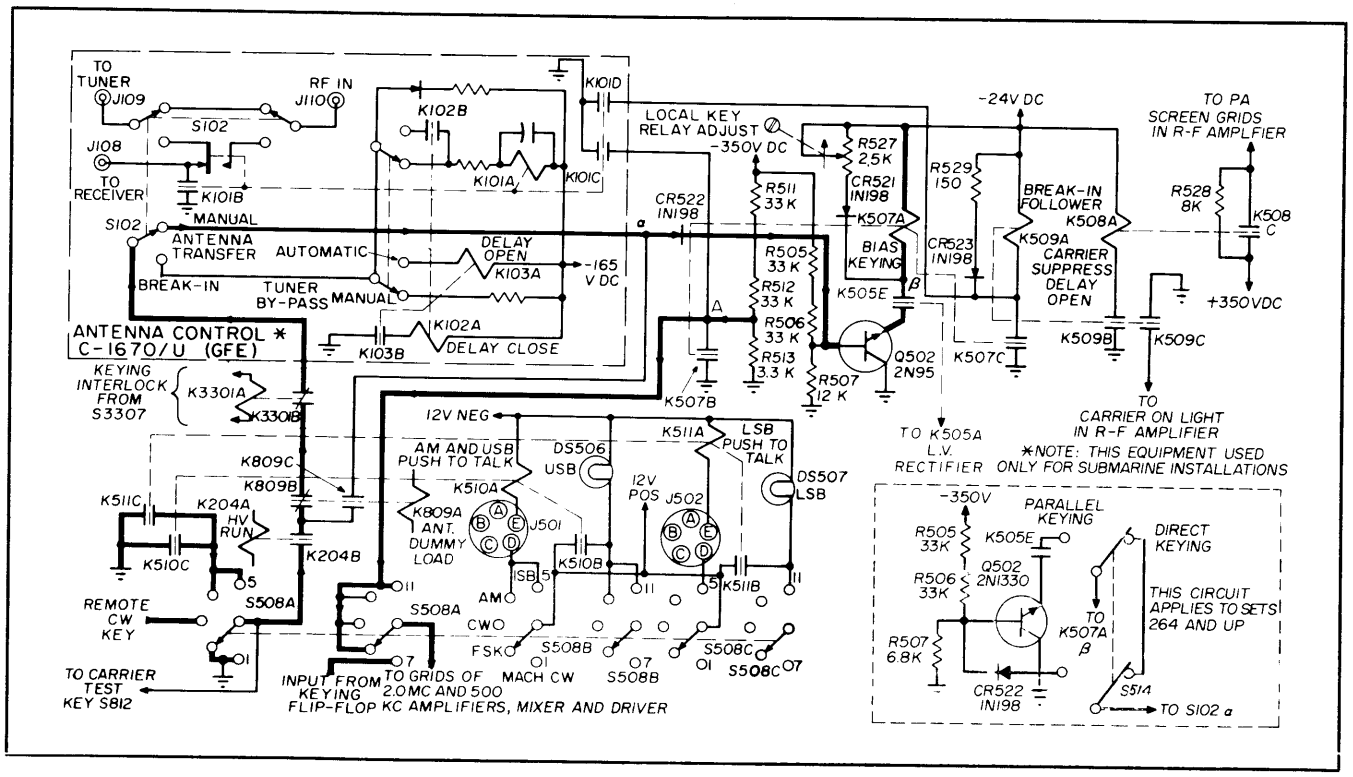
(6) KEYING AND SIGNAL CONTROL CIRCUITS.

(*a*) For each type of emission mentioned above, a definite sequence of control events must occur before any signal is radiated from the transmitter antenna. The particular control functions to be performed are initially selected by the setting of EMISSION SELECTOR switch S508, located on the front panel of Amplifier-Power Supply AM-2122/WRT-2. On undersurface vessels only, break-in CW operation is accomplished by circuits in Antenna Control CU-1670/U, (GFE); the setting of ANTENNA TRANSFER switch S102 on the front panel of the control determines the functions to be performed by the unit. After the desired control paths have been selected, the control circuits are energized by the particular message-sending device in use and the transmitter is placed on the air. When a message is completed, the control circuits are deenergized and the transmitter is taken off the air. A simplified schematic diagram of the keying and signal control circuits is shown in figure 4-23.

(*b*) Transmitter keying is accomplished by applying a bias keying voltage to the grids of the 2.0-mc and 500-kc amplifiers located in Radio Frequency Oscillator O-581/WRT-2, and to the grids of the mixer and first driver in Radio Frequency Amplifier AM-2121/WRT-2. When a negative voltage of sufficient magnitude to cut off the tubes is applied, no signal is applied to the power amplifier final driver stage. When the negative keying voltage is removed from the amplifier grids, 2.0-mc or 500-kc signal components (depending on the band of operation) are amplified and applied to the mixer. Sum frequencies are generated in the mixer and are accepted and amplified by the following driver stages. As shown in figure 4-23, the bias keying voltage is applied through EMISSION SELECTOR switch wafer S508A to the grids of the 2.0-mc and 500-kc amplifiers and to the mixer and first driver.

(*c*) When single sideband AM operation is desired, EMISSION SELECTOR switch S508 is placed in the AM position. Depression of the microphone push-to-talk button energizes AM and USB push-to-talk relay K510. As shown in figure 4-23, contacts K510B close, causing the USB indicator, DS506, to light, and contacts K510C close, applying a ground to contacts K204B of the HV RUN relay in Power Supply PP-2222/WRT. HV RUN relay K204 must be energized before keying can take place. If contacts K204B are closed, a path for ground is established through contacts K809B of the ANT DUMMY LOAD relay, the contacts of the antenna tuner interlock, and the ANTENNA TRANSFER switch S102 to the anode of bias keying diode, CR522. When the transmitter is being tuned, the antenna dummy load relay is energized and a keying path which bypasses the antenna tuner and control is established through contacts K809C.

(*d*) A −350V d-c divider network composed of resistors R505, R506, and R507 normally holds the emitter of Q502 positive with respect to its base. The cathode of keying diode CR522 is connected to the base of Q502 however and when a ground is applied to the anode of the diode, the base voltage of Q502 falls to the threshold potential of the diode and the transistor



Figur 4-23. K ying and Signal Contr l Circuits, Simplifi d Sch matic Diagram

4-4. POWER AMPLIFIER FUNCTIONAL SECTION.

a. GENERAL OPERATION.

(1) The power amplifier functional section consists of the high voltage rectifier circuits, located in Power Supply PP-2222/WRT, the r-f amplifier circuits located in Radio Frequency Amplifier AM-2121/WRT-2 and the r-f tuner circuits located in Radio Frequency Tuner TN-342/WRT-2.

(2) Figure 4-24 is a functional block diagram of the power amplifier functional section. As shown in figure 4-24 the r-f signal from the modulator functional section and the r-f signal from the r-f generating functional section are mixed in the first stage of the power amplifier section, input mixer V951. The mixed signal is then amplified in first and second driver stages V801 and V802. The amplified signal from second driver V802 is applied to power amplifiers V804 through V807. The plate voltage for power amplifier tubes V804 through V807 is supplied by the high voltage rectifiers V201 through V206 located in Power Supply PP-2222/WRT. The output of the power amplifier tubes is developed across coil L803 and applied to a tuning and coupling circuit consisting of capacitors C836, C837 and coils L804, L805, L813 and L814 through capacitor C827. From the tuning circuit the r-f signal is coupled through the primary of transformer T804 to Radio Frequency Tuner TN-342/WRT-2 and then to the antenna. A portion of the output from the tuning circuit is also fed to the r-f monitor circuit which consists of a modulation monitor for measuring the modulation percentage and a reflectometer for measuring the output power level and voltage-standing-wave-ratio on the line feeding the antenna circuits. Figure 5-51 shows the circuits of the power amplifier functional section in schematic form.

b. DETAILED OPERATION.

(1) INPUT MIXER.

(*a*) Figure 4-25 is a simplified schematic diagram of the input mixer and driver circuits in the power amplifier functional section. As shown in figure 4-25, the r-f signal from the r-f oscillator is impressed upon the dual cathodes of input mixer tube V951 through transformer T952 and shifted in phase 180 degrees from cathode to cathode. The r-f signal from the modulator is applied, in push-pull, to the grids of V951 through transformer T951. The plates of dual triode tube V951 are tied together, thereby combining the grid and cathode signals of each half of the tube. The output from input mixer V951 is a signal contain-

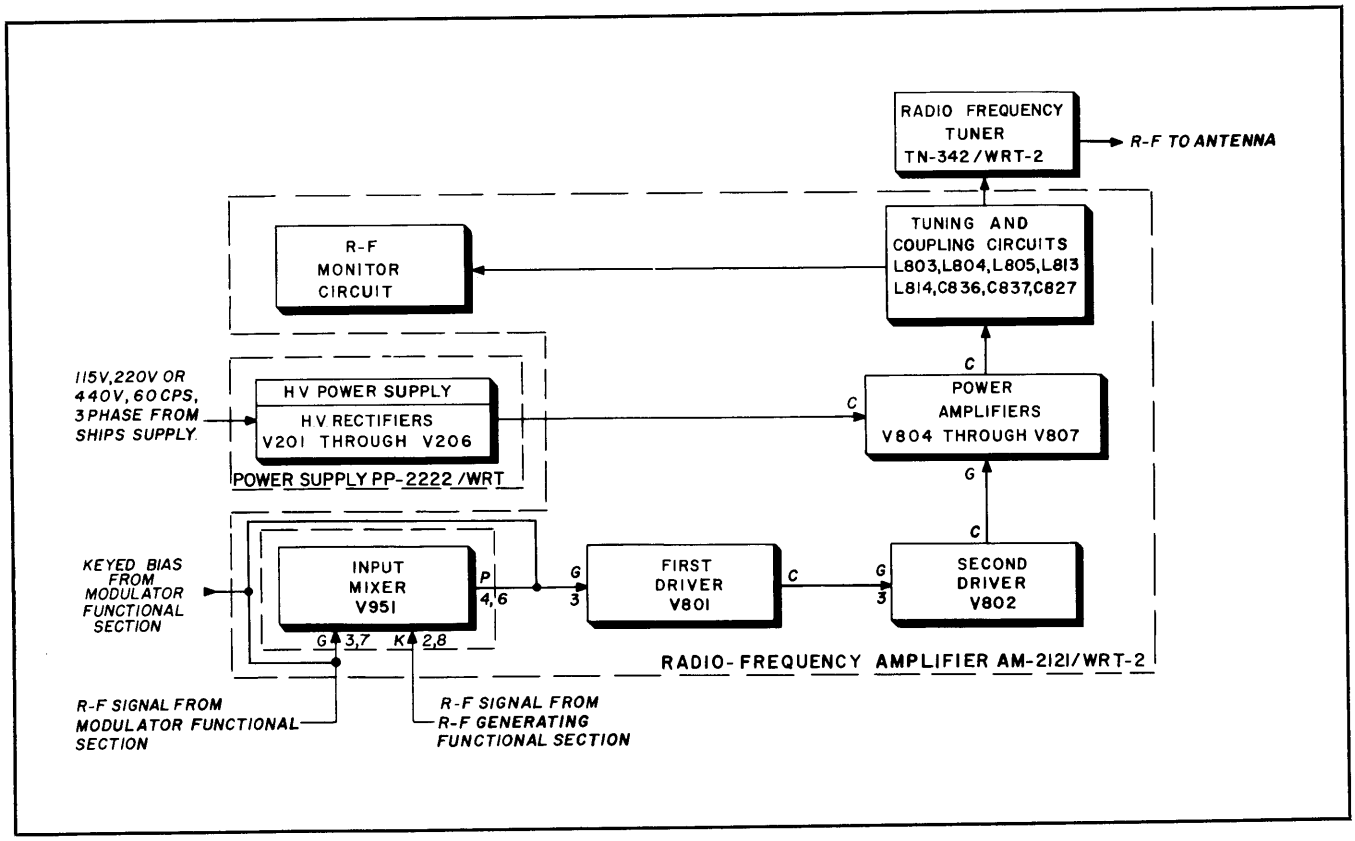


Figure 4-24. Power Amplifier Section, Functional Block Diagram

(*b*) Figure 4-26 is a simplified schematic diagram of the driver gear train. As shown in figure 4-26 the rotation of I.P.A. TUNING (F) control is transmitted to sprocket MP820, which determines the tuning of coil L809, through the sprocket MP822 and chain MP827. Sprocket MP823 acts to maintain proper chain tension and to prevent backlash. The rotation of sprocket MP820 is transmitted to drive sprockets MP819 and MP818 for the tuning of coils L818 and L820 through the train of gears MP837, MP836 and MP835. Gear MP837 is joined to worm MP830, driving worm wheel MP831 to provide the drive for sprocket MP825 which synchronizes the tuning dial to I.P.A. TUNING (F).

(*c*) The inductance of coils L809, L818 and L820 is varied by changing the position of the coil case which is attached to the respective sprockets MP820, MP819 and MP818. As the coil case rotates, the lead screw turns the metal coil case and its grounding finger or brush along the coil turns. The pitch of the lead screw is the same as the pitch of the coil turns so that the grounding finger stays on top of the coil turns. The grounded portion of the respective coils enters the metal case, and thus prevents spurious radiation.

(*d*) An additional takeoff from sprocket MP822 through sprocket MP821 is directed to the gear train which transmits rotation to gears MP804 and MP805 for the tuning of capacitors C840, C832 and C803. Tuning of capacitors C832 and C803, which are coupled on a common shaft, is accomplished by rotation of gear MP804. Gear MP804 is put into rotation from sprocket MP821 through gear train MP834, antibacklash gear set MP839, MP833, MP840, MP832 and MP841 to gear MP838, miter set MP801A and MP801B and on to gear MP802. The take-off for the transmission of rotation to gear MP805 is from gear MP804 through the differential consisting of gears MP806, MP809, MP808 and MP807. The differential provides, as one of its functions, a means of reversing the direction of rotation so that capacitors C840, C832 and C803 are tuned in the same direction (clockwise or counterclockwise).

(*e*) Rotation of gear MP805 in the fine tuning operation of capacitor C840 from I.P.A. FINE TUNING is provided through a train of gears consisting of worm and worm wheel MP828 and MP829, and gears MP842 and MP803 to the differential set.

(*f*) The differential transmits rotation from I.P.A. TUNING (F) to gear MP805 for the tuning of capacitor C840 from I.P.A. TUNING (F) in the following manner. The differential frame is pinned to the shaft of gear MP803. When I.P.A. TUNING (F) control is rotated, the rotation applied to the set of bevel gears MP801A and MP801B, through the previously traced gear train, is transferred to gear MP802 and thus to MP804. At the same time that gear MP804 is rotating capacitors C832 and C803, the motion is transferred through the differential to C840 as follows:

1. The differential frame, which is pinned to the shaft of gear MP803, cannot move because of the locking effect of worm gear set MP828 and MP829. The rotation of gear MP804 therefore forces rotation of gear MP806 which, in turn, transmits the rotation through gears MP809, MP808, MP807 and MP805 to rotate capacitor C840.

2. When rotation is applied to I.P.A. FINE TUNING, the load on the gear train connected to MP804 is sufficient to hold it stationary. Since the differential frame is pinned to gear MP803, this frame is rotated while gear MP806, which is meshed with gear MP804, is held stationary. This forces gear MP809 to rotate on gear MP806 and this rotation is transferred through gears MP808, MP807 and MP805 to rotate C840 for fine tuning.

(*g*) The stop assembly, which is attached to gear MP843, limits the rotation of the I.P.A. TUNING (F) control to 11½ turns. Gear MP845 is limited to one turn by its stop assembly. The lock shaft applies a clamp to gears MP844 and MP865 thus locking both I.P.A. TUNING (F) and I.P.A. FINE TUNING.

(4) POWER AMPLIFIER.

(*a*) Figure 4-27 is a simplified schematic diagram of the power amplifier circuits. As shown in figure 4-27, the r-f signal from the plate of second driver V802 is coupled to the control grids of power amplifier tubes V804, V805, V806 and V807. The four amplifier tubes are connected in parallel. The output of the power amplifiers is applied to a tuning network consisting of coils L803, L804, L813, L814, L805 and capacitors C836 and C837. Capacitor C827 is a blocking capacitor which allows the r-f voltage from the tubes to pass to the tuning and coupling network and prevents the high d-c plate voltage from entering the tuning network. P.A. TUNING (G) control varies the setting of capacitors C836 and C837, and that of coils L803, L804 and L805 to tune the output of the final stage to the selected frequency.

(*b*) Antenna coupling is accomplished through P.A. COUPLING (H) control, which varies the setting of coil L805 and capacitor C837 only. Resistors R818, R819, R820, and R916 are parasitic oscillation suppressors which tend to cancel ultra high frequency oscillations due to stray lead capacitance and inductance.

(*c*) When POWER SELECTOR switch S510, located on the front panel of Amplifier Power Supply AM-2122/WRT-2 is placed in TUNE position, antenna

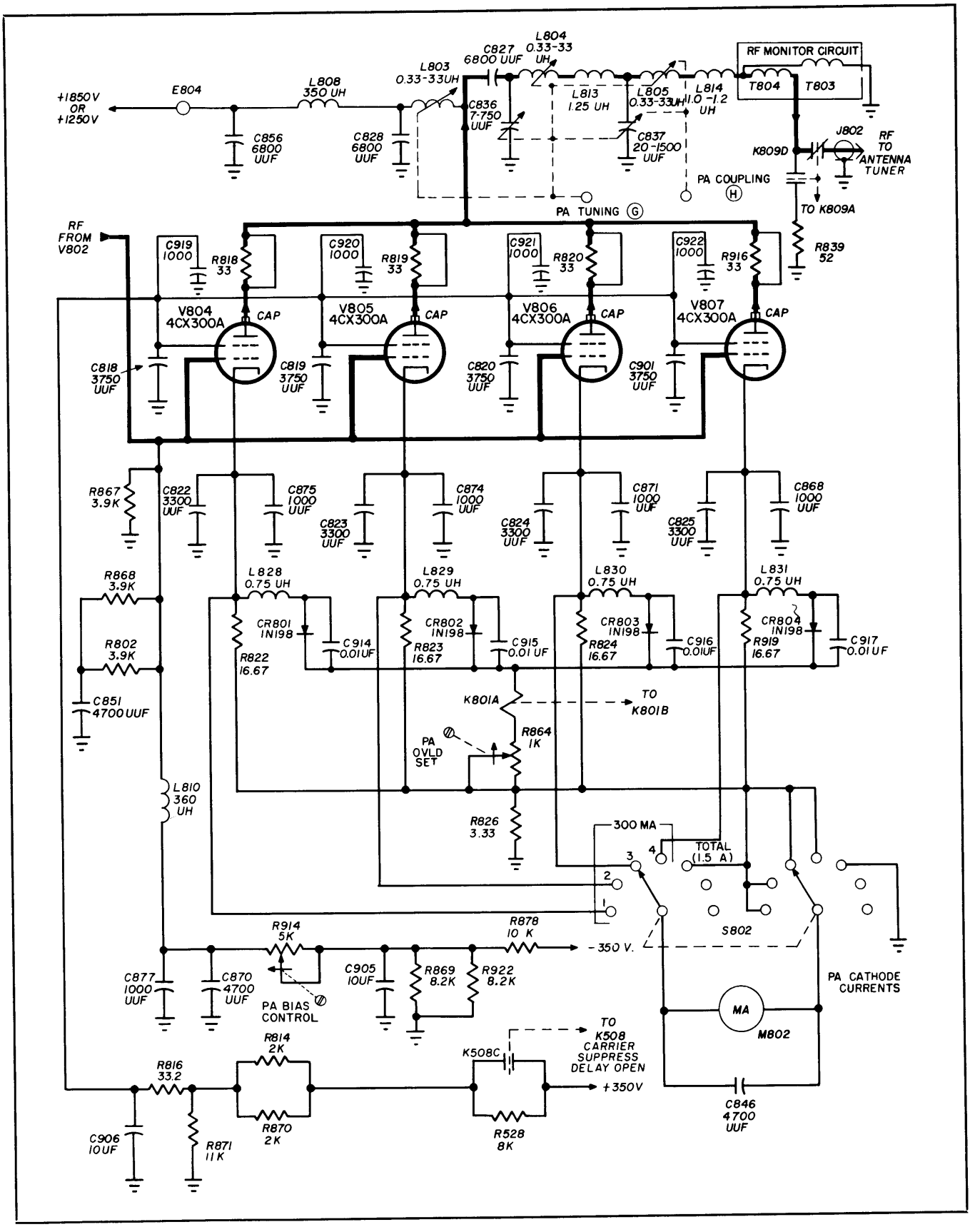


Figure 4-27. Power Amplifier Circuits, Simplifi d Schematic Diagram, S ts S rials 1 t 263

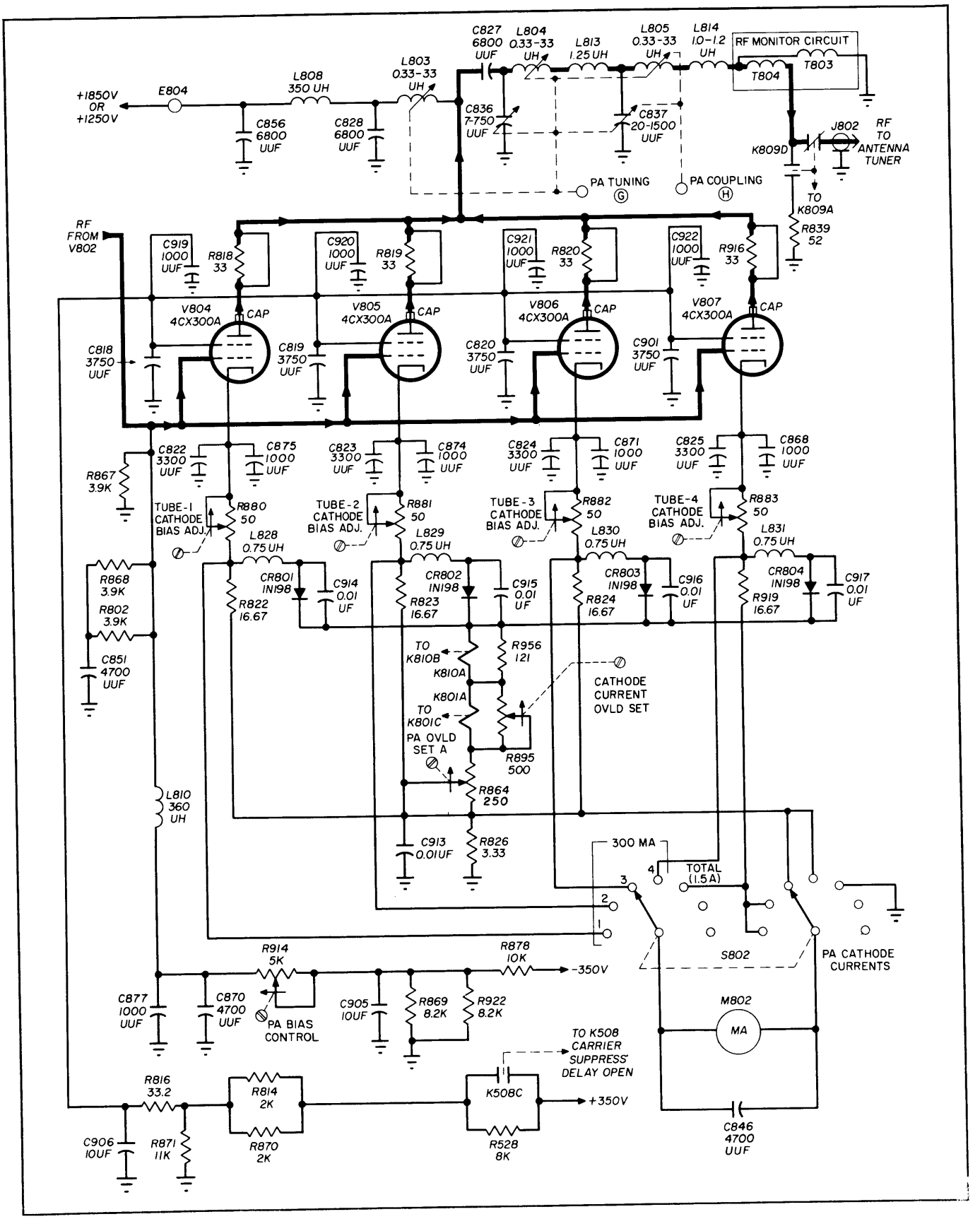
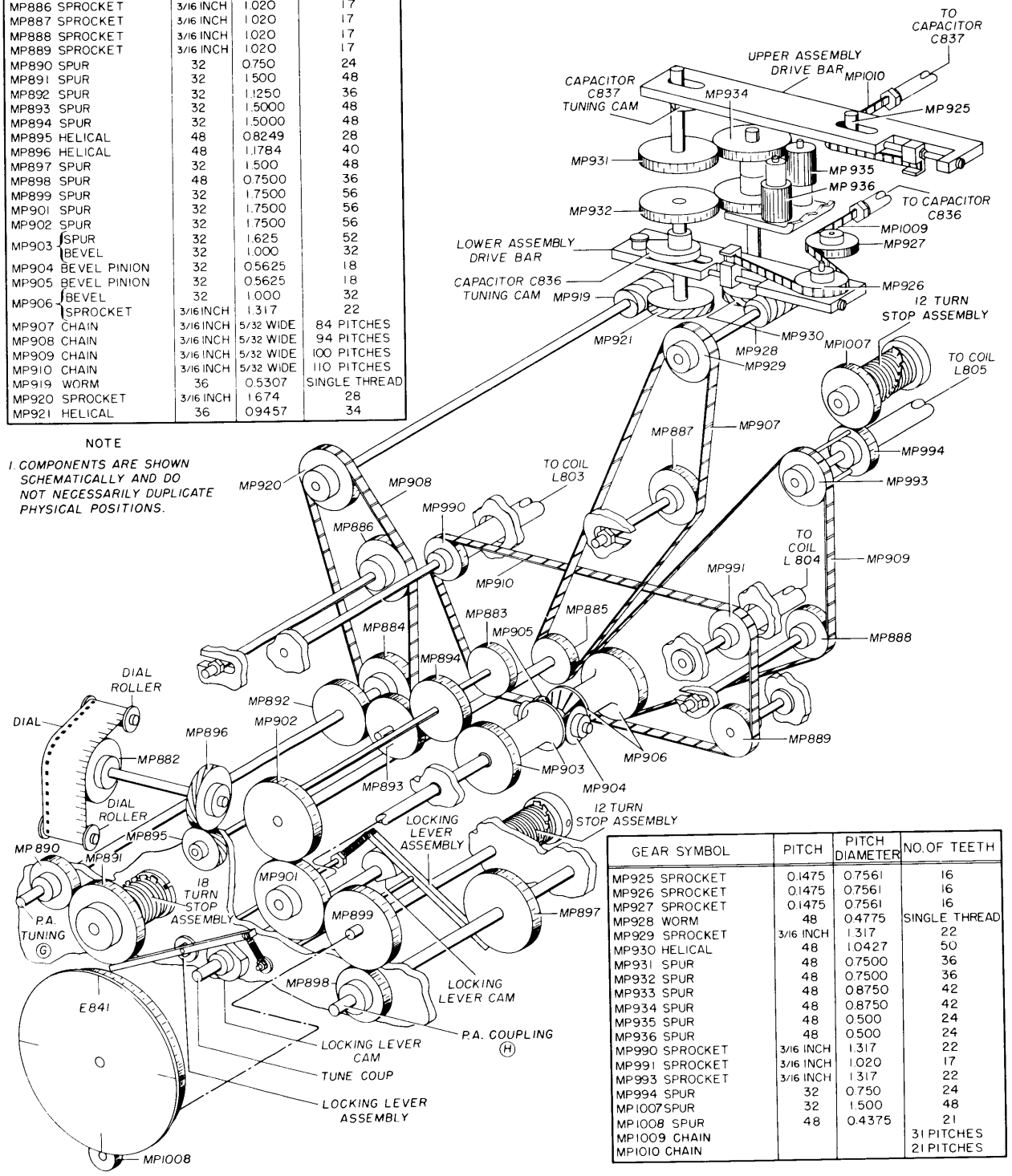


Figure 4-27A. Power Amplifier Circuits, Simplified Schematic Diagram, Sets Serials 264 and up

GEAR SYMBOL	PITCH	PITCH DIAMETER	NO. OF TEETH
E841 DIAL ASSEMBLY	48	3.000	144
MP882 SPROCKET	3/16 INCH	1.548	26
MP883 SPROCKET	3/16 INCH	1.674	28
MP884 SPROCKET	3/16 INCH	1.674	28
MP885 SPROCKET	3/16 INCH	1.020	17
MP886 SPROCKET	3/16 INCH	1.020	17
MP887 SPROCKET	3/16 INCH	1.020	17
MP888 SPROCKET	3/16 INCH	1.020	17
MP889 SPROCKET	3/16 INCH	1.020	17
MP890 SPUR	32	0.750	24
MP891 SPUR	32	1.500	48
MP892 SPUR	32	1.1250	36
MP893 SPUR	32	1.5000	48
MP894 SPUR	32	1.5000	48
MP895 HELICAL	48	0.8249	28
MP896 HELICAL	48	1.1784	40
MP897 SPUR	32	1.500	48
MP898 SPUR	48	0.7500	36
MP899 SPUR	32	1.7500	56
MP901 SPUR	32	1.7500	56
MP902 SPUR	32	1.7500	56
MP903 SPUR	32	1.625	52
MP903 BEVEL	32	1.000	32
MP904 BEVEL PINION	32	0.5625	18
MP905 BEVEL PINION	32	0.5625	18
MP906 BEVEL	32	1.000	32
MP906 SPROCKET	3/16 INCH	1.317	22
MP907 CHAIN	3/16 INCH	5/32 WIDE	84 PITCHES
MP908 CHAIN	3/16 INCH	5/32 WIDE	94 PITCHES
MP909 CHAIN	3/16 INCH	5/32 WIDE	100 PITCHES
MP910 CHAIN	3/16 INCH	5/32 WIDE	110 PITCHES
MP919 WORM	36	0.5307	SINGLE THREAD
MP920 SPROCKET	3/16 INCH	1.674	28
MP921 HELICAL	36	0.9457	34

NOTE

1. COMPONENTS ARE SHOWN SCHEMATICALLY AND DO NOT NECESSARILY DUPLICATE PHYSICAL POSITIONS.



GEAR SYMBOL	PITCH	PITCH DIAMETER	NO. OF TEETH
MP925 SPROCKET	0.1475	0.7561	16
MP926 SPROCKET	0.1475	0.7561	16
MP927 SPROCKET	0.1475	0.7561	16
MP928 WORM	48	0.4775	SINGLE THREAD
MP929 SPROCKET	3/16 INCH	1.317	22
MP930 HELICAL	48	1.0427	50
MP931 SPUR	48	0.7500	36
MP932 SPUR	48	0.7500	36
MP933 SPUR	48	0.8750	42
MP934 SPUR	48	0.8750	42
MP935 SPUR	48	0.500	24
MP936 SPUR	48	0.500	24
MP990 SPROCKET	3/16 INCH	1.317	22
MP991 SPROCKET	3/16 INCH	1.020	17
MP993 SPROCKET	3/16 INCH	1.317	22
MP994 SPUR	32	0.750	24
MP1007 SPUR	32	1.500	48
MP1008 SPUR	48	0.4375	21
MP1009 CHAIN			31 PITCHES
MP1010 CHAIN			21 PITCHES

Figure 4-28. Tuning and Coupling Mechanism, Simplified Sch matic Diagram

the dial assembly E841 to the differential is accomplished through the bevel pinions MP904 and MP905 which are pinned to the shaft from E841. Gear MP903, which is locked by gear MP894, is bored oversize to permit the shaft to turn. Thus, capacitor C837 and coil L805 are tuned from P.A. COUPLING (H) while the tuning components, C836, L803 and L805, are locked.

(*l*) The turning limit of gear MP890 (P.A. TUNING (G) control) is fixed by the eighteen turn stop assembly attached to gear MP891. Gear MP890 may be turned clockwise or counterclockwise until stopped through gear MP891 by the stop assembly. The rotation of gear MP898 (P.A. COUPLING (H) control) is limited in a similar manner by the twelve turn stop assembly of gear MP899. An additional stop assembly is geared to coil L805 through gears MP1007 and MP994 to limit the rotation of the coil to twelve turns. When gear MP994 is locked by the stop assembly, the differential functions to permit transfer of motion to other tuning components even though MP906 is not free to turn.

(6) ANTENNA TUNER.

(*a*) Radio Frequency Tuner TN-342/WRT-2 is provided in order that the power amplifiers may deliver maximum power at minimum standing wave ratio to a fixed antenna for any frequency within the range of operation of Transmitter Group OA-2175/WRT-2. Maximum power is delivered and a minimum standing wave ratio exists when the antenna appears as a purely resistive 50 ohm load. Since the physical dimensions of the antenna itself are fixed, the electrical length must be changed as the frequency of operation of the transmitter is changed.

(*b*) Radio Frequency Tuner TN-342/WRT-2 increases or decreases the effective physical length of the antenna by removing or inserting inductance in series with the antenna. As shown in figure 6-30, drive motor B3301 and 2 speed drive MP3301 drive a sliding short up and down the main coil L3302 which is in series with the antenna. ANTENNA TUNER-UP and ANTENNA TUNER-DOWN switches, S808 and S809, located on the front panel of Radio Frequency Amplifier AM-2121/WRT-2 determine the direction of the motor drive and SLOW READ SWR SWITCH, S807, enables the operator to select a reduced motor speed when reading the standing wave ratio. Limit switches S3303 and S3304 limit, respectively, the upper and lower limits of travel of the coil shorting arm. The arm of potentiometer R3301 is geared to the mechanical drive mechanism and an electrical contact is made to POSITION INDICATOR meter M806 on the front panel of Radio Frequency Amplifier AM-2121/WRT-2. The meter indicates the relative position of the sliding short on the main coil.

(*c*) Fixed capacitance may also be inserted in series or in parallel with the antenna for tuning purposes. Switches S3307 and S3301, driven by motor B3303, place capacitors C3302 and C3303 in parallel with the antenna when COUPLER ANTENNA (J) switch S806 on the front panel of Radio Frequency Amplifier AM-2121/WRT-2 is in the B position. Capacitor C3301 is placed in series with the antenna when S806 is in the A position. When S806 is in the DIRECT position, only coil L3302 is in series with the antenna. The setting of COUPLER ANTENNA (J) switch S806 depends on the operating frequency of the transmitter and is shown in the table of paragraph 3-2*b*(1)(*a*). If the transfer switch control relay, K3302, is energized, switches S3307 and S3301 automatically return to position 5 and the tuner is bypassed. The setting of TUNER CONTROL switch S810 on the front panel of Radio Frequency Amplifier AM-2121/WRT-2 determines the operation of K3302. When the switch is in the BYPASS position, relay K3302 is deenergized; when it is on the TUNER IN position, the relay is energized. The AUTOMATIC position of switch S810 is provided in order that the antenna may be switched between the transmitter and a receiver for break-in CW operation, and in this case, the relay is keyed by contacts in Antenna Control C-1670/U (GFE). Relay K3301, the r-f keying interlock, removes the r-f input when S3301 is operating and thus prevents burning of the switch contacts.

(*d*) High temperature regions in Radio Frequency Tuner TN-342/WRT-2 are cooled by forced-air ventilation from blower B3302. When the blower fails to operate properly, centrifugal switch S3306 removes the plate power from the r-f amplifiers. Thermoswitch S3305 opens, acomplishing the same result, if the internal temperature of the tuner rises above 110°C (230°F). All electrical and mechanical components of the tuner are contained in a shockmounted, pressurized cylinder filled with nitrogen at a pressure of 20 psi. A pressure gauge, a relief valve and a valve for attaching pressurizing equipment are provided in the front plate of the cylinder.

(7) TUNER GEAR TRAIN.

(*a*) Figure 4-29 is a simplified schematic diagram of the tuner gear train. As shown in figure 4-29, the r-f section of Radio Frequency Tuner TN-342/WRT-2 consists of L3302 which is adjustable by means of a sliding short, and a coupling loop (L3301) which feeds the unshorted section. The coupling loop is fixed to the sliding short support plate fed from a slide wire contact. The control section of the r-f tuner consists of the necessary gears, switches and motors required for the operation of the unit.

(*b*) The inside surface of the cylindrical shell housing covering the coil provides the outer conductor for the adjustable coil. Coil L3302 consists of a 5.65 inch diameter fiberglass tube wound with .064 inch diameter silver plated copper wire for a total length

of 16 inches. The initial 12 inch is wound at a pitch of 10 turns per inch, with the remaining four inches wound at a pitch of five turns per inch.

(*c*) The sliding short consists of a circular support plate completely encircling the main coil, and carrying a corrugated band of silver alloy with bosses contacting the main coil about every half inch around the circumference. The outer edge of the circular plate carries button-type housing contact fingers E3301 and E3302 which slide on the inside of the housing. Guide shoes extend from the plate to insure alignment with the axis of the main coil, particularly under shock conditions. Single-turn coupling coil L3301 is formed of 0.140-inch silver plated copper wire. It is secured to the plate and extends toward the unshorted part of the coil supported by insulators E3306 and E3307. Also mounted on the plate are the sliding contacts to a feed wire which extends along the total length of the main coil.

(*d*) The sliding short and coupling coil are driven by a servo-type, two-phase, 115-volt, 60-cycle motor B3301, (see figure 4-30). The motor is equipped with a two-speed drive which provides fine tuning at reduced speed. With nominal load, the motor speed is about 1500 rpm. Referring to the two-speed drive shown in figure 4-30, operation is as follows:

1. High speed.—In high speed operation, rotation of the input shaft is applied to the clutch plate. With the clutch solenoid deenergized, the clutch return springs hold the clutch housing against the clutch plate and rotation is transferred directly to the clutch housing. The clutch housing is pinned to the output shaft in such a manner that the housing will slide a small amount axially and yet it transfers rotation to the output shaft. This is accomplished by means of a pin that is fitted into a tight hole in the housing and passes through a larger hole in the output shaft. Thus the input shaft rotation is transferred to the output shaft with no reduction in speed.

2. Low speed.—In low speed drive, rotation is still applied to the high speed shaft and thus to the clutch plate. In low speed operation, however, the clutch solenoid is energized and the clutch housing is pulled to the left, away from the clutch plate. Rotation cannot be transferred from the clutch plate to the clutch housing. The low speed drive balls roll on the high speed input shaft and the outer race which is part of the clutch solenoid. Because of the ratio of diameter of the input shaft to the outer race, the speed of the low speed drive balls is reduced approximately 8.4 to 1. Pins extend into the path of the low speed balls from the low speed sleeve so that the low speed sleeve is carried around with the balls. With the clutch housing held against the low speed sleeve by the clutch solenoid the input shaft is moved slightly to the left. This brings low speed driving balls against the back-up plate which starts them up the input shaft radius at A

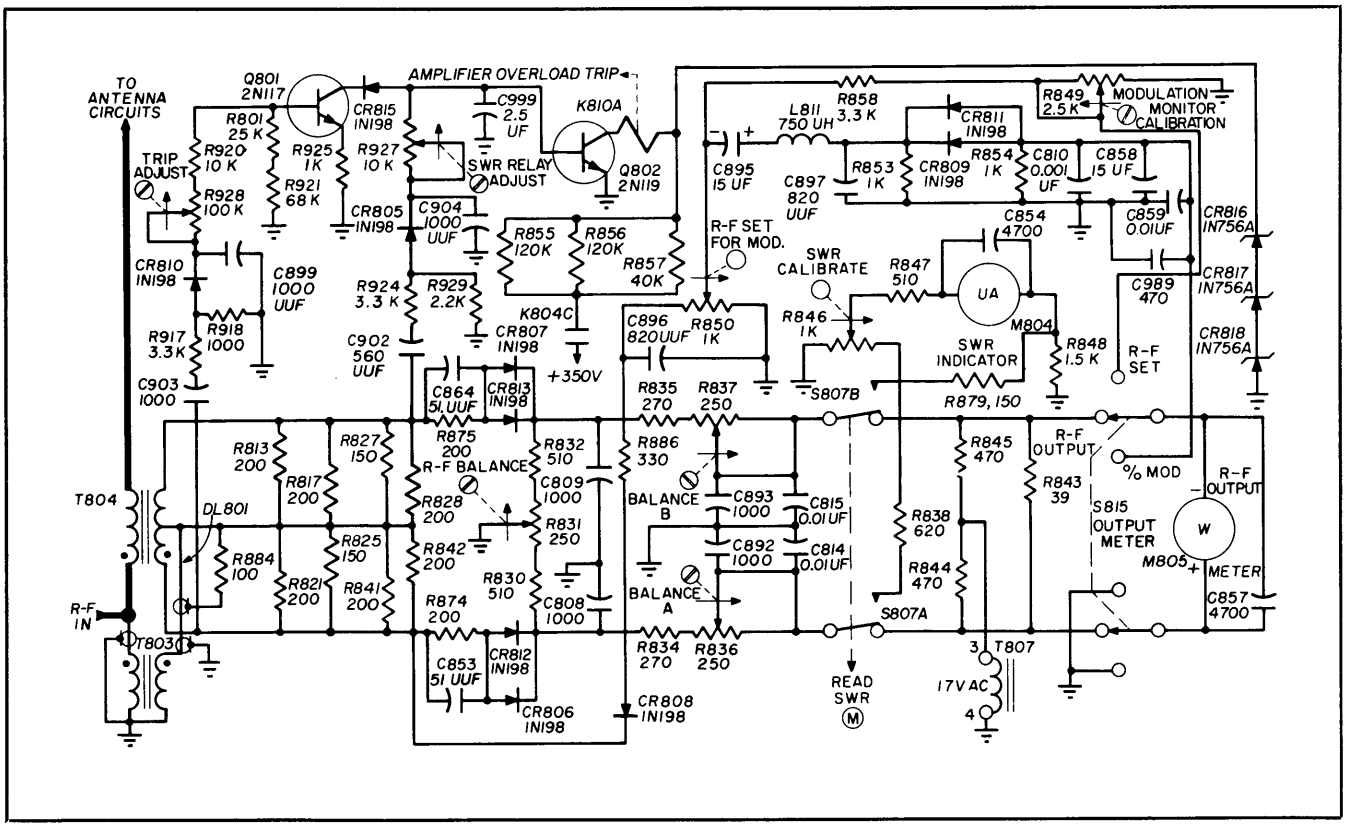


Figure 4-30. R-F Monitoring Circuit, Simplified Schematic Diagram, Serials 1 to 263

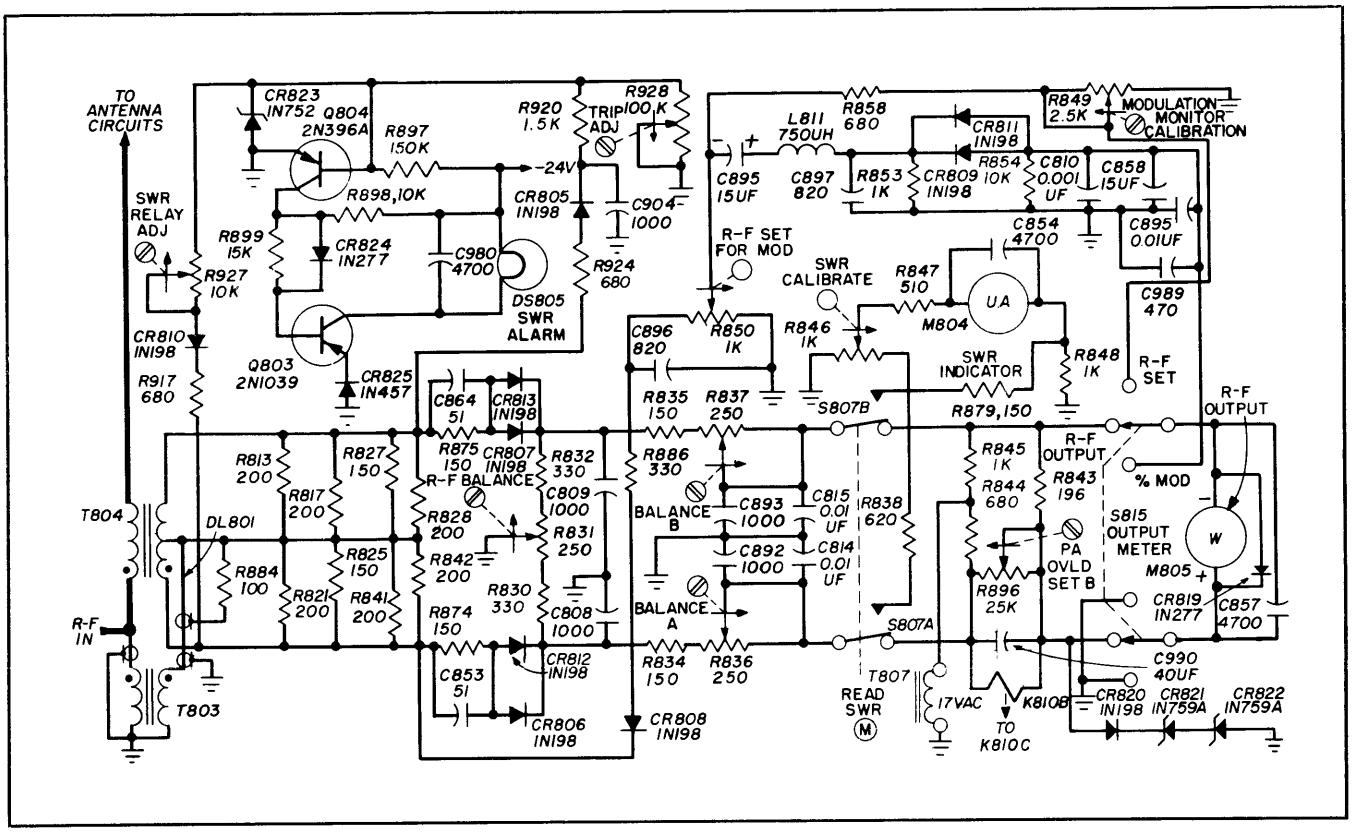


Figure 4-30A. R-F Monitoring Circuit, Simplified Schematic Diagram, Sets Serials 264 and up

into the monitor circuit when switch S807 is closed and the standing-wave-ratio is indicated opposite the pointer for SWR CALIBRATE control R846 when it is positioned to have SWR INDICATOR meter M804 read zero.

(*d*) For monitoring modulation, an r-f sample of the transmitter output is obtained through transformer T804 and applied to diode CR808. A negative d-c voltage is developed across R-F SET FOR MOD. control R850. When OUTPUT METER switch S815 is in R-F SET position a portion of the d-c voltage across R850 is applied to OUTPUT METER M805 and R850 is adjusted so that meter M805 deflects to its R-F SET marker. When switch S815 is in % MOD position, a d-c voltage is applied from resistor R850 to meter M805. The d-c voltage from R850 is further detected by parallel diodes CR809 and CR811 and filtered to remove the r-f and permit an a-f signal to be applied to meter M805. When a known modulation percentage is applied to a carrier, OUTPUT METER switch S815 is placed in R-F SET position and MOD. CAL. potentiometer is adjusted to indicate the known modulation percentage. Thereafter, when switch S815 is placed in % MOD position, meter M805 indicates percentage of modulation when the transmitter emission is of the A3 type.

(*e*) In sets serials 1 to 263 to avoid possible equipment damage, SWR alarm circuitry is provided to remove the high voltage from the power amplifier when the standing wave ratio becomes excessive. When there is a phase difference between the antenna feeder line current and voltage, a voltage exists across resistor R926. As shown in figure 4-30, diode CR805, filter capacitor C904, resistor R927 and the collector resistance of Q801 provide positive d-c bias for the base of transistor Q802. The voltage across R926 increases as the antenna feeder line standing-wave-ratio increases, and when the ratio becomes greater than 4:1, the collector current of Q802 is sufficiently large to energize relay K810. The setting of SWR RELAY ADJUST potentiometer R927 determines the amount of voltage across R926 necessary to energize the overload relay. Transistor Q301 is provided in order that the overload circuit may still function properly at low power levels. The collector resistance of Q801 is a function of the base bias developed across resistors R801 and R921. When operating at low power levels, the base bias of Q801 decreases and therefore its collector resistance increases. At the same time the voltage across R926 has decreased but the base bias for Q802 does not decrease substantially due to the increased collector resistance of Q801. Thus an excessive standing-wave-ratio will still cause relay K810 to energize even when the power output level is reduced. The setting of SWR ALARM TRIP ADJUST potentiometer R928 determines the amount of base bias applied to Q801.

(*f*) In sets serials 264 and up, as shown in figures 4-30A, the SWR ALARM lamp DS805 glows whenever the standing wave ratio becomes greater than 4:1. Diode CR823 maintains a negative d-c bias across transistor Q804. When there is a phase difference between the antenna feeder line current and voltage, a voltage exists across resistor R920. When this phase difference is excessive, transistor Q804 conducts and reduces the bias on transistor Q803 causing it to conduct and allows current to flow through lamp SWR ALARM DS805. SWR RELAY ADJUST potentiometer R927 and TRIP ADJUST potentiometer R928 determine the amount of bias applied to Q804 by an incoming voltage. To avoid possible equipment damage in sets 264 and up, imput relay coil K810A and output coil K810B are connected so that they remove all d-c voltage when the difference between imput and output power exceeds a predetermined level of 1.02 kw. The level of 1.02 kw is set by the adjustment of potentiometers R864, R895, and R896. When S807 is in the SWR indicate position, diodes CR820, CR821, and CR822 conduct as the AC voltage increases, maintaining a current flow through relay coil K810B so that relay K810 does not trip.

4-5. LOW VOLTAGE POWER SUPPLY FUNCTIONAL SECTION.

a. GENERAL.

(1) The low voltage power supply functional section supplies all the d-c voltages needed for the proper operation of Radio Transmitting Set AN/WRT-2.

(2) Figure 4-31 is a functional block diagram of the low voltage power supply section. As shown in figure 4-31, the circuits of the +350-volts, −350-volts, −24-volts, 12-volts positive and 12-volts negative power supplies are located in the drawer containing Amplifier-Power Supply AM-2122/WRT-2. The circuits of the +250-volt regulator are located in the drawer containing Radio Frequency Oscillator O-581/WRT-2. The circuits of the +24-volt and −6-volt regulator are located in the drawer containing Electrical Frequency Control C-2764/WRT-2.

(3) The primary power input of 115 volts, 220 volts or 440 volts, depending upon the ship's supply, is applied to the primary windings of transformer T501 as shown in figure 4-31. Transformer T501 is tapped so as to give an output of 220 volts and 115 volts. The output of T501 is applied to the circuits of the low voltage power supply section through FILAMENT POWER switch S502. The 220 volts is applied to the primary of transformers T502 and T503 while the 115 volts is applied to transformer T617 in the Electrical Frequency Control C-2764/WRT-2. The output of transformer T502 is rectified by the +350-volt and −350-volt rectifiers, and applied to the circuits of Radio Frequency Amplifier AM-2121/WRT-2 and Radio Frequency Oscillator O-581/WRT-2. Part of the output

put of the −350-volt rectifier is applied to the circuits in Radio Frequency Amplifier AM-2121/WRT-2.

(3) −24-VOLT DC POWER SUPPLY.

(*a*) The output from the secondary winding of transformer T503 is applied to the −24-volt rectifier, a full wave rectifier consisting of crystal diodes CR519 and CR520. The negative output of the −24-volt rectifier is filtered by choke L506 and capacitor C508 and fed to the circuits of the speech amplifier and the control circuits in Amplifier-Power Supply AM-2122/WRT-2. The unfiltered output of the −24-volt power supply is fed to the other control circuits of Radio Transmitting Set AN/WRT-2 as shown in figure 5-48. Fuse F504 protects the −24-volt circuits in case of a short circuit.

(4) 12-VOLT DC POWER SUPPLY.

(*a*) The output at terminals 6 and 8 of transformer T503 is applied to the 12-volt rectifier, consisting of crystal diodes CR517 and CR518 as shown in figure 5-48. The filter for the −12-volt circuit consists of choke L505 and capacitors C509 and C510. An additional filter network consisting of resistor R517 and capacitor C511 is used to isolate the microphone from the push-to-talk keying relays. The negative output

of the 12-volt power supply is fed to the speech amplifier and the control circuits in Amplifier-Power Supply AM-2122/WRT-2. The positive output of the 12-volt power supply is fed only to the control circuits in Amplifier-Power Supply AM-2122/WRT-2. The control circuits receiving power from the low voltage power supply section are discussed in the respective functional sections.

(5) +250-VOLT REGULATED POWER SUPPLY.

(*a*) The +250-volt regulator circuits are located in Radio Frequency Oscillator O-581/WRT-2. As shown in figure 5-48, the unregulated +350-volts d-c from the Amplifier-Power Supply, AM-2122/WRT-2, is applied to the plates of series regulators V321 and V322, and the regulated +250-volts dc appears at their cathodes. Voltage reference tube V324 maintains a reference potential of approximately +87-volts dc at grid 7 of regulator amplifier V323. The +250-volts is developed across resistors R321 through R325, potentiometer R332, resistor R326 and the reference tube. The setting of 250-VOLT DC ADJUST potentiometer, R332, determines the bias voltage appearing at cathode 8 of regulator amplifier V323. Plate 1 of the regulator amplifier is connected directly to grids 1 and 4 of the series regulators and to the +350-volt supply through dropping resistor R329. If the unregulated voltage increases or the load current decreases, the potential at the cathodes of V323 tends to increase, increasing the bias on the righthand section of the tube. The increasing plate potential at pin 6 of V323 is coupled to grid 2 and the lefthand side of the tube draws more current through dropping resistor R329. An increase in the voltage across R329 increases the bias on the series regulators, V321 and V322, their plate resistance increases, and a larger portion of the unregulated supply voltage is dropped across the tubes. The cathodes of V321 and V322 are thus returned to the +250-volt level. Should the unregulated voltage decrease or the load current increase, the circuit would function in an opposite manner.

(6) +24-VOLT REGULATED POWER SUPPLY.

(*a*) The +24-volt regulated power supply is located in the drawer containing Electrical Frequency Control C-2764/WRT-2, and is shown on the functional schematic diagram of the low voltage section, figure 5-48. As shown in figure 5-48 the unregulated voltage at terminals 5 and 6 of transformer T617 is rectified by a bridge rectifier consisting of crystal diodes CR1309, CR1310, CR1347 and CR1348. The rectified output is filtered by choke L1302 and capacitors C1331 through C1333 and C1339, and kept at +24V by the four zener diodes CR1311 through CR1314. The +24-volt regulated supply is used in the circuits of the r-f generating functional section and in those of the modulating functional section.

(7) −6-VOLT POWER SUPPLY.

(*a*) The −6-volt regulated power supply circuits are also located in Electrical Frequency Control C-2764/WRT-2 and are shown in figure 5-48. As shown in figure 5-48 the unregulated voltage at terminals 3 and 4 of transformer T617 is rectified by a bridge rectifier consisting of crystal diodes CR1305 through CR1308. The rectified output is filtered by a filter network consisting of R1323, R1335 and capacitors C1336 through CR1338. The filtered output is maintained at −6-volts by diode CR1315 and used by the circuits of the one megacycle oscillator in the r-f generating functional section.

4-6. PRIMARY POWER DISTRIBUTION SECTION.

a. Figure 5-47 is the primary power distribution diagram of Radio Transmitting Set AN/WRT-2. As shown in figure 5-47 Radio Transmitting Set AN/WRT-2 can be operated from a three-phase 60 cps power source of 115 volts, 220 volts or 440 volts. The primary power is applied through TB102 and filter FL101, on Electrical Equipment Cabinet CY-2558/WRT-2, to terminal board TB201 located in Power Supply PP-2222/WRT. Primary power is applied to Radio Transmitting Set AN/WRT-2 when EMERGENCY STOP switch S201, is in the ON position. At that time 115-VOLT ac is fed to the oven circuits in Radio Frequency Oscillator O-581/WRT-2 and to the oven circuits in Electrical Frequency Control C-2764/WRT-2, through oven fuse F503. In case the primary power is more or less than 115-volts, different taps have been provided on transformer T502 in order to adjust the output of the transformer to 115-volts. The adjustment is accomplished through CONTROL BUS ADJUST switch S501 and the exact output from transformer T502 is indicated on CONTROL BUS METER M501. When FILAMENT POWER switch S502 is placed in the ON position, power is applied to transformers T502 and T503 and thus the −24-volt and 12-volt dc power supplies are activated. At the same time 115-volts ac is applied, through TRANSMITTER fuse F501, to all filament transformers and to the ac control bus. If all the drawer interlocks, S101 through S105, are closed, DOOR INT indicator lamp DS501 glows and DOOR INT relay K503 is energized. When K503 is energized contacts K503B close and deenergize high voltage grounding relay K101, in Electrical Equipment Cabinet CY-2558/WRT-2, thus, removing the ground from the high voltage line. At the same time contacts K503C energize thermal switch S506. Switch S506 must be energized for at least 30 seconds before rectifier power control relay K504 can be energized.

b. The application of plate and bias voltages to Radio Transmitting Set AN/WRT-2 is controlled by

SECTION 5

TROUBLESHOOTING

5-1. GENERAL.

a. This section presents troubleshooting procedures for Radio Transmitting Set AN/WRT-2 in two general steps: overall troubleshooting, whereby a fault is localized to a functional section and troubleshooting for each functional section, whereby a fault is localized to a particular circuit. As an additional aid to the technician a list of typical troubles together with the probable cause is provided to facilitate rapid location of faults. The fault in some cases may be in a single drawer (unit) but in some cases it affects several drawers (units) which are part of a single functional section of Radio Transmitting Set AN/WRT-2. The functional sections are: the primary power distribution circuits, the low voltage power supply section, the r-f generating section, the modulating section, and the power amplifier section.

b. The most practical method of locating troubles in a system is to use an overall performance test based on the starting procedure, which is essentially the procedure outlined in Table 5-3, the overall troubleshooting chart. This chart gives a cause and effect procedure aimed at localizing trouble to one functional section. The last column in Table 5-3 refers to one of the functional section troubleshooting charts, and in some cases shows the corrective action without further reference in case an abnormal condition is encountered during any step in the procedure.

c. In order to facilitate troubleshooting of Radio Transmitting Set AN/WRT-2, a system of test points has been established. The location of the test points in the circuit is shown on the functional schematic diagram of the respective section. The physical location of these test points is shown in photographs. The test points fall into three categories: major, secondary and minor. Each category can be identified as follows:

(1) Major test points are represented by an encircled arabic numeral enclosed in a star, e.g., ⑴. Major test points identify locations for checking overall functions, inputs and outputs of major units and major assemblies.

(2) Secondary test points are represented by an encircled capital letter, e.g., Ⓐ. Secondary test points identify locations for isolating faults within a functional section, or major assembly.

(3) Minor test points are represented by an encircled capital letter with an arabic numeral subscript, e.g., Ⓐ_1. The encircled capital letter with a numerical subscript denotes pertinent test points within a particular stage or circuit.

(4) This instruction book does not describe the methods of locating troubles in the equipment to be supplied by the installing activity. For information concerning these units, see the appropriate instruction books supplied with the respective equipment.

WARNING

BEFORE MEASURING VOLTAGES GREATER THAN 300 VOLTS WITH EXTERNAL TEST EQUIPMENT READ THE FOLLOWING PARAGRAPH.

d. Voltage greater than 300 volts shall be measured as follows:

(1) Deenergize the equipment. Place a momentary ground across terminals, from which voltage measurements are to be taken, to discharge any capacitors connected to these terminals. High voltage capacitors should be discharged with the grounding stick provided with the equipment. Where neither terminal of a capacitor is grounded, short the terminals to each other.

(2) Connect a meter to the terminals to be measured. Use a range higher than the voltage expected at these terminals.

(3) Without touching the meter on test leads, energize the equipment and read the meter.

(4) Deenergize the equipment.

e. In addition to the foregoing, observe the following precautions:

(1) Make sure you are not grounded while adjusting the equipment or while using measuring devices.

(2) In general, use only one hand when servicing live equipment.

(3) If the meter must be held or adjusted while voltage is applied, ground the case of the meter, before starting measurements; do not touch live equipment or personnel working on live equipment while you are holding the meter. Some moving-vane type meters should not be grounded and therefore should not be held during measurements.

(4) Do not forget that high voltage might be present across terminals that are normally at low voltage, due to equipment breakdown. Therefore, be careful even when measuring low voltage.

5-2. TEST EQUIPMENT AND SPECIAL TOOLS.

a. No special tools are required for troubleshooting Radio Transmitting Set AN/WRT-2. The recommended equipment for troubleshooting is listed in Table 5-1.

TABLE 5-2. PRELIMINARY CONTROL SETTINGS

CONTROL NAME	UNIT LOCATION	POSITION
EMERGENCY STOP (S201)	Power Supply PP-2222/WRT	OFF
FILAMENT POWER (S502)	Amplifier-Power Supply AM-2122/WRT-2	OFF
POWER SELECTOR (S510)		ADJ
EMISSION SELECTOR (S508)		CW
LOCAL-REMOTE (S507)		LOCAL
OVEN (S304)	Radio Frequency Oscillator O-581/WRT-2	ON
FSK TEST (S309)		LINE
SIDEBAND SELECTOR (R1208)		UPPER
CARRIER TEST KEY (S812)	Radio Frequency Amplifier AM-2121/WRT-2	OFF
TUNER CONTROL (S810)		TUNER IN

c. SYSTEM TROUBLESHOOTING.

(1) Observation of indicating lights and meter indications can isolate troubles to a definite circuit of Radio Transmitting Set AN/WRT-2. The method of system troubleshooting is outlined in Table 5-3. To avoid unnecessary repetition throughout the table note that the series numbers of controls are related to the various units as follows: controls in the 200 series are located on Power Supply PP-2222/WRT controls in the 300 and 1200 series are located on Radio Frequency Oscillator O-581/WRT-2; controls in the 500 and 1400 series are located on Amplifier-Power Supply AM-2122/WRT-2; controls in the 600 and 700 series are located on Electrical Frequency Control C-2764/WRT-2; controls in the 800 and 900 series are located on Radio Frequency Amplifier AM-2121/WRT-2; controls in the 3300 series are located on Radio Frequency Tuner TN-342/WRT-2. When using Table 5-3 note the instructions given in the NORMAL INDICATION column, for each step. If the indication is normal proceed to the next step. If indication is not normal follow the instructions given in the NEXT STEP column.

TABLE 5-3. RADIO TRANSMITTING SET AN/WRT-2, SYSTEM TROUBLESHOOTING CHART

STEP	PRELIMINARY ACTION	NORMAL INDICATION	NEXT STEP
1	Place EMERGENCY STOP switch (S201) in the ON position.	H V RECT LINE BLOWN FUSE IND lamps F201, F202, F203 and L. V. RECT FIL LINE lamps F205, F206, should not be lighted.	Replace the fuse corresponding to the blown fuse indicator lamp that glows.
		OVEN HEATERS lamp (DS301) should be lighted.	Check OVEN fuse (F503). If fuse is good refer to Table 5-4 to locate fault.
		OVEN HEATERS lamp (DS601) should be lighted.	Check OVEN fuse (F503). If the fuse is good refer to Table 5-4 to locate fault.
2	Place FILAMENT POWER switch (S502) in the ON position.	FILAMENT POWER ON indicator lamp (DS502) should be lighted.	Check TRANSMITTER fuse (F501). If fuse is good refer to Table 5-4 to locate fault.

TABLE 5-3. RADIO TRANSMITTING SET AN/WRT-2, SYSTEM TROUBLESHOOTING CHART—Continued

STEP	PRELIMINARY ACTION	NORMAL INDICATION	NEXT STEP
12	Connect Multimeter AN/PSM-4 between ground and terminal 8 of TB601, and set it on its 50-volt scale.	Multimeter should indicate −24 volts.	Refer to Table 5-5 to locate fault.
13	Connect Multimeter AN/PSM-4 between ground and terminal 10 of TB601.	Multimeter should indicate exactly +24 volts.	Refer to Table 5-5 to locate fault.
14	Connect Multimeter AN/PSM-4 between ground and terminal 7 of TB601.	Multimeter should indicate exactly −6 volts.	Refer to Table 5-5 to locate fault.
15	Connect Multimeter AN/PSM-4 between ground and terminal 56 on TB501.	Multimeter should indicate exactly +24 volts.	Refer to Table 5-5 to locate fault.
16	Connect Multimeter AN/PSM-4 between ground and terminal 51 on TB501.	Multimeter should indicate −24 volts.	Refer to Table 5-5 to locate trouble.
17	Connect Multimeter AN/PSM-4 between ground and terminal 11 on TB105.	Multimeter should indicate −24 volts.	Check interconnection between TB501-51 and TB105-11.
18	Connect Multimeter AN/PSM-4 between ground and terminal 9 on TB801.	Multimeter should indicate −24 volts.	Check interconnection between TB105-11 and TB801. Refer to Table 5-6 to locate fault.
19	Connect Multimeter AN/PSM-4 between ground and terminal 2 on TB301.	Multimeter should indicate −24 volts.	Check interconnection between TB301-2 and TB105-11. Refer to Table 5-7 to locate fault.
20	Connect Multimeter AN/PSM-4 between ground and terminal 18 on TB202.	Multimeter should indicate −24 volts.	Check interconnection between TB202-18 and TB105-11.
21	Connect Multimeter AN/PSM-4 between ground and terminal 8 in TB501 and set it on its 500-volt scale.	Multimeter should indicate +350 volts.	Refer to Table 5-5 to locate fault.
22	Connect Multimeter AN/PSM-4 between ground and terminal 9 on TB501.	Multimeter should indicate −350 volts.	Refer to Table 5-5 to locate fault.
23	Connect Multimeter AN/PSM-4 between ground and terminal 17 on TB105.	Multimeter should indicate +350 volts.	Check interconnection between TB501-8 and TB105-17.
24	Connect Multimeter AN/PSM-4 between ground and terminal 42 on TB801.	Multimeter should indicate +350 volts.	Check interconnections between TB105-17 and TB801-42.

TABLE 5-3. RADIO TRANSMITTING SET AN/WRT-2, SYSTEM TROUBLESHOOTING CHART—Continu d

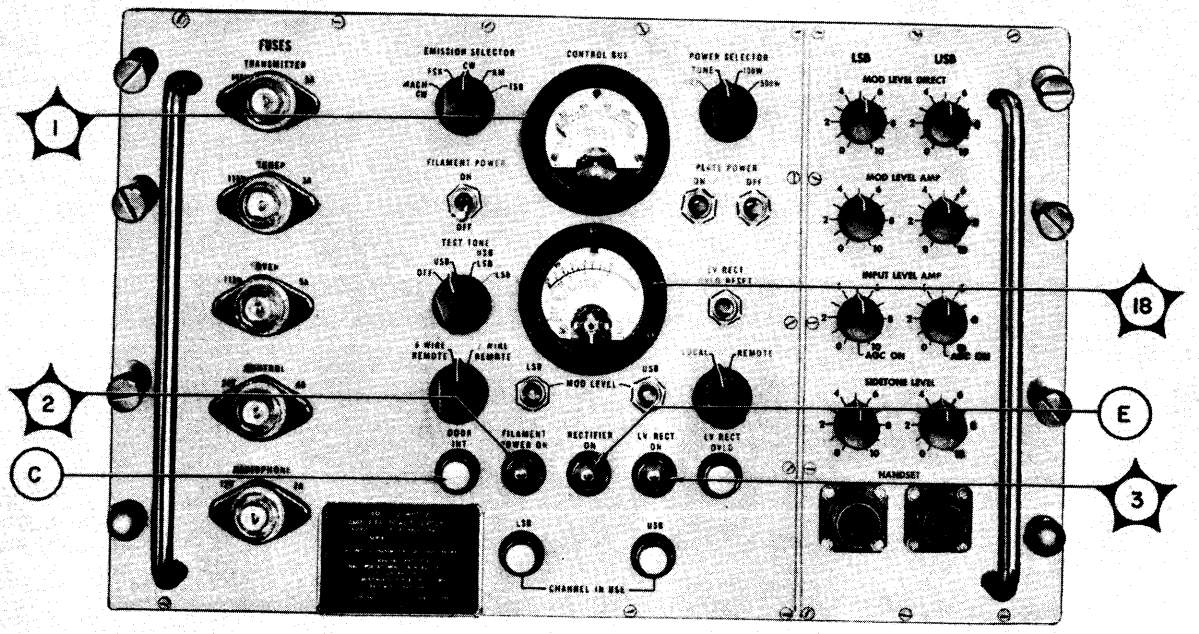
STEP	PRELIMINARY ACTION	NORMAL INDICATION	NEXT STEP
30	Using same equipment as in Step 29, check r-f output at J303 in Radio Frequency Oscillator O-581/WRT-2.	Frequency Meter AN/USM-29 series (or equivalent) should indicate 1.5 mc if the assigned output frequency is 2 mc. The output at J303 is always 500 kc less than the assigned output frequency when the assigned output frequency is between 2 and 8 mc and always 2 mc less than the assigned output frequency when this is between 8 and 30 mc.	Refer to Table 5-8 to locate fault.
31	Repeat steps 27 through 30 at 7.5 mc, 8 mc and 30 mc or on any other frequency on which the operator indicates trouble.	Same as steps 27 through 30.	Same as steps 27 through 30.
32	Place CARRIER TEST KEY (S802) in the ON position. Connect Oscilloscope AN/USM-24 series (or equivalent) between ground and J1202 on Radio Frequency Oscillator O-581/WRT-2.	Oscilloscope should show an output of 500 kc or 2 mc (depending on the assigned output frequency) and a voltage reading of 0.7-0.8 volts	Refer to Table 5-7 to locate fault.
33	Place CARRIER TEST KEY in in the OFF position. Place TUNE-COUP control on Radio Frequency Amplifier AM-2121/WRT-2 in TUNE position. Set I. P. A. TUNING (F) and I. P. A. FINE TUNING control to about 5. Place TUNE-COUP control in COUP position and set P. A. COUPLING (H) control to approximately 50 on the dial. Set DRIVE ADJUST control (R986) to about mid position. Place OUTPUT METER switch (S815) in the R-F OUTPUT position, TEST AMMETER switch (S801) in the P. A. POS SCREEN CURRENT position and P. A. CATHODE CURRENTS switch (S802) in the TOTAL position. Place CARRIER TEST KEY (S812) in the ON position. Adjust I. P. A. FINE TUNING and I. P. A.	P. A. CATHODE CURRENTS meter (M802) should indicate between 400 and 440 ma.	Refer to Table 5-6 to locate fault.

TABLE 5-3. RADIO TRANSMITTING SET AN/WRT-2, SYSTEM TROUBLESHOOTING CHART—Continued

STEP	PRELIMINARY ACTION	NORMAL INDICATION	NEXT STEP
36	Observe P. A. CATHODE CURRENTS meter (M802).	Indication on P. A. CATHODE CURRENTS meter (M802) should not exceed 440 ma.	Refer to Table 5-6 to locate fault.
37	Place POWER SELECTOR control (S510) in the 500W position and repeat steps 34(a) through 36.	Same as in steps 34(a) through 36 except that in step 35 R-F OUTPUT meter (M805) should indicate 500 watts and in step 36 indication on P. A. CATHODE CURRENTS meter (M802) should not exceed 750 ma.	Refer to Table 5-6 to locate fault.
38	Place CARRIER TEST KEY S812 in the OFF position and EMISSION SELECTOR switch (S510) in the AM position. Plug in Handset H-169/U in USB HANDSET jack (J501). Rotate USB INPUT LEVEL AMP Control R1479 fully clockwise and press USB MOD LEVEL switch (S512). Adjust USB MOD LEVEL AMP for -3 db reading on MOD LEVEL meter (M502).	MOD LEVEL (M502) should indicate -3db.	Refer to Table 5-7 to locate fault.
39	Place CARRIER TEST KEY (S812) in the ON position and OUTPUT METER switch (S815) in the R-F SET position.	The indicator on R-F OUTPUT meter (M805) should deflect to the extreme right of the meter on RF SET scale marker.	Refer to Table 5-6 to locate fault.
40	Adjust R-F SET FOR MOD control (R850) until R-F OUTPUT meter M805 deflects to R-F SET scale marker. Place CARRIER TEST KEY in the OFF position and OUTPUT METER switch (S815) in the % MOD position. Talk at normal speech level into Handset H-169/U and adjust MOD LEVEL AMP control (R1477) until R-F OUTPUT Meter (M805) indicates 90 to 100%.	R-F OUTPUT meter (M805) should indicate between 90 and 100 per cent modulation on peaks of speech input.	Refer to Table 5-7 to locate fault.
41	Place EMISSION SELECTOR switch (S508) in the ISB position and CARRIER REINSERT control (S1201) to the desired level position. Place SIDEBAND SELECTOR control (R1208) in the LOWER position. Repeat steps 34 through 40.	Same as for steps 34 through 40.	Same as for steps 34 through 40.

TABLE 5-4. RADIO TRANSMITTING SET AN/WRT-2, PRIMARY POWER FUNCTIONAL SECTION, TROUBLESHOOTING CHART

STEP	TEST POINT	PRELIMINARY ACTION	NORMAL INDICATION	NEXT STEP
1	(1) Figures 5-47 and 5-1	Place EMERGENCY STOP switch (S201) in the ON position and Control Bus switch S501, inside on top of drawer, in the 115V position.	CONTROL BUS meter (M501) should indicate 115 volts ±4%.	If indication is normal proceed with next step. If no indication check power input at TB501-1 and 2.
	(A) Figures 5-47 and 5-2		OVEN HEATERS lamp (DS301) should glow.	Refer to figure 5-47 and check continuity between TB301-1 and 2 and TB501-3 and 5. Check relay K301.
	(B) Figures 5-47 and 5-3		OVEN HEATERS lamp (DS601) should glow.	Refer to figures 5-47 nnd check continuity between TB601-2 and 3 and TB501-3 and 5. Check relay K601.
2	(2) Figures 5-47 and 5-1	Place FILAMENT POWER switch (S502) in the ON position.	FILAMENT POWER indicating lamp (DS502) should glow.	Check TRANSMITTER fuse (F501) and FILAMENT POWER indicating lamp DS502.



Figur 5-1. Amplifi r-Pow r Supply AM-2122/WRT-2 Fr nt Pan l, L cation of T st Points

TABLE 5-4. RADIO TRANSMITTING SET AN/WRT-2, PRIMARY POWER FUNCTIONAL SECTION, TROUBLESHOOTING CHART—Continued

STEP	TEST POINT	PRELIMINARY ACTION	NORMAL INDICATION	NEXT STEP
2 (Cont.)	(C) Figures 5-39 and 5-1		DOOR INT (DS501) should glow.	Check drawer interlock switches S101 through S105.
3	(D) Figures 5-47 and 5-4	Pull out drawer containing Power Supply PP-2222/WRT and observe frame blower B101.	Cabinet blower B101 should be operating.	Check continuity between TB107-1 and 2 and TB501-3 and 4. If power is present at TB107, refer to Section 6 and check blower B101.
4	(E) Figures 5-47 and 5-1	Press PLATE POWER ON switch (S503).	RECTIFIER ON indicator lamp (DS503) should glow.	Check rectifier power control relay K504.
	(3) Figures 5-47 and 5-1	Observe L. V. RECT ON lamp (DS504).	30 seconds later L. V. RECT ON indicator lamp (DS504) should be glowing.	Check door interlock relay K503 and filament time delay switch S506. Also check overload auxiliary relay K506 in low voltage section.

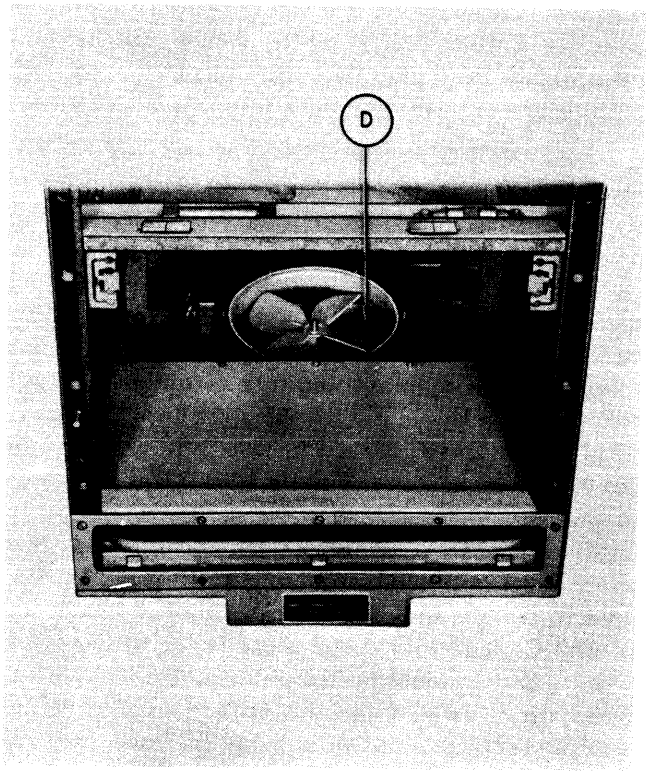


Figure 5-4. Electrical Equipment Cabinet CY-2558/WRT-2, Location of Test Point

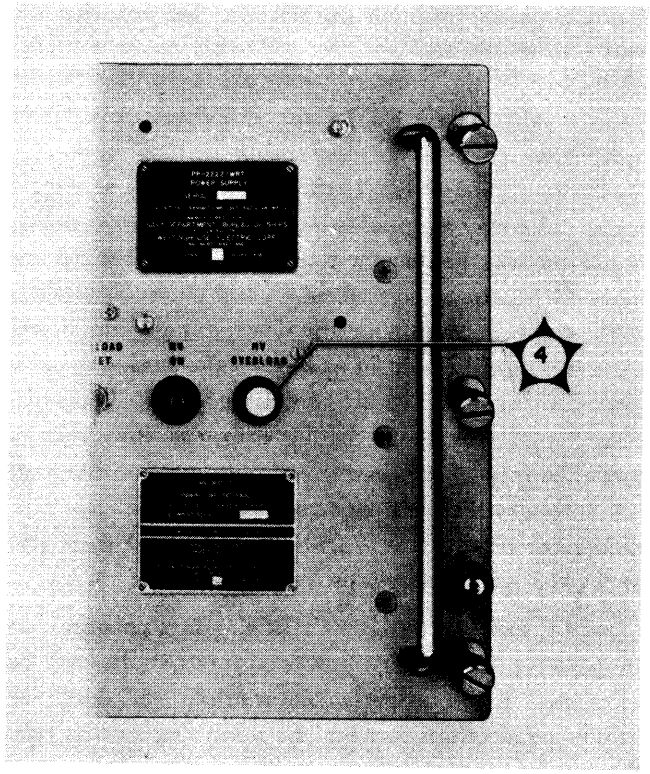


Figure 5-5. Power Supply PP-2222/WRT Front Panel, Location of Test Point

TABLE 5-4. RADIO TRANSMITTING SET AN/WRT-2, PRIMARY POWER FUNCTIONAL SECTION, TROUBLESHOOTING CHART—C ncluded

STEP	TEST POINT	PRELIMINARY ACTION	NORMAL INDICATION	NEXT STEP
5	④ Figures 5-47 and 5-5	Place POWER SELECTOR switch (S510) in the TUNE position	H. V. ON indicating lamp (DS207) should be glowing.	Check blower B801, air interlock switch S805, air interlock relay, K803 low power relay K201 and L. V. start relay K203.
6	④ Figures 5-47 and 5-5	Place POWER SELECTOR switch (S501) in the 500W position.	H. V. ON indicating lamp (DS207) should be glowing.	Check high power relay K202, L. V. start relay K203, and H. V. run relay K204 and overload auxiliary relay K207 in low voltage section.

c. LOW VOLTAGE POWER SUPPLY, FUNCTIONAL SECTION.—The low voltage power supply circuits of Radio Transmitting Set AN/WRT-2 are shown in the functional schematic diagram of the low voltage power supply section, figure 5-48. As shown in figure 5-48, the low voltage power supply circuits furnish all the d-c power required for the proper operation of Radio Transmitting Set AN/WRT-2. The low voltage power supply circuits include the plus and minus 350-volt power supplies, the positive and negative 12-volt power supplies and the −24-volt power supply, all located in the drawer containing Amplifier Power Supply AM-2122/WRT-2, the +250-volt regulator, located in the drawer containing Radio Frequency Oscillator O-581/WRT-2, the −6-volt and +24-volt regulated power supplies located in the drawer containing Electrical Frequency Control C-2764/WRT-2 together with the associated relays and control switches. Indication of trouble in the low voltage functional section would be lack of power to the bias and plate circuits or to the d-c control circuits of Radio Transmitting Set AN/WRT-2. Trouble in the low voltage power supply circuits can usually be traced to inoperative relays, broken or poor switch connections, defective diodes (or tubes in the +250-volt regulator) and loose or broken interconnections.

(1) PRELIMINARY CHECK.—It is possible that inoperative low voltage power supply circuits may be attributed to improperly set controls and loose or broken connections between the circuits of the low voltage power supply section. As a preliminary check see that all controls are set properly and that there are no loose or broken connections.

(2) TEST EQUIPMENT AND SPECIAL TOOLS.—No special tools are required for making the functional check of the low voltage power supply circuits of Radio Transmitting Set AN/WRT-2. The only test equipment required is Multimeter AN/PSM-4 series (or equivalent) which should be used whenever necessary to make continuity checks on various components of the low voltage power supply circuits.

(3) CONTROL SETTINGS.—Before making the functional check of the low voltage power supply circuits set EMERGENCY STOP switch (S201) and FILAMENT POWER ON switch (S502) in the ON position and press PLATE POWER ON switch (S503).

(4) TROUBLESHOOTING CHART.—Table 5-5, low voltage power supply functional section troubleshooting chart provides a procedure for locating troubles in the low voltage power supply circuits. Reference should be made to figure 5-48, the functional schematic diagram of the low voltage power supply section, and to the figures shown in the test point column, which show the location of test points. All controls and relays in the 100 series are located on Electrical Equipment Cabinet CY-2558/WRT-2, those in the 200 series on Power Supply PP-2222/WRT, those in the 300, 400 and 1200 series in Radio Frequency Oscillator O-581/WRT-2, those in the 500 and 1400 series in Amplifier-Power Supply PP-2122/WRT-2, those in the 600 and 700 series in Electrical Frequency Control C-2764/WRT-2 and those in the 800 and 900 series in Radio Frequency Amplifier AM-2121/WRT-2. When using Table 5-5 note the instructions given in the NORMAL INDICATION column for each step. If indication is normal proceed to next step. If indication is not normal follow the instructions given in the NEXT STEP column.

TABLE 5-5. RADIO TRANSMITTING SET AN/WRT-2, LOW VOLTAGE POWER SUPPLY FUNCTIONAL SECTION, TROUBLESHOOTING CHART

STEP	TEST POINT	PRELIMINARY ACTION	NORMAL INDICATION	NEXT STEP
1	(5) Figures 5-48 and 5-6	Connect Multimeter AN/PSM-4 between ground and terminal 51 on TB501 and set it on its 50-volt scale.	Multimeter should indicate −24 volts.	Check CONTROL fuse (F504). If fuse is intact, check diodes CR519 and CR520.
2	(6) Figures 5-48 and 5-7	Connect Multimeter AN/PSM-4 between ground and terminal 32 on TB1401.	Multimeter should indicate −24 volts.	Check choke L506 and CONTROL fuse F504.
3	(7) Figures 5-48 and 5-8	Connect Multimeter AN/PSM-4 across capacitor C511 and set it on its 25-volt scale.	Multimeter should indicate 12 volts.	Check RADIOPHONE fuse (F505). If fuse is intact check diodes CR517 and CR518.
4	(8) Figures 5-48 and 5-6	Connect Multimeter AN/PSM-4 between ground and terminal 9 on TB501 and set it on its 500-volt scale.	Multimeter should indicate −350 volts.	Check circuit associated with −350-volt rectifier.

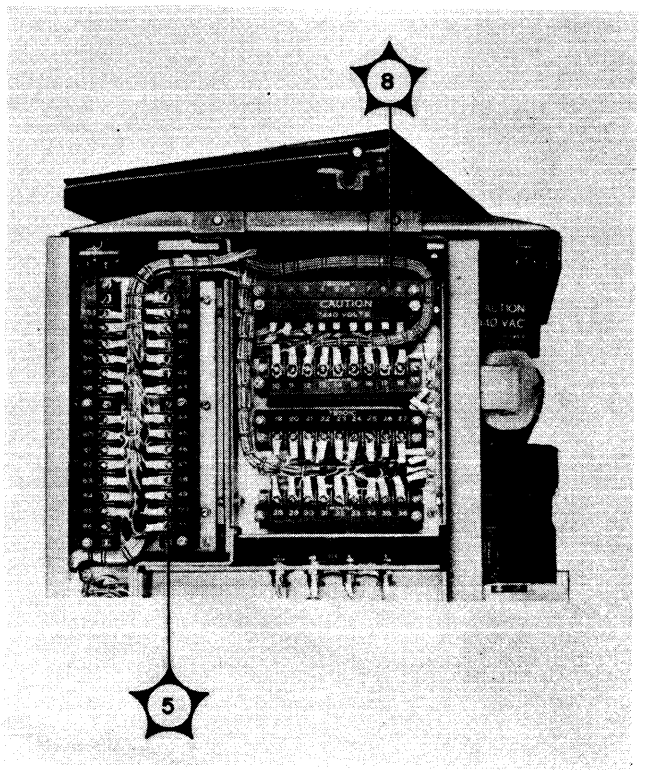


Figure 5-6. Amplifier-Power Supply AM-2122/WRT-2 Top View, Location of Test Points

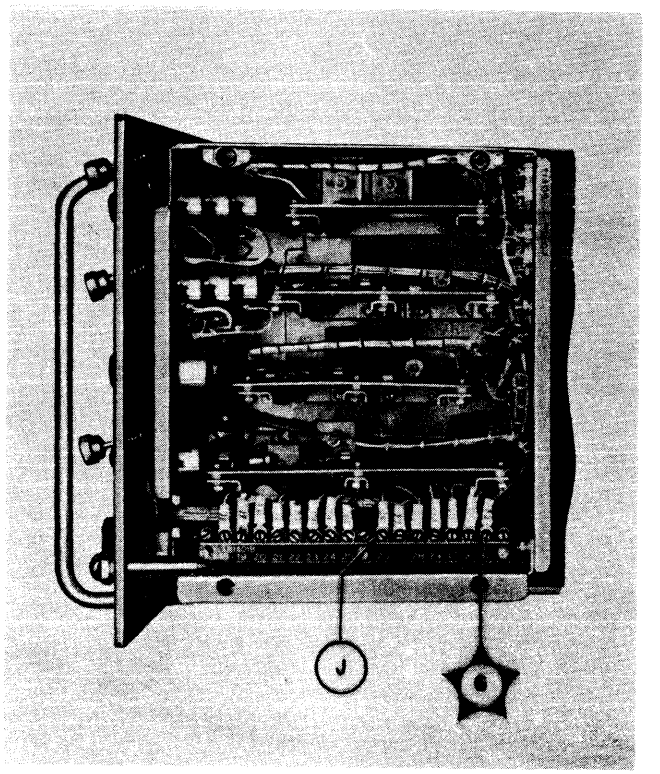


Figure 5-7. Amplifier-Power Supply AM-2122/WRT-2 Right Side View, Location of Test Points

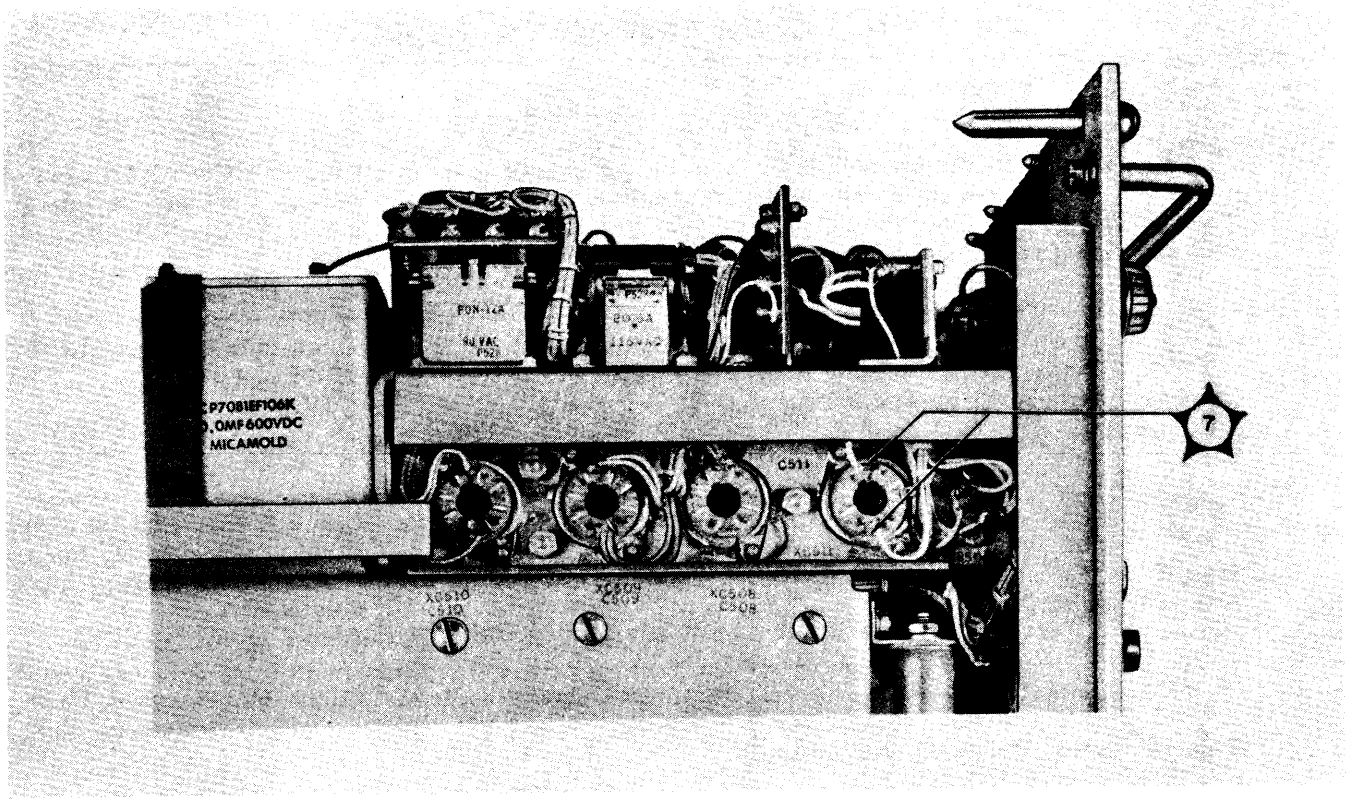


Figure 5-8. Amplifier-Power Supply AM-2122/WRT-2 Bottom View, Location of Test Points

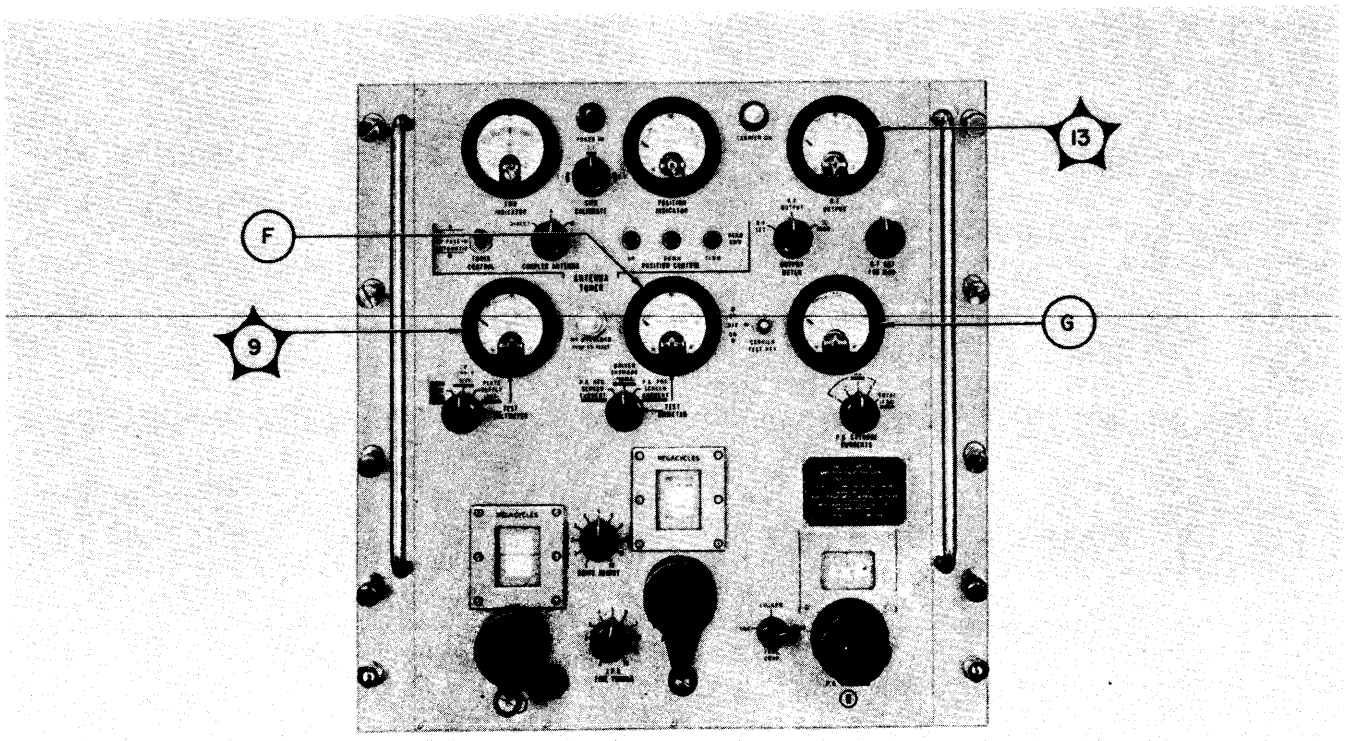


Figure 5-9. Radio Frequency Amplifier AM-2121/WRT-2 Front Panel, Location of Test Points

TABLE 5-5. RADIO TRANSMITTING SET AN/WRT-2, LOW VOLTAGE POWER SUPPLY FUNCTIONAL SECTION, TROUBLESHOOTING CHART—Concluded

STEP	TEST POINT	PRELIMINARY ACTION	NORMAL INDICATION	NEXT STEP
5	(9) Figures 5-48 and 5-9	Place TEST VOLTMETER control S803 in the L. V. SUPPLY (500V) position.	TEST VOLTMETER M803 should indicate +350 volts.	Check continuity between TB801-42 and TB501-8. If voltage present at TB501-8 check circuit associated with +350-volt rectifier.
6	(10) Figures 5-48 and 5-10	Connect Multimeter AN/PSM-4 between ground and terminal 9 and TB301 and set it on its 500-volt scale.	Multimeter should indicate exactly +250 volts.	Refer to figure 5-11 and make voltage and resistance measurements of circuitry associated with tubes V321, V322 and V323.
7	(11) Figures 5-48 and 5-12	Connect Multimeter AN/PSM-4 between ground and terminal 7 on TB601 and set it on its 10-volt scale.	Multimeter should indicate exactly −6 volts.	Check circuit associated with −6-volt rectifier.
8	(12) Figures 5-48 and 5-12	Connect Multimeter AN/PSM-4 between ground and terminal 10 on TB601 and set it on its 50-volt scale.	Multimeter should indicate exactly +24 volts.	Check circuits associated with +24-volt regulator.

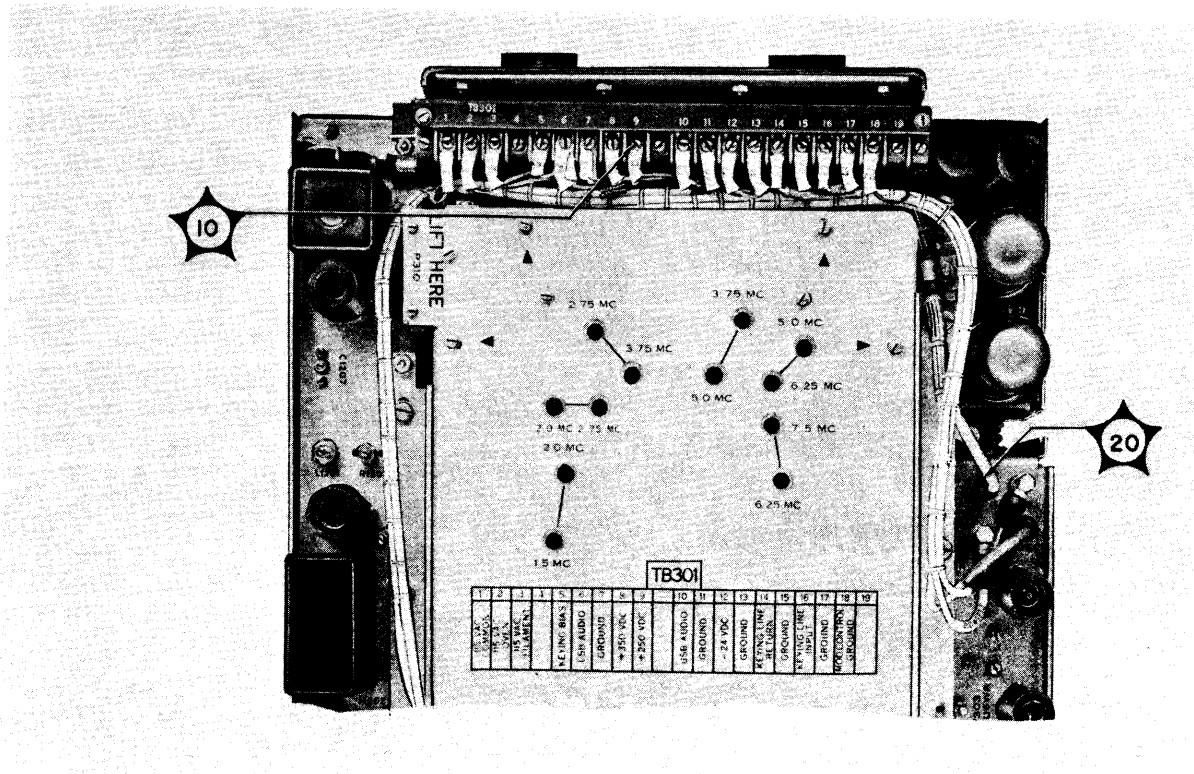
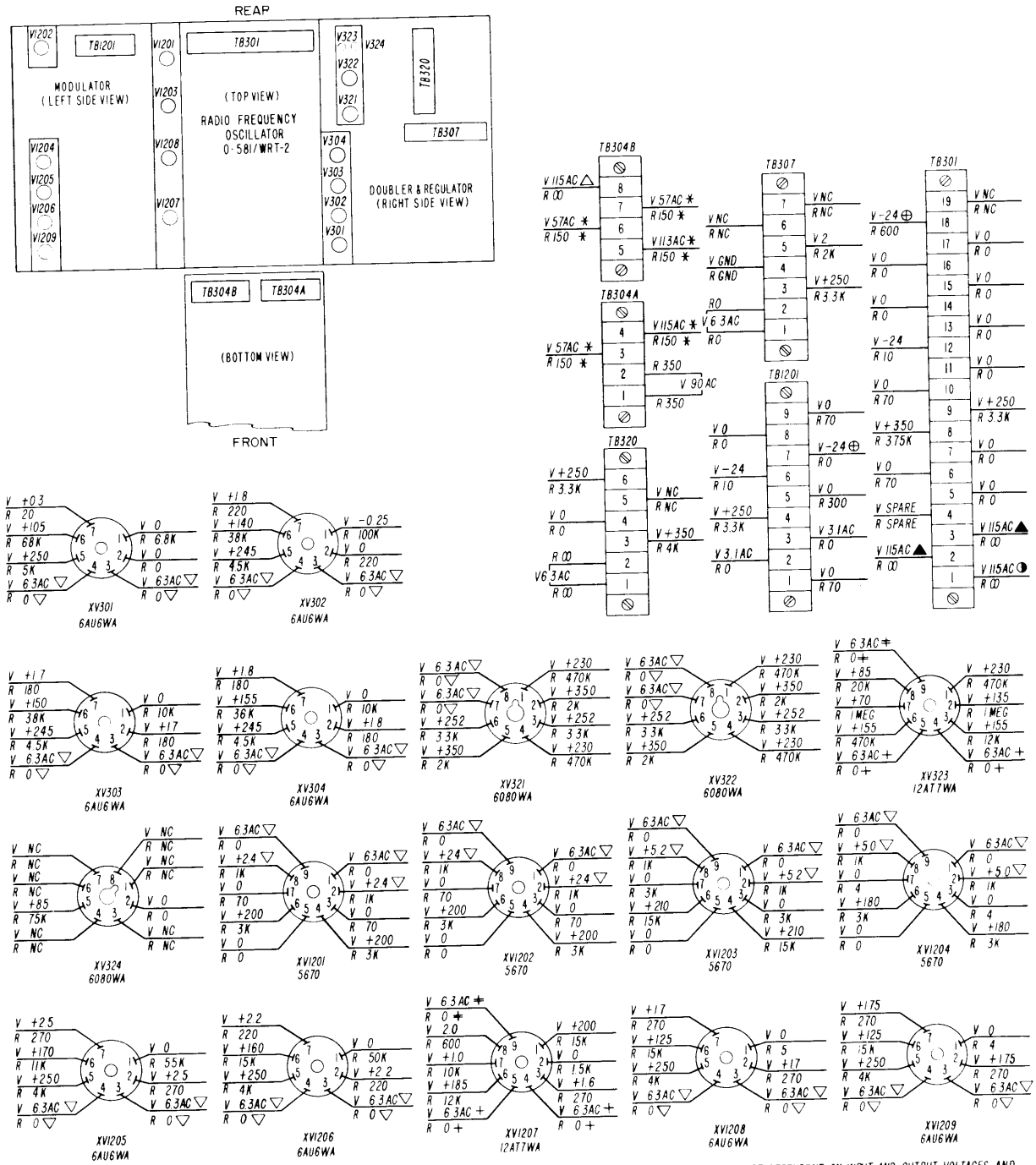


Figure 5-10. Radio Frequency Oscillat r O-581/WRT-2 T p View, L cati n f Test Points



NOTES

1 ALL VOLTAGE MEASUREMENTS WERE MADE WITH EQUIPMENT IN NORMAL OPERATION, WITH NO SIGNAL INPUT, AND EMISSION SELECTOR SWITCH S508 IN CW, UNLESS OTHERWISE STATED.
2 ALL RESISTANCE MEASUREMENTS WERE MADE WITH EQUIPMENT CONNECTED FOR NORMAL OPERATION, BUT DEENERGIZED
3 ALL MEASUREMENTS WERE MADE TO GROUND UNLESS OTHERWISE INDICATED
4 ALL VOLTAGE MEASUREMENTS ARE D-C UNLESS OTHERWISE INDICATED
5 RESISTANCE MEASUREMENTS WERE MADE WITH POSITIVE METER LEAD CONNECTED TO TUBE SOCKET PIN
6 ALL MEASUREMENTS WERE MADE WITH MULTIMETER AN/PSM-4
7 ALL RESISTANCES GIVEN IN OHMS UNLESS OTHERWISE INDICATED
K - REPRESENTS THOUSANDS OF OHMS
MEG - REPRESENTS MILLIONS OF OHMS
8 THE VOLTAGES FOR TB320, V322, & V323 ARE DEPENDENT ON INPUT AND OUTPUT VOLTAGES AND LOAD CURRENT GIVEN VALUES ARE FOR INPUT VOLTAGE OF +350VDC, OUTPUT VOLTAGE OF +250VDC, AND LOAD CURRENT OF 200MA.
9 * - TO TB304B-8 VOLTAGES PRESENT WHEN K301 IS ENERGIZED
10 △ - TO TB304A-4 VOLTAGE PRESENT WHEN K301 IS ENERGIZED
11 ▲ - TO TB301-1
12 ◑ - TO TB301-2 OR 3
13 ⊕ - WHEN EMISSION SELECTOR IN ISB, READING IS 0
14 + - COMMON PINS ON SOCKETS SO IDENTIFIED
15 ‡ - 6.3VAC BETWEEN SOCKET PINS SO IDENTIFIED AND COMMON PINS
16 ▽ - READING OBTAINED BETWEEN SOCKET PINS SO IDENTIFIED
17 "NC" INDICATES NO CONNECTION

Figure 5-11. Radio Frequency Oscillator O-581/WRT-2 Voltage and R sistance Measurements

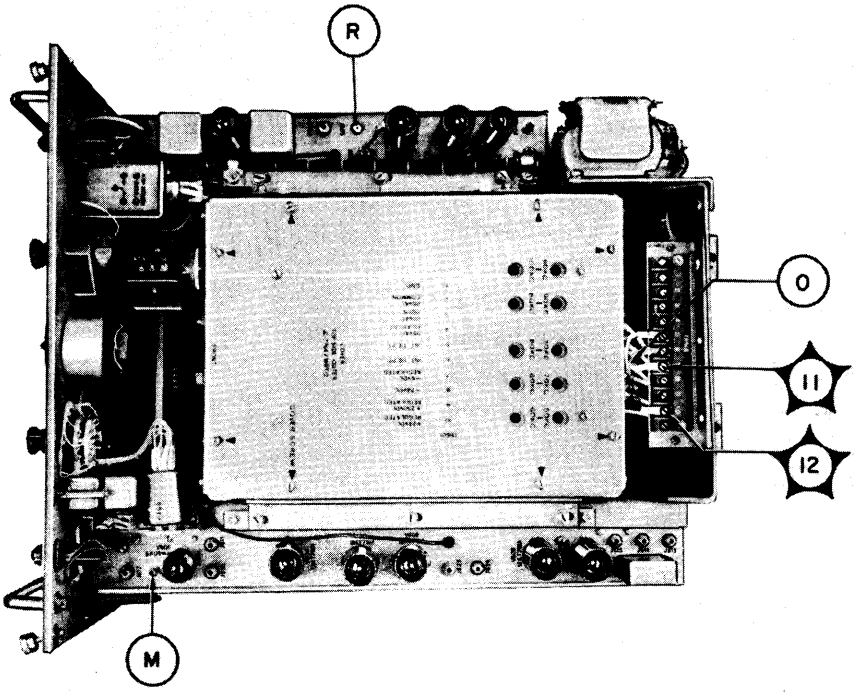


Figure 5-12. Electrical Frequency Control C-2764/WRT-2 Top View, Location of Test Points

d. POWER AMPLIFIER FUNCTIONAL SECTION.—Figure 5-51 is a functional schematic diagram of the power amplifier circuits. As shown in figure 5-51 the power amplifier circuits include the high voltage rectifiers located in Power Supply PP-2222/WRT, the mixer, the i-f amplifier circuits, the power amplifier circuits, the monitoring circuits, located in Radio Frequency Amplifier AM-2121/WRT-2 and the circuits of Radio Frequency Tuner TN-342/WRT-2. Indication of trouble in the power amplifier functional section could be transmission failure when indications show all other functional sections to be operating properly.

(1) PRELIMINARY CHECK.—Examine the control settings in the front panels of all the units of Radio Transmitting Set AN/WRT-2. Examine all tubes for inoperative filaments. Refer to figure 2-8 and check the interconnecting cables between Transmitter Group OA-2175/WRT-2 and Radio Frequency Tuner TN-342/WRT-2, for breaks or irregularities that would interfere with transmission. All drawers should be tightly closed for normal operation.

(2) TEST EQUIPMENT AND SPECIAL TOOLS.—Test equipment required for a functional check of the power amplifier section is Multimeter AN/USM-34 series (or equivalent), and a T-adapter UG-566/U. No other special tools are required.

(3) CONTROL SETTINGS.—Before starting the functional check on the power amplifier section refer to Section 3 of this technical manual and tune-up the transmitter as directed in step 1 of Table 5-6, the power amplifier functional section troubleshooting chart.

(4) TROUBLESHOOTING CHART.—Table 5-6 provides a procedure for locating troubles in the power amplifier functional section. Meters located on the front panel of Radio Frequency Amplifier AM-2122/WRT-2 provide the main source for isolating the trouble to the circuits in the power amplifier functional section. Reference should be made to figure 5-48, the functional schematic diagram of the power amplifier section and to the figures in the TEST POINT

column for the location of test points. All controls and relays in the 100 series are located on Electrical Equipment Cabinet CY-2558/WRT-2, those in the 200 series on Power Supply PP-2222/WRT, those in the 300, 400 and 1200 series in Radio Frequency Oscillator O-581/WRT-2, those in the 500 and 1400 series in Amplifier-Power Supply PP-2122/WRT-2, those in the 600 and 700 series in Electrical Frequency Control C-2764/WRT-2 and those in the 800 and 900 series in Radio Frequency Amplifier AM-2121/WRT-2. When using Table 5-6 note the instructions given in the NORMAL INDICATION column for each step. If indication is normal proceed to next step. If indication is not normal follow the instructions given in the NEXT STEP column.

WARNING

THIS UNIT CONTAINS HIGH VOLTAGE CIRCUITS. READ PARAGRAPH 5-1*d* AND *e* OF THIS SECTION BEFORE MAKING ANY MEASUREMENTS.

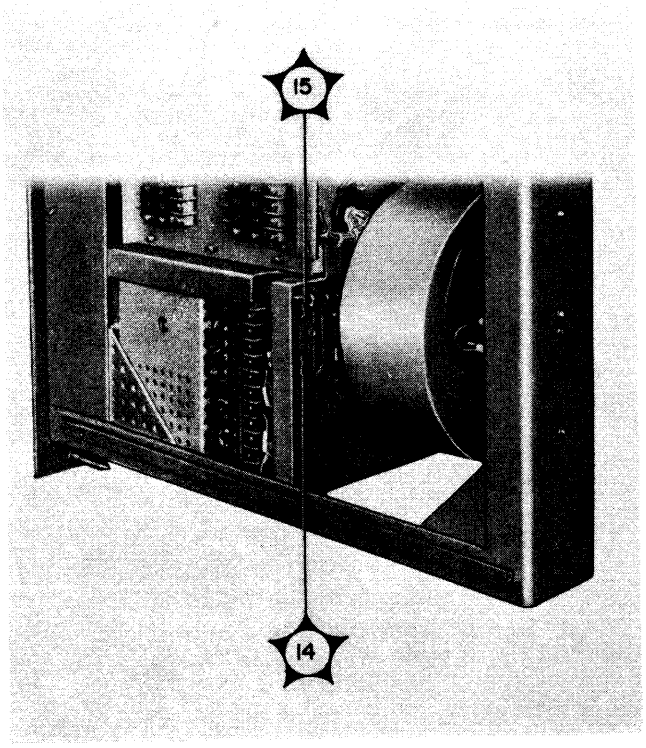


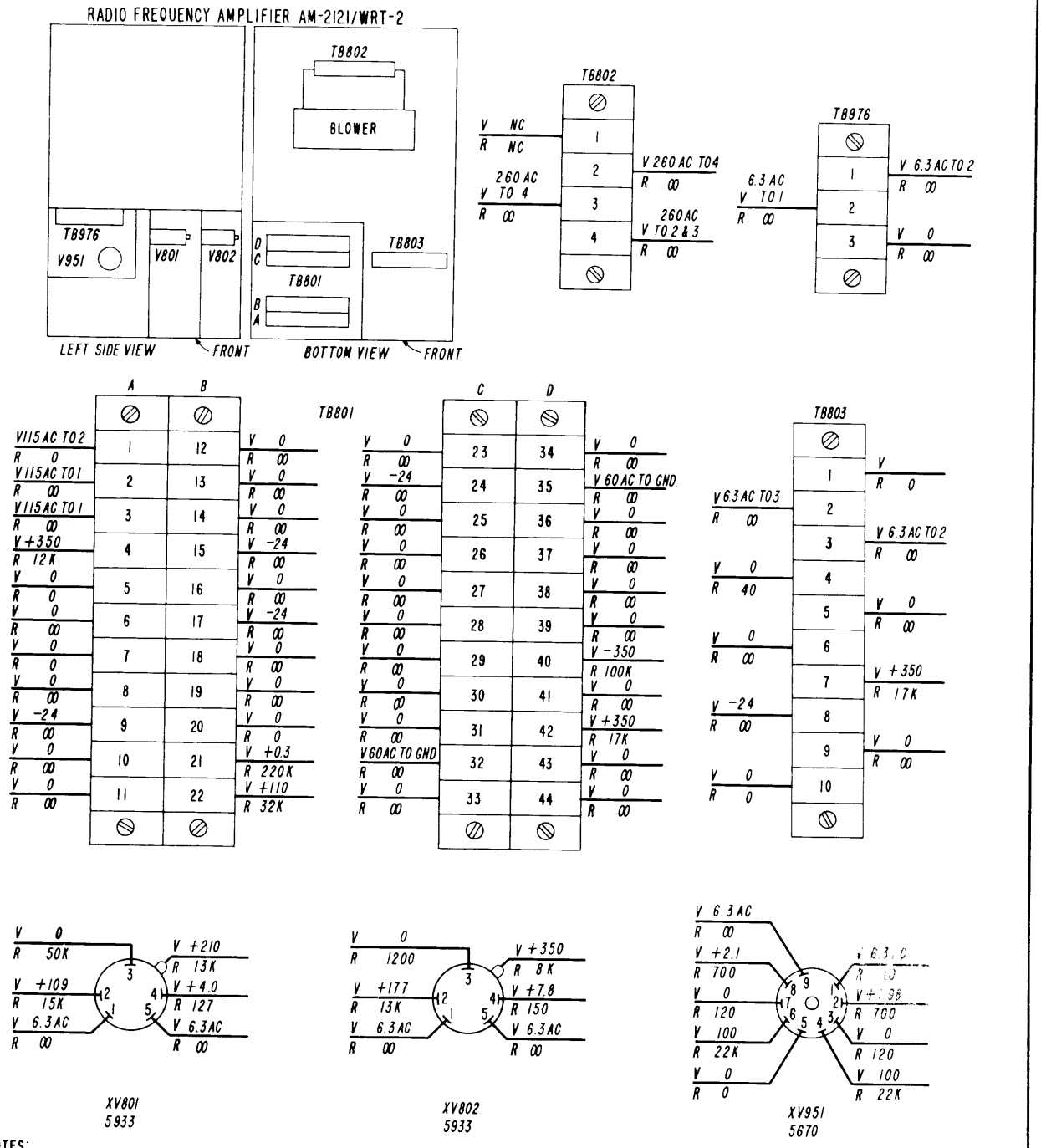
Figure 5-13. Radio Frequency Amplifier AM-2121/WRT-2 Bottom Oblique View, Location of Test Points

TABLE 5-6. RADIO TRANSMITTING SET AN/WRT-2, POWER AMPLIFIER FUNCTIONAL SECTION TROUBLESHOOTING CHART

STEP	TEST POINT	PRELIMINARY ACTION	NORMAL INDICATION	NEXT STEP
1	13 Figures 5-51 and 5-9	Refer to Section 3 and tune up transmitter for CW emission with POWER SELECTOR switch (S510) in TUNE position at an output frequency of 30 mc. Place OUTPUT METER switch (S815) in R-F OUTPUT position and adjust P. A. output for a reading of 100 watts on R-F OUTPUT meter M805.	R-F OUTPUT meter (M805) should indicate 100 watts.	If R-F OUTPUT meter M805 gives normal indication proceed with next step. If M805 indication is not normal check all reflectometer circuits and if indication is still not normal proceed to step 3.
2	13 Figures 5-51 and 5-9	Place POWER SELECTOR switch in 100W position and tune transmitter for 100 watt output. Place OUTPUT METER switch (S815) in R-F OUTPUT position and adjust P. A. output for a reading of 100 watts on R-F OUTPUT meter (M805).	R-F OUTPUT meter (M805) should indicate 100 watts.	If P. A. output cannot be adjusted for a reading of 100 watts on M805 check line to, and circuits of Radio Frequency Tuner TN-342 WRT-2.

TABLE 5-6. RADIO TRANSMITTING SET AN/WRT-2, POWER AMPLIFIER FUNCTIONAL SECTION TROUBLESHOOTING CHART—Continued

STEP	TEST POINT	PRELIMINARY ACTION	NORMAL INDICATION	NEXT STEP
3	(14) Figures 5-51 and 5-13	Pull out the drawer containing Radio Frequency Amplifier AM-2121/WRT-2 and engage drawer interlock switch. Using T-adapter UG-566/U connect Multimeter AN/USM-34 between ground and J951. Place CARRIER TEST KEY (S812) in the ON position. Refer to Section 3 of this technical manual and tune up transmitter for an output frequency of 30 mc with POWER SELECTOR switch (S510) in the TUNE position. Set DRIVE ADJUST control (R986) fully clockwise.	Multimeter AN/USM-34 should indicate 1.2 volts.	If indication is normal proceed to next step. If indication is abnormal refer to modulating section troubleshooting chart Table 5-7 to locate fault.
4	(15) Figures 5-51 and 5-13	Using T-adapter UG-566/U connect Multimeter AN/USM-34 between ground and J801.	Multimeter AN/USM-34 should indicate 1.95 volts.	If indication is normal proceed to next step. If indication is abnormal, refer to r-f generating functional section troubleshooting chart, Table 5-8 to locate fault.
5	(F) Figures 5-51 and 5-9	Place TEST AMMETER control (S801) in the DRIVER CATHODE (150 MA) position.	TEST AMMETER (M801) should indicate 53 to 63 ma.	If indication is normal proceed to next step. If indication is abnormal refer to figure 5-14 and make voltage and resistance measurements of circuitry associated with tubes V801, V802, and V951. Check I. P. A. tuning mechanism.
6	(G) Figures 5-51 and 5-9	Place CATHODE CURRENTS switch (S802) in TOTAL (1.5A) position and POWER SELECTOR (S510) switch in 500W position.	CATHODE CURRENTS meter (M802) should indicate between 750 and 780 ma.	If indication is over 800 ma check relay K801 and adjustment of P. A. OVLD SET (R864). If indication is under 750 ma proceed with next step.
7	(G) Figures 5-51 and 5-9	Place CATHODE CURRENTS switch (S802) first in 1 then in 2, 3 and 4 position.	In each position CATHODE CURRENTS meter (M802) should indicate between 180 and 184 ma.	If indication on one of the settings is abnormal check the respective tube. Position 1 corresponds to V804, 2 to V805, 3 to V806 and 4 to V807. If one of the tubes is defective replace the respective tube. If tubes are not defective, proceed to next step.



NOTES:

1. ALL VOLTAGE MEASUREMENTS WERE MADE WITH EQUIPMENT IN NORMAL OPERATION, NO SIGNAL INPUT, AND FRONT PANEL SWITCHES SET AS FOLLOWS:

EMISSION SELECTOR	OFF
2 WIRE 6 WIRE REMOTE	6 WIRE REMOTE
POWER SELECTOR	ADJ.
LOCAL REMOTE	LOCAL
FILAMENT POWER	ON
PLATE POWER	ON

ALL USB AND LSB LEVEL POTENTIOMETERS ON THE FRONT PANEL SET IN THE FULLY COUNTERCLOCKWISE POSITION.

2. ALL RESISTANCE MEASUREMENTS WERE MADE WITH EQUIPMENT CONNECTED AS ABOVE AND INPUT POWER OFF. ALL EXTERNAL LEADS WERE DETACHED FROM TERMINALS.
3. ALL MEASUREMENTS WERE MADE TO GROUND UNLESS OTHERWISE SPECIFIED.
4. ALL VOLTAGE MEASUREMENTS ARE D-C UNLESS OTHERWISE INDICATED
5. ALL RESISTANCE MEASUREMENTS ARE IN OHMS UNLESS OTHERWISE INDICATED.
6. "NC" INDICATES NO CONNECTION.

Figure 5-14. Radi Frequency Amplifier AM-2121/WRT-2, Voltage and Resistance Measurements

TABLE 5-6. RADIO TRANSMITTING SET AN/WRT-2, POWER AMPLIFIER FUNCTIONAL SECTION TROUBLESHOOTING CHART—Concluded

STEP	TEST POINT	PRELIMINARY ACTION	NORMAL INDICATION	NEXT STEP
8	⑨ Figures 5-51 and 5-9	Place TEST VOLTMETER switch (S803) in the L. V. SUPPLY (500V) position.	TEST VOLTMETER (M803) should indicate 315 to 385 volts.	Check interconnection to TB801. Refer to low voltage funtional section troubleshooting chart, Table 5-5 to find fault.
9	⑨ Figures 5-51 and 5-9	Place TEST VOLTMETER switch (S803) in the PLATE SUPPLY (2 KV) position.	TEST VOLTMETER M803 should indicate 1810 to 1890 volts.	Check H. V. rectifier tubes V201 through V206.

e. MODULATING FUNCTIONAL SECTION.—Figure 5-50 is a functional schematic diagram of the modulating section. As shown in figure 5-50 the modulating functional section includes the keying circuits, the side tone amplifiers, the speech amplifiers and the test oscillator, located in Amplifier-Power Supply AM-2122/WRT-2, the upper and lower sideband modulators, the 2.0 and 1.5 mc selector circuits, the 2.0 mc amplifier circuits, and the 500 kc modulator and amplifier circuits, located in Radio Frequency Oscillator O-581/WRT-2. Indication of trouble in the modulating functional section would be no r-f drive available to the r-f amplifier. Trouble in the modulating functional section can usually be traced quickly to one of the circuits in the modulating section if it is known in what position the EMISSION SELECTOR SWITCH (S508) was when the trouble occurred and also in what frequency range the transmitter was operating.

(1) PRELIMINARY CHECK.—Examine the control settings on the front panel of Amplifier-Power Supply AM-2122/WRT-2 and on the front panel of Radio Frequency Oscillator O-581/WRT-2. Refer to figure 5-50 and examine all tubes for inoperative filaments. Check interconnections for broken wires or loose connections. Make sure all drawers are tightly closed.

(2) TEST EQUIPMENT AND SPECIAL TOOLS.—The test equipment required for a functional check of the modulator functional section consists of Multimeter AN/USM-34 series (or equivalent), Oscilloscope AN/USM-24 and T-adapter UG-566/U. No other special tools are required.

(3) CONTROL SETTINGS.—Before starting a functional check on the modulating functional section preset the controls in the following manner:

EMERGENCY STOP (S201)	in the	ON Position
FILAMENT POWER (S502)	in the	ON Position
POWER SELECTOR (S510)	in the	ADJ Position
LOCAL REMOTE (S507)	in the	LOCAL Position
METER INDICATION (S606)	in the	OPERATE A Position
FSK TEST (S309)	in the	LINE Position
OVEN (S304)	in the	ON Position
CARRIER TEST KEY (S812)	in the	ON Position
EMISSION SELECTOR (S508)	in the	CW Position
AUXILIARY RANGE SWITCH (S1202)	in the	2-8MC Position

(4) TROUBLESHOOTING CHART. — Table 5-7 provides a procedure for locating troubles in the modulating functional section. MOD LEVEL meter (M502) on the front panel of Amplifier-Power Supply AM-2122/WRT-2 provides a source for isolating the trouble to the circuits of the speech amplifiers or the test oscillator. During this troubleshooting procedure reference should be made to figure 5-50 and the figures in the TEST POINT column for the location of the test points in the modulating section. All controls and relays in the 100 series are located on Electrical Equipment Cabinet CY-2558/WRT-2, those in the 200 series on Power Supply PP-2222/WRT, those in the 300, 400 and 1200 series in Radio Frequency Oscillator O-581/WRT-2, those in the 500 and 1400 series in Amplifier Power Supply PP-2122/WRT-2, those in the 600 and 700 series in Electrical Frequency Control C-2764/WRT-2 and those in the 800 and 900 series in Radio Frequency Amplifier AM-2122/WRT-2. When using Table 5-7 note the instructions given in the NORMAL INDICATION column for each step. If indication is normal proceed to next step. If indication is not normal follow the instructions given in the NEXT STEP column.

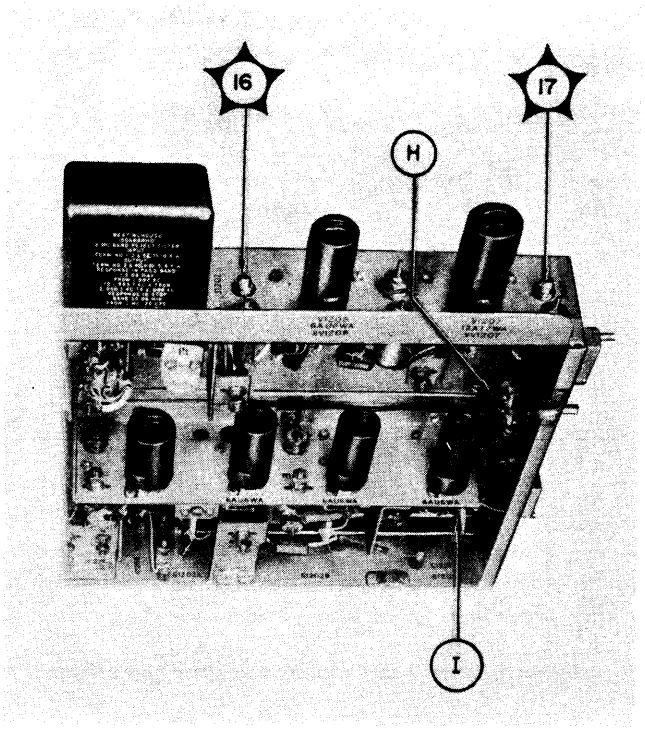


Figure 5-15. Radio Frequency Oscillator O-581/WRT-2 Modulator Chassis, Location of Test Points

TABLE 5-7. RADIO TRANSMITTING SET AN/WRT-2 MODULATING FUNCTIONAL SECTION, TROUBLESHOOTING CHART

STEP	TEST POINT	PRELIMINARY ACTION	NORMAL INDICATION	NEXT STEP
1	(16) Figures 5-50 and 5-15	Using adapters IPC-47325 and IPC-47250 connect Multimeter AN/PSM-4 series (or equivalent to J1202).	Multimeter AN/PSM-4 should indicate a voltage reading of 0.7 to 0.8 volts.	Proceed to next step.
2	(17) Figures 5-50 and 5-15	Using same adapters as in step 1, connect Oscilloscope series (or equivalent) to J1201.	Oscilloscope should indicate 500-kc square wave.	If indication is normal proceed to next step.
3	(H) Figures 5-50 and 5-15	Connect Multimeter AN/USM-34 between ground and the arm of S1201. Set CARRIER REINSERT switch S1201 on the CW, MCW (+3db) position.	Multimeter should indicate approximately one volt.	If indication is normal proceed to step 5, if not normal, check tubes V1207 and V1208. Refer to figure 5-11 and make voltage resistance measurements of circuitry associated with tubes V1207 and V1208.
4	(I) Figures 5-50 and 5-15	Connect Multimeter AN/USM-34 between ground and the arm S1202C.	Multimeter should indicate approximately one volt.	Check tube V1209. Refer to figure 5-11 and make voltage and resistance measurements of circuitry associated with V1209. If indications in

TABLE 5-7. RADIO TRANSMITTING SET AN/WRT-2 MODULATING FUNCTIONAL SECTION, TROUBLESHOOTING CHART—Continued

STEP	TEST POINT	PRELIMINARY ACTION	NORMAL INDICATION	NEXT STEP
4 (Cont.)				steps 3 and 4 are normal check tubes V1204 and V1205. Refer to figure 5-11 and make voltage and resistance measurements of circuitry associated with tubes tubes V1204 and V1205.
5	(16) Figures 5-50 and 5-15	Place AUXILIARY RANGE switch (S1202) in the 8-30 MC position. Using adapters IPC-47325 and IPC-47250 connect Multimeter AN/PSM-4 between ground and J1202.	Multimeter AN/PSM-4 should indicate a voltage reading of 0.7 to 0.8 volts.	Check tubes V1206. Refer to figure 5-12 and make voltage and resistance measurements of circuitry associated with V1206.
6	(18) Figures 5-50 and 5-1	Place EMISSION SELECTOR switch (S508) in the ISB position, SIDEBAND SELECTOR control (R1208) in the UPPER position. Plug in Telephone Handset H-169/U into jack J501 and while speaking in a normal tone into the telephone set press the USB MOD LEVEL button (S512) and observe MOD LEVEL meter (M502).	The needle on MOD LEVEL meter (M502) should oscillate along the black scale.	If indication is normal check tube V1201 and V1203. Refer to figure 5-11 and make voltage and resistance measurements of circuitry associated with V1201 and V1203. If indication is not normal check circuitry of USB Speech Amplifier mounted on board E1402.
7	(18) Figures 5-50 and 5-1	Place SIDEBAND SELECTOR switch (S508) in the LOWER position. Plug in Telephone Handset H-169/U into jack J502 and while speaking in a normal tone into the telephone set press LSB MOD LEVEL button (S513) and observe MOD LEVEL meter (M502).	The needle on MOD LEVEL meter (M502) should oscillate along the black scale.	If indication is normal check LSB modulator tube V1202. Refer to figure 5-11 and make voltage and resistance measurements of circuitry associated with tube V1202.
8	(18) Figures 5-50 and 5-1	Place EMISSION SELECTOR switch (S508) in the FSK position and FSK TEST switch (S309) in the MARK position. Press USB MOD LEVEL button (S513) and observe MOD LEVEL meter (M502).	The needle on MOD LEVEL meter (M502) should deflect along the black scale.	Proceed with next step.
9	(18) Figures 5-50 and 5-1	Place EMISSION SELECTOR switch (S508) in the ISB position, TEST TONE switch (S511) in the USB position, press USB MOD LEVEL button (S512) and observe MOD LEVEL meter (M502).	The needle on MOD LEVEL meter (M502) should deflect along the black scale.	If no indication check circuit of TEST OSCILLATOR (E1404). If indication is normal proceed with next step.

TABLE 5-7. RADIO TRANSMITTING SET AN/WRT-2 MODULATING FUNCTIONAL SECTION, TROUBLESHOOTING CHART—Concluded

STEP	TEST POINT	PRELIMINARY ACTION	NORMAL INDICATION	NEXT STEP
10	(J) Figures 5-50 and 5-7	Place EMISSION SELECTOR switch (S508) in the FSK position and connect Multimeter AN/USM-34 between ground and terminal 26 on TB1401. While switching FSK TEST switch (S309) from MARK to SPACE positions observe Multimeter ME-25A/U.	The needle on Multimeter AN/USM-34 should vary between 0 and −10 volts as FSK TEST switch is switched back and forth between MARK and SPACE positions.	If indication is normal check transformers T1401, T1402 and T1403 and the FSK switch consisting of diodes CR1402 through CR1409. If no indication check circuitry of keying multivibrator Q1401, Q1402.

f. R.F. GENERATING FUNCTIONAL SECTION.—Figure 5-49 is a functional schematic diagram of the r-f generating functional section. As shown in figure 5-49 the r-f generating functional section consists of: the r-f oscillator and doubler circuits located in Radio Frequency Oscillator O-581/WRT-2, and all the circuits located in Electrical Frequency Control C-2764/WRT-2, with the exception of the +24-volt and −6-volt regulators. Indication of trouble in the r-f generating functional section would be no r-f output to the power amplifier functional section or no 500 kc output to the modulating functional section. Trouble in the r-f generating functional section can usually be traced to the individual circuits by observing the meters and indicators on the front panel of Radio Frequency Oscillator O-581/WRT-2 and Electrical Frequency Control C-2764/WRT-2.

(1) PRELIMINARY CHECK.—Examine all tubes for inoperative filaments. Check interconnections for broken wires or loose connections. Make sure all drawers are tightly closed.

(2) TEST EQUIPMENT AND SPECIAL TOOLS.—The test equipment required for a functional check of the r-f functional section, consists of Multimeter AN/USM-34, Oscilloscope AN/USM-24, and Frequency Meter AN/USM-29.

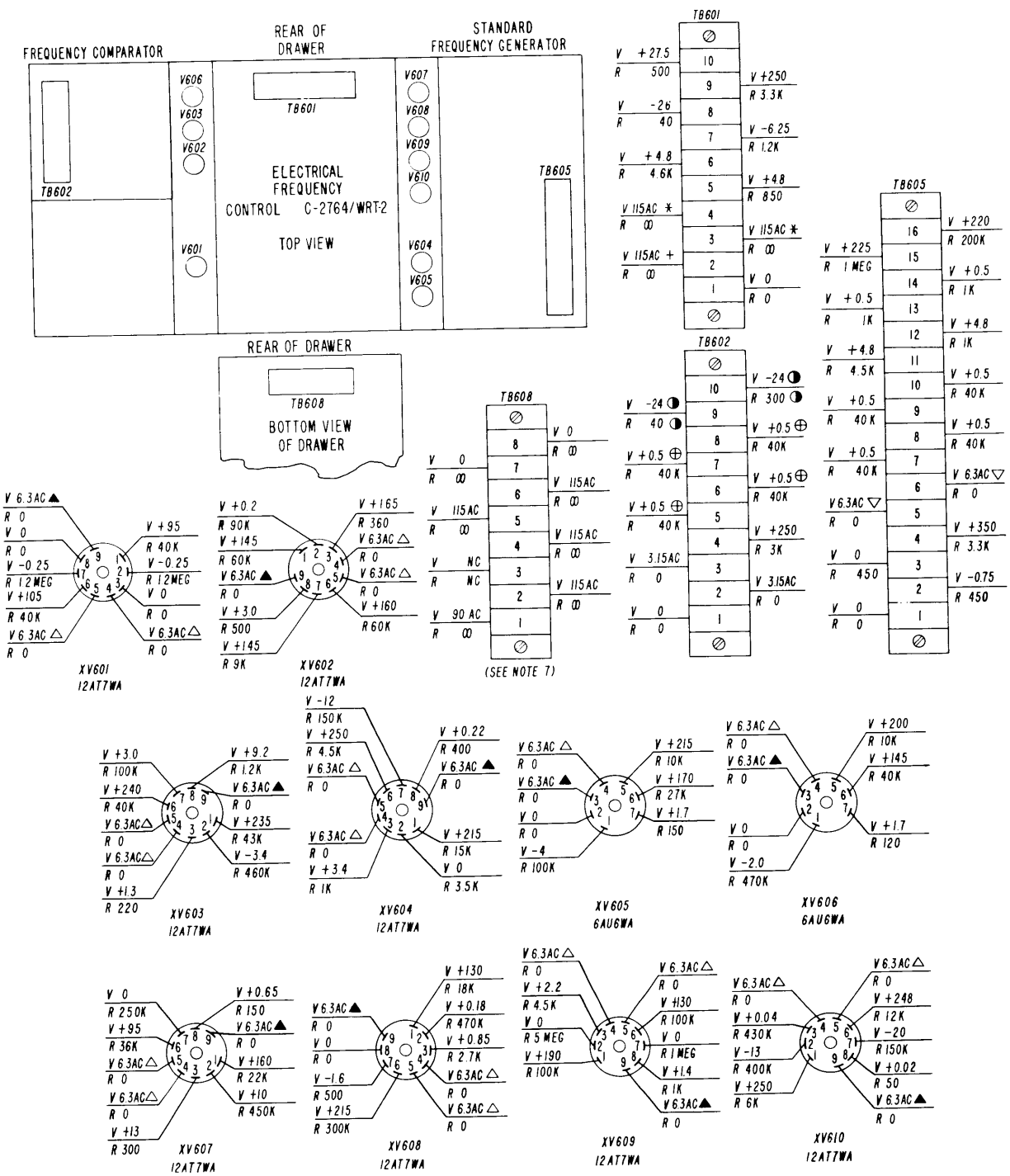
(3) CONTROL SETTINGS.—Before starting a functional check on the r-f generating functional section preset the controls in the following manner:

EMERGENCY STOP (S201)	in the	ON Position
FILAMENT POWER (S502)	in the	ON Position
POWER SELECTOR (S510)	in the	ADJ Position
LOCAL REMOTE (S507)	in the	LOCAL Position
METER INDICATION (S606)	in the	OPERATE A Position
FSK TEST (S309)	in the	LINE Position
OVEN (S304)	in the	ON Position
CARRIER TEST KEY (S812)	in the	OFF Position
EMISSION SELECTOR (S508)	in the	CW Position
AUXILIARY RANGE SWITCH (S1202)	in the	8-30MC Position
INT OSC TUNING (S607)	in the	1 KC STEPS
PLATE POWER ON (S503)		PRESS

(4) TROUBLESHOOTING CHART.—Table 5-8 provides a procedure for locating troubles in the r-f generating functional section. Meter M601 and 1 KC ALARM lamp (DS602) located on the front panel of Electrical Frequency Control C-2764/WRT-2 as well as FREQUENCY ZERO ADJUST meter M301 located on the front panel of Radio Frequency Oscillator O-581/WRT-2, provide indications for isolating the trouble to certain circuits in the r-f generating functional section. During this troubleshooting procedure reference should be made to figures 5-49 and the figures called out in the test point column of Table 5-8, which show the location of test points in the r-f generating functional section. Before starting the troubleshooting procedure the oven heaters in Radio Frequency Oscillator O-581/WRT-2 and in Electrical Frequency Control C-2764/WRT-2 should be energized for at least six hours. All controls and relays in the 100 series are located on Electrical Equipment Cabinet CY-2558/WRT-2, those in the 200 series on Power Supply PP-2222/WRT, those in the 300, 400 and 1200 series in Radio Frequency Oscillator O-581/WRT-2, those in the 500 and 1400 series in Amplifier-Power Supply PP-2122/WRT-2, those in the 600 and 700 series in Electrical Frequency Control C-2764/WRT-2 and those in the 800 and 900 series in Radio Frequency Amplifier AM-2121/WRT-2. When using Table 5-8 note the instructions given in the NORMAL INDICATION column for each step. If indication is normal proceed to next step. If indication is not normal follow the instructions given in the NEXT STEP column.

TABLE 5-8. RADIO TRANSMITING SET AN/WRT-2 R-F GENERATING FUNCTIONAL SECTION TROUBLESHOOTING CHART

STEP	TEST POINT	PRELIMINARY ACTION	NORMAL INDICATION	NEXT STEP
1	(19) Figures 5-49 and 5-2	Refer to Section 3 and tune up Radio Transmitting Set AN/WRT-2 for an output frequency of 20 mc. Observe FREQUENCY ZERO ADJUST meter M301.	FREQUENCY ZERO ADJUST meter M301 should indicate zero.	If FREQUENCY ZERO ADJUST meter does not sweep as the master oscillator is tuned, check feedback amplifier tubes V607 and V608. Refer to figure 5-16 and make voltage and resistance measurements of circuitry associated with tubes V607 and V608. If the meter sweeps proceed to next step.
2	(19) Figures 5-49 and 5-2	Tune up transmitter for an output frequency of 10 mc.	FREQUENCY ZERO ADJUST meter M301 should indicate zero.	If indication is normal check tube V304. Refer to figure 5-16 and make voltage and resistance measurements of circuitry associated with V304. Check switch S302. If indication is not normal proceed with next step.
3	(19) Figures 5-49 and 5-2	Tuneup transmitter for an output frequency of 5 mc.	FREQUENCY ZERO ADJUST meter M301 should indicate zero.	If indication is normal check tube V303. Refer to figure 5-16 and make voltage and resistance measurements of circuitry associated with V303. If indication is not normal proceed to next step.
4	(20) Figures 5-49 and 5-10	Using adapters IPC-47325, and IPC-47250 connect Multimeter AN/USM-34 series (or equivalent) between J304 and P132.	Multimeter should indicate 1.5 to 3.0 volts.	If indication is normal proceed to next step. If no indication check tubes V301 and V302. Refer to figure 5-16, and make voltage and resistance measurements of circuitry associated with V301 and V302.
5	(K) Figures 5-49 and 5-3	Observe meter M601 on the front panel of Electrical Frequency Control C-2764/WRT-2.	M601 should be locked on.	If indication is normal proceed to next step 12. If indication is not normal vary the frequency of the Interpolation Oscillator by not more than 500 cycles and observe M601. If M601 does not lock on proceed to next step. If M601 does not sweep and does not lock on check tube V609. Refer to figure 5-16 and make voltage and resistance measurements of circuitry associated with V609.



NOTES

1. ALL VOLTAGE MEASUREMENTS WERE MADE WITH EQUIPMENT IN NORMAL OPERATION, TUNED TO 29.975 MC AND "INT OSC TUNING" SWITCH S607 IN THE "1KC STEPS" POSITION.
2. ALL RESISTANCE MEASUREMENTS WERE MADE WITH EQUIPMENT CONNECTED FOR NORMAL OPERATION, BUT DEENERGIZED.
3. ALL MEASUREMENTS WERE MADE TO GROUND UNLESS OTHERWISE SPECIFIED.
4. ALL VOLTAGE MEASUREMENTS ARE D-C UNLESS OTHERWISE SPECIFIED.
5. RESISTANCE MEASUREMENTS WERE MADE WITH POSITIVE METER LEAD CONNECTED TO TUBE SOCKET PIN.
6. MEASUREMENTS WERE MADE WITH MULTIMETER AN/PSM-4.
7. ALL VOLTAGES WITH REFERENCE TO TB608-2 AND WITH OVEN HEATERS ON (DS601 ON).
8. RESISTANCE VALUES ARE IN OHMS UNLESS OTHERWISE SPECIFIED. K INDICATES THOUSANDS OF OHMS. MEG INDICATES MILLIONS OF OHMS.
9. * - TO TB601-2.
10. + - TO TB601-3 OR TB601-4.
11. ⊕ - VOLTAGE VARIES ± 1 VOLT.
12. ◑ - READINGS TAKEN WITH SWITCH S605 OPEN.
13. △ - COMMON PINS ON SOCKETS SO IDENTIFIED.
14. ▲ - 6.3VAC BETWEEN SOCKET PINS SO IDENTIFIED AND COMMON PINS.
15. ▽ - ACROSS TERMINALS 5 & 6 OF TB605.

Figure 5-16. Electrical Frequency Control C-2764/WRT-2, V ltage and Resistance Measurements

TABLE 5-8. RADIO TRANSMITING SET AN/WRT-2 R-F GENERATING FUNCTIONAL SECTION TROUBLESHOOTING CHART—C ntinued

STEP	TEST POINT	PRELIMINARY ACTION	NORMAL INDICATION	NEXT STEP
6	(L) Figures 5-49 and 5-3	Observe 1 KC ALARM indicator lamp (DS602).	1 KC ALARM DS602 should not glow.	If indication is normal proceed to step 10. If indication is not normal proceed with next step.
7	(M) Figures 5-49 and 5-11	Using adapters IPC-47325 and IPC-47250 connect Frequency Meter AN/USM-29 series (or equivalent) to J616.	Frequency Meter should indicate 100 kc.	If indication is normal proceed with step 8. If indication is not normal proceed to step 9.
8	(N) Figures 5-49 and 5-17	Connect Oscilloscope AN/USM-24 series (or equivalent) to terminal 6 of T619.	Oscilloscope should display waveform shown in figure 5-49 at test point (N)	If indication is not normal check tubes V604, V610 and V605. Refer to figure 5-16 and make voltage and resistance measurements of circuitry associated with V604, V610 and V605.
9	(O) Figures 5-49 and 5-11	Using adapters IPC-47325 and IPC-47250 connect Frequency Meter AN/USM-29 series (or equivalent) at J602.	Frequency should indicate 500 kc.	If indication is not normal refer to Section 6, open the oven and check the circuits of the 10:1 frequency dividers. (E1301 and E1303). Check circuitry of the 1 MC Oscillator (E1304). Refer to Section 6, remove and check the 1 MC Oscillator assembly (E1304). Remove and check the oven control unit (Z1302). Remove the proportional oven (Z1301) and using crystal checker check the 1 MC crystal.
10	(K) Figures 5-49 and 5-3	Place INT OSC TUNING switch S607 in CONTINUOUS position.	Meter M601 on Electrical Frequency Control C-2764/WRT-2 should lock on.	If indication is normal check the 1 KC phase detector. If not normal proceed to next step.
11	(P) Figures 5-41 and 5-18	Connect Multimeter AN/PSM-4 series (or equivalent) between ground and terminal 1 of T605.	Multimeter should indicate 15 volts.	If indication is normal proceed to next step. If indication is not normal check tube V603 and V606. Refer to figure 5-16, and make voltage and resistance measurements of circuits associated with V603 and V606.

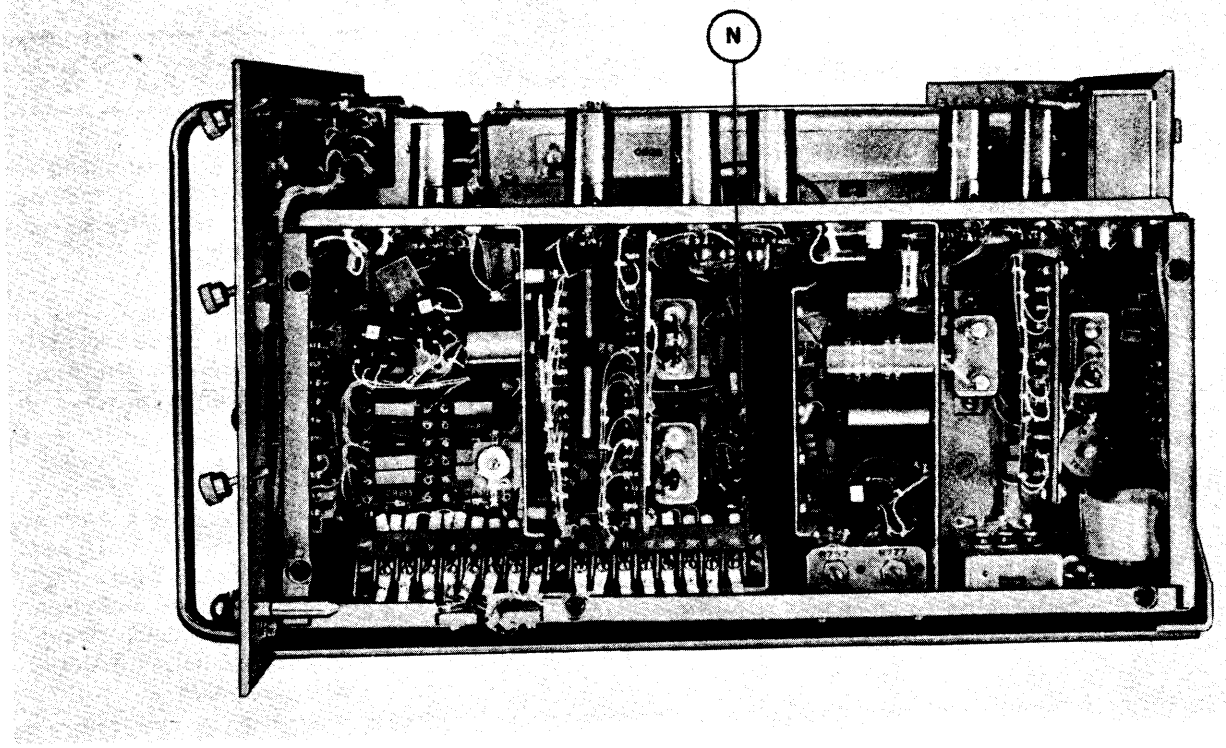


Figure 5-17. Electrical Frequency Control C-2764/WRT-2 Right Side View Location of Test Point

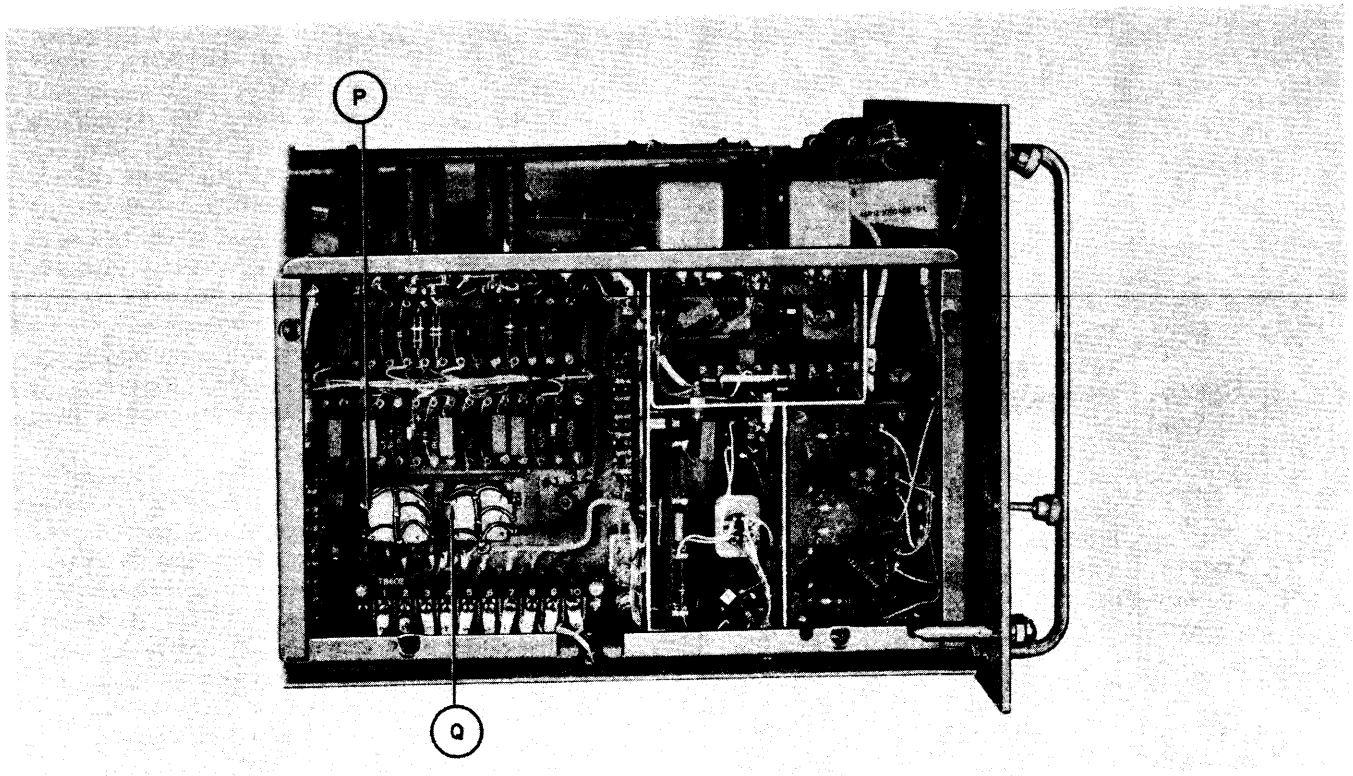


Figure 5-18. Electrical Frequency Contr l C-2764/WRT-2 Left Side View, L cati n f Test Point

TABLE 5-8. RADIO TRANSMITING SET AN/WRT-2 R-F GENERATING FUNCTIONAL SECTION TROUBLESHOOTING CHART—C ncluded

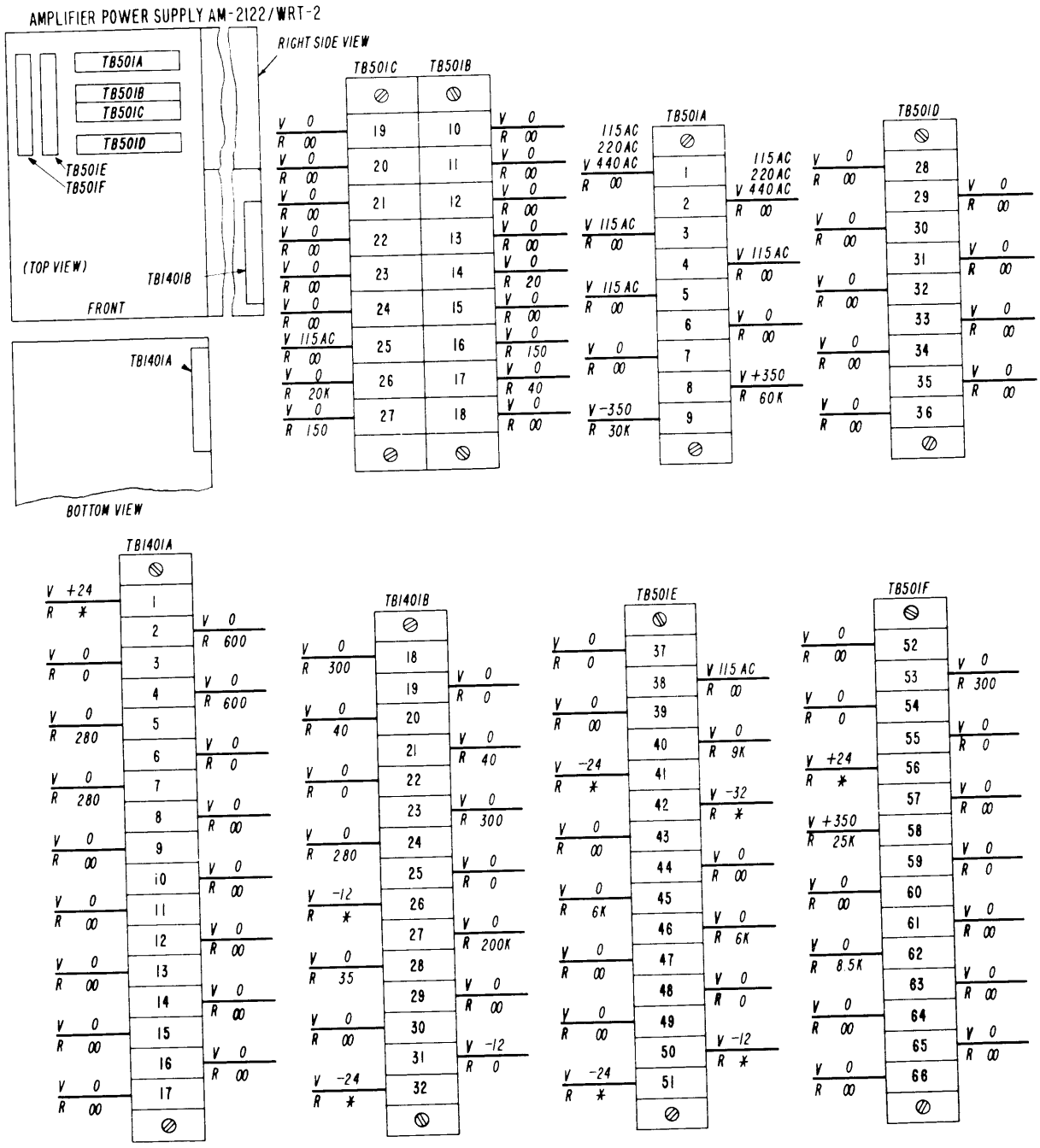
STEP	TEST POINT	PRELIMINARY ACTION	NORMAL INDICATION	NEXT STEP
12	(Q) Figures 5-49 and 5-18	Connect Multimeter AN/PSM-4 series (or equivalent) between ground and terminal 1 of T604.	Multimeter should indicate 20 volts.	If indication is normal check master oscillator phase detector. If indication is not normal proceed with next step.
13	(R) Figures 5-49 and 5-11	Connect Multimeter AN/PSM-4 series (or equivalent) between ground and J605.	Multimeter should indicate 14 volts.	If indication is normal check tubes V602 and V603. Refer to figure 5-16 and make voltage and resistance measurements of circuitry associated with tubes V603 and V602. If indication is not normal check tube V601. Refer to table 5-16, and make voltage and resistance measurements of circuitry associated with V601. Check the mixer circuits and the circuits of the 100 kc phase detector.

5-5. TYPICAL TROUBLES.

Table 5-9 lists a number of faults which may occur often enough to warrant their classification as typical troubles. The troubles are listed in the order of their expected frequency in order to save time in troubleshooting. When using the table, the symptom should be noted, the nature of trouble determined and the fault identified. Tables 5-4 through 5-8 show procedures for locating less obvious faults.

TABLE 5-9. RADIO TRANSMITTING SET AN/WRT-2, TYPICAL TROUBLES

TROUBLE	NATURE OF TROUBLE	SYMPTOMS
Transmitter operates on 8 to 30 mc but not on 2 to 8 mc, or operates on 2 to 8 mc but not on 8 to 30 mc.	2.0-mc or 500-kc carrier, LSB or USB modulator circuits defective.	No transmitter output.
Low output voltage from the power rectifiers.	Rectifier tubes V201 through V206 weak or defective.	Transmitter output cannot be brought to required output power reading on R-F OUTPUT meter M805.
Low or high voltage overload relay trips and cannot be reset.	Short in interconnecting wires or defective components.	H.V. OVERLOAD lamp DS208 or L.V. RECT OVLD lamp DS505 glows constantly.
1 MC standard cannot be set to correct frequency.	+24-volt regulator or proportional oven in Electrical Frequency Control C-2764/WRT-2 defective.	Transmitter off frequency.
FREQUENCY ZERO ADJUST meter (M301) will not lock in on some bands of the master oscillator.	Master oscillator doubler circuits defective.	No transmitter output on some bands of the master oscillator.
Meter M601 on Electrical Frequency Control .C-2764/WRT-2 does not lock in.	100:1 frequency divider or interpolation oscillator circuits defective.	1 KC ALARM lamp (DS606) flashing continuously.



NOTES

1. ALL VOLTAGE MEASUREMENTS WERE MADE WITH EQUIPMENT IN NORMAL OPERATION, NO SIGNAL INPUT, AND FRONT PANEL SWITCHES SET AS FOLLOWS.

EMISSION SELECTOR	OFF
2 WIRE 6 WIRE REMOTE	6 WIRE REMOTE
POWER SELECTOR	ADJ
LOCAL REMOTE	LOCAL
FILAMENT POWER	ON
PLATE POWER	ON

ALL USB AND LSB LEVEL POTENTIOMETERS ON THE FRONT PANEL SET IN THE FULLY COUNTERCLOCKWISE POSITION

2. ALL RESISTANCE MEASUREMENT WERE MADE WITH EQUIPMENT CONNECTED AS ABOVE AND INPUT OFF. ALL EXTERNAL LEADS WERE DETACHED FROM TERMINALS
3. ALL MEASUREMENTS WERE MADE TO GROUND UNLESS OTHERWISE SPECIFIED.
4. ALL VOLTAGE MEASUREMENTS ARE D-C UNLESS OTHERWISE INDICATED
5. ALL RESISTANCE MEASUREMENTS ARE IN OHMS UNLESS OTHERWISE INDICATED
6. "NC" INDICATES NO CONNECTION.

* CAUTION – NO RESISTANCE MEASUREMENTS ARE TO BE MADE BECAUSE OF POSSIBLE DAMAGE TO TRANSISTORS.

Figure 5-19. Amplifier-Power Supply AM-2122/WRT-2, Voltage and Resistance Measurem nts

NOTES:
1. ALL VOLTAGE MEASUREMENTS WERE MADE WITH EQUIPMENT IN NORMAL OPERATION, NO SIGNAL INPUT, AND FRONT PANEL SWITCHES SET AS FOLLOWS:

EMISSION SELECTOR	OFF
2 WIRE 6WIRE REMOTE	6 WIRE REMOTE
POWER SELECTOR	ADJ
LOCAL REMOTE	LOCAL
FILAMENT POWER	ON
PLATE POWER	ON

ALL USB AND LSB LEVEL POTENTIOMETERS ON THE FRONT PANEL SET IN THE FULLY COUNTERCLOCKWISE POSITION.

2. ALL RESISTANCE MEASUREMENTS WERE MADE WITH EQUIPMENT CONNECTED AS ABOVE AND INPUT POWER OFF. ALL EXTERNAL LEADS WERE DETACHED FROM TERMINALS.
3. ALL MEASUREMENTS WERE MADE TO GROUND UNLESS OTHERWISE SPECIFIED.
4. ALL VOLTAGE MEASUREMENTS ARE D-C UNLESS OTHERWISE INDICATED.
5. ALL RESISTANCE MEASUREMENTS ARE IN OHMS UNLESS OTHERWISE INDICATED.
6. "NC" INDICATES NO CONNECTION.

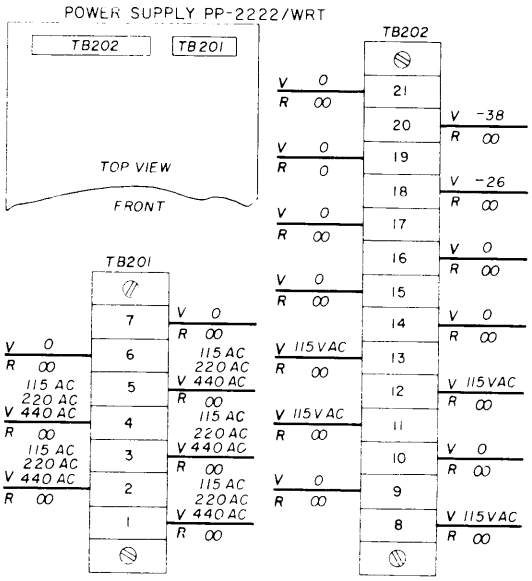


Figure 5-20. Power Supply PP-2222/WRT, Voltage and Resistance Measurements

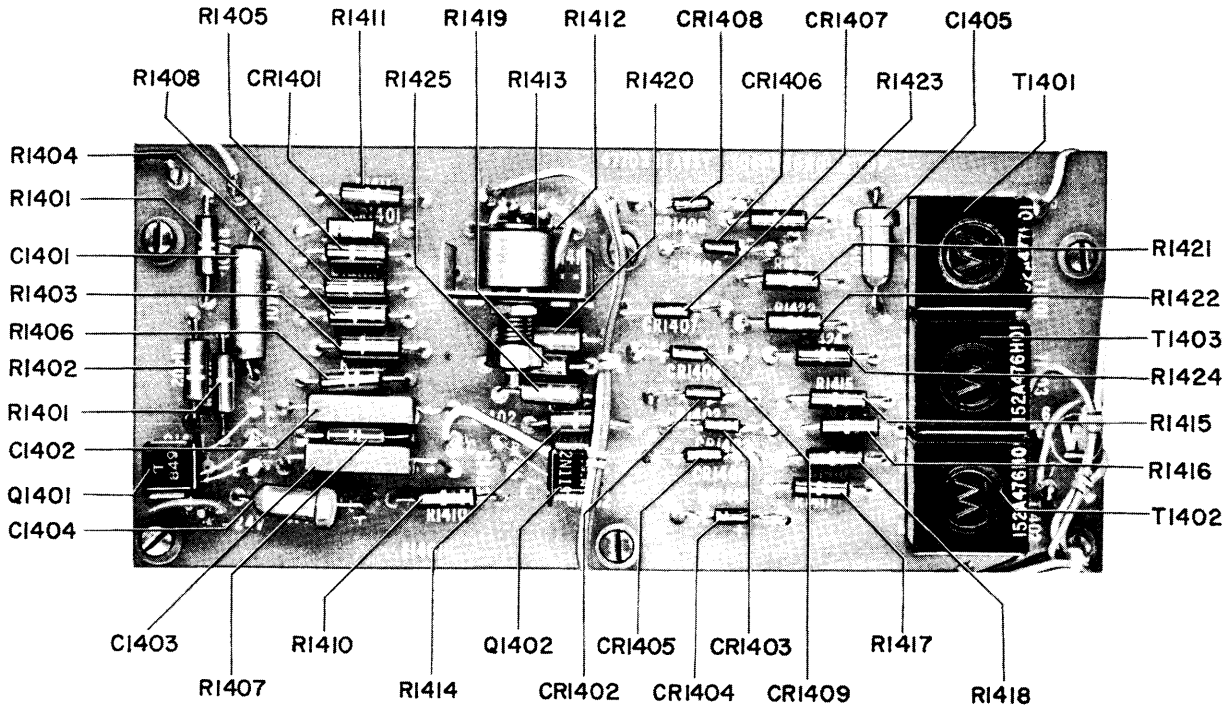


Figure 5-21. Amplifier Power Supply AM-2122/WRT-2, E1401, Keying Multivibrator, Location of Parts

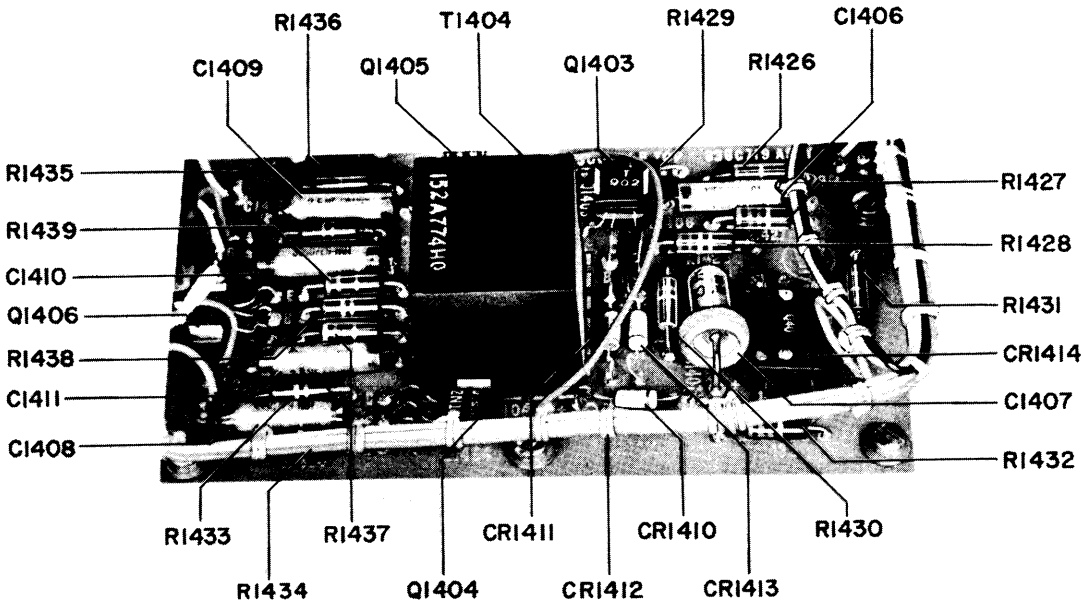


Figure 5-22. Amplifier-Power Supply AM-2122/WRT-2, E1402, USB Speech Amplifier, Location of Parts

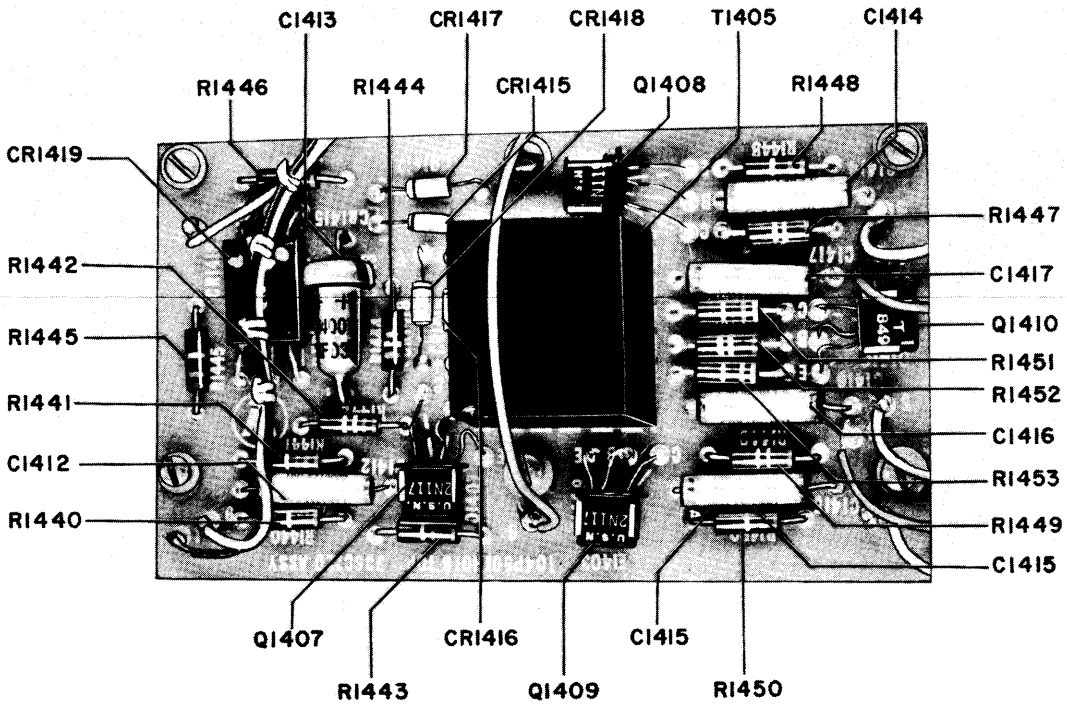
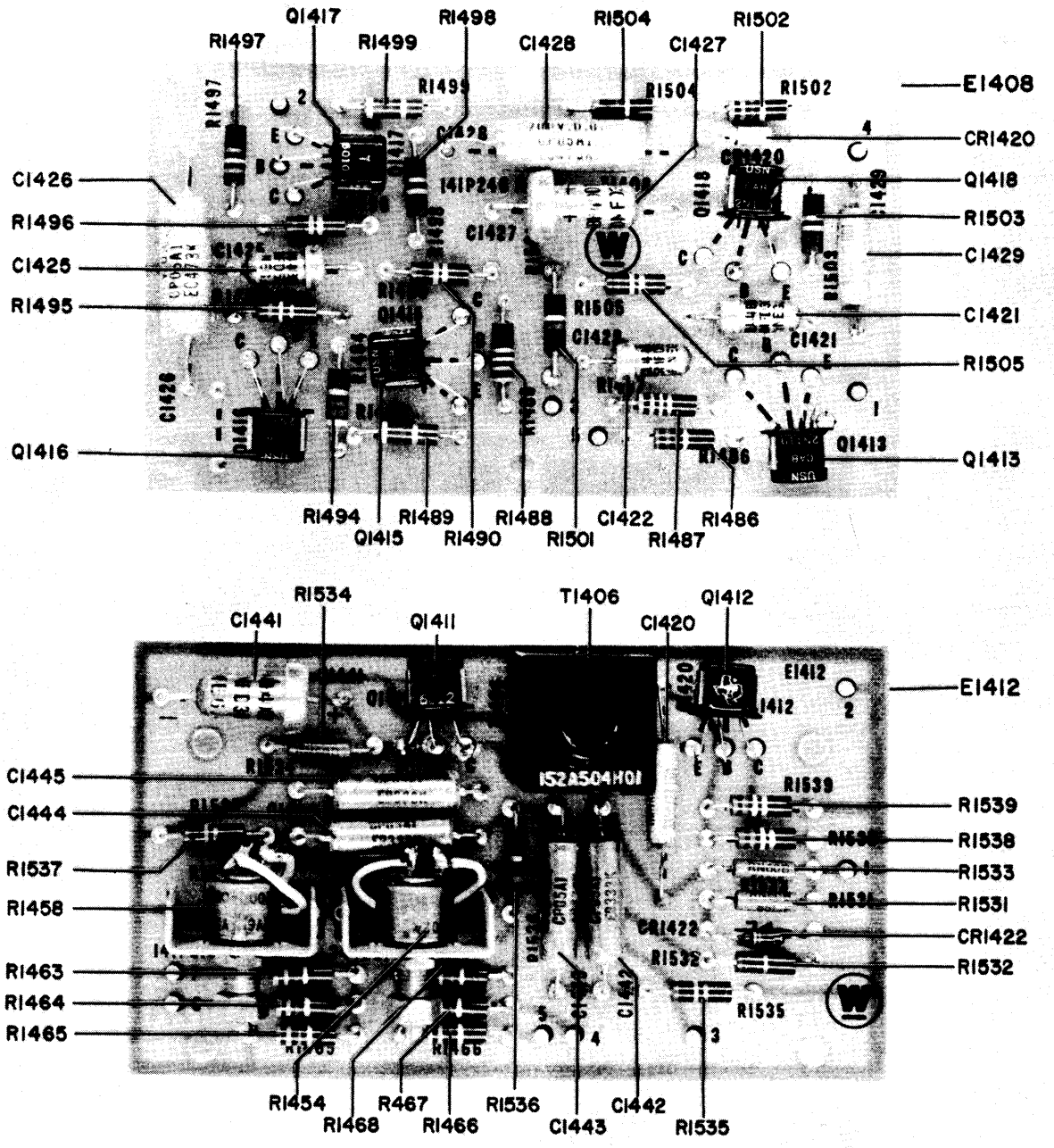


Figure 5-23. Amplifier-P wer Supply AM-2122/WRT-2, E1403, LSB Speech Amplifier, L cation of Parts



Figur 5-23A. Amplifi r-P w r Supply AM-2122/WRT-2, E1408, USB AGC Contr l, S ts S rials 123 and up, and E1412, T st Oscillator S ts Serials 155 and up, Location f Parts

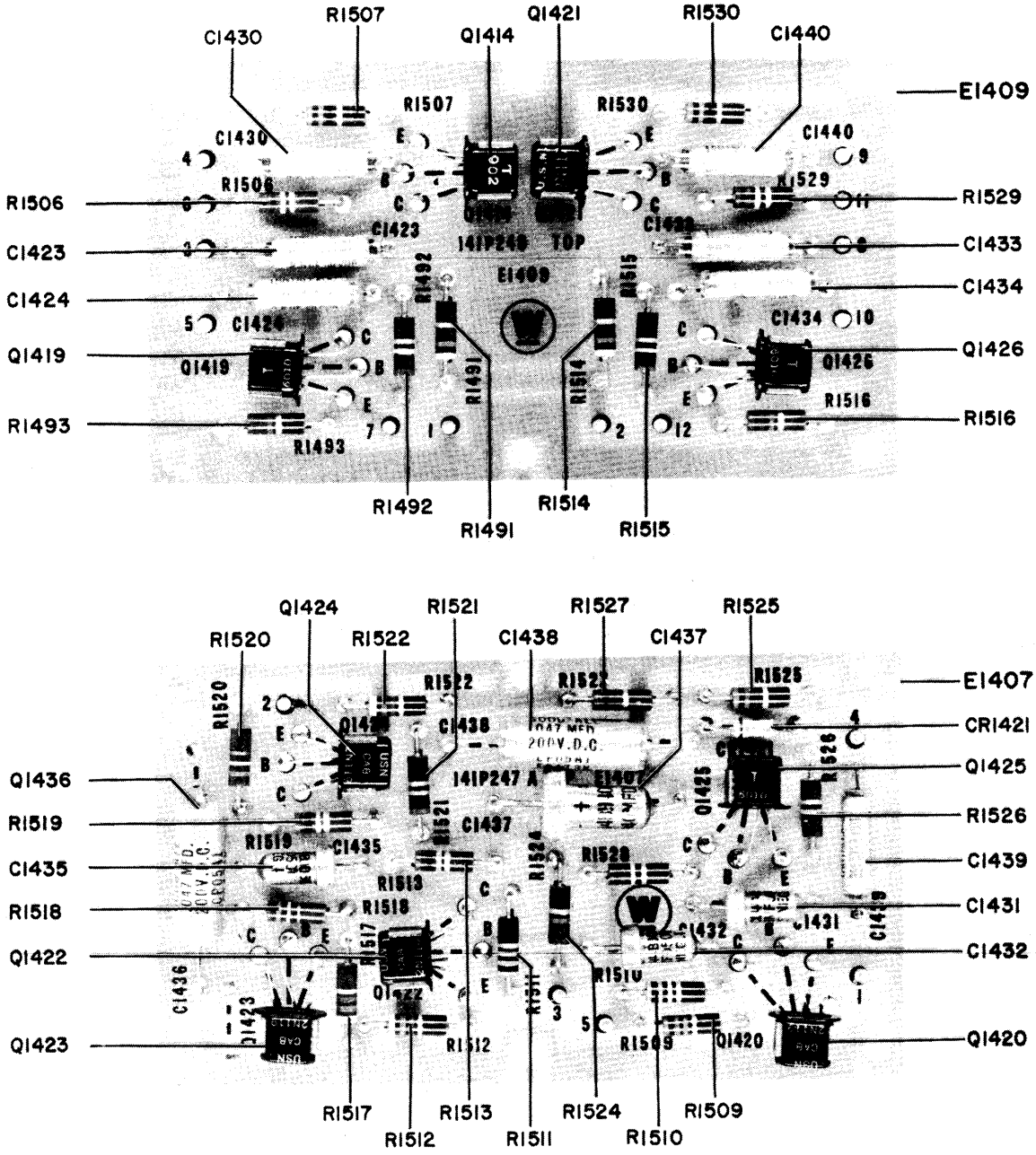


Figure 5-23B. Amplifier-Power Supply AM-2122/WRT-2, E1409, Speech Amplifier and E1407, LSB AGC Control, Sets Serials 123 and up, Location of Parts

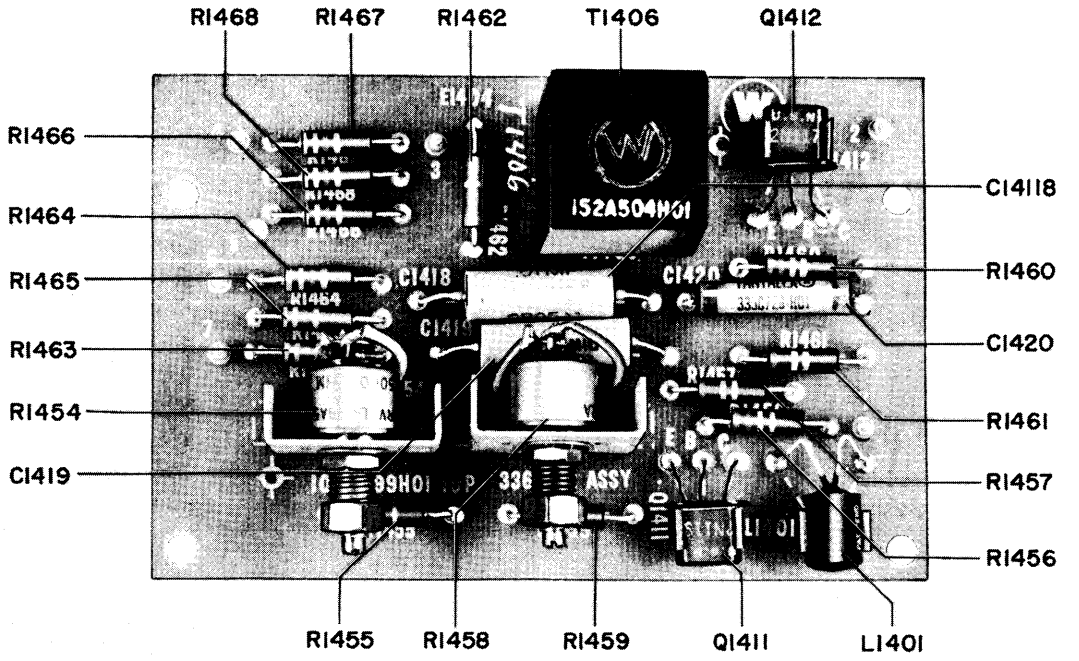


Figure 5-24. Amplifier-Power Supply AM-2122/WRT-2, E1404, Test Oscillator, Locati n f Parts

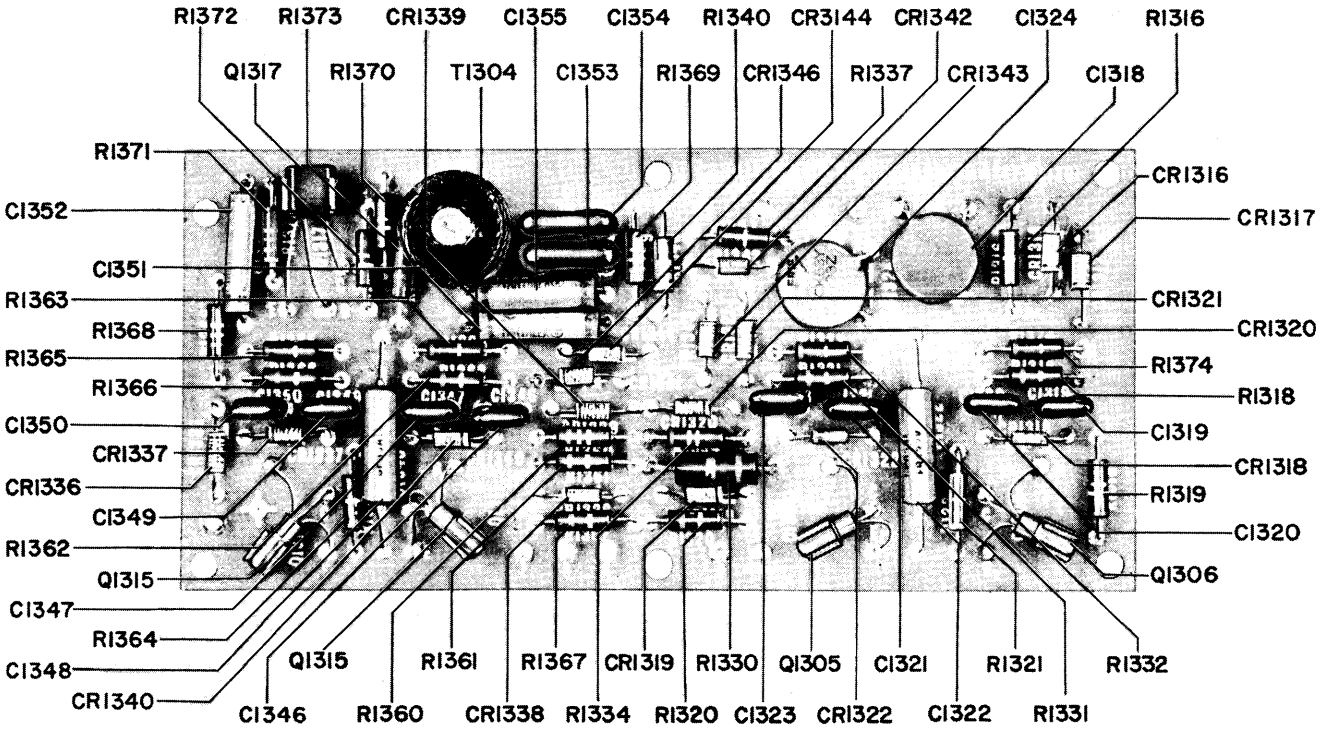


Figure 5-25. Electrical Frequency C ntrol C-2764/WRT-2, E1301 ,Binary N . 1, Feedback Counter, 100 KC Amplifier, Locati n of Parts

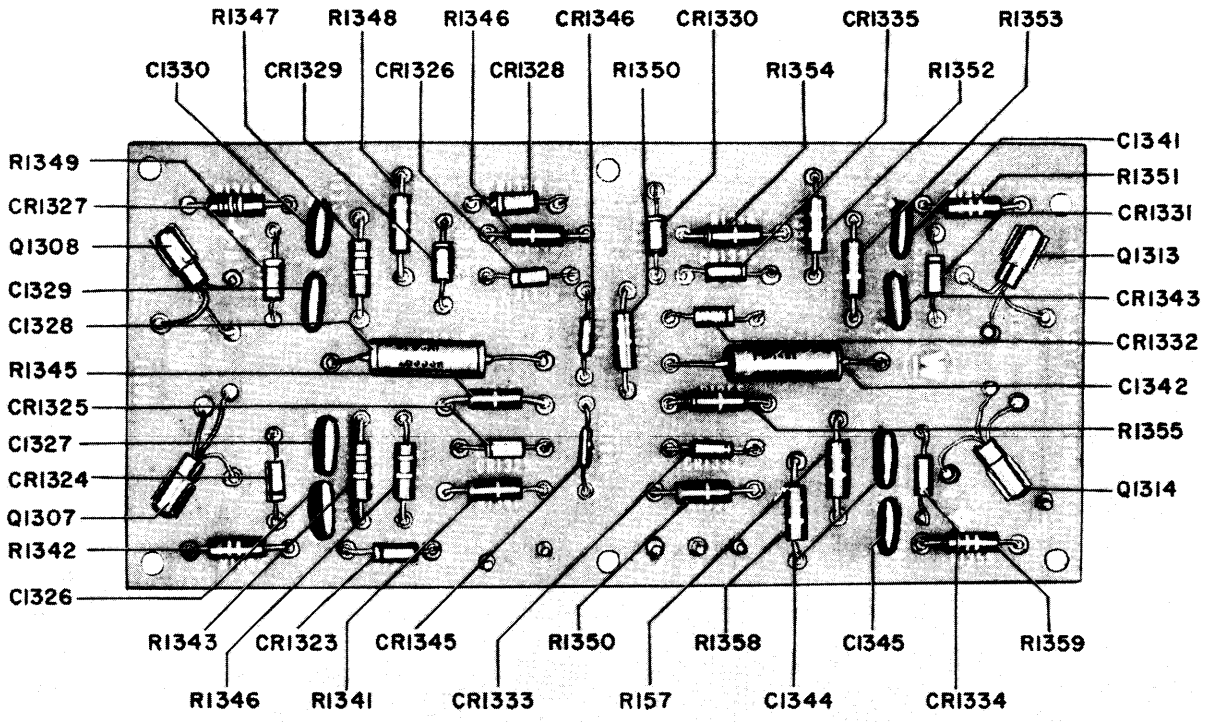
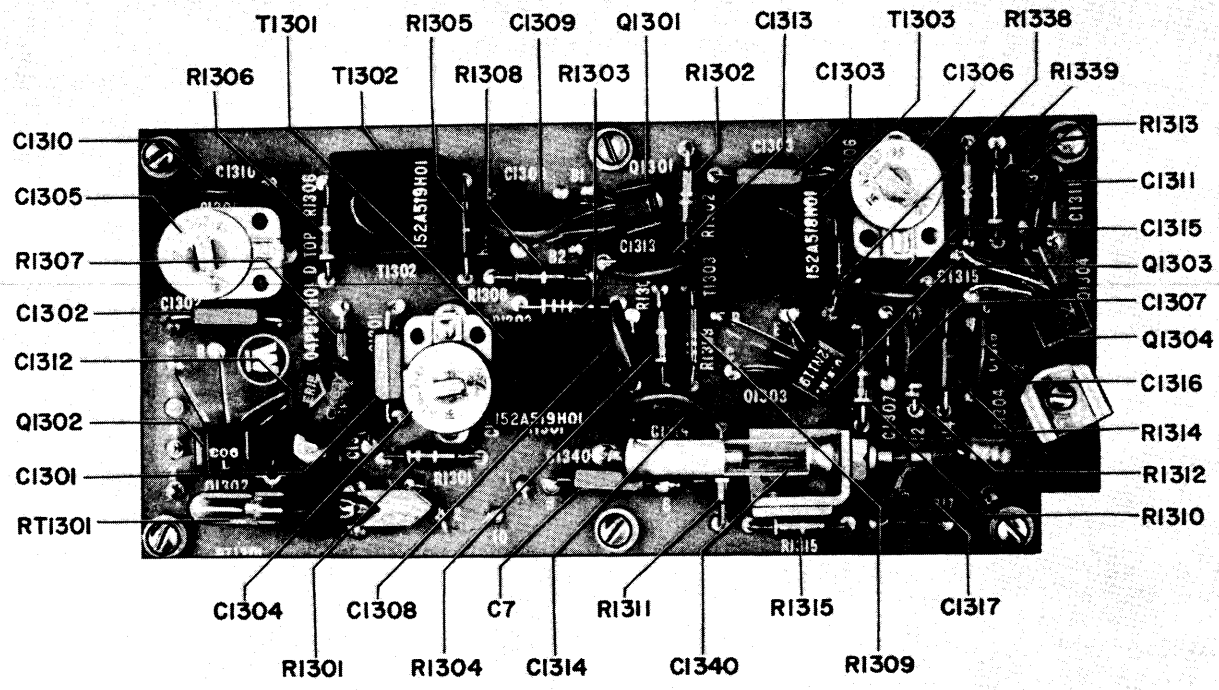


Figure 5-26. Electrical Frequency Control C-2764/WRT-2, E1303, Binary No. 2, Binary No. 3, Location of Parts



Figur 5-27. El ctrical Frequency C ntr l C-2764/WRT-2, E1304, 1 MC Oscillat r, Location f Parts

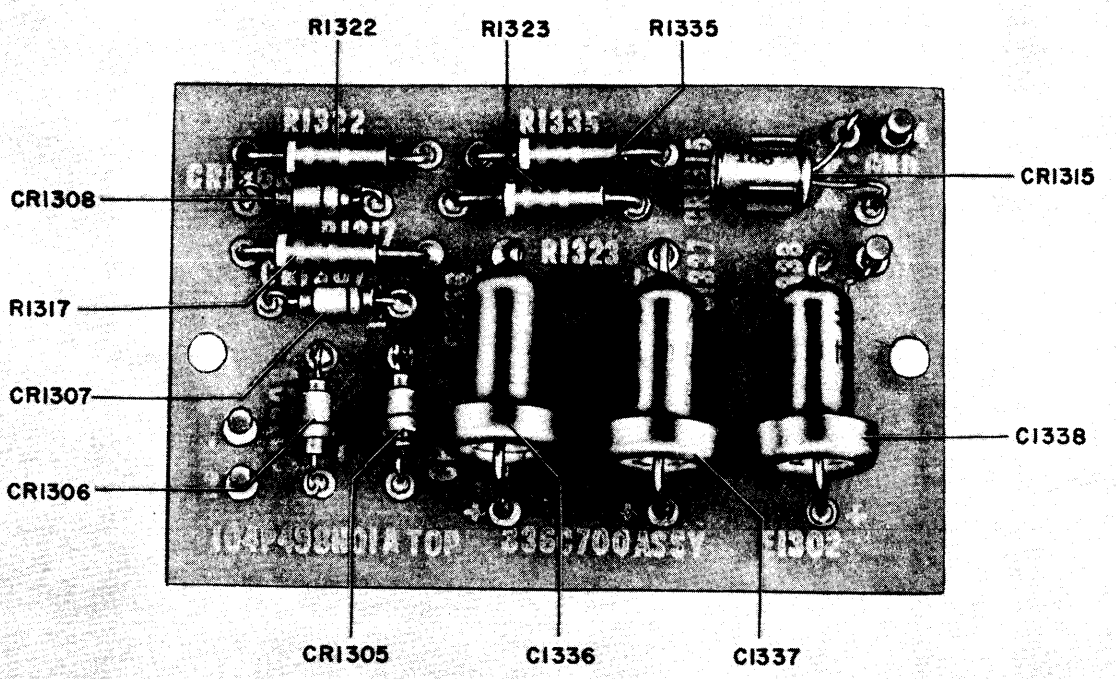
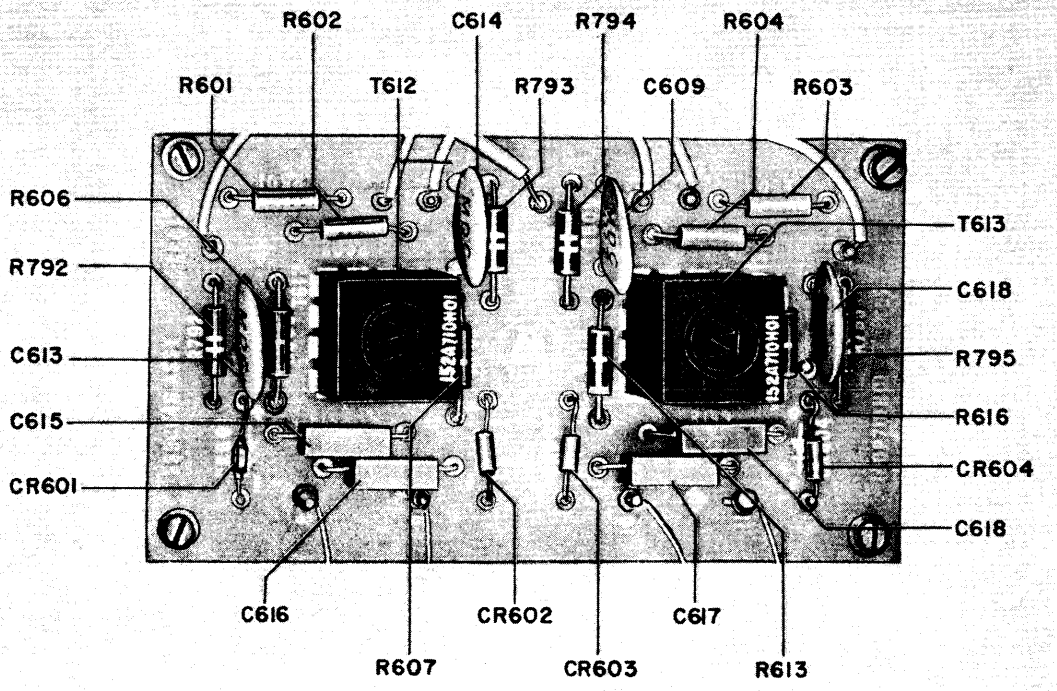
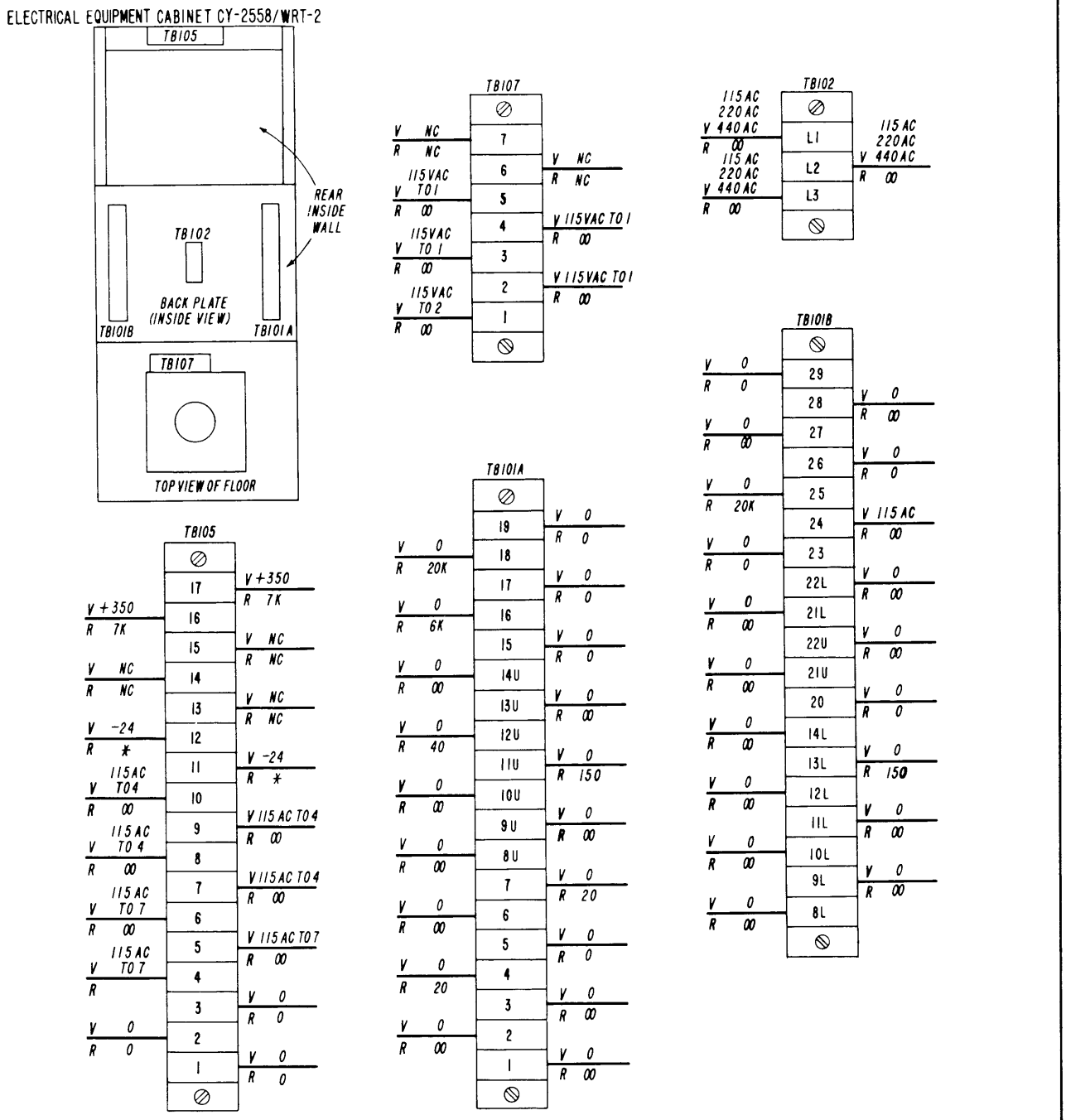


Figure 5-28. Electrical Frequency Control C-2764/WRT-2, E1302, —6 VDC Regulator, Location of Parts



Figur 5-29. Electrical Frequ ncy Control C-2764/WRT-2, E601, Mixer, Locati n of Parts



NOTES:

1. ALL VOLTAGE MEASUREMENTS WERE MADE WITH EQUIPMENT IN NORMAL OPERATION, NO SIGNAL INPUT, AND FRONT PANEL SWITCHES SET AS FOLLOWS:

EMISSION SELECTOR	OFF
2 WIRE 6 WIRE REMOTE	6 WIRE REMOTE
POWER SELECTOR	ADJ
LOCAL REMOTE	LOCAL
FILAMENT POWER	ON
PLATE POWER	ON

ALL USB AND LSB LEVEL POTENTIOMETERS ON THE FRONT PANEL SET IN THE FULLY COUNTERCLOCKWISE POSITION.

2. ALL RESISTANCE MEASUREMENTS WERE MADE WITH EQUIPMENT CONNECTED AS ABOVE AND INPUT POWER OFF. ALL EXTERNAL LEADS WERE DETACHED FROM TERMINALS.
3. ALL MEASUREMENTS WERE MADE TO GROUND UNLESS OTHERWISE SPECIFIED.
4. ALL VOLTAGE MEASUREMENTS ARE D-C UNLESS OTHERWISE INDICATED.
5. ALL RESISTANCE MEASUREMENTS ARE IN OHMS UNLESS OTHERWISE INDICATED.
6. "NC" INDICATES NO CONNECTION.

* CAUTION – NO RESISTANCE MEASUREMENTS ARE TO BE MADE BECAUSE OF POSSIBLE DAMAGE TO TRANSISTORS.

Figure 5-30. Electrical Equipment Cabinet CY-2558/WRT-2, Voltage and Resistance Measurements

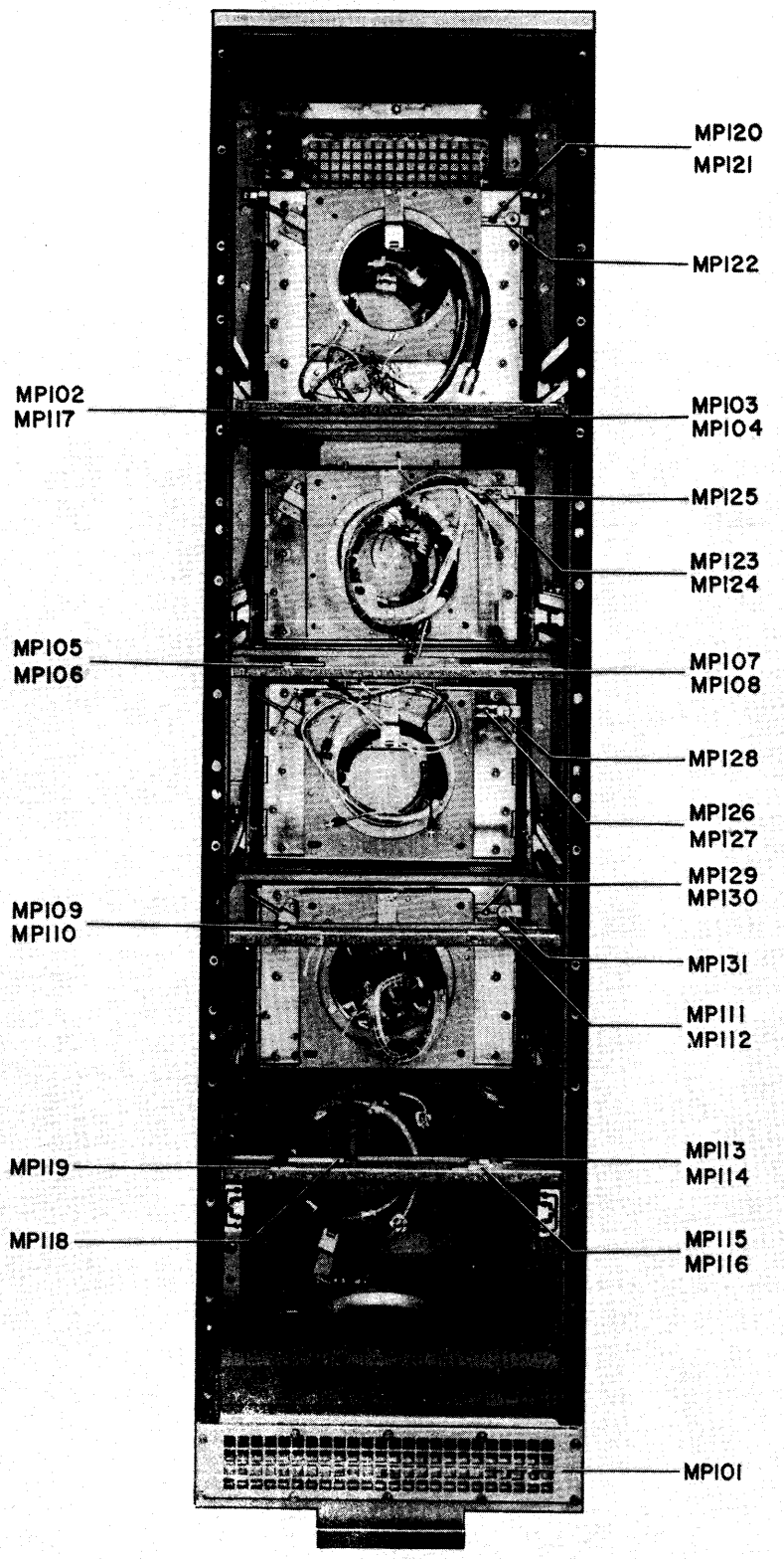


Figure 5-31. Electrical Equipment Cabinet CY-2558/WRT-2, Replaceable Mechanical Parts

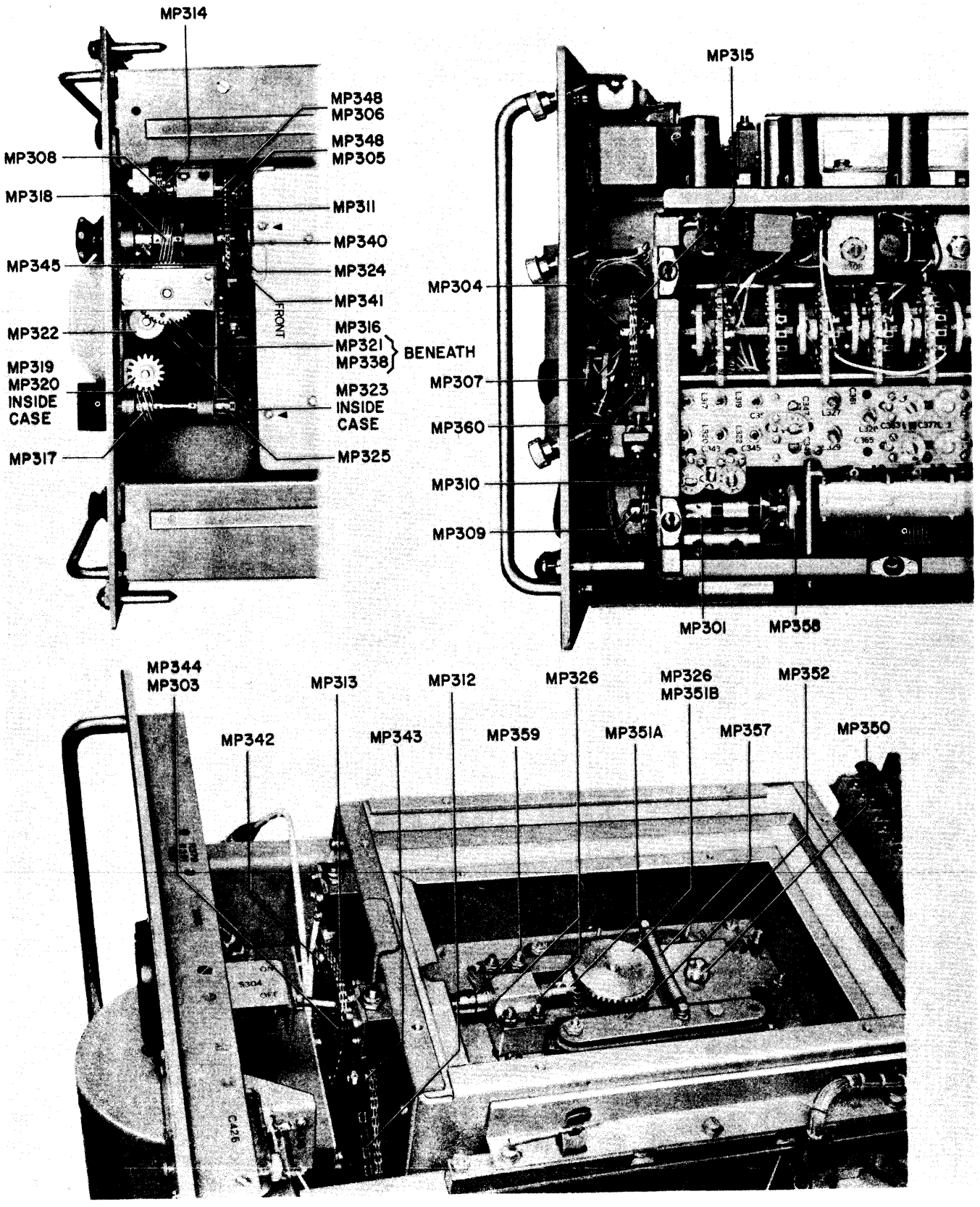


Figure 5-32. Radi Frequency Oscillator O-581/WRT-2, Master Oscillator Gear Train, L cati n of Parts

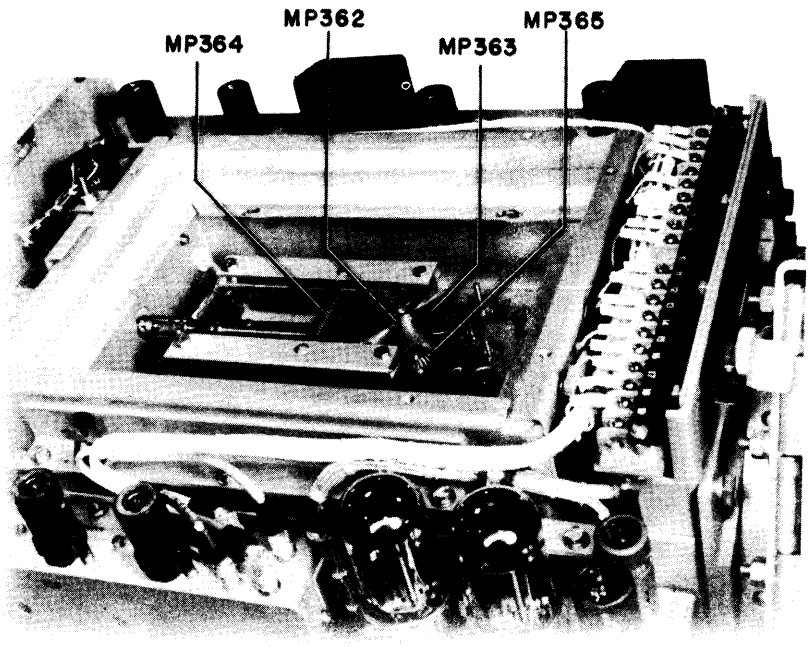


Figure 5-32A. Radio Frequency Oscillator O-581/WRT-2, Master Oscillator Oven Gear Train, Location of Parts, Sets Serials 107 and up

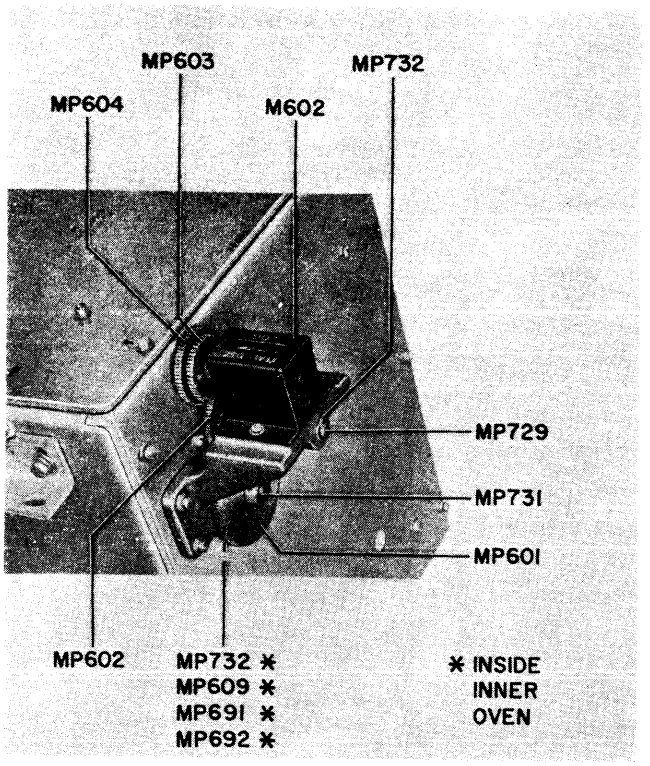


Figure 5-33. Electrical Frequency Control C-2764/WRT-2, Interpolation Oscillator Gear Train, Location of Parts on Oven

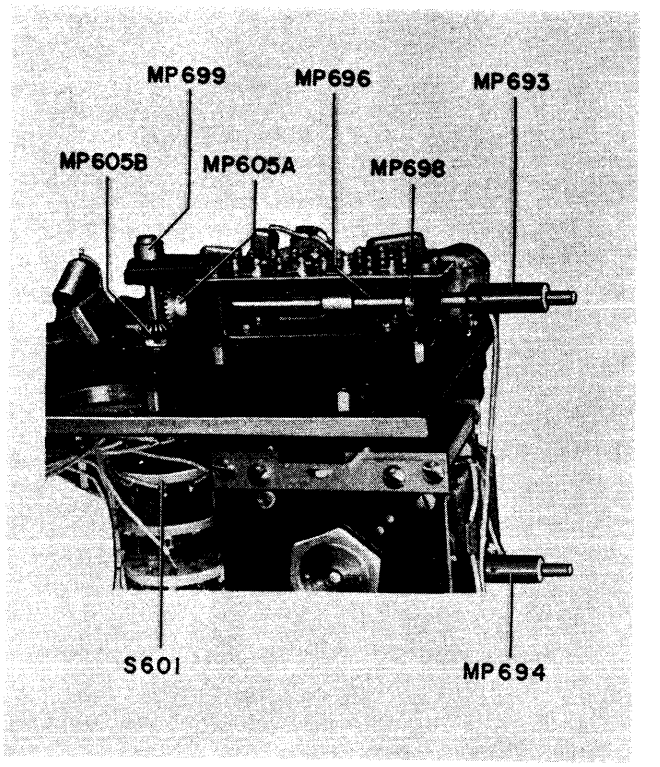
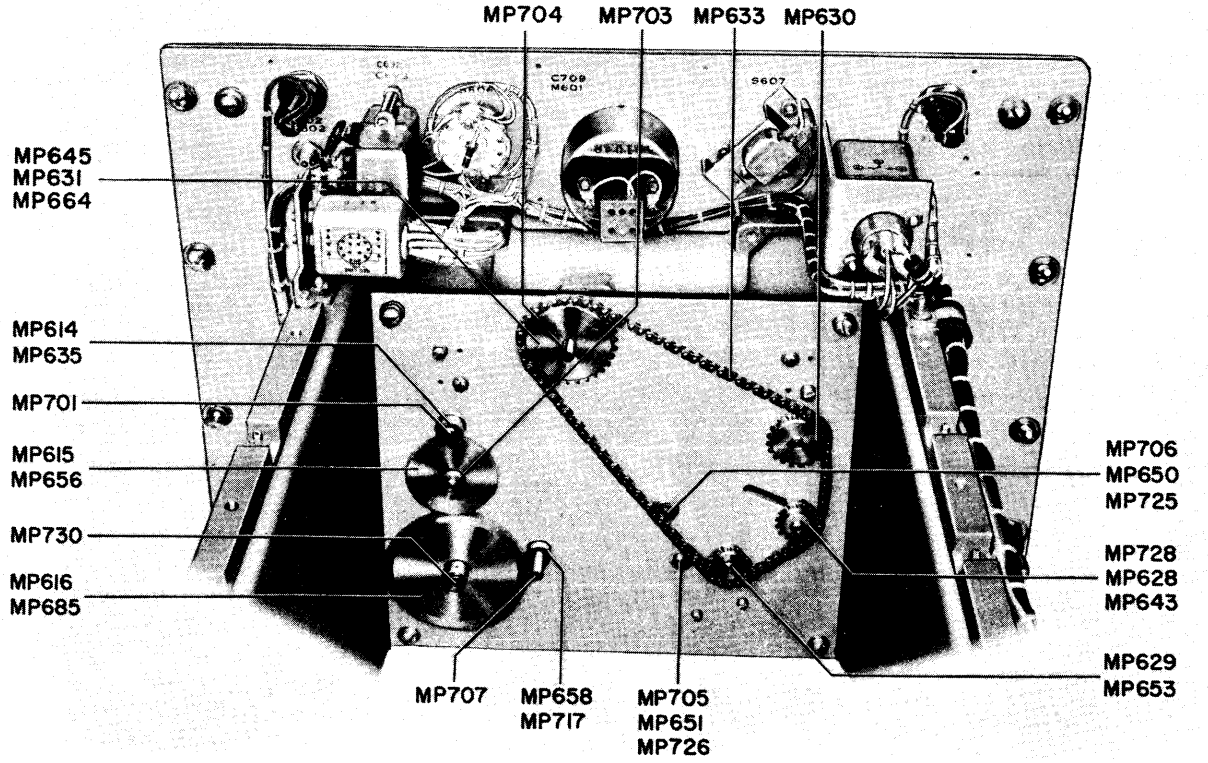
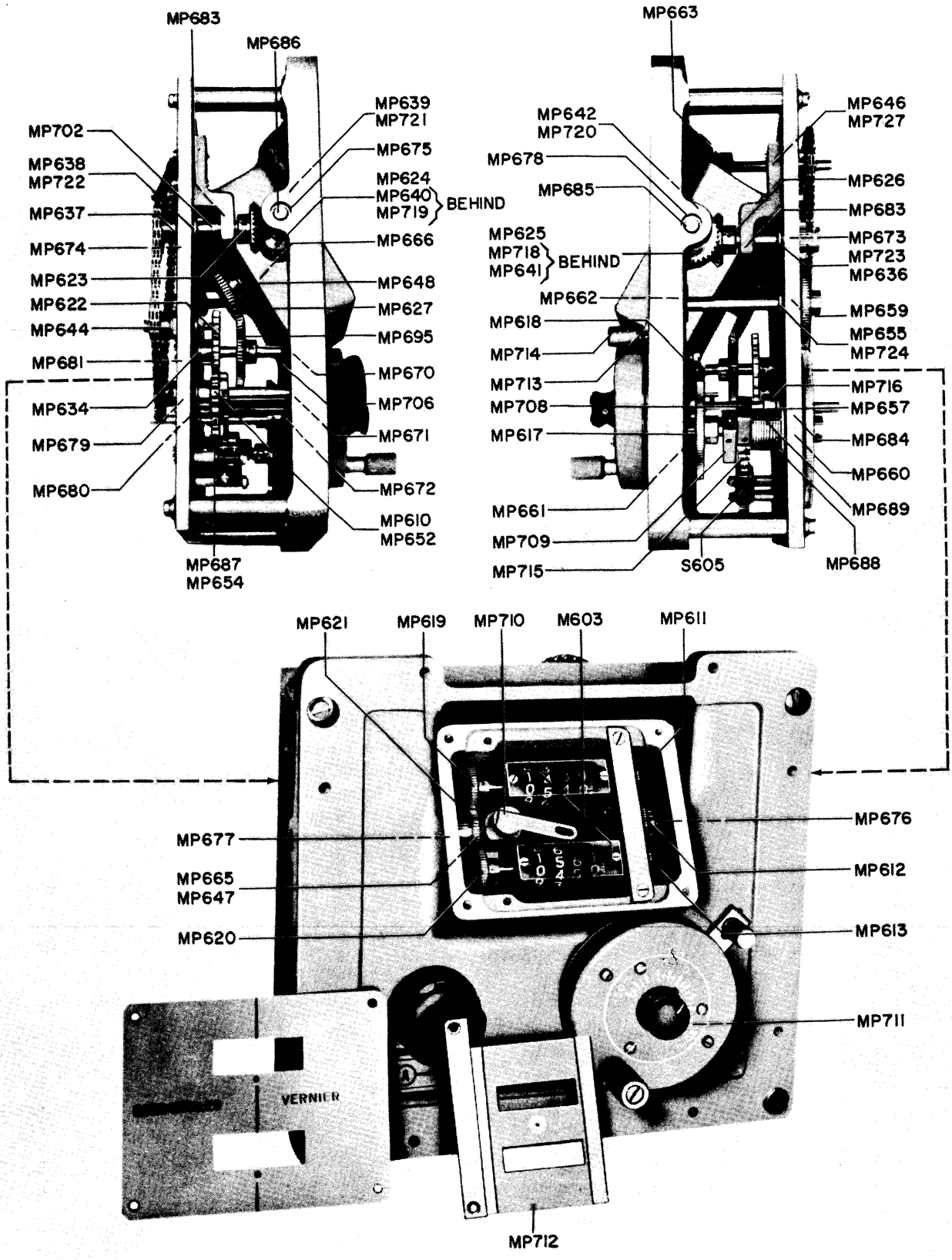


Figure 5-34. Electrical Frequency C ntrol C-2764/WRT-2, Interpolation Oscillator Gear Train, Location of Parts in Oven



Figur 5-35. Electrical Frequency C ntrol C-2764/WRT-2, L cation f Parts n Back Plate f G ar B x



Figur 5-36. El ctrical Fr qu ncy C ntrol C-2764/WRT-2, L caton f Parts in G ar Box

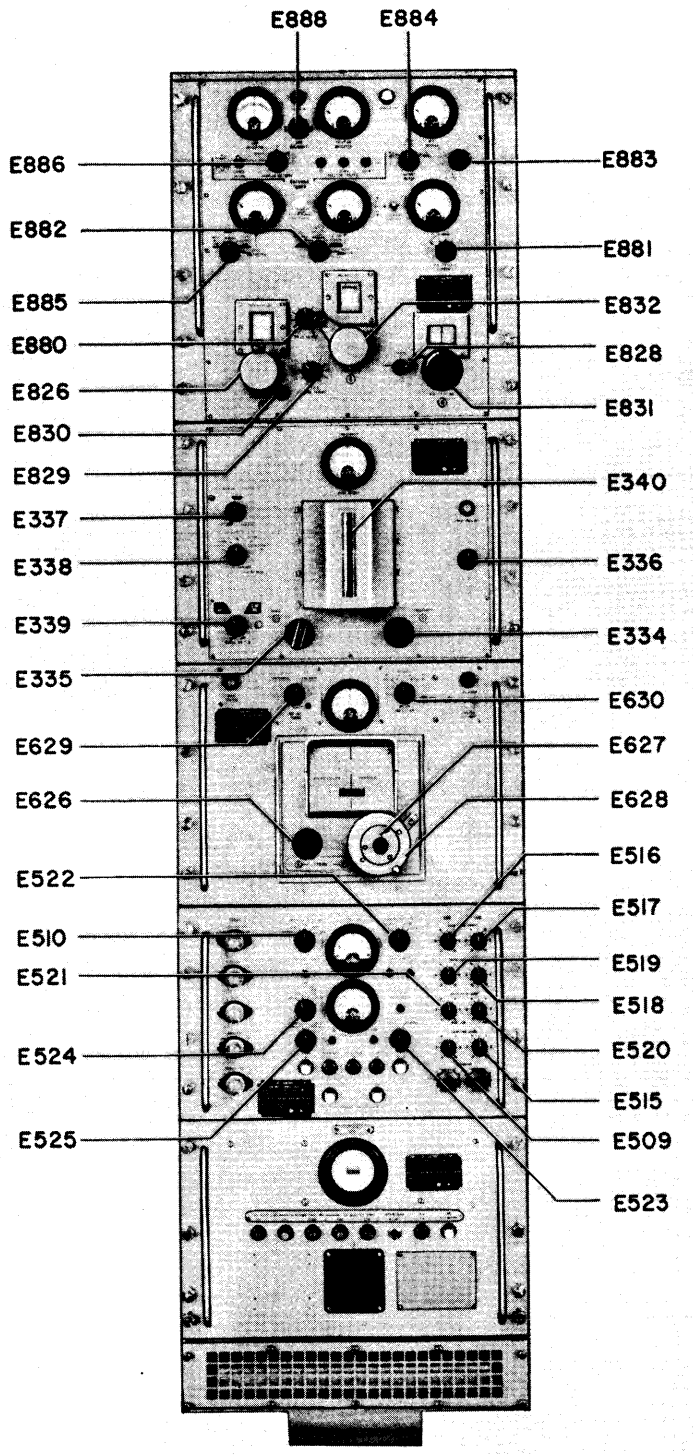
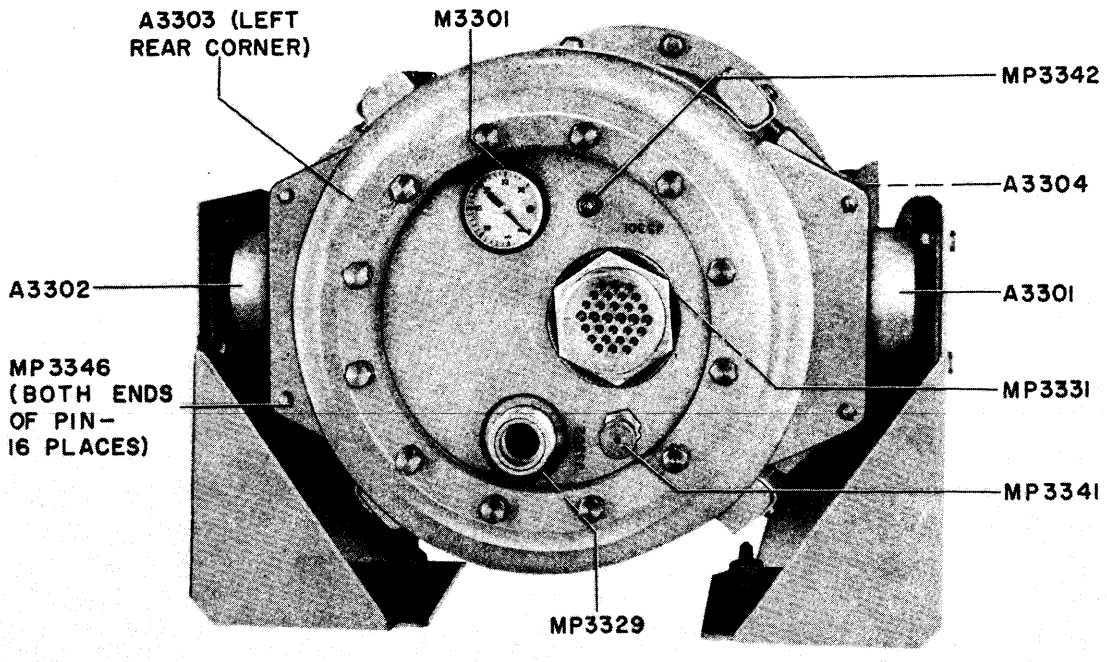


Figure 5-37. Transmitter Gr up OA-2175/WRT-2, L cation f Parts n Fr nt Panel



Figur 5-38. Radio Frequency Tuner TN-342/WRT-2, Location of External Mechanical Parts

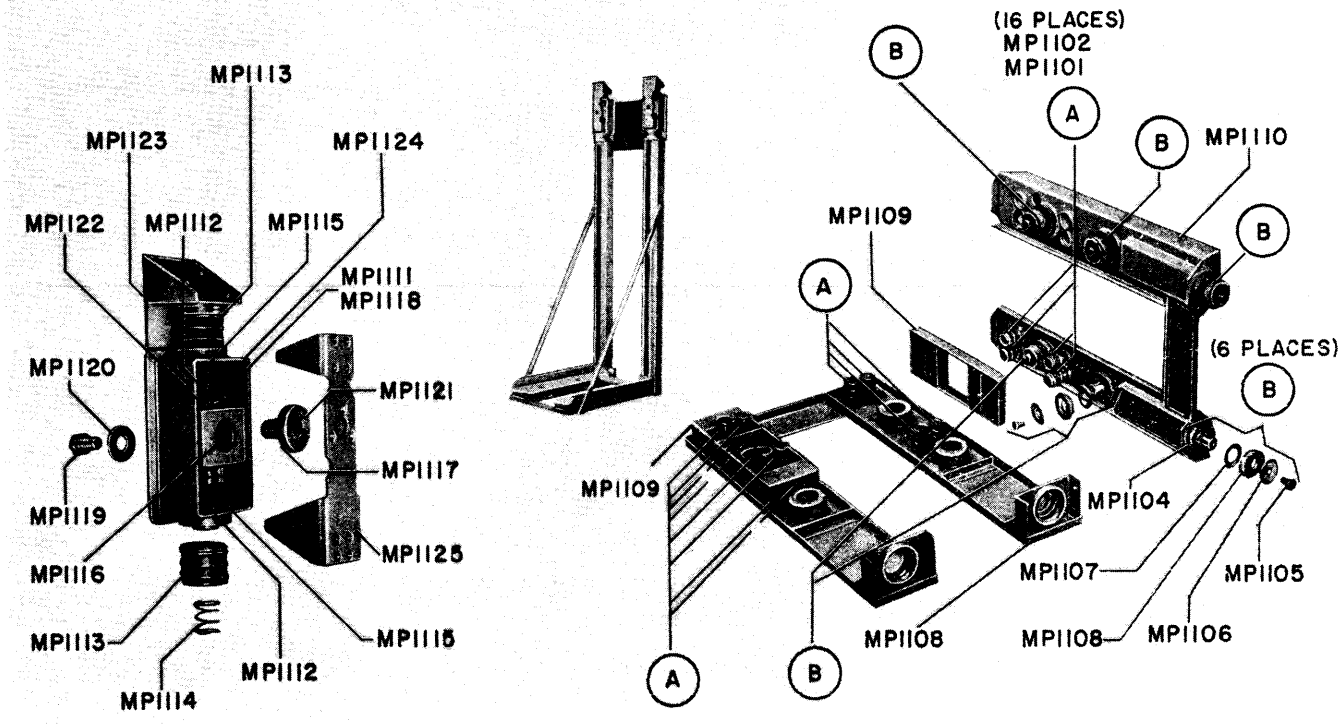


Figure 5-38A. Mounting MT-2170/WRT, Location of Parts

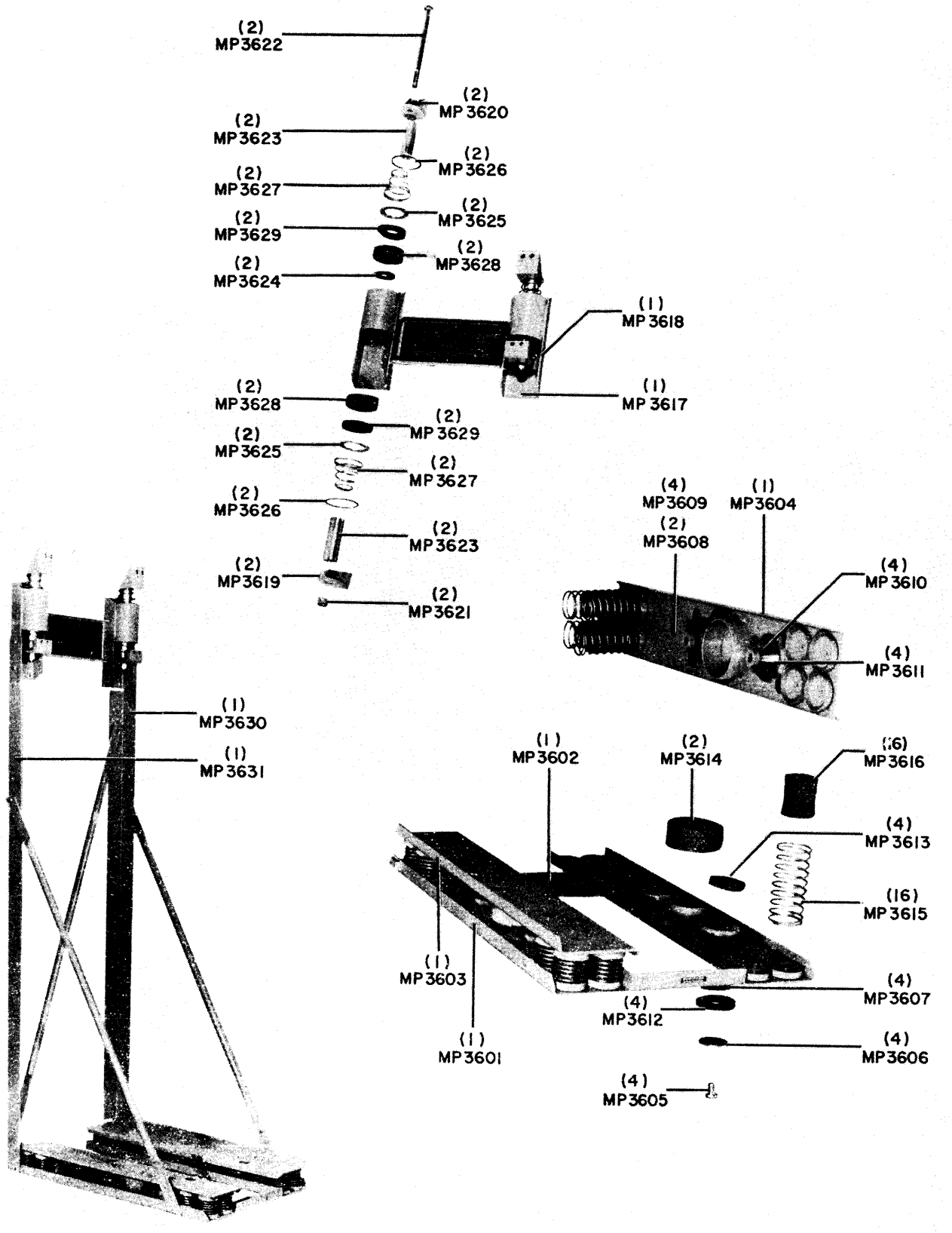
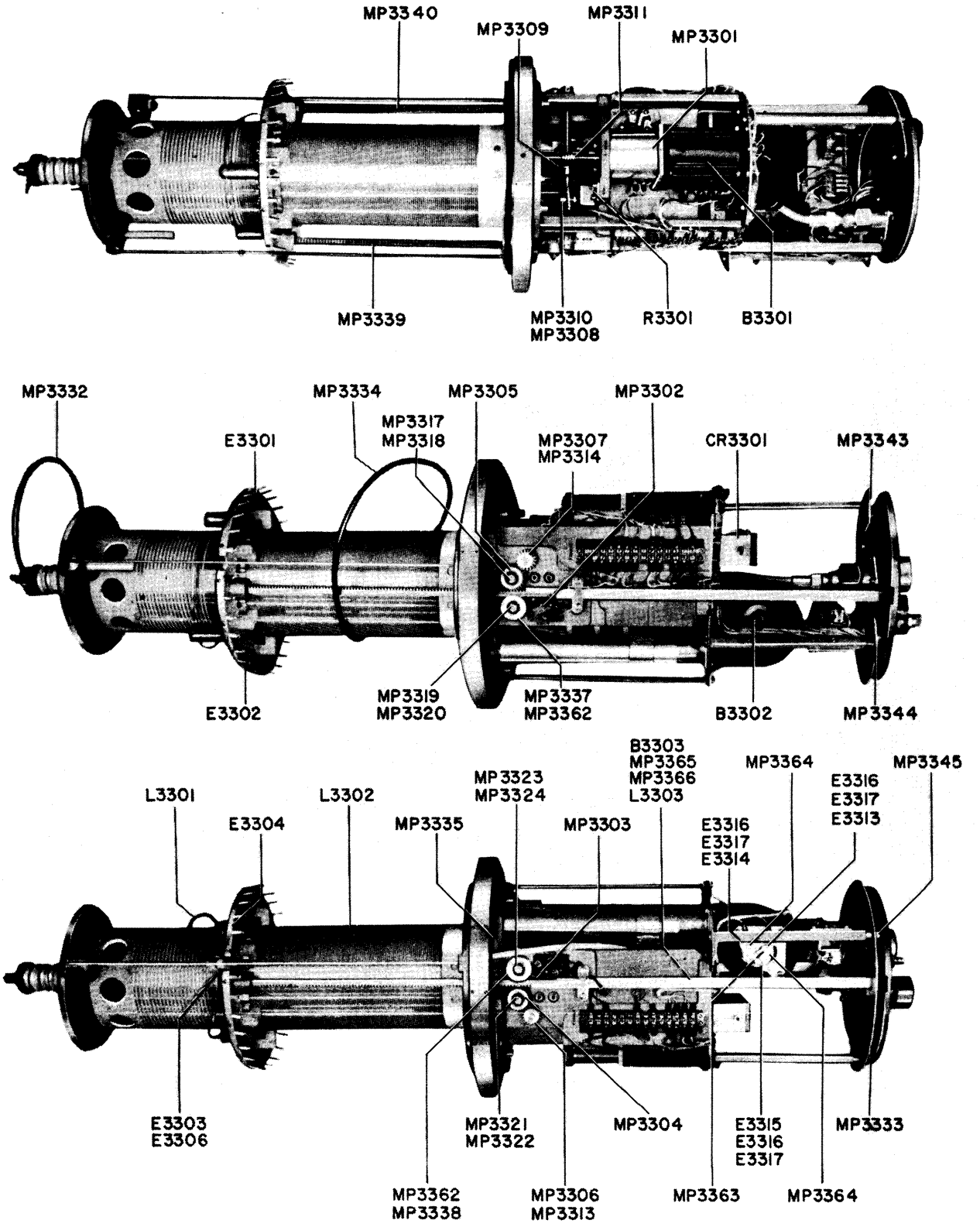


Figure 5-38B. Mounting MT-2170A/WRT, L cation of Parts



Figur 5-39. Radi Frequency Tuner TN-342/WRT-2, L cati n of Internal Mechanical Parts

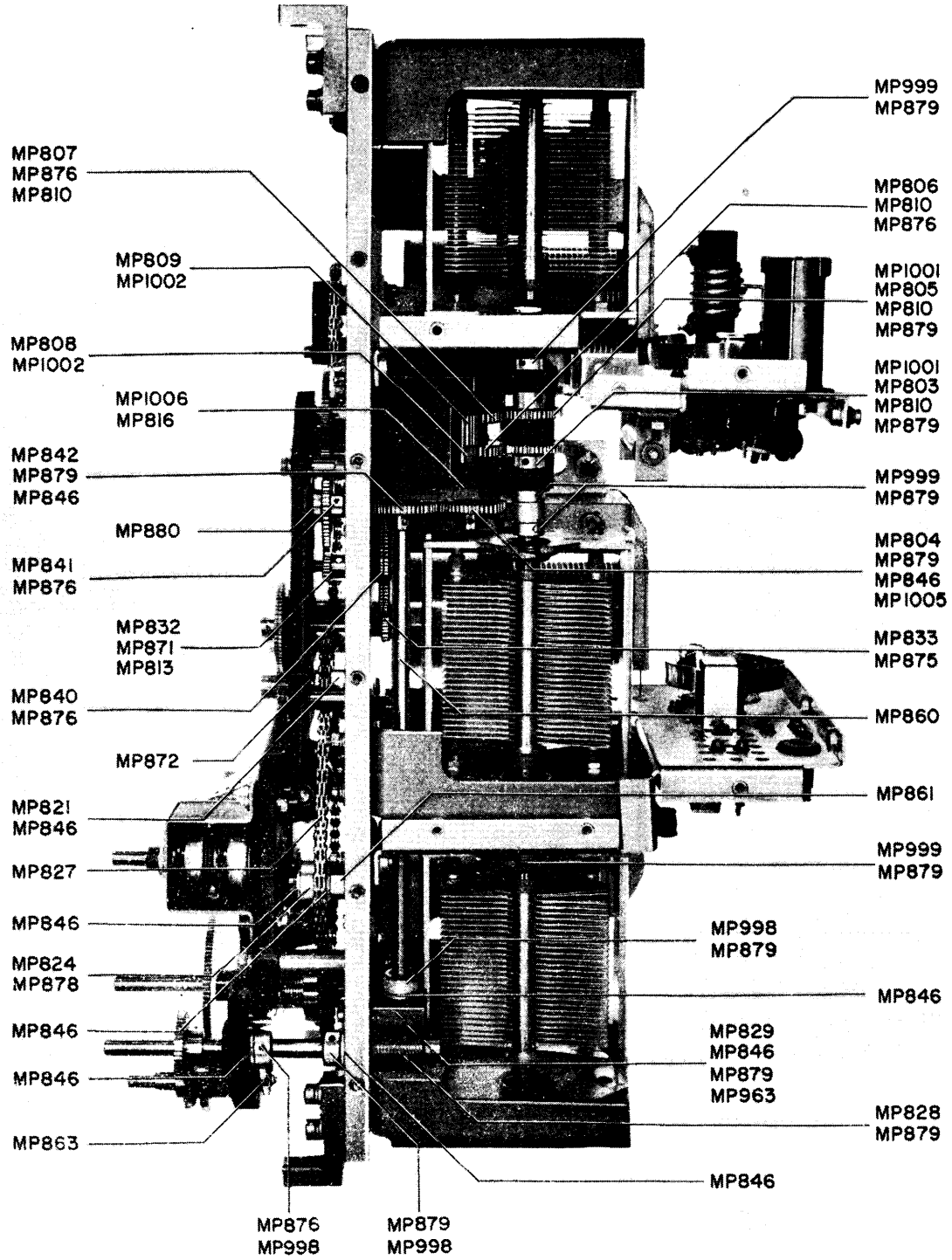


Figure 5-40 Driver Gear Train, Location of Parts on Righthand Side

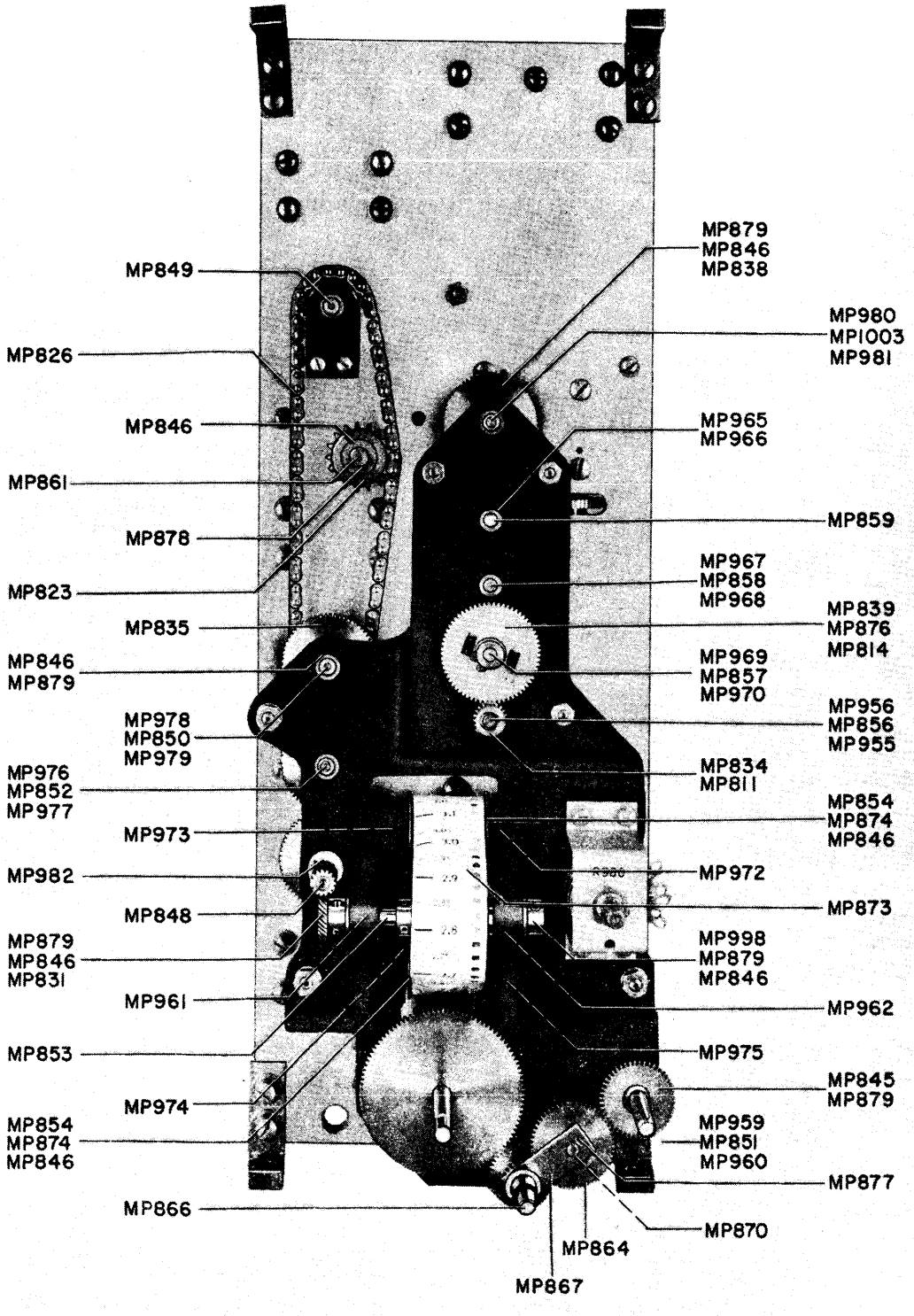
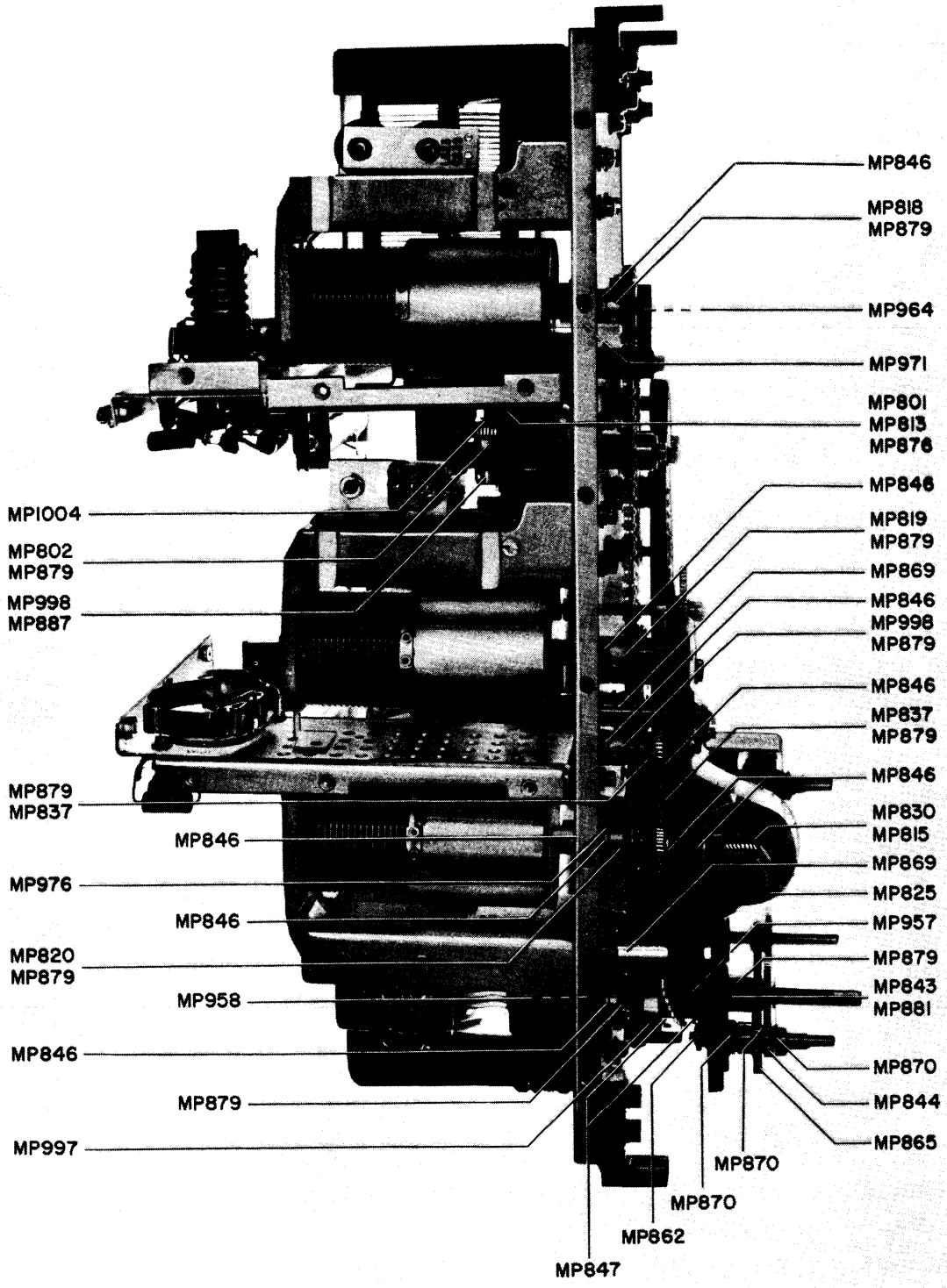
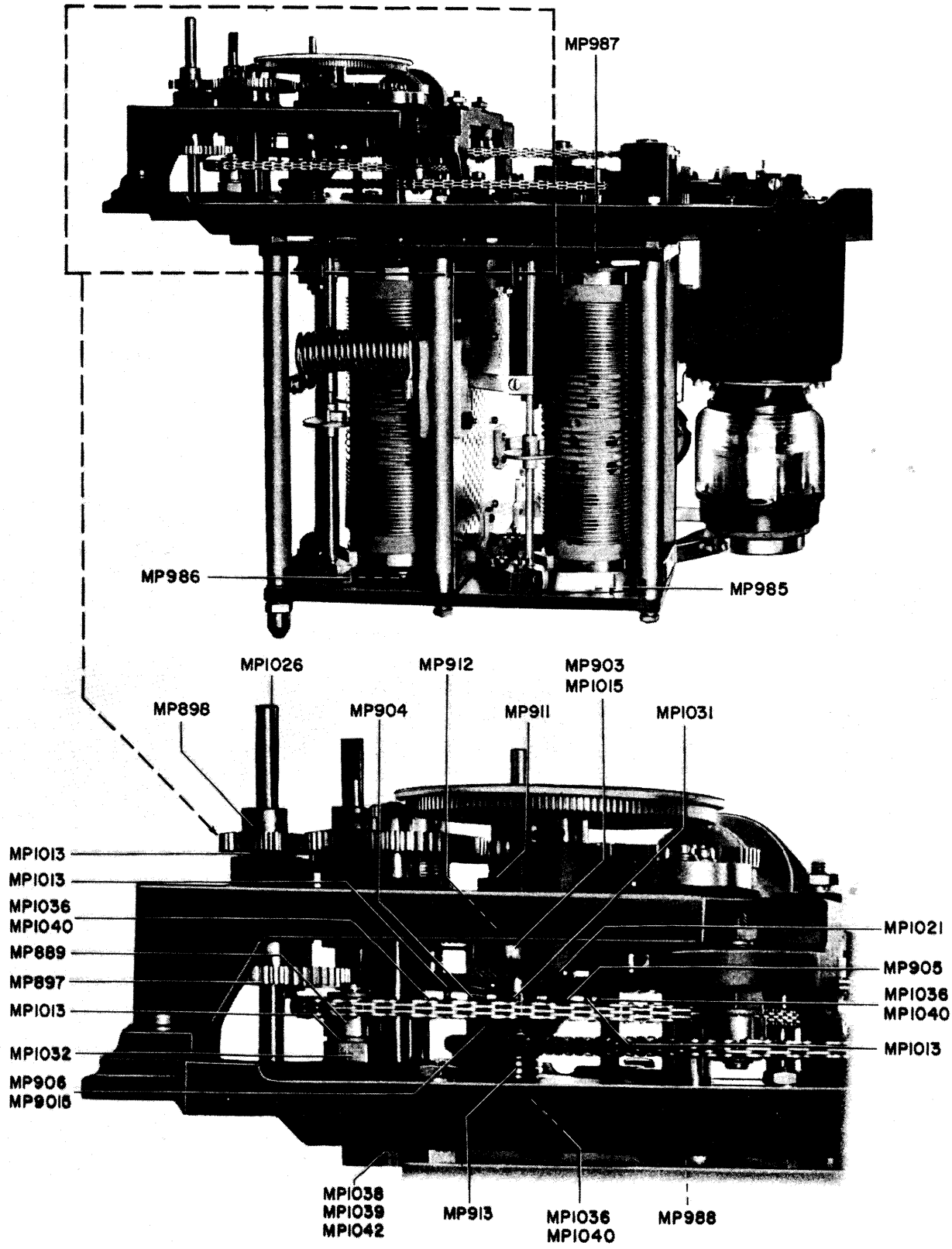


Figure 5-41. Driver Gear Train, Location of Parts on Front



Figur 5-42. Driver Gear Train, Locati n of Parts on Lefthand Side



Figur 5-43. Tuning and C upling M chanism, L cation f Parts n Righthand Side

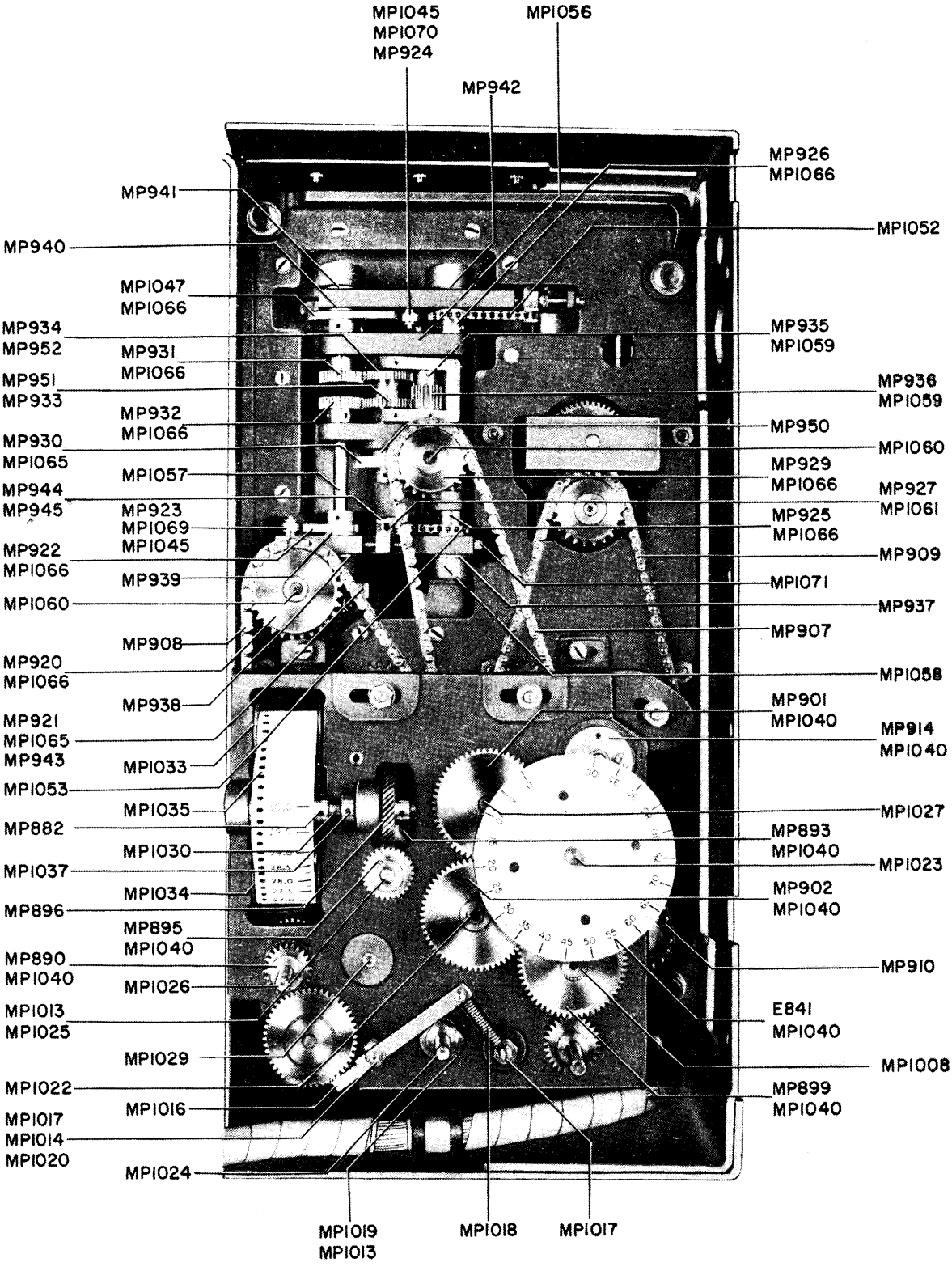


Figure 5-44. Tuning and Coupling Mechanism, L cati n f Parts on Front of Gear Train

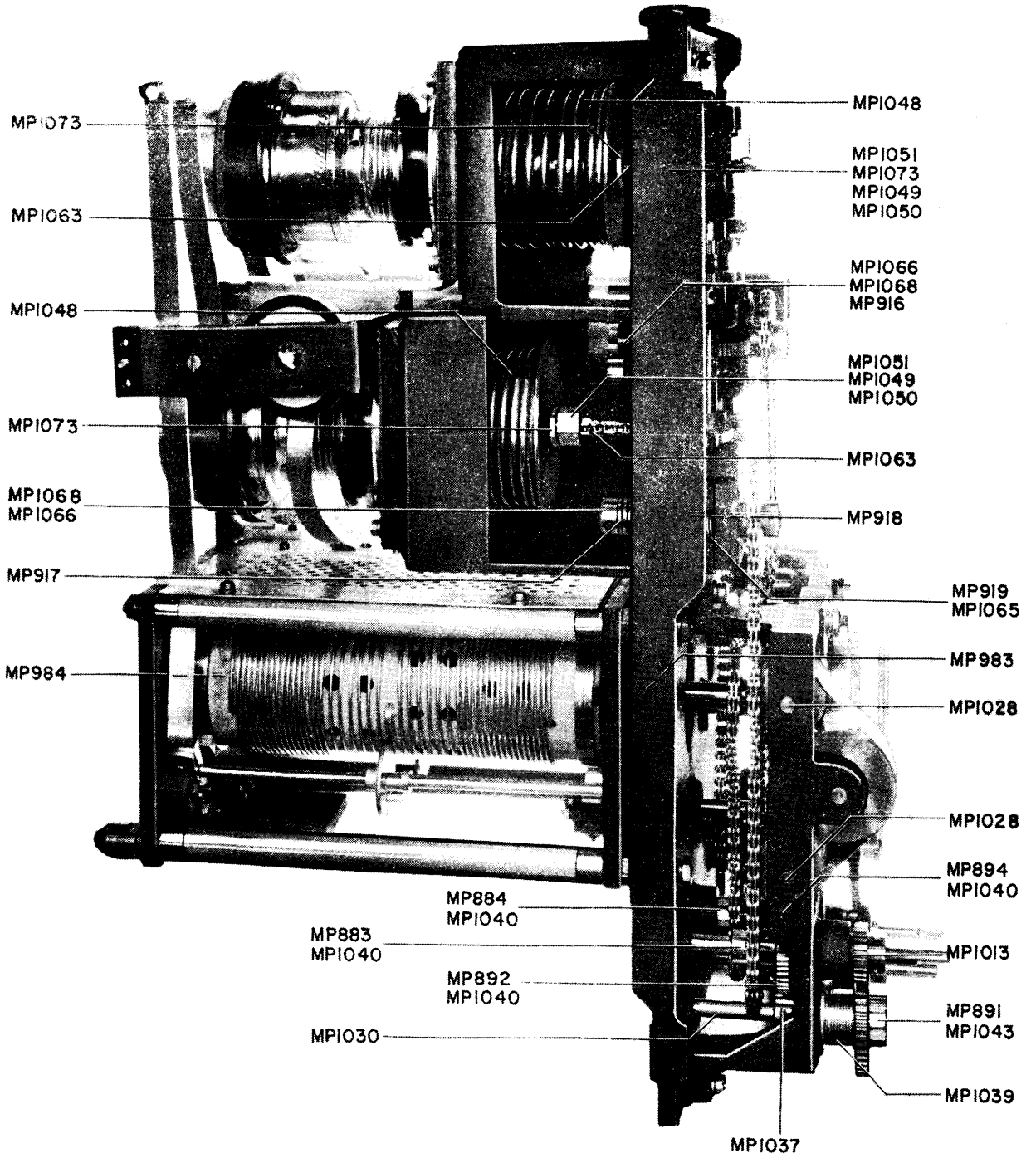


Figure 5-45. Tuning and Coupling Mechanism, Locati n f Parts n Lefthand Side

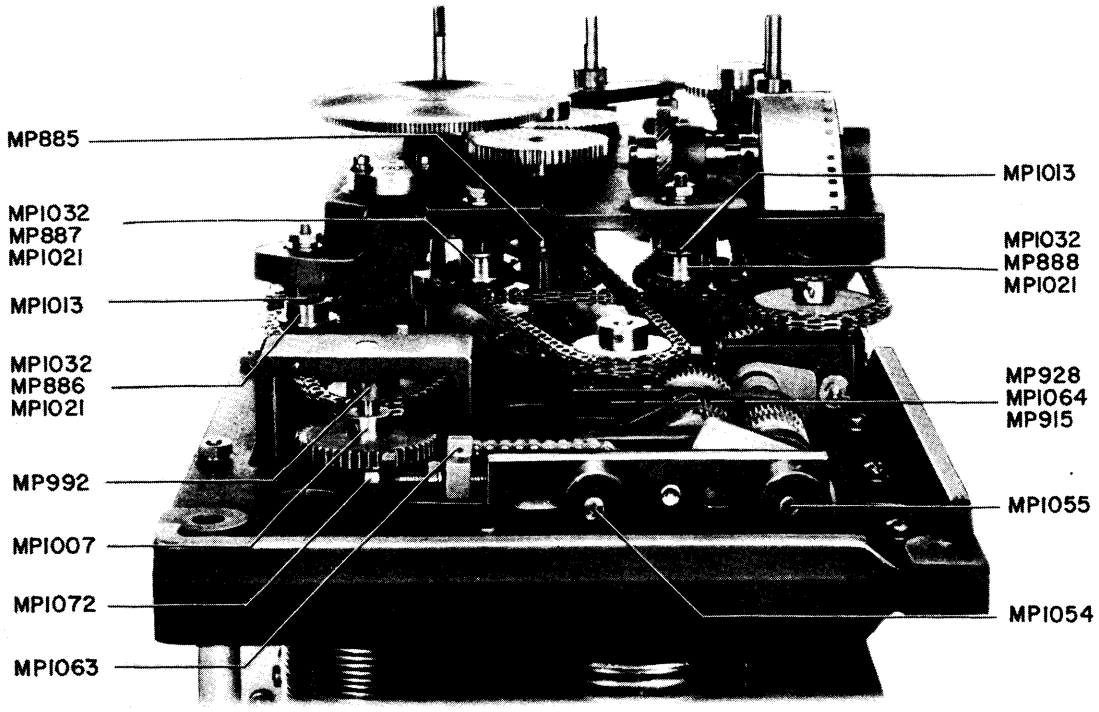


Figure 5-46. Tuning and Coupling Mechanism, Location of Parts Visible from the Top

Ref. Desig.	Location	Ref. Desig.	Location	Ref. Desig.	Location	Ref. Desig.	Location
B101	5D	J3301	6C	P3301	3E	T501	2C
B801	5D	J3301	6D	P3301	5E	T502	4B
B3301	4E	K201A	8C	R201	9A	T503	3B
B3302	4E	K201B	8C	R202	9A	T611	5C
C101	5D	K201C	9A	R203	9A	T617	5D
C203	9B	K201D	10B	R205	4A	T806	7B
C324	5C	K201E	10B	R206	5A	T807	7C
C325	5C	K202	8C	R207	5A	TB101	6D
C862	6D	K202A	9C	R208	5A	TB101	7E
C863	6D	K202C	9A	R209	5A	TB101	8E
C866	6D	K202D	10D	R217	9C	TB102	1A
C867	6D	K202E	10B	R219	6A	TB105	3B
C907	7C	K203A	9A	R220	6A	TB105	3D
C908	7B	K203B	9A	R221	6A	TB105	3E
C923	6C	K203C	9A	R222	5A	TB107	5C
C924	6D	K203D	9A	R392	3C	TB107	5D
C925	7C	K203E	9A	R522	6B	TB201	1A
C944	6D	K204A	9A	R523	3D	TB202	8B
C945	6D	K204C	9A	R524	7B	TB202	8C
C947	6D	K204D	9A	R525	8B	TB202	9D
DS201	4B	K204E	9A	R526	8B	TB202	9C
DS202	4A	K207C	9A	R608	3D	TB301	3B
DS203	6A	K301A	3C	S101	5C	TB301	3D
DS204	6A	K301B	3C	S102	5C	TB301	4D
DS205	4A	K503A	6B	S103	5C	TB304	3C
DS207	9B	K503C	8C	S104	5D	TB304	4C
DS301	4C	K504A	7C	S105	5D	TB307	5C
DS501	6C	K504B	7C	S201	2A	TB320	5C
DS502	3D	K504C	8C	S304	3C	TB501	1C
DS503	7C	K504D	8C	S306	4C	TB501	1D
DS504	8C	K505A	8C	S310	3C	TB501	2B
E202	5A	K505B	4B	S501A	2C	TB501	3D
F201	4A	K505C	4B	S501B	2B	TB501	3E
F202	5A	K505D	9D	S503	7C	TB501	6C
F203	6A	K506C	8C	S504	8C	TB501	7D
F205	6A	K601A	3D	S506	8C	TB501	8D
F206	3A	K601B	4D	S507A	7D	TB501	9D
F501	2E	K803A	6C	S509A	7D	TB601	3D
F502	2E	K803B	6C	S509A	8D	TB601	5D
F503	2D	K804B	6D	S509B	8D	TB602	5D
FL101	1A	K3303B	5E	S510A	9D	TB608	3D
HR301	4C	K3303C	5E	S602	4D	TB608	4D
HR303	4C	L1	1A	S805	6C	TB801	6C
HR306	4C	L1	9A	S808	6D	TB801	6D
HR601	4D	L2	1A	S809	6D	TB802	6C
HR602	4D	L2	9A	S825	7D	TB802	6D
HR603	4D	L3	1B	S826	7D	TB803	7C
HR604	4D	M501	3D	S827	7D	TB805	7C
J101	3E	P101	3E	S828	7C	TB805	7D
J101	6C	P101	6C	S3305	6C	TB1201	5C
J101	6D	P101	6D	S3306	6D	TB3301	4E
J101	6E	P101	6E	T201	10A	TB3301	6C
J310	3C	P310	3C	T202	10A	TB3301	6D
J310	4C	P310	4C	T203	10C	TB3302	4E
J311	4C	P311	4C	T204	9D		
J3301	4E	P3301	6C	T306	5C		
J3301	5E	P3301	6D	T307	5C		

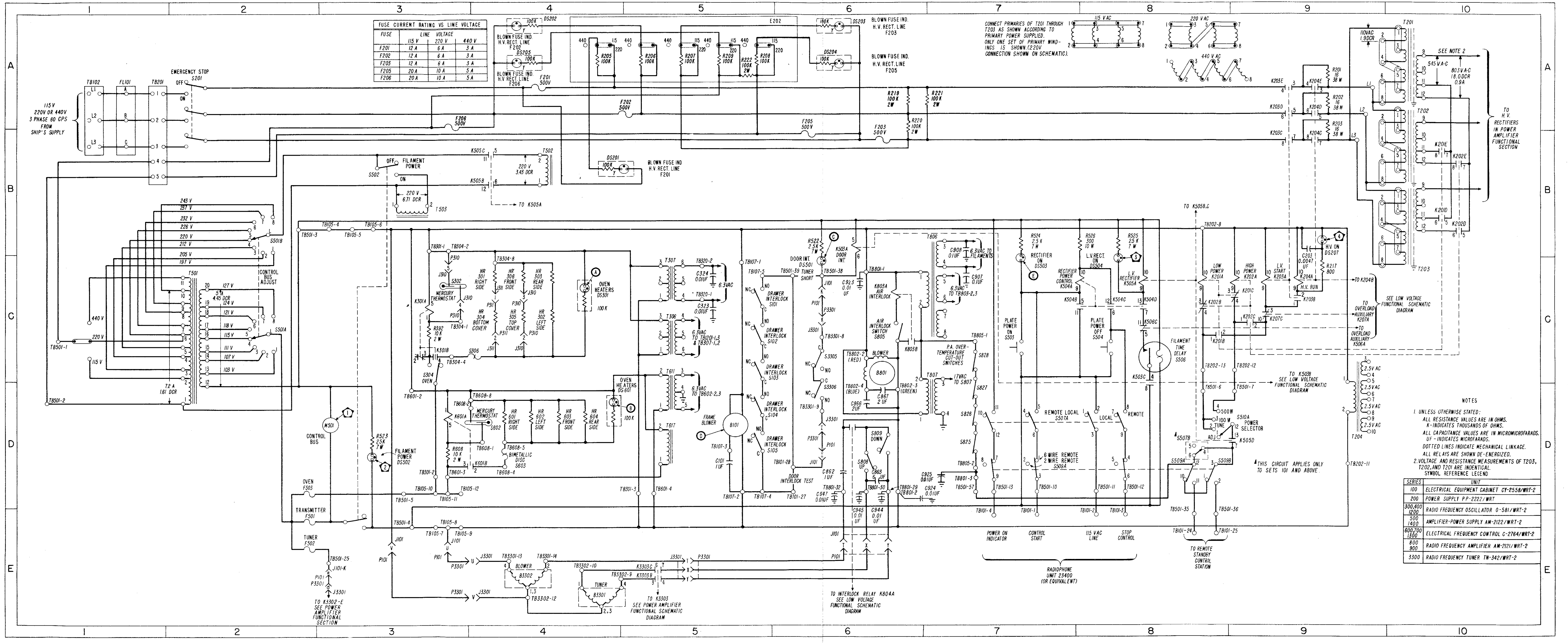


Figure 5-47. Radio Transmitting Set AN/WRT-2, Primary Power Distribution Diagram

Ref. Desig.	Location
C102	3C
C204	3C
C320	3B
C321	3B
C322	3B
C325	3A
C326	4B
C501	1A
C502	2A
C503	2A
C504	2A
C506	2B
C507	2B
C508	1D
C509	2C
C510	2C
C511	2C
C514	1B
C876	5C
C887	5C
C889	3C
C894	4C
C984	5C
C988	5D
C1331	6A
C1332	5A
C1333	5A
C1336	5B
C1337	6B
C1338	6B
C1339	6A
CR501	1A
CR502	1A
CR503	1A
CR505	1A
CR506	1A
CR507	1A
CR508	1A
CR509	1B
CR510	1B
CR511	1B
CR512	1B
CR513	1B
CR514	1B
CR515	1B
CR516	1B
CR517	1C
CR518	1C
CR519	1D
CR520	1D
CR521	5C
CR522	5D
CR523	6C
CR1302	5A
CR1305	5B
CR1306	5B
CR1308	5B
CR1309	5A
CR1310	5A
CR1311	6A
CR1312	6A
CR1313	6A
CR1314	6A
CR1315	6B
CR1347	5A
CR1348	5A
DS208	3C
DS505	3C
DS506	6C
DS507	7C
DS801	3C
DS802	5C
DS803	4C
E1302	5B
F504	1D
F505	1C
J101	4D
J101A	5E
J101B	5E
J101C	5E
J102	5E
J102C	5E
J102F	5E
J501	7D
J502	7D
J803	5D
J803E	5E
J3301	4E
J3301B	5E
K101A	3C
K102A	3C
K102B	3C
K204B	5E
K206B	3D
K207A	3D
K207B	3D
K501A	2A
K501B	3C
K502A	2B
K502B	3C
K503B	3D
K505E	5D
K506A	3C
K506B	3C
K506C	3C
K507A	5C
K507B	5E
K507C	6C
K508A	5C
K508B	5C
K508C	6D
K509A	6C
K509B	6D
K509C	6C
K509D	6C
K510A	6C
K510B	6C
K510C	6C
K511A	7C
K511B	7C
K603A	4C
K801B	3D
K804A	5C
K809A	5D
K809B	5D
K809C	5D
K810B	3D
K952A	5C
K1201A	4C
K3301B	5E
K3302	4E
K3303	4E
L501	2A
L502	2A
L503	2B
L504	2B
L505	1C
L506	1D
L1302	6A
M803	3A
P101	4D
P101A	5E
P101B	5E
P102C	5E
P102F	5E
P803	5D
P803	5E
P3301	4E
P3301	5E
P3301B	5E
Q502	5D
R321	3B
R322	3B
R323	3B
R324	3B
R325	3B
R326	3B
R327	3B
R328	3A
R329	3A
R330	4A
R331	4A
R332	3B
R333	3A
R334	3A
R335	3A
R336	3B
R501	1A
R502	2A
R503	1B
R504	2B
R505	5D
R506	5D
R507	5D
R511	5D
R512	5D
R513	5D
R514	1C
R515	1D
R516	1C
R517	2C
R527	5C
R528	6D
R529	6C
R531	1A
R532	1A
R533	1A
R534	1A
R535	1A
R536	1A
R537	1A
R538	1A
R539	1B
R540	1B
R541	1B
R542	1B
R543	1B
R544	1B
R545	1B
R546	1B
R859	2A
R887	4D
R1317	5B
R1322	5B
R1323	5B
R1324	5A
R1335	6B
S203	3D
S505	3D
S507B	6D
S507B	7D
S507C	6D
S507D	7D
S507E	6D
S507E	7D
S508A	7D
S508B	6D
S508B	7D
S508C	7D
S508F	4D
S509B	6E
S510A	5D
S510B	5D
S601	4C
S605	4C
S607	4C
S803	3A
S804	3E
S804	4D
S808	4D
S810	4D
S812	7E
S3303	4E
S3304	4E
T502	1A
T503	1C
T617	5A
TB101	6E
TB101	7E
TB105	2A
TB105	3A
TB202	3C
TB202	3D
TB202	5E
TB301	3A
TB301	4A
TB301	4C
TB301	4D
TB320	3A
TB320	4A
TB501	2A
TB501	2B
TB501	3C
TB501	3D
TB501	4D
TB501	5B
TB501	5D
TB501	5E
TB501	6A
TB501	6D
TB501	6E
TB501	7E
TB601	6A
TB601	6B
TB601	4A
TB601	4C
TB602	4C
TB801	2A
TB801	2B
TB801	3C
TB801	3D
TB801	3E
TB801	4D
TB801	5C
TB801	5D
TB801	5E
TB801	6D
TB801	7E
TB803	5C
TB803	5D
TB976	5B
TB1201	4C
TB1401	2C
TB1401	2D
TB1401	7A
TB3301	4E
TB3302	4E
V321	3A
V322	4A
V323	3B
V324	4B

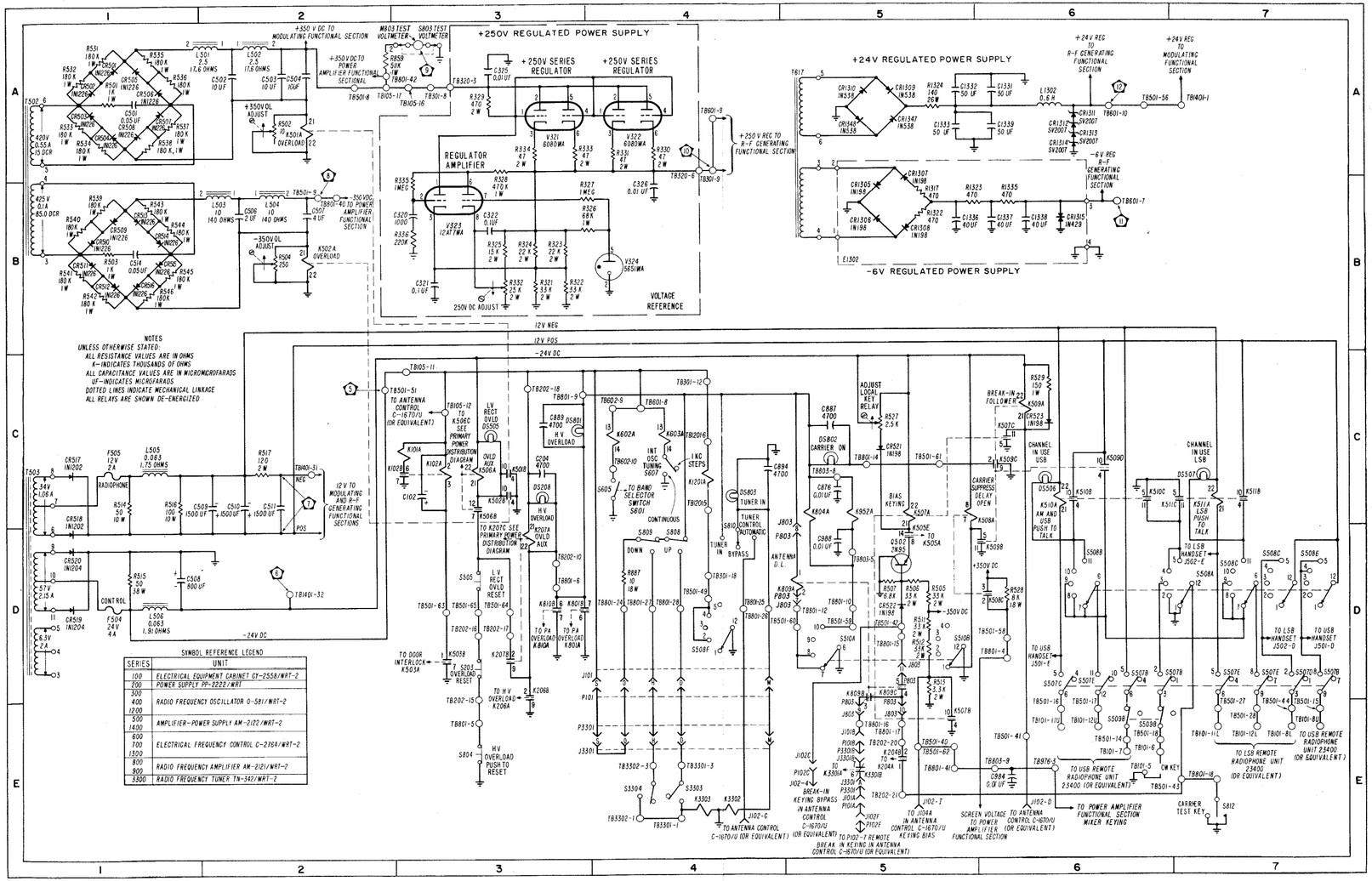


Figure 5-48. Radio Transmitting Set AN/WRT-2 Low Voltage Power Supply, Functional Schematic Diagram, Sets Serials 1 to 263

Ref. Desig.	Location	Ref. Desig.	Location	Ref. Desig.	Location	Ref. Desig.	Location
C102	3C	F504	1D	P803	5D	S508F	4D
C204	3C	F505	1C	P803	5E	S509B	6E
C320	3B	J101	4D	P3301	4E	S510A	5D
C321	3B	J101A	5E	P3301	5E	S510B	5D
C322	3B	J101B	5E	P3301B	5E	S514A	5D
C325	3A	J102	4E	Q502	5D	S514B	5D
C326	4B	J102	5E	R321	3B	S601	4C
C501	1A	J102	6E	R322	3B	S605	4C
C502	2A	J102C	5E	R323	3B	S607	4C
C503	2A	J102F	5E	R324	3B	S803	3A
C504	2A	J501	7D	R325	3B	S804	3E
C506	2B	J502	7D	R326	3B	S804	4D
C507	2B	J803	5D	R327	3B	S808	4D
C508	1D	J803	5E	R328	3A	S810	4D
C509	2C	J3301	4E	R329	3A	S812	7E
C510	2C	J3301	5E	R330	4A	S3303	4E
C511	2C	J3301B	5E	R331	4A	S3304	4E
C514	1B	K101A	3C	R332	3B	T502	1A
C876	5C	K102A	3C	R333	3A	T503	1C
C887	5C	K102B	3C	R334	3A	T617	5A
C889	3C	K204B	5E	R335	3A	TB101	6E
C894	4C	K206B	3D	R336	3B	TB101	7E
C984	5C	K207A	3D	R501	1A	TB105	2A
C988	5D	K207B	3D	R502	2A	TB105	3A
C1331	6A	K501A	2A	R503	1B	TB105	3C
C1332	5A	K501B	3C	R504	2B	TB202	3C
C1333	5A	K502A	2B	R505	5D	TB202	3D
C1336	5B	K502B	3C	R506	5D	TB202	5E
C1337	6B	K503B	3D	R507	5D	TB301	3A
C1338	6B	K505E	5D	R511	5D	TB301	4A
C1339	6A	K506A	3C	R512	5D	TB301	4C
CR501	1A	K506B	3C	R513	5E	TB301	4D
CR502	1A	K506C	3C	R514	1C	TB320	3A
CR503	1A	K507A	5C	R515	1D	TB320	4A
CR505	1A	K507B	5E	R516	1C	TB501	2A
CR506	1A	K507C	6C	R517	2C	TB501	2B
CR507	1A	K508A	5C	R527	5C	TB501	3C
CR508	1A	K508B	5C	R528	6D	TB501	3D
CR509	1B	K508C	6D	R529	6C	TB501	4D
CR510	1B	K509A	6C	R531	1A	TB501	5B
CR511	1B	K509B	6D	R532	1A	TB501	5D
CR512	1B	K509C	6C	R533	1A	TB501	5E
CR513	1B	K509D	6C	R534	1A	TB501	6A
CR514	1B	K510A	6C	R535	1A	TB501	6D
CR515	1B	K510B	6C	R536	1A	TB501	6E
CR516	1B	K510C	6C	R537	1A	TB501	7E
CR517	1C	K511A	7C	R538	1A	TB601	6A
CR518	1C	K511B	7C	R539	1B	TB601	6B
CR519	1D	K511C	6C	R540	1B	TB601	4A
CR520	1D	K603A	4C	R541	1B	TB601	4C
CR521	5C	K801B	3D	R542	1B	TB602	4C
CR522	5D	K804A	5C	R543	1B	TB801	2A
CR523	6C	K809A	5D	R544	1B	TB801	2B
CR1302	5A	K809B	5D	R545	1B	TB801	3C
CR1305	5B	K809C	5D	R546	1B	TB801	3D
CR1306	5B	K810B	3D	R859	2A	TB801	3E
CR1308	5B	K952A	5C	R887	4D	TB801	4D
CR1309	5A	K1201A	4C	R1317	5B	TB801	5C
CR1310	5A	K3301B	5E	R1322	5B	TB801	5D
CR1311	6A	K3302	4E	R1323	5B	TB801	5E
CR1312	6A	K3303	4E	R1324	5A	TB801	6D
CR1313	6A	L501	2A	R1335	6B	TB801	7E
CR1314	6A	L502	2A	S203	3D	TB803	5C
CR1315	6B	L503	2B	S505	3D	TB803	5D
CR1347	5A	L504	2B	S507B	6D	TB976	5B
CR1348	5A	L505	1C	S507B	7D	TB1201	4C
DS208	3C	L506	1D	S507C	6D	TB1401	2C
DS505	3C	L1302	6A	S507D	7D	TB1401	2D
DS506	6C	M803	3A	S507E	6D	TB1401	7A
DS507	7C	P101	4D	S507E	7D	TB3301	4E
DS801	3C	P101A	5E	S508A	7D	TB3302	4E
DS802	5C	P101B	5E	S508B	6D	V321	3A
DS803	4C	P102C	5E	S508B	7D	V322	4A
E1302	5B	P102F	5E	S508C	7D	V323	3B
						V324	4B

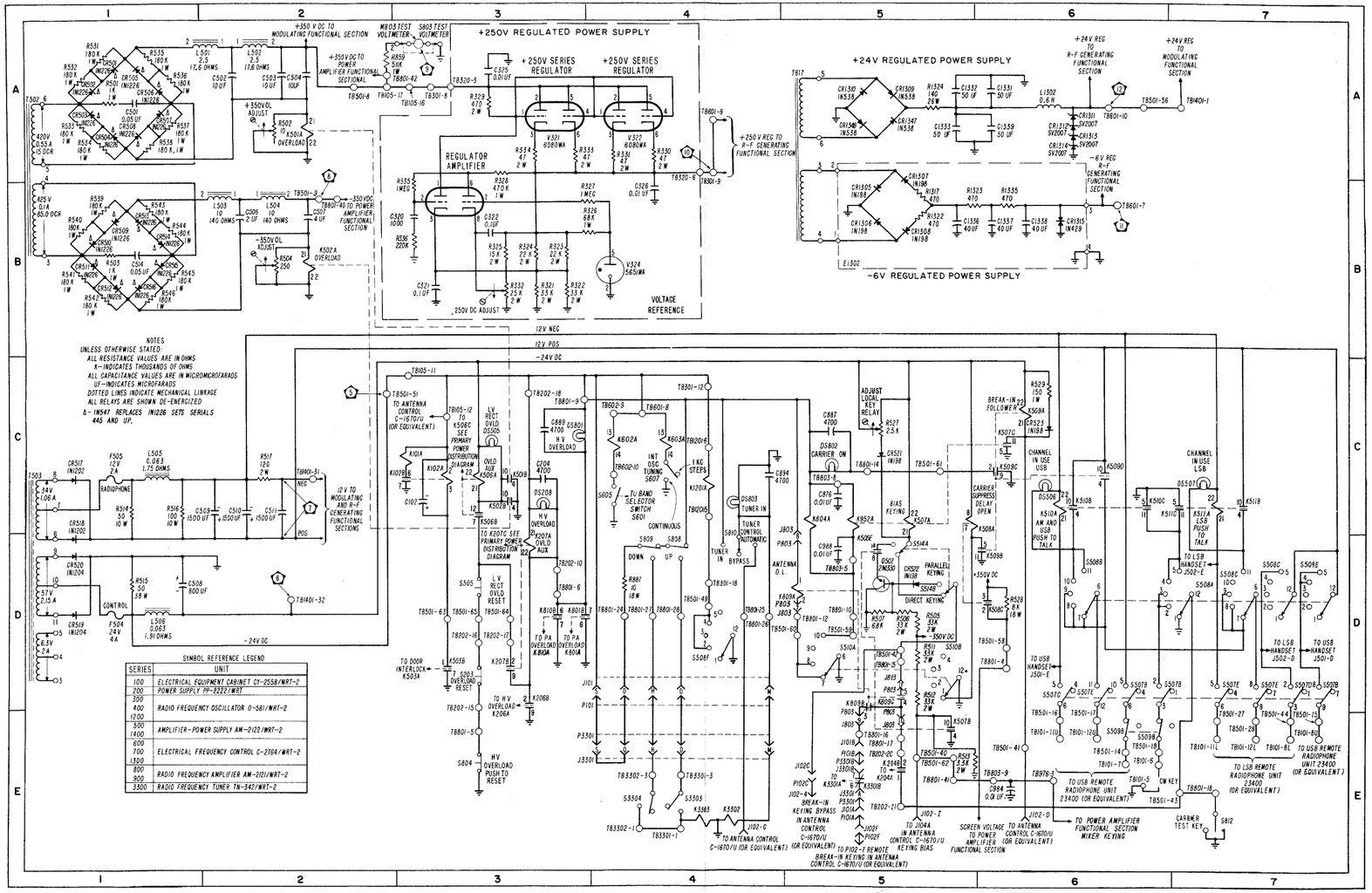


Figure 5-48A. Radio Transmitting Set AN/WRT-2 Low Voltage Power Supply, Functional Schematic Diagram, Sets Serials 264 and up

Ref. Desig.	Location
C1 (FL603)	2A
C1 (FL1301)	5E
C1 (Z1302)	5E
C2 (FL603)	2A
C2 (FL1301)	5E
C2 (Z1302)	5E
C3 (FL603)	2B
C3 (Z1302)	4E
C4 (FL603)	2B
C4 (Z1302)	4E
C5	4E
C6	4E
C7 (Z1302)	4E
C7 (E1304)	5D
C8	5D
C609	2B
C610	3B
C613	3B
C614	2B
C615	3A
C616	3A
C617	3B
C618	3C
C619	3B
C620	3B
C621	4A
C622	4B
C623	4A
C624	4A
C625	4B
C626	4C
C627	4A
C631	3C
C633A	5B
C633B	6B
C639	5A
C643	6A
C644A	6A
C644B	6A
C644C	8A
C645	6A
C647	7B
C648	7A
C650	7A
C680	3E
C681	3E
C682	3D
C683	3D
C684	3D
C685	3D
C686	2D
C687	2D
C688	2D
C689	2D
C690	2E
C691	2E
C692A	2C
C692B	1C
C693A	2C
C693B	2C
C694	3D
C738	4E
C1301	4C
C1302	4D
C1303	5C
C1304	4C
C1305	4D
C1306	5C
C1307	5C
C1308	4C
C1309	4D
C1310	4D
C1311	5C
C1312	4D
C1313	4C
C1315	5C
C1317	5C
C1319	7C
C1320	7C
C1321	6C
C1323	6C
C1324	6C
C1326	6D
C1327	6D
C1330	7D
C1335	5D
C1340	5D
C1341	6E
C1343	6E
C1344	7E
C1345	7E
C1346	6C
C1347	6C
C1349	7C
C1350	7C
C1351	5D
C1352	5E
C1353	5D
C1354	5D
C1362	6D
CR601	3A
CR602	3B
CR603	3B
CR604	3C
CR605	7B
CR610	2D
CR611	2D
CR612	2E
CR613	2E
CR623	3D
CR1316	7C
CR1317	7C
CR1318	7C
CR1319	6C
CR1320	6C
CR1321	6C
CR1322	6C
CR1323	6D
CR1324	6D
CR1325	6D
CR1326	6D
CR1327	6D
CR1328	7D
CR1329	7D
CR1330	6E
CR1331	6E
CR1332	6E
CR1333	6E
CR1334	7E
CR1335	7E
CR1336	7C
CR1337	7C
CR1339	6D
CR1340	6C
CR1341	6C
CR1344	5D
CR1345	6D
CR1346	6D
E601	3C
E1301	5D
E1303	7E
FL601	5A
FL602	6A
FL603	1B
FL1301	5E
HR1	5E
HR2	5E
HR3	5E
HR4	5E
J601	1A
J602	7E
J604	7B
J605	6A
J610	3D
J611	3D
J616	4E
J1301	5C
J1302	5B
J1303	7E
J1304	4E
K602A	1B
K602B	3C
K602C	3C
K602D	4A
K602E	4A
L1 (FL603)	2A
L1 (FL1301)	5E
L2 (FL603)	2A
L2 (FL1301)	5E
L3	2B
L4	2B
L609	3D
P164	7E
P165	1A
P604	7B
P610	3D
P611	3D
P616	4E
P1301	5C
P1302	5B
P1303	7E
P1304	4E
Q1	4E
Q2	4E
Q3	4E
Q1301	4C
Q1302	4D
Q1303	5C
Q1304	5C
Q1305	6C
Q1306	7C
Q1307	6D
Q1308	7D
Q1313	6E
Q1314	7E
Q1315	6C
Q1316	7C
Q1317	5D
R1 (FL603)	2A
R1 (Z1301)	4D
R1 (Z1302)	4E
R2 (FL603)	2A
R2 (Z1302)	4E
R3 (FL603)	2A
R3 (Z1302)	4E
R4 (FL603)	2A
R4 (Z1302)	4E
R5 (FL603)	2A
R5 (Z1302)	4E
R6 (FL603)	2B
R6 (Z1302)	4E
R7 (FL603)	2B
R7 (Z1302)	4E
R8	1B
R601	2A
R602	2A
R603	2B
R604	2B
R606	2A
R607	2A
R609	3B
R611	4B
R613	2B
R616	2B
R617	4A
R618	4B
R619	4B
R620	4B
R621	4A
R622	4A
R623	4A
R624	4B
R625	4B
R626	4B
R630	5B
R631	3C
R632	6B
R633	5B
R634	5B
R640	6B
R641	7A
R642	7A
R643	6B
R644	7B
R645	7B
R647	7A
R648	7A
R649	7B
R650	6C
R651	7B
R652	6C
R680	3E
R681	3E
R682	3D
R683	3E
R685	3E
R686	2E
R687	2E
R688	2D
R689	2D
R690	2E
R691	2E
R699	3D
R719	4E
R724	3B
R725	3A
R726	3C
R727	3B
R732	3A
R733	3B
R740	3D
R792	3B
R793	2B
R794	2B
R795	3B
R1301	4D
R1302	5C
R1303	4C
R1304	4C
R1305	5D
R1306	4D
R1307	4D
R1308	4C
R1309	5C
R1310	5C
R1311	5B
R1312	5C
R1313	5C
R1314	5C
R1315	5C
R1316	7C
R1317	7B
R1318	7C
R1319	7C
R1320	7C
R1321	6B
R1325	5C
R1330	6C
R1331	6C
R1332	6B
R1333	6C
R1334	6C
R1337	7C
R1338	7C
R1339	5C
R1340	7C
R1341	6D
R1342	6D
R1343	6D
R1344	6D
R1345	6D
R1346	7D
R1347	7D
R1348	7D
R1349	7D
R1350	6D
R1351	6E
R1352	6E
R1353	6E
R1354	6E
R1355	6E
R1356	7E
R1357	7E
R1358	7E
R1359	7E
R1360	6C
R1361	6D
R1362	6C
R1363	6C
R1364	6C
R1365	7C
R1366	7C
R1367	7D
R1368	7C
R1369	5C
R1370	5D
R1371	5E
R1372	5D
R1373	5D
RT1301	4D
S605	1C
S606A	1C
T1 (FL603)	1A
T1 (Z1302)	4E
T602	3A
T603	4B
T606	2E
T607	2D
T608	3D
T612	2A
T613	2B
T1301	5B
T1301	4D
T1302	4D
T1304	5D
TB602	1C
TB602	2C
TB602	3C
TB605	2D
TB1301	5E
V601A	4A
V601B	5A
V602A	6A
V602B	7A
V603A	7A
V603B	9A
V605	3E
Z1301	5E
Z1302	4E

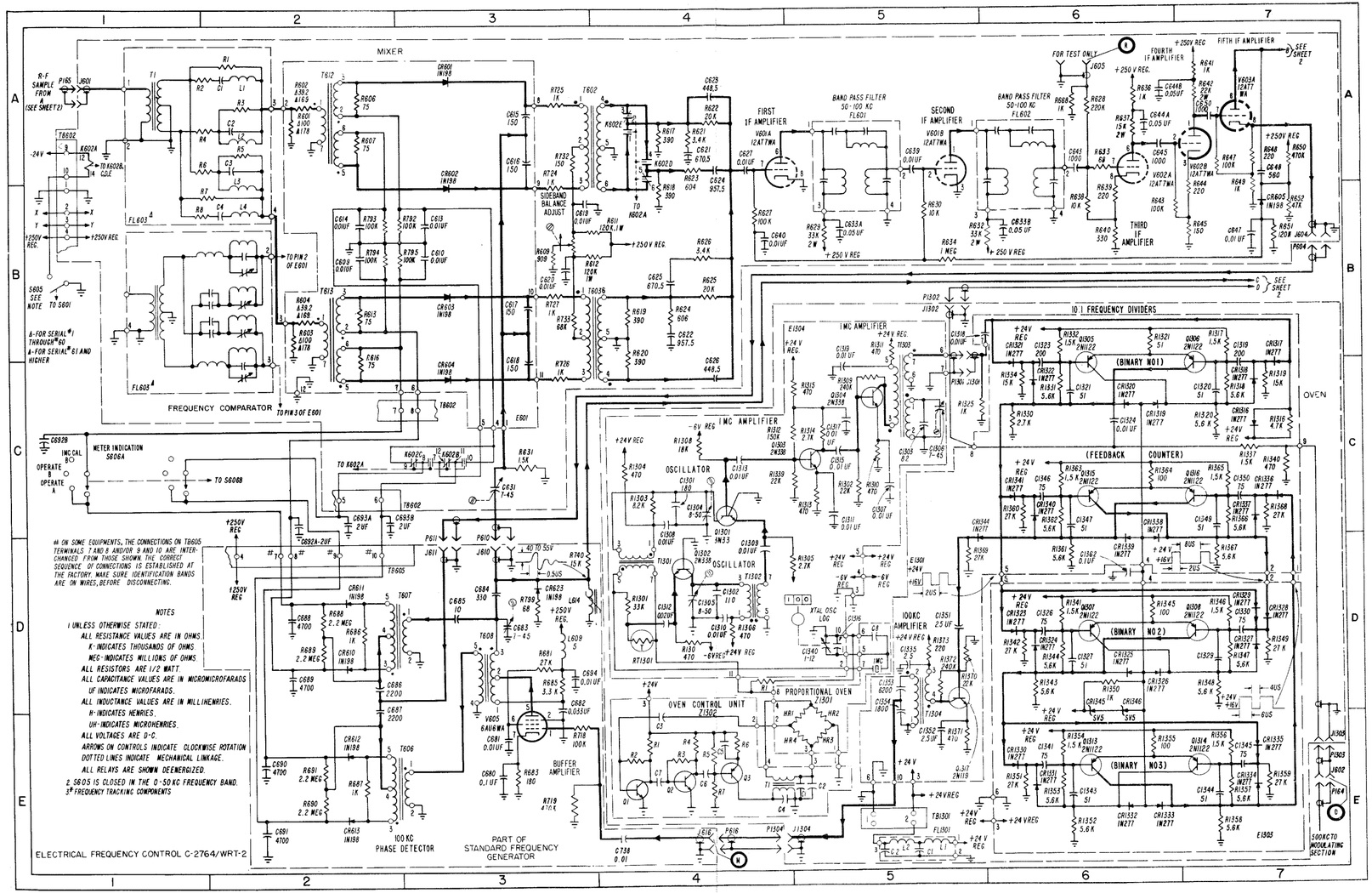


Figure 5-49. Radio Transmitting Set AN/WRT-2, R-F Generating Circuits Functional Schematic Diagram (Sheet 1 of 2 Sheets), Sets Serials 1 to 294

Ref. Desig.	Location
C609	2B
C610	2B
C613	2B
C614	2B
C615	3A
C616	3A
C617	3B
C619	3B
C620	3B
C621	4A
C622	4B
C623	4A
C624	4A
C625	4B
C626	4C
C627	4A
C631	3C
C633A	4B
C633B	5B
C639	5A
C640	4B
C643	5A
C644A	6A
C644B	6A
C645	6A
C647	6B
C648	6A
C650	6A
C680	3E
C681	3E
C682	3D
C683	3D
C684	3D
C685	3D
C687	2D
C688	2D
C689	2D
C690	2E
C691	2E
C692A	2C
C692B	1C
C693A	2C
C693B	2C
C694	3D
C1318	9B
C1319	10B
C1320	10C
C1321	9C
C1323	9B
C1324	9C
C1326	9D
C1327	9D
C1329	10D
C1330	10D
C1335	8D
C1341	9E
C1343	9E
C1344	10E
C1345	10E
C1346	9C
C1347	9C
C1349	10C
C1350	10C
C1351	9D
C1352	9E
C1353	8D
C1354	8D
**C1363	8D
**C1364	9C
C1701	4C
C1703	5C
C1704	4C
C1705	5C
C1706	5C
C1707	5C
I602A	1A
K602B	2C
K602C	2C
K602D	3A
K602E	3A
L609	3D
L614	3D
P164	10E
P165	1A
P604	6B
P610	3C
P611	2C
P616	4E
P1301	8B
P1302	9B
P1303	10E
P1304	4E
Q1305	9B
Q1306	10B
Q1307	9D
Q1308	10D
Q1313	9E
Q1314	10E
Q1315	9C
Q1316	10C
Q1317	9D
Q1701	5C
Q1702	5C
Q1703	6C
Q1704	6C
Q1705	6C
Q1706	6C
Q1707	7C
R601	2A
R602	2A
R603	2B
R604	2B
R606	2A
R607	2A
R609	3B
R610	3B
R611	3B
R612	3B
R613	2B
R616	2B
R617	4A
R618	4B
R619	3B
R620	3B
R621	4A
R622	4A
R623	4A
R624	4B
R625	4B
R626	4B
R627	4B
R629	4B
R630	5B
R631	3C
R632	5B
R633	6A
J610	3D
J611	2D
J616	4E
J1301	8B
J1303	10E
J1304	4E
J602A	1A
K602B	2C
K602C	2C
K602D	3A
K602E	3A
L609	3D
L614	3D
P164	10E
P165	1A
P604	6B
P610	3C
P611	2C
P616	4E
P1301	8B
P1302	9B
P1303	10E
P1304	4E
Q1305	9B
Q1306	10B
Q1307	9D
Q1308	10D
Q1313	9E
Q1314	10E
Q1315	9C
Q1316	10C
Q1317	9D
Q1701	5C
Q1702	5C
Q1703	6C
Q1704	6C
Q1705	6C
Q1706	6C
Q1707	7C
R601	2A
R602	2A
R603	2B
R604	2B
R606	2A
R607	2A
R609	3B
R610	3B
R611	3B
R612	3B
R613	2B
R616	2B
R617	4A
R618	4B
R619	3B
R620	3B
R621	4A
R622	4A
R623	4A
R624	4B
R625	4B
R626	4B
R627	4B
R629	4B
R630	5B
R631	3C
R632	5B
R633	6A
J605	5A
R634	5B
R636	6A
R637	6A
R638	6B
R639	6B
R640	6B
R641	6A
R642	6A
R643	6B
R644	6B
R645	6B
R647	6A
R648	6A
R649	6B
R650	6A
R651	6B
R652	6B
R681	3D
R683	3E
R685	3D
R686	2D
R687	2E
R688	2D
R689	2D
R690	2E
R691	2E
R718	3E
R719	3E
R724	3A
R725	3A
R732	3A
R733	3B
R740	3D
R792	2B
R793	2B
R794	2B
R795	2B
R799	3D
R1316	10C
R1317	10B
R1318	10C
R1319	10C
R1320	10C
R1321	10B
R1325	9C
R1330	9C
R1331	9C
R1332	9B
R1334	9C
R1335	10E
R1337	10C
R1340	10C
R1341	9D
R1344	9D
R1345	10D
R1346	10D
R1347	10D
R1348	10D
R1349	10D
R1350	9D
R1351	9E
R1352	9E
R1353	9E
R1354	9E
R1356	10E
R1357	10E
R1358	10E
R1359	10E
R1360	9C
R1361	10C
R1362	9C
R1363	9C
R1364	10C
R1365	10C
R1366	10C
R1367	10D
R1368	10D
R1370	9D
R1371	9E
R1372	9D
R1373	9D
R1701	5B
R1702	5C
R1703	5B
R1704	5B
R1705	5C
R1706	5B
R1707	5C
R1708	5B
R1709	5C
R1710	6B
R1711	6C
R1712	6B
R1713	6C
R1714	6B
R1715	6C
R1716	6B
R1717	6C
R1718	6B
R1719	6C
R1720	6B
R1721	6C
R1722	6C
R1723	6C
R1724	7B
R1725	7C
R1726	7C
R1727	4C
R1728	6B
S603A	1C
S605	1B
T602	3A
T603	3B
T606	2E
T607	2D
T608	3D
T612	2A
T613	2B
T1304	9D
T1701	7C
TB602	1A
TB602	2C
TB605	2D
TB1301	9E
V601A	4A
V601B	5A
V602A	6A
V602B	6A
V603A	6A
V605	5E
Z1301	6D
Z1302	6D

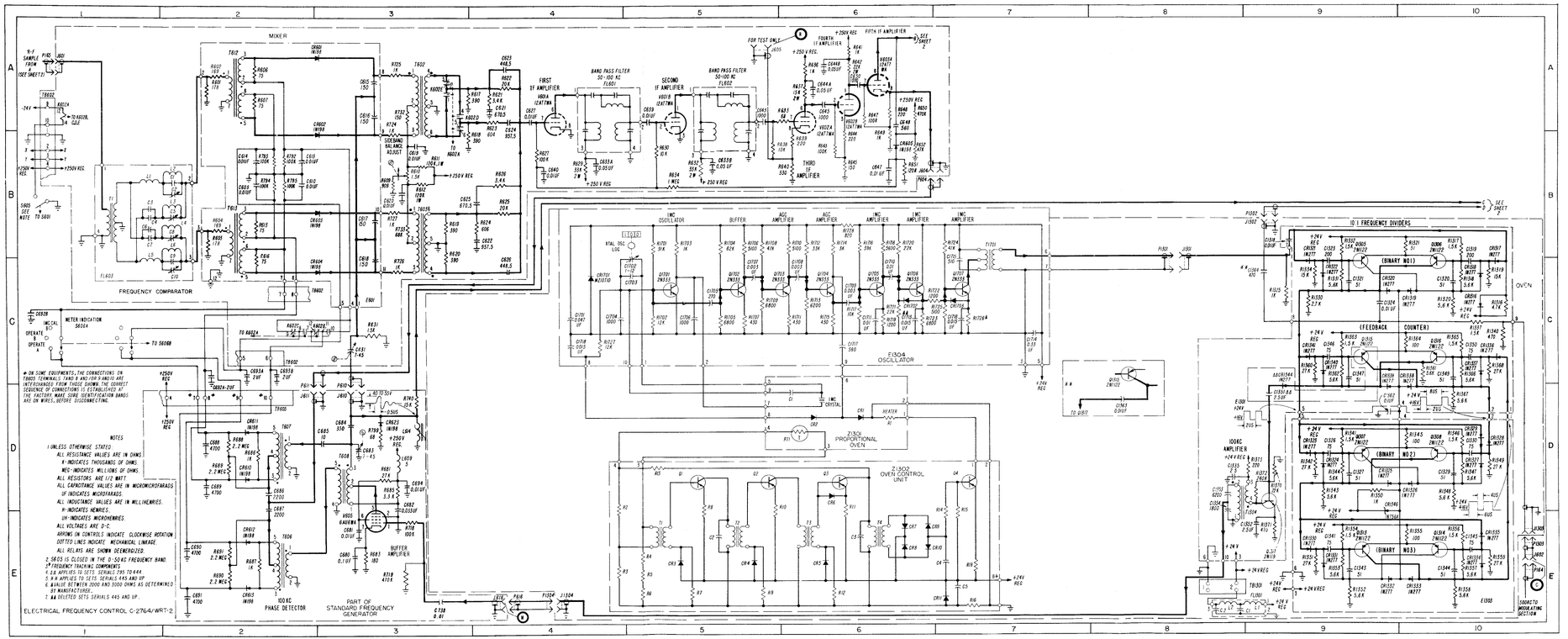


Figure 5-49. Radio Transmitting Set AN/WRT-2, R-F Generating Circuits Functional Schematic Diagram (Sheet 1A of 2 Sheets), Sets Serials 294 and up

Ref. Desig.	Location
C301	16A
C302	16C
C303	16A
C304	16C
C305	17A
C306	17B
C307	17B
C308	17C
C309	17B
C310	17C
C311	17B
C312	17C
C313	17C
C314	17A
C315	17A
C316	16B
C327	17B
C329	17B
C331	17C
C334	18B
C336	18D
C337	19B
C338	18D
C339	19B
C340	19B
C341A	19B
C341B	19C
C341C	21C
C342	19B
C343	19B
C344	19A
C345	19B
C346	19A
C347	19B
C348	19A
C349	20A
C350	20A
C351	20A
C352	20A
C353	20B
C354	20A
C355	19B
C356	19B
C357	20B
C358	20B
C359	20B
C360	20B
C361	20C
C362	20C
C363	20C
C364	20C
C365	20C
C366	20C
C367	20B
C368	20B
C369	21B
C370	21B
C371	21B
C372	20B
C373	21B
C374	21B
C375	21B
C376	21C
C377	21C
C378	21B
C380	16A
C381	16B
C382	16B
C383	16B
C384	16B
C385	16B
C386	16C
C387	16C
C388	16C
C389	17A
C399	16D
C421	17B
C422	17B
C423	17B
C424	17B
C426	17D
C428	17B
C429	17A
C641	12C
C642	12C
C646	12D
C651	12C
C653	9A
C654	9A
C655	9B
C656	10A
C657	9A
C659	11B
C660	11B
C661	12C
C663	12B
C664	10D
C665	11D
C666	11D
C667	11D
C668	10B
C669	11B
C670	11B
C671	11B
C672	11A
C676	13B
C677	14B
C696A	11A
C696B	13A
C697A	13A
C697B	12A
C698	11A
C699	11A
C701	12A
C702	11A
C703	11A
C704	12A
C705	12B
C706	12B
C707	11B
C708	12B
C709	15A
C710	12B
C712	11D
C713	11D
C714	11D
C715	11D
C716	10A
C720	13C
C721A	13C
C721B	13C
C721C	13C
C722	13C
C723A	13B
C723B	13B
C723C	13B
C725	14C
C726	14D
C727A	13B
C727B	14B
C727C	14B
C728	14C
C731	14D
C732	14D
C733	14D
C734	15D
C735	15D
C736	14B
C737	15B
C743	13B
CR301	19E
CR302	19E
CR303	20E
CR304	20E
CR606	9A
CR607	9A
CR608	8A
CR609	9A
CR615	11C
CR616	12C
CR617	11C
CR618	12C
CR619	9B
CR621	13A
CR622	15A
CR623	14B
CR637	15B
CR658	15B
CR659	14B
D5602	15A
J301	18A
J302	18A
J303	21C
J304	21C
J305	16E
J306	16E
J312	17A
J313	17A
J606	10B
J607	10B
J608	8B
J613	8C
J614	8D
J615	9D
J616	10C
J617	13B
J618	10B
J619	10C
P620	9B
P621	10C
P624	13B
P625	15B
P301	18A
P302	18D
P304	18D
P305	19E
P306	19E
P308	19B
P309	19D
P310	20E
P311	20E
P312	20D
P313	20E
P314	20D
P315	21E
P316	21E
P317	21E
P318	16C
P319	20E
P320	19E
P379	17D
P381	18D
P389	16C
P390	16D
P391	16D
P392	16E
P396	15B
P397	16E
P398	16D
P399	17D
P401	19B
P402	17E
P403	17E
P404	17E
P405	17E
P406	16E
P407	16E
P408	16B
P409	16D
P646	8A
P653	8A
P654	9A
P655	8A
P656	9A
P657	9A
P658	9A
P659	9A
P661	9B
P662	9B
P663	10B
P664	10A
P665	9A
P666	10B
P682	14C
P692	8C
P693	11A
P694	11A
P695	11A
P696	11A
P697	11B
P698	11B
P699	12A
P701	12A
P702	12A
P703	12B
P704	12B
P705	12A
P706	12A
P707	12A
P708	12B
P709	11B
P710	12A
P711	13A
P712	13A
P713	10E
P714	11E
P715	11E
P716	11E
P717	11E
P718	10A
P729	11C
P734	14C
P741	13C
P742	13C
P744	15C
P745	15C
P746	15C
P748	14C
P749	14C
P750	14C
P751	14C
P752	13B
P753	13B
P754	14B
P755	14D
P756	14D
P757	14D
P758	13D
P759	13D
P760	13D
P761	13D
P762	14D
P763	14D
P767	14D
P768	14D
P769	14D
P770	14D
P771	14D
P772	9A
R301	18A
R302	18A
R303	21C
R304	21C
R305	19E
R306	19E
R307	19E
R308	19B
R309	19D
R310	20E
R311	20E
R312	20D
R313	20E
R314	20D
R315	21E
R316	21E
R317	21E
R318	16C
R319	20E
R320	19E
R379	17D
R381	18D
R389	16C
R390	16D
R391	16D
R392	16E
R396	15B
R397	16E
R398	16D
R399	17D
R401	19B
R402	17E
R403	17E
R404	17E
R405	17E
R406	16E
R407	16E
R408	16B
R409	16D
R646	8A
R653	8A
R654	9A
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R656	9A
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R660	9B
R661	9B
R662	9B
R663	10B
R664	10A
R665	9A
R666	10B
R667	12D
R669	11C
R670	12C
R671	11C
R672	12C
R673	12C
R675	14B
R677	14C
R678	14B
R679	15B
R682	14C
R692	8C
R693	11A
R694	11A
R695	11A
R696	11A
R697	11B
R698	11B
R699	12A
R701	12A
R702	12A
R703	12B
R704	12B
R705	12A
R706	12A
R707	12A
R708	12B
R709	11B
R710	12A
R711	13A
R712	13A
R713	10E
R714	11E
R715	11E
R716	11E
R717	11E
R718	10A
R729	11C
R734	14C
R741	13C
R742	13C
R744	15C
R745	15C
R746	15C
R748	14C
R749	14C
R750	14C
R751	14C
R752	13B
R753	13B
R754	14B
R755	14D
R756	14D
R757	14D
R758	13D
R759	13D
R760	13D
R761	13D
R762	14D
R763	14D
R767	14D
R768	14D
R769	14D
R770	14D
R771	14D
R772	9A
R773	15C
R775	13B
R776	13D
R777	13D
R779	14A
R782	13C
R783	13B
R784	13B
R785	14C
R786	14C
R787	14B
R788	14B
R789	15C
R790	15B
R791	14B
S301A	16A
S301B	16C
S301C	17C
S301D	17A
S302A	19A
S302B	18C
S302C	19D
S302D	19C
S302E	20C
S302F	21C
S302G	21D
S302H	17E
S601A	11E
S601B	11D
S601D	12D
S601E	12D
S602	13E
T301	19D
T302	20D
T303	20B
T304	20C
T305	20C
T604	8A
T605	9A
T609	12D
T610	14C
T614	14C
T615	14C
T616	15C
T619	14C
T620	13B
TB305	17D
TB307	17D
TB601	13B
TB605	15A
TB605	13D
V301	18B
V302	19E
V303	20E
V304	21E
V604A	13A
V604B	14C
V606	10A
V607A	11A
V607B	12A
V608A	12A
V608B	14B
V609A	14D
V609B	13D
V610A	14C
V610B	14D
Z601	15C
Z602	14C
Z603	15C
Z604	14B

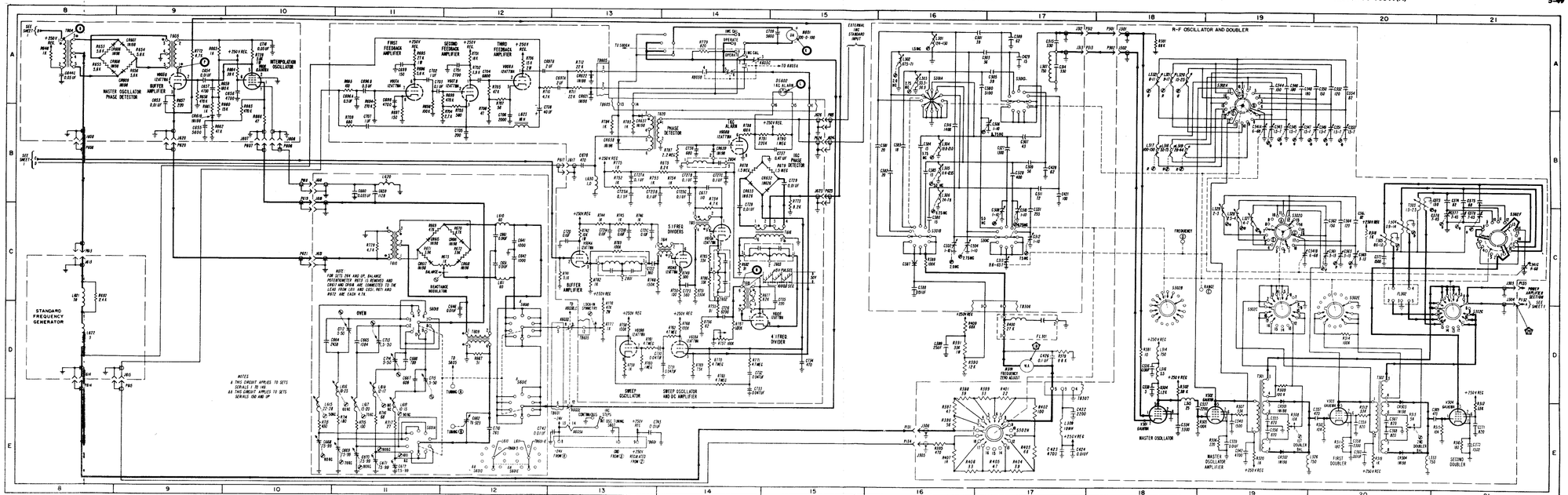

Figure 5-49. Radio Transmitting Set AN/WRT-2, R-F Generating Circuits Functional Schematic Diagram (Sheet 2 of 2 Sheets)

Ref. Desig.	Location
C512	8E
C513	8E
C1201	9A
C1202	9A
C1203	9B
C1204	10A
C1205	10A
C1206	10A
C1207	10A
C1208	11A
C1211	9B
C1212	9B
C1213	9C
C1214	10B
C1215	10B
C1216	10B
C1217	10B
C1218	11B
C1219	12B
C1220	12B
C1221	13D
C1223	14D
C1224	14C
C1225	14C
C1226	14C
C1227	14C
C1228	13D
C1229	13D
C1230	14E
C1231	14D
C1232	14C
C1233	13C
C1234	13B
C1235	13B
C1236	13B
C1237	14B
C1238	14B
C1241	9C
C1242	9C
C1243	9D
C1244	10C
C1245	10D
C1246	10D
C1247	11D
C1248	11C
C1249	11D
C1250	12C
C1251	12B
C1252	9D
C1253	10D
C1254	10D
C1255	11D
C1256	11D
C1257	11E
C1258	12B
C1259	12B
C1260	12B
C1401	5A
C1402	5A
C1403	6A
C1404	5A
C1405	7A
C1406	5C
C1407	6C
C1408	7C
C1409	6D
C1410	6C
C1411	7C
C1412	5D
C1413	6D
C1414	5D
C1415	6E
C1416	6E
C1417	7D
C1418	4D
C1419	4D
C1420	4D
C1521	2A
C1522	2B
C1201	10C
C1202	10D
C1401	6B
C1402	6A
C1403	7A
C1404	5A
C1405	7A
C1406	6B
C1407	7B
C1408	6B
C1409	5D
C1410	5C
C1411	4D
C1412	5C
C1413	4D
C1414A	5C
C1414B	6C
C1414C	6C
C1414D	6C
C1415	5D
C1416	5D
C1417	5D
C1418	5D
C1419A	6D
C1419B	6D
C1419C	6D
C1419D	6D
D5506	2C
FL502	2B
FL501	2D
FL502	2E
FL1201	10A
FL1202	10B
FL1203	12B
FL1401	4C
J102E	1B
J102I	1B
J501	2C
J502	2C
J503	2C
J502	2D
J502	2E
J803-7	1A
J803-10	1A
J803-11	1A
J1201	9B
J1202	14E
K204B	1B
K505D	2C
K505E	2A
K507A	2A
K507B	2A
K509D	3C
K510A	2C
K510B	2C
K510C	3A
K511A	2D
K511B	3E
K511C	3A
K804A	1A
K809A	1A
K809C	1A
K1201B	11A
K1201C	11B
L1201	11A
L1202	11B
L1401	4D
M502	9D
P133	9C
P136	14E
P803-7	1A
P803-10	1A
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Q1405	6D
Q1406	6C
Q1407	5D
Q1408	7D
Q1409	6E
Q1410	7E
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Q1412	4D
Q1413	5C
Q1414	4D
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R507	2B
R508	2B
R509	2B
R510	2B
R511	2A
R512	2A
R513	2A
R518	8E
R519	8E
R520	8E
R521	9D
R527	2A
R530	2B
R1201	9A
R1202	9A
R1203	9A
R1204	9B
R1205	10A
R1206	10A
R1207	11A
R1208A	11A
R1208B	11B
R1211	9B
R1212	9B
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R1221	12C
R1222	13D
R1223	13D
R1224	13C
R1225	14C
R1226	14C
R1227	13D
R1228	14D
R1229	14D
R1230	14E
R1231	14C
R1232	14C
R1233	13C
R1234	13B
R1235	13B
R1236	13B
R1237	13B
R1238	14B
R1239	14B
R1240	14B
R1245	9C
R1247	9C
R1248	9D
R1249	9E
R1250	11D
R 451	6E
R 452	7E
R 453	7E
R1454	4E
R1455	4D
R1456	4D
R1457	4D
R1458	4D
R1459	4D
R1460	4D
R1461	4D
R1462	4D
R1463	4D
R1464	4E
R1465	4E
R1466	4E
R1467	4E
R1468	4E
R1470	4C
R1471	4C
R1472	4C
R1473	4C
R1474	4C
R1475	7E
R1476	7E
R1477	6C
R1478	6C
R1479	4C
R1479	5C
R1480	7D
R1481	6D
R1482	6E
S309	3B
S507B	2A
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S507D	2D
S507D	2E
S507E	2C
S507E	2D
S507E	2E
S508	3A
S508A	3A
S508B	3C
S508C	3D
S508D	3B
S508D	3E
S508E	7B
S508E	7D
S508F	7A
R1434	7C
R1435	6C
R1436	6D
R1437	6C
R1438	6C
R1439	6D
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R1441	5D
R1442	5D
R1443	5D
R1444	6D
R1445	6D
R1446	6D
R1447	7D
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T1402	7A
T1403	7B
T1404	5C
T1405	5D
T1406	4D
T1407	9C
T1408	3D
T1409	5C
T1410	5E
T1501	1B
TB202	1B
TB301	8A
TB301	8B
TB301-14	3B
TB501	1A
TB501	8A
TB501	9D
TB501-47	3B
TB801	1A
TB1201	6E
TB1401	3B
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TB1401	7E
TB1401	8C
TB1401	8D
V1201	9A
V1202	9B
V1203	12B
V1204	13C
V1205	13D
V1206	13B
V1207A	9C
V1207B	12C
V1208	11C
V1209	11D

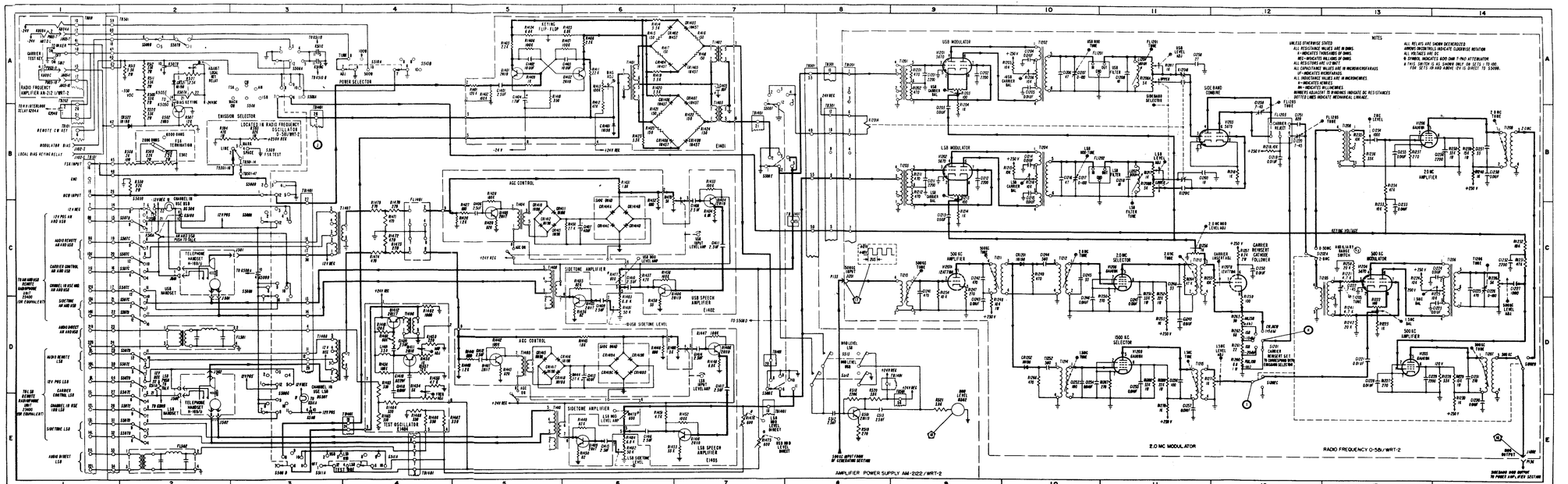

Figure 5-50. Radio Transmitting Set AN/WRT-2, Modulating Circuits, Functional Schematic Diagram

Ref. Desig.	Location	Ref. Desig.	Location	Ref. Desig.	Location	Ref. Desig.	Location	Ref. Desig.	Location	Ref. Desig.	Location	Ref. Desig.	Location
C512	8E	C1421	6C	J1202	14E	R1205	10A	R1408	6A	R1495	6B	S1201	12D
C513	8E	C1422	6C	K204B	1B	R1206	10A	R1409	5A	R1496	6B	S1202A	12C
C1201	9A	C1423	7D	K505E	2A	R1207	11A	R1410	5A	R1497	6B	S1202B	14D
C1202	9A	C1424	7C	K507A	2A	R1208A	11A	R1411	6A	R1498	6B	S1202C	12D
C1203	9B	C1425	6C	K507B	2A	R1208B	11B	R1412	6B	R1499	6C	T1201	9A
C1204	10A	C1426	6C	K509D	3C	R1211	9B	R1413	6A	R1501	7B	T1202	10A
C1205	10A	C1427	6B	K510A	2C	R1212	9B	R1414	6A	R1502	7C	T1203	9B
C1206	10A	C1428	7C	K510B	2C	R1213	9B	R1415	6A	R1503	7B	T1204	10B
C1207	10A	C1429	7C	K510C	3A	R1214	9C	R1416	7A	R1504	7C	T1205	13C
C1208	11A	C1430	6D	K511A	2D	R1215	10B	R1417	6A	R1505	7B	T1206	14C
C1211	9B	C1431	6E	K511B	3E	R1216	10B	R1418	7A	R1506	6C	T1207	14D
C1212	9B	C1432	6E	K511C	3A	R1217	11B	R1419	6A	R1507	6D	T1208	13B
C1213	9C	C1433	6D	K804A	1A	R1218	12B	R1420	6A	R1508	5D	T1209	14B
C1214	10B	C1434	6C	K809A	1A	R1219	12B	R1421	6B	R1509	5E	T1210	9C
C1215	10B	C1435	6E	K809C	1A	R1221	13C	R1422	7A	R1510	6E	T1211	9C
C1216	10B	C1436	6E	K1201A	8B	R1222	13D	R1423	6B	R1511	6D	T1212	10C
C1217	10B	C1437	6D	K1201B	11A	R1223	13D	R1424	7A	R1512	6E	T1213	11C
C1218	11B	C1438	7E	K1201C	11B	R1224	13C	R1425	6B	R1513	6D	T1214	10D
C1219	12B	C1439	7E	L1201	11A	R1225	14C	R1436	5C	R1514	6C	T1215	11D
C1220	12B	C1440	6D	L1202	11B	R1226	14C	*R1454	5D	R1515	6C	T1401	6A
C1221	13D	C1441	*5D	M502	9E	R1227	13D	**R1454	4E	R1516	6D	T1402	7A
C1222	13C	C1442	5D	P136	14E	R1228	14D	R1455	4D	R1517	6E	T1403	7B
C1223	14D	C1443	5D	P803-7	1A	R1229	14D	R1456	4D	R1518	6E	*T1406	5C
C1224	14C	C1444	5D	P803-10	1A	R1230	14E	R1457	4D	R1519	6D	**T1406	4D
C1225	14C	C1445	5D	P803-11	1A	R1231	14C	*R1458	5C	R1520	6E	T1407	3C
C1226	14C	CR521	2A	Q501	8E	R1232	14C	**R1458	4D	R1521	7D	T1408	3D
C1227	14C	CR522	2B	Q502	2B	R1233	13C	R1459	4D	R1522	7E	T1409	5B
C1228	13D	CR1401	6A	Q1401	5A	R1234	13B	R1460	4D	R1524	7D	T1410	5E
C1229	13D	CR1402	6A	Q1402	6A	R1235	13B	R1461	4D	R1525	7E	TB101	1B
C1230	14E	CR1403	7A	*Q1411	5D	R1236	13B	R1462	4D	R1526	7E	TB101	1C
C1231	14D	CR1404	6A	**Q1411	4D	R1237	13B	*R1463	5E	R1527	7E	TB101	1D
C1232	14C	CR1405	7A	*Q1412	5C	R1238	14B	**R1463	4D	R1528	7D	TB101	1E
C1233	13C	CR1406	6A	**Q1412	4D	R1239	14B	*R1464	5D	R1529	6C	TB202	1B
C1234	13B	CR1407	7A	Q1413	6C	R1240	14B	**R1464	4E	R1530	6D	TB301	8A
C1235	13B	CR1408	6B	Q1414	6D	R1241	13D	*R1465	5E	R1531	5D	TB301	3B
C1236	14B	CR1409	7B	Q1416	6C	R1242	13D	**R1465	4E	R1533	5D	TB301	8B
C1237	14B	CR1420	7C	Q1417	6C	R1247	9C	*R1466	5E	R1535	5D	TB501	1A
C1238	14B	CR1421	7E	Q1418	7C	R1248	9D	**R1466	4E	R1536	5D	TB501	1B
C1241	9C	CR1422	5D	Q1419	7D	R1249	10C	*R1467	5E	R1537	5D	TB501	1C
C1242	9C	DS506	2C	Q1420	6E	R1250	11D	**R1467	4E	R1538	5C	TB501	1D
C1243	9D	DS507	3E	Q1421	6D	R1251	11C	*R1468	5D	R1539	5C	TB501	1E
C1244	10C	E502	2B	Q1422	6E	R1252	11C	**R1468	4E	S309	3B	TB501	3B
C1245	10C	E1401	7B	Q1423	6E	R1253	11D	R1469	4C	S507B	2C	TB501	8A
C1246	10D	E1404	4E	Q1424	6E	R1254	9C	R1470	4C	S507B	2D	TB501	8B
C1247	11C	E1407	6D	Q1425	7E	R1255	12C	R1471	4C	S507C	2C	TB501	8C
C1248	11C	E1408	5B	Q1426	6D	R1256	11C	R1472	4C	S507C	2D	TB501	9E
C1249	11D	E1409	6C	R393	3B	R1257	12C	R1473	4C	S507D	2D	TB801	1A
C1250	12C	E1412	5C	R394	2B	R1258	13C	R1474	4C	S507D	2E	TB1201	8A
C1251	12B	FL501	3D	R505	2A	R1259	12D	R1475	7E	S507E	2D	TB1401	3B
C1252	10D	FL502	2E	R506	2B	R1260	12D	R1476	7D	S507E	2C	TB1401	7B
C1253	10D	FL1201	10A	R507	2B	R1261	12D	R1477	7C	S507E	2E	TB1401	3C
C1254	10D	FL1202	11B	R508	2B	R1262	12D	R1478	7D	S508A	3A	TB1401	8C
C1255	11D	FL1203	12B	R509	2B	R1263	12D	R1479	6C	S508B	3C	TB1401	7D
C1256	11D	FL1401	4C	R510	2B	R1264	11C	R1480	5D	S508C	3E	TB1401	9D
C1257	11E	J102C	1B	R511	2A	R1266	10D	R1481	7D	S508D	3B	TB1401	4E
C1258	11A	J501A	2D	R512	2A	R1267	11D	R1482	6D	S508D	3E	TB1401	7E
C1259	12B	J501B	2D	R513	2A	R1268	11D	R1483	7D	S508E	7D	TB1403	3D
C1260	11B	J501C	3C	R518	8E	R1269	11D	R1484	6D	S508E	7E	V1201	9A
C1401	5A	J501D	2C	R519	8E	R1270	11E	R1485	6C	S508F	7B	V1202	9B
C1402	5A	J501E	2C	R520	8E	R1271	12D	R1487	6C	S509B	2A	V1203	12B
C1403	6A	J502A	2E	R521	9E	R1401	5A	R1488	6B	S509B	2C	V1204	13C
C1404	5A	J502B	2E	R527	2A	R1402	5A	R1489	6C	S510A	4A	V1205	13D
C1405	7A	J502D	2E	R530	2B	R1403	5A	R1490	6D	S510B	4A	V1206	13B
C1418	4D	J502E	2E	R1201	9A	R1404	5A	R1491	7C	S511A	3E	V1207A	9C
C1419	4D	J803-7	1A	R1202	9A	R1405	6A	R1492	7C	S512	8D	V1207B	12C
*C1420	5D	J803-10	1A	R1203	9A	R1406	5A	R1493	7D	S513	8D	V1208	11C
**C1420	4D	J803-11	1A	R1204	9A	R1407	6A	R1494	6C	S812	1A	V1209	11D

*Applies to Sets Serials 155 and up.
**Applies to Sets Serials 1 to 154.

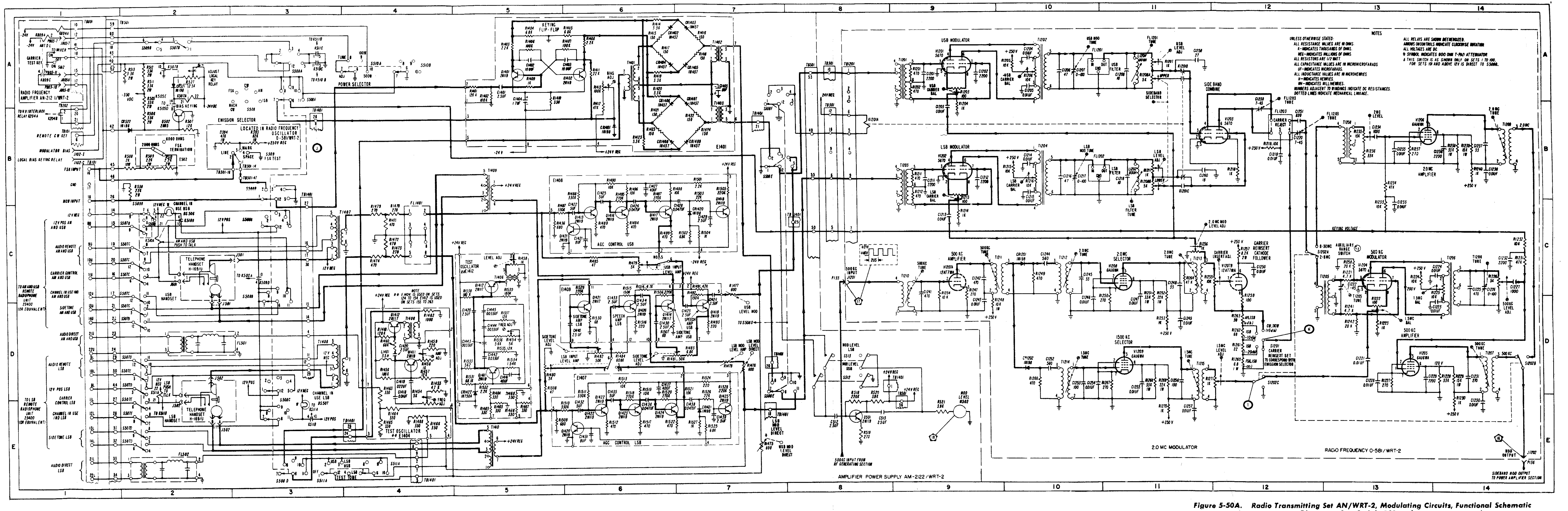

Figure 5-50A. Radio Transmitting Set AN/WRT-2, Modulating Circuits, Functional Schematic Diagrams, Sets Serials 123 and up

Ref. Desig.	Location
C512	8E
C513	8E
C1201	9A
C1202	9A
C1203	9B
C1204	10A
C1205	10A
C1206	10A
C1207	10A
C1208	11A
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C1212	9B
C1213	10B
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C1215	10B
C1216	10B
C1217	10B
C1218	11B
C1219	12B
C1220	12B
C1221	13D
C1222	13C
C1223	14D
C1224	14C
C1225	14C
C1226	14C
C1227	14C
C1228	13D
C1229	13D
C1230	14E
C1231	14E
C1232	14C
C1233	13C
C1234	13B
C1235	13B
C1236	14B
C1237	14B
C1238	14B
C1241	9C
C1242	9C
C1243	9D
C1244	10C
C1245	10D
C1246	11C
C1247	11C
C1248	11C
C1249	11D
C1250	11C
C1251	12B
C1252	10D
C1253	10D
C1254	11D
C1255	11D
C1256	11D
C1257	11E
C1258	11A
C1259	12B
C1401	11B
C1402	5A
C1403	6A
C1404	5A
C1405	7A
C1420	4D
C1421	6C
C1422	6C
C1423	7D
C1424	7C
C1425	6C
C1426	6C
C1427	6B
C1428	7C
C1429	7C
C1430	6D
C1431	6E
C1432	6E
C1433	6D
C1434	6C
C1435	6E
C1436	6E
C1437	6D
C1438	7E
C1439	7E
C1440	6D
C1441	5D
C1442	5D
C1443	5D
C1444	4D
C1451	3A
C1452	3C
C1453	3C
C1454	3C
C1455	3C
C1456	3C
C1457	3C
C1458	3C
C1459	3C
C1460	3C
C1461	3C
C1462	3C
C1463	3C
C1464	3C
C1465	3C
C1466	4E
C1467	4E
C1468	4E
C1469	4C
C1470	4C
C1471	4C
C1472	4C
C1473	4C
C1474	4E
C1475	7E
C1476	7D
C1477	7D
C1478	7D
L1201	11A
L1202	11B
M102	9E
P136	14E
P803-7	6D
P803-10	1A
P803-11	1A
Q501	8E
Q502	2B
Q1401	5A
Q1402	5A
Q1403	6D
Q1412	4D
Q1413	6C
Q1414	6D
Q1415	6C
Q1416	6C
Q1417	6C
Q1418	7C
Q1419	7D
Q1420	6E
Q1421	6D
Q1422	6E
Q1423	6E
Q1424	6E
Q1425	7C
Q1426	6D
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R394	2B
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R521	9E
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R1214	9C
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R1217	11B
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R1219	12B
R1220	13C
R1221	13C
R1222	13D
R1223	13D
R1224	13C
R1225	14C
R1226	14C
R1227	13D
R1228	14D
R1229	14D
R1230	14E
R1231	14C
R1232	14C
R1233	13C
R1234	13B
R1235	13B
R1236	13B
R1237	13B
R1238	14B
R1239	14B
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R1243	13D
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R1249	12C
R1250	12C
R1251	11C
R1252	11C
R1253	11D
R1254	9C
R1255	12C
R1256	11E
R1257	12C
R1258	13C
R1259	12D
R1260	12D
R1261	12D
R1262	12D
R1263	12D
R1264	11D
R1265	11D
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R1267	11D
R1268	11D
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R1416	6A
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R1419	6A
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R1421	6B
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R1425	6B
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R1430	7D
R1431	7D
R1432	7D
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R1434	7D
R1435	7D
R1436	7D
R1437	7D
R1438	7D
R1439	7D
R1440	7D
R1441	7D
R1442	7D
R1443	7D
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R1445	7D
R1446	7D
R1447	7D
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R1449	7D
R1450	7D
R1451	7D
R1452	7D
R1453	7D
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R1456	6D
R1457	6D
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R1461	5D
R1462	6D
R1463	7D
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R1465	5E
R1466	4E
R1467	4E
R1468	4E
R1469	4C
R1470	4C
R1471	4C
R1472	4C
R1473	4C
R1474	4E
R1475	7E
R1476	7D
R1477	7D
R1478	7D
R1479	6C
R1480	5D
R1481	7D
R1482	6D
R1483	7D
R1484	6D
R1485	6C
R1487	6E
R1488	6D
R1489	6D
R1490	7C
R1491	7C
R1492	7C
R1493	7D
R1494	6C
R1495	6B
R1496	6B
R1497	6B
R1498	6B
R1499	6C
R1501	7B
R1502	7C
R1503	7B
R1504	7E
R1505	7E
R1506	7D
R1507	6D
R1508	5D
R1509	5E
R1510	6D
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R1518	6E
R1519	6D
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R1521	7D
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R1523	7D
R1524	7E
R1525	7E
R1526	7E
R1527	7E
R1528	7D
R1529	6C
R1530	6D
R1531	5D
R1532	5D
R1533	5D
R1534	5D
R1535	5D
R1536	4D
R1537	4D
R1538	4D
R1539	4D
R1540	6D
R1541	7D
S501	3B
S507B	2C
S507C	2C
S507E	2D
S507F	2C
S507E	2E
S508A	5A
S508B	3C
S508C	5E
S508D	5B
S508D	5E
S508E	7E
S508F	7A
S509B	2A
S509B	2C
S510A	4A
S510B	4A
S511A	3E
S512	8D
S513	8D
S514	2B
S812	1A
S1201	12D
S1202A	12D
S1202B	12D
S1202C	12D
T1201	9A
T1202	10A
T1203	9B
T1204	10B
T1205	13C
T1206	14C
T1207	14D
T1208	13B
T1209	14B
T1210	9C
T1211	9C
T1212	10C
T1213	11C
T1214	10D
T1215	11D
T1401	5A
T1402	7A
T1403	7B
T1406	4D
T1407	5C
T1408	5D
T1409	5B
T1410	5E
TB101	1B
TB101	1C
TB101	1D
TB101	1E
TB501	1B
TB501	5A
TB501	8A
TB501	8B
TB501	8C
TB501	9E
TB801	1A
TB1201	8A
TB1401	5B
TB1401	7B
TB1401	8C
TB1401	7D
TB1401	9D
TB1401	4E
TB1401	7E
TB1403	5D
V1201	9A
V1202	9B
V1203	12B
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V1205	13D
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V1207B	12C
V1208	11C
V1209	11D

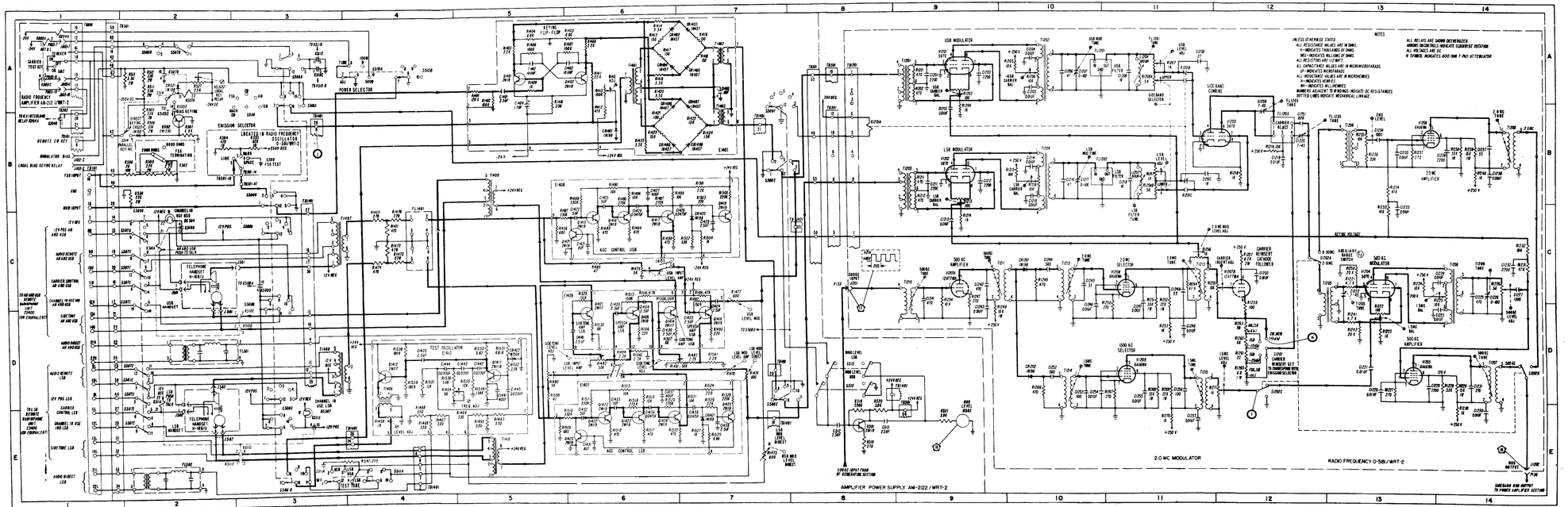


Figure 5-50B. Radio Transmitting Set AN/WRT-2, Modulating Circuits, Functional Schematic Diagram, Sets Serials 264 to 444

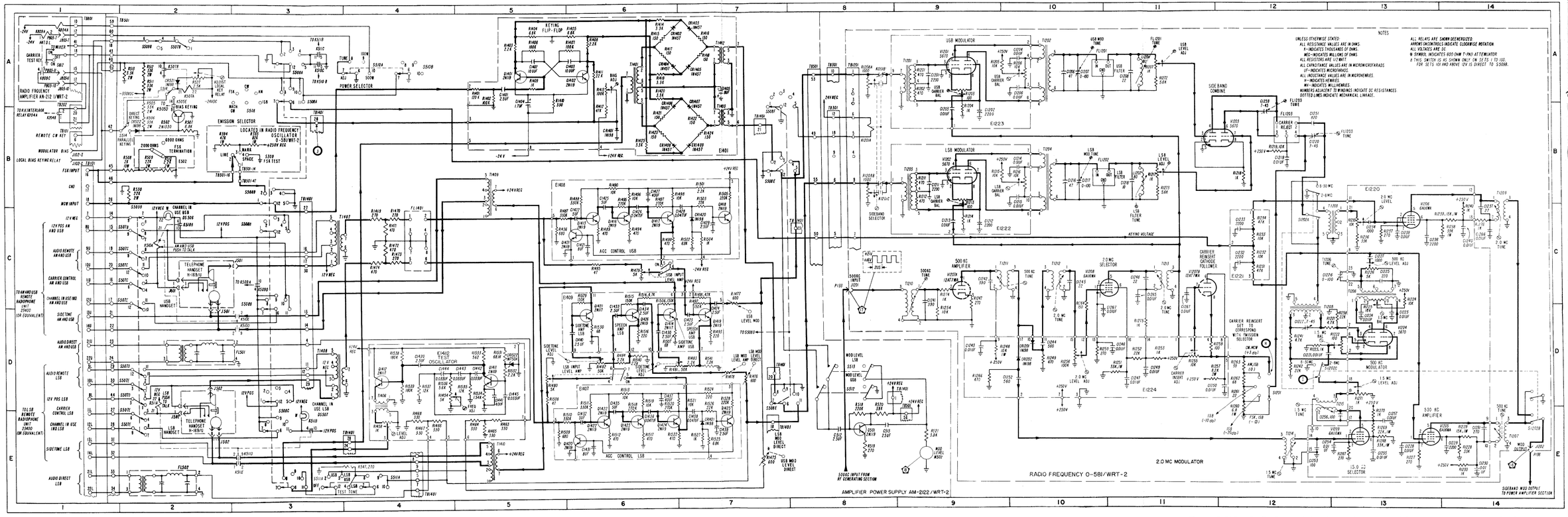


Figure 5-50C. Radio Transmitting Set AN/WRT-2, Modulating Circuits, Functional Schematic Diagram, Sets 445 and up

Ref. Desig.	Location	Ref. Desig.	Location	Ref. Desig.	Location	Ref. Desig.	Location	Ref. Desig.	Location	Ref. Desig.	Location
C512	8E	C1437	6D	K1201A	8B	R1233	12C	R1473	4C	S508E	7D
C513	8E	C1438	7E	K1201B	8A	R1234	12C	R1474	4C	S508E	7E
C1201	9A	C1439	7E	K1201C	8B	R1235	13C	R1475	7E	S508F	7B
C1202	9A	C1440	6D	L1201	11A	R1236	13C	R1476	7D	S509B	2A
C1203	9B	C1441	5D	L1202	11B	R1237	13C	R1477	7C	S509B	2C
C1204	10A	C1442	5D	M502	9E	R1238	14C	R1478	7D	S510A	4A
C1206	10A	C1443	5D	P133	8C	R1239	14C	R1479	6C	S510B	4A
C1207	10A	C1444	4D	P136	14E	R1240	14C	R1480	5D	S511A	3E
C1208	11A	C1445	5D	P803-7	1A	R1241	12D	R1481	7D	S512	8D
C1211	9B	CR521	2A	P803-10	1A	R1242	12D	R1482	6D	S513	8D
C1212	9B	CR522	2B	P803-11	1A	R1243	9D	R1483	7D	S514	2A
C1213	9C	CR1201	10D	Q501	8E	R1247	9C	R1484	6D	S514	2B
C1214	10B	CR1202	10D	Q502	2B	R1248	9D	R1485	6C	S812	1A
C1215	10B	CR1401	6A	Q1401	5A	R1249	10D	R1487	6C	S1201	12D
C1216	10B	CR1402	6A	Q1402	6A	R1250	10D	R1488	6B	S1202A	12C
C1217	10B	CR1403	7A	Q1411	5D	R1251	11D	R1489	6C	S1202B	14E
C1218	11B	CR1404	6A	Q1412	4D	R1252	11D	R1490	6D	S1202C	12D
C1219	12B	CR1405	7A	Q1413	6C	R1253	11D	R1491	7C	T1201	9A
C1220	12B	CR1406	6A	Q1414	6D	R1254	9C	R1492	7C	T1202	10A
C1221	12D	CR1407	7A	Q1416	6C	R1255	11D	R1493	7D	T1203	9B
C1222	12C	CR1408	6B	Q1417	6C	R1256	10D	R1494	6C	T1204	10B
C1223	13D	CR1409	7B	Q1418	7C	R1257	11D	R1495	6B	T1205	12D
C1224	13C	CR1420	7C	Q1419	7D	R1258	13D	R1496	6B	T1206	13C
C1225	13C	CR1421	7E	Q1420	6E	R1259	11D	R1497	6B	T1207	14D
C1226	13C	CR1422	5D	Q1421	6D	R1260	12E	R1498	6B	T1208	13C
C1227	13C	CR1522	5D	Q1422	6E	R1261	12D	R1499	6C	T1209	14C
C1228	13E	DS506	2C	Q1423	6E	R1262	12D	R1501	7B	T1210	9C
C1229	14E	DS507	3E	Q1424	6E	R1263	12D	R1502	7C	T1211	9C
C1230	14E	E502	2B	Q1425	7E	R1264	10D	R1503	7B	T1212	10C
C1231	14E	E1220	13B	Q1426	6D	R1266	9D	R1504	7C	T1213	11C
C1232	12C	E1221	12C	R393	3B	R1267	13E	R1505	7B	T1214	12E
C1233	12C	E1222	9C	R394	2B	R1268	13E	R1506	6C	T1215	12E
C1234	13C	E1223	9B	R505	2A	R1269	13E	R1507	6D	T1401	6A
C1236	13C	E1224	11D	R506	2B	R1270	13E	R1508	5D	T1402	7A
C1237	14C	E1401	7B	R507	2B	R1271	13D	R1509	5E	T1403	7B
C1239	13C	E1407	6D	R508	2B	R1272	11A	R1510	6E	T1406	4D
C1240	14C	E1408	5B	R509	2B	R1273	11B	R1511	6D	T1407	3C
C1241	9C	E1409	6C	R510	2B	R1274	9D	R1512	6E	T1408	3D
C1242	9C	E1412	4D	R511	2A	R1275	11D	R1513	6D	T1409	5B
C1244	10D	FL501	3D	R512	2A	R1276	14C	R1514	6C	T1410	5E
C1245	10C	FL502	2E	R513	2A	R1401	5A	R1515	6C	TB101	1B
C1246	11D	FL1201	10A	R518	8E	R1402	5A	R1516	6D	TB101	1C
C1247	11D	FL1202	10B	R519	8E	R1403	5A	R1517	6E	TB101	1D
C1248	11C	FL1203	12B	R520	8E	R1404	5A	R1518	6E	TB101	1E
C1249	11C	FL1401	4C	R521	9E	R1405	6A	R1519	6D	TB202	1B
C1250	12D	J102C	1B	R527	2A	R1406	5A	R1520	6E	TB301	8A
C1251	12B	J501A	2D	R530	2B	R1407	6A	R1521	7D	TB301	3B
C1252	10D	J501B	2D	R547	4E	R1408	6A	R1522	7E	TB301	8B
C1253	12E	J501C	3C	R1201	9A	R1409	5A	R1524	7D	TB501	1A
C1254	13E	J501D	2C	R1202	9A	R1410	5A	R1525	7E	TB501	1B
C1255	13E	J501E	2C	R1203	9A	R1411	6A	R1526	7E	TB501	1C
C1256	13E	J502A	2E	R1204	9B	R1412	6B	R1527	7E	TB501	1D
C1257	13E	J502B	2E	R1205	9A	R1413	6A	R1528	7D	TB501	1E
C1265	11C	J502D	2E	R1206	10A	R1414	6A	R1529	6C	TB501	3B
C1266	14C	J502E	2E	R1207	11A	R1415	6A	R1530	6D	TB501	8A
C1267	10C	J803-7	1A	R1208A	8A	R1416	7A	R1531	5D	TB501	9E
C1401	5A	J803-10	1A	R1208B	8B	R1417	6A	R1532	5D	TB801	1A
C1402	5A	J803-11	1A	R1211	9B	R1418	7A	R1533	5D	TB1201	8A
C1403	6A	J1201	8C	R1212	9B	R1419	6A	R1534	5D	TB1401	3B
C1404	5A	J1202	14E	R1213	9B	R1420	6A	R1535	5D	TB1401	7B
C1405	7A	K204B	1B	R1214	9C	R1421	6B	R1536	4D	TB1401	3C
C1420	4D	K505E	2A	R1215	9B	R1422	7A	R1537	4D	TB1401	8C
C1421	6C	K507A	2A	R1216	10B	R1423	6B	R1538	4D	TB1401	8D
C1422	6C	K507B	2A	R1217	11B	R1424	7A	R1539	4D	TB1401	4E
C1423	7D	K509D	3C	R1218	12B	R1425	6B	R1540	6D	TB1401	7E
C1424	7C	K510A	2C	R1219	12B	R1436	5C	R1541	7D	TB1403	3D
C1425	6C	K510B	2C	R1221	13D	R1454	4D	S309	3B	V1201	9A
C1426	6C	K510C	3A	R1222	13D	R1454	4E	S507B	2C	V1202	9B
C1427	6B	K510D	3D	R1223	12D	R1463	5E	S507C	2C	V1203	12B
C1428	7C	K510E	3D	R1224	13C	R1464	5E	S507D	2D	V1204	13E
C1429	7C	K511A	2D	R1225	13D	R1465	5E	S507E	2D	V1205	13E
C1430	6D	K511B	3E	R1226	13C	R1466	4E	S507E	2C	V1206	13C
C1431	6E	K511C	3A	R1227	13E	R1467	4E	S507E	2E	V1207A	9C
C1432	6E	K511D	3E	R1228	14E	R1468	4E	S508A	3A	V1207B	11C
C1433	6D	K511E	3E	R1229	14E	R1469	4C	S508B	3C	V1208	10C
C1434	6C	K804A	1A	R1230	14E	R1470	4C	S508C	3E	V1209	13D
C1435	6E	K809A	1A	R1231	12C	R1471	4C	S508D	3B		
C1436	6E	K809C	1A	R1232	12C	R1472	4C	S508D	3E		

Ref. Desig.	Location	Ref. Desig.	Location	Ref. Desig.	Location	Ref. Desig.	Location	Ref. Desig.	Location	Ref. Desig.	Location
B3301	5E	C894	7D	CR812	8B	L804	7A	R824	7B	R951	2C
B3302	6E	C895	9B	CR813	9B	L805	8A	R825	8A	R952	2C
B3303	8E	C896	9B	CR815	9A	L808	6A	R826	7C	R955	2D
C201	2A	C897	9C	CR816	10A	L809	3B	R827	8B	R975	1C
C202	2A	C899	9A	CR817	10A	L810	6B	R830	8B	R976	1C
C801	3B	C901	7A	CR818	10A	L811	9B	R831	8B	R986	1D
C802	3B	C902	9B	CR3301	8E	L813	7A	R832	8B	R992	3B
C803	3B	C903	8A	DL801	8A	L814	8A	R833	4A	R993	3B
C804	3B	C904	9B	DS801	10B	L815	3B	R834	8C	R994	3B
C805	3B	C905	5B	DS802	3C	L817	3A	R835	9C	R997	2C
C808	8C	C906	7C	DS803	7D	L818	3A	R836	8C	R998	2C
C809	8C	C912	4B	E217	2A	L820	4A	R837	9C	R999	2D
C810	9C	C913	7B	E802	8A	L822	4A	R838	8C	R3301	7E
C812	4A	C914	7C	E804	6A	L823	4A	R839	10A	R3302	9E
C813	4A	C915	7C	E805	3B	L828	7C	R841	8B	RT801	9A
C814	8C	C916	7B	E806	3B	L829	7B	R842	8B	S202	2A
C815	8C	C917	7A	E807	4B	L830	7B	R843	8D	S510A	3E
C817	3C	C918	3B	E808	4B	L831	7A	R844	8C	S801	5C
C818	7C	C926	3D	E842	9D	L832	2C	R845	8C	S802	8B
C819	7B	C930	3D	E843	9B	L3301	10D	R846	9C	S803	6C
C820	7B	C931	3D	E3305	10C	L3302	10D	R847	9C	S804	10B
C822	7C	C932	3D	J101	4D	L3303	8E	R848	9C	S806A	6D
C823	7B	C934	4D	J103	10B	M801	5C	R849	9D	S806B	6D
C824	7B	C935	4D	J202	2A	M802	8C	R850	9B	S807A	8C
C825	7A	C937	8D	J801	2D	M803	6C	R853	9C	S807B	9C
C827	7A	C938	8D	J802	10A	M804	9C	R854	9C	S807D	7D
C828	7A	C939	5D	J803-1	9C	M805	8D	R855	10A	S808	5D
C830	4B	C940	7D	J803-3	9D	M806	8D	R856	10A	S809	5D
C832	3A	C941	7D	J803-4	8C	MP3301	7E	R857	10A	S810	7D
C834	4A	C942	5D	J803-5	9C	P101	4D	R858	9B	S815	8D
C835	4B	C943	5D	J803-6	9A	P103	10C	R859	6C	S3301A	10C
C836	7A	C944	5D	J803-7	3D	P181	2D	R860	6C	S3301B	10D
C837	8A	C945	4D	J803-8	3D	P183	1D	R861	6B	S3301C	10D
C840	4A	C947	6D	J803-9	4D	P802	10A	R862	6B	S3302	8E
C842	5B	C948	6D	J803-10	4D	P803-1	9C	R863	6B	S3303	5E
C844	5C	C949	5D	J951	1D	P803-3	9D	R864	7C	S3304	5E
C846	8C	C950	6D	J952	1D	P803-4	8C	R865	6C	S3305	5E
C847	6C	C952	2D	J953	1C	P803-5	9C	R866	5B	S3306	4E
C850	3B	C953	2D	J3301	8E	P803-6	9A	R867	6A	S3307	8E
C851	6B	C954	4A	J3302	10C	P803-7	3D	R868	6B	T201	1A
C853	8B	C975	7D	K101A	2A	P803-8	3D	R869	5B	T202	1A
C854	9C	C976	3D	K201D	1A	P803-9	4D	R870	5C	T203	1A
C855	8D	C977	3D	K201E	1A	P803-10	4D	R871	5C	T204	2B
C856	6A	C978	3C	K202D	1A	P952	1D	R874	8B	T803	8A
C857	8D	C979	6D	K202E	1A	P953	1C	R875	9B	T804	8A
C858	9D	C982	2C	K206A	2A	P3301	8E	R878	4B	T951	1C
C859	9D	C983	2C	K508B	3E	P3302	10C	R879	9C	T952	2D
C862	6D	C984	3C	K508C	3E	Q801	9A	R885	6A	TB105-11	5D
C863	5D	C985	3B	K509C	3E	Q802	9A	R887	5D	TB107	4D
C864	9B	C986	2C	K801A	7C	R218	2A	R888	8C	TB201	1A
C868	7A	C987	3A	K801B	10B	R528	3D	R889	8C	TB501	3D
C870	6B	C988	3C	K804A	3C	R801	3B	R890	8D	TB801	3D
C871	7B	C999	9B	K804B	6C	R802	6B	R891	8C	TB801	10B
C872	4A	C3301	10D	K804C	6C	R803	4B	R892	8C	TB803	3C
C873	4B	C3302	10D	K809A	3D	R804	4A	R893	8D	TB803	5B
C874	7B	C3303	10D	K809B	4D	R805	4A	R914	6B	TB976	2C
C875	7C	C3307A	10D	K809D	9A	R806	4A	R916	7A	TB3301	4E
C876	3C	C3307B	10D	K810A	10A	R807	4B	R917	8A	TB3302	5E
C877	6B	C3309	9E	K810B	10B	R808	4B	R918	9A	TB3303	7E
C879	4B	CR801	7C	K952A	3C	R813	8A	R919	7A	V201	1A
C881	4A	CR802	7B	K952B	1C	R814	5C	R920	9A	V203	2A
C882	4A	CR803	7B	K952C	1D	R815	5C	R921	9A	V204	2A
C883	4B	CR804	7A	K3301A	4E	R816	5C	R922	5B	V205	2A
C884	5B	CR805	9B	K3301B	4E	R817	8A	R924	9B	V206	2A
C886	4A	CR806	8B	K3302A	7E	R818	7C	R925	9A	V801	3B
C887	3C	CR807	9B	K3303A	5E	R819	7B	R926	9B	V802	4B
C888	4A	CR808	8B	K3303B	5E	R820	7B	R927	9B	V804	7C
C891	4A	CR809	9C	K3303C	5E	R821	8A	R928	9A	V805	7B
C892	8C	CR810	9A	L201	2A	R822	7C	R949	2D	V806	7B
C893	8C	CR811	9C	L803	7A	R823	7B	R950	2D	V807	7A
										V951	2C

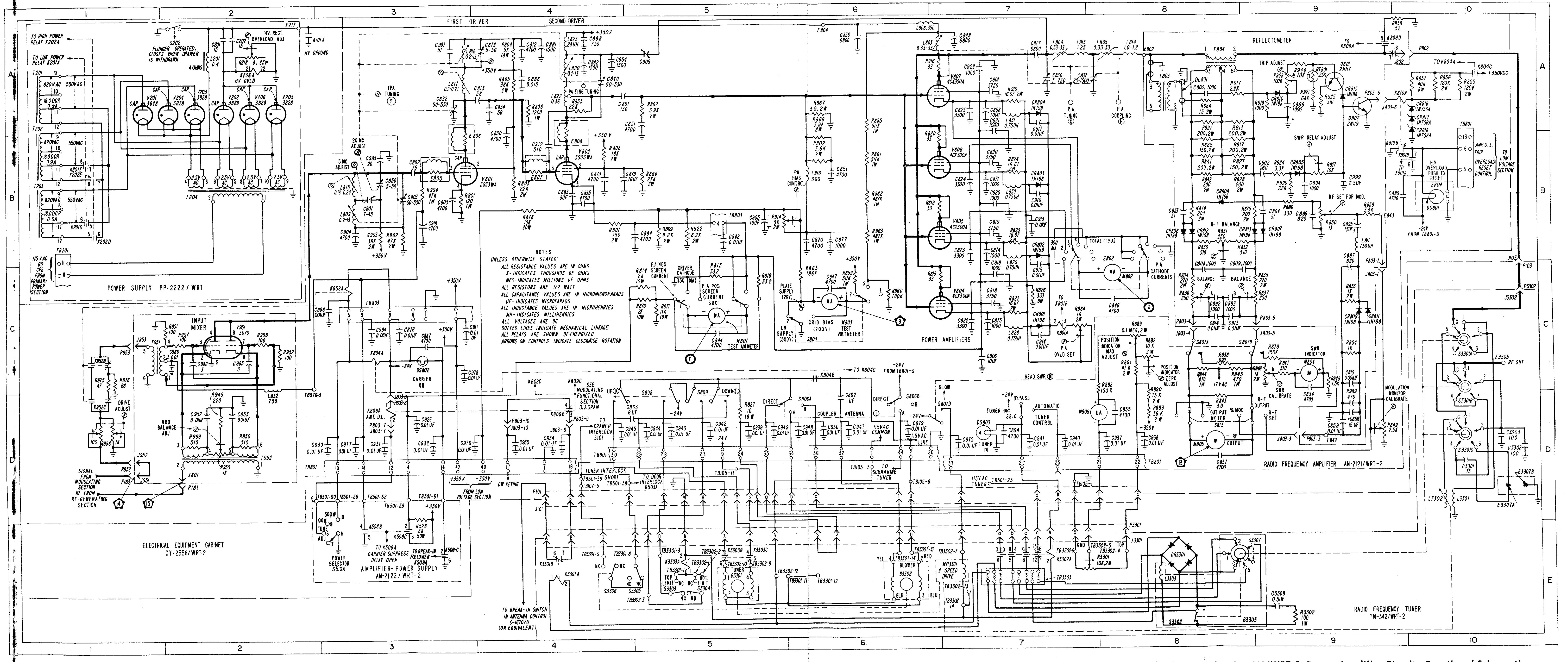


Figure 5-51. Radio Transmitting Set AN/WRT-2, Power Amplifier Circuits, Functional Schematic Diagram, Sets Serials 1 to 263

Ref. Desig.	Location	Ref. Desig.	Location	Ref. Desig.	Location	Ref. Desig.	Location	Ref. Desig.	Location	Ref. Desig.	Location
B3301	5E	C901	7A	CR821	8D	L809	3B	R834	8C	R986	1D
B3302	6E	C903	8A	CR822	8D	L810	6B	R835	9C	R989	9C
B3303	8E	C904	9B	CR823	9A	L811	9B	R836	8C	R992	3B
C201	2A	C905	5B	CR824	10B	L813	7A	R837	9C	R993	3B
C202	2A	C906	7C	CR825	10B	L814	8A	R838	8C	R994	3B
C801	3B	C909	5A	CR3301	8E	L815	3B	R839	10A	R997	2C
C802	3B	C912	4B	DL801	8A	L817	3A	R841	8B	R998	2C
C803	3B	C913	7C	DS801	10B	L818	3A	R842	8B	R999	2D
C804	3B	C914	7C	DS802	3C	L820	4A	R843	8D	R3301	8E
C805	3B	C915	7C	DS803	7D	L822	4A	R844	8C	R3302	9E
C808	8B	C916	7B	DS805	10B	L823	4A	R845	8C	S101	4D
C809	8B	C917	7A	E217	2A	L828	7C	R846	9C	S202	2A
C810	9C	C918	3B	E802	8A	L829	7B	R847	9C	S510A	3E
C812	4A	C919	7B	E804	6A	L830	7B	R848	9C	S801	5C
C813	4A	C920	7B	E805	3B	L831	7A	R849	9D	S802	8B
C814	8C	C921	7A	E806	4A	L832	2D	R850	9B	S803	6C
C815	8C	C922	7A	E807	4B	L3301	10D	R853	9C	S804	10B
C817	3C	C926	3D	E808	4B	L3302	10D	R854	9C	S806A	6D
C818	7C	C930	2D	E842	9D	L3303	8E	R855	10A	S806B	6C
C819	7B	C931	3D	E3305	10C	M801	5C	R856	10A	S807A	8C
C820	7B	C932	3D	E3307A	10D	M802	8C	R857	10A	S807B	8C
C822	7C	C934	4D	E3307B	10D	M803	6C	R858	9B	S807D	7D
C823	7B	C935	4D	J101	4D	M804	9C	R859	6C	S808	5D
C824	7B	C937	8D	J103	10C	M805	8D	R860	6C	S809	5C
C825	7A	C938	8D	J801	2D	M806	7D	R861	6B	S810	7D
C827	7A	C939	5D	J802	10A	MP3503	6E	R862	6B	S815	8D
C828	7A	C940	7D	P101	4D	R101	4D	R863	6B	S3301A	10C
C830	4A	C941	7C	J803-4	8C	P103	10C	R864	7C	S3301B	10D
C832	3A	C942	5D	J803-5	9C	P181	2D	R865	6C	S3301C	10D
C834	4A	C943	5D	J803-6	10B	P183	1D	R866	5B	S3302	9E
C835	4B	C944	5D	J803-7	9D	P802	10A	R867	6A	S3303	5E
C836	7A	C945	4D	J803-8	3C	P803-1	9B	R868	6A	S3304	5E
C837	7A	C947	6D	J803-9	4D	P803-3	9D	R869	5B	S3305	4E
C840	4A	C948	6D	J803-10	4D	P803-4	8C	R870	5C	S3306	4E
C842	5B	C949	5D	J951	1D	P803-6	9B	R871	5C	S3307	8E
C844	5C	C950	6D	J952	1D	P803-7	5D	R874	8B	T201	1A
C846	8C	C952	2D	J953	1C	P803-8	3D	R875	8B	T202	1A
C847	6C	C953	2D	J3301	8E	P803-9	4D	R878	4B	T203	1B
C850	3B	C954	4A	J3302	10C	P803-10	4D	R879	9C	T204	2B
C851	6B	C975	7D	K101A	3A	P952	1D	R880	7C	T903	8A
C853	8B	C976	3D	K201D	1B	P953	1C	R881	7B	T804	8A
C854	9C	C977	3D	K201E	1B	P3301	8E	R882	7B	T952	2D
C855	8D	C978	3C	K201A	1A	P3302	10C	R883	7A	T951	1C
C856	6A	C979	6D	K202A	1A	Q802	9B	R884	8A	TB105	5D
C857	8D	C980	10B	K202D	1B	Q803	10B	R885	6A	TB105-6	4D
C858	9D	C982	2C	K202E	1B	R218	2A	R886	9B	TB107-5	4D
C859	9D	C983	2C	K206A	2A	R528	3E	R887	5D	TB201	1B
C862	6C	C984	5C	K508B	3D	R801	3B	R888	8C	TB501	3D
C863	4D	C985	3B	K508C	3D	R802	6B	R889	8C	TB501	4D
C864	9B	C986	2C	K509C	3E	R803	4B	R890	8C	TB501	7D
C868	7A	C987	3A	K801A	7C	R804	4A	R891	8C	TB801	4D
C870	6B	C988	5C	K801B	8C	R805	4A	R893	8D	TB801	2D
C871	7B	C990	8D	K801C	10B	R806	4A	R895	7C	TB801	8D
C872	4A	C3301	10D	K804A	3A	R807	4B	R896	8C	TB801	10A
C873	4B	C3302	10D	K804B	6C	R808	4B	R897	9B	TB803	3C
C874	7B	C3303	10D	K804C	10A	R813	8A	R898	10B	TB803	5B
C875	7C	C3309	9E	K809A	3D	R814	5C	R899	10B	TB976	2C
C876	3C	CR801	7C	K809B	4D	R815	5C	R914	5B	TB3301	4E
C877	6B	CR802	7C	K809C	4C	R816	5C	R916	6A	TB3301	5E
C879	4B	CR803	7B	K809D	9A	R817	8B	R917	9A	TB3301	6E
C881	4A	CR804	7A	K810A	7C	R818	6C	R919	7A	TB3302	6E
C882	4A	CR805	9B	K810B	8C	R819	6B	R920	9B	TB3302	7E
C883	4B	CR806	8B	K810C	8C	R820	6A	R922	5B	TB3303	7E
C884	5B	CR807	9B	K952A	3C	R821	8A	R924	9B	V201	1A
C887	3C	CR808	8B	K952B	1C	R822	7C	R927	9A	V202	2A
C888	4A	CR809	9C	K952C	1D	R823	7B	R928	9A	V203	2A
C889	10B	CR810	9A	K3301B	4E	R824	7B	R949	2D	V204	2A
C891	4B	CR811	9C	K3302A	7E	R825	8B	R950	2D	V205	2A
C892	8C	CR812	8B	K3303A	5E	R826	7C	R951	1C	V206	2A
C893	8C	CR813	8B	K3303C	5E	R827	8B	R952	2C	V801	4B
C894	7D	CR815	8D	L201	2A	R828	8B	R955	2D	V802	4B
C895	9B	CR816	10A	L803	6A	R830	8B	R956	7C	V804	7C
C896	9B	CR817	10A	L804	7A	R831	8B	R957	8D	V805	7B
C897	9B	CR818	10A	L805	8A	R832	8B	R975	1C	V806	7B
C899	9A	CR820	8D	L808	6A	R833	4A	R976	1C	V807	7A
										V951	2C

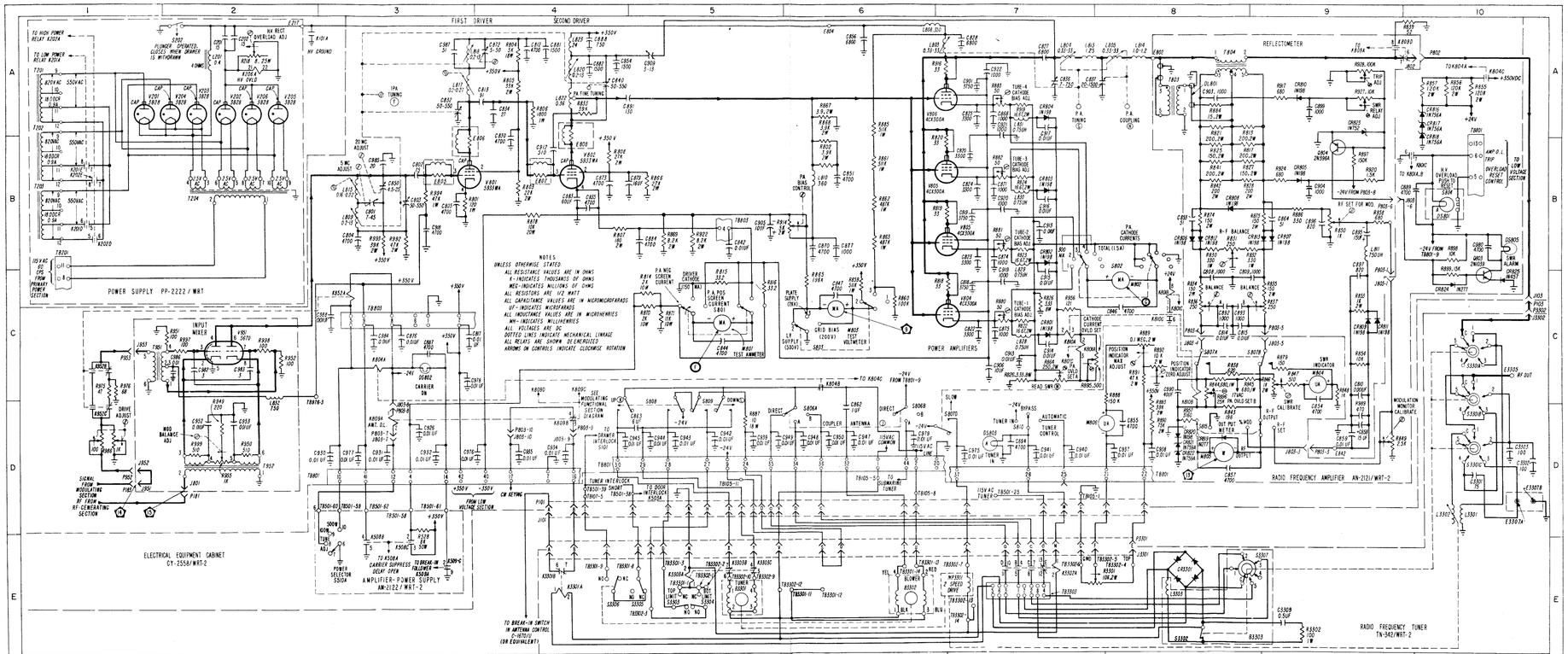


Figure 5-51A. Radio Transmitting Set AN/WRT-2, Power Amplifier Circuits, Functional Schematic Diagram, Sets Serials 264 and up

SECTION 6

REPAIR

6-1. FAILURE REPORT.

"Report each failure of the equipment, whether caused by a defective part, wear, improper operation, or an external cause. Use ELECTRONIC FAILURE REPORT form DD787. Each pad of the forms includes full instructions for filling out the forms and forwarding them to the Bureau of Ships. However, the importance of providing complete information cannot be emphasized too much. Be sure that you include the model designation and serial number of the equipment (from the equipment identification plate), the type number and serial number of the major unit (from the major unit identification plate), and the type number and reference designation of the particular defective part (from the technical manual). Describe the cause of the failure completely, continuing on the back of the form if necessary. Do not substitute brevity for clarity. And remember—there are two sides to the failure report—

"YOUR SIDE"

"Every FAILURE REPORT is a boost for you:

1. It shows that you are doing your job.
2. It helps make your job easier.
3. It insures available replacements.
4. It gives you a chance to pass your knowledge to every man on the team.

"BUREAU SIDE"

"The Bureau of Ships uses the information to:

1. Evaluate present equipment.
2. Improve future equipment.
3. Order replacements for stock.
4. Prepare field changes.
5. Publish maintenance data.

Always keep a supply of failure report forms on board. You can get them from the nearest District Publications and Printing Office."

6-2. TUNING AND ADJUSTMENT.

a. GENERAL.—The following paragraphs give a step by step procedure for making the adjustments which will produce optimum performance of Radio Transmitting Set AN/WRT-2. Included are the necessary test equipment and special tools required, the necessary preliminary control settings, the test set-up and the instructions for performing the adjustments. The location of electrical adjustments are shown in appropriate figures, which have been located as close to the procedure as possible. An efficient method for checking Radio Transmitting Set AN/WRT-2 and for performing routine preventive maintenance is given in the Maintenance Standards Book for Radio Transmitting Set AN/WRT-2. This book contains a series of maintenance standard test procedures which provide indications representing top performance of the equipment, and a series of maintenance check-off procedures, which, when performed as directed, will detect impending failures before they occur. Reference to the Maintenance Standards Book for Radio Transmitting Set AN/WRT-2 will be helpful in the maintenance of this equipment.

WARNING

BEFORE MEASURING VOLTAGES GREATER THAN 300 VOLTS WITH EXTERNAL TEST EQUIPMENT READ PARAGRAPH 5-1*d* IN SECTION 5 OF THIS HANDBOOK.

b. POWER SUPPLY PP-2222/WRT.—The only adjustment in Power Supply PP-2222/WRT is HV RECT OVERLOAD ADJ potentiometer R218. The step by step outline of the procedure for adjusting R218 is given in paragraph 6-2*b*(2). For location of test points and adjustments refer to figure 6-1.

(1) TEST EQUIPMENT AND SPECIAL TOOLS.—The test equipment required for making the adjustments in Power Supply PP-2222/WRT consists of:

Battery BA-206/U (or equivalent)
Potentiometer, 25 watts, 10 ohms
2 Multimeter AN/PSM-4 Series (or equivalent)

(2) HIGH VOLTAGE RECTIFIER OVERLOAD ADJUSTMENT.

Step 1. Make sure that EMERGENCY STOP switch S201 (located on the front panel of Power Supply PP-2222/WRT) is in the OFF position. Release the six fasteners on the front panel and withdraw the chassis until it clicks into its locked position. Remove the four quick-disconnect screw-type fasteners holding the front top cover plate. Remove the six quick-disconnect screw-type fasteners holding the rear top cover plate and then remove the plate. Lift up the hinged front cover plate, exposing the rectifier tubes to view. Withdraw shorting plunger S202 and block it in the open position with a piece of wood or other insulating material.

Step 2. Connect the positive terminal of Battery BA-206/U (or equivalent) to terminal 19 of TB202. Connect the negative terminal of the battery to the arm of the 10-ohm, 25-watt potentiometer, and then connect one end of the potentiometer to the negative terminal of Multimeter AN/PSM-4 Series (or equivalent). Connect the +10A terminal of the multimeter to the top of insulated standoff E211.

Step 3. Set up a second Multimeter AN/PSM-4 Series (or equivalent) on its 1000-ohm range, and connect the leads between terminals 10 and 19 of TB202. Note the resistance indication of the meter.

Step 4. Rotate HV RECT OVERLOAD ADJ control R218 fully clockwise. Position the test potentiometer until Multimeter AN/PSM-4 Series (or equivalent) indicates 1.0 amperes.

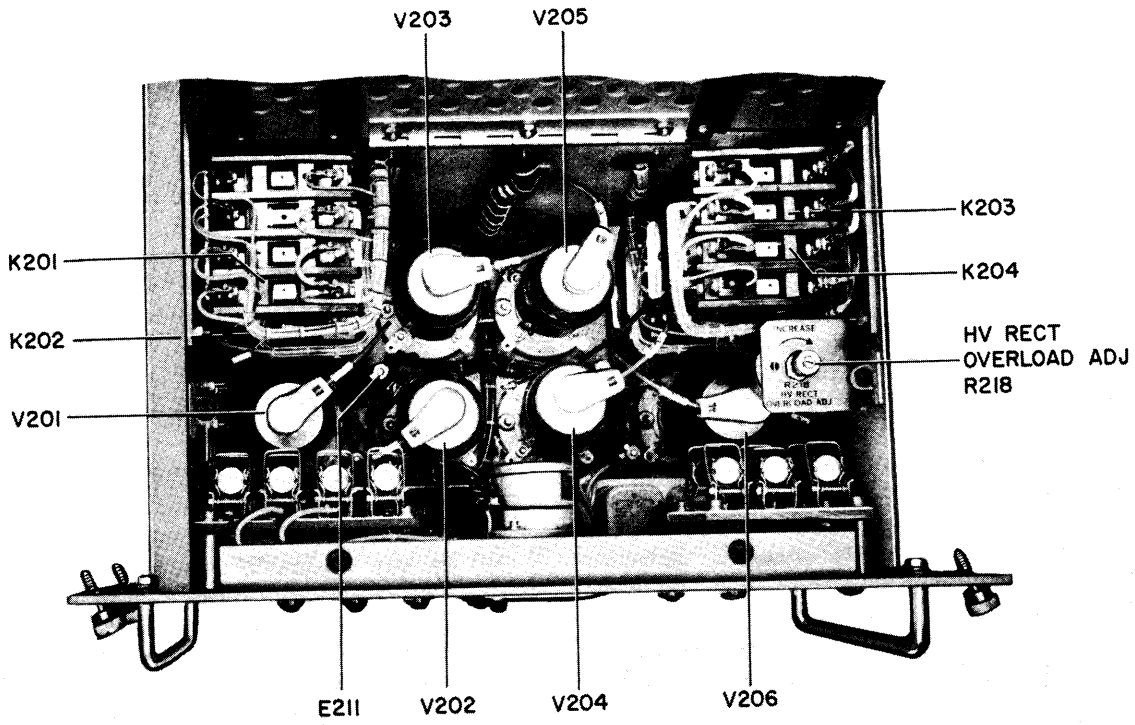


Figure 6-1. Power Supply PP-2222/WRT, Electrical Adjustments and Location of Tubes

Step 5. Slowly rotate the HV RECT OVERLOAD ADJ. control clockwise, and at the same time position the test potentiometer so that the current stays at 1.0 ampere, until relay K206 is energized. Multimeter AN/PSM-4 Series (or equivalent) connected between terminals 10 and 19 of TB202 indicates zero ohms when K206 is energized.

Step 6. Rotate the test potentiometer for maximum resistance and note that K206 is deenergized. Gradually decrease the resistance until Multimeter AN/PSM-4 Series (or equivalent) indicates 1.0 amperes, at which point overload relay K206 should just become energized. If necessary, readjust R218 slightly.

Step 7. Repeat step 5 until K206 is energized with a current of 1.0 ampere.

Step 8. Remove all test equipment and replace all cover plates. Slide Power Supply PP-2222/WRT back into the cabinet and secure it.

c. AMPLIFIER-POWER SUPPLY AM-2122/WRT-2. —The electrical adjustments necessary in the Amplifier-Power Supply AM-2122/WRT-2 are: adjustment of the +350-volt and −350-volt d-c power supply overload relays, adjustment of the bias keying relay, adjustment of the 425-cps test-tone oscillator, and adjustment of the MACH CW keying bias. For location of adjustments throughout the following procedures refer to figures 6-2 and 6-3.

(1) TEST EQUIPMENT AND SPECIAL TOOLS. —The test equipment required for making the adjustments in the Amplifier-Power Supply AM-2122/WRT-2 consists of:

Multimeter AN/USM-34 Series (or equivalent)
Keying Simulator, Boehme Vari-speed Keyer, Type 66-M (or equivalent)
Rheostat, 200 watts, 3500 ohms
Potentiometer, ½ watt, 1000 ohms
Frequency Meter AN/USM-29 Series (or equivalent)
Oscilloscope AN/USM-24 Series (or equivalent)

(2) CONTROL SETTINGS.—Before proceeding to make the adjustments in Amplifier-Power Supply AM-2122/WRT-2, set the controls on the front panels of Transmitter Group OA-2175/WRT-2 in the following manner:

CONTROL	LOCATION	SETTING
EMERGENCY STOP (S201) PLATE POWER OFF (S504) ON (S503)	Front panel, Power Supply PP-2222/WRT Front panel, Amplifier-Power Supply AM-2122/WRT-2	ON Press OFF

CONTROL	LOCATION	SETTING
FILAMENT POWER (S502)	Front panel, Amplifier-Power Supply AM-2122/WRT-2	ON
EMISSION SELECTOR (S508)	Front panel, Amplifier-Power Supply AM-2122/WRT-2	FSK
TEST TONE (S511)	Front panel, Amplifier-Power Supply AM-2122/WRT-2	OFF
POWER SELECTOR (S510)	Front panel, Amplifier-Power Supply AM-2122/WRT-2	ADJ
FSK TEST (S309)	Front panel, Radio Frequency Oscillator O-581/WRT-2	SPACE

(3) +350-VOLT AND −350-VOLT OVERLOAD RELAY ADJUSTMENTS.

Step 1. Withdraw the drawer containing Amplifier-Power Supply AM-2122/WRT-2 to its extreme limit of travel. Engage the interlock switch. Locate terminal board TB501A.

Step 2. Remove the safety cover from TB501A and then remove all external leads from terminals 8 and 9. Using Multimeter AN/USM-34 Series (or equivalent), set the resistance of the 3500-ohm, 200-watt rheostat at exactly 3200 ohms. Connect the 3200-ohms resistance between terminals 9 and 37 of TB501A.

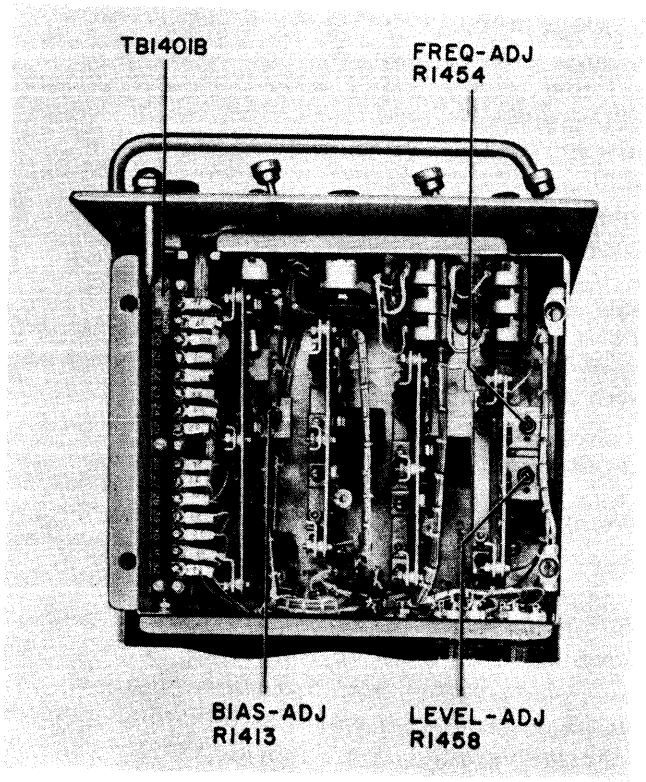


Figure 6-2. Amplifier-P wer Supply AM-2122/WRT-2 Right Side View, Electrical Adjustments

Step 3. Connect Multimeter AN/USM-34 Series (or equivalent) to the terminal of C507 at which the black lead is attached. Set the meter to measure ohms and adjust −350 V OL. ADJ potentiometer R504 (figure 6-3) until a reading of approximately 130 ohms is obtained. Remove the meter.

Step 4. Press PLATE POWER ON switch S504 and adjust −350 V OL. ADJ potentiometer R504 in the counterclockwise direction until L.V. RECT OVLD light DS505 glows. The light is located on the front panel of Amplifier-Power Supply AM-2122/WRT-2. Make a slight clockwise readjustment of R504. Press the PLATE POWER ON and PLATE POWER OFF switches several times, readjusting R504 if necessary until the overload relay will just remain closed as the plate power is turned on and off.

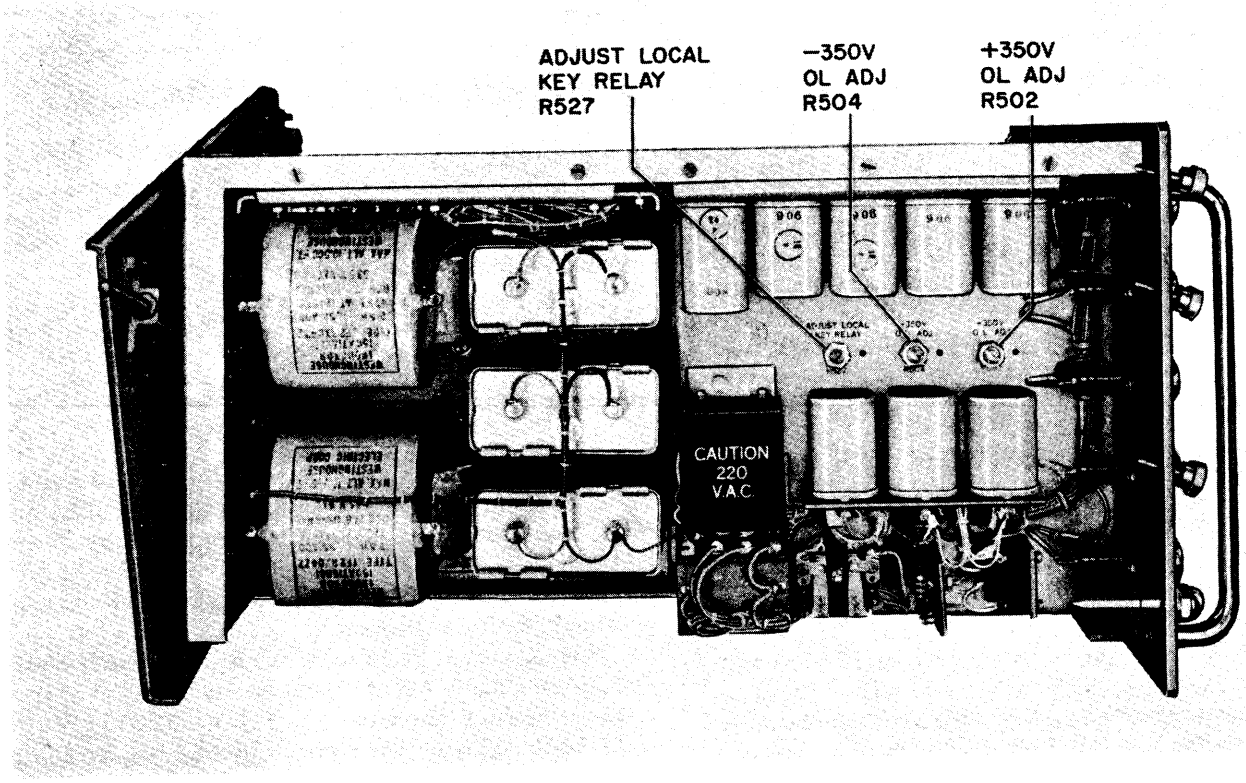
Step 5. Lock −350 V OL. ADJ in the final position. Press PLATE POWER OFF switch S504. Remove the rheostat from terminals 9 and 37 of TB501A.

Step 6. Using Multimeter AN/USM-34 Series (or equivalent), set the resistance of the 3500-ohm, 200-watt rheostat at exactly 650 ohms. Connect the 650-ohms resistance between terminals 8 and 37 of TB501A.

Step 7. Connect Multimeter AN/USM-34 Series (or equivalent) to the terminal of C504 at which the black lead is attached. Set the meter to measure ohms and adjust +350 V OL. ADJ potentiometer R502 (figure 6-3) until a reading of approximately 6 ohms is obtained. Remove the meter.

Step 8. Press PLATE POWER ON switch S504 and adjust +350 V OL. ADJ potentiometer R502 in the counterclockwise direction until L.V. RECT OVLD light DS505 glows. Make a slight clockwise adjustment of R502. Press the PLATE POWER OFF and PLATE POWER ON switches several times, readjusting R502 if necessary until the overload relay will just remain closed as the plate power is turned on and off.

Step 9. Lock +350 V OL. ADJ in the final position. Press PLATE POWER OFF switch S504. Remove the rheostat from terminals 8 and 37 of TB501A. Replace all external leads to terminals 8 and 9 of TB501A, and then replace the safety cover on the terminal strip.



Figur 6-3. Amplifier-Power Supply AM-2122/WRT-2 Left Side View, Electrical Adjustments

Step 10. Slide the unit drawer back into the cabinet and secure it.

(4) MACHINE CW KEYING BIAS ADJUSTMENT.

Step 1. Withdraw the drawer containing Amplifier-Power Supply AM-2122/WRT-2 to its extreme limit of travel. Engage the interlock switch. Release the four quick-disconnect fasteners and remove the speech amplifier chassis cover plate. Locate terminal board TB1401B (figure 6-2).

Step 2. Connect Multimeter AN/USM-34 Series (or equivalent) between terminal 26 of TB1401B and ground. Set the meter on its negative 100-volt d-c range.

Step 3. Press PLATE POWER ON switch S503. Adjust BIAS ADJ potentiometer R1413 (figure 6-2) until the meter indicates approximately −11 volts. Place FSK TEST switch S309 on the MARK position; the meter reading should fall to approximately zero volts.

Step 4. Lock BIAS ADJ potentiometer R1413 in the final position. Press PLATE POWER OFF switch S504. Place FSK TEST switch S309 in the SPACE position. Remove Multimeter AN/USM-34 Series (or equivalent) from terminal 26 of TB1401B.

Step 5. Replace the cover plate on the speech amplifier chassis. Slide the drawer back into the cabinet and secure it.

(5) 425-CYCLE OSCILLATOR ADJUSTMENTS.

Step 1. Withdraw the drawer containing Amplifier-Power Supply AM-2122/WRT-2 to its extreme limit of travel. Engage the interlock switch. Release the four quick-disconnect fasteners and remove the speech amplifier chassis cover plate. Place FILAMENT POWER switch S502 in the OFF position.

Step 2. Locate terminal board TB1401B. Remove the lead from terminal 24 of TB1401B. Using Multimeter AN/USM-34 Series (or equivalent), set the resistance of the 1000-ohm, ½ watt potentiometer at exactly 660 ohms. Connect the 660-ohm resistance between the disconnected lead and ground.

Step 3. Connect Multimeter AN/USM-34 Series (or equivalent) across the 660-ohm resistance. Set the meter on its 1-volt a-c range. Place FILAMENT POWER switch S502 in the ON position. A reading on the meter indicates that the oscillator is functioning.

Step 4. Connect the vertical input of Oscilloscope AN/USM-24 Series (or equivalent) across the 660-ohm output load. Set up Frequency Meter AN/USM-29 Series (or equivalent) for an output frequency of 425 cps, and then connect its output to the horizontal input of the oscilloscope.

Step 5. Adjust AMP ADJ potentiometer R1458 (figure 6-2) until Multimeter AN/USM-34 Series (or equivalent) indicates approximately 0.5-volts a-c.

Step 6. Adjust FREQ ADJ potentiometer R1454 until a 1:1 Lissajous pattern appears on the face of Oscilloscope AN/USM-24 Series (or equivalent).

Step 7. Readjust AMP ADJ R1458 and FREQ ADJ R1454 until the output voltage and frequency are as specified in steps 4 and 5. Lock the potentiometers at their correct settings.

Step 8. Place FILAMENT POWER switch S502 in the OFF position. Remove all test equipment. Replace the lead on terminal 24 of TB1401B. Replace the cover plate on the speech amplifier chassis.

Step 9. Place FILAMENT POWER switch S502 in the ON position. Slide the drawer back into the cabinet and secure it.

(6) ADJUSTMENT OF THE BIAS KEYING RELAY.

Step 1. Withdraw the drawer containing Amplifier-Power Supply AM-2122/WRT-2 to its extreme limit of travel. Engage the interlock switch. Locate terminal board TB501E.

Step 2. Connect the vertical input of Oscilloscope AN/USM-24 Series (or equivalent) between terminal 40 of TB501E and ground.

Step 3. Set EMISSION SELECTOR switch S508 on the CW position. Connect the Boehme Vari-speed Keyer, Type 66-M (or equivalent), between terminal 42 of TB501E and ground. Select a commutator for a series of dot pulses and adjust the motor speed for a keying rate of approximately 12 words per minute.

Step 4. Press PLATE POWER ON switch S503. Observe the keying voltage waveform. Adjust ADJUST LOCAL KEY RELAY potentiometer R527 (figure 6-3) until the on and off periods of the waveform are equal.

Step 5. Lock ADJUST LOCAL KEY RELAY potentiometer in the final position. Press PLATE POWER OFF switch S504. Remove all test equipment.

Step 6. Slide the unit drawer back into the cabinet and secure it.

d. RADIO FREQUENCY OSCILLATOR O-581/WRT-2.—Radio Frequency Oscillator O-581/WRT-2 requires adjustments in the master oscillator, the frequency multipliers and the modulator chassis. Throughout the following procedures refer to figures 6-4 through 6-7 for location of adjustments.

(1) TEST EQUIPMENT AND SPECIAL TOOLS. —The test equipment required for making the adjustments in Radio Frequency Oscillator O-581/WRT-2 consists of:

Resistor, 100 ohm, ½ watt
Multimeter AN/USM-34 Series (or equivalent)
Frequency Meter AN/USM-29 Series (or equivalent)
Signal Generator, Ferris Model 16C Series (or equivalent)
Miniature Coaxial Cable T-Adapter: Industrial Products Co. Type IPC 47325
Miniature Coaxial Cable to Coaxial Cable Adapter: Industrial Products Co. Type IPC 47250

(2) CONTROL SETTINGS.—Before proceeding to make the adjustments on the master oscillator the oven heaters should be energized for at least six hours. This is accomplished by placing EMERGENCY STOP switch S201 on the front panel of Power Supply PP-2222/WRT and oven heaters switch S304, (located inside the drawer containing Radio Frequency Oscillator O-581/WRT-2 on top of the chassis) in the ON position. Thirty minutes before starting to make the adjustments place FILAMENT POWER switch S502 in the ON position and press PLATE POWER ON switch S503. Switches S502 and S503 are located on the front panel of Amplifier-Power Supply AM-2122/WRT-2. After these conditions have been satisfied, set the other controls on the front panel of Transmitter Group OA-2175/WRT-2 in the following manner:

CONTROL	LOCATION	SETTING
POWER SELECTOR	Amplifier-Power Supply AM-2122/WRT-2	ADJ
LOCAL REMOTE	Amplifier-Power Supply AM-2122/WRT-2	LOCAL
EMISSION SELECTOR	Amplifier-Power Supply AM-2122/WRT-2	CW

(3) MASTER OSCILLATOR. — The required electrical adjustments of the master oscillator consist of making it track with the calibrated tuning dial located on the front panel of Radio Frequency Oscillator O-581/WRT-2. In order to make the master oscillator tracking adjustments refer to figure 6-4 and proceed as follows:

Step 1. Pull out the drawer containing Radio Frequency Oscillator O-581/WRT-2 to its extreme travel limit. Engage the interlock switch. Refer to figure 6-4 and note that all the controls for making the adjustments for frequency bands 1 through 6 are located in the oven and can be reached through the special holes provided on top of the oven.

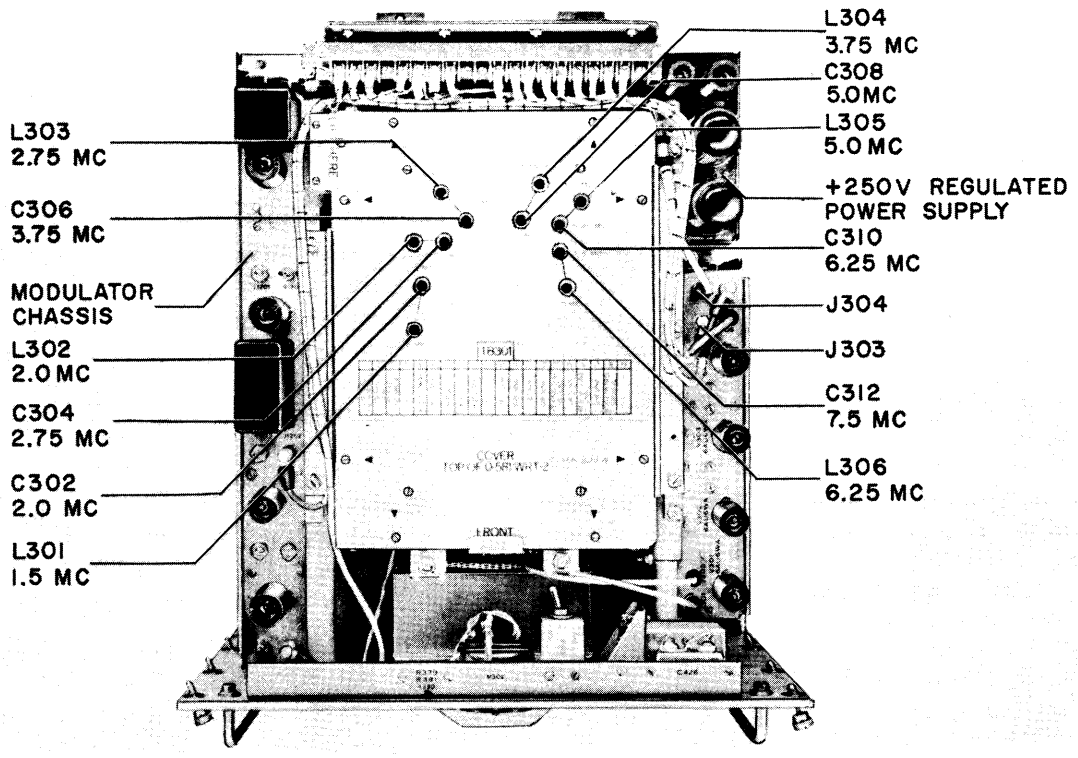


Figure 6-4. Radio Frequency Oscillator O-581/WRT-2 Top View, Electrical Adjustments

Step 2. Using band 1 as a starting point, set FREQUENCY (D) control to 2.5 megacycles. Note that this setting is the high-frequency end of band 1. Set TUNING (A) and TUNING (B) controls on Electrical Frequency Control C-2764/WRT-2 to 00.01.

Step 3. Adjust 2.0 mc capacitor C302 until FREQUENCY ZERO ADJUST meter M301 stops sweeping and indicates zero.

Step 4. Turn the FREQUENCY (D) control to 2.0 megacycles. This setting is the lower frequency range of band 1. Do not change the setting of TUNING (A) and (B) controls on Electrical Frequency Control C-2175/WRT-2.

Step 5. Adjust 1.5 mc coil L301 until FREQUENCY ZERO ADJUST meter M301 stops sweeping and indicates zero.

Step 6. Repeat the procedures in steps 2 through 5 until no further adjustment is necessary.

Step 7. The alignment procedure for the remaining bands is similar to that for band 1. However for each band different capacitors and coils must be adjusted while TUNING (A) and TUNING (B) controls must be set differently for each band. The following table shows the coils and capacitors used for each band and the settings of TUNING (A) and TUNING (B) controls. The location of each capacitor and each coil is shown in figure 6-4.

BAND	OUTPUT FREQ. MC	HIGH END ADJUSTMENTS	LOW END ADJUSTMENTS	SETTINGS OF TUNING A and TUNING B	
				LOW END	HIGH END
1	2.0 —2.5	2.0 mc., C302	1.5 mc., L301	00.01 kc	00.01 kc
2	2.5 —3.25	2.75 mc., C304	2.0 mc., L302	00.01 kc	50.01 kc
3	3.25—4.25	3.75 mc., C306	2.75 mc., L303	50.01 kc	50.01 kc
4	4.25—5.50	5.0 mc., C308	3.75 mc., L304	50.01 kc	00.01 kc
5	5.50—6.75	6.25 mc., C310	5.0 mc., L305	00.01 kc	50.01 kc
6	6.75—8.00	7.5 mc., C312	6.25 mc., L306	50.01 kc	00.01 kc

(4) FREQUENCY DOUBLER CIRCUITS.

(*a*) The electrical adjustments on the frequency doubler circuits consist of tracking the master oscillator amplifier and frequency multipliers with the master oscillator, and balancing the outputs of first and second doubler V303 and V304. When making the tracking alignment of the frequency doubler circuits refer to figure 6-5 in order to locate each adjustment and proceed in the following manner:

Step 1. Pull out the drawer containing Radio Frequency Oscillator O-581/WRT-2 to its extreme travel limit.

Step 2. Connect miniature coaxial cable T-adapter, Industrial Products Co. type IPC 47325 between J303 and P135.

Step 3. Connect the probe of Multimeter AN/USM-34 Series (or equivalent) to the open end of the adapter, and the other side of the meter to ground. Engage the drawer interlock.

Step 4. On the front panel of Radio Frequency Oscillator O-581/WRT-2 set RANGE (C) and FREQUENCY (D) controls to 2.0 mc.

Step 5. On the front panel of Electrical Frequency Control C-2764/WRT-2 set TUNING (A) and (B) controls to 00.01 so that the oscillator locks on frequency.

Step 6. Refer to figure 6-5 and adjust coil L317 for a maximum indication on Multimeter AN/USM-34 Series (or equivalent).

Step 7. Set FREQUENCY (D) control to the high end of the band (2.0 mc for band one). Leave TUNING (A) and (B) controls set at 00.01.

Step 8. Refer to figure 6-5 and adjust capacitor C343 for maximum indication on the multimeter.

Step 9. Repeat steps five through eight until no further adjustment is necessary.

Step 10. Reset FREQUENCY (D) control to the middle of the band (2.25 mc for band one). Set TUNING (A) and (B) controls to 50.01.

Step 11. Readjust coil L317 for a maximum indication on the multimeter.

Step 12. Repeat steps six through 11 for bands two through six adjusting the coils and capacitors listed in the following table. Refer to Section 3 of this technical manual and position TUNING (A) and (B) controls to obtain the proper frequency.

BAND	OUTPUT FREQ. MC	LOW AND MID-POINT ADJUSTMENTS	HIGH ADJUSTMENTS	MID-POINT SETTING—MC
1	2.0 —2.5	L317	C343	2.25
2	2.5 —3.25	L318	C345	2.875
3	3.25—4.25	L319	C347	3.75
4	4.25—5.50	L320	C349	4.875
5	5.50—6.75 and 7.00—8.25	L321	C351	6.125
6	6.75—8.00 and 8.25—9.50	L322	C353	7.375

Step 13. Set RANGE (C) and FREQUENCY (D) controls for 9.5 mc. In all the following steps, set TUNING (A) and (B) controls at 00.00.

Step 14. Refer to figure 6-5 and adjust coil L327 for a maximum indication on the multimeter.

Step 15. Set FREQUENCY (D) control to 12.0 mc. Note that this setting is the high end of band seven.

Step 16. Refer to figure 6-5 and adjust capacitor C361 for a maximum indication on the multimeter.

Step 17. Repeat steps 14 through 16 until the maximum output voltage is obtained for both the high and low ends of band seven.

Step 18. Repeat steps 14 through 17 for bands eight through 12 adjusting the coils and capacitors listed in the following table:

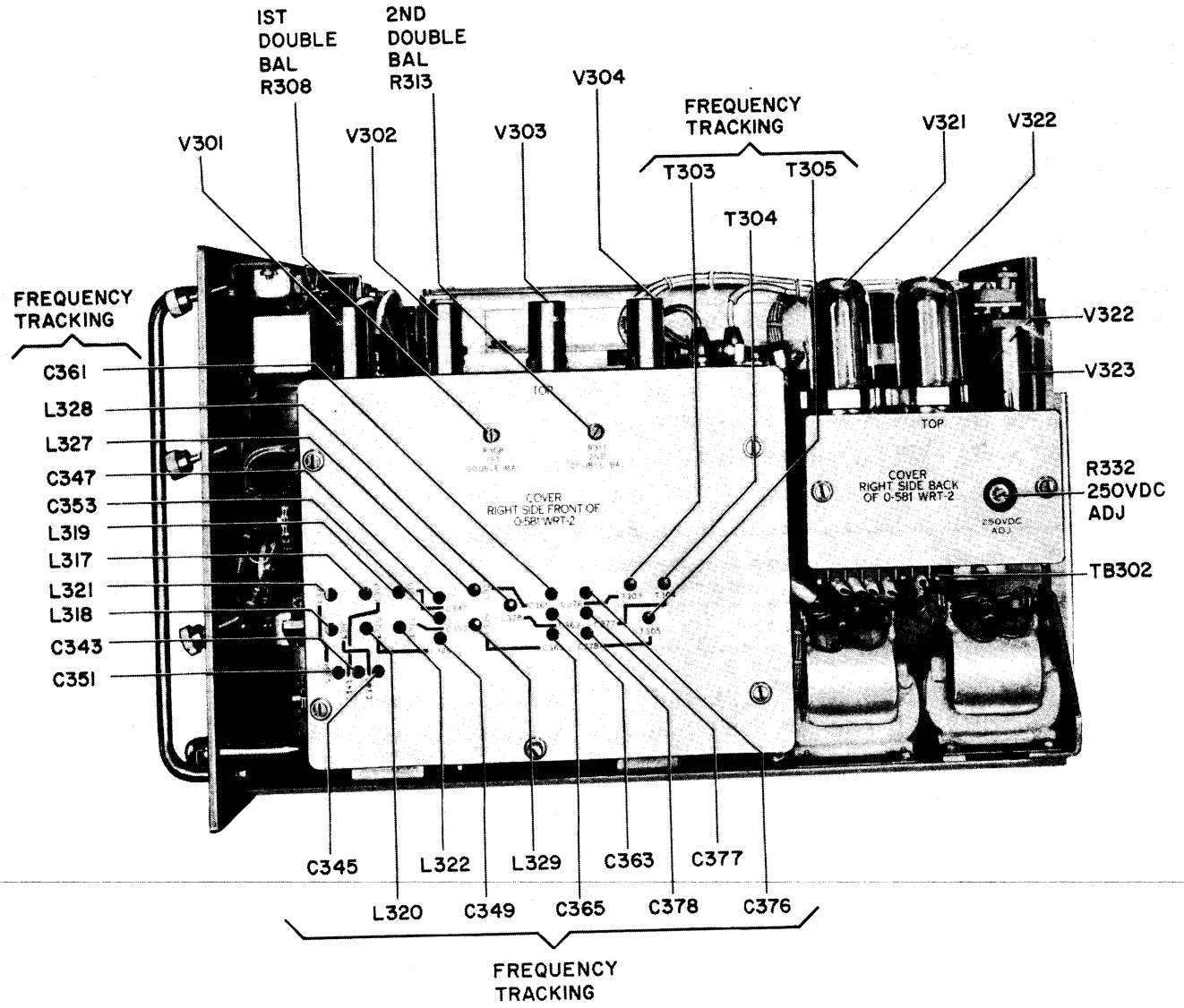


Figure 6-5. Radi Frequency Oscillat r O-581/WRT-2 Right Side View, Electrical Adjustments

BAND	OUTPUT FREQ. MC	HIGH END ADJUSTMENT	LOW END ADJUSTMENT
7	9.5—12.0	C361	L327
8	12.0—14.5	C363	L328
9	14.5—17.0	C365	L329
10	17.0—22.0	C376	T303
11	22.0—27.0	C377	T304
12	27.0—30.0	C378	T305

Step 19. Adjust RANGE (C) and FREQUENCY (D) controls to obtain a 10.5 indication on the frequency indicator dial located on the front panel of Radio Frequency Oscillator O-581/WRT-2.

Step 20. Set TUNING (A) and (B) controls, on the front panel of Electrical Frequency Control C-2764/WRT-2, to 00.01 kc. If necessary, readjust FREQUENCY (D) control slightly so that the system locks on.

Step 21. Refer to figure 6-5 and adjust 1ST DOUBLE BAL potentiometer R308 for a maximum reading on Multimeter AN/USM-34 Series (or equivalent).

Step 22. Adjust FREQUENCY (D) control to 22.0 mc and then readjust it slightly until the system locks on.

Step 23. Adjust 2ND DOUBLE BAL potentiometer R313 for a maximum indication on Multimeter AN/USM-34.

(5) 2.0-MC MODULATOR.

(*a*) SUB-CARRIER ALIGNMENT.

Step 1. Check to see that all control settings are as indicated in paragraph 6-2*d*(2). Pull out the drawer containing Radio Frequency Oscillator O-581/WRT-2 to its extreme limit of travel. Engage the interlock switch. Note that the 2.0-mc modulator chassis is located on the lefthand side of the exposed unit. Remove the four quick-disconnect screw-type fasteners holding the cover plate to the lefthand side of the modulator chassis. Remove P136 from J1202 and connect a 100-ohm, ½-watt resistor between the center conductor of J1202 and ground. In the steps to follow, refer to figure 6-6 and 6-7 for location of adjustments.

Step 2. Remove P133 from J1201 and connect the output of Ferris Model 16C Signal Generator (or equivalent) to J1201, using Miniature Coaxial Cable to Coaxial Cable Adapter, Industrial Products Co. Type IPC 47250. Adjust the output of the signal generator for a 500-kc, 0.2-volt rms signal.

Step 3. Connect Multimeter AN/USM-34 Series (or equivalent) from pin 3 of T1211 to ground. Press PLATE POWER ON switch S503. Adjust 500 KC TUNE T1210 and 500 KC TUNE T1211 for maximum output (about 0.9-volt rms).

Step 4. Turn CARRIER INSERT ADJ. control R1255 and 2.0 MC MOD LEVEL ADJ. control R1256 to the maximum counterclockwise position.

Step 5. Connect Multimeter AN/USM-34 Series (or equivalent) from pin 3 of T1213 to ground and adjust 2.0 MC TUNE T1212 and 2.0 MC TUNE T1213 for maximum output (about 3.5-volts rms). Note: Make sure that the voltage maximum is for a 2.0-mc frequency rather than for 1.5 or 2.5 mc.

Step 6. Set AUXILIARY RANGE SWITCH (C2) S1202 (located on the front panel of Radio Frequency Oscillator O-581/WRT-2) in the 2-8 MC position.

Step 7. Turn 1.5 MC LEVEL ADJ R1271 to the maximum counterclockwise position.

Step 8. Connect Multimeter AN/USM-34 Series (or equivalent) from pin 3 of T1215 to ground and adjust 1.5 MC TUNE T1214 and 1.5 MC TUNE T1215 for maximum output (about 3.5-volts rms). Note: Make sure that the voltage maximum is for a 1.5-mc frequency rather than for a 1.0 or 2.0 mc.

Step 9. Set CARRIER REINSERT switch S1201 (located on the front panel of Radio Frequency Oscillator O-581/WRT-2) in the FSK, ISB ($-\infty$) position.

(*b*) UPPER SIDEBAND ALIGNMENT.

Step 1. Set SIDEBAND SELECTOR R1208 (located on the front of Radio Frequency Oscillator, O-581/WRT-2) in the UPPER position; set AUXILIARY RANGE SWITCH (C2) S1202 on the 8-30 MC position.

Step 2. Set USB CARRIER BAL R1203 and USB CARRIER BAL R1206 to approximately the center of their adjustment ranges. Set USB LEVEL ADJ R1207 to the maximum clockwise position.

Step 3. Connect Multimeter AN/USM-34 Series (or equivalent) between the center arm of USB CARRIER BAL R1203 and ground. Adjust 2.0 MC MOD LEVEL ADJ. R1256 for 1.0-volt rms.

Step 4. Connect Audio Oscillator, Navy Model LAJ Series (or equivalent) between terminal 1 of

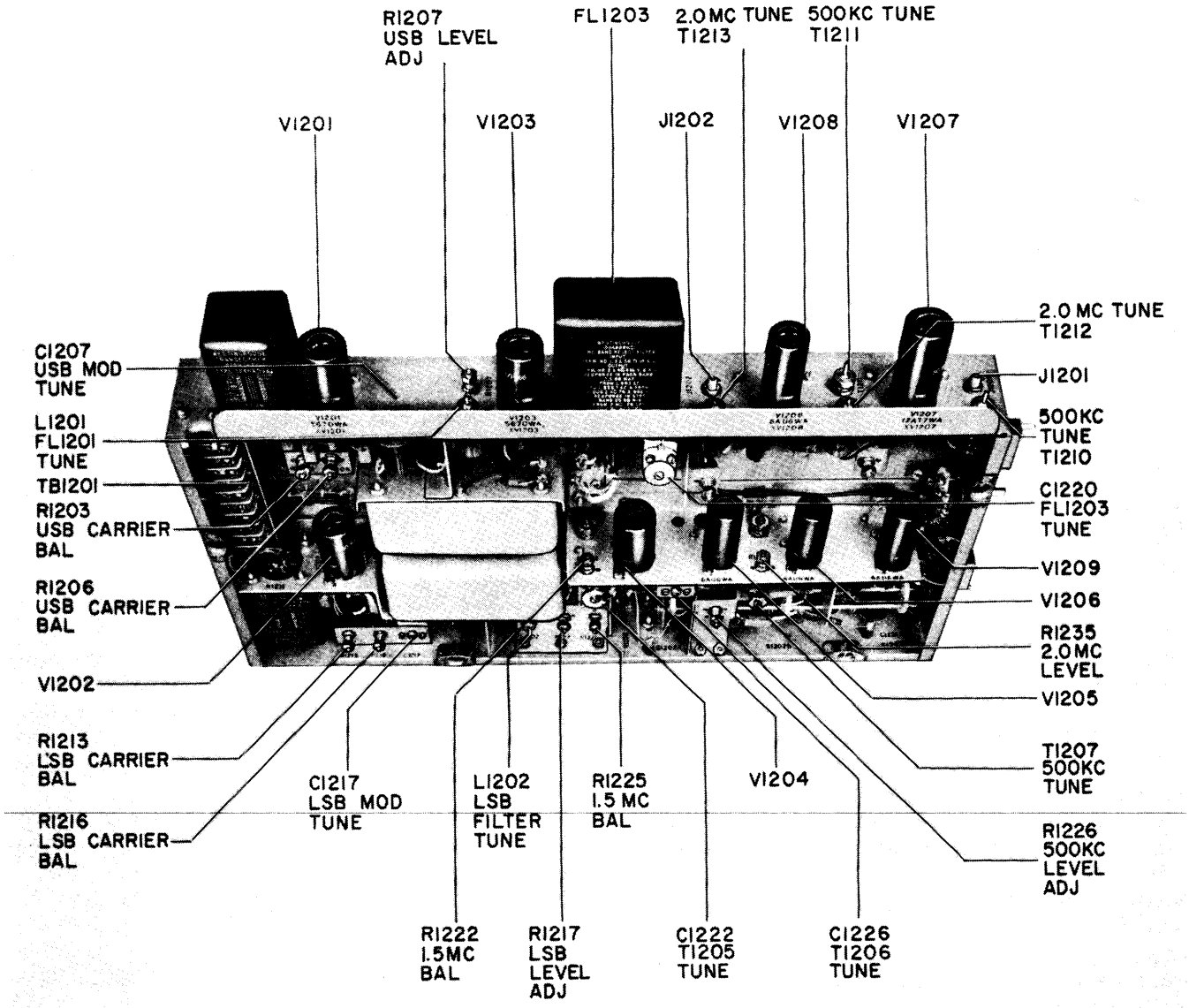


Figure 6-6. Radi Frequ ncy Oscillat r O-581/WRT-2 Modulator Chassis Top Obliqu Vi w, El ctrical Adjustm nts

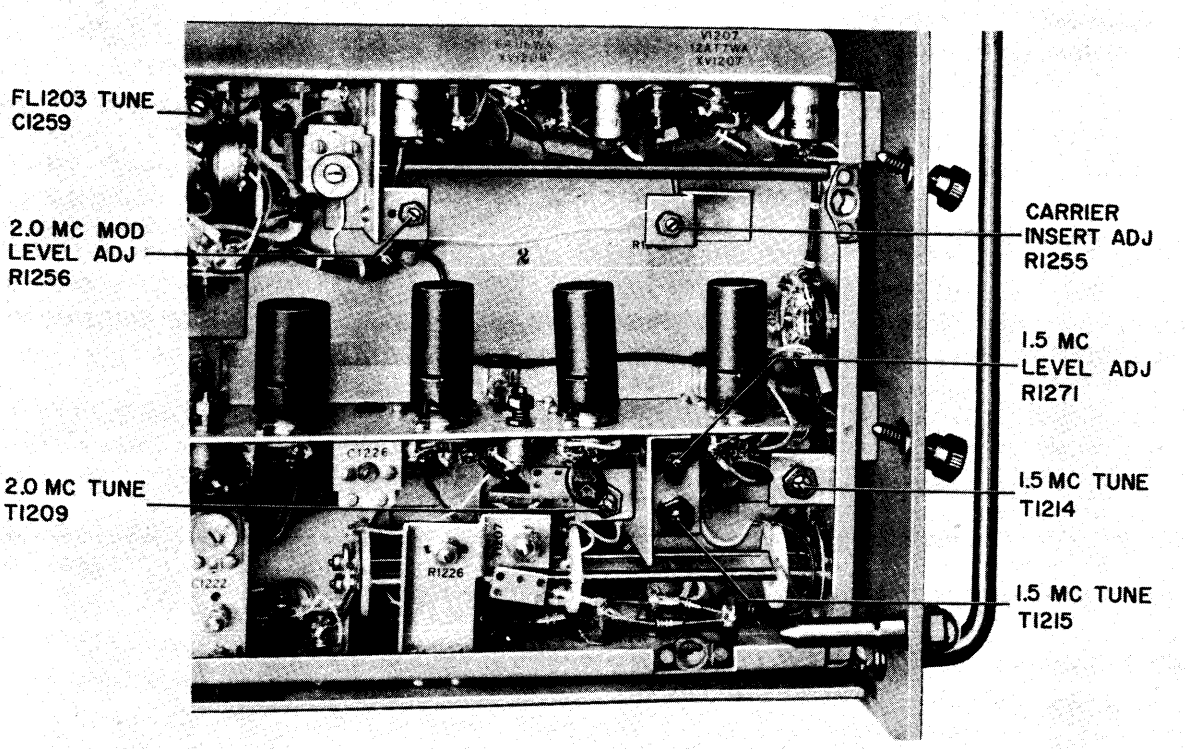


Figure 6-7. Radio Frequency Oscillator O-581/WRT-2 Modulator Chassis Side View, Electrical Adjustments

TB1201 and ground. Adjust the output of the signal generator for a 600-cps, 0.1-volt rms signal.

Step 5. Connect Multimeter AN/USM-34 Series (or equivalent) between the center arm of USB LEVEL ADJ R1207 and ground. Adjust USB MOD TUNE C1207 and FL1201 TUNE L1201 for maximum output (approximately 0.1-volt rms).

Step 6. Reduce the audio input voltage to zero. Adjust USB CARRIER BAL R1203 and USB CARRIER BAL R1206 for a minimum reading.

Step 7. Adjust Audio Oscillator, Navy Model LAJ Series (or equivalent) for a 0.1-volt rms signal and sweep the output frequency from 300 to 3500 cps. Keep the output voltage level constant. Readjust USB MOD TUNE C1207 and FL1201 TUNE L1201 until the reading of Multimeter AN/USM-34 Series (or equivalent) exhibits the least amount of variation as the audio input frequency is varied.

Step 8. Adjust the output of Audio Oscillator, Navy Model LAJ Series (or equivalent) for a 300 cps, 0.1-volt rms signal.

Step 9. Connect Multimeter AN/USM-34 Series (or equivalent) between terminal 2 of FL1203 and ground and adjust FL1203 TUNE C1220 and FL1203 TUNE C1259 for maximum output (approximately 0.1-volt rms).

Step 10. Set 2.0 MC LEVEL R1255 to the maximum clockwise position.

Step 11. Connect Multimeter AN/USM-34 Series (or equivalent) across the 100 ohm terminating resistor at J1202. Adjust FL1203 TUNE C1220 and 2.0 MC TUNE T1209 for maximum output (approximately 0.4-volt rms).

(*c*) LOWER SIDEBAND ALIGNMENT.

Step 1. Connect Multimeter AN/USM-34 Series (or equivalent) between the center arm of LSB CARRIER BAL R1213 and ground. The voltage reading should be 1.0-volt rms. If not, recheck the setting of 2.0 MC MOD LEVEL ADJ R1256 to obtain the same 1.0-volt rms reading at the center arms of the LSB CARRIER BAL R1213 and USB CARRIER BAL R1203 potentiometers.

Step 2. Connect Audio Oscillator, Navy Model LAJ Series (or equivalent) between terminal 9 of TB1201 and ground. Adjust the output of the signal generator for a 600-cps, 0.1-volt rms signal.

Step 3. Set LSB CARRIER BAL R1213 and LSB CARRIER BAL R1216 to approximately the center of their adjustment ranges. Set LSB LEVEL ADJ R1217 to the maximum clockwise position.

Step 4. Set the SIDEBAND SELECTOR R1208 (located on the front of Radio Frequency Oscillator, O-581/WRT-2) in the LSB position.

Step 5. Connect Multimeter AN/USM-34 Series (or equivalent) between the center arm of LSB LEVEL ADJ R1217 and ground. Adjust LSB MOD TUNE

C1217 and LSB FILTER TUNE L1202 for maximum output (approximately 0.1-volt rms).

Step 6. Reduce the audio input voltage to zero. Adjust LSB CARRIER BAL R1213 and LSB CARRIER BAL R1216 for a minimum reading.

Step 7. Adjust Audio Oscillator, Navy Model LAJ Series (or equivalent) for a 0.1-volt rms signal and sweep the output frequency from 300 to 3500 cps. Keep the output voltage level constant. Readjust LSB MOD TUNE C1217 and LSB FILTER TUNE L1202 until the reading of Multimeter AN/USM-34 Series (or equivalent) exhibits the least amount of variation as the audio input frequency is varied.

Step 8. Adjust the output of Audio Oscillator, Navy Model LAJ Series (or equivalent) for a 300-cps, 0.1-volt rms signal.

Step 9. Connect Multimeter AN/USM-34 Series (or equivalent) across the 100-ohm terminating resistor at J1202. The reading should be approximately 0.4-volt rms.

(d) 500-KC OUTPUT ADJUSTMENT.

Step 1. Place AUXILIARY RANGE SWITCH (C2) S1202 (located on the front panel of Radio Frequency Oscillator O-581/WRT-2) in the 2-8 MC position.

Step 2. Set 1.5 MC BAL R1222 and 1.5 MC BAL R1225 to approximately the center of their adjustment ranges. Set 500-kc LEVEL ADJ R1226 to the maximum clockwise position.

Step 3. Connect Multimeter AN/USM-34 Series (or equivalent) between the center arm of 1.5 MC BAL R1222 and ground. Adjust 1.5 MC LEVEL ADJ R1271 until the meter reads approximately 1.0-volt rms.

Step 4. Adjust the output of Audio Oscillator, Navy Model LAJ Series (or equivalent) for a 400-cps, 0.1-volt rms signal.

Step 5. Connect Multimeter AN/USM-34 Series (or equivalent) between the center arm of 500 MC LEVEL ADJUST R1226 and ground. Adjust T1205 TUNE C1222 and T1206 TUNE C1226 for maximum output (approximately 0.25-volt rms).

Step 6. Reduce the audio input voltage to zero. Adjust 1.5 MC BAL R1222 and 1.5 MC BAL R1225 for a minimum reading.

Step 7. Adjust the output of Audio Oscillator, Navy Model LAJ Series (or equivalent) for a 400-cps, 0.1-volt rms signal.

Step 8. Connect Multimeter AN/USM-34 Series (or equivalent) across the 100-ohm terminating resistor at J1202. Adjust T1206 TUNE C1226 and 500 KC TUNE T1207 for maximum output (approximately 0.4-volt rms).

(e) OUTPUT LEVEL ADJUSTMENT.

Step 1. Connect the Audio Oscillator, Navy Model LAJ Series (or equivalent) between terminals 1 and 9 of TB1201. Adjust the output for a 1000-cps, 0.1-volt rms signal.

Step 2. Connect Multimeter AN/USM-34 Series (or equivalent) across the 100-ohm terminating resistor at J1202.

Step 3. Place AUXILIARY RANGE SWITCH (C2) S1202 (located on the front of Radio Frequency Oscillator O-581/WRT-2) in the 8-30 MC position. Place SIDEBAND SELECTOR R1208 (located on the front of Radio Frequency Oscillator O-581/WRT-2) in the UPPER position and note the voltage at J1202. Place SIDEBAND SELECTOR R1208 on the LOWER position and note the voltage at J1202.

Step 4. If the voltage is highest in the UPPER sideband position, adjust USB LEVEL ADJ R1207 in the counterclockwise direction until the two voltage readings of step 3 are equal.

Step 5. If the voltage is highest in the LOWER sideband position, adjust LSB LEVEL ADJ R1217 in the counterclockwise direction until the two voltage readings of step 3 are equal.

Step 6. Place SIDEBAND SELECTOR R1208 in the UPPER position. Place AUXILIARY RANGE SWITCH (C2) S1202 in the 8-30 MC position and note the voltage at J1202. Place AUXILIARY RANGE SWITCH (C2) S1202 in the 2-8 MC position and note the voltage at J1202.

Step 7. If the voltage is highest in the 8-30 MC position, adjust 2.0 MC LEVEL R1235 in the counterclockwise direction until the two voltage readings of step 6 are equal.

Step 8. If the voltage is highest in the 2-8 MC position, adjust 500 MC LEVEL R1226 in the counterclockwise direction until the two voltage readings of step 6 are equal.

Step 9. Place AUXILIARY RANGE SWITCH (C2) S1202 in the 8-30 MC position and note the voltage reading at J1202.

Step 10. Remove the audio signal generator output from terminals 1 and 9 of TB1201.

Step 11. Place CARRIER REINSERT switch S1201 (located on the front of Radio Frequency Oscillator O-581/WRT-2) in the 0 db position. Adjust CARRIER INSERT ADJ R1255 in the clockwise direction until the voltage reading at J1202 is the same as that observed in step 9.

Step 12. Press PLATE POWER OFF switch S504. Remove the Ferris Model 16C Signal Generator (or equivalent) from J1201 and reconnect P133 to J1201. Remove the 100-ohm resistor from J1202 and reconnect P136 to J1202. Replace the cover on the left side of the modulator chassis.

Step 13. Slide the unit drawer back into the cabinet and secure it.

(6) +250-VOLTS DC REGULATOR ADJUSTMENT.

Step 1. Check to see that all control settings are as indicated in paragraph 6-2*d*(2). Pull out the drawer containing Radio Frequency Oscillator O-581/WRT-2

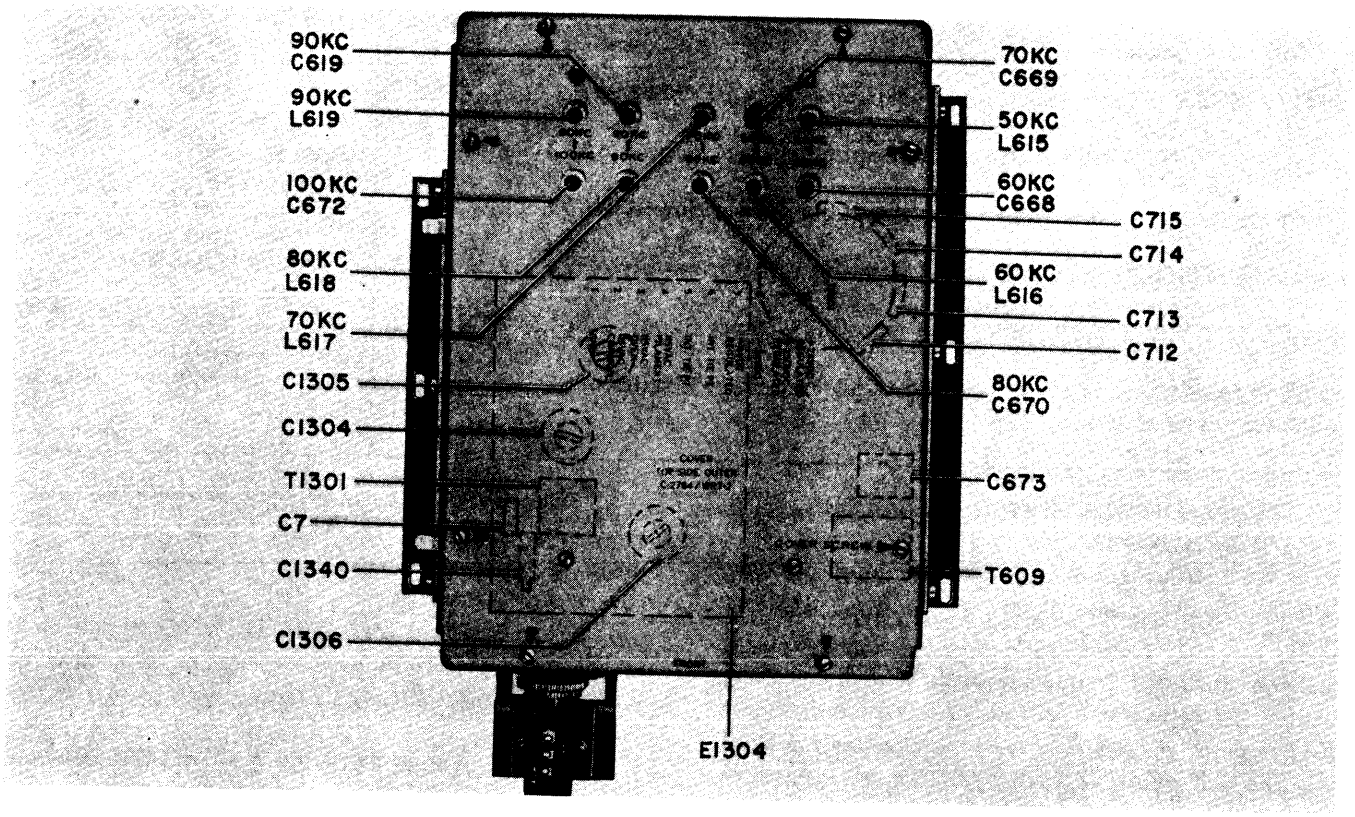


Figure 6-8. Electrical Frequency Control C-2764/WRT-2 Oven Top View, Electrical Adjustm nts

to its extreme limit of travel. Engage the interlock switch.

Step 2. Connect Multimeter AN/PSM-4 Series (or equivalent) between terminals 6 and 4 (ground) of TB320. Set the meter on its 400-volt d-c range.

Step 3. Press PLATE POWER ON switch S503. (The switch is located on the front panel of Amplifier-Power Supply AM-2122/WRT-2).

Step 4. Unlock 250 VDC ADJ potentiometer R332 (see figure 6-5) and adjust it until a voltmeter reading of +250-volts d-c is obtained. Lock the potentiometer.

Step 5. Press PLATE POWER OFF switch S504. Remove Multimeter AN/PSM-4 Series (or equivalent). Slide Radio Frequency Oscillator O-581/WRT-2 back into the cabinet and secure it.

e. ELECTRICAL FREQUENCY CONTROL C-2764/WRT-2.—The electrical adjustments in the circuits of Electrical Frequency Control C-2764/WRT-2 include tuning the tank circuit elements in the interpolation oscillator for proper tracking with the counter reading, tuning the 1-mc generator circuits, adjustment of the sideband balance in the frequency comparator, and the lock in symmetry and divider adjustments in the standard frequency generator chassis. Throughout the procedures for adjustments in Electrical Frequency Control C-2764/WRT-2 refer to figures 6-8, 6-9 and 6-10 to locate the respective adjustments.

(1) TEST EQUIPMENT AND SPECIAL TOOLS.—In order to perform the adjustment in Electrical Frequency Control C-2764/WRT-2, the following test equipment is required:

Frequency Meter AN/USM-29 Series (or equivalent)
Carrier Frequency Voltmeter, Sierra Model 101 (or equivalent)
Signal Generator Ferris Model 16C (or equivalent)
Multimeter AN/USM-34 Series (or equivalent)
Frequency Standard AN/URQ-9 Series (or equivalent)
Miniature Coaxial Cable T-Adapter: Industrial Products Co. Type IPC 47325
Miniature Coaxial Cable to Coaxial Cable, Adapter: Industrial Products Co. Type IPC 47250

(2) CONTROL SETTINGS.—Before proceeding to perform the adjustments in Electrical Frequency Control C-2764/WRT-2, preset the controls on the front panel of Transmitter Group OA-2175/WRT-2 in the following manner:

CONTROL	LOCATION	SETTING
EMERGENCY STOP (S201)	Power Supply PP-2222/WRT	ON
FILAMENT POWER (S502)	Amplifier-Power Supply AM-2122/WRT-2	ON
POWER SELECTOR (S510)	Amplifier-Power Supply AM-2122/WRT-2	ADJ
LOCAL REMOTE (S507)	Amplifier-Power Supply AM-2122/WRT-2	LOCAL
EMISSION SELECTOR (S508)	Amplifier-Power Supply AM-2122/WRT-2	CW
OVEN HEATERS (S304) (inside, top of chassis)	Radio Frequency Oscillator O-581/WRT-2	ON

(3) INTERPOLATION OSCILLATOR ADJUSTMENTS.

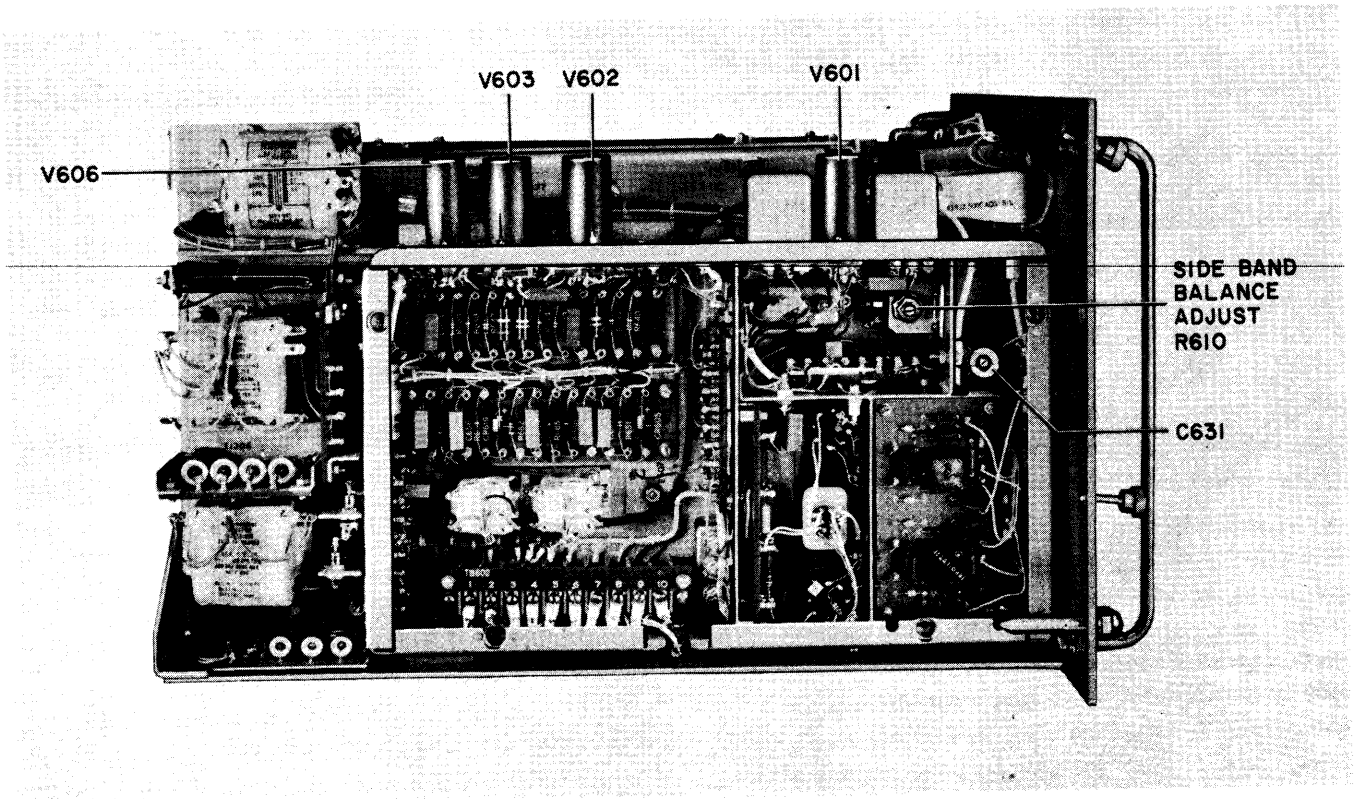
(*a*) Adjustments on the interpolation oscillator are those required after TUNING (B) capacitor C662 has been replaced and those required to make the interpolation oscillator frequency track with the counter reading. If capacitor C662 has been replaced, the entire procedure of this paragraph must be performed. If only the end points of each band require adjustment in order to make the frequency track with the counter, only the steps in paragraph 6-2*e*(3)(*b*) must be performed. All the adjustments on the interpolation oscillator are located in the oven.

Step 1. Pull out the drawer containing Electrical Frequency Control C-2764/WRT-2 to its extreme travel limit. Remove the screws and remove the two oven covers.

Step 2. Place INT OSC TUNING switch S607 in CONTINUOUS position. Engage the drawer interlock. Steps 3 through 6 apply only to sets serials 1 to 263.

Step 3. Rotate TUNING (A) and (B) controls until the upper counter indicates 75.000 kc. Connect Multimeter AN/USM-34 Series (or equivalent) between terminals 5 and 6 of TB601.

Step 4. Adjust balance potentiometer R673 so that



Figur 6-9. El ctrical Frequency C ntr l C-2764/WRT-2 Left Sid View, El ctrical Adjustm nts

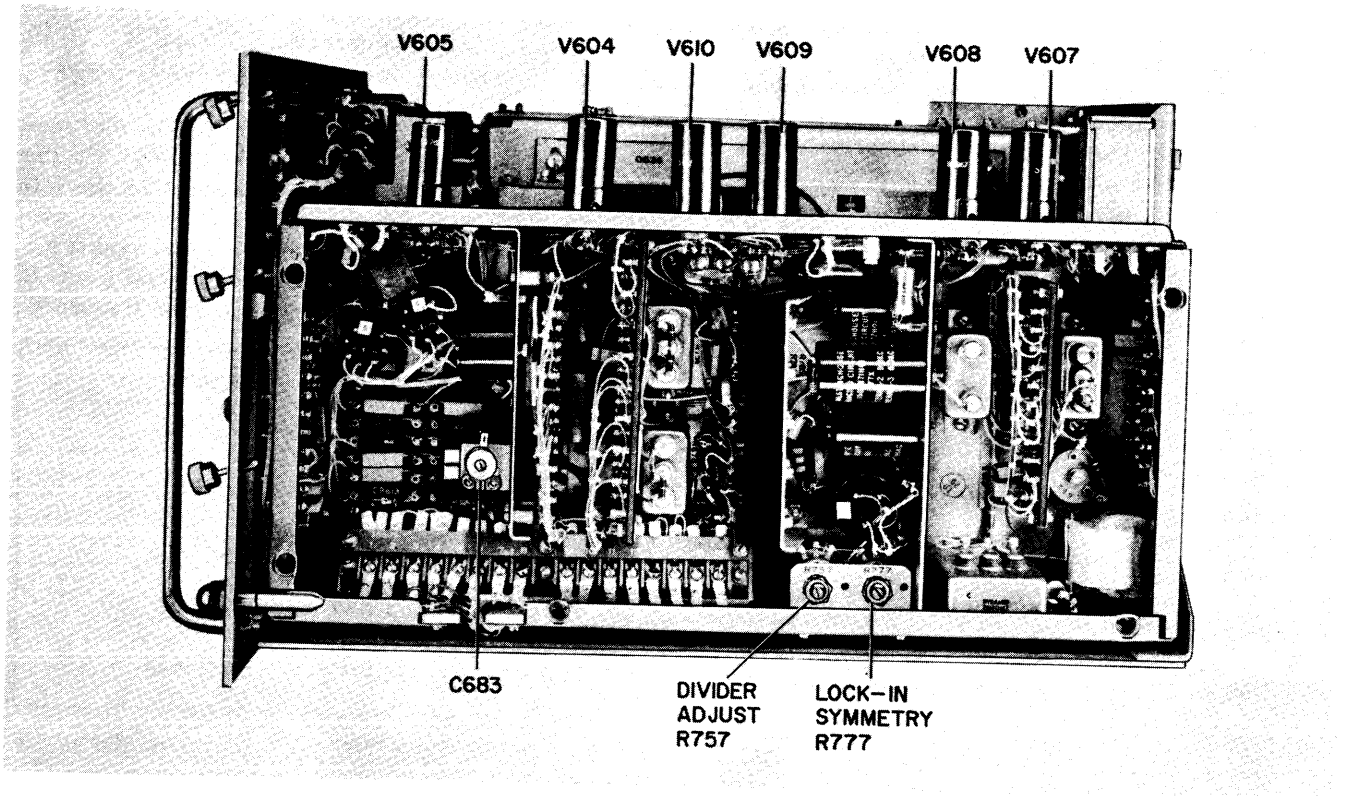


Figure 6-10. Electrical Frequency Control C-2764/WRT-2 Right Side View, Electrical Adjustm nts

Multimeter AN/USM-34 indicates zero volts dc (±0.02 volts).

Step 5. Disconnect the multimeter.

Step 6. Disengage the drawer interlock. Using adapters, IPC 47325 and IPC 47250, connect Frequency Meter AN/USM-29 Series (or equivalent) between the chassis and J620-P620. Engage the drawer interlock.

Step 7. Rotate TUNING B control to 79.990 kc without changing the setting of TUNING A control. Set the frequency on Frequency Meter AN/USM-29 until the meter on the front panel reads zero. If the frequency is not exactly 79.990 kc, refer to figure 6-8 and adjust 80-kc capacitor C670 until the same error is obtained in the opposite direction. (For example, if the frequency registered first by AN/USM-29 was 80.150 kc, adjust C670 until AN/USM-29 indicates 79.830).

Step 8. Rotate TUNING B control until the upper counter reads 70.010 kc and adjust 70-kc coil until the meter on the front panel of Frequency Meter AN/USM-29 indicates zero.

Step 9. Repeat steps 7 and 8 until the error is within plus or minus five cycles.

Step 10. Rotate TUNING B control until the upper counter indicates 75.000 kc. Adjust frequency on Frequency Meter AN/USM-29 until the meter on the front panel reads zero and note the frequency reading. Adjust padding capacitor C713 until the error is doubled. (For example, if the actual frequency was 75.100 kc, adjust capacitor C713 until frequency meter AN/USM-29 indicates 75.200 kc).

Step 11. Repeat steps 7 through 10 until the end points are within plus or minus ten cycles and the mid point is within plus or minus 20 cycles of the correct frequency.

Step 12. Using a procedure similar to that used in steps 7 through 11, refer to figure 6-8 and adjust the coils and capacitors as indicated in the following table:

BAND	LOW FREQUENCY ADJUSTMENT	HIGH FREQUENCY ADJUSTMENT	PADDER ADJUSTMENT
50-60 kc	50 kc coil L615 for 50.010 kc	60 kc capacitor C668 for 59.990 kc	NONE
60-70 kc	60 kc coil L616 for 60.010 kc	70 kc capacitor C669 for 69.990 kc	C712 for 6500 kc
70-80 kc	70 kc coil L617 for 70.010 kc	80 kc capacitor C670 for 79.990 kc	C713 for 7500 kc
80-90 kc	80 kc coil L618 for 80.010 kc	90 kc capacitor C671 for 89.990 kc	C714 for 8500 kc
90-100 kc	90 kc coil L619 for 90.010 kc	100 kc capacitor C672 for 99.990 kc	C715 for 9500 kc

Step 13. Replace oven covers and follow the instructions described in the next paragraph.

(*b*) The procedure given in the following steps covers the calibration of the end points of the interpolation oscillator. This procedure must be used whenever the interpolation oscillator has been repaired or when a tracking error is observed at the end points of the bands. Prior to making these adjustments, the oven heaters should be energized for at least six hours, and the filament and plate voltages should be applied for at least one half hour. After these conditions have been met, proceed as follows:

Step 1. Using adapters IPC 47325 and IPC 47250 connect Frequency Meter AN/USM-29 between J620-P620 and ground.

Step 2. Using a procedure similar to that outlined in steps 7 and 8 of paragraph 6-2*e*(3) set the end points for the five bands as indicated in the following table:

Step 3. Repeat step 2 until the end points are within plus or minus ten cycles, and the mid point is within plus or minus 20 cycles of the correct frequency.

BAND	LOW FREQUENCY ADJUSTMENT	HIGH FREQUENCY ADJUSTMENT
50 to 60 kc	50 kc coil L615 for 50.010 kc	60 kc capacitor C668 for 59.990 kc
60 to 70 kc	60 kc coil L616 for 60.010 kc	70 kc capacitor C669 for 69.990 kc
70 to 80 kc	70 kc coil L617 for 70.010 kc	80 kc capacitor C670 for 79.990 kc
80 to 90 kc	80 kc coil L618 for 80.010 kc	90 kc capacitor C671 for 89.990 kc
90 to 100 kc	90 kc coil L619 for 90.010 kc	100 kc capacitor C672 for 99.990 kc

Step 4. Remove Frequency Meter AN/USM-29 and the adapters from J620-P620 and reconnect J620 to P620.

(4) FREQUENCY COMPARATOR ADJUSTMENTS.—The only adjustments to be made in the frequency comparator circuit are those of the SIDEBAND BALANCE ADJUST R610 and that of C631. First make sure that the controls on the front panel of Transmitter Group OA-2175/WRT-2 are set as described in paragraph 6-2*c*(2) then proceed as follows:

Step 1. Connect Carrier Frequency Voltmeter, Sierra Model 101 (or equivalent) to J605.

Step 2. Disconnect P161 from J614, P162 from J615, P611 and the leads from TB605-7 through 10.

Step 3. Locate the junction of R627, C640, R630 and R634 on circuit board E605. Ground this junction with a clip lead not longer than four inches.

Step 4. Press Plate Power ON switch S503 on the front panel of Amplifier Power Supply AM-2122/WRT-2.

Step 5. Refer to Section 3 of this technical manual and set the controls on the front panel of Radio Frequency Oscillator O-581/WRT-2 for an output frequency of 29.975 mc.

Step 6. On Electrical Frequency Control C12764/WRT-2 set TUNING A control to the 50-60-kc band.

Step 7. Set Carrier Frequency Voltmeter, Sierra Model 101 to 75 kc.

Step 8. Refer to figure 6-9 and adjust C631 for a maximum reading on Carrier Frequency Voltmeter, Sierra Model 101 (or equivalent). Note this value, which will be used as a reference level.

Step 9. Set TUNING A control to the 40-50-kc band.

Step 10. Refer to figure 6-9 and adjust SIDEBAND BALANCE ADJUST potentiometer R610 for a minimum reading on Carrier Frequency Voltmeter, Sierra Model 101 (or equivalent). This reading must be no greater than 1/10 of the reference level noted in step 7.

Step 11. Reconnect P161 to J614, P162 to J615, P611 to J611 and leads 5 through 8 on TB602. Remove the clip lead.

(5) ONE MEGACYCLE OSCILLATOR ADJUSTMENTS.—For sets serials 1 to 294, the adjustments to be made in the one megacycle oscillator require the removal of the oven covers. After removing both the outer and inner covers of the oven proceed in the following manner:

Step 1. Refer to figure 6-8 and locate assembly board E1304. Note that the symbols of all the components are clearly marked on the board next to each component.

Step 2. Connect Multimeter AN/USM-34 Series (or equivalent) between ground and terminal 3 of transformer T1301, and set it on its 1-volt a-c scale.

Step 3. Connect Frequency Standard AN/URQ-9 (or equivalent) at the common connection of C1312, R1301 and RT1301.

Step 4. Connect a 10-ohm resistor between the probe of Frequency Standard AN/URQ-9 and ground.

Step 5. Apply the one-mc signal.

Step 6. Adjust capacitor C1305 for a maximum indication on Multimeter AN/USM-34.

Step 7. Disconnect Multimeter AN/USM-34 from terminal 3 of T1301.

Step 8. Connect Miniature Coaxial Cable T-adapter IPC 47325 between P1301 and J1301, and connect Mini-

ature Coaxial Cable to Coaxial Cable, Adapter IPC 47250 to IPC 47325.

Step 9. Connect Multimeter AN/USM-34 to the open end of adapter IPC 47250.

Step 10. Adjust capacitors C1304 and C1306 for a maximum indication on the multimeter.

Step 11. Disconnect Multimeter AN/USM-34 and the adapters and reconnect P1301 to J1301.

Step 12. Disconnect Frequency Standard AN/URQ-9 (or equivalent).

Step 13. Replace oven covers and tighten all cover screws.

Step 14. Place METER INDICATION switch S606 in 1 MC CAL or 1 MC CAL B position.

Step 15. Connect Frequency Standard, AN/URQ-9 (or equivalent) to J624 located on the front panel of Electrical Frequency Control C-2764/WRT-2.

Step 16. Adjust XTAL OSC LOG (C1340) thumbwheel, located on top of the chassis, until the pointer on meter M601 completes a full swing in not less than 1000 seconds. (Use a stopwatch to perform this step.)

Step 17. After Radio Transmitting Set AN/WRT-2 has been in operation for a period of several years, the frequency of the 1-mc crystal contained in the sealed oven (Z1301) may have drifted too far to allow simple calibration by means of the XTAL OSC LOG thumbwheel. The drift in frequency is due to normal aging of the crystal and the amount and rate of drift is different for each crystal. Frequency drag capacitor C1316 (figure 5-27) is provided to compensate for crystal aging effects. When it becomes impossible to bring the 1-mc oscillator frequency within the specified range of the calibration standard, C1316 should be replaced by a capacitor approximately 10 micromicrofarads larger. For sets serials 295 and up, the only adjustment to be made to the one megacycle oscillator is the frequency adjustment.

Step 18. Set the front panel controls in accordance with paragraph 6-2*e*(2).

Step 19. Pull out the electrical frequency control drawer.

Step 20. Place the METER INDICATION switch (front panel electrical frequency control drawer) in either the 1 MC CAL A or 1 MC CAL B position.

Step 21. Connect Frequency Standard AN/URQ-6 (or equivalent) to 1 MC STD FREQ INPUT jack J624 located on the front panel of the electrical frequency control drawer.

Step 22. Apply the one-mc standard frequency.

Step 23. Observe the pointer of meter M601 on the front panel of the electrical frequency control drawer. It should complete a full swing in not less than 1000 seconds (16 minutes 40 seconds).

Step 24. If the pointer completes a full swing in less than 1000 seconds, adjust the XTAL OSC LOG thumbwheel on the top front of the electrical frequency control drawer. Repeat step 23.

Step 25. After Radio Transmitting Set AN/WRT-2 has been in operation for several years, the frequency of the one-mc crystal located in sealed oven Z1301 may have drifted too far to allow calibration by means of XTAL OSC LOG thumbwheel. The drift in frequency is due to normal aging of the crystal. Frequency drag capacitor C1703 should be replaced by a capacitor approximately 10 micromicrofarad larger. Then, readjust the XTAL OSC LOG thumbwheel.

(6) STANDARD FREQUENCY GENERATOR ADJUSTMENTS.—The adjustments to be performed in the circuits on the Standard Frequency generator chassis include adjustment of capacitor C683, LOCK-IN SYMMETRY adjustment R777 and DIVIDER ADJUST R757. After making certain that the controls on the front panel of Transmitter Group OA-2175/WRT-2 have been set as described in paragraph 6-2*c*(2) proceed in the following manner:

Step 1. Pull out drawer containing Electrical Frequency Control C-2764/WRT-2. Connect oscilloscope AN/USM-24 Series (or equivalent) to terminal 6 of T619. Engage drawer interlock and observe waveform appearing on oscilloscope.

Step 2. Adjust DIVIDER ADJUST potentiometer R757 to the middle of a range of positions that obtains a pattern on oscilloscope AN/USM-24 as shown in figure 6-27.

Step 3. Tighten the shaft lock on R757 and disconnect oscilloscope AN/USM-24 from terminal 6 of T619.

Step 4. Place METER INDICATION switch in the OPERATE A position. Place INT OSC TUNING switch in the 1 KC STEPS position.

Step 5. Set TUNING (A) and TUNING (B) control to 55.00 kc. Rotate TUNING (B) slowly clockwise until meter M601 starts sweeping. Note the frequency at this point.

Step 6. Rotate TUNING (B) slowly counterclockwise until the meter stops sweeping. Note the meter indication and frequency at this point.

Step 7. Continue rotating TUNING (B) slowly counterclockwise through 55.00 kc until the meter starts sweeping. Note the frequency at this point.

Step 8. Rotate TUNING (B) slowly clockwise until the meter stops sweeping. Note the meter indication and frequency at this point.

Step 9. If the differences between the meter readings of steps 6 and 8 are different in magnitude by more than 10 microamperes, adjust LOCK-IN SYMMETRY potentiometer R777 and repeat steps 5 through 8.

Step 10. Obtain the difference between the frequencies of steps 5 and 7. This difference (hold-in range) should be a minimum of 400 cps.

Step 11. Obtain the difference between the frequencies of steps 6 and 8. This difference (lock-in range) should be a minimum of 300 cps.

Step 12. Repeat steps 5 through 8 and steps 10 through 11 using frequencies of 65, 75, 85, and 95 kc.

Step 13. Lock the LOCK-IN SYMMETRY potentiometer R777. Place INT OSC TUNING switch in the CONTINUOUS position.

Step 14. Disengage the drawer interlock and connect Multimeter AN/USM-34 to terminal 1 of T606.

Step 15. Disconnect jack J611 from plug P611 and engage the drawer interlock.

Step 16. Refer to figure 6-10 and adjust capacitor C683 for a maximum indication in Multimeter AN/USM-34.

Step 17. Disconnect Multimeter AN/USM-34 from terminal 1 of T606 and reconnect J611 to P611.

f. RADIO FREQUENCY AMPLIFIER AM-2121/WRT-2. — The electrical adjustments in Radio Frequency Amplifier AM-2121/WRT-2 are: Adjustment of the mixer balance and tracking of the driver tuning components, adjustment of the power amplifier bias and overload relay, adjustment and tracking of the power amplifier, calibration of the reflectometer circuit, and calibration of the tuner-position indicating meter. Throughout the procedure for the adjustments in Radio Frequency Amplifier AM-2121/WRT-2 refer to figures 6-11 and 6-12 for location of adjustments.

(1) TEST EQUIPMENT AND SPECIAL TOOLS. —The test equipment required for making the adjustments in the Radio Frequency Amplifier AM-2121/WRT-2 consists of:

3 Multimeters, AN/USM-34 Series (or equivalent)
Multimeter, AN/USM-116 Series (or equivalent)
R-F Ammeter, 0.5 Amperes, Weston Model 622 (or equivalent)
Oscilloscope, AN/USM-24 Series (or equivalent)
8-ft length of RG-8/U coaxial cable
Dummy Load, DA-91/U
T-adapter, UG-566/U
2 Connectors, UG-573/U and UG-572/U
Potentiometer, 10,000 ohm, 2 watt
Audio Oscillator Equipment, Navy Model LAJ Series (or equivalent)

(2) CONTROL SETTINGS.—Before proceeding to make the adjustments in the Radio Frequency Amplifier AM-2121/WRT-2 set the controls on the front panels of Transmitter Group OA-2175/WRT-2 in the following manner:

CONTROL	LOCATION	SETTING
EMERGENCY STOP (S201)	Front panel, Power Supply PP-2222/WRT	ON
EMISSION SELECTOR (S508)	Front panel, Amplifier-Power Supply AM-2122/WRT-2	CW
FILAMENT POWER (S502)	Front panel, Amplifier-Power Supply AM-2122/WRT-2	ON
TEST TONE (S511)	Front panel, Amplifier-Power Supply AM-2122/WRT-2	OFF
LOCAL REMOTE (S507)	Front panel, Amplifier-Power Supply AM-2122/WRT-2	LOCAL
PLATE POWER ON (S503) OFF (S504)	Front panel, Amplifier-Power Supply AM-2122/WRT-2	Press OFF
POWER SELECTOR (S510)	Front panel, Amplifier-Power Supply AM-2122/WRT-2	ADJ
CARRIER TEST KEY (S812)	Front panel, Radio Frequency Amplifier, AM-2121/WRT-2	OFF
OUTPUT METER (S815)	Front panel, Radio Frequency Amplifier, AM-2121/WRT-2	R-F OUTPUT
P. A. CATHODE CURRENTS (S802)	Front panel, Radio Frequency Amplifier, AM-2121/WRT-2	TOTAL
TEST AMMETER (S801)	Front panel, Radio Frequency Amplifier, AM-2121/WRT-2	P. A. POS SCREEN CURRENT
FSK TEST (S309)	Front panel, Radio Frequency Oscillator, O-581/WRT-2	LINE

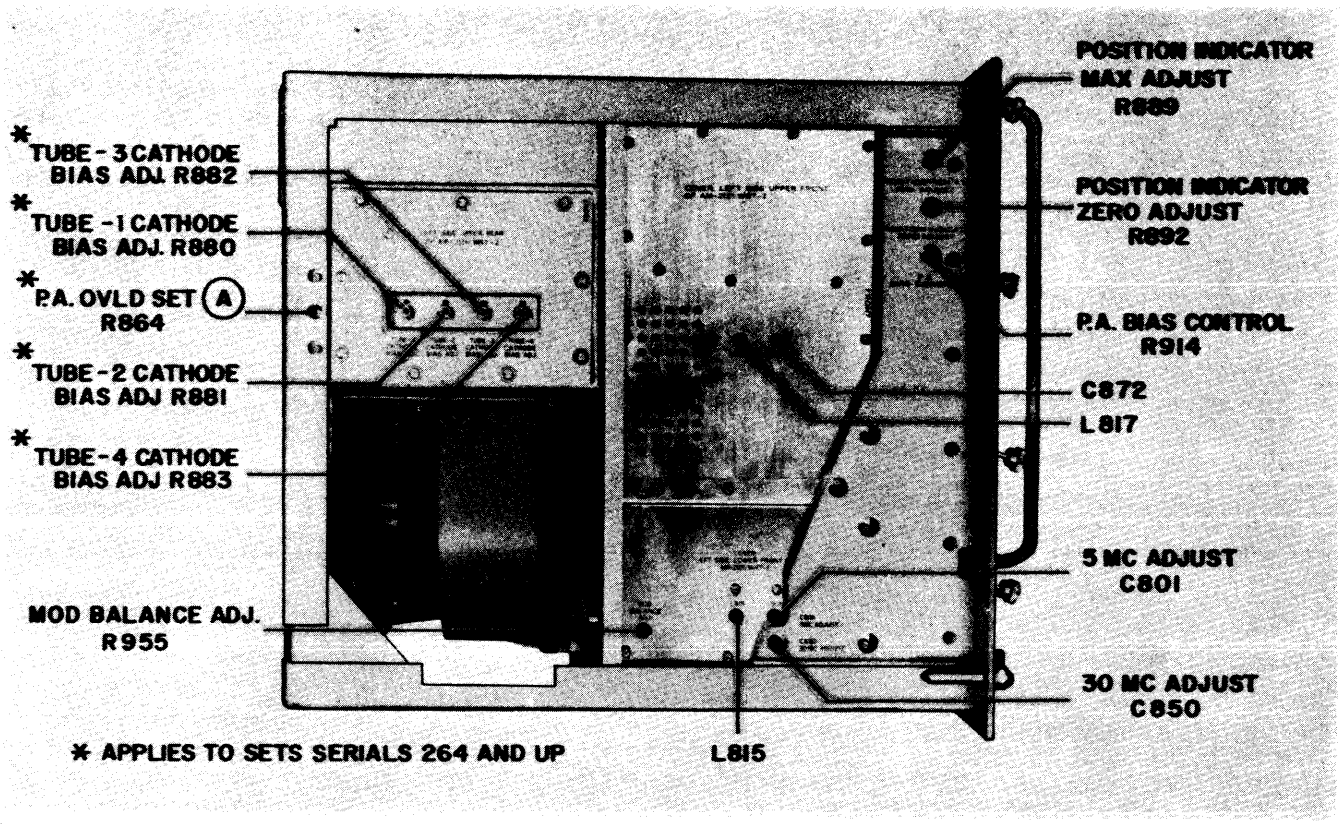


Figure 6-11. Radio Frequency Amplifier AM-2121/WRT-2 Left Side of Chassis, Electrical Adjustments

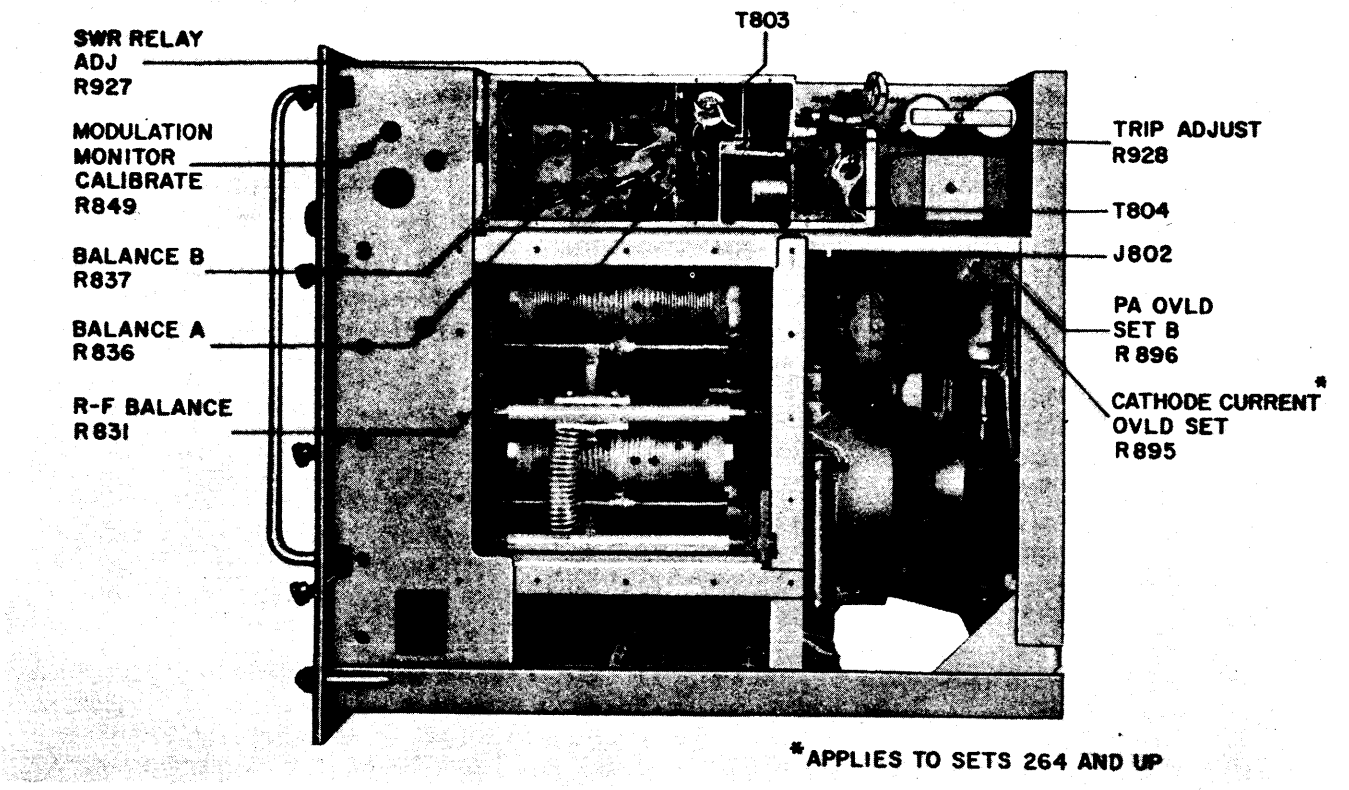


Figure 6-12. Radio Frequency Amplifier AM-2121/WRT-2 Right Side of Chassis, Electrical Adjustments

(3) DRIVER ALIGNMENT.

Step 1. Energize the equipment and tune up the transmitter at an operating frequency of 5.0 mc in accordance with the instructions given in paragraphs 3-2*b*(1) and (2) of Section 3. Proceed with the tuning as outlined in paragraphs 3-2*b*(1) and (2) of Section 3 ONLY THROUGH STEP 14.

Step 2. Pull out, to its extreme limit of travel, the drawer containing Radio Frequency Amplifier AM-2121/WRT-2. Engage the interlock switch.

Step 3. Set I.P.A. TUNING (F) for a dial reading of 5 mc. Adjust I.P.A. TUNING (F) and I.P.A. FINE TUNING for a maximum reading on TEST AMMETER M801.

Step 4. Adjust trimmer capacitors C801 and C872 for a maximum reading on TEST AMMETER M801. Make a note of the reading. Neither C801 nor C872 should be set for minimum or maximum capacity (screwdriver slot in horizontal position).

Step 5. Refer to Section 3, paragraphs 3-2*b*(1) and (2), and retune and lock-up the master oscillator at an output frequency of 5.5 mc. Rotate DRIVE ADJUST control R986 fully counterclockwise.

Step 6. Repeat step 3. Adjust MOD. BALANCE ADJ potentiometer R955 near the center of its range for a minimum reading on TEST AMMETER M801.

Step 7. Repeat step 1 for an output frequency of 26.0 mc.

Step 8. Set I.P.A. TUNING (F) for a dial reading of 26.0 mc. Adjust I.P.A. FINE TUNING for a maximum reading on TEST AMMETER M801.

Step 9. Adjust trimmer coils L815 and L817 for a maximum reading on TEST AMMETER M801. Make a note of the reading.

Step 10. Repeat step 1 for an output frequency of 30.0 mc.

Step 11. Set I.P.A. TUNING (F) for a dial reading of 30.0 mc. Adjust I.P.A. TUNING (F) and I.P.A. FINE TUNING for a maximum reading on TEST AMMETER M801.

Step 12. Adjust I.P.A. TUNING (F) and C850 for a maximum indication on TEST AMMETER M801. Shift the I.P.A. TUNING (F) control back and forth and adjust C850 until a position is found where the greatest output indication is obtained. Leave C850 set in this position. Make a note of the meter indication.

Step 13. Repeat steps 7 and 8. If the maximum reading noted in step 9 is not obtained, readjust coils L815 and L817 for a maximum reading.

Step 14. If it is necessary to readjust L815 and L817, go through steps 10, 11, and 12 again. Steps 13 and 14 may have to be repeated several times until the maximum meter indications at 26.0 and 30.0 mc are approximately equal.

St p 15. Repeat steps 1 and 3. If the maximum reading noted in step 4 is not obtained, readjust C801 and C872.

St p 16. If C801 and C872 are readjusted in step 15, repeat steps 10 through 14.

Step 17. Press PLATE POWER OFF switch S504. Slide the unit drawer back into the cabinet and secure it.

(4) POWER AMPLIFIER OVERLOAD AND BIAS ADJUSTMENTS.

Note

Before starting the following procedure on sets serials 264 and up, turn CATHODE CURRENT OLVD SET potentiometer R895 fully clockwise and P.A. OLVD SET B potentiometer R896 fully counterclockwise.

Step 1. Pull out to its extreme limit of travel the drawer containing Radio Frequency Amplifier AM-2121/WRT-2. Engage the interlock switch.

Step 2. Set TRIP ADJUST potentiometer R928 fully count rclockwise and set SWR RELAY ADJUST potentiometer R927 fully clockwise. (The adjustments are located in the reflectometer chassis—see figure 6-11.)

Step 3. Energize the equipment and tune up the transmitter at an operating frequency of 15.0 mc in accordance with the instructions given in paragraphs 3-2*b*(1) and (2) of Section 3. PROCEED WITH THE TUNING PROCEDURE ONLY THROUGH STEP 17.

Step 4. Set POWER SELECTOR switch S510 on the 100W position.

Step 5. Reduce the drive (DRIVE ADJUST control R986) and detune the P.A. TUNING CONTROL Ⓖ to about 5.0 mc. Adjust P.A. BIAS CONTROL potentiometer R914 to give the maximum total cathode current reading on meter M802. Then increase the drive until meter M802 indicates 850-ma total cathode current.

Step 6. Adjust P.A. OVLD SET (P.A. OVLD SET A on sets serials 264 and up) potentiometer R864 until th overload trips. (H.V. OVERLOAD lamp DS801 will light wh n the overload relay is energized).

Step 7. Reduce the drive and press the H.V. OVERLOAD PUSH TO RESET BUTTON S804. Readjust P.A. OVLD SET potentiometer R864 slightly and again increase th drive until the overload trips. Note the cathode current reading on M802.

Step 8. Repeat step 7 until the overload relay energizes at a total cathode current reading of 830 ma.

Step 9. Reduce the drive to zero and adjust P.A. BIAS CONTROL potentiometer R914 until a total cathode current reading of 500 ma is obtained.

Step 10. Set the POWER SELECTOR switch S510 to the ADJ position. Set the CARRIER TEST KEY to the OFF position.

Step 11. Slide the unit drawer back into the cabinet and secure it.

(5) POWER AMPLIFIER ALIGNMENT.

Step 1. Tune up the transmitter at an operating frequency of 30.0 mc using the procedure outlined in paragraph 3-2*b*(2) of Section 3. DO NOT GO FURTHER THAN STEP 16 WITH THE TUNING PROCEDURE. Deenergize the equipment by placing EMERGENCY STOP switch S201 in the OFF position.

WARNING

EXTREME CAUTION MUST BE EXERCISED WHEN MAKING TEST CONNECTIONS AND MEASUREMENTS AROUND THE FINAL AMPLIFIER TANK ASSEMBLY. BE SURE TO SET THE EMERGENCY STOP SWITCH ON THE FRONT PANEL OF THE HIGH VOLTAGE POWER SUPPLY IN THE OFF POSITION AND THEN DISCHARGE THE FILTER CAPACITORS BY WITHDRAWING THE POWER SUPPLY DRAWER FROM THE CABINET FAR ENOUGH TO ALLOW SHORTING SWITCH S202 TO OPERATE.

Step 2. Pull out the unit drawer containing Radio Frequency Amplifier AM-2121/WRT-2. Engage the interlock switch. Refer to figure 6-12 and locate r-f output jack J802. Remove P182 and connect Dummy Load DA-91/U to J802. Use the UG-566/U T-adapter at J802 and connect the dummy load to the T-adapter with an eight-foot length of RG-8/U coaxial cable terminated with UG-572/U and UG-573/U connectors. Do not remove any subassembly cover plates from the unit except when it is necessary to gain access to components or test points mentioned in the procedure which follows.

Step 3. Set Multimeter AN/USM-34 Series (or equivalent) on its 100-volt r-f range and connect it between the junction of C827 and L804. Call this voltage measurement E_1.

Step 4. Set the second Multimeter AN/USM-34 Series (or equivalent) on its 100-volt r-f range and connect it between the junction of C837 and L805. Call this voltage measurement E_2.

Step 5. Set the third Multimeter AN/USM-34 Series (or equivalent) on its 100-volt r-f range and connect it between E802 and ground. Call this voltage E_3.

Step 6. Using an open end wrench, release the lock nut on the top of vacuum variable capacitor C837. Adjust the hex nut lead screw to withdraw the concentric plates of the capacitor until there is approximately 3/64 inch clearance between the moveable plates and the fixed plates. (Note—a ten-cent piece is approximately 3/64 inch thick).

Step 7. Remove the silver strap between L813 and the bar of L805. Connect the 0.5 ampere r-f ammeter, Weston Model 622 (or equivalent), between these two points using short pieces of copper strap for leads. Call this current reading IL804.

St p 8. Plac the EMERGENCY STOP switch in the ON position. Press FILAMENT POWER switch

S502 ON. After L.V. RECT ON light DS504 glows, press PLATE POWER ON switch S503. Set the DRIVE ADJUST control R986 to zero.

Step 9. Lock CARRIER TEST KEY S812 in the permanently ON position (up). Set POWER SELECTOR switch S510 on the 100W position. Check the total cathode current reading on meter M802. If necessary readjust P.A. BIAS CONTROL potentiometer R914 until a reading of 500 ma is obtained.

Step 10. Increase the drive until meter E_1 indicates about half scale. Check the total cathode current and see that it does not exceed 600 ma.

Step 11. Retune the transmitter for an operating frequency of 10.0 mc. Set the P.A. TUNING Ⓖ dial at 9.9 mc. Adjust the drive until meter E_1 indicates approximately 50 volts.

Step 12. Using a long screw driver, adjust C836 to peak the reading on meter E_1. If E_1 cannot be peaked near the middle of the range of the adjustment screw, it will be necessary to adjust the hex nut lead screw to withdraw or insert C836 so that it can be peaked in the range of the adjustment screw.

Step 13. When E_1 has been properly peaked, advance the drive until E_1 is approximately 300 volts. E_2 should then be about 215 volts and E_3 should be about 66 volts. (Note—change ranges on the three multimeters as the drive is increased).

Step 14. Check the dummy load current by temporarily removing one of the voltmeters and connecting it between the open arm of the T-adapter at J802 and ground. Call this voltage measurement E_4. The dummy load current is given by the formula: $I_{LOAD} = E_4/52$. The current ratio I_{L804}/I_{LOAD} should be approximately 1.1/1.

Step 15. If the current ratio is too high, the voltage reading E_2 will probably be too low. Use a long screwdriver and adjust C837 for a decrease in the current reading IL804. (Note: Voltage readings with 25% of those specified above and a current ratio of 1/1 to 1.5/1 may be considered satisfactory at this time.)

WARNING

IN ADJUSTING CAPACITOR C909 IN THE STEP WHICH FOLLOWS, EXERCISE EXTREME CARE AND MAKE THE ADJUSTMENT WITH AN INSULATED SCREWDRIVER. HIGH R-F AND D-C VOLTAGES EXIST ON THE CAPACITOR.

Step 16. Retune the transmitter for an operating frequency of 26.0 mc. Increase the drive to obtain the voltage and current readings of step 13 and 14. Set TEST AMMETER switch S801 to the DRIVER CATHODE (150 MA) position. While observing the driver cathode current reading, vary P.A. TUNING Ⓖ control several megacycles up and down from the E_1 peak reading. Using an insulated screwdriver, adjust neutralizing capacitor C909 until a minimum variation of the driver cathode current is obtained as P.A. TUNING Ⓖ control is varied.

Step 17. Retune the transmitter for an operating frequency of 30.0 mc. Increase the drive to obtain the voltage readings and current readings of steps 13 and 14.

Step 18. Using a long screwdriver, rock the C836 tuning adjustment and see if the tank circuit is actually tuned to the resonance point.

Step 19. If the tank circuit is not now close to the resonance point (within one-half turn of the C836 adjustment screw) it will probably be necessary to adjust the inductance of L813 in order to improve the tracking. The voltage at E_2 will generally indicate whether L813 needs to be increased or decreased. If E_2 is too large, L813 has too little inductance. Squeezing the coil turns closer together will increase the inductance. If E_2 is too small, the coil turns must be stretched further apart.

Step 20. If after performing step 18, the correct voltage and current ratios cannot be obtained for a setting of the P.A. TUNING Ⓖ dial at slightly below 30.0 mc, it may be necessary to retune the transmitter to 10.0 mc and readjust C836 so that resonance is obtained when the P.A. TUNING Ⓖ dial is at a slightly lower setting than 9.9 mc.

Step 21. When the tracking has been completed, it should be possible to tune any frequency between 2.0 and 30.0 mc with the voltage ratio E_1/E_3 remaining constant at 4.5 $\pm$10%. E_2 may vary by $\pm$20%.

Step 22. If at 30.0 mc the current ratio I_{L804}/I_{LOAD} is correct (1.1/1), but the ratio E_2/E_3 (3.3) is off, the latter may be corrected by adjusting the inductance of L814. The voltage ratio is increased by increasing the inductance of L814 (squeeze the coil turns together), and the voltage ratio is decreased by stretching the coil turns apart.

Step 23. Deenergize the equipment and discharge the high voltage supply. Remove the three voltmeters. Remove the ammeter from the tank circuit and replace the silver strap between L813 and the bias of L805. Tighten the locking nuts on C836 and C837. Connect Multimeter AN/USM-34 Series (or equivalent) between the open arm of the T-adapter at J802 and ground. Set the meter on its 1000-volt range.

Step 24. Energize the equipment. With the transmitter tuned to 30.0 mc, set the POWER SELECTOR switch S510 on the 500W position. Increase the drive until Multimeter AN/USM-34 indicates approximately 162 volts. Adjust the coupling and retune until the total cathode current reading is between 725 and 825 ma with the voltmeter reading 162 volts. The P.A. COUPLING H dial should be between 45 and 55. Place TEST AMMETER switch S801 in the P.A. NEG SCREEN CURRENT position. The reading should be approximately 5 ma.

Step 25. Repeat step 23 for every 1 mc between

the range of 2.0 and 8.0 mc, and for every 2 mc between the range of 8.0 and 30.0 mc. If the conditions of step 23 are met for all frequencies, the final amplifier is properly aligned. Deenergize the equipment. Remove the dummy load and replace all connections. Slide the unit drawer back into the cabinet and secure it.

(6) REFLECTOMETER ADJUSTMENT.—When making the reflectometer adjustments for sets serials 1 to 263, proceed in the following manner:

Step 1. Pull out the unit drawer containing Radio Frequency Amplifier AM-2121/WRT-2. Engage the interlock switch. Refer to figure 6-28 and locate r-f output jack J802. Remove P182 and connect Dummy Load DA-91/U to J802. Use the UG-566/U T-adapter at J802 and connect the dummy load to the T-adapter with an eight-foot length of RG-8/U coaxial cable terminated with UG-572/U and UG-573/U connectors. Do not remove any subassembly cover plates from the unit except when it is necessary to gain access to components or test points mentioned in the procedure which follows.

Step 2. Set Multimeter AN/USM-116 Series (or equivalent) on its 300-volt r-f scale and connect the meter between the open end of the T-adapter at J802 and ground.

Step 3. Energize the equipment and tune up the transmitter at an operating frequency of 15.0 mc. (Refer to Section 3, paragraphs 3-2*b*(1) and (2), for details of the operating and tuning procedure). Increase the setting of DRIVE ADJUST control R986, (front panel of Radio Frequency Amplifier AM-2121/WRT-2) until the final amplifiers are delivering approximately 510-watts output to the dummy load. Multimeter AN/USM-116 Series (or equivalent) should indicate approximately 162-volts rms for 510-watts output.

Step 4. Press PLATE POWER OFF switch S504. Locate the reflectometer chassis and remove the screws holding the cover plate to the righthand side of the chassis. Locate transformers T803 and T804. Disconnect the lead from the center tap of T804 to the stud on T803. Ground the center tap of T804 to the nearest point on the center chassis partition, using as short a length of ground wire as possible.

Step 5. Press FILAMENT POWER switch S502 OFF. Locate transformer T807 and unsolder the wire connected to terminal 3. Set BALANCE A and BALANCE B potentiometers, R836 and R837, to the center of their ranges.

Step 6. Press FILAMENT POWER switch S502 ON. When the L.V. RECT ON light glows, press PLATE POWER ON switch S503. Using a Multimeter AN/USM-34 Series (or equivalent), measure the d-c voltage at the junction of the cathode of diode CR812 and resistor R830; make the same measurement at the junction of the cathode of diode CR813 and resistor R832. Adjust R-F BALANCE potentiometer R831 until the two voltage measurements are equal. Lock the potentiometer at its final setting.

Step 7. Press PLATE POWER OFF switch S509. Place FILAMENT POWER switch S502 in the OFF position. Remove the ground wire from the center tap of T804 and then replace the connection between T804 and T803. Resolder, to terminal 3 of transformer T807, the wire removed in step 5.

Step 8. Press FILAMENT POWER ON switch S502. When the L.V. RECT ON light glows, press PLATE POWER ON switch S503. Set the DRIVE ADJUST control for zero drive. Set OUTPUT METER switch S815 in the R-F OUTPUT position. Note the reading on R-F OUTPUT meter M805. Adjust either BALANCE A potentiometer R836 or BALANCE B potentiometer R837 until M805 indicates zero.

Step 9. Increase the drive until the power amplifiers are delivering approximately 510 watts of power to the dummy load. (The multimeter connected to J802 should indicate approximately 162-volts rms). Note the reading of R-F OUTPUT meter M805. If the meter reads between 500 and 520 watts, no further adjustments are necessary. If the meter indicates high or low, adjust BALANCE A and BALANCE B potentiometers R836 and R837 in the same direction and by the same amount until the meter indicates about 510 watts.

Step 10. Repeat steps 8 and 9 until R-F OUTPUT meter M805 indicates zero for zero drive and 510 watts when the meter at J802 indicates 162-volts rms.

Step 11. With the amplifier drive adjusted for 500-watts output of the dummy load, press READ SWR switch (S807) and adjust SWR CALIBRATE potentiometer R846 (located on the front panel of Radio Frequency Amplifier AM-2121/WRT-2) until the pointer of SWR INDICATOR meter M804 is at the center scale mark. Loosen the set screw holding the knob to the shaft of R846 and rotate the knob until its pointer is opposite the 1:1 marking on the panel. Tighten the knob set screw.

Step 12. Deenergize the equipment. Remove the dummy load and all test equipment. Replace the cover on the reflectometer chassis. Slide the unit drawer back into the cabinet and secure it.

(6A) REFLECTOMETER ADJUSTMENT. When making the reflectometer adjustments for sets serials 264 and up, proceed in the following manner.

Step 1. Pull out the unit drawer containing Radio Frequency Amplifier AM-2121/WRT-2. Engage the interlock switch.

Step 2. Place the following controls in their extreme counterclockwise position:

Balance A	R836
Balance B	R837
PA OVLD set B	R896
Trip Adjust	R928

Step 3. Place the following controls in their extreme clockwise position:

PA OVLD SET A R864
CATHODE CURRENT OVLD SET R895
SWR RELAY ADJUST R927

Step 4. Refer to figure 6-28 and locate r-f output jack J802. Remove P182 and connect Dummy Load

DA-91/U to J802. Use the UG-566/U T-adapter at J802 and connect the dummy load to the T-adapter with an eight-foot length of RG-8/U coaxial cable terminated with UG-572/U and UG-573/U connectors.

Step 5. Set Multimeter AN/USM-116 Series (or equivalent) on its 300-volt r-f scale and connect the meter between the open end of the T-adapter at J802 and ground.

Step 6. Energize the equipment and tune up the transmitter at an operating frequency of 15.0 mc. (Refer to Section 3, paragraph 3-2*b*(1) and (2), for details of the operating and tuning procedure.)

Step 7. With CARRIER TEST KEY S812 in OFF position, adjust R-F BALANCE control R831 until RF OUTPUT meter M805 indicates zero.

Step 8. Set DRIVE ADJUST control R986 to zero.

Step 9. Place PA CATHODE CURRENT switch S802 in the TOTAL (1.5A) position, and adjust PA BIAS CONTROL R914 until the total cathode current is 550 ±5 ma as indicated on PA CATHODE CURRENT meter M802.

Step 10. Adjust PA OVLD SET A control R864 in the counterclockwise direction until the high voltage overload trips (lamp DS801 glows).

Step 11. Adjust PA BIAS CONTROL R914 one eighth turn counterclockwise, and reset the overload (by pushing H.V. OVERLOAD PUSH TO RESET switch S804).

Step 12. Adjust PA BIAS CONTROL R914 until the total cathode current, as indicated on PA CATHODE CURRENT meter M802, is 500 ±5 ma.

Step 13. Increase drive level, by adjusting DRIVE ADJUST control R986 (with P.A. tuned properly) until the high voltage overload trips or until the total cathode current is 850 ±10 ma.

Step 14. If the high voltage overload trips before 850 ±10 ma is obtained proceed to step 15, otherwise proceed to step 17.

Step 15. Adjust CATHODE CURRENT OVLD SET control R895 a few degrees counterclockwise, and reset the high voltage overload.

Step 16. Repeat steps 13 through 15 until the total cathode current is 850 ±10 ma, as indicated on PA CATHODE CURRENT meter M802.

Step 17. Adjust CATHODE CURRENT OVLD SET control R895 counterclockwise until the high voltage overload trips.

Step 18. Set DRIVE ADJUST control R986 to zero, and reset the high voltage overload.

Step 19. Adjust PA OVLD SET A R864 counterclockwise one quarter turn, and adjust PA BIAS CONTROL R914 clockwise until the total cathode current is 550 ±5 ma.

Step 20. Adjust PA OVLD SET A R864 counterclockwise until the high voltage overload trips.

Step 21. Adjust PA BIAS CONTROL R914 counterclockwise one quarter turn and reset the high voltage overload.

Step 22. Adjust PA BIAS CONTROL R914 clockwise until the total cathode current is 500 ±5 ma.

Step 23. Repeat steps 11 through 20 until the high voltage overload trips at 550 ±5 ma and at 850 ±10 ma as outlined in the preceding steps.

Step 24. Adjust DRIVE ADJUST control R986 until the total cathode current is 820 ±10 ma.

Step 25. Turn BALANCE A control R836 clockwise until RF OUTPUT meter M805 indicates 500 watts.

Step 26. Turn PA OVLD SET B control R896 clockwise, readjusting BALANCE A control R836 as necessary to keep RF OUTPUT meter M805 indicating 500 watts, until the high voltage overload trips.

Step 27. Reset BALANCE A control R836 to the extreme counterclockwise position.

Step 28. Reset the high voltage overload, and adjust DRIVE ADJUST control R986 until the total cathode current is 820 ±10 ma.

Step 29. Adjust BALANCE A control R836 clockwise and check that the high voltage overload trips when the RF OUTPUT meter M805 indicates 500 watts.

Step 30. Reset BALANCE A control R836 to the extreme counterclockwise position, and reset the high voltage overload.

Step 31. Adjust DRIVE ADJUST control R986, until the final amplifiers are delivering approximately 500-watts output to the dummy load. Multimeter AN/USM-116 Series (or equivalent) should indicate approximately 161-volts rms for 500-watts output.

Step 32. Turn BALANCE A control R836 and BALANCE B control R837 equal amounts in the clockwise direction until RF OUTPUT meter M805 indicates 550 watts with CARRIER TEST KEY S812 ON, and zero watts with CARRIER TEST KEY OFF.

Step 33. With RF OUTPUT meter M805 indicating 550 watts, adjust SWR CALIBRATE control R846, (while depressing READ SWR switch S807) until SWR INDICATOR-meter M804 indicates center scale.

Step 34. Loosen the setscrew securing the knob to the shaft of SWR CALIBRATE control R846 and adjust the knob so that its index points to the 1:1 position on the panel. Tighten the knob setscrew.

Step 35. Deenergize the equipment. Remove the dummy load and all test equipment. Slide the unit drawer back into the cabinet and secure it.

(7) MODULATION MONITOR CALIBRATION.

Step 1. Refer to Section 3, paragraphs 3-2*b*(1) and (2) and tune up the transmitter for AM operation at an output frequency of 15.0 mc and a power output of approximately 250 watts. Deenergize the equipment.

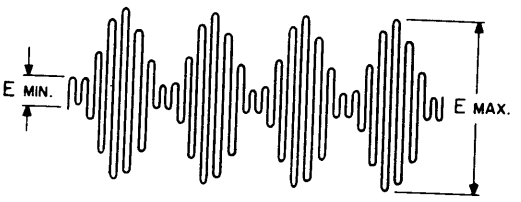
Step 2. Withdraw, to its extreme limit of travel, the drawer containing Radio Frequency Oscillator O-581/WRT-2. Engage the interlock switch. Locate J1202 on the modulator chassis. Remove plug P136 and connect the Miniature T-adapter, Industrial Products Co. Type IPC 47325 (or equivalent), to J1202. Connect P136 to one arm of the adapter. Connect the vertical input of Oscilloscope AN/USM-24 Series or (equivalent) between the center conductor of one arm of the T-adapter and ground.

Step 3. Withdraw to its extreme limit of travel the drawer containing Amplifier-Power Supply AM-2122/WRT-2. Engage the interlock switch. Locate terminal board TB501F. Remove the external lead from terminal 53 of TB501F. Connect the output of Audio Oscillator Equipment, Navy Model LAJ Series (or equivalent) between the lead and ground. Adjust the output of the oscillator for a 1000-cps signal.

Step 4. Energize the transmitter. Adjust the output of the audio oscillator for 90 percent modulation as indicated by the oscilloscope envelope waveform. In determining when the desired degree of modulation is attained, use the following formula:

$$\%\ \text{modulation} = \frac{E_{max} - E_{min}}{E_{max} + E_{min}} \times 100$$

where E_{max} and E_{min} are determined as in the following typical waveform.



Step 5. Deenergize the transmitter. Withdraw, to its extreme limit of travel, the unit drawer containing Radio Frequency Amplifier AM-2121/WRT-2. Engage the interlock.

Step 6. Energize the transmitter. Set OUTPUT METER switch S815 on the % MOD position. Adjust RF SET FOR MOD. control R850 until R-F OUTPUT meter M805 reads 90% modulation.

Step 7. Set OUTPUT METER switch S815 to the R-F SET position. Adjust MODULATION MONITOR CALIBRATE potentiometer R849 (figure 6-17) until the indicator of R-F OUTPUT meter M805 is on the R-F SET line.

Step 8. Repeat steps 6 and 7 until no further adjustment is necessary.

Step 9. Deenergize the transmitter. Disconnect all test equipment. Replace all leads. Remove the T-adapter from J1202 and replace P136. Slide all unit drawers back into the cabinet and secure them.

(8) SWR OVERLOAD ADJUSTMENTS. — When making the SWR overload adjustments for sets serials 1 to 263, proceed in the following manner.

Note

The adjustments of SWR RELAY ADJ potentiometer R927 and TRIP ADJUST potentiometer R928 are quite critical, and they should be rotated by small amounts when searching for the point at which the overload ceases to trip.

Step 1. Place POWER SELECTOR switch S510 in the ADJ position. Rotate DRIVE ADJUST control R986 fully counterclockwise.

Step 2. Pull out Radio Frequency Amplifier AM-2197/WRT-2 and connect four 50-ohm, 100-watt noninductive resistors or a 35-foot Navy type C-66047 antenna and Radio Frequency Tuner TN-342/WRT-2 (or equivalent) to J103 and J101.

Step 3. Refer to figure 6-12 and rotate TRIP ADJUST potentiometer, R928 and SWR RELAY ADJ potentiometer, R927 fully clockwise. Refer to section 3 and retune transmitter to operate at 2.5 mc. If the antenna and tuner is used as a load in step 2, detune

Radio Frequency Tuner TN-342/WRT-2 until SWR INDICATOR, on Radio Frequency Amplifier AM-2197/WRT-2, indicates a 4:1 VSWR.

Step 4. Place P.A. CATHODE CURRENTS switch S802 in the TOTAL position.

Step 5. Place POWER SELECTOR switch S510 in the 500 W position. Rotate DRIVE ADJUST control R986 clockwise until R-F OUTPUT meter M805 indicates approximately 50 watts. When OUTPUT METER switch S815 is in the R-F OUTPUT position. Rotate TRIP ADJUST potentiometer R928 counterclockwise until H.V. OVERLOAD lamp DS801 glows. Rotate TRIP ADJUST potentiometer slowly clockwise and press H.V. OVERLOAD PUSH TO RESET switch S804 until H. V. OVERLOAD lamp DS801 does not light when H. V. OVERLOAD PUSH TO RESET is pressed.

Step 6. Rotate DRIVE ADJUST control R986 until OUTPUT meter M805 indicates 500 watts.

Step 7. Rotate SWR RELAY ADJ potentiometer R927 slowly counterclockwise until H. V. OVERLOAD lamp DS801 glows, and then turn it clockwise until H. V. OVERLOAD lamp DS801 does not light after pressing H. V. OVERLOAD PUSH TO RESET switch S804.

Step 8. Repeat steps 5 through 7 until H. V. OVERLOAD lamp DS801 does not light at any setting of DRIVE ADJUST control R986. Lock SWR RELAY ADJ potentiometer R927 and TRIP ADJUST potentiometer R928 in this position.

Step 9. Rotate DRIVE ADJUST control R986 fully counterclockwise and place POWER SELECTOR switch S510 in the ADJ position.

Step 10. Remove the dummy loads or the antenna and Radio Frequency Tuner TN-342/WRT-2, connected in Step 2, and replace the normal connections on J101 and J103. Push the drawer back into the cabinet.

(8)A. SWR OVERLOAD ADJUSTMENTS.—When making the SWR overload adjustment for sets serials 264 and up proceed in the following manner:

Step 1. Place POWER SELECTOR switch S510 in the ADJ position. Rotate DRIVE ADJUST control R986 fully counterclockwise.

Step 2. Pull out Radio Frequency Amplifier AM-2121/WRT-2 and connect four 50-ohm 100-watt noninductive resistors in parallel using very short pieces of 52 ohm coaxial cable and then connect this lead to jack J103.

Step 3. Rotate TRIP ADJUST potentiometer R928 fully counterclockwise.

Step 4. Connect Multimeter AN/USM-34 Series (or equivalent) to E897-5 and set it on its d-c scale and measure the voltage at E897-5. Record this value.

Step 5. Refer to section three and tune the amplifier at 15 MC increasing DRIVE ADJUST control R986 until R-F OUTPUT meter M805 indicates 500 watts when OUTPUT METER switch S815 is in the R-F OUTPUT position or until CATHODE CURRENTS meter M802 indicates 800 MA when CATHODE CURRENTS switch S802 is in the TOTAL position, whichever occurs first.

Step 6. Rotate SWR RELAY ADJUST potentiometer R927 slowly counterclockwise until Multimeter AN/USM-34 (connected in step 4) indicates the same voltage as that recorded in step 4. Lock R927 in this position.

(9) TUNER POSITION INDICATOR CALIBRATION.

Step 1. Pull out the drawer containing Radio Frequency Amplifier AM-2121/WRT-2 to its extreme limit of travel. Engage the interlock switch.

Step 2. Locate terminal board TB801B. Remove the external leads from terminals 21 and 22.

Step 3. Connect the 10,000-ohm, 2-watt potentiometer between terminal 22 of TB801B and ground. Connect the arm of the potentiometer to terminal 21 of TB801B.

Step 4. Using Multimeter AN/USM-34 Series (or equivalent) set the 10,000-ohm-2-watt potentiometer for a zero resistance reading between terminals 21 and 22 of TB801B.

Step 5. Press PLATE POWER ON switch (S503). Adjust POSITION INDICATOR MAX. ADJUST potentiometer R889 until POSITION INDICATOR meter M806 indicates full scale. Lock the potentiometer at this setting.

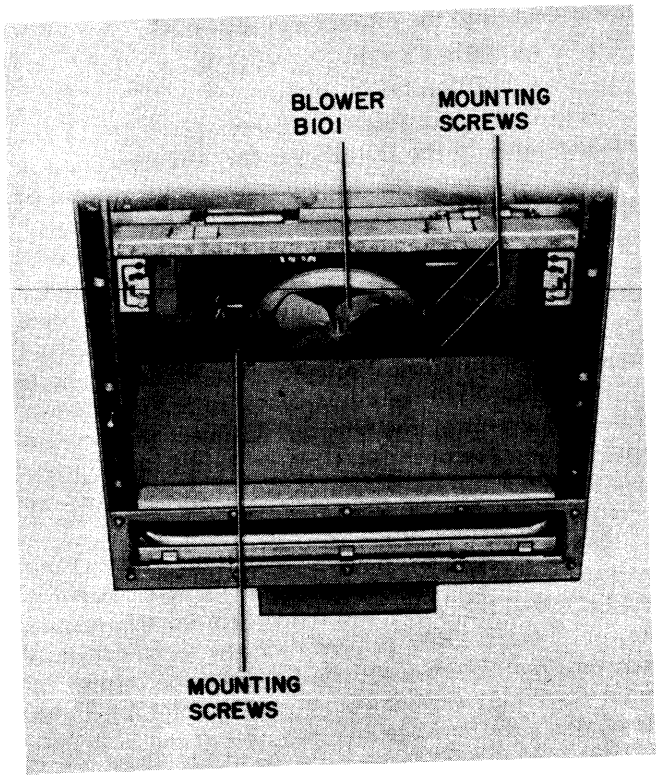


Figure 6-13. Electrical Equipment Cabinet CY-2558/WRT-2, Blower Replacement

Step 6. Rotate the 10,000-ohm, 2-watt potentiometer to the opposite extreme of its setting in step 3. Adjust POSITION INDICATOR ZERO ADJUST potentiometer R892 until POSITION INDICATOR meter M806 indicates zero. Lock the potentiometer at this setting.

Step 7. Press PLATE POWER OFF switch (S504). Remove the potentiometer from terminals 21 and 22 of TB801B and replace all external leads. Slide the unit drawer track into the cabinet and secure it.

(10) POWER AMPLIFIER CATHODE BIAS ADJUSTMENTS.—On sets serials 264 and up, the cathode bias of the power amplifier tubes should be adjusted whenever: (1) the difference between the highest and lowest individual cathode current is more than 20% of the lowest cathode current or (2) a power amplifier tube has been replaced. If the power amplifier cathode bias requires adjustment, proceed in the following manner:

Step 1. Tune the transmitter for 15.0 mc, 500 watt, CW operation.

Step 2. Make sure that CARRIER TEST KEY S812 is turned OFF.

Step 3. Reduce DRIVE ADJUST to ZERO.

Step 4. Pull out the Radio Frequency Amplifier Drawer AM-2121/WRT-2 and engage the interlock switch.

Step 5. Press PLATE POWER ON switch S503.

Step 6. Locate the CATHODE BIAS ADJ. potentiometers on the left side of the Radio Frequency Amplifier Drawer.

Step 7. Turn P.A. CATHODE CURRENTS switch S802 to tube 1.

Step 8. Adjust TUBE-1 CATHODE BIAS ADJ potentiometer R880 until P.A. CATHODE CURRENTS meter M802 reads 125 ma.

Step 9. With P.A. CATHODE CURRENTS switch in the corresponding position, adjust each power amplifier tube for 125 ma.

Step 10. Using the P.A. CATHODE CURRENTS switch S802, check to see that each power amplifier tube is drawing 125 ma. Check to see if the TOTAL P.A. CATHODE CURRENTS is 500 ma. If not, repeat steps 7 through 10.

Step 11. Press PLATE POWER OFF switch S504. Slide the drawer back into the cabinet and secure it.

6-3. REMOVAL, ADJUSTMENT, REPAIR AND REASSEMBLY OF PARTS AND SUBASSEMBLIES.

a. GENERAL.—The following paragraphs outline the procedures for the removal, repair, reassembly and adjustment of those parts and subassemblies contained in Transmitter Group OA-2175/WRT-2 that require unusual or difficult servicing techniques. Those mechanical sections which require only conventional methods and procedures have been omitted. The gear drive assemblies discussed in the following paragraphs are precision assemblies and should be treated in such a manner as to avoid damaging impacts. No lubrication is required either as part of or as a result of part replacement. All bearings which require lubrication are oil impregnated or oil filled. Be sure to read all notes before performing any of the procedures outlined.

b. ELECTRICAL EQUIPMENT CABINET CY-2558/WRT-2.—The only subassembly or part of the Electrical Equipment Cabinet CY-2558/WRT-2 that involves any unusual disassembly or removal procedures is the blower B101. To remove this subassembly proceed as follows:

Step 1. Release the thumbscrews at the sides of Power Supply PP-2222/WRT and withdraw this drawer against the stops. Disconnect the input terminals at TB202 at the back of the chassis.

Step 2. Carefully support the weight of the chassis to take the load of the slide rails and remove the screws which secure the chassis to the slide rails. Move the chassis away from the cabinet far enough to gain access to the interior of the cabinet.

Step 3. Refer to figure 6-13 and remove the screws which secure the blower mounting plate in position.

Step 4. Disconnect the blower leads at TB107 and remove the blower and plate assembly.

Step 5. Remove the blower from its mounting plate.

Step 6. Replace blower B101 by following steps 1 through 5 in reverse order and reversing the procedures.

c. POWER SUPPLY PP-2222/WRT.—The only removal or disassembly procedures involved in servicing this chassis are normal electronic servicing procedures.

d. AMPLIFIER-POWER SUPPLY AM-2122/WRT-2. —The only removal or disassembly procedures involved in servicing this chassis are normal electronic servicing procedures.

e. RADIO FREQUENCY OSCILLATOR O-581/WRT-2.

WARNING

BEFORE SERVICING RADIO FREQUENCY OSCILLATOR O-581/WRT-2, PLACE EMERGENCY STOP SWITCH S201 ON THE FRONT PANEL OF POWER SUPPLY PP-2222/WRT IN THE "OFF" POSITION.

(1) GENERAL.—The only parts of the Radio Frequency Oscillator O-581/WRT-2 which require any unusual or difficult disassembly or servicing procedures are the oven and the gear drive assembly. To prepare the Radio Frequency Oscillator O-581/WRT-2 for servicing, release the six captive screws on the front panel, and withdraw the chassis from the cabinet to the limit of travel. The foul weather latch at the rear of the chassis should be engaged before attempting to perform any service work. Pull the locking plunger at the rear, and rotate the chassis to a position most convenient for

servicing the part involved. If it is necessary to remove the r-f oscillator chassis from th console, disconnect all wiring to the chassis. Support the chassis so that it cannot fall when it is released. Remove the four bolts securing the chassis to the mounting plate portion of the chassis support bearing. The bolts are accessible from the rear of the chassis. Lift and remove the chassis. To install the oscillator chassis rotate th back plate until the edge with pins projecting is uppermost, set the two bosses on the back of the drawer onto the two pins which project from the top of the back plate and attach the chassis to the mounting plate with a bolt at each rear corner. Release the locking mechanism and slide it into the console.

(2) ISB MODULATOR CHASSIS. — The components of the ISB modulator assembly are accessible for servicing without removing the assembly from the chassis, and the r-f oscillator chassis need not be taken out of the console for this purpose. The cover plate of the assembly is removed by backing out the four fasteners.

(3) OSCILLATOR - DOUBLER CHASSIS REMOVAL.—Most of the components of the oscillator-doubler subchassis assembly may be serviced without removing the r-f oscillator chassis from the console. Some parts of the chassis are not accessible from the outside, the oscillator-doubler assembly must be removed from the r-f oscillator chassis. The chassis is removed from the console for this purpose as described in paragraph 6-3*e*(1). To disassemble the parts from the subchassis the following procedure is used:

Step 1. Set the r-f oscillator in a work location conv nient for ease of disassembly. Release the five fastners and remove the front cover of the oscillator-doubler subchassis.

Step 2. Disconnect all electrical connections to the subchassis. Tag all leads for identification to facilitate the reassembly.

Step 3. Set the RANGE (C1) control to the 2.0-2.5 mc band on the tuning dial. Rotate the FREQUENCY (D) control as far as possible past 2.0 mc, the low end of the band. Do not move or alter these controls until required by subsequent instructions.

Step 4. Refer to figure 6-14 and loosen the eccentric hex nut on the shaft of idler sprocket MP314 to release the tension on chain MP310.

Step 5. Unpin and remove sprocket MP309.

Note

At no time during the removal and replacement of switch S302 should the setting of the switch be changed.

Step 6. Release the tension on chain MP315 through the tension adjustment device C of idler sprocket MP360, and remove the chain from sprocket MP304.

Step 7. Drive out the roll pin of sprocket MP304 and remove the sprocket.

Step 8. Back out the two screws, which are located n ar the top at the front and rear of th subchassis. Remove the two flat head screws which secur th subchassis to the chassis bottom plate. Th y pass through the two rectangular blocks which space the subchassis from the bottom plate. Slide the subchassis out of the r-f oscillator chassis.

(*a*) To remove switch S302 from th subchassis, proceed as follows:

Step 1. Disconnect and identify all wiring to switch S302.

Step 2. Remove the lock nuts on the switch anchors on the rear of switch S302, sliding the nuts toward the switch. Carefully support th switch, take out the switch anchors from the rear. With the switch still supported, back off the nut on the shaft end and remove the switch from the subchassis.

(*b*) To remove doubler tuning capacitor C341, proceed as follows:

Step 1. Remove all electrical connections to the capacitor and identify all leads.

Step 2. Disconnect the coupling between the capacitor C341 and speed changer MP301.

Step 3. Back out five of the six screws in the three capacitor supports. Three of the attaching screws are located on the bottom of the subchassis, and three are on the top of the supports which are inside. The screw at the top of the single spacer at the back of the capacitor is not readily accessible and should be left until the capacitor has been removed. When r placing the capacitor this spacer should be secured to the capacitor prior to installation.

Step 4. Slide the capacitor toward the r ar and lift it out through the side. The speed reducer will rotate after the removal of the load.

(*c*) The speed reducer MP301, may be removed if required by removing the four mounting screws and spacers.

(*d*) Replace switch S302, by reversing the procedure of 6-3*e*(3)(*a*). If a new switch is being installed as a replacement, proceed as follows:

Step 1. Recover all mounting hardware from the old switch.

Step 2. Position the new switch so that the red band is oriented at the top rear to correspond to the old switch. Set the contacts on the first deck to the position noted in 6-3*e*(3) step 6.

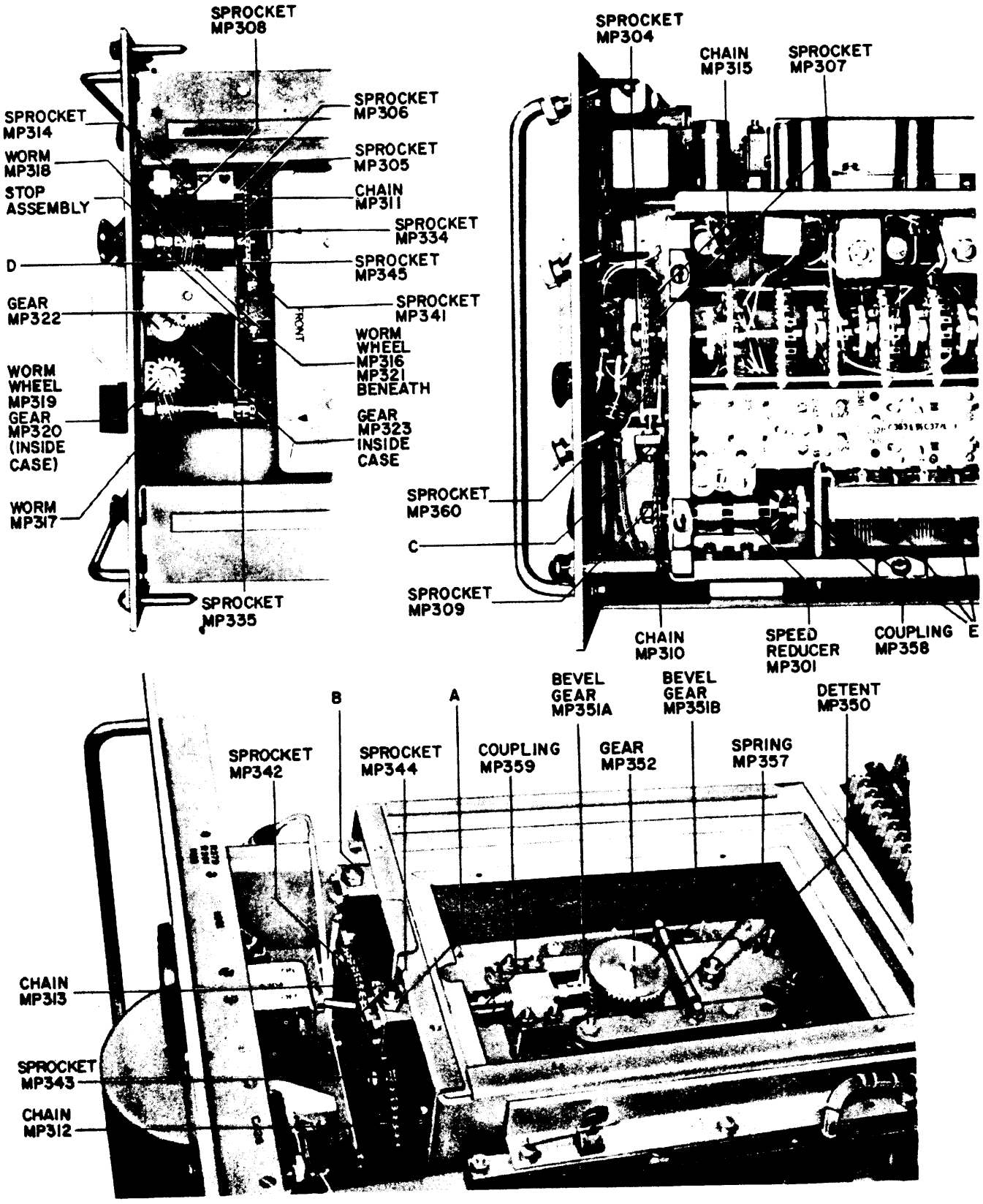
Step 3. Insert the shaft of the switch through the hole in the oscillator-doubler subchassis. Assemble the switch shaft nut and the switch anchors.

Step 4. Resolder all electrical connections.

(*e*) Replace capacitor C341 in the subchassis by reversing the order of disassembly as detailed in paragraph 6-3*e*(3)(*b*). A replacement capacitor should be installed in the subchassis according to the following procedure:

Step 1. Mesh the plates of the new capacitor.

Step 2. Remove the part of the slide coupling attached to the old capacitor, and secure the coupling



Figur 6-14. Radio Frequ ncy Oscillat r O-581/WRT-2, Gear Train Disassembly

to the new capacitor with set screws.

Step 3. Replace the other half of the coupling on the speed reducer MP301.

Step 4. Install the new capacitor in the subchassis by reversing the procedures given in paragraph 6-3*e*(3)(*b*). Position the capacitor to ensure clearance between the plates and the subchassis cover.

Step 5. Replace all electrical connections.

(4) OSCILLATOR - DOUBLER CHASSIS REPLACEMENT.—To replace and align the oscillator-doubler subchassis assembly, proceed in the following manner:

Step 1. Set the subchassis back into the r-f oscillator chassis and attach the mounting bolts removed in step 9 of paragraph 6-3*e*(3).

Step 2. Reconnect all electrical connections.

Step 3. Replace sprocket MP304 on the shaft of switch S302 with the sprocket hub facing away from the switch.

Step 4. Replace chain MP315 and adjust idler sprocket MP360, using tension adjustment C so that the chain has no slack.

Step 5. Assemble sprocket MP309 to the shaft of the speed reducer.

Step 6. Replace chain MP310 on Sprocket MP309, and take up the slack in the chain by adjusting idler sprocket MP314.

Step 7. With RANGE (C1) control set on the 2.0-2.5 mc band, rotate the FREQUENCY (D) control until the dial indicates 2.06 mc.

Step 8. Pin sprockets MP304 and MP309 in the original holes. If replacement parts have been used, the shafts should be drilled using a 2/32 inch drill with the pin holes in the hubs of the gears as guides. Do not remove the set screws until the sprockets are pinned.

Step 9. Be sure that the coupling MP358 between capacitor C341 and speed reducer MP301 is free and that a set screw on each half is accessible. Rotate the rotor plates of C341 until they are opened just beyond the cross frames of the capacitor (see figure 6-14-E).

Step 10. Place a short straight-edge on the flat edges of the rotor plates and carefully press the rotor toward the meshed position until the straight-edge just touches the frames at E. Lock one set of set screws in coupling MP358. Rotate FREQUENCY (D) control until the remaining set of set screws is accessible and lock these.

Step 11. Replace the cover of the oscillator-doubler subchassis.

(5) OVEN ASSEMBLY REMOVAL.—The components in the oven of the r-f oscillator may be serviced when the top oven covers (outer and inner) and the bottom oven covers (outer and inner) have been removed. To remove capacitor C313 or switch S301 from the oven for service or replacement, the oven subchassis must be taken out of the r-f oscillator chassis. The following procedures should be used to remove the oven:

Step 1. Remove the top and bottom oven cover.

Step 2. Loosen nut B of the tension adjustment mounting for idler sprocket MP342 and release chain MP313. Remove chain MP313 from double sprocket MP344.

Step 3. Loosen nut A of the tension adjustment mounting for idler sprocket MP343 and release chain MP312. Remove chain MP312.

Step 4. Loosen nut D of the tension adjustment mounting for idler sprocket MP341 and release chain MP311. Remove chain MP311.

Step 5. Disconnect all electrical wiring between the oven and other parts of the r-f oscillator chassis. Carefully identify all leads.

Step 6. Back out the six screws attaching the oven assembly to the chassis. Shift the oven toward the front of the chassis and lift it out of the chassis.

(*a*) Switch S301 in the oven assembly should be removed according to the following procedure:

Step 1. Remove the pin from the sprocket shaft end of the universal joint MP359 which is inside the inner oven. The shaft should be supported while the pin is being removed. Withdraw the shaft with the sprocket MP344 mounted and disassemble if necessary.

Step 2. Unpin, using the necessary precautions, and remove the collar from the shaft of switch S301.

Step 3. Remove all wiring from switch S301 being careful to identify leads for identification.

Step 4. Back out the four screws which retain the detent and gear assembly to the switch and capacitor mounting plate. Lift the detent and gear assembly out of the oven.

Step 5. Take out the two attaching screws of switch S301 and remove the switch.

(*b*) Capacitor C313 should be removed as follows:

Step 1. Disconnect all wiring to capacitor C313.

Step 2. Unpin the flexible coupling on the shaft of sprocket MP345 and capacitor C313. The capacitor and the shaft should be carefully supported while this is being done.

Step 3. Remove the four nuts from the screws attaching the capacitor to the switch and capacitor mounting plate. Take out capacitor C313.

(*c*) For sets serials 1 to 106, the detent and gear assembly should be disassembled if required as follows:

Step 1. Drive out the pin of bevel gear MP351B and remove the gear.

Step 2. Remove the detent spring from the roller arm assembly.

Step 3. Take off the nuts of the front ends of the roller arm assembly and the roller arm back up assembly, and remove the assemblies.

Step 4. Lift out the detent and gear MP350.

Step 5. Remove the six nuts from the top gear housing and lift off the housing.

Step 6. Remove the pins from bevel pinion MP351A and the collar behind it and withdraw the shaft from the front. The universal joint and collar should be taken off the shaft as required.

Step 7. Remove the collar from the shaft of bevel gear MP351B.

Step 8. Unpin gear MP352, and remove the shaft and gear.

For sets serials 107 and up, proceed in the following manner:

Step 1. Remove detent spring MP364.

Step 2. Drive out the pin on detent wheel MP363 and remove the detent wheel.

Step 3. Remove the pin from level gear MP362 and withdraw the shaft from the front. The universal joint and collar should be taken off the shaft as required.

Step 4. Unpin gear MP362 if required.

(*d*) To reassemble the detent and gear assembly reverse the procedure of paragraph 6-3*e*(5)(*c*). The following points are pertinent to the correct reassembly of the detent and gear assembly. The shaft which mounts bevel pinion MP351A should be aligned parallel with the left side of the switch and capacitor mounting plate within 1/64 inch. The alignment of the shaft of bevel pinion MP351A is accomplished by positioning the top detent and gear assembly housing before pinning. The detent and gear MP350 and gear MP352 are a matched pair, the bevel gear set, MP351A and MP351B are a matched set. Shaft end play should be held to 0.002 inch to 0.004 inch. The gears should be secured to the respective shafts using set screws and adjusting the end play of the shafts to between 0.002 inches and 0.004 inches. Drill for pinning using a $\frac{3}{32}$ inch drill. The assembly of the detent and gear assembly should be complete before the gears are pinned. Remove the set screws after the pins are inserted. The shaft of bevel gear MP351B should not protrude more than $\frac{1}{16}$ inch above the gear face.

(*e*) Replace capacitor C313 in the oven subchassis as follows:

Step 1. Completely mesh the plates of the capacitor.

Step 2. Install the capacitor, C313, and replace the four mounting screws. Replace the flexible coupling MP358 but do not pin it.

Step 3. Reconnect all wiring to the capacitor.

(*f*) Replace switch S301 in the oven subchassis as follows:

Step 1. Replace the switch using the reverse of the disassembly procedure detailed in steps 4 and 5 of paragraph 6-3*e*(5)(*a*).

Step 2. Face the back plate of switch S301 and rotate it so that the back plate forms an upright "L". Turn the rotor until either end of its wiper-type contact is on the fourth fixed contact in a counterclockwise direction from the top. This is position 1 of the switch. Leave it there.

Step 3. Tighten the set screws in the collar on switch S301 so that the position of the wiper contact set in step 2 is maintained. Be sure that the wiper arm is centered on the fixed contact. Repin the collar on the shaft of the switch. The hole in the collar should be used as a guide in the drilling of the roll pin hole with a $\frac{3}{32}$ inch drill.

Step 4. Reassemble the wiring to switch S301.

Note

The switch should be installed so that the connector mounting bracket, which is mounted to the bottom of the switch, is oriented with the connectors, J312 and J313, toward the front of the subchassis.

Step 5. When the detent follower is fully engaged in the detent wheel, the rotor wipers should be exactly centered on the stator contacts.

(6) OVEN ASSEMBLY REPLACEMENT.—The oven subchassis should be reassembled in the r-f oscillator chassis in the following steps:

Step 1. Set the oven subchassis into the r-f oscillator chassis, being careful not to damage the dial assembly, and replace the six attaching screws.

Step 2. Reconnect the electrical wiring.

Step 3. Replace universal joint MP359 and its attached shaft. Replace dual sprocket MP344 with the smaller sprocket of the two facing the oven assembly.

Step 4. Replace chain MP312 and adjust nut A of the mounting for idler sprocket MP343 to remove slack from chain MP312.

Step 5. Replace chain MP313 on the larger section of double sprocket MP344, and adjust nut B of the mounting for idler sprocket MP342 to take up the slack in the chain.

Step 6. Repin the universal joint on the gear and detent assembly to the shaft of double sprocket MP344.

Note

Do not change the positions of switches S301 and S302 during this procedure.

Step 7. Replace sprocket MP345 and pin it in place. Replace chain MP311 and adjust nut D of the mounting for idler sprocket MP341. All slack should be taken out of the chain as the idler is adjusted. It is important that the chain not be put under excessive tension.

Step 8. Check the RANGE (C1) control and see that it is set on the 2.0 to 2.5 mc band. Set FREQUENCY (D) control at exactly 2.25 mc.

Step 9. Set the rotor plates of capacitor C313 in the oven to 90°. To set the plates at 90° rotate the capacitor rotor until the long half of the rotor plates are unmeshed and at approximately 90°. Place a steel scale against the capacitor side bar on the side facing the straight edge of the rotor plates and measure between the straight edge of the rotor and the side bar. Rotate the rotor plates until this dimension is $1\frac{5}{32}$ inches. This may be set even more accurately with a pair of inside calipers set to a micrometer, if these are available.

Step 10. Tighten the flexible coupling on the shaft of capacitor C313 and pin it. Use a $\frac{3}{32}$ inch drill and the original pin.

Step 11. Rotate FREQUENCY (D) control to 2.06 mc.

Step 12. Unmesh the plates of capacitor C341 in the oscillator-doubler approximately 20 degrees.

Step 13. Place a straight-edge along the straight edge of the rotor plates and mesh the plates by means of the straight-edge until the straight edge strikes the frame at points E in figure 6-14. Be sure that the straight edge is at the outer edge of the rotor plates.

Step 14. Tighten the flexible coupling.

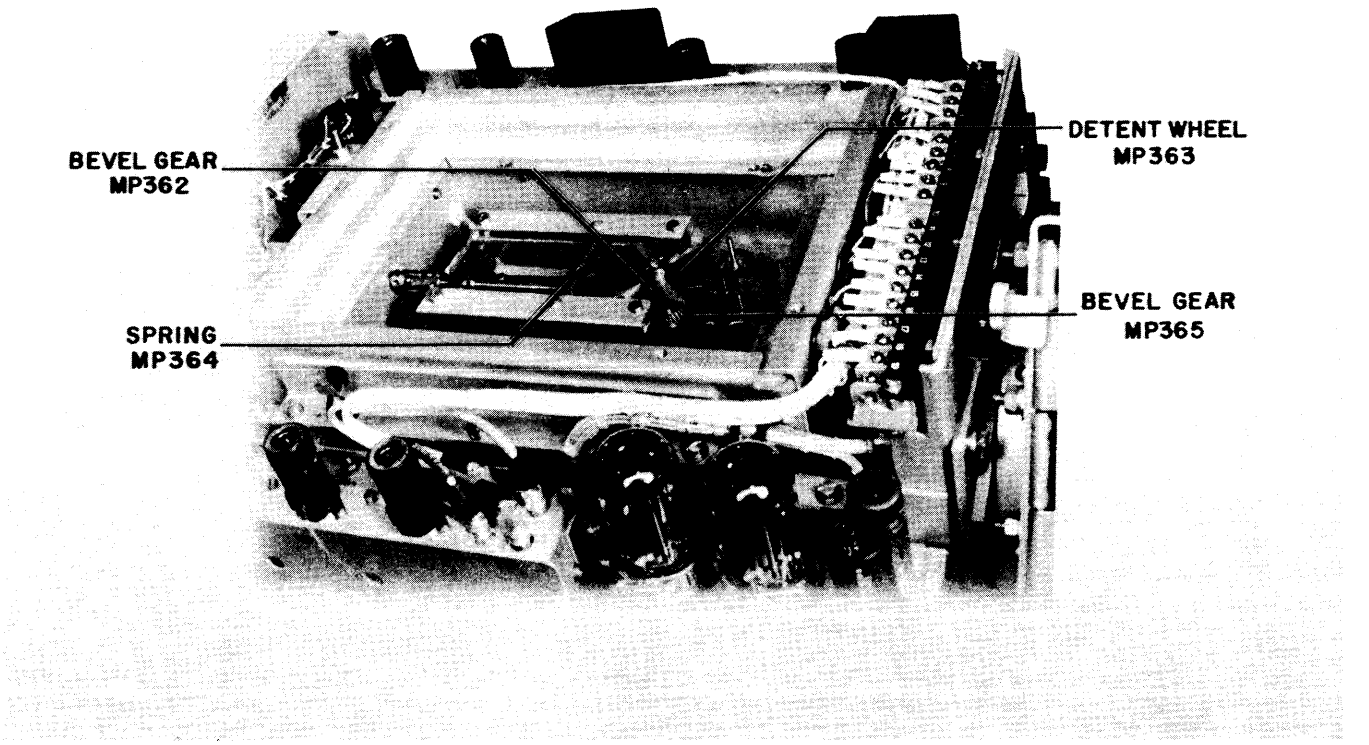


Figure 6-14A. Radio Frequency Oscillator O-581/WRT-2, Oven Gear Train Disassembly, Sets Serials 107 and up

(7) DIAL ASSEMBLY REMOVAL.—The following procedur should be used for the removal and disassembly of the r-f oscillator dial assembly.

Step 1. Set RANGE (C1) control to the 2.0 to 2.5 mc band. Remove the oven subassembly from the chassis as described in paragraph 6-3e(5).

Step 2. Remove the dial knobs of RANGE (C1) E335 and FREQUENCY (D) E334 controls.

Step 3. Back out the eight retaining screws from the front panel and carefully lift the dial assembly out of the r-f oscillator chassis.

Step 4. Unpin and remove sprocket MP335.

Step 5. Drive the pins out of worm gear MP317, and the collar on the shaft mounting MP317 and MP325. The shaft must be carefully supported during this operation. Withdraw the shaft for gear MP317 and sprocket MP335 through the front of the housing, being careful not to drop the worm, collar and bearings. Unpin and lift off helical gear MP319 and its bearing.

Step 6. Remove the roll pins from helical gear MP316 and gears MP321 and MP322.

Step 7. Take out the screws attaching the bearing block of the dial shaft adjacent to gear MP316, and lift off the bearing block.

Step 8. Remove gears MP321 and MP322 and lift out the shaft. Remove helical gear MP316.

Step 9. Drive the pins out of sprocket MP334, worm MP318 and the stop collar of the dial stop assembly.

Step 10. Carefully study the assembly of the stop washers, noting particularly that the slot in the bearing on the housing retains the stop of the first washer. Take off sprocket MP334, and withdraw the shaft mounting the gears and the stop assembly. Do not drop any of the parts.

Step 11. Take out the six screws attaching the cover to the rear of the housing, and remove the cover.

Step 12. Remove the pin from the top of the dial shaft and lift out the bushing. Take out the dial shaft through the top of the housing.

Step 13. Disengage the screw of the inner and outer shoes and turn the outer shoe toward the rear of the housing.

Step 14. Lift the dial and drum assembly out of the housing and disassemble as necessary.

Step 15. The lens should be removed if required by backing out the four screws of the two lens retainers.

(8) DIAL ASSEMBLY REPLACEMENT.—The dial assembly should be reassembled by reversing the disassembly procedure except for pinning the two sprockets MP334 and MP335. Pin these as directed in this paragraph. The inner and outer drum shoes should be adjusted by tightening the scr w only a sufficient amount to pr v nt turning of the out r drum as th dial is turned. The stop assembly washers should be assembled so that overtravel on each side of the nameplate is equal. Adjust gears, sprock ts and collars for 0.002 inch to 0.004 inch nd play. Set the RANGE (C1) control to the 2.0-2.5 mc band and pin sprocket MP325 in place. Remove the cover from the oscillator-doubler subchassis and loosen the set screws in coupling MP358 at capacitor C341. Remove the bottom cover from the oven. Set the rotor plates of capacitor C313 to 90° as directed in step 9 of paragraph 6-3e(6). Hold the rotor plates so that they cannot move and set FREQUENCY (D) control to 2.25 mc. Pin sprocket MP335. Refer to paragraph 6-3e(6) steps 12, 13 and 14 and set capacitor C341 in the oscillator-doubler chassis.

Note

In the reassembly procedure, all parts to be pinned are treated as replacement parts. It should be possible to pin all original mating parts through the original mating holes after adjustments have been made. All replacement gears, sprockets and collars, which are fixed to their shafts, should be temporarily attached with set screws. After the shafts have been adjusted for proper end play and mesh, the shafts should be drilled using a $\frac{3}{32}$ inch drill with the pre-drilled holes in gear hubs and collars as a guide. Insert the roll pins through the holes.

(9) MECHANICAL ADJUSTMENTS.—All adjustments of a mechanical nature have been performed as part of replacement procedures. After r placing any part which causes disconnection of the linkage between the FREQUENCY (D) control and capacitor C313 in the oven or capacitor C341 in the oscillator-doubler chassis, the circuits for both capacitors must be realigned electrically. Refer to paragraphs 6-3e(3) and 6-3e(4) respectively for these procedures.

f. ELECTRICAL FREQUENCY CONTROL C-2764/WRT-2.

WARNING

BEFORE SERVICING THE FREQUENCY CONTROL GROUP, PLACE EMERGENCY STOP SWITCH S201 ON THE FRONT PANEL OF THE POWER SUPPLY IN THE OFF POSITION.

(1) GENERAL.—The only parts of the Electrical Frequency Control C-2764/WRT-2 which require any unusual disassembly or servicing procedures are the oven and the gear assembly components. Disassembly is illustrated in figures 6-15 through 6-18. All other components may be handled by standard methods and techniques. The Electrical Frequency Control C-2764/WRT-2 is prepared for servicing by withdrawing the chassis from the console. Release the six captive fasteners on the front panel and withdraw the chassis to the limit of travel. Engage the foul weather latch on upper righthand corner. Pull the locking plunger at the rear of the chassis, and rotate the chassis to a position convenient for servicing the part or assembly involved. All procedures outlined in this paragraph

may be accomplished with the chassis attached to th console. If it is necessary to remove th chassis from the console, identify and disconnect all wiring to the chassis. R mov the four bolts which attach the chassis to the mounting plate portion of the chassis support bearing. The bolts are accessible from the rear of the mounting plate. Lift and remove the chassis. To reinstall the chassis, set the bosses on the back of the chassis onto the two pins on the mounting plate and bolt the chassis to the mounting plate. Reconnect all wiring. Release the foul weather latch and slide the chassis into the console. Secure the chassis by replacing the six captive screws on the sides of the front panel.

(2) REMOVAL OF OVEN PARTS.—The capacitor C662, board E1304 and the sealed crystal unit Z1301 which are located in the oven of the Electrical Frequency Control C-2764/WRT-2 may be replaced without removing the interpolation oscillator assembly from the oven. Remove top and bottom outer covers and the top and bottom inner covers of the oven to gain access to the interior by backing out the attaching screws of the respective covers. The outer covers must be removed carefully so that the insulating material will not be disturbed. It is necessary that the assembly be taken out of the oven for the replacement of the switch S601. When the assembly must be removed, the oven should be removed from the chassis to facilitate the removal and servicing operations.

(*a*) TUNING CAPACITOR C662.—To remove capacitor C662, proceed as follows:

Step 1. Remove the shaft coupling inside of the oven. Use caution when removing the pin to avoid damaging the shaft on the coupling.

Step 2. Remove the wiring from the capacitor.

Step 3. Remove the capacitor mounting screws.

(*b*) BOARD E1304.—To remove board E1304, proceed as follows:

Step 1. Set XTAL OSC LOG counter M602 to "000". (See figure 6-15.)

Step 2. Carefully loosen the setscrews from the coupling on capacitor C1340 and slide the coupling free from the capacitor.

Step 3. Identify and disconnect all leads to the board E1304.

Step 4. Remove the four mounting screws and take out board E1304.

(*c*) CRYSTAL OVEN Z1301.—Identify and disconnect all wiring. Remove board E1304 as directed in the proceeding paragraph and then remove the crystal oven Z1301.

(*d*) SWITCH S601.—To remove switch S601, proceed as follows:

Step 1. Identify and disconnect all leads to the oven assembly.

Step 2. Set XTAL OSC LOG counter M612 to "000" and remove the coupling for capacitor C1340.

Step 3. Remove the coupling for capacitor C662.

Step 4. Remove the coupling for the gearing to switch S601.

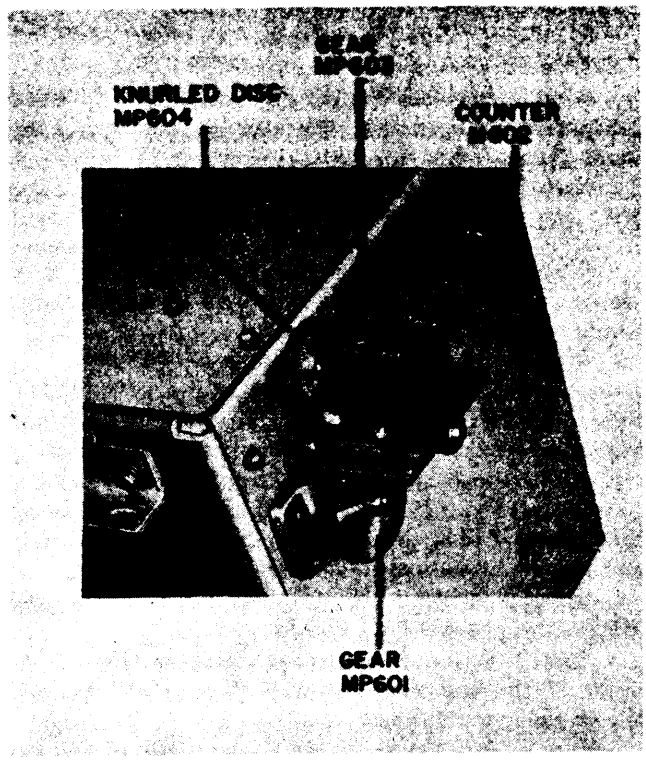


Figure 6-15. Electrical Frequency Control C-2764/WRT-2 Interpolation Oscillator, XTAL OSC Log Gearing

Step 5. Remove the six screws which secure the oven assembly mounting brackets to the top of the chassis. Remove the oven.

Step 6. Remove the three machine screws which secure the switch and capacitor subassembly in place in the oven. Remove the subassembly.

Step 7. Identify and disconnect all wiring to switch S601.

Step 8. Refer to figure 6-16 and unpin collar A from switch S601. Remove the collar.

Step 9. Remove terminal board E615. Electrical connections need not be unsoldered, but extreme caution must be exercised so that the connected components not be disturbed.

Step 10. Withdraw the four screws from the mounting block of the shaft to the gear assembly, and remove the mounting block. Complete disassembly of the shaft and gear from the block may be accomplished only as required.

Step 11. Remove the gear from the switch shaft after driving out the roll pin.

Step 12. Remove the nut from the threaded portion of the switch shaft, and remove the switch.

(*e*) XTAL OSC LOG.—The counter M602 (XTAL OSC LOG), which is located on the outside front panel of the oven, is removed by backing out the four mounting screws in the block. The shaft of gear MP601 (see figure 6-16) must first be uncoupled inside the oven.

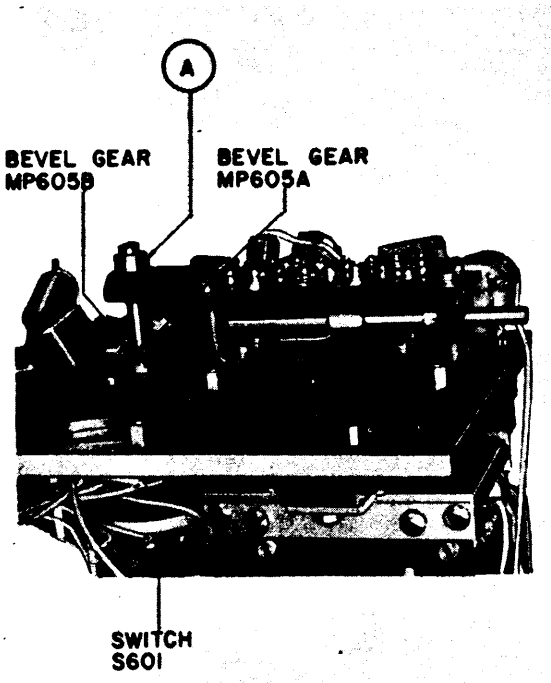


Figure 6-16. Electrical Frequency Control C-2764/WRT-2 Interpolation Oscillator, Replacement of Switch S601

(*f*) REPLACEMENT OF OVEN PARTS.—To replace the parts removed in the preceding paragraphs (*a*), (*b*), (*c*) and (*d*), reverse the procedure given in the appropriate paragraph. The gear box must be realigned as described in paragraph 6-3*f*(6). For electrical realignment, refer to the applicable subparagraph of paragraph 6-2*e*.

(3) GEAR DRIVE REMOVAL.—The gear drive assembly of the Electrical Frequency Control C-2764/WRT-2 is removed with the oven out of the chassis. Identify and remove all connections to the ov n. Remove the three screws from each mounting angle for the oven assembly. Slide the oven slightly toward the back of the chassis and then lift it out of the chassis. Remove the eight screws which attach the gear drive assembly to the front panel of chassis. Shift the gear assembly toward the rear of the chassis, and remove it.

(4) GEAR DRIVE DISASSEMBLY.—To disassemble the gear assembly, refer to figures 6-17 and 6-18 and proceed as follows:

CAUTION

THIS UNIT CONTAINS PRECISION PARTS. A GEAR OR BEARING WHICH DROPS FROM A WORK SURFACE TO THE STEEL DECK CAN BE RENDERED USELESS. FOREIGN MATTER CAN ALSO RUIN A BEARING. PROVISION SHOULD BE MADE FOR PROPER STORAGE OF ALL PARTS WHICH MUST BE REMOVED.

Step 1. Remove microswitch S605 by withdrawing th two mounting screws from the back cover of the gear housing. See figure 6-17.

Step 2. Loosen the nut on the stud of sprocket idler MP628 and slide the idler in the slot in the back cover to release chain MP633. Remove chain MP633. Remove idler sprocket MP628 if necessary.

Step 3. Drive the roll pins out of sprockets MP629, MP630 and MP631 and remove the sprockets and bearings.

Step 4. Note the relative positions of spur gears MP614, MP615 and MP616, carefully remove the roll pins from the respective gear hubs and remove the gears and bearings.

Step 5. Remove the retaining ring from the shaft of gear MP615, and take out the shaft. The retaining ring is located on the inside of the rear cover of the housing.

Step 6. Withdraw the pin from the collar on the shaft to capacitor C662 and remove the collar and bearing.

Step 7. Remove the retaining rings and bearings from the shafts mounting gear MP622 and Geneva positioner MP687.

Step 8. Remove the retaining rings from the shafts of gears MP623 and MP626, and the stop roll pin from the shaft of gear MP623. The retaining rings are located on the inside of the rear cover.

Step 9. Remove the control knob E626 and the vernier knob E627 from the front panel. Withdraw the two screws in the face of control MP711 and lift off the knob assembly.

Step 10. Lay the gear housing on the front cover being careful to provide support so that the protruding shafts will not be damaged. Take out the four screws, lockwashers and washers connecting the gear assembly rear housing cover to the housing spacers. Remove the rear cover.

Step 11. Remove gears MP623 and MP626 and the mounting shafts from the associated shaft support assemblies attached to the rear cover of the housing. Disassemble the gears. The shaft supports may be removed from the rear cover as required.

Step 12. Remove the shaft of sprocket MP631 from the rear cover.

Step 13. Remove the bearing, the stop plate and the eleven stop washers from the stop assembly on the shaft of gear MP617. Note the relative positions of the washers as removed.

Step 14. Remove the shaft mounting gear MP617 and the stop assembly collars and disassemble.

Step 15. Remove the Geneva positioner MP687 and disassemble the gear from the shaft.

Step 16. Remove the control shaft which mounts Geneva driver MP610 and disassemble Geneva driver MP610.

Step 17. Slide gear MP695 toward the front of the shaft to unmesh the teeth of gears MP627 and MP695. Carefully drive the roll pin out of gear MP627, and remov gear MP627.

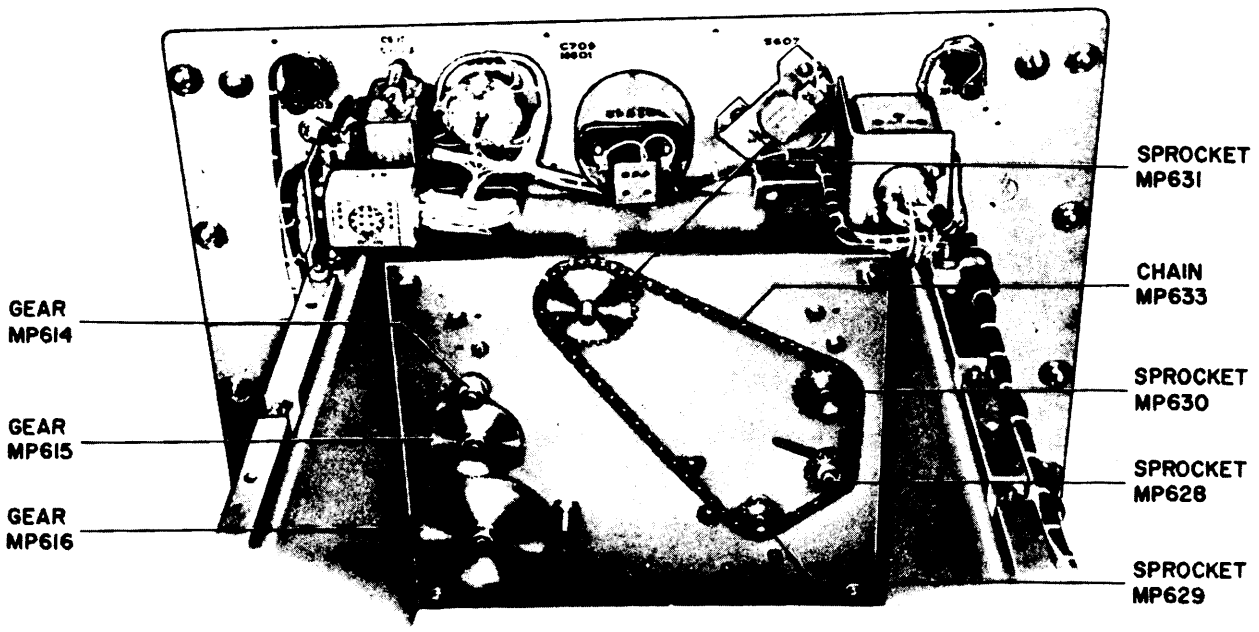


Figure 6-17. Electrical Frequency Control C-2764/WRT-2 Interpolation Oscillator, Replacement of Parts on Gearbox Back Plate

Step 18. Remove the assembly of gears MP622 and MP695, and disassemble.

Step 19. Check the gears not yet removed from the assembly, and remove all pins from gears and collars and the stop pin from the shaft of gear MP618. Remove all retaining rings.

Step 20. Carefully turn the assembly so that the front is accessible. Provide support for the assembly to avoid damage to unremoved parts.

Step 21. Withdraw the counter assembly cover attaching screws, and remove the cover.

Step 22. Remove the shutter guides and the shutter MP712.

Step 23. Remove the shutter arm MP710 and shaft from the housing.

Step 24. Take out the four screws, lockwashers and washers which attach the counter assembly M603 to the housing, and carefully remove the counter. Disassemble the counter assembly only as required.

Step 25. Remove the pins from gears MP613 and MP621. Support the front housing cover on edge and r move the shafts from the rear of the housing. This must be carefully accomplished to avoid damage to the collars and gears which are not pinned but still on the shafts.

Step 26. Remove the vernier MP711 and shaft assembly. Disassemble as required.

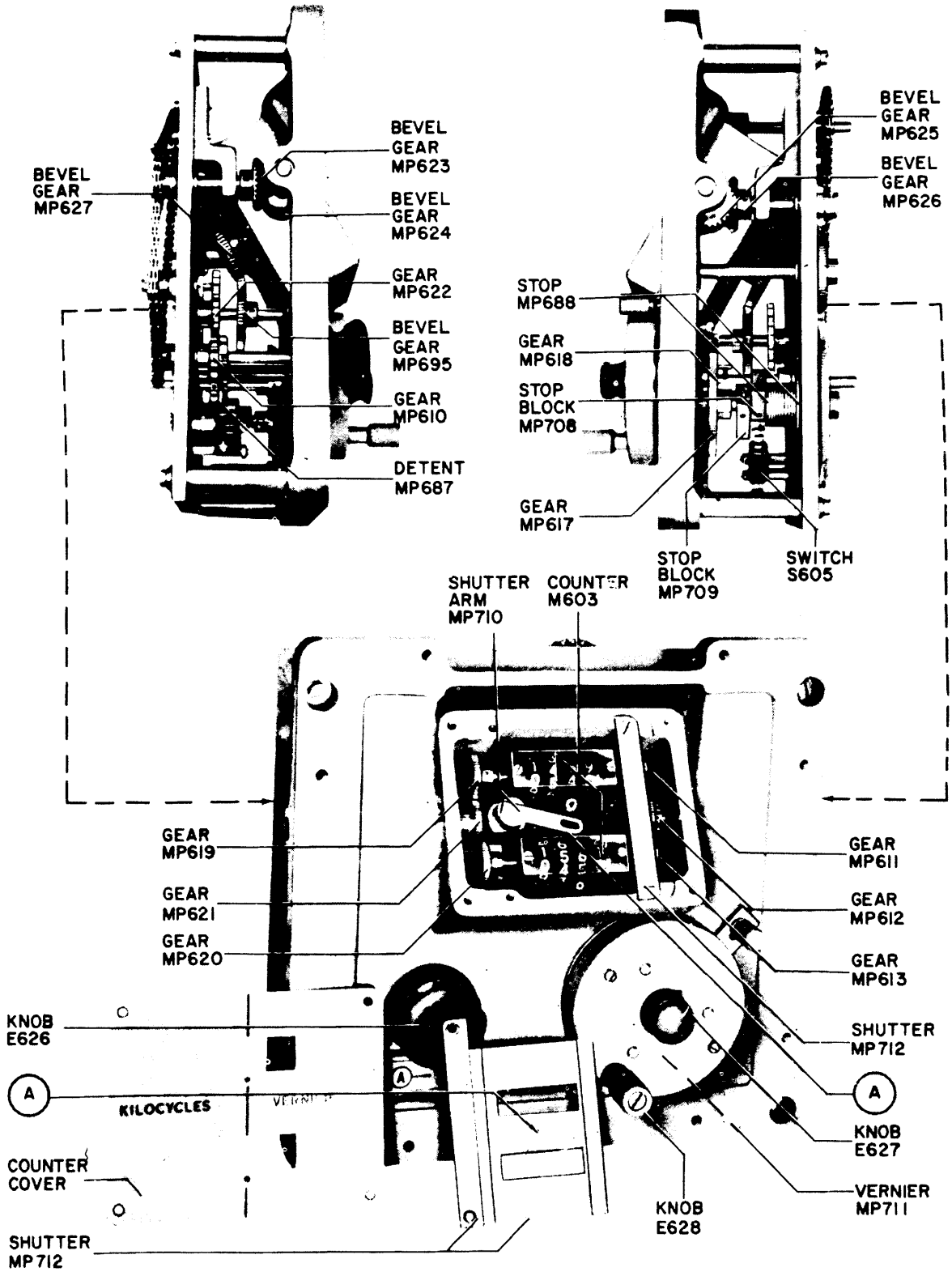
Step 27. Withdraw the four screws from the vernier mounting flange. Remove the vernier lock rest, the vernier mounting flange and gear MP618.

Step 28. Disassemble the remainder of parts from the gear assembly housing as required.

(5) GEAR DRIVE REASSEMBLY.—To reassemble the gear drive assembly, read the following not , and then reverse the disassembly procedure outlined in paragraph 6-3*f*(4).

Note

In the following adjustment procedure, all parts to be pinned are treated as replacement parts. It should be possible to pin all original mating parts through the original pinning holes as each adjustment is completed. All replacement gears, sprockets and collars which are to be fixed to their shafts, should be temporarily secured with set screws. Do *not* pin the parts until instructed to do so in paragraph 6-3*f*(6). When a shaft has been installed, adjust the gear, sprocket or collars adjoining the front and back plates to provide 0.001 to 0.002 inches end play in the shaft. Adjust the bevel gears for proper mesh with minimum back lash but without binding. Be sure that all mating spur gears are fully



Figur 6-18. Electrical Fr quency Contr l C-2764/WRT-2 Interpolati n Oscillator, Replacem nt f Gearb x Parts

meshed. To pin a part to its shaft, use the predrilled hole in the hub or collar as a pilot and drill completely through with the specified diameter drill. Be sure that the assembly is properly supported during drilling and that the shaft or part being drilled cannot rotate. Remove all burrs and metal chips and install the pin.

(6) GEAR DRIVE ADJUSTMENT.—To adjust the gear assembly, refer to figures 6-17 and 6-18 and proceed as follows:

Step 1. Remove the counter assembly cover and the shutter to expose the gears in the counter housing. Loosen the set screws of gears MP619 and MP620, and move the gears on the shaft toward the counters to disengage the teeth of gear MP621.

Step 2. Set the left dial of the upper counter and of the lower counter to 4 by turning the gear shafts. Turn TUNING (A) control knob until the shutter moves to the down position to read the lower counter.

Step 3. Position the Geneva driver MP610 and the Geneva positioner MP687 so that the roller of microswitch S605 is riding in the lower detent of gear MP687, and the single tooth of gear MP610 is just engaging the teeth of gear MP687.

Step 4. Move gears MP619 and MP620 to engage gear MP621 without changing the setting of the left dial of each counter. Tighten the set screws of gears MP610 and MP620.

Step 5. Clockwise rotation of TUNING (A) control knob should now shift the shutter to the upper position and the left dial of the upper counter to 5.

Step 6. Sprocket MP631 should be positioned to limit the overtravel of the stop on the shaft of MP631 as the left dial of each counter travels from 0 on the bottom to 9 on the top.

Step 7. Loosen the set screws of gears MP611 and MP612, and move the gears on the shaft toward the counters to disengage gear MP613.

Step 8. Set the three righthand dials of the upper counter at 001 and the three righthand dials of the lower counter at 999.

Step 9. Rotate TUNING (B) control knob counterclockwise until the stop on gear MP618 limits the turning of the knob.

Step 10. Move gears MP611 and MP612 to engage gear MP613 without disturbing the setting of the dials. Tighten the set screws in gears MP611 and MP612.

Step 11. Replace the shutter assembly. Be sure that the pin on the shutter properly engages the slot in the shutter area (see figure 6-18 (A)). Replace the counter cover.

Step 12. Adjust the setting of idler sprocket MP628 so that the chain moves freely on all sprockets without binding.

Step 13. Check that all instructions given in the note at the beginning of paragraph 6-3f(6) have been fulfilled. Pin all collars, gears and sprockets. All parts to be pinned require $\frac{3}{32}$-inch pin holes. Pins in shafts of gear MP618 and sprocket MP631 should be pressed in with ¼-inch projecting.

(7) GEAR DRIVE REPLACEMENT.—Reinstall the gear drive assembly in the chassis by reversing the procedure of paragraph 6-3f(3). Replace the oven in the chassis, and proceed as follows:

Step 1. Check the couplings to the shafts of rotary switch S601 and capacitor C662 and be sure they are loose. Ascertain that the shaft of capacitor C1340 is in the full counterclockwise position and that the XTAL OSC LOG counter is at the "000" setting.

Step 2. Tighten the set screws of the counter shaft coupling.

Step 3. Rotate the shaft of rotary band switch S601 to place the wiper in the position directly connected to capacitor C667. Turn the TUNING (A) knob until the left dial of the lower counter is at the 0 reading. With this orientation of the shafts maintained, couple the shafts and tighten the set screws.

Step 4. Turn the shaft of capacitor C662 so that the rotor plates are at precisely 90° with the stator plates. To set the plates to 90°, turn the rotor so that the longest half of the plates is unmeshed and open approximately 90°. Place a steel scale against the capacitor sidebar facing the flat edges of the rotor and set the rotor so that the distance between the side bar and the flat edges is $1\frac{13}{32}$ inches. Turn TUNING (B) control knob until the three righthand dials of the lower counter read 500. Rotate TUNING (A) control knob until the lefthand dial of the lower counter reads 2. With the reading maintained on the lower counter, couple the shaft of C662 to the shaft from the counter, and tighten the set screws.

Step 5. Replace the covers on the top and bottom of the oven and reinstall the chassis in the console.

g. RADIO FREQUENCY AMPLIFIER AM-2121/WRT-2.

(1) GENERAL.—The majority of electronic components in the Radio Frequency Amplifier AM-2121/WRT-2 are readily replaceable by conventional servicing techniques. The driver subchassis, power amplifier subchassis and the blower assembly require special procedures and they are covered in the following paragraphs. The driver subchassis and the power amplifier subchassis are located immediately behind the front panel and require removal of the panel for servicing. The blower is located in the lower lefthand rear corner of the chassis and is accessible with the chassis extended from the cabinet. Figures 6-19 through 6-22 illustrate the servicing procedures for these subchassis and parts.

(2) FRONT PANEL REMOVAL.—To remove the front panel, proceed as follows:

Step 1. Release the eight captive thumb screws (four on each vertical edge) which secure the panel in place.

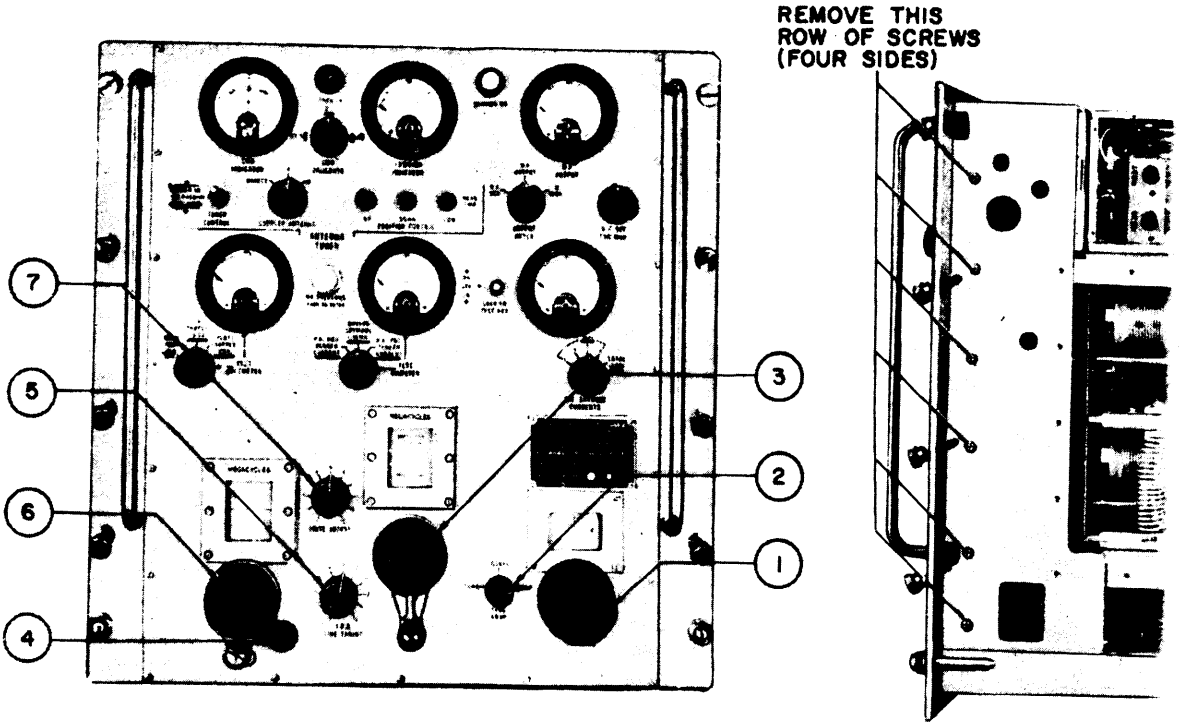


Figure 6-19. Radio Frequency Amplifier AM-2121/WRT-2, Front Panel Removal

Step 2. Withdraw the chassis from the cabinet to the limit of its travel.

Step 3. Secure the foul weather latch on the upper righthand rear corner of the chassis.

Step 4. Refer to figure 6-19 and remove the seven control knobs specified.

Step 5. Referring again to figure 6-19, remove the row of flathead screws shown. There are six on each side, two on top and one on the bottom.

Step 6. Carefully withdraw the front panel from the chassis. Tie the panel to the chassis so that its weight is not on the cable which connects them.

(3) DRIVER ASSEMBLY.

(*a*) DRIVER ASSEMBLY REMOVAL.—To remove the driver assembly, proceed as follows:

Step 1. Remove the front panel from Radio Frequency Amplifier AM-2121/WRT-2 as directed in the preceding paragraph. The driver assembly is the left-hand gear drive unit when facing the front of the chassis.

Step 2. Disconnect all straps and other connections to the driver section.

Step 3. Remove the four screws, washers and lockwashers from the mounting feet located at the top and bottom of the gear housing, and lift the driver assembly out of the chassis.

Step 4. Remove all of the covers from the driver and remove the screws attaching the assembly to the main shield weldment. Set the driver assembly in a work space, supported in a manner which will avoid damage to the coils and capacitors and other electrical and mechanical elements.

(*b*) DISASSEMBLY OF DRIVER GEAR TRAIN.—The driver assembly, which includes coils L809, L818 and L820 and capacitors C803, C832 and C840 together with the associated gear train, should be placed in a convenient work location, where it can be placed on a flat surface to avoid damage to coils and capacitors. To disassemble the gear drive section, proceed as follows:

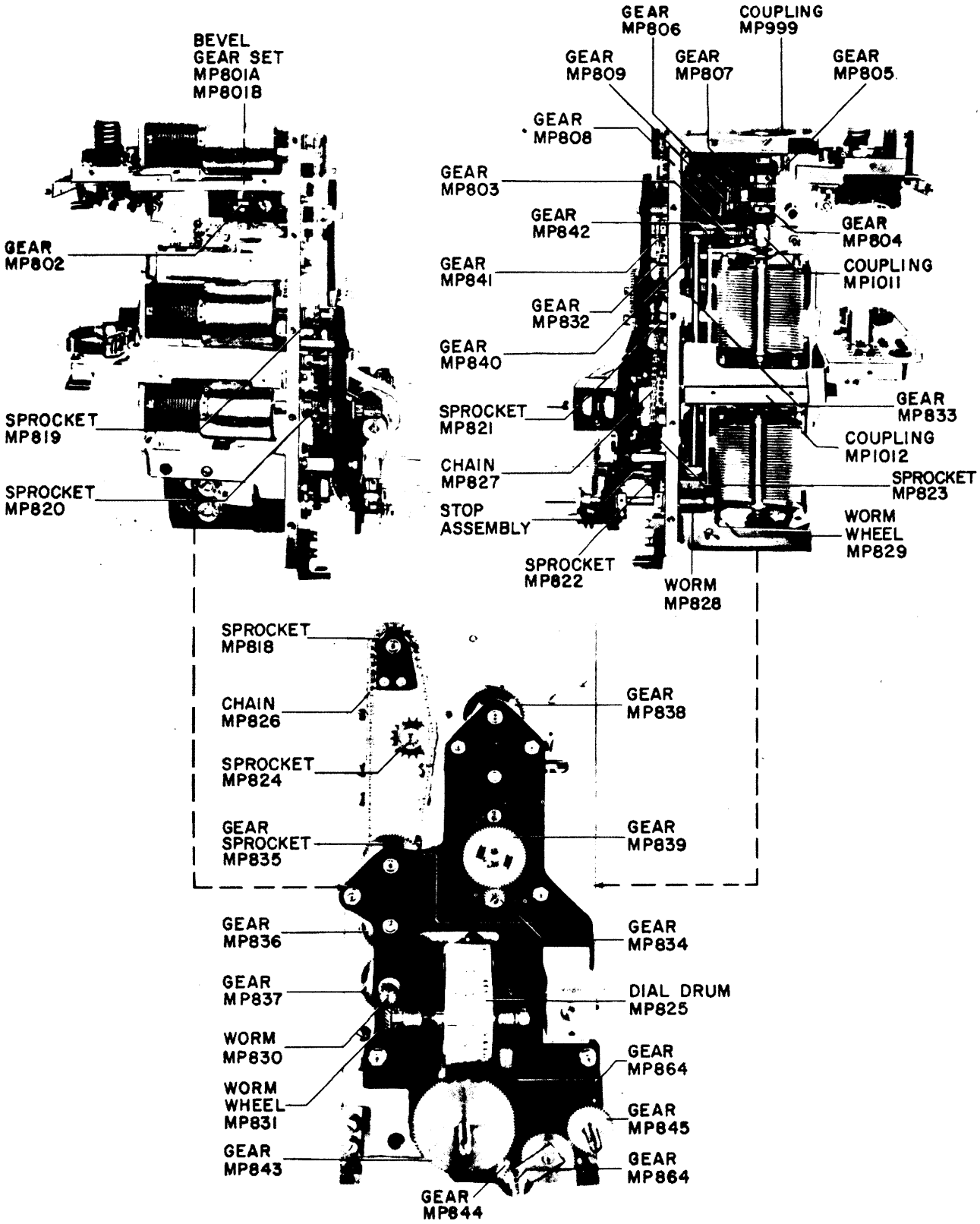
CAUTION

THIS UNIT CONTAINS PRECISION PARTS. A GEAR OR BEARING WHICH DROPS FROM A WORK SURFACE TO THE STEEL DECK CAN BE RENDERED USELESS. FOREIGN MATTER CAN ALSO RUIN A BEARING. PROVISION SHOULD BE MADE FOR PROPER STORAGE OF ALL PARTS WHICH MUST BE REMOVED.

Note

All roll pins should be carefully taken out with the shafts supported to avoid damage to gears and shafts.

Step 1. Refer to figure 6-20 and remove the lock bar retaining ring from the shaft of idler gear MP864. Unscrew the threaded shaft lock from the shaft-mounting idler gears MP844 and MP865, and take off the lock bar. Remove the spacers and idler gears MP844



Figur 6-20. Radi Fr qu ncy Amplifi r AM-2121/WRT-2, Driv r G ar Train Disass mbly

and MP865, and take off the lock bar. Remove the spacers and idler gears, MP864 and MP865 in this sequence. Remove the shafts of gears MP864 and MP865. Disassemble the shafts of gears MP864 and MP865 from the front housing after removing the nuts on the back ends of the shafts.

Step 2. Unpin and remove gears MP845, MP843 and MP834, helical gear MP830, and gear MP839 with the associated retainer ring and bearing.

Step 3. Before continuing the disassembly procedure, unpin all gears and collars from gears which are supported by the front housing.

Step 4. Take the six nuts, lockwashers and washers off the studs attaching the front housing to the rear housing, and lift off the front housing.

Step 5. Remove the dial tape being careful not to back-bend the tap against the normal curvature. Do not stretch the tape flat. The remainder of the dial assembly, consisting of helical MP831, sprocket MP825, the dial rollers and collars, should be disassembled from the front housing as required. Resistor R986 should be removed from the front housing if necessary.

Step 6. Remove the nuts and lockwashers from the rear of the studs of idler sprockets MP823 and MP824. Disengage the idler sprockets from chains MP827 and MP826, respectively, and carefully lift the studs with the sprockets from the rear housing. Disassemble the studs and sprockets as necessary.

Step 7. Remove gears MP837, MP836 and MP835, and take off chain MP826.

Step 8. Observe the order of assembly of the 11½ turn stop assembly on the shaft of sprocket MP822, and disassemble the 13 stop washers and the stop collar from the shaft.

Step 9. Disengage chain MP827 from the sprockets and remove the chain.

Step 10. Unpin and back out the screws attaching the coil shaft support at sprocket MP818, and remove the coil shaft support and sprocket MP818. Remove sprockets MP819, MP820, MP821 and MP822. Lift out the shaft mounting gear MP843 and sprocket MP822. Remove the shaft mounting gear MP834, sprocket MP821 and gear MP836, together with the collar and bearing.

Step 11. Remove gears MP832, MP838 and MP841, and the bearings and the shaft mounting gear MP841.

Step 12. Support the shaft of worm MP828. Unpin the worm and remove the worm and the shaft. Remove the bearings; the rear collar and the stop pin collar should be removed from the shaft as necessary.

Step 13. Release the couplings of the differential drive assembly to capacitors C842 and C840, and remove the couplings from the shaft of gears MP804 and MP806. Back out the four screws attaching the differential housing to the rear gear housing, lift the differential assembly to clear the shaft of gear MP842, and remove.

Step 14. Carefully unpin the differential shafts from the housing. Disassemble the differential drive assembly, consisting of gears MP803, MP804, MP805, MP806, MP807, MP808 and MP809.

Step 15. Remove matched miter gears MP801A and MP801B after unpinning the associated collars and the shaft.

Step 16. Support the shaft mounting gear MP842 and worm wheel MP829, unpin the parts and remove them from the shaft.

Step 17. Take the screws out of the shaft bearing block, and remove the shaft. Disassemble the collar and block from the shaft.

Step 18. Remove gears MP833 and MP840 and the shafts.

(*c*) REASSEMBLY OF I.P.A. DRIVER GEAR TRAIN.—Reassemble the driver gear train in the reverse order of the disassembly procedure given in paragraph 6-3*g*(3)(*b*). It should be possible to repin all original mating parts through the original pinning holes as each adjustment is completed. Temporarily attach replacement gears, sprockets and collars to the respective shafts by means of set screws. Use the pre-drilled hole in the collar or gear hub as a guide and drill a $\frac{3}{32}$ inch hole through except where otherwise instructed. The shaft must be properly supported during the drilling operation. Insert the roll pin and remove the set screw. The following notes are pertinent to the reassembly procedure, and it is imperative that all notes be carefully read prior to reassembly and adjustment of the driver gear train. When installing collars, sprockets and gears, lock them in place with set screws until the gear drive has been completely assembled and adjusted in accordance with the following notes:

Note 1

With the block of the differential drive assembly set at the midpoint of the arc of travel, adjust capacitors C803, C832 and C840 so that the rotors are in full mesh with the stationary plates. Pin the couplings. Set the collar mounted on the shaft of gear MP845 so that the stop pin in the collar is oriented 180° ±5° from the pin in the front housing.

Note 2

Rotate coils L809, L818 and L820 until th contact is ¼ turn from the end of the conductor, and set the stop washers of the 11½ turn stop assembly of the I.P.A. TUNING (F) control to limit the clockwise rotation of the control shaft.

Note 3

With coils L809, L818 and L820 set with the first contact ¾ turn from the feed through terminal, set the tape dial at 30.0 mc.

N t 4

Adjust all spur gears and sprockets to allow 0.003 inch to 0.008 inch end play in shafts. Adjust worm and helical gears to allow 0.001 inch to 0.002 inch end play in shafts. Miter gears are to be adjusted to mesh properly on the pitch circle for minimum backlash without binding.

Note 5

Sprockets MP822 and MP825 and gear MP843 should not be pinned until after electrical testing is accomplished.

Note 6

Gears MP832, MP833, MP839, MP840 and MP841, miter set MP801, and helical MP830 should be drilled for pinning using a $\frac{1}{16}$ inch diameter drill. All other gears, sprockets, miters and collars should be drilled using a $\frac{3}{32}$ inch drill.

(*d*) REPLACEMENT OF ELECTRONIC COMPONENTS.

1. CAPACITORS C803, C832 OR C840.—To replace capacitors C803, C832 or C840, proceed as follows:

Step 1. Remove the driver assembly from the r-f amplifier as directed in paragraph 6-3*g*(1)(*a*).

Step 2. Disconnect all electrical connections and support straps from the capacitor to be replaced. Electrical connections should be removed at the capacitor.

Note

Capacitors C803 and C840 may be removed independently. Capacitor C832, occupying the middle position, may be removed only after the lower capacitor, C803, has been removed.

Step 3. Set the I.P.A. FINE TUNING control to fully mesh capacitor C840.

Step 4. Disable the tuning stop assembly by driving out the pin in the stop collar of the assembly on tuning shaft. Turn the I.P.A. TUNING (F) control to 2.0 mc, until capacitors C832 and C840 are fully meshed, and lock the control.

Step 5. Remove the pins from the coupling between C803 and C832, and uncouple the shafts. Take out the three screws from bottom capacitor bracket. Remove the screw from the capacitor support at the top of capacitor C803, and remove the capacitor from the rear.

Step 6. Remove the pins from the coupling between capacitor C832 and the differential drive assembly, and uncouple the shafts. Disconnect the ground angles of coils L809 and L818 from the lower shield assembly, and back out the screws attaching the lower shield assembly to the rear housing. Carefully remove the lower shield assembly so that the components and wiring of the assembly are not disturbed. Lay the assembly as removed on a clear surface to prevent damage to the wiring and mounted parts.

Step 7. Take out the three screws attaching capacitor C832 to the capacitor bracket and the single screw from the capacitor support. Withdraw capacitor C832 from the rear of the driver assembly.

Step 8. Drive out the pins from the coupling between capacitor C840 and the differential drive assembly, and uncouple the shafts.

Step 9. Remove the three screws from the capacitor bracket on the top of capacitor C840, the screw from the capacitor support and take out capacitor C840.

Step 10. Reassemble the capacitors in the driver assembly in the reverse order of disassembly. One end of the coupling between capacitors C832 and C803 should be assembled and pinned to the shaft of C832 before the capacitor is attached to the capacitor bracket.

Step 11. Mesh the capacitor plates fully at reassembly with the I.P.A. TUNING (F) control still set as in step 4. The pin should be replaced in the stop collar of the tuning stop assembly after reassembly is complete. The couplings should be repinned.

2. COILS L809, L818 AND L820.—To replace coils L809, L818 or L820, proceed as follows:

Step 1. Remove the driver assembly from the r-f amplifier as directed in paragraph 6-3*g*(1)(*a*). Set the I.P.A. TUNING (F) control at 30.0 mc on the dial. Disconnect all electrical connections to the defective coil. Carefully remove the pin from the spline extension assembly of the coil to be replaced.

Step 2. Remove the spline retaining plate from the rear of the coil, and take out the coil spline.

Step 3. Remove the screw from the rear coil support, and remove the coil.

Step 4. The coil replacement or reassembly is accomplished in the reverse order of disassembly.

(*e*) MECHANICAL ADJUSTMENT.—Adjustments on the driver assembly are necessary after the replacement of a coil or capacitor component of the assembly. To adjust the tuning components for proper tracking with the tuning dial, proceed as follows:

Step 1. Set the I.P.A. TUNING (F) control to 30.0 mc.

Step 2. Remove the pin from the collar of the tuning stop assembly.

Step 3. Rotate the three coils, L809, L818 and L820 clockwise until the contact is ¼ inch from the end of the coil inductor. Set the stop washers of the tuning stop assembly to limit the clockwise rotation of the I.P.A. TUNING (F) control shaft.

Step 4. With the three tuning coils set so that the first contact is ¾ inch from the feed through terminal, set the tape dial at 30.0 mc.

Step 5. Turn the I.P.A. TUNING (F) control to 2.0 mc. Lock the I.P.A. TUNING (F) control and the I.P.A. FINE TUNING control. The I.P.A. FINE TUNING control must be centered before it is locked.

Step 6. Set the capacitors, C803, C832 and C840, so that the rotor plates are completely meshed with the stationary plates.

Step 7. Return the dial to 30.0 mc and pin the collar of the stop assembly.

(4) POWER AMPLIFIER TUNING AND COUPLING ASSEMBLY.

(*a*) REMOVAL OF P.A. TUNING AND COUPLING ASSEMBLY. — To remove the power amplifier tuning and coupling assembly, proceed as follows:

Step 1. Turn P.A. TUNING (G) control to 30.0 mc, P.A. COUPLING (H) control to 50 and the TUNE COUP selector to LOCKED. Remove the respective control knobs as well as knobs of I.P.A. TUNING (F) control, I.P.A. FINE TUNING control, DRIVE ADJUST and the lock (numbered 1 through 7 in figure 6-19).

Step 2. Release the six fasteners on the front panel of the r-f amplifier chassis, and withdraw the chassis to the limit of travel. Engage the foul weather latch on the righthand side. Pull the locking level at the rear of the chassis, and rotate the chassis to a position most convenient for servicing the part involved. If it is necessary to remove the chassis from the console, disconnect all wiring to the chassis. Remove the four bolts holding the chassis to the mounting plate portion of the chassis support bearing. The bolts are accessible from the rear of the mounting plate. Lift and remove the chassis. To reinstall the chassis, place the bosses on the back of the chassis over the protruding pins on the back plate and secure the chassis in place with the four corner bolts. Lift the chassis to release the locking mechanism and slide it into the console.

Step 3. Remove the six flat head screws on each side of the panel flange, one flat head screw on the bottom and two on the top (see figure 6-19), and remove the panel. Support the panel on a platform or other device to relieve the strain on the attached cable.

Step 4. Disconnect all straps and other connections to the tuning and coupling section.

Step 5. Take out the four bolts at the top and bottom of the gear housing.

Step 6. Lift the tuning and coupling assembly out of the chassis, and support it in the work space so as not to damage the capacitors or the coils.

(*b*) DISASSEMBLY OF P.A. TUNING AND COUPLING GEAR TRAIN.—The tuning and coupling assembly, which includes coils L803, L804 and L805 and capacitors C836 and C837 together with the associated gear train, should be placed in a convenient work location. Refer to figure 6-21 and disassemble the gear train according to the following procedure.

CAUTION

THIS UNIT CONTAINS PRECISION PARTS. A GEAR OR BEARING WHICH DROPS FROM A WORK SURFACE TO THE STEEL DECK CAN BE RENDERED USELESS. FOREIGN MATTER CAN ALSO RUIN A BEARING. PROVISION SHOULD BE MADE FOR PROPER STORAGE OF ALL PARTS WHICH MUST BE REMOVED.

Note

All roll pins should be carefully taken out to avoid damage to gears and shafts. Shafts should be well supported when pins are being removed. Washers, ring retainers and bearings should be kept in order with the disassembled parts.

Step 1. Remove the dial assembly E841.

Step 2. Drive the pins out of gears MP1008, MP898, MP899, MP901 and MP902, and remove the gears in the sequence given. Remove the ball bearing and race from the shaft of MP901 and the bearings, MP1040, which are behind the other gears.

Step 3. Remove helical gear MP895 and gear MP890.

Step 4. Note carefully the correct assembly of the stop associated with gear MP891 to facilitate the reassembly of the stop. Remove gear MP891 and disassemble the stop.

Step 5. Loosen the retaining nuts of idler sprockets MP886, MP887 and MP888 and slide the respective stud assemblies in the slots of the housing to release the associated chains.

Step 6. Loosen the adjustable bearing located on the housing above the shaft of gear MP899.

Step 7. Withraw the four screws attaching the front of the gear housing to the rear of the housing. Remove the front of the gear housing with care to avoid damage to parts still attached.

Step 8. Remove the dial tape from the dial rollers. The tape should not be bent opposite to the natural curvature nor should it be layed flat.

Step 9. Disassemble the dial roller assembly, the locking level assembly and the idler sprockets as required for servicing.

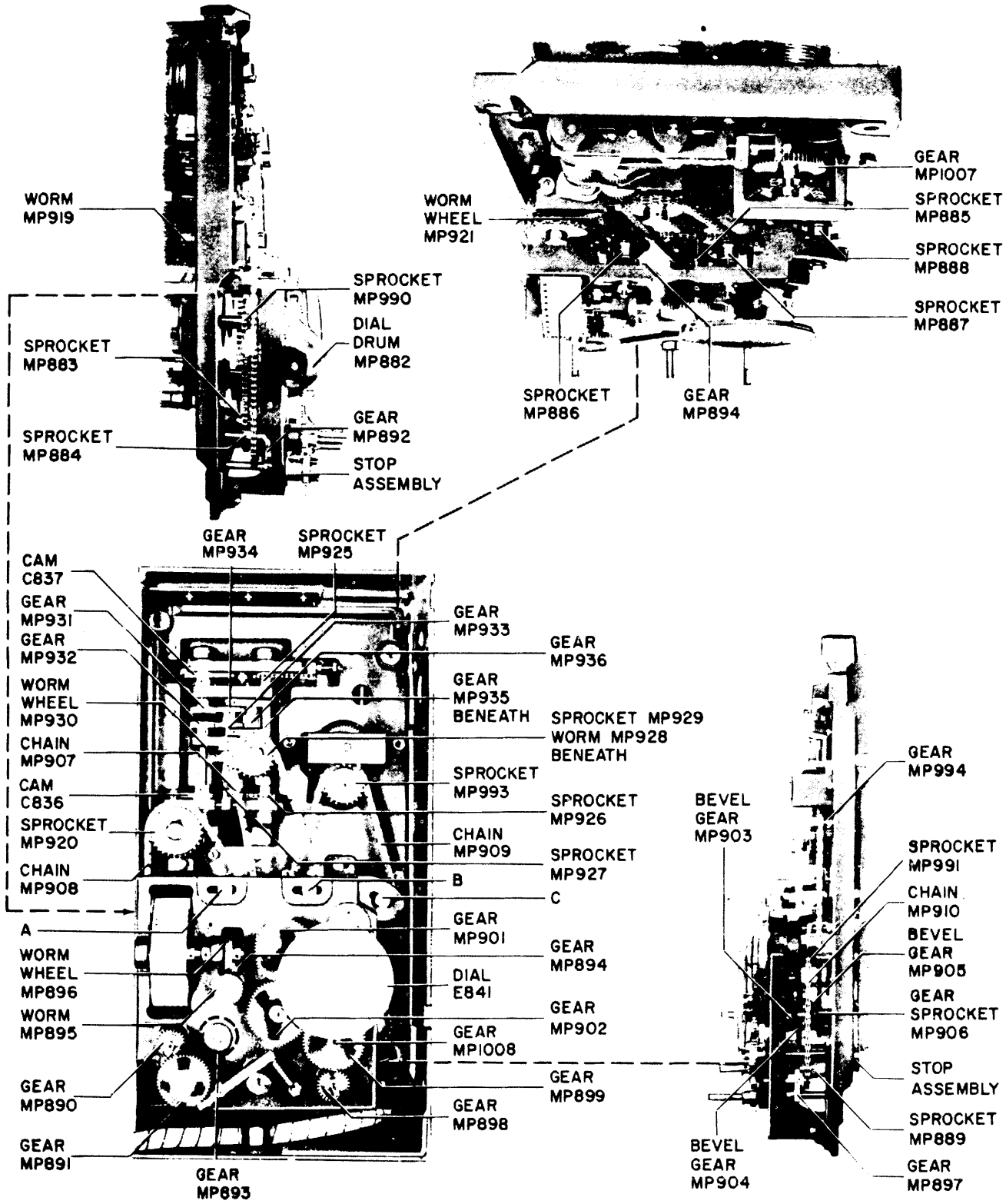
Step 10. Remove gear MP897.

Step 11. Loosen idler sprocket MP889 and move the assembly in the slot to release chain MP910.

Step 12. Disengage in order chains MP908, MP907, MP910 and MP909 from the associated sprockets and remove.

Step 13. Take out shafts mounting gear MP892 with sprocket MP884, gear MP893 with sprocket MP883, gear MP894 and sprocket MP885. The gears should be disassembled from the respective shafts as necessary.

Step 14. Remove the differential drive mechanism as a unit, and replace only the necessary gears. The differential need not be completely disassembled.



Figur 6-21. Radio Fr qu ncy Amplifier AM-2121/WRT-2, Pow r Amplifi r G ar Train Disass mbly

Step 15. Withdraw the shaft of gear MP899 through the rear of the housing. Carefully study the stop assembly mounted on the shaft and disassemble.

Step 16. Back out the nine screws attaching the housing of capacitors C836 and C837 with the allied gear mechanism to the gear assembly housing, and remove the unit assembly.

Step 17. Remove sprocket MP920 and spacer and helical gear MP921.

Step 18. Take out the four screws attaching the block on shaft mounting worm MP919 and remove. Remove worm MP919.

Step 19. Remove the bearing and races from the shaft of worm MP919. Withdraw the shaft mounting a bearing and a collar from the rear.

Step 20. Remove sprocket MP929 and spacer and helical gear MP930.

Step 21. Take out the four screws attaching the block on shaft mounting worm MP930 and remove. Remove worm MP930.

Step 22. Unpin the lower drive bar collar and block. Back out the lower drive bar stud and disconnect chain MP1053.

Step 23. Unpin the lower tuning cam and gear MP932, and remove the shaft, cam and gear.

Step 24. Unpin MP926 and remove the shaft. Remove the lower drive bar and sprockets MP926 and MP927.

Step 25. Unpin the block pinned to the shaft of gears MP933 and MP934 and remove the shaft, gears and block.

Step 26. Take out the set screws in the differential block which secure the shafts for gears MP935 and MP936 and remove the shafts and gears.

Step 27. Unpin the upper drive bar block and release unit. Back out the lower drive bar stud and disconnect chain MP1052.

Step 28. Unpin the upper tuning cam and gear MP931, and remove the shaft, gear and cam.

Step 29. Unpin sprockets MP925, and remove the shaft, gear and upper drive bar.

Step 30. Remove MP1007 and MP994 from the coil assembly section and carefully disassemble the stop associated with gear MP1007.

(*c*) REASSEMBLY OF P.A. TUNING AND COUPLING GEAR TRAIN.—Reassemble the tuning and coupling gear train in the reverse order of disassembly. The following notes regarding the reassembly and adjustment procedure are pertinent, and all notes must be read before beginning the reassembly. It is imperative to the correct functioning of the gear train that all details given be properly attended.

Note 1

Set screw all gears, sprockets, collars, and cams on their respective shafts. Allow 0.003 to 0.008 inch end play in shafts mounting only spur gears, sprockets and cams. Allow 0.001 to 0.002 inch end play in shafts mounting helical gears, worm gears and bevel gears. Adjust the differential cluster to mesh properly on pitch lines with backlash held as near to zero as possible to allow the g ars to rotate freely.

Note 2

Assemble the gear housing assembly, and position the adjustable bearing of coil L804.

Note 3

Set the P.A. COUPLING (H) dial for equal over-travel 0-100 and pin the stop collar of the stop assembly associated with gear MP1008.

Note 4

With the capacitor drive assembled to the gear assembly except for chains MP907 and MP908, set the capacitor drive so that both cams are in the set-up notches, and set dial assembly E841 on zero and the dial tape on index. The stop washers of the stop assembly mounted with gear MP891 must be disengaged to do this. Assemble chains MP907 and MP908 and pin sprocket MP884 and helical gear MP896. Rotate P.A. TUNING (G) shaft clockwise until the tape dial reads 30 mc, set and pin the stop assembly gear MP891. Assemble the coil assembly to the gearing assembly, and set dial E841 at 50 with the tape dial at 30 mc. Set coil L803 as close to the center as possible; set coil L804 as close to $\frac{1}{5}$ of a turn from the center as the mesh will allow, and assemble chain MP910. Rotate coil L805 until the stop assembly of gear MP1007 prevents clockwise rotation and the trolley of coil L805 is on the turn closest to the center. With this done, rotate L805 counterclockwise and set at 180° from the center and assemble chain MP909.

Note 5

The maximum torque to rotate P.A. TUNING (G) control in a clockwise direction is 150 in-oz with P.A. COUPLING (H) control set at 50. The maximum torque to rotate P.A. COUPLING (H) control clockwise between dial settings 40 to 60 with P.A. TUNING (G) at 2 mc is 70 in-oz.

Note 6

When assembling the upper drive bar assembly, the nut on the upper drive bar stud should be close to the upper drive bar block, but not so close as to jam the block. The shaft of gear MP925 must be set so that the block of the differential can pass. With the block of the capacitor tuning differential in the full counter-

clockwise position, and the cams in the set-up notches, sprocket MP929 should be rotated 4 turns and 14 teeth clockwise to rotate the block 33.3° clockwise. The block and all gears, sprockets and cams of the capacitor drive should then be pinned. The worms MP919 and MP928 of the capacitor drive assembly must be pinned before helical gears MP921 and MP930 are assembled.

Note 7

The stud ends of the capacitor swivel assemblies should be screwed into the capacitors until the capacitors start to raise. Lock the swivel assemblies by tightening the swivel assembly lock nut. Caution must be exercised in making this adjustment to avoid damage to the capacitors.

Note 8

The maximum torque to rotate sprocket MP920 clockwise with both cams at the starting point of the active cam is 40 in-oz. The maximum torque to rotate sprocket MP929 clockwise with the tuning cam of capacitor C837 at the starting point of the active cam is 25 in-oz.

Note 9

Carefully check to ascertain that all gears, sprockets, worms, cams and collars which are to be pinned have been properly pinned and adjusted.

Note

It should be possible to pin all original mating parts through the original pinning holes. If new parts are used, attach the part to the shaft using temporary set screws, adjust shaft end play as detailed in note 1, and drill through with a $\frac{3}{32}$ inch hole using the existing hole in the part as a guide. Remove all set screws after inserting pins.

(*d*) REPLACEMENT OF ELECTRONIC COMPONENTS.

1. REPLACEMENT OF CAPACITORS C836 AND C837.—To replace capacitor C836 or C837, proceed as follows:

Step 1. Turn the swivel nut on the underside of the capacitor until the stud comes free from the base of the capacitor.

Step 2. Remove the mounting straps and the four screws in the flange of the capacitor, then lift the capacitor free of the casting.

Step 3. To replace the capacitor, reverse the preceding steps. When screwing the stud end of the swivel into the capacitor, it should be screwed in just far enough to start raising the capacitor. Do not screw it in any farther than this. Tighten the swivel lock nut. This procedure is applicable to either capacitor.

Note

Replacement of either capacitor makes it necessary that the power amplifier be realigned in accordance with the instructions given in paragraph 6-2*f*.

2. REPLACEMENT OF COILS L803, L804 AND L805.—To replace coils L803, L804 or L805, proceed as follows:

Step 1. Make index marks on the ends of the coil rotor shafts and the shaft of the stop assembly of gear MP1007 to indicate the relationship to adjacent surfaces to facilitate proper reassembly. Note carefully and log for reference the positions of the coil trolley wheels with relation to the coils.

Step 2. Loosen the retaining nuts on the studs of idler sprockets MP888 and MP889, and carefully disengage chains MP909 and MP910. Loosen the screws in the adjustable bearing on the shaft of coil L804.

Step 3. Remove the nuts from the coil assembly studs which project through the rear gear housing. Withdraw the subassembly of coils L803, L804 and L805 being careful not to damage any attached parts.

Step 4. Remove the sprockets, MP990 and MP991, from the shafts of L803 and L804, respectively, and sprocket MP993 and gear MP994 from the shaft of L805. Caution must be exercised in the unpinning of the sprockets and gear to avoid damaging the shafts. The shafts should be supported while pins are being removed.

Step 5. Withdraw the screws attaching the micarta blocks at the rear of each coil to the rear plate, and remove the blocks. The removal of the blocks must be carefully accomplished in order that the trolley shaft positioner spring not be damaged or lost.

Step 6. Take off the retaining rings from the trolley shafts which project through the rear plate.

Step 7. Remove the nuts and washers from the studs at the rear plate.

Step 8. Lay the subassembly on its front plat being careful to block it to remove all weight from the coil shafts. Lift off the rear plate.

Step 9. Hold the trolley wheels and shafts away from the coil inductor, and lift the desired coil from the assembly.

Step 10. The replacement or reinstallation of a coil is accomplished without any special procedure. The forward ring contactor should be pressed aside while reinserting the coil shaft through the front plate.

Step 11. Reassemble the rear plate in the reverse order to the disassembly.

Step 12. If new coils have been installed, the sprockets or gear assembled to the coil shafts should be set with a set screw only until reassembly is complete. The sprockets or gear should be pinned as a final operation in th reassembly procedure. Reread note 10 of paragraph (*c*).

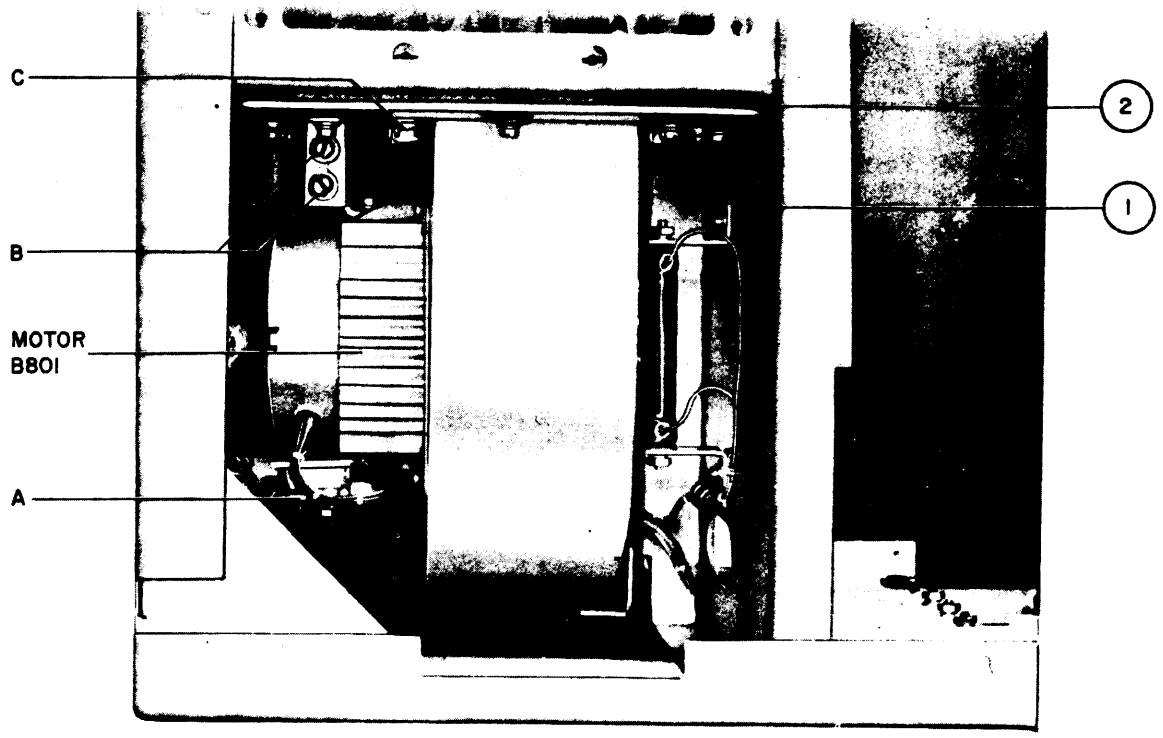


Figure 6-22. Radio Frequency Amplifier AM-2121/WRT-2, Blower Replacement

Step 13. After reassembly of the coil subassembly to the gear housing, the index marks should be checked to establish the alignment of the assembly.

Step 14. Set the trolley wheels on the coils as indicated below:

L803	Lefthand trolley wheel at zero point
L804	Righthand trolley wheel 1/5 turn before zero point
L805	Righthand trolley wheel 1/2 turn before zero point

The zero point is the point at which the two coil windings pass through the coil form at the center. The trolley wheels on the side opposite to these indicated should be placed at a distance from the zero point equal to that of the opposed trolley wheels.

Step 15. Make a final check to ascertain the positioning of the P.A. TUNING (G) control and the P.A. COUPLING (H) control. The P.A. TUNING (G) control dial should be on 30.0 mc, and the P.A. COUPLING (H) control dial should be on 50.

Step 16. Engage the drive chain idler sprockets and tighten the idler sprocket studs after rechecking the positions of the trolley wheels.

Step 17. Reconnect all leads between the P.A. tuning and coupling assembly and the r-f amplifier.

Step 18. Replace the tuning and coupling assembly in the r-f amplifier chassis and reinstall the front panel knobs. Reassemble the chassis in the console.

3. ADJUSTMENT OF CAMS.—When any of the components in the r-f amplifier tuning and coupling assembly are replaced or when any work is performed on the gears or associated mechanism, the adjustment of the tuning cams of capacitors C836 and C837 should be checked. The procedure for the adjustment of the cams is detailed in step 4 of paragraph (*c*).

4. REPLACEMENT OF BLOWER ASSEMBLY.—To remove the blower assembly in the r-f amplifier chassis, refer to figure 6-22 and proceed as follows:

Step 1. Loosen the four captive thumbscrews on each vertical edge of the r-f amplifier chassis and withdraw the chassis to the extended position and secure it with the foul weather latch in the upper righthand corner.

WARNING

BEFORE REMOVING THIS BLOWER ASSEMBLY, BE SURE THAT EMERGENCY STOP SWITCH S201 ON THE FRONT PANEL OF POWER SUPPLY PP-2222/WRT IS IN THE "OFF" POSITION.

Step 2. Remove the cover plate from the upper lefthand compartment (immediately above the blower assembly in figure 6-22).

Step 3. Refer to figure 6-22(A) and disconnect the leads at terminal board TB802. Identify each lead as it is disconnected.

Step 4. Remove the two screws B in the bracket above the motor B101.

Step 5. Remove screws C (four) and remove blower B101. Do not disturb screws (1) or the gasket (2).

Step 6. Install the new blower B101 by reversing the procedure given in steps 1 through 5.

b. RADIO FREQUENCY TUNER TN-342/WRT-2.

(1) GENERAL.—The first step in disassembly of the r-f tuner is to remove it from the permanently mounted shockmount supports so that the case may be removed. It is mandatory that the inside of the r-f tuner be kept clean and absolutely free from any moisture. In order to perform maintenance properly the unit must be taken to a clean, enclosed work area. If the motor and control circuitry is operative, depress DOWN switch S809 on Radio Frequency Amplifier AM-2121/WRT-2 until POSITION INDICATOR M806 indicates zero. If these circuits are inoperative, the position of the shorting disc in the tuner assembly will have to be set manually as directed in the appropriate paragraph. Remove the grounding strap and all interconnection cabling.

CAUTION

THE R-F TUNER WEIGHS APPROXIMATELY 135 POUNDS. BLOCK THE UNIT AS CAREFULLY AS POSSIBLE BEFORE REMOVING THE SHOCKMOUNT BOLTS.

Remove the four bolts which secure each shockmount to its support. Remove the r-f tuner from the supports. Do not dent the case or strike the receptacles, valves, etc., which protrude from the ends of the case. Refer to figures 6-23 and 6-24 during removal and disassembly.

(2) REMOVAL OF R-F TUNER FROM CASE.—To remove the r-f tuner from its case, refer to figure 6-23 and proceed as follows:

Step 1. Discharge the dry nitrogen from the unit by removing the cap from the tank valve MP3342 and depressing the valve stem to release the gas. Discharge gas until gauge M3301 indicates zero pounds pressure.

Step 2. Remove the hex head bolts from both end plates and from the center flanges.

Note

If the motor or control circuitry was inoperative and the position of the sliding short could not be set to zero electrically as directed in the preceding paragraph, proceed as follows: Remove the case half next to the pressure gauge end of the r-f tuner. Refer to figure 6-24 and rotate worm MP3311 until racks MP3339 and MP3340 press against the end plate which mounts the pressure gauge. Proceed with step 3.

Step 3. Carefully withdraw the case halves axially. Withdraw them as nearly along the axis of the tuner as possible. Block the tuner assembly so that it cannot roll and keep it blocked during disassembly and assembly.

(3) DISASSEMBLY OF R-F TUNER. — The majority of parts in the r-f tuner require no special procedures or techniques for replacement. The unit should be kept clean and dry during all servicing. The racks MP3339 and MP3340, and their driving gears are identical on opposite sides of the r-f tuner so only one side will be discussed. To disassemble the r-f tuner, refer to figure 6-24 and proceed as follows:

(*a*) MOTOR B3301.—Remove motor B3301 in the following steps:

Step 1. Identify and disconnect the motor leads at the side of the motor. Disconnect the two leads on the two-speed drive circuit attached to the motor.

Step 2. Remove the set screws in the output shaft of the two-speed drive at worm MP3311.

Step 3. Remove the mounting screws in the plate at the end of motor B3301 opposite the two-speed drive and the two screws in the back mounting flange of the motor B3301. Work the plate away from the drive motor as far as necessary to slip the drive motor B3301 and the two-speed drive MP3301 out of the r-f tuner.

Step 4. Remove the two-speed drive unit, MP3301, by removing the four screws which secure it to the motor, B3301.

(*b*) GEARS MP3306 OR MP3307.—To remove either of these gears, remove the set screw and pin from the gear and pull the gear from its shaft. Only one of the gears should be removed at a time to avoid upsetting the mechanical relationship between the driving shaft and the racks. If this relationship is disturbed the setting of position potentiometer R3301 will no longer be accurate.

(*c*) GEARS MP3304 OR MP3305.—To remove either of these gears, remove the nut, lockwasher and plain washer from the face of the gear. Pull the gear and its bearings from the stud. Remove the bearings and the separating spacer from the gear. Remove only one gear at a time and replace it before removing the opposite one.

(*d*) ROLLERS MP3337 OR MP3338.—To remove either of these rollers, remove the nut, lockwasher and plain washer from the face of the roller. Press the stud through the roller and lift the roller from its counterbore in the mounting plate. Lift the edge of the roller which is away from the rack to get the inner flange away from the rack.

(*e*) WORM WHEEL MP3309.—To remove this worm wheel, first remove the mounting screws for both the two-speed drive MP3301 and the motor B3301. Remove the pin from worm wheel MP3309. Remove gears MP3306 and MP3307 by removing the set screw and pin from each and pulling them from the shaft. Carefully block the motor and two-speed assembly away from the axial center line of the tuner just enough to permit the worm wheel MP3309 to slip side ways

under the worm MP3311. Push the shaft of worm wheel MP3309 out of the tuner toward the side where potentiometer R3301 is mounted.

(4) REASSEMBLY OF R-F TUNER.—All replaceable parts and subassemblies of the r-f tuner are reassembled in reverse order from the disassembly procedure outlined in the preceding paragraphs. If the setting of potentiometer R3301 has been disturbed with respect to the position of racks MP3339 and MP3340, the potentiometer must be reset. Connect an ohmmeter across terminals 4 and 5 of TB3302. Rotate the worm MP3311 until the sliding short is centered on coil L3302. Loosen the mounting unit for potentiometer R3301 and rotate the potentiometer until the meter indicates 5000 ohms. Tighten the mounting nut. When replacing the case halves, every seal ring must be checked to be certain that they are properly sealed and that there is no foreign material on them to permit a gas leak. Pressurize the r-f tuner after reassembly as directed in paragraph 2-4*c*(2)(*b*) in Section 2.

i. Mounting MT-2170/WRT.—Disassembly and assembly of Mounting MT-2170/WRT requires no special instructions. Remove Radio Set AN/WRT-2 and anchor it securely before attempting to service the mounting. Refer to figure 6-22A for Mounting MT-2170/WRT or to figure 6-22B for Mounting MT-2170A/WRT when assembling or disassembling the mounting.

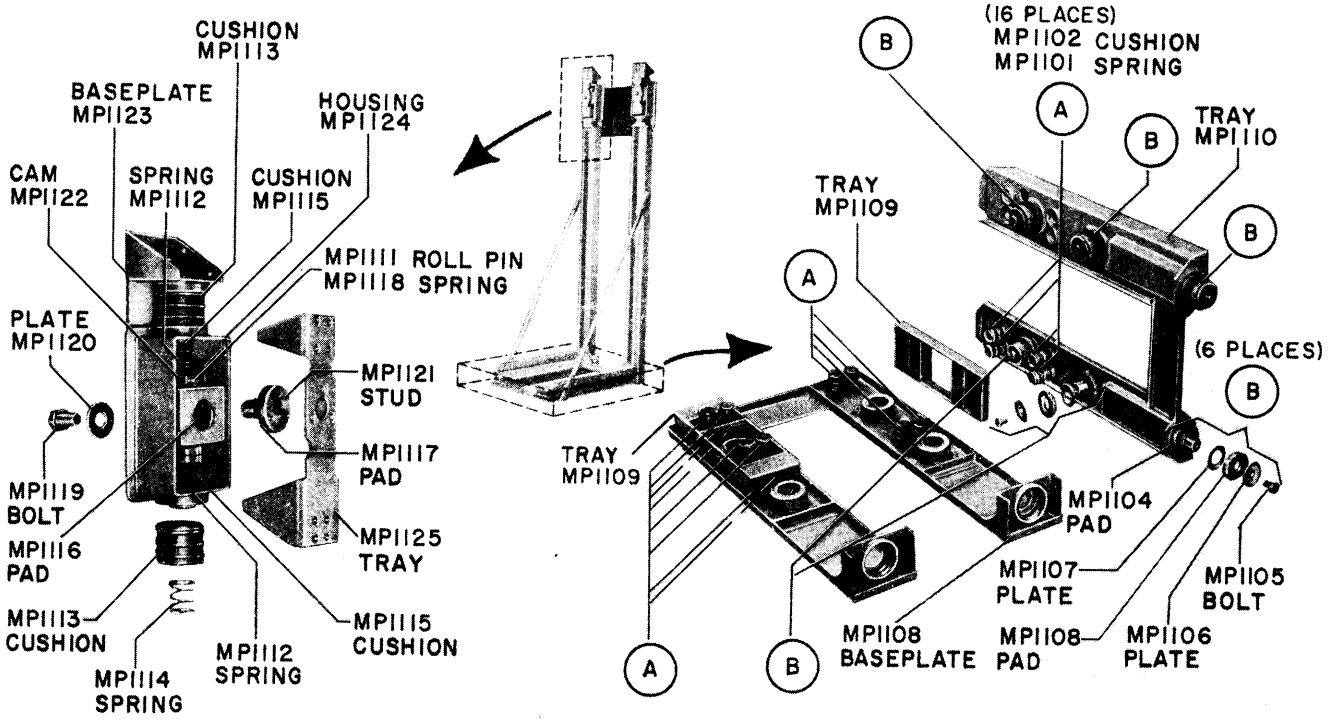


Figure 6-22A. Mounting MT-2170/WRT, Replacement of Parts

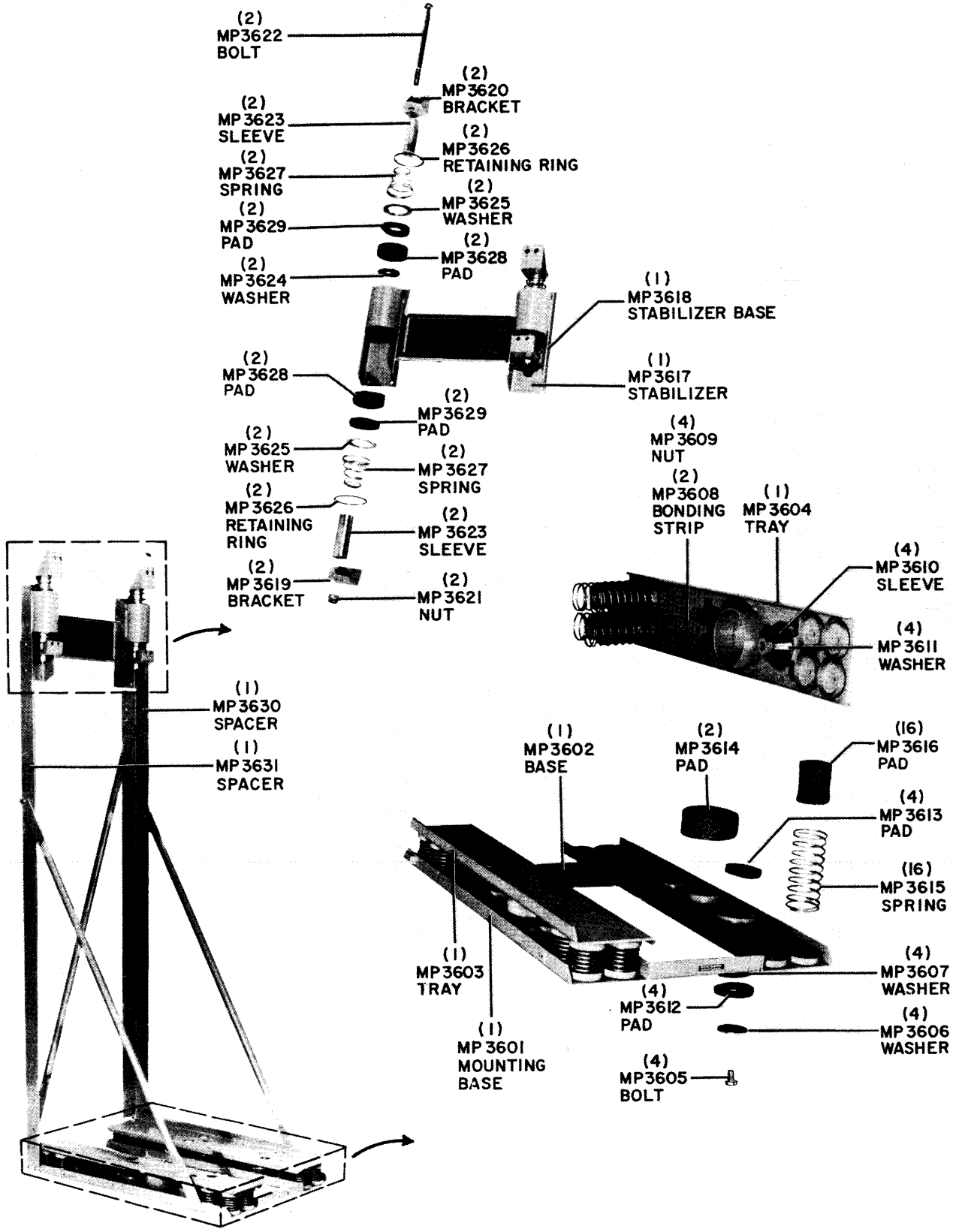


Figure 6-22B. Mounting MT-2170A/WRT, Replacement of Parts

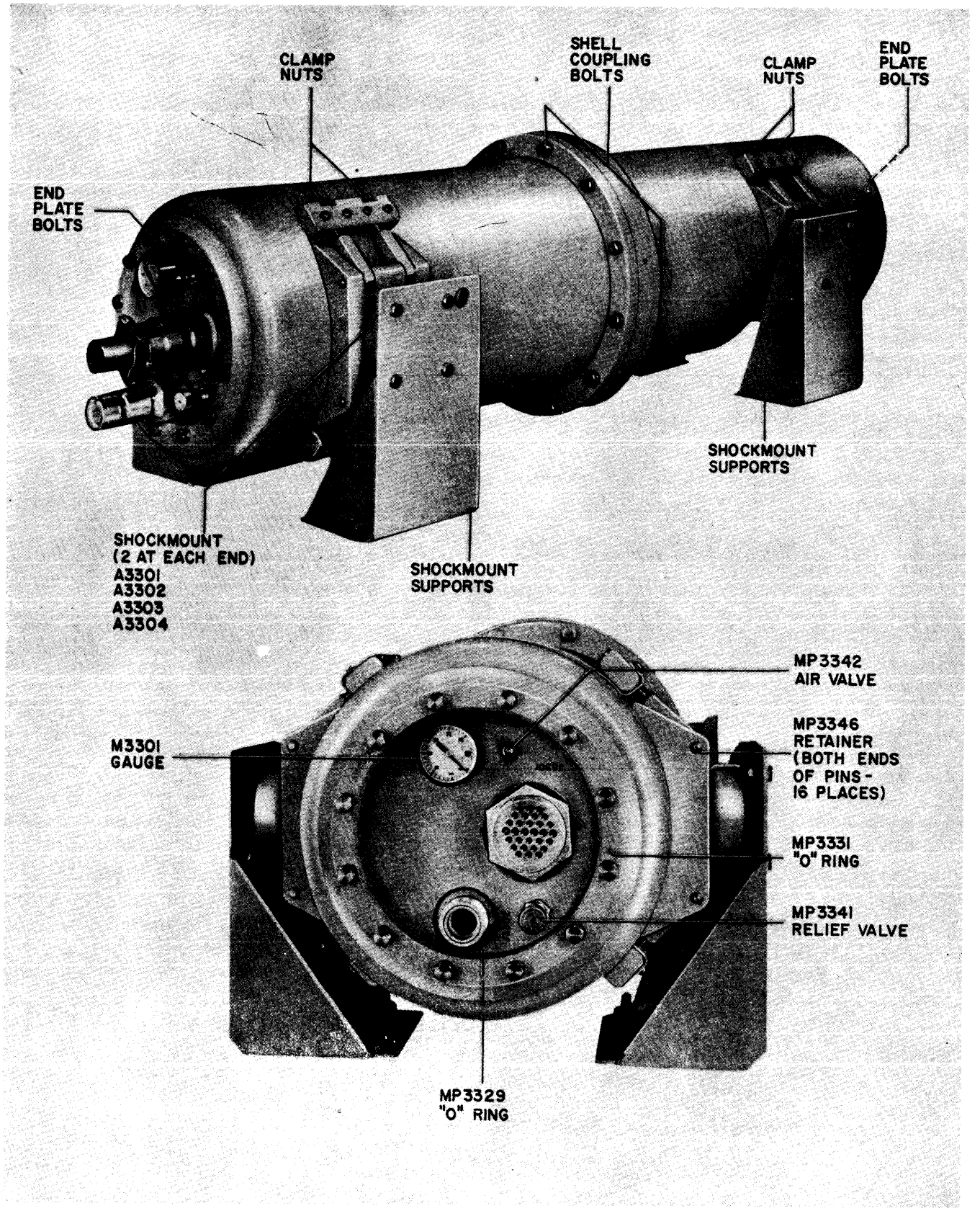


Figure 6-23. Radi Frequency Tuner TN-342/WRT-2, Rem val of Case

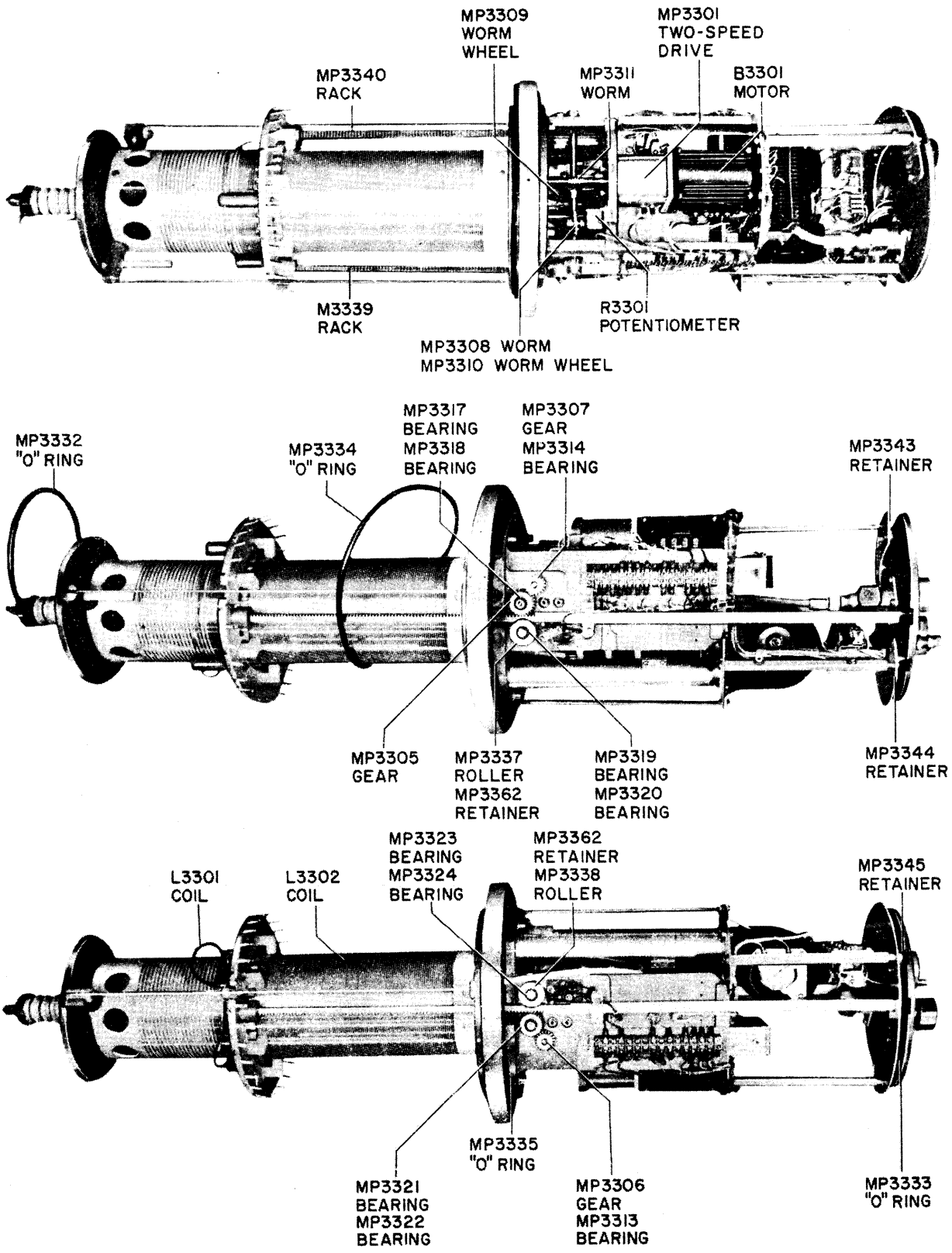


Figure 6-24. Radio Frequency Tuner TN-342/WRT-2, Replacement f Internal Parts

Ref. Desig.	Location	Ref. Desig.	Location	Ref. Desig.	Location	Ref. Desig.	Location	Ref. Desig.	Location	Ref. Desig.	Location
B801	6E	C882	4A	C979	4E	K809A	1E	R817	8A	R917	8A
C801	2B	C883	4B	C982	1C	K809B	1D	R818	5C	R918	8A
C802	3B	C884	4C	C983	2C	K809C	1D	R819	5B	R816	4D
C803	3B	C885	3C	C984	2C	K809D	9A	R820	5A	R919	6A
C804	2B	C886	4A	C985	3B	K810A	9A	R821	8A	R920	9A
C805	3B	C887	2D	C986	1C	K810B	9A	R822	6C	R921	9A
C806	3B	C888	4A	C988	2C	K952A	2C	R823	6B	R922	4C
C808	8C	C889	9B	C999	9B	K952B	1B	R824	6B	R924	8B
C809	8C	C891	4B	CR801	6C	K952C	1B	R825	8A	R925	9A
C810	9D	C892	8C	CR802	6C	L801	3B	R826	6D	R926	8B
C812	4A	C893	8C	CR803	6B	L802	3B	R827	8B	R927	9B
C813	3A	C894	8E	CR804	6A	L803	5A	R828	8B	R928	8A
C814	8C	C895	9B	CR805	8B	L805	7A	R830	8B	R949	1C
C815	8C	C896	8B	CR806	7B	L806	4B	R831	8B	R950	1C
C817	3C	C897	9C	CR807	8B	L807	4B	R832	8B	R951	1B
C818	5C	C899	8A	CR808	8B	L808	5A	R833	4B	R952	1C
C819	5B	C901	5A	CR809	9C	L809	2B	R834	7C	R953	1C
C820	5B	C902	8B	CR810	8A	L810	5C	R835	8C	R975	1B
C822	5C	C903	8A	CR811	9C	L811	9C	R836	7C	R976	1B
C823	5B	C904	8B	CR812	7B	L813	7A	R837	8C	R986	1A
C824	5B	C905	4C	CR813	8B	L814	7A	R838	8C	R992	3B
C825	5A	C906	5D	CR815	9A	L815	2B	R839	10A	R993	3B
C827	6A	C907	7C	CR816	10A	L817	3A	R841	8B	R994	3B
C828	4A	C908	6C	CR817	10A	L818	3A	R842	8B	R997	1B
C829	3B	C912	4B	CR818	9A	L820	4A	R843	8D	R998	2B
C830	3B	C913	6D	DL801	7A	L822	4A	R844	8D	R999	1C
C832	3A	C914	6C	DS801	10B	L823	4A	R845	8D	RT801	9A
C833	4B	C915	6C	DS802	2D	L825	2C	R846	8C	S801	4D
C834	5A	C916	6B	DS803	8E	L826	2C	R847	8D	S802	6B
C835	4B	C917	6A	E802	7A	L828	6C	R848	8D	S803	4D
C836	6A	C918	3C	E804	5A	L829	6C	R849	9D	S804	10B
C837	7A	C923	6E	E805	3B	L830	6B	R850	8B	S805	6D
C838	4B	C924	6E	E806	3B	L831	6A	R853	9C	S806A	4E
C840	4A	C925	7E	E807	4B	L832	2C	R854	9C	S806B	4E
C841	3C	C926	2E	E808	4B	M801	4D	R855	10A	S807A	8C
C842	4C	C927	10A	E842	8D	M802	6B	R856	10A	S807B	8C
C844	4D	C928	10A	E843	9B	M803	5D	R857	10A	S807C	6D
C846	6B	C929	1D	E895-1	7B	M804	8D	R858	9B	S807D	7E
C847	4D	C930	1D	E895-2	8B	M805	8D	R859	5D	S808	3E
C848	4C	C931	1E	E895-3	8B	M806	5E	R860	5D	S809	3E
C849	4C	C932	1E	E895-4	8B	P181	1C	R861	5B	S810	8E
C850	3B	C933	1D	E895-5	8A	P182	10A	R862	5C	S812	5D
C851	4C	C934	1E	E895-6	8B	P183	2B	R863	5D	S815	8D
C852	3C	C935	1D	E895-7	7B	P803-1	9C	R864	6C	S825	7E
C853	7B	C936	5E	J801	1C	P803-3	8D	R865	4B	S826	7E
C854	8D	C937	5E	J802	9A	P803-4	7C	R866	4B	S827	7E
C855	5E	C938	5E	J803-1	9C	P803-5	8C	R867	4B	S828	7E
C856	4A	C939	3E	J803-3	8D	P803-6	9A	R868	4C	T803	7A
C857	8D	C940	4E	J803-4	7C	P803-7	1E	R869	5C	T804	8A
C858	9D	C941	8E	J803-5	8C	P803-8	E2	R870	3D	T805	7D
C859	8D	C942	3E	J803-6	9A	P803-9	1D	R871	3D	T807	7D
C862	4E	C943	3E	J803-7	1E	P803-10	1D	R874	7B	T951	1B
C863	3E	C944	3E	J803-8	2E	P803-11	1D	R875	8B	T952	1C
C864	8B	C945	3E	J803-9	1D	P952	2B	R878	3C	TB801	1D
C866	6E	C946	6E	J803-10	1D	P953	1B	R879	8D	TB801	2E
C867	6D	C947	4E	J803-11	1D	Q801	9A	R884	7A	TB801	10A
C868	5A	C948	4E	J805	5B	Q802	9A	R885	5B	TB802	6E
C869	3C	C949	4E	J806	5B	R801	3B	R886	8B	TB802	6D
C870	4C	C950	4E	J951	2B	R802	4C	R887	3E	TB803	2C
C871	5B	C952	1C	J952	2B	R803	3B	R888	5D	TB805	6D
C872	3A	C953	1C	J953	1B	R804	3A	R889	5D	TB805	7E
C873	4B	C954	4A	K801A	6C	R805	3A	R890	5D	TB976	2C
C874	5B	C955	2C	K801B	9A	R806	4A	R891	5D	V801	3B
C875	5C	C956	2C	K803A	6D	R807	4C	R892	5D	V802	4B
C876	3C	C975	7E	K803B	6D	R808	4B	R893	5E	V804	5C
C877	5C	C976	2E	K804A	3D	R813	8A	R901	1A	V805	5B
C879	4B	C977	1D	K804B	4D	R814	3D	R914	4C	V806	5B
C881	4A	C978	2E	K804C	4D	R815	4D	R916	5A	V807	5A
										V951	1B

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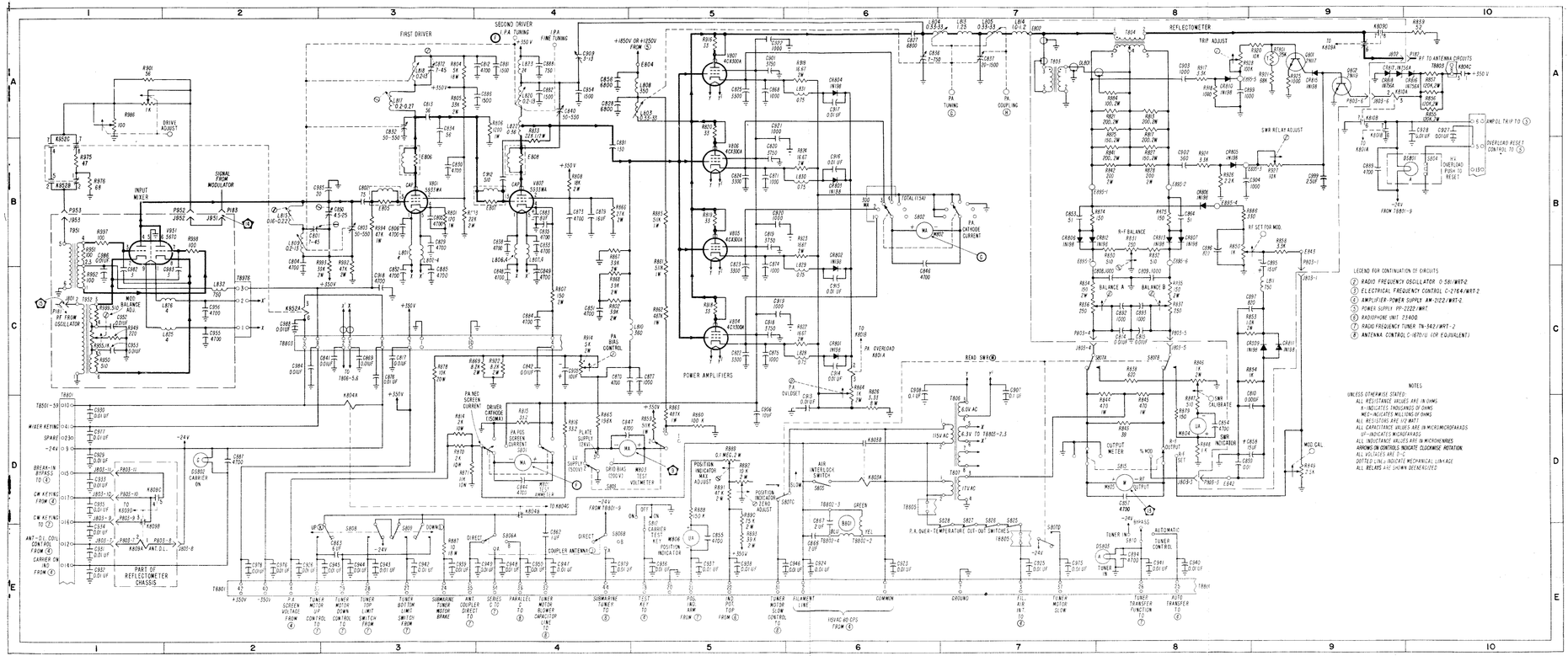

Figure 6-25. Radio Frequency Amplifier AM-2121/WRT-2, Schematic Diagram, Sets Serials 1 to 263

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Ref. Desig.	Location	Ref. Desig.	Location	Ref. Desig.	Location	Ref. Desig.	Location	Ref. Desig.	Location
B801	6E	C884	4C	C982	1C	K810A	6C	R823	6B
C801	2B	C885	3C	C983	2C	K810B	7D	R824	6B
C802	3B	C887	2D	C984	2C	K810C	6C	R825	8A
C803	3B	C888	4A	C985	3B	K952A	2C	R826	6C
C804	2B	C889	9B	C986	1B	K952B	1B	R827	8B
C805	3B	C891	4B	C988	2C	K952C	1B	R828	8B
C806	3B	C892	8C	C989	9D	L801	3B	R830	8B
C808	8C	C893	8C	C990	7D	L802	3B	R831	8B
C809	8C	C894	8E	CR801	6C	L803	5A	R832	8B
C810	9D	C895	9B	CR802	6B	L804	6A	R833	4A
C812	4A	C896	8B	CR803	6E	L805	7A	R834	8C
C813	3A	C897	9C	CR804	6A	L806	4B	R835	6C
C814	8C	C899	8A	CR805	8B	L807	4B	R836	8C
C815	8C	C901	5A	CR806	7B	L808	5A	R837	8C
C817	3C	C904	9B	CR807	8B	L809	2B	R838	8C
C818	5C	C905	4C	CR808	8B	L810	5C	R839	10A
C819	5B	C906	5D	CR809	9C	L811	9C	R841	8A
C820	5B	C907	7C	CR810	8A	L813	7A	R842	8A
C822	5C	C908	6C	CR811	9C	L814	7A	R843	8D
C823	5B	C909	4A	CR812	8B	L815	2B	R844	8C
C824	5B	C912	4B	CR813	8B	L817	3A	R845	8D
C825	5A	C913	6D	CR816	10A	L818	3A	R846	8C
C827	6A	C914	6C	CR817	10A	L820	4A	R847	8D
C828	4A	C915	6C	CR818	9A	L822	4A	R848	8D
C829	3B	C916	6B	CR819	8D	L823	4A	R849	9D
C830	3A	C917	6A	CR820	7D	L825	2C	R850	8B
C832	3A	C918	3C	CR821	7D	L826	2C	R853	9C
C833	4B	C919	5C	CR822	7D	L828	6C	R854	9C
C834	3A	C920	5B	CR823	9A	L829	6B	R855	10A
C835	4B	C921	5A	CR824	9B	L830	6B	R856	10A
C836	6A	C922	5A	CR825	10B	L831	6A	R857	10A
C837	7A	C923	6E	DL801	7A	L832	2C	R858	9B
C838	4B	C924	6E	DS801	10B	M801	4D	R859	5D
C840	4A	C925	7E	DS802	2D	M802	6B	R860	5D
C841	3C	C926	2E	DS803	8E	M803	5D	R861	5B
C842	4C	C927	10A	DS805	10B	M804	8D	R862	5C
C844	4D	C928	10A	E804	5A	M805	8D	R863	5D
C846	6B	C929	1D	E805	3B	M806	5E	R864	6C
C847	4D	C930	1D	E806	3A	P181	1C	R865	4D
C848	4C	C931	1E	E807	4B	P182	10A	R866	4B
C849	4C	C932	1E	E808	4B	P183	2B	R867	4B
C850	3B	C933	1D	E842	8D	P803	9B	R868	4C
C851	4C	C934	1E	E843	9B	P803	7C	R869	4C
C852	3C	C935	1D	E895	9A, B	P803	8C	R870	3D
C853	7B	C936	5E	E897	8A, B	P803	1D	R871	3D
C854	8D	C937	5E	J801	1C	P803	8D	R874	8B
C855	5E	C938	5E	J802	9A	P803	1E	R875	8B
C856	4A	C939	3E	J803-1	9C	P803	2E	R878	3C
C857	8D	C940	8E	J803-5	8D	P952	2B	R879	8D
C858	9D	C941	8E	J803-4	7C	P953	1B	R880	5C
C859	8D	C942	3E	J803-5	8C	Q803	10B	R881	5B
C862	4B	C943	3E	J803-6	9B	Q804	9A	R882	5B
C863	3E	C944	3E	J803-7	1E	R801	3B	R883	5A
C864	8B	C945	3E	J803-8	2E	R802	4C	R884	8A
C866	6E	C946	6E	J803-11,		R803	3B	R885	5B
C867	6D	C947	4E	10, 9	1D	R804	3A	R886	8B
C868	5A	C948	4E	J951	2B	R805	3A	R887	5E
C869	3C	C949	4E	J952	2B	R806	4A	R888	5D
C870	4C	C950	4E	J953	1B	R807	4C	R889	5D
C871	5B	C952	1C	K801A	6C	R808	4B	R890	5D
C872	3A	C953	1C	K801B	6C	R813	8A	R891	5D
C873	4B	C954	4A	K801C	9A	R814	3D	R892	5D
C874	5B	C955	2C	K803A	6D	R815	4D	R893	5E
C875	5C	C956	2C	K803B	6D	R816	4D	R894	3B
C876	3C	C975	7E	K804A	3D	R817	8A	R895	6C
C877	5C	C976	2E	K804B	4D	R818	5C	R896	8D
C879	4B	C977	1D	K809A	1E	R819	5B	R897	9B
C881	4A	C978	2E	K809B	1D	R820	5A	R898	9B
C882	4A	C979	4E	K809C	1D	R821	8A	R899	9B
C883	4B	C980	10B	K809D	9A	R822	6C	R901	1A

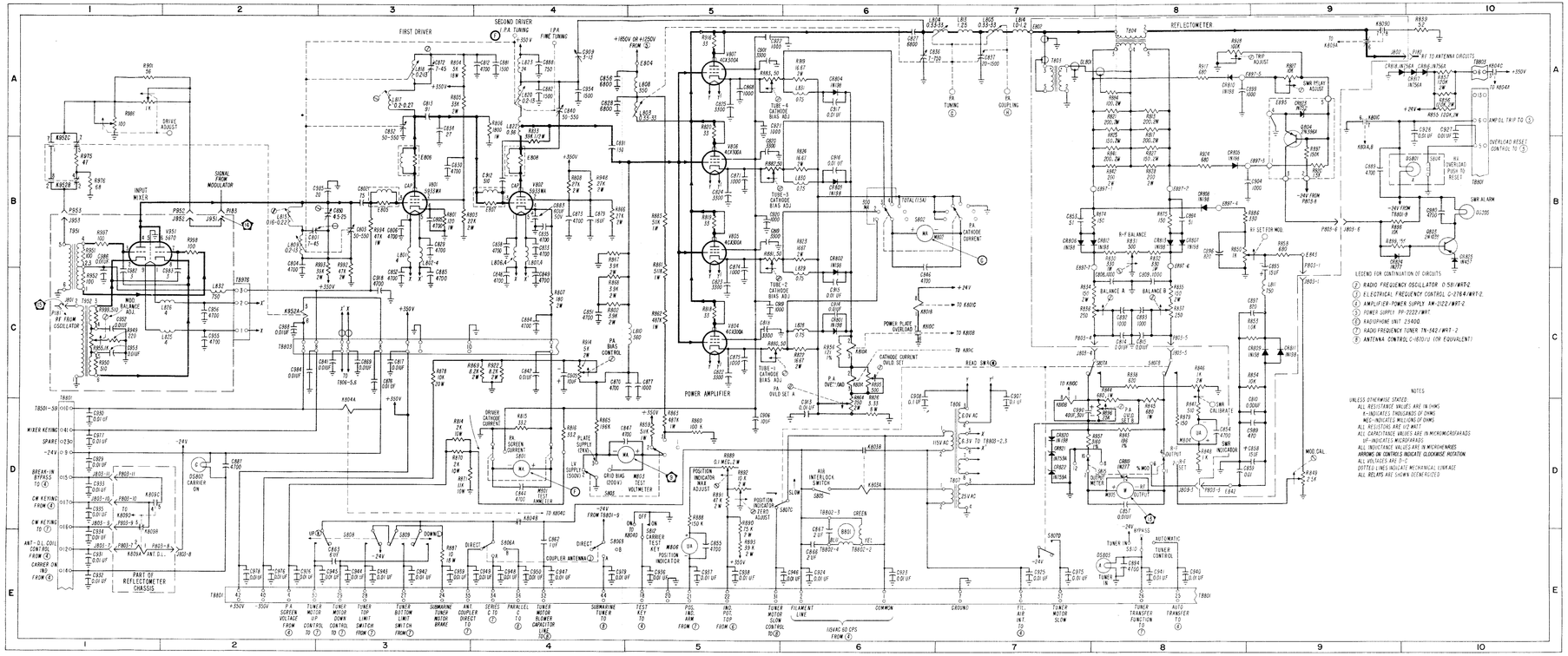

Figure 6-25A. Radio Frequency Amplifier AM-2121/WRT-2, Schematic Diagram, Sets Serials 264 and up

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Ref. Desig.	Location	Ref. Desig.	Location	Ref. Desig.	Location	Ref. Desig.	Location	Ref. Desig.	Location	Ref. Desig.	Location
C341C	14C	C375	14B	C1249	4D	L329	11C	R405	14E	S301C	9C
C301	8A	C376	13C	C1250	5C	L333	13E	R406	13E	S301D	9A
C303	9A	C377	14C	C1251	5B	L1201	4A	R407	13E	S302A	11A
C304	8C	C378	14C	C1252	3D	L1202	4B	R408	14D	S302B	10D
C305	9A	C380	9A	C1253	3D	M301	10D	R409	10C	S302C	11D
C306	9B	C381	8B	C1254	3D	P131	14D	R1201	2A	S302D	11C
C307	9B	C382	8B	C1255	4D	P132	14C	R1202	2A	S302E	12D
C308	9C	C383	8B	C1256	4D	P133	1C	R1203	2A	S302F	14C
C309	9B	C384	8B	C1257	4E	P134	14D	R1204	2A	S302G	14D
C310	9C	C385	8B	C1258	5B	P135	14C	R1205	3A	S302H	14E
C311	9B	C386	8C	C1259	5B	P136	7E	R1206	3A	S304	8E
C312	9C	C387	8C	C1260	5B	P301	10A	R1207	4A	S305	8D
C313	9C	C388	8C	CR301	11E	P302	10A	R1208A	4A	S306	8D
C314	9A	C389	9A	CR302	11E	P310	8D	R1208B	4B	S309	2D
C315	9A	C399	10C	CR303	12E	P311	9D	R1211	2A	S1201	5D
C316	8B	C421	9B	CR304	12E	P312	9A	R1212	2A	S1202A	5C
C320	13A	C422	10E	CR1201	3C	P313	9A	R1213	2A	S1202B	7D
C321	13B	C423	10E	CR1202	3D	R301	10A	R1214	2C	S1202C	5D
C322	13B	C424	10E	DS301	8E	R302	10D	R1215	3B	T301	11D
C323	14A	C426	10D	FL1201	3A	R304	10D	R1216	3B	T302	12D
C324	14A	C428	9B	FL1202	3B	R305	11E	R1217	4B	T303	13B
C325	13A	C429	9A	FL1203	5B	R306	11E	R1218	5B	T304	13C
C326	14A	C1201	2A	HR301	9D	R307	11E	R1219	5B	T305	13C
C327	9B	C1202	2A	HR302	9D	R308	11E	R1221	5C	T306	14A
C329	9B	C1203	2A	HR303	9D	R309	12D	R1222	6D	T307	14A
C331	9C	C1204	3A	HR304	9D	R310	12E	R1223	6D	T1201	2A
C334	10E	C1205	3A	HR305	8D	R311	12E	R1224	6C	T1202	3A
C336	10D	C1206	3A	HR306	9D	R312	12D	R1225	7C	T1203	2A
C337	10E	C1207	3A	J301	10A	R313	12E	R1226	7C	T1204	3B
C338	10D	C1208	4A	J302	10A	R314	13D	R1227	6D	T1205	6C
C339	11E	C1211	2A	J303	14C	R315	13E	R1228	7D	T1206	7C
C340	11E	C1212	2A	J304	14C	R316	13E	R1229	7D	T1207	7D
C341A	11B	C1213	2C	J305	14D	R317	13E	R1230	7E	T1208	6B
C341B	12C	C1214	3B	J306	14D	R318	13C	R1231	7C	T1209	7B
C342	11E	C1215	3B	J310	8D	R319	12E	R1232	7C	T1210	2C
C343	11B	C1216	3B	J311	9D	R320	11E	R1233	6C	T1211	3C
C344	11A	C1217	3B	J312	9A	R321	13B	R1234	6B	T1212	3C
C345	11B	C1218	4B	J313	9A	R322	13B	R1235	6B	T1213	4C
C346	11A	C1219	5B	J1201	1C	R323	13B	R1236	6B	T1214	3D
C347	12B	C1220	5B	J1202	2A	R324	13B	R1237	6B	T1215	4D
C348	12A	C1221	6D	J1202	7E	R325	13B	R1238	7B	TB301	1A
C349	12B	C1222	6D	J1203	5B	R326	13B	R1239	7B	TB301	1B
C350	12A	C1223	7D	J1208	4C	R327	13A	R1240	7B	TB301	1D
C351	12B	C1224	7C	K301A	8E	R328	13A	R1246	2C	TB301	8E
C352	12A	C1225	7C	K301B	8E	R329	13A	R1247	2C	TB301	12A
C353	12B	C1226	7C	K1201A	1B	R330	13A	R1248	3D	TB301	14A
C354	12A	C1227	7C	K1201B	4A	R331	13A	R1249	3C	TB304	8E
C355	11E	C1228	6D	K1201C	4B	R332	13B	R1250	4C	TB306	9C
C356	11E	C1229	6D	L301	8A	R333	13A	R1251	4C	TB307	10E
C357	12E	C1230	7E	L302	8A	R334	13A	R1252	4C	TB320	13A
C358	12E	C1231	7D	L303	8A	R335	12A	R1253	4D	TB320	14A
C359	12E	C1232	7C	L304	8B	R379	10D	R1254	2C	TB1201	1A
C360	12E	C1233	6C	L305	8B	R381	10D	R1256	4C	V301	10E
C361	12C	C1234	6B	L306	8B	R389	8C	R1257	5C	V302	10E
C362	8C	C1235	4B	L307	9A	R390	10C	R1258	5C	V303	12E
C362	12C	C1235	6B	L309	10E	R391	10C	R1259	5D	V304	13E
C363	12C	C1236	7B	L314	10D	R392	8E	R1260	5D	V321	13A
C364	12C	C1237	7B	L315	10E	R393	1D	R1261	5D	V322	13A
C365	12C	C1238	5B	L316	10D	R394	1D	R1262	5D	V323	13A
C366	12C	C1238	7B	L317	11B	R395	14D	R1263	5D	V324	13B
C367	12E	C1241	2C	L318	11B	R396	13E	R1266	3D	V1201	2A
C368	12E	C1242	2C	L319	11B	R397	13D	R1267	4D	V1204	6C
C369	13E	C1243	2D	L320	11A	R398	13D	R1268	4D	V1205	6D
C370	13E	C1244	3C	L321	11A	R399	13D	R1269	4D	V1206	6B
C371	13E	C1245	3C	L322	10A	R401	14D	R1270	4E	V1207A	2C
C372	13C	C1246	3D	L326	12E	R402	14E	R1271	5D	V1207B	5C
C373	13B	C1247	4C	L327	11C	R403	14E	S301A	8A	V1209	4D
C374	14B	C1248	4C	L328	11C	R404	14E	S301B	8C		

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Figure 6-26

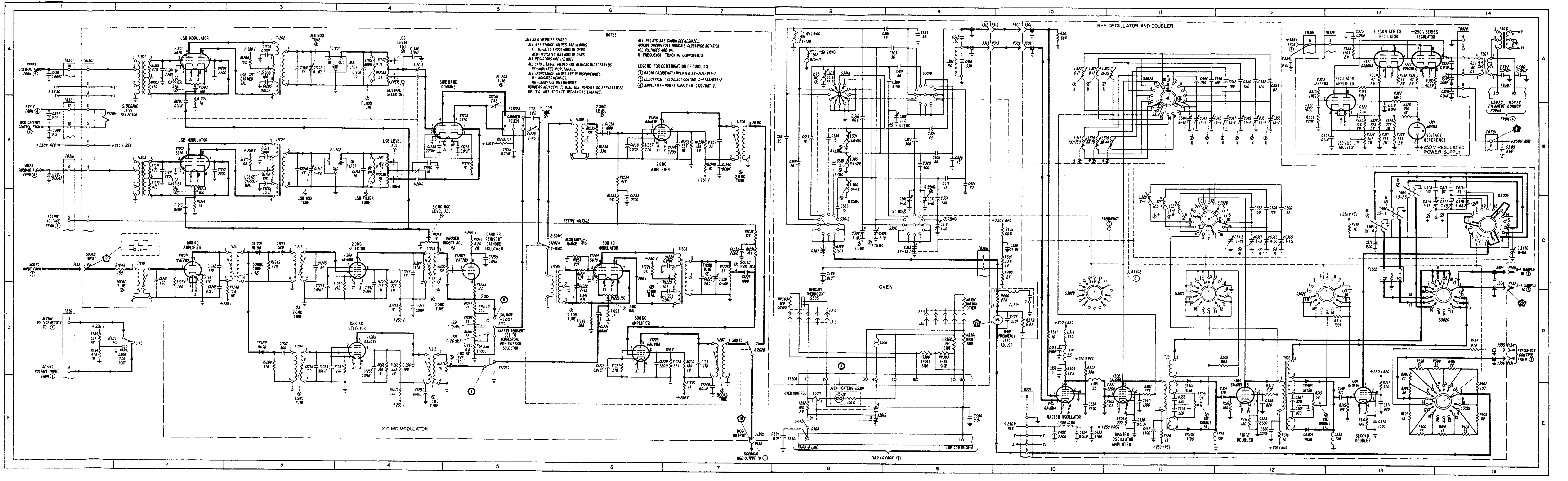

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Figure 6-26. Radio Frequency Oscillator O-581/WRT-2, Schematic Diagram

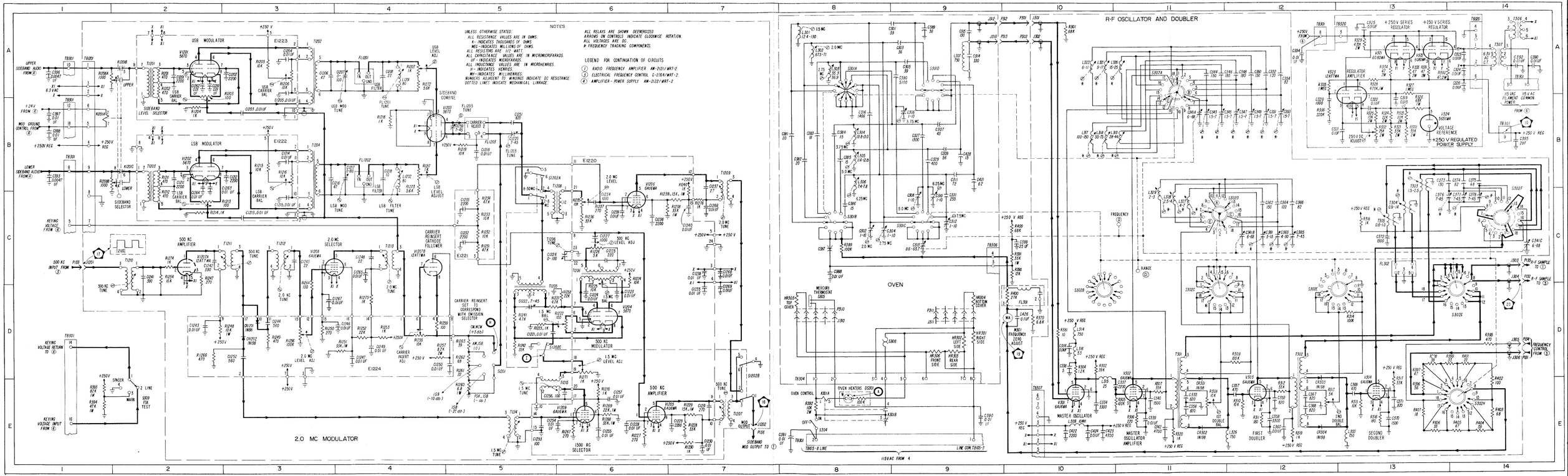

Figure 6-26A. Radio Frequency Oscillator O-581/WRT-2, Schematic Diagram, Sets Serials 445 and up

Ref. Desig.	Location	Ref. Desig.	Location	Ref. Desig.	Location	Ref. Desig.	Location	Ref. Desig.	Location	Ref. Desig.	Location
C301	9A	C380	9A	C1248	4C	L318	10B	R400	10D	R1271	6D
C302	8C	C381	8B	C1249	4D	L320	11A	R401	14D	R1272	4A
C303	9A	C382	8B	C1250	4D	L321	10A	R402	14E	R1273	4B
C304	9C	C383	8B	C1251	5B	L322	10A	R403	14E	R1274	2C
C305	9A	C384	8B	C1252	3D	L326	12E	R404	14E	R1275	4D
C306	9B	C385	8B	C1253	5E	L327	11C	R405	14E	R1276	7B
C307	9B	C386	8C	C1254	5E	L328	11C	R406	13E	S301A	8A
C308	9C	C387	8C	C1255	6E	L329	11C	R407	13E	S301B	8C
C309	9B	C388	8C	C1256	5E	L333	13E	R409	10C	S301C	9C
C310	9C	C389	9A	C1257	6E	L1201	4A	R1201	2A	S301D	9A
C311	9B	C390	9E	C1259	5B	L1202	4B	R1202	2A	S302A	11A
C312	9C	C390	14A	C1261	2A	M301	10D	R1203	3A	S302B	10D
C313	9C	C391	8E	C1262	2A	P131	14D	R1204	2B	S302C	11D
C314	9A	C392	14A	C1263	3C	P132	14C	R1205	3A	S302D	12C
C315	9A	C393	1B	C1264	2C	P133	1C	R1206	3A	S302E	12D
C316	8B	C394	12A	C1265	4D	P134	14D	R1207	4A	S302F	14C
C319	13B	C395	14B	C1266	7B	P135	14C	R1208A	1A	S302G	14D
C320	12B	C396	1A	C1267	3D	P136	7E	R1208B	1B	S302H	14E
C321	12B	C397	1B	C1268	7C	P301	10A	R1211	2B	S304	8E
C322	13B	C398	1B	C1269	7C	P302	10A	R1212	2C	S305	8D
C323	14A	C399	10C	CR301	11E	P310	8D	R1213	3C	S306	9D
C324	14A	C421	9B	CR302	11E	P311	9D	R1214	2C	S309	2E
C325	13A	C422	10E	CR303	12E	P312	10A	R1215	3B	S1201	5D
C326	14A	C423	10E	CR304	12E	P313	10A	R1216	3B	S1202A	5C
C327	9B	C424	10E	CR1201	3D	R301	10A	R1217	4B	S1202B	7E
C329	9B	C426	10D	CR1202	3D	R302	10D	R1218	4B	S1202C	5D
C331	9C	C428	9B	DS301	8E	R304	10D	R1219	5B	T301	11D
C334	10E	C1201	2A	E1220	6B	R305	11E	R1221	5D	T302	12D
C336	10D	C1202	3A	E1221	5C	R306	11E	R1222	6D	T303	13B
C337	11D	C1203	3B	E1222	3B	R307	11E	R1223	5D	T304	13C
C338	10D	C1204	3A	E1223	3A	R308	11E	R1224	6C	T305	13C
C339	11E	C1205	3A	E1224	4D	R309	12D	R1225	6D	T306	14A
C340	11E	C1206	3A	FL301	10D	R310	12E	R1226	6C	T307	14A
C341A	11B	C1207	4A	FL302	13C	R311	12E	R1227	6E	T1201	2A
C341B	12C	C1208	4A	FL1201	4A	R312	12E	R1228	7E	T1202	3A
C341C	14C	C1211	2B	FL1202	4B	R313	12E	R1229	7E	T1203	2B
C342	11E	C1212	3B	FL1203	5B	R314	13D	R1230	7E	T1204	3B
C343	11B	C1213	3C	HR301	9D	R315	13E	R1231	5C	T1205	5D
C344	11A	C1214	3B	HR302	9D	R316	13E	R1232	5C	T1206	6C
C345	12B	C1215	3C	HR303	9D	R317	13E	R1233	5C	T1207	7E
C346	12A	C1216	3C	HR304	9D	R318	13C	R1234	5C	T1208	6B
C347	12B	C1217	4B	HR305	8D	R319	12E	R1235	6C	T1209	7B
C348	12A	C1218	4B	HR306	9D	R320	11E	R1236	6C	T1210	2C
C349	12B	C1219	5B	J301	10A	R321	13B	R1237	6C	T1211	3C
C350	12A	C1220	5B	J302	10A	R322	13B	R1238	7C	T1212	3C
C351	12B	C1221	5D	J303	14C	R323	13B	R1239	6C	T1213	4C
C353	12B	C1222	5D	J304	14C	R324	13B	R1240	7B	T1214	5E
C354	12A	C1223	6D	J305	14D	R325	13B	R1241	5D	T1215	6E
C355	11E	C1224	6D	J306	14D	R326	13B	R1242	5D	TB301	1A
C356	11E	C1225	6C	J310	8D	R327	13A	R1247	2C	TB304	8D
C357	12E	C1226	5C	J311	9D	R328	13A	R1248	3D	TB306	9C
C358	12E	C1227	6C	J312	9A	R329	13A	R1249	3D	TB307	10E
C359	12E	C1228	6E	J313	9A	R330	13A	R1250	3D	TB320	13A
C360	12E	C1229	7E	J1201	1C	R331	13A	R1251	4D	TB1201	1A
C361	12C	C1230	7E	J1202	7E	R332	13B	R1252	4D	V301	10E
C362	12C	C1231	7E	K301A	8E	R333	13A	R1253	4D	V302	11D
C363	12C	C1232	5C	K301B	9E	R334	13A	R1254	2C	V303	12D
C364	12C	C1233	5C	K1201A	1B	R335	12A	R1255	4D	V304	12D
C365	12C	C1234	6C	K1201B	2A	R336	12B	R1256	3D	V321	13A
C366	12C	C1235	7D	K1201C	2B	R379	10D	R1257	4D	V322	13A
C367	12E	C1236	6C	L301	8A	R381	10D	R1258	6D	V323	12A
C368	12E	C1237	7B	L302	8A	R389	8C	R1259	4D	V324	13B
C369	13E	C1238	7C	L303	8A	R390	10C	R1260	5D	V1201	2A
C370	13E	C1239	6C	L304	8B	R391	10C	R1261	5D	V1202	2B
C371	13E	C1240	7C	L305	8B	R392	8E	R1262	5D	V1203	5B
C372	13C	C1241	2C	L306	8B	R393	1E	R1263	5D	V1204	6D
C373	13B	C1242	2C	L307	9A	R394	1E	R1264	3C	V1205	6E
C374	14B	C1243	2D	L309	10E	R395	14D	R1266	2D	V1206	6B
C375	14B	C1244	3D	L314	10D	R396	13E	R1267	6E	V1207A	2C
C376	13C	C1245	3C	L315	10E	R397	13D	R1268	6E	V1207B	4B
C377	14C	C1246	4D	L316	10D	R398	13D	R1269	6E	V1208	3C
C378	14C	C1247	4D	L317	10B	R399	13D	R1270	6E	V1209	6E

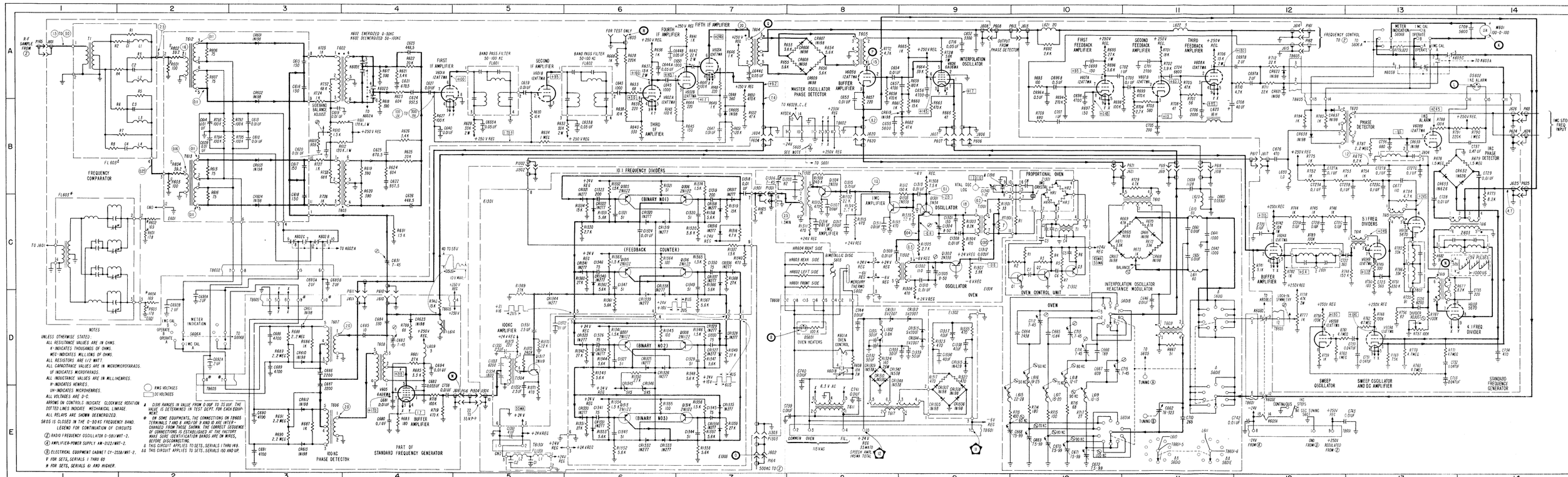

Figure 6-27. Electrical Frequency Control C-2764/WRT-2, Schematic Diagram, Sets Serials 1 to 263

Ref. Desig.	Location
C609	2B
C610	3B
C613	3B
C614	2B
C615	3A
C616	3A
C617	3B
C618	3C
C619	3B
C621	4A
C622	4B
C623	4A
C624	4A
C625	4B
C626	4C
C627	4A
C631	4C
C633	6A
C633A	5B
C639	5B
C640	4B
C641	11C
C642	11C
C643	6A
C644A	6A
C644B	6B
C644C	7A
C645	6A
C646	11D
C647	7B
C648	7A
C650	6A
C651	11C
C652	9A
C653	8A
C654	8A
C655	8B
C656	9A
C657	8A
C659	11B
C660	11B
C661	11C
C662	11E
C664	10D
C665	10D
C666	10D
C667	10D
C668	10E
C669	10E
C670	10E
C671	10E
C672	10E
C676	12B
C677	13B
C680	4E
C681	4E
C682	4D
C683	4D
C684	4D
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C687	3D
C688	3D
C689	3D
C690	3E
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C692A	2D
C692A	3D
C692B	2D
C693A	3C
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C696B	10A
C697A	12A
C697B	12A
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C699	10A
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C703	11A
C704	11A
C705	11B
C706	11B
C707	10B
C708	11B
C709	14A
C710	11E
C712	10D
C713	10D
C714	10D
C715	10D
C716	9A
C717	10E
C720	12C
C721A	12C
C721B	12C
C721C	12C
C722	13C
C723A	12B
C723B	13B
C723C	13B
C725	13C
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C727A	12B
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C727C	13B
C728	13C
C729	14B
C730	13D
C731	13D
C732	13D
C733	13D
C734	14D
C735	14C
C736	13B
C737	14B
C738	4E
C739	8E
C740	8D
C741	8E
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C744	8D
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C1302	9C
C1303	8B
C1303	8C
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C1305	9C
C1306	8B
C1306	8C
C1307	8C
C1308	9C
C1309	8C
C1310	9C
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C1313	9B
C1313	9C
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C1315	8C
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C1326	6D
C1327	6D
C1329	7D
C1330	7D
C1331	8D
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C1333	8D
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C1344	7E
C1345	7E
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C1349	7C
C1350	7C
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C1353	5D
C1354	5D
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CR602	3A
CR603	3B
CR604	3C
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CR609	8A
CR610	3D
CR611	3D
CR612	3E
CR613	3E
CR615	11C
CR616	11C
CR617	10C
CR617	11C
CR618	11C
CR619	9B
CR621	13A
CR622	12A
CR623	4D
CR632	14B
CR633	13B
CR637	12B
CR638	12B
CR639	13B
CR1305	9E
CR1306	9E
CR1307	9D
CR1308	9D
CR1309	8D
CR1310	8D
CR1311	8D
CR1312	9D
CR1313	9D
CR1314	9D
CR1315	9D
CR1316	7C
CR1317	7C
CR1318	7C
CR1319	6C
CR1320	6C
CR1321	6B
CR1322	6C
CR1323	6D
CR1324	6D
CR1325	6D
CR1326	6D
CR1327	7D
CR1328	7D
CR1329	7D
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CR1335	7E
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CR1337	7C
CR1338	6C
CR1339	6D
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CR1341	6C
CR1344	5D
CR1345	6D
CR1346	6D
CR1347	8D
CR1348	8D
DS601	8D
DS602	14A
E601	2C
E1301	5C
E1302	9D
E1303	7E
E1304	9C
FL601	5A
FL602	6A
FL603	1B
FL1301	5E
HR601	8C
HR602	8C
HR603	8C
HR604	8C
J601	1A
J602	7E
J604	7B
J605	6A
J606	9B
J607	9B
J608	9A
J610	4D
J611	4D
J613	10A
J614	12A
J615	12A
J616	5E
J617	12B
J618	11B
J619	11B
J620	8B
J621	11B
J624	14B
J625	14B
J626	14B
J1301	7B
J1302	5B
J1303	7E
J1304	5E
K601A	8D
K601B	8D
K602A	1C
K602B	3C
K602C	3C
K602D	4A
K602E	4A
K603A	12E
K603B	13A
K603C	13A
K603D	12D
K603E	12E
L609	4D
L610	11C
L611	11C
L614	4D
L615	10E
L616	10D
L618	10D
L619	10E
L620	11B
L621	10A
L622	11A
L623	11B
L630	12B
L1302	8D
M601	14A
P161	12A
P162	12A
P163	14B
P164	7E
P165	1A
P604	7B
P606	9B
P607	9B
P608	9A
P610	4D
P611	4D
P613	9A
P616	5E
P617	12B
P618	11B
P619	11B
P620	8B
P621	11B
P624	14B
P625	14B
P1301	7B
P1302	5B
P1303	7E
P1304	5E
Q1301	9C
Q1302	9C
Q1303	8C
Q1304	8B
Q1305	6B
Q1306	7B
Q1307	6D
Q1308	7D
Q1313	6E
Q1314	7E
Q1315	6C
Q1316	7C
Q1317	5D
R601	2A
R602	2A
R603	2B
R604	2B
R606	2A
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R669	11C
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R672	11C
R673	11C
R675	13B
R677	13C
R678	13B
R679	14B
R681	4D
R682	13C
R683	4E
R685	4D
R686	3D
R687	3E
R688	3D
R689	3D
R690	3E
R691	3E
R692	10A
R693	10A
R694	10A
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R718	4E
R719	4E
R724	3A
R725	3A
R726	3C
R727	3B
R728	7A
R729	11B
R732	3A
R733	3B
R734	13B
R740	4D
R741	12C
R742	12C
R744	12C
R745	12C
R746	12C
R748	13C
R749	13C
R750	13C
R751	13C
R752	12B
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R754	13B
R755	13D
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R757	13D
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R759	12D
R760	12D
R761	12D
R762	13D
R763	13D
R767	13D
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R773	14B
R775	12B
R776	12D
R777	12D
R779	13A
R782	12C
R783	12B
R784	12B
R785	13C
R786	13C
R787	13B
R788	13B
R789	12C
R790	14B
R791	14B
R792	3B
R793	2B
R794	2B
R795	3B
R799	4D
R1301	9C
R1302	8C
R1302	9C
R1303	9C
R1304	9C
R1305	9C
R1306	9C
R1308	9B
R1309	8B
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R1314	8C
R1315	8C
R1316	7C
R1317	9D
R1318	7C
R1319	7C
R1320	7C
R1321	6B
R1322	9D
R1323	9D
R1324	8D
R1325	7C
R1330	6C
R1331	6C
R1332	6B
R1334	6C
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R1361	6D
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R1363	6C
R1364	6C
R1365	7C
R1366	7C
R1367	7D
R1368	7C
R1369	5C
R1371	5E
R1372	5D
R1373	5D
R1374	7B
RT1301	9C
S601A	10E
S601B	10D
S601D	11D
S601E	11E
S602	8C
S603	8C
S605	1D
S606A	2D
S606B	13A
S607	12E
T602	3A
T603	3C
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T608	4D
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V607B	11A
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V609A	13D
V609B	12D
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Z602	13C
Z603	14C
Z604	13B
Z1301	10B
Z1302	10C

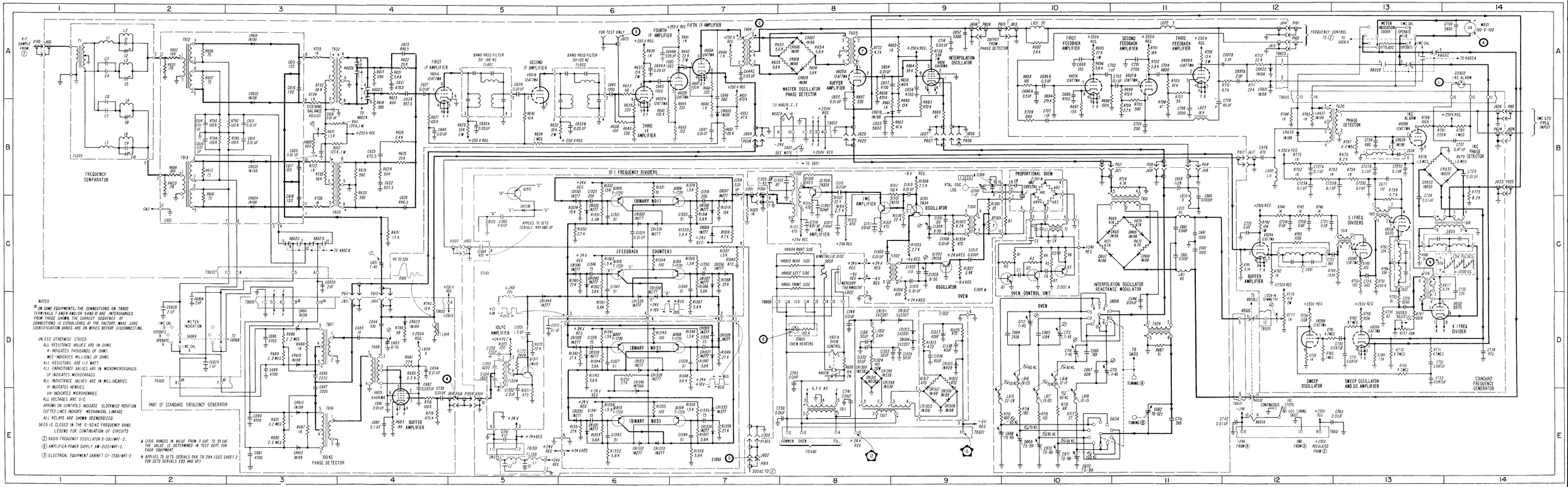

Figure 6-27A. Electrical Frequency Control C-2764/WRT-2, Schematic Diagram, Sets Serials 264 and up

Ref. Desig.	Location
C609	2B
C610	3B
C613	3B
C614	3B
C615	3A
C616	3A
C617	3B
C618	3C
C619	3B
C620	3B
C621	4A
C622	4B
C623	4A
C624	4A
C625	4B
C626	4C
C627	4A
C631	4C
C633A	5B
C633B	6B
C639	5A
C640	4B
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C642	11C
C643	6A
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C653	8A
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C655	8B
C656	9A
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C660	11C
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C662	11E
C664	10D
C665	10D
C666	10D
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C668	10E
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C670	10E
C671	10E
C672	10E
C676	12B
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C681	4D
C682	4E
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C707	10B
C708	12B
C709	14A
C710	11E
C712	10D
C713	10D
C714	10D
C715	11D
C716	9A
C720	12C
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C721B	12C
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C723A	12B
C723B	13B
C723C	13B
C725	13C
C726	13D
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C727B	13B
C727C	13D
C728	13C
C729	14B
C730	13D
C731	13D
C732	13D
C733	13D
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C738	4E
C739	8E
C740	8D
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C742	12E
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C1344	7E
C1345	7E
C1346	6C
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C1353	5D
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CR603	3B
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CR611	3D
CR612	3E
CR613	3E
CR615	11C
CR616	11C
CR617	10C
CR618	11C
CR619	8B
CR621	12A
CR622	12A
CR623	4D
CR632	14B
CR633	13B
CR637	12B
CR638	12B
CR639	13B
CR1305	9E
CR1306	9E
CR1307	9E
CR1308	9E
CR1309	8D
CR1310	8D
CR1311	8D
CR1312	9D
CR1313	9D
CR1314	9D
CR1315	9D
CR1316	7C
CR1318	7C
CR1319	6C
CR1320	6C
CR1321	6C
CR1322	6C
CR1323	6D
CR1324	6D
CR1325	6D
CR1326	6D
CR1327	7C
CR1328	7C
CR1329	7D
CR1330	6E
CR1331	6E
CR1332	6E
CR1333	6E
CR1334	7E
CR1336	7C
CR1337	7C
CR1338	6D
CR1339	6D
CR1340	6C
CR1341	6C
CR1344	5D
CR1346	6E
CR1347	8D
CR1348	8D
DS601	8D
DS602	14A
E601	2C
E1301	5C
E1302	9D
E1303	7D
E1304	9C
FL601	5A
FL602	6A
FL603	1A
FL1301	5E
HR602	8C
HR603	8C
J601	1A
J602	7E
J604	7B
J605	6A
J606	9B
J607	9B
J608	9A
J610	4D
J611	4D
J613	10A
J614	12A
J615	12A
J616	5E
J617	12B
J618	11B
J619	11B
J620	8B
J621	11B
J624	14B
J625	14B
J1301	7C
J1302	5B
J1303	7E
J1304	5E
K601A	8D
K601B	8D
K602A	8B
K602B	3C
K602C	3C
K602D	4A
K603A	12E
K603B	13A
K603C	13A
K603D	12D
K603E	12E
L609	4D
L610	11C
L611	11C
L614	4D
L615	10E
L616	10D
L617	10E
L618	10D
L619	10E
L620	11C
L621	10A
L622	11A
L623	11B
L630	12B
L1302	8D
M601	14A
P161	12A
P162	12A
P163	14B
P164	7E
P165	1A
P604	7B
P606	9B
P607	9B
P608	9A
P610	4D
P611	4D
P613	10A
P616	5E
P617	12B
P618	11B
P619	11B
P620	8B
P621	11B
P624	14B
P625	14B
P626	14B
P1301	7C
P1302	5B
P1303	7E
P1304	5E
Q1301	9C
Q1302	9C
Q1303	9C
Q1304	8B
Q1305	6C
Q1306	7C
Q1307	6D
Q1308	7D
Q1313	6E
Q1314	7E
Q1315	6C
Q1316	7C
Q1317	5D
R601	2A
R602	2A
R603	2B
R604	2B
R606	2A
R607	2A
R608	8D
R609	3B
R610	3B
R611	3B
R612	3B
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R616	2B
R617	4A
R618	4B
R619	4B
R620	4B
R621	4A
R622	4A
R623	4A
R624	4B
R625	4B
R626	4B
R627	4B
R629	5B
R630	5B
R631	4C
R632	6B
R633	6A
R634	5B
R636	6A
R637	6A
R638	6B
R639	6A
R640	6B
R641	7A
R642	7A
R643	6B
R644	7A
R645	7A
R646	7A
R647	7A
R648	7A
R649	7B
R650	7A
R651	7B
R652	7B
R653	8A
R654	8A
R655	8A
R656	8A
R657	8A
R658	8A
R659	9A
R660	9B
R661	9B
R662	9B
R663	9B
R664	9A
R665	9A
R666	9B
R667	11D
R669	11C
R670	11C
R671	10C
R675	13B
R677	14C
R678	13B
R679	14B
R681	4D
R682	13C
R683	4E
R686	3D
R687	3E
R688	3D
R689	3D
R690	3E
R691	3E
R692	10A
R693	10A
R694	10A
R695	10A
R696	10A
R697	10B
R698	10B
R699	11A
R701	11A
R702	11A
R703	11B
R704	11B
R705	11A
R706	11A
R707	11A
R708	11B
R709	10B
R710	12A
R711	12A
R712	12A
R713	10E
R714	10E
R715	10E
R717	10E
R718	4E
R719	4E
R724	3B
R725	3A
R726	3C
R727	3B
R728	9A
R729	11B
R732	3A
R733	3B
R734	13C
R740	4D
R741	12C
R742	12C
R744	12C
R745	12C
R746	12C
R748	13C
R749	13C
R750	13C
R751	13C
R752	12B
R753	12B
R754	13B
R755	13D
R756	13D
R757	13D
R758	12D
R759	12D
R760	12D
R761	12D
R762	13D
R763	13D
R767	13D
R768	13D
R769	13D
R770	13D
R771	13D
R772	8A
R773	14B
R775	12B
R776	12D
R777	12D
R779	13A
R782	12C
R783	12B
R784	12B
R785	13C
R786	13C
R787	13B
R788	13B
R789	12C
R790	14B
R791	14A
R793	2B
R794	2B
R795	3B
R799	4D
R1301	9C
R1302	8C
R1303	9C
R1304	9C
R1305	9C
R1306	9C
R1307	9C
R1308	9B
R1309	8C
R1310	8C
R1311	8C
R1312	9B
R1313	8C
R1314	8C
R1315	8C
R1316	7C
R1317	9D
R1318	7C
R1320	7C
R1321	6B
R1322	9D
R1323	9D
R1324	8D
R1325	7C
R1330	6C
R1331	6C
R1332	6B
R1334	6C
R1335	9D
R1337	7C
R1339	9C
R1340	7C
R1341	6D
R1342	6D
R1343	6D
R1344	6D
R1345	6D
R1346	7D
R1347	7D
R1348	7D
R1349	7D
R1350	6D
R1351	6E
R1352	6E
R1353	6E
R1354	6E
R1355	6E
R1356	7E
R1357	7E
R1358	7E
R1359	7E
R1360	6C
R1361	6D
R1362	6C
R1363	6C
R1364	6C
R1365	7C
R1366	7C
R1367	7D
R1368	7C
R1369	5C
R1370	5D
R1371	5E
R1372	5D
R1373	5D
R1374	7B
RT1301	9C
S601A	10E
S601B	10D
S602	8C
S603	8C
S605	8B
S606A	2D
S606B	13A
S607	12E
T602	3A
T603	3D
T604	7A
T605	8A
T606	3E
T607	3D
T608	4D
T609	11D
T610	11C
T611	8E
T612	2A
T613	2B
T614	13C
T615	13C
T616	14C
T617	8E
T619	13C
T620	13B
T1301	9C
T1302	9C
T1303	8C
T1304	5D
TB601	9E
TB601	12E
TB602	3C
TB602	8B
TB605	2D
TB605	3D
TB605	4D
TB605	5D
TB605	12A
TB605	12D
TB608	8D
TB1301	5E
V601A	4A
V601B	5A
V602A	6A
V602B	7A
V603A	7A
V603B	8A
V604A	12C
V604B	13C
V605	4E
V606	9A
V607A	10A
V607B	11A
V608A	11A
V608B	13B
V609A	13D
V609B	12D
V610A	13C
V610B	14D
Z601	12C
Z602	13C
Z603	14C
Z604	13B
Z1301	10B
Z1302	10C

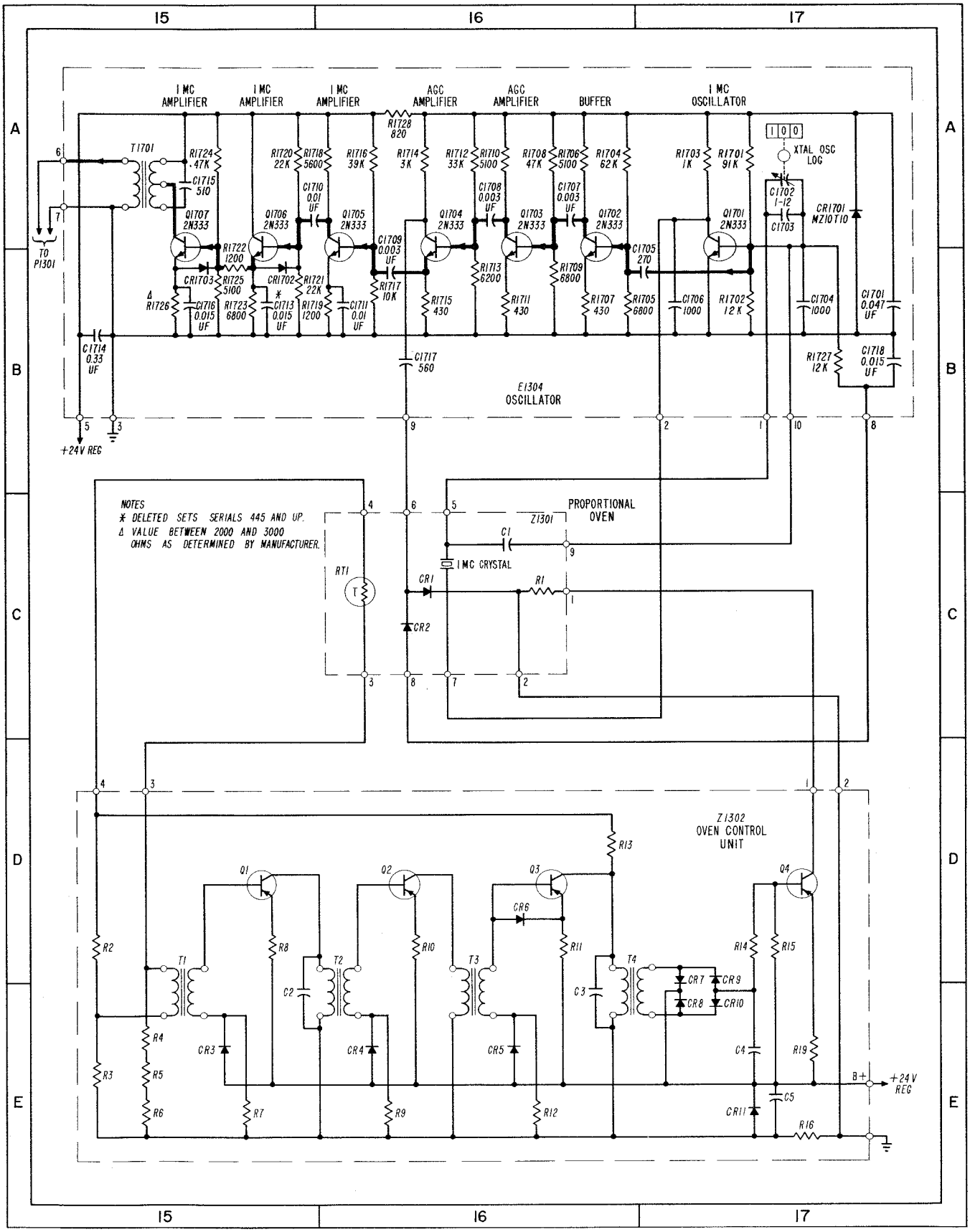

Figure 6-27B. Electrical Frequency Control C-2764/WRT-2, One MC Oscillator, Schematic Diagram, Sets Serials 295 and up

Ref. Desig.	Location
C501	2A
C502	5A
C503	4A
C504	6A
C505	2B
C506	3B
C507	4B
C508	5C
C509	5C
C510	6C
C511	5C
C512	9D
C513	10D
C1401	12E
C1402	12D
C1403	13D
C1403	14A
C1404	12E
C1405	14E
C1406	12A
C1407	13A
C1408	14A
C1409	13B
C1410	13B
C1411	14A
C1412	12C
C1413	13C
C1414	14B
C1415	13C
C1416	13C
C1417	14C
C1418	12A
C1419	11A
CR501	1A
CR501	3A
CR502	2A
CR503	3A
CR504	3A
CR505	5A
CR506	5A
CR507	5A
CR508	5A
CR509	3B
CR510	2B
CR511	3B
CR512	3B
CR513	3B
CR514	3B
CR515	3B
CR516	3B
CR517	2C
CR518	2C
CR519	2C
CR520	2C
CR521	2C
CR522	7D
CR523	5C
CR1401	13E
CR1402	14D
CR1403	14D
CR1404	14D
CR1405	14D
CR1406	14E
CR1407	14E
CR1408	14E
CR1409	14E
CR1410	13A
CR1411	13A
CR1412	13A
CR1413	3B
CR1414A	13A
CR1414B	13A
CR1414C	13A
CR1414D	13A
CR1415	13C
CR1416	13C
CR1418	13C
CR1419A	13C
CR1419B	13C
CR1419C	13C
CR1419D	13C
DS501	3D
DS502	3D
DS503	3D
DS504	5D
DS505	5B
DS506	5B
DS507	6B
E502	6D
E506	1D
F501	2D
F502	3D
F503	3D
F504	2C
F505	2C
F507	7D
FL501	9A
FL502	9A
FL1401	12B
J501	8A
J502	7A
K501A	4A
K501B	4A
K502A	4B
K502B	4B
K503A	3D
K503B	4D
K503C	5D
K504A	4D
K504B	4D
K504C	4D
K504D	5D
K505A	5D
K505B	2B
K505C	2A
K505D	7D
K505E	7D
K506A	5B
K506B	5B
K506C	5A
K507A	8D
K507B	8D
K507C	5C
K508A	5B
K508C	5D
K509A	5C
K509B	5C
K509C	5D
K509D	6B
K510A	8A
K510B	5B
K510C	8D
K511A	6B
K511A	7A
K511C	8D
L501	3A
L502	3A
L503	3B
L504	3B
L505	5C
L506	5C
L1401	11A
M501	2D
M502	10D
Q501	9D
Q502	7D
Q1401	12D
Q1402	13D
Q1403	12A
Q1404	14A
Q1405	13B
Q1406	14B
Q1407	12C
Q1408	14B
Q1409	13C
Q1410	14C
Q1411	11A
Q1412	10A
R501	3A
R502	4A
R503	3B
R504	4B
R505	8D
R506	8D
R507	7D
R508	6D
R509	6D
R510	6D
R511	8D
R512	8D
R513	8D
R514	5C
R515	5C
R516	5C
R517	5C
R518	9D
R519	9E
R520	9E
R521	10D
R522	10D
R523	5D
R524	5D
R525	5C
R526	6D
R527	8C
R528	5D
R529	5C
R530	10E
R531	2A
R532	2A
R533	2A
R534	2A
R535	5A
R536	5A
R537	5A
R538	5A
R539	2B
R540	2B
R541	2B
R542	2B
R543	5B
R544	5B
R545	5B
R546	5B
R1401	12E
R1402	12E
R1403	12D
R1404	12B
R1405	13D
R1406	12D
R1407	13D
R1408	13D
R1409	12E
R1410	13E
R1411	13D
R1412	13D
R1413	13E
R1414	14D
R1415	14D
R1416	14D
R1417	14D
R1418	14D
R1419	14D
R1420	14E
R1421	14E
R1422	14E
R1423	14E
R1424	14E
R1425	13E
R1426	12A
R1427	12A
R1428	12A
R1429	12A
R1430	13A
R1431	13A
R1432	14A
R1433	14A
R1434	14A
R1435	13B
R1436	13B
R1437	13B
R1438	14B
R1439	14B
R1440	12C
R1441	12C
R1442	12B
R1443	12C
R1444	13C
R1445	13B
R1446	14B
R1447	14B
R1448	14C
R1449	14C
R1450	13D
R1451	14C
R1452	14C
R1453	10A
R1454	11A
R1455	11A
R1456	11A
R1457	11A
R1458	11A
R1459	11A
R1460	11A
R1461	10A
R1462	10A
R1463	10A
R1464	10A
R1465	10A
R1466	10A
R1467	10A
R1469	12B
R1470	12B
R1471	12B
R1472	12B
R1473	12B
R1474	12B
S504	10B
S505	5C
S506	5C
S501	1C
S502	2C
S501A	2B
S501B	2C
S503	2C
S502	2D
S503	4D
S505	4A
S506	4A
S507A	4E
S507B	7E
S507B	8A
S507C	8E
S507C	7A
S507D	6A
S507D	7A
S507E	6A
S507E	7A
S508A	8D
S508A	9D
S508B	5B
S508B	6B
S508C	6B
S508D	10D
S508E	11D
S508F	11D
S509A	4E
S509A	7E
S509B	7E
S509B	8E
S510A	6C
S510A	7C
S510B	5C
S510B	8C
S511A	11C
S511A	11D
S512	9E
S513	9E
T501	1C
T502	2A
T503	2C
T1401	13D
T1402	14D
T1403	14E
T1404	12A
T1405	12C
T1406	10A
T1407	11B
T1408	11B
T1409	13B
T1410	13C
TB501	1E
TB501	4A
TB501	8A
TB501	9A
TB501	11E
TB1401	10A
TB1401	11B
TB1401	11C
TB1401	12C

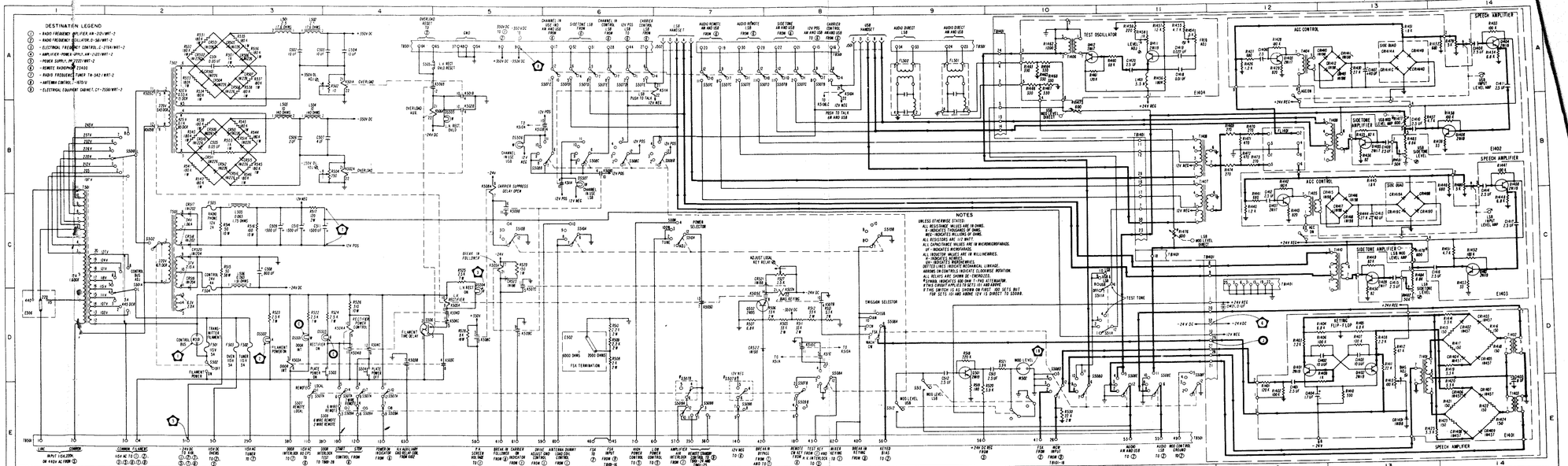

Figure 6-28. Amplifier-Power Supply AM-2122/WRT-2, Schematic Diagram

Ref. Desig.	Location
C501	2A
C502	3A
C503	4A
C504	4A
C505	2B
C506	3B
C507	4B
C508	3C
C509	3C
C510	3C
C511	3C
C512	9D
C513	10D
C1401	12E
C1402	12D
C1403	13D
C1404	12E
C1405	14E
C1418	14B
C1419	14B
*C1420	11A
**C1420	11A
C1421	12D
C1421A	12A
C1422	12A
C1423	14B
C1424	14B
C1425	12A
C1426	12A
C1427	12A
C1428	13A
C1429	13A
C1430	14C
C1431	12C
C1432	12C
C1433	14C
C1434	14C
C1435	12C
C1436	13C
C1437	13C
C1438	13C
C1439	13C
C1440	14D
C1441	10A
C1442	10A
C1443	11A
C1444	11A
C1445	11A
CR501	2A
CR502	2A
CR503	2A
CR504	3A
CR505	3A
CR506	3A
CR507	3A
CR508	3A
CR509	2B
CR510	2B
CR511	2B
CR512	3B
CR513	3B
CR514	3B
CR515	3B
CR516	3B
CR517	2C
CR518	2C
CR519	2C
CR520	2C
CR521	7C
CR522	7D
CR523	5C
CR1401	13D
CR1402	14D
CR1403	14D
CR1404	14D
L501	3A
L502	3A
L503	3B
L504	3B
L505	3C
L506	3C
M501	2D
M502	10D
DS501	3D
DS502	3D
DS503	3D
DS504	5C
DS505	5B
*DS506	5B
**DS506	6B
E502	6D
E506	1D
E1401	14E
E1404	14A
E1407	12B
E1408	12A
E1409	14D
E1412	13A
F501	2D
F502	1D
F503	3D
F504	2D
F505	2C
FL501	9A
FL502	9A
FL1401	12B
J501	8A
J502	7A
K501A	4A
K501B	5A
K502A	4B
K502B	5B
K503A	3D
K503B	4D
K503C	5D
K504A	4D
K504B	4D
K504C	4D
K504D	5D
K505A	5D
K505B	2A
K505C	2A
K505D	5D
K505E	7D
K506A	5B
K506B	4A
K506C	5D
K507A	8D
K507B	8D
K507C	5D
K508A	5B
K508C	5D
K509A	5C
K509B	5C
K509C	5D
K509D	6B
R531	2A
R532	2A
R533	2A
R534	2A
R535	3A
R536	3A
R537	3A
R538	3A
R539	2B
R540	2B
R541	2B
R542	2B
R543	3B
R544	3B
R545	3B
R546	3B
R1401	12E
R1402	12E
R1403	12D
R1404	12D
R1405	13D
R1406	12D
R1407	13D
R1408	13D
R1409	12D
R1410	13E
R1411	13D
R1412	13D
R1413	13E
R1414	14D
R1415	14D
R1416	14D
R1417	14D
R1418	14D
R1419	12D
R1420	14E
R1421	14E
R1422	14E
R1423	14E
R1424	14E
R1425	13E
*R1454	11A
**R1454	11A
R1455	14B
R1456	14B
R1457	12B
*R1458	11A
**R1458	11A
R1459	14A
R1460	14A
R1461	14A
R1462	14A
*R1463	10A
**R1463	14A
*R1464	10A
**R1464	14A
*R1465	10A
**R1465	14A
*R1466	10A
**R1466	14A
*R1467	10A
**R1467	14A
*R1468	10A
**R1468	14A
R1469	12B
R1470	12B
R1471	12B
R1472	12B
R1473	12B
R1474	12B
R1475	10B
R1476	11C
R1477	12B
R1478	11C
R1479	12B
R1480	12C
R1481	14C
R1482	14C
R1483	14C
R1484	14C
R1485	12B
R1486	12A
R1487	12A
R1488	12A
R1489	12A
R1490	12A
R1491	12B
R1493	14C
R1494	12A
R1496	12A
R1497	13A
R1498	13A
R1499	13A
R1501	13A
R1502	13A
R1503	13A
R1504	13A
R1505	13A
R1506	14C
R1507	14C
R1508	12C
R1509	12C
R1510	12C
R1511	12C
R1512	12C
R1513	12B
R1514	14C
*R1515	11A
**R1515	11A
R1516	14C
R1517	15C
R1518	15C
R1519	15C
R1520	13C
R1521	13C
R1522	13C
R1524	15B
R1525	15C
R1526	13C
R1527	13C
R1528	13C
R1529	14A
R1530	14D
R1531	14E
R1532	10A
R1533	10A
R1534	10A
R1535	11A
R1536	11A
R1537	11A
R1538	11A
R1539	11A
TB1401	10A
TB1401	10B
TB1401	11B
TB1401	11C
TB1401	11D
S504	4D
S505	4A
S506	4D
S507A	3E
S507A	4E
S507B	7E
S507B	8A
S507B	8E
S507C	7A
S507C	8A
S507D	6A
S507D	7A
S507E	6A
S507E	7A
S508A	8D
S508A	8E
S508B	7B
S508B	5B
S508C	6D
S508D	10D
S508E	11D
S508F	11D
S509A	4E
S509A	7E
S509B	7E
S509B	8E
S510A	6C
S510A	7C
S510B	5C
S511A	11D
S511A	10D
S512	9E
S513	9E
T501	1B
T502	2A
T503	2C
T1401	13D
T1402	14D
T1403	14E
*T1406	11A
**T1406	11A
T1407	11B
T1408	11B
T1409	13B
T1410	13C
TB501	4A
TB501	5A
TB501	6A
TB501	7A
TB501	8A
TB501	9A
TB501	1E
TB501	2E
TB501	3E
TB501	4E
TB501	5E
TB501	6E
TB501	7E
TB501	8E
TB501	9E
TB501	10E
TB501	11E
TB1401	10A
TB1401	10B
TB1401	11B
TB1401	11C
TB1401	11D

* Applies to Sets Serials 155 and up.
** Applies to Sets Serials 1 to 154.

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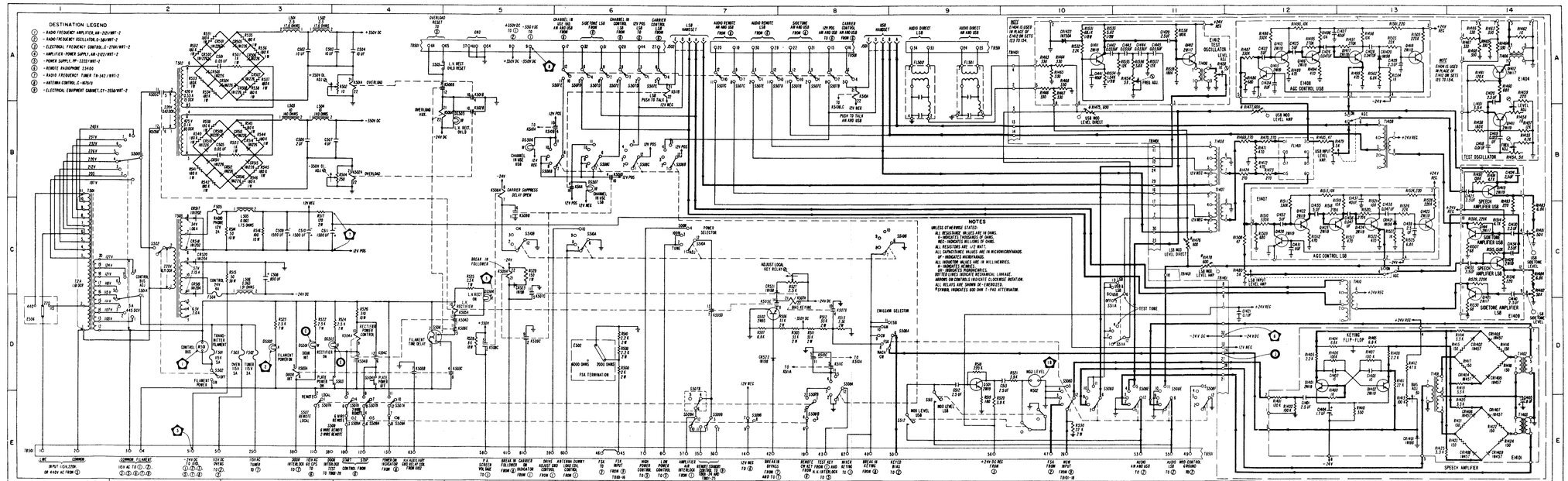

Figure 6-28A. Amplifier-Power Supply AM-2122/WRT-2, Schematic Diagram, Sets Serials 123 to 263

UNCLASSIFIED

Ref. Desig.	Location
C501	2A
C502	3A
C503	4A
C504	4A
C505	2B
C506	3B
C507	4B
C508	3C
C509	5C
C510	5C
C511	5C
C512	9D
C513	10D
C1401	12E
C1402	12D
C1403	13D
C1404	12E
C1405	14E
C1420	11A
C1420	13A
C1421	12A
C1421	12D
C1422	12A
C1423	14B
C1424	14B
C1425	13A
C1426	13A
C1428	13A
C1429	13A
C1430	13B
C1431	12C
C1432	12C
C1433	14C
C1434	14C
C1435	12C
C1436	13C
C1437	13B
C1438	13C
C1439	13C
C1440	13C
C1441	10A
C1442	11A
C1443	11A
C1444	11A
C1445	11A
CR501	2A
CR502	2A
CR503	2A
CR504	3A
CR505	3A
CR506	3A
CR507	3A
CR508	3A
CR509	2B
CR510	2B
CR511	2B
CR512	3B
CR513	3B
CR514	3B
CR515	3B
CR516	3B
CR517	2C
CR518	2C
CR519	2C
CR520	2C
CR521	8D
CR522	7D
CR523	5C
CR1401	13B
CR1402	14D
CR1403	14D
CR1404	14D
CR1405	14D
CR1406	14E
CR1407	14E
CR1408	14E
CR1409	14B
CR1410	13A
CR1411	13A
CR1412	10A
DS501	3D
DS502	3D
DS503	3D
DS504	3D
DS505	5B
DS506	5B
DS507	6B
E502	6D
E506	1D
E1401	14E
E1407	12C
E1408	12A
E1409	12C
E1412	12A
F501	2D
F502	3D
F503	3D
F504	2C
F505	2C
FL501	9A
FL502	9A
FL1401	12B
J501	8A
J502	7A
K501A	4A
K501B	5A
K502A	4B
K502B	5B
K503A	4C
K503B	4D
K504A	4D
K504B	4D
K504C	4D
K504D	5D
K505A	5D
K505B	2B
K505C	2A
K505D	7D
K505E	7D
K506A	4B
K506B	4A
K506C	5D
K507A	8C
K507B	9C
K507C	5C
K508A	5B
K508C	5D
K509A	5C
K509B	5C
K509C	5D
K509D	6B
K510A	8A
K510B	8B
K510C	8D
K510D	9B
K510E	9B
K511A	7A
K511B	6B
K511C	8D
K511D	7C
K511E	7C
L501	3A
L502	3A
L503	3B
L504	3B
L505	3C
L506	3C
M501	2D
M502	10D
Q501	9D
Q502	7D
Q1401	12D
Q1402	13D
Q1411	10A
Q1412	11A
Q1413	12A
Q1414	13B
Q1415	12A
Q1416	13A
Q1417	13A
Q1418	13A
Q1419	14B
Q1420	12C
Q1421	13C
Q1422	12C
Q1423	12C
Q1424	13C
Q1425	13C
Q1426	14C
R501	3A
R502	4A
R503	3B
R504	4B
R505	7D
R506	7D
R507	7D
R508	6D
R509	6D
R510	6D
R511	8D
R512	8D
R513	8C
R514	9C
R515	3C
R516	5C
R517	5C
R518	9D
R519	9E
R520	9E
R521	10D
R522	3D
R523	3D
R524	4D
R525	5C
R526	4D
R527	8D
R528	5D
R529	5C
R530	10E
R531	2A
R532	2A
R533	2A
R534	2A
R535	3A
R536	3A
R537	3A
R538	3A
R539	2B
R540	2B
R541	2B
R542	2B
R543	5B
R544	3B
R545	3B
R546	3B
R547	10D
R1401	12E
R1402	12E
R1403	12D
R1404	12D
R1405	13D
R1406	12D
R1407	13D
R1408	13D
R1409	12E
R1410	13E
R1411	13D
R1412	13D
R1413	13E
R1414	14D
R1415	14D
R1416	14D
R1417	14D
R1418	14D
R1419	14D
R1420	14E
R1421	14E
R1422	14E
R1423	14E
R1424	14E
R1425	13E
R1456	11A
R1458	12A
R1463	10A
R1464	10A
R1465	10A
R1466	10A
R1467	10A
R1468	10A
R1469	12B
R1470	12B
R1471	12B
R1472	12B
R1473	12B
R1474	12B
R1475	10B
R1476	11C
R1477	13B
R1478	14C
R1479	14A
R1480	14B
R1481	13B
R1482	13D
R1483	13B
R1484	13C
R1485	14A
R1486	12A
R1487	12A
R1488	12A
R1489	12A
R1490	13A
R1491	14B
R1492	14B
R1493	13A
R1494	13A
R1496	13A
R1496	13A
R1497	13A
R1498	13A
R1499	13A
R1501	13A
R1502	13A
R1503	13A
R1504	13A
R1505	13A
R1506	13B
R1507	13B
R1508	13B
R1509	12C
R1510	12C
R1511	12B
R1513	12B
R1514	14C
R1515	14C
R1516	14D
R1517	13C
R1518	12C
R1519	13C
R1520	13C
R1521	13B
R1522	13C
R1524	13B
R1525	13C
R1526	13C
R1527	13C
R1528	13B
R1529	13C
R1530	13D
R1531	10A
R1532	10A
R1533	11A
R1534	11A
R1535	11A
R1536	11A
R1537	11A
R1538	11A
R1539	11A
R1540	13C
R1541	13B
S501A	2C
S501B	2B
S502	2C
S502	2D
S503	4D
S504	4D
S505	4A
S506	4D
S507A	8E
S507B	8A
S507B	7E
S507B	8E
S507C	7A
S507D	6A
S507D	7A
S507E	6A
S507E	7A
S508A	8D
S508B	5B
S508B	7B
S508C	6B
S508D	10D
S508E	11B
S508F	11B
S509A	4E
S509A	7E
S509B	7E
S509B	8E
S510A	6C
S510A	7C
S510B	5C
S510B	8C
S511A	11C
S511A	11D
S512	9E
S513	9E
S514	7D
T501	1C
T502	2A
T503	2C
T1401	15D
T1402	14D
T1403	14B
T1406	12A
T1407	11B
T1408	11B
T1409	13B
T1410	13C
TB501	4A
TB501	7A
TB501	9A
TB501	1E
TB501	11E
TB1401	10A
TB1401	11B
TB1401	11C
TB1401	12C

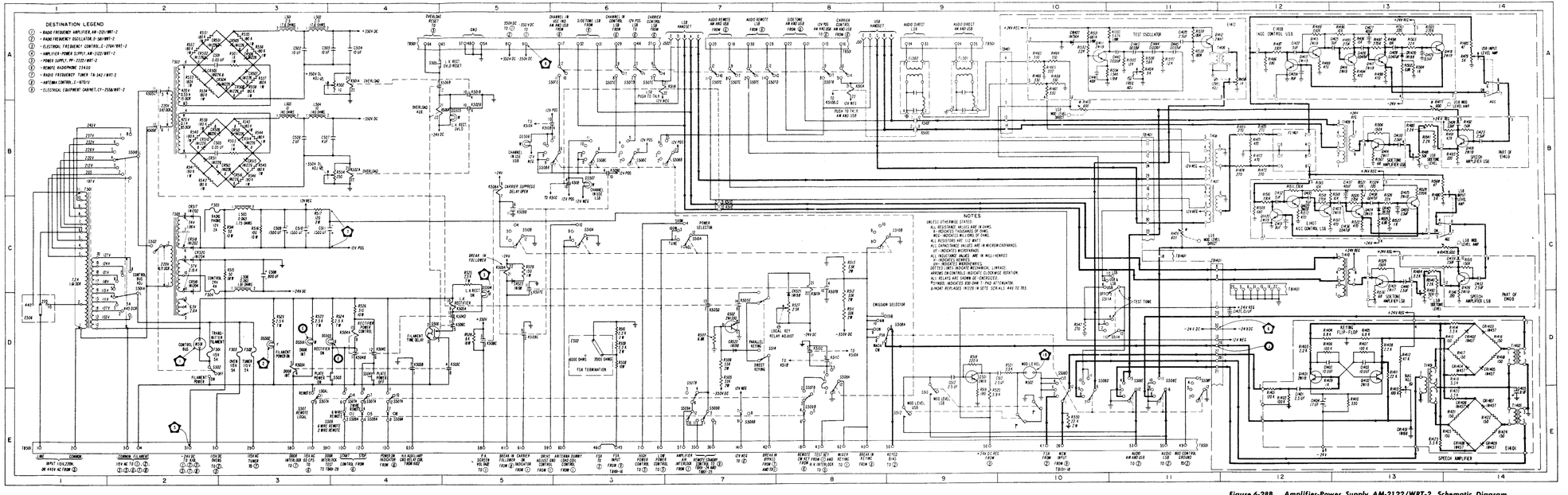

Figure 6-28B. Amplifier-Power Supply AM-2122/WRT-2, Schematic Diagram, Sets Serials 264 and up

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FUSE CURRENT RATING VERSUS LINE VOLTAGE			
FUSE	LINE VOLTAGE 115 V	220V	440V
F201	12A	6A	3A
F202	12A	6A	3A
F203	12A	6A	3A
F205	20A	10A	5A
F206	20A	10A	5A

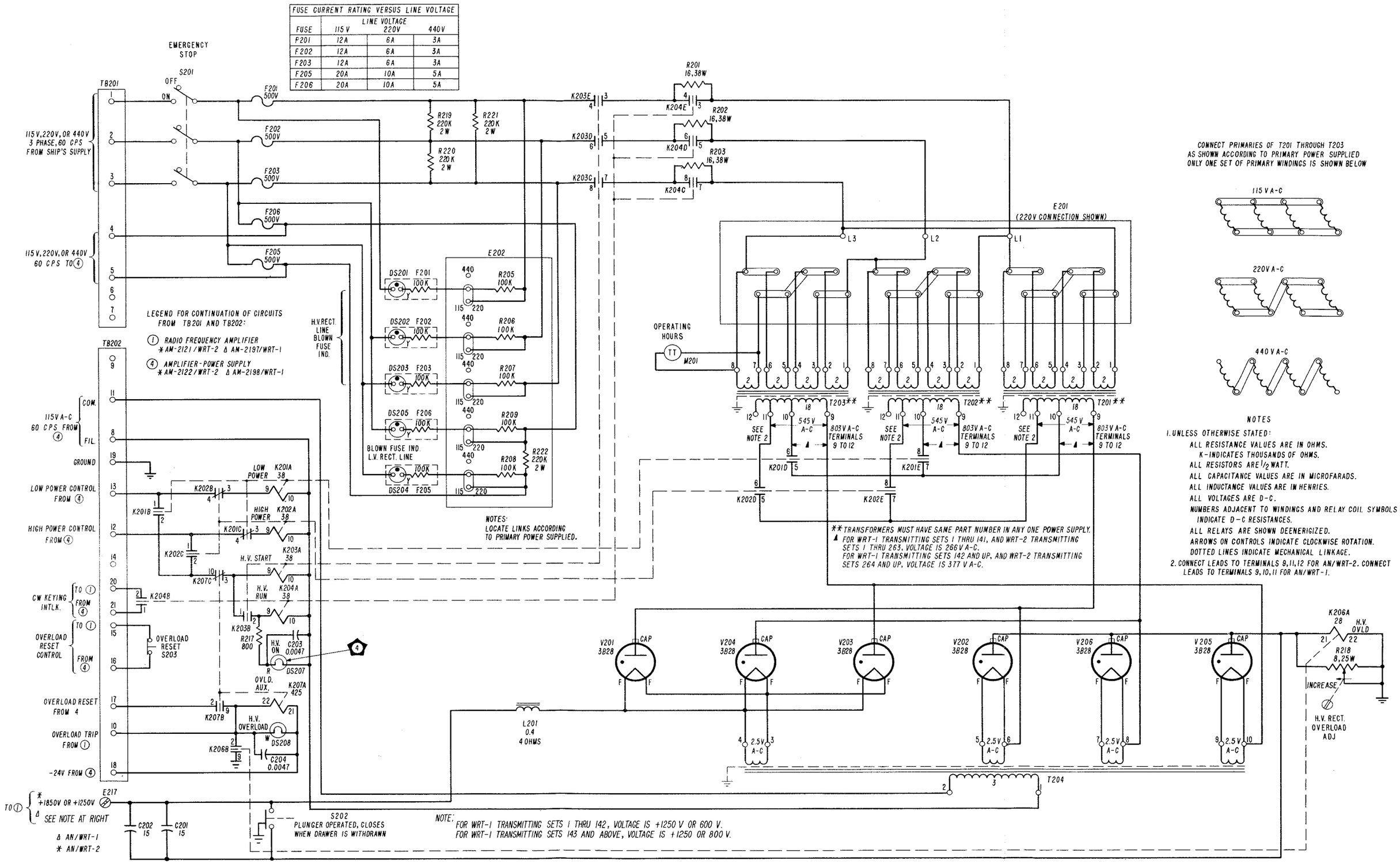

Figure 6-29. Power Supply PP-2222/WRT, Schematic Diagram

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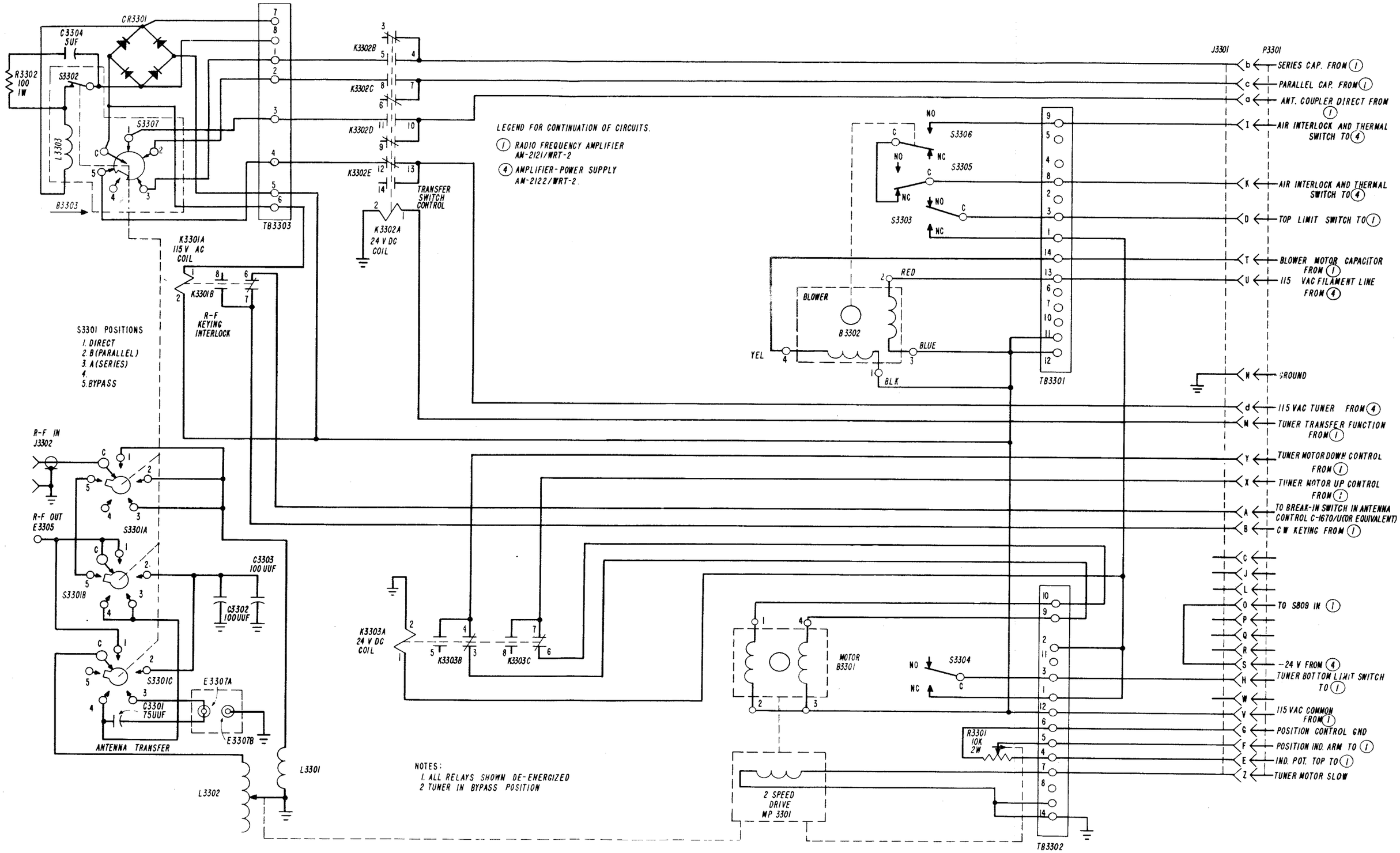

Figure 6-30. Radio Frequency Tuner TN-342/WRT-2, Schematic Diagram

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STRAP	ASSEMBLY
NO. 1	476D346-83
NO. 2	476D346-84
NO. 3	476D346-85
NO. 4	476D346-86
NO. 5	476D346-87
NO. 6	476D346-88
NO. 7	476D346-89
NO. 9	476D346-90
NO. 10	476D346-91
NO. 12	476D346-92
NO. 13	476D346-93
NO. 14	476D346-94
NO. 15	476D346-95
NO. 16	476D346-96
NO. 18	476D346-97
NO. 19	476D346-98

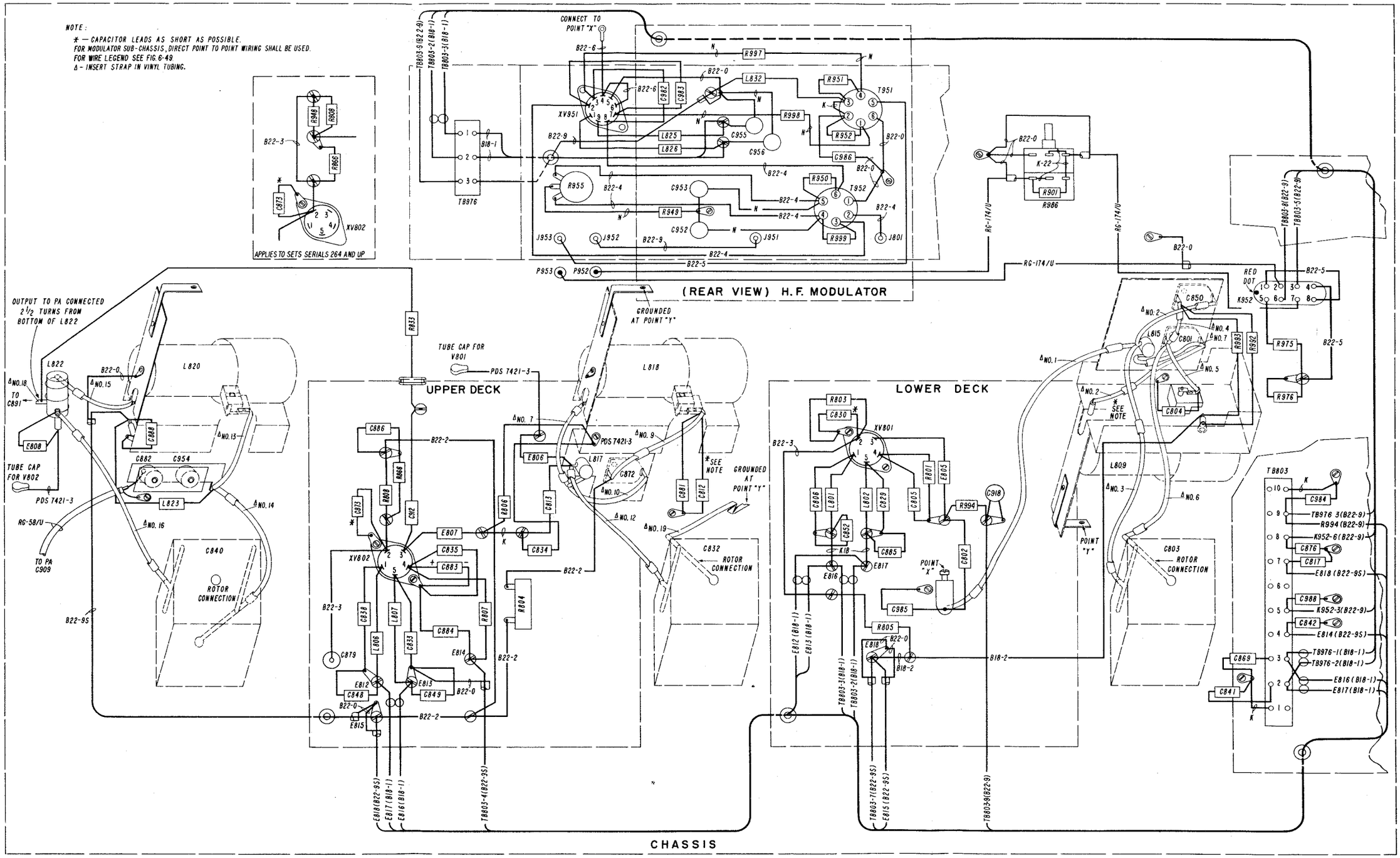

Figure 6-31. Radio Frequency Amplifier AM-2121/WRT-2, Driver Amplifier, Wiring Diagram

Ref. Desig.	Location	Ref. Desig.	Location	Ref. Desig.	Location	Ref. Desig.	Location	Ref. Desig.	Location
B801	2E	C891	3C	L804	4E	R848	8C	S804	9D
C818	2B	C894	9C	L805	4B	R849	6C	S805	1B
C819	2C	C901	5C	L808	5C	R855	4A	S806A	9D
C820	3B	C907	1C	L810	4C	R856	4A	S806B	9D
C822	2C	C908	1C	L813	4E	R857	4A	S807	8C
C823	2C	C909	4D	L814	4E	R859	10E	S808	9C
C824	2B	C913	2D	L828	2D	R860	10E	S809	8C
C825	3C	C914	2D	L829	2D	R861	5C	S810	10D
C827	5D	C915	2D	L830	2D	R862	5C	S812	7C
C828	5D	C916	2D	L831	3D	R863	10E	S815	7D
C836	5E	C917	3D	M801	9D	R864	1B	S825	3A
C837	4D	C919	2B	M802	7D	R865	10D	S826	3A
C844	9E	C920	2C	M803	10E	R867	3B	S827	3A
C846	7D	C921	3B	M804	9C	R868	3B	S828	3A
C847	10E	C922	3C	M805	7C	R869	10D	T806	4C
C851	3B	CR801	2D	M806	8C	R870	6C	T807	4B
C854	10C	CR802	2D	R802	3B	R871	6C	TB801	5D
C855	8C	CR803	3D	R814	6C	R878	6C	TB802	3D
C856	5D	CR804	3D	R815	9E	R885	5C	TB803	4E
C862	4D	CR816	4A	R816	10E	R887	6C	TB805	3A
C863	4E	CR817	4A	R822	2D	R888	9C	TB806	5A
C866	3B	CR818	4A	R823	2D	R889	10C	XC905	5A
C867	3E	E804	5C	R824	2D	R890	8D	XC906	5A
C868	2C	E811	3C	R826	1B	R891	8D	XDS802	7C
C870	4C	E856	9E	R838	8C	R892	10C	XDS803	9C
C871	3C	E887	4A	R839	4B	R893	6E	XK801	5A
C874	2C	E897	3E	R843	7C	R914	10D	XK810	5A
C875	2C	J803	5B	R844	7C	R919	3D	XV804	2B
C877	4C	K803	6C	R845	7C	S801	9E	XV805	2C
C887	7C	K804	3E	R846	9C	S802	8E	XV806	3B
C889	9E	L803	5E	R847	9C	S803	10E	XV807	3C

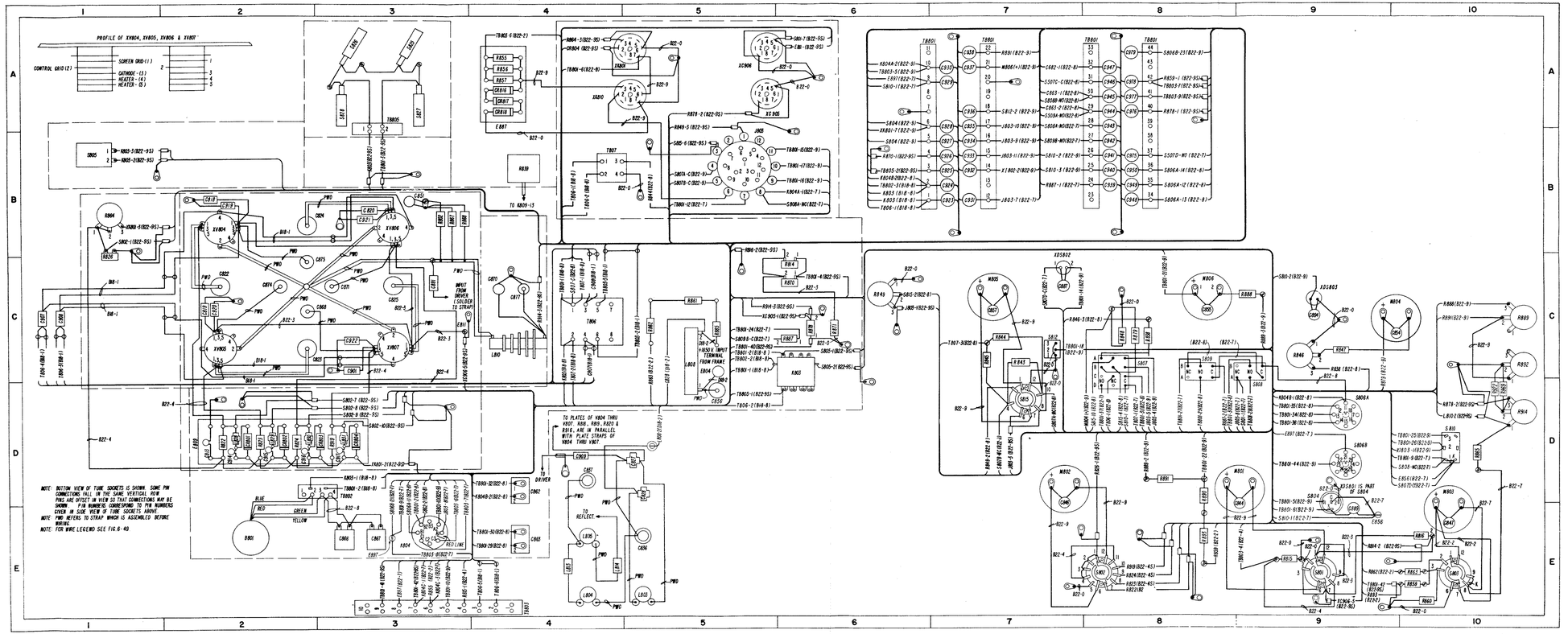

Figure 6-32. Radio Frequency Amplifier AM-2121/WRT-2, Power Amplifier, Wiring Diagram, Sets Serials 1 to 263

Ref. Desig.	Location
B801	2E
C818	2B
C819	2C
C820	3B
C822	2C
C823	2C
C824	2B
C825	3C
C827	5D
C828	5D
C836	5D
C837	4D
C844	9E
C846	7D, E
C847	10E
C851	3C
C854	9C
C855	8C
C856	5D
C857	7C
C862	4D
C863	4E
C866	3E
C867	3E
C868	2C
C870	4C
C871	3C
C874	2C
C875	2C
C877	4C
C889	9E
C891	3C
C894	9C
C901	3C
C907	1C
C908	1C
C909	4D
C913	2D
C914	2D
C915	2D
C916	2D
C917	3D
C919	2B
C920	2C
C921	3B
C922	3C
C923	7B
C924	7B
C925	7B
C926	7B
C927	7B
C928	7A
C929	7A
C930	7A
C931	7B
C932	7B
C933	7B
C934	7B
C935	7A
C936	7A
C937	7A
C938	7A
C939	8B
C940	8B
C941	8B
C942	8B
C943	8A
C944	8A
C945	8A
C946	8A
C947	8A
C948	8B
C949	8B
C950	8B
C975	8B
C976	8A
C977	8A
C978	8A
C979	8A
C980	7C
C990	4B
CR801	2D
CR802	2D
CR803	3D
CR804	3D
CR805	4A
CR806	4A
CR807	4A
CR808	4A
CR809	4A
CR810	4A
CR811	4A
CR812	4A
CR813	4A
CR814	4E
L828	2D
L829	2D
L830	2D
L831	3D
M801	9D
M802	7D
M804	9C
M805	7C
M806	8C
Q803	6E
R802	3B
R814	6C
R815	9E
R816	10E
R822	2D
R823	2D
R824	2D
R826	1B
R838	8C
R839	4B
R843	6D
R844	6D
R845	6D
R846	9C
R847	9C
R848	8C
R849	6C
R855	4A
R856	4A
R857	4A
R859	10E
R860	10E
R861	5C
R862	5C
R863	10E
R864	1B
R865	10D
R866	3B
R867	3B
R868	3B
R869	10D
R870	6C
R871	6C
R878	6C
R879	8C
R880	2B
R881	3B
R882	3B
R883	3B
R885	5C
R887	6C
R888	9C
R889	10C
R890	8D
R891	8D
R892	10C
R893	8E
R895	5D
R896	6D
R898	5E
R899	5E
R914	10D
R919	3D
R922	10D
R956	4A
R957	4A
S801	9E
S802	8E
S803	10E
S804	9D
S805	1B
S806A	9D
S806B	9D
S807	8C
S808	9C
S809	8C
S810	10D
S812	7C
S815	7D
T806	4C
T807	4B
TB801	7A
TB802	3D
TB803	3E
TB807	4B
XC905	5A
XC906	5A
XDS801	9D
XDS802	7C
XDS803	9C
XDS805	7C
XK801	5A
XK810	5A
XV804	2B
XV805	2C
XV806	3B
XV807	3C

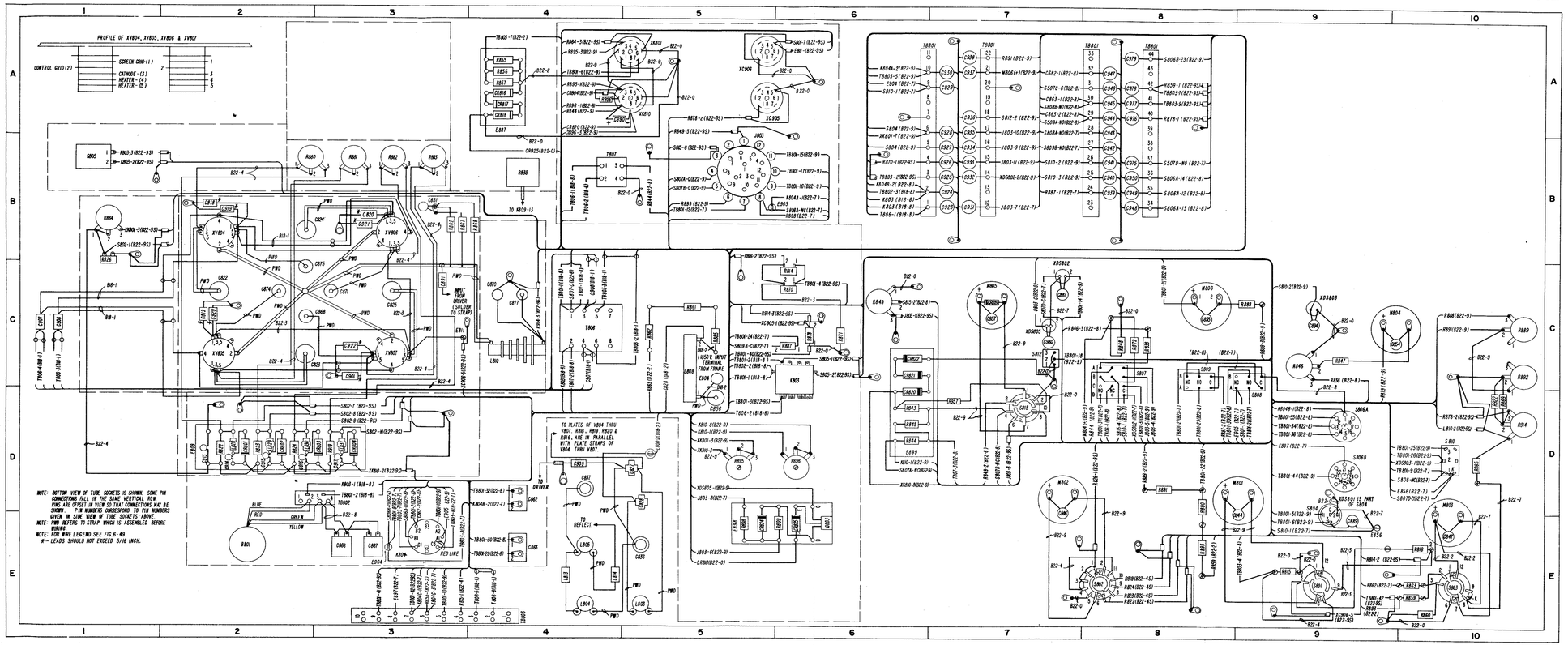

Figure 6-32A. Radio Frequency Amplifier AM-2121/WRT-2, Power Amplifier, Wiring Diagram, Sets Serials 264 and up

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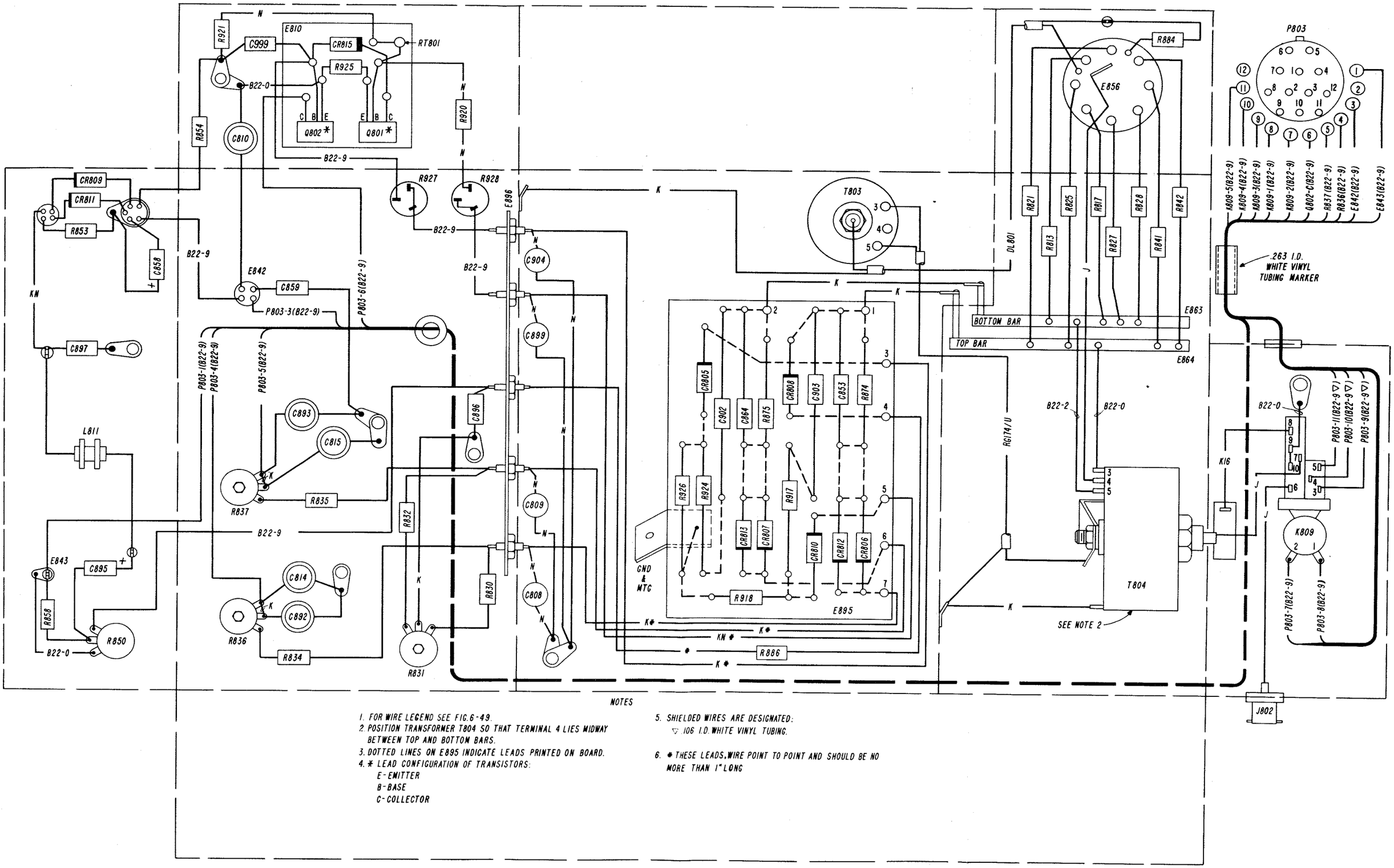

NOTES

1. FOR WIRE LEGEND SEE FIG.6-49.
2. POSITION TRANSFORMER T804 SO THAT TERMINAL 4 LIES MIDWAY BETWEEN TOP AND BOTTOM BARS.
3. DOTTED LINES ON E895 INDICATE LEADS PRINTED ON BOARD.
4. * LEAD CONFIGURATION OF TRANSISTORS:
   E-EMITTER
   B-BASE
   C-COLLECTOR
5. SHIELDED WIRES ARE DESIGNATED:
   ▽ 106 I.D. WHITE VINYL TUBING.
6. # THESE LEADS, WIRE POINT TO POINT AND SHOULD BE NO MORE THAN 1" LONG

Figure 6-33. Radio Frequency Amplifier AM-2121/WRT-2, Reflectometer Wiring Diagram, Sets Serials 1 to 263

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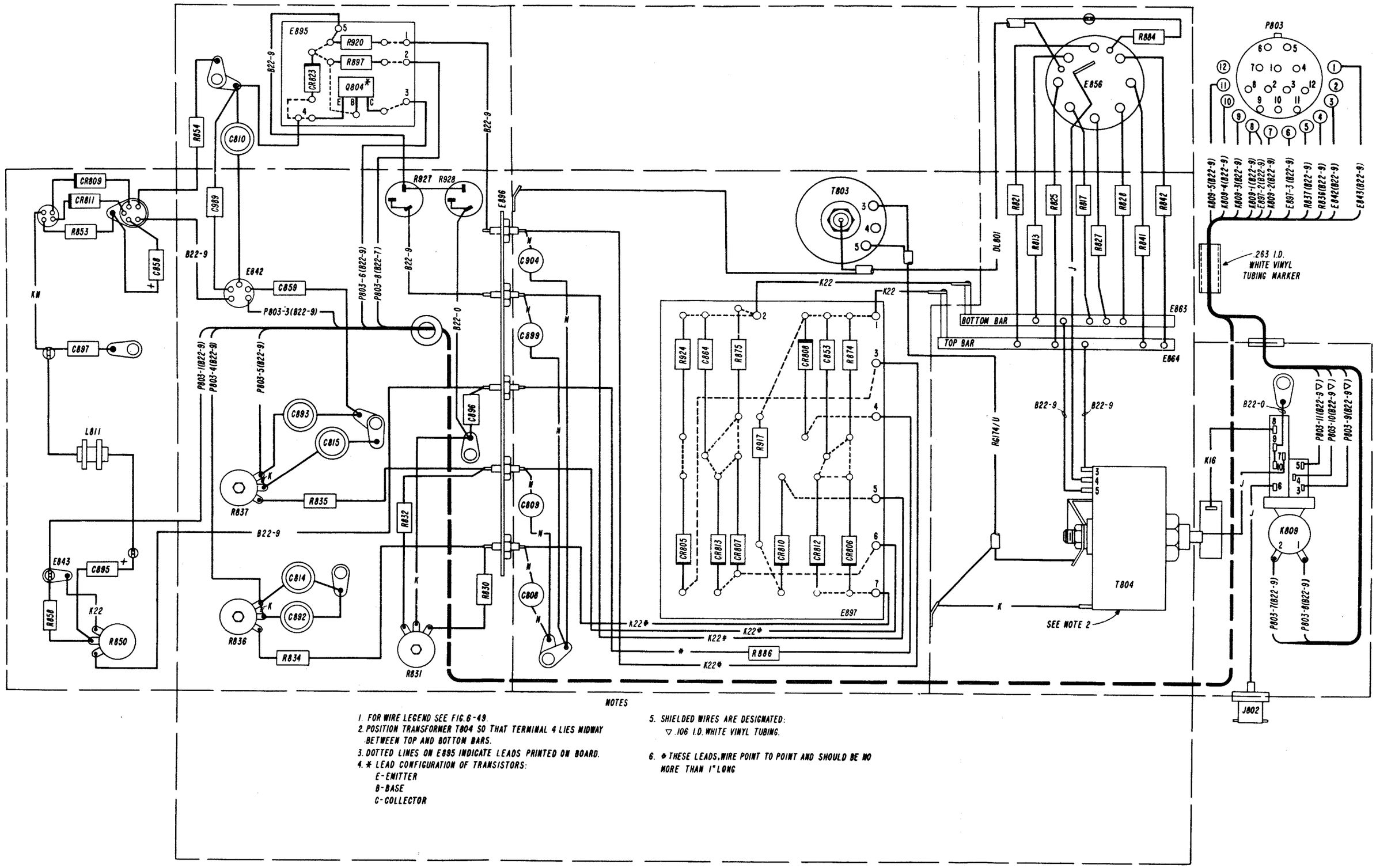

NOTES

1. FOR WIRE LEGEND SEE FIG.6-49.
2. POSITION TRANSFORMER T804 SO THAT TERMINAL 4 LIES MIDWAY BETWEEN TOP AND BOTTOM BARS.
3. DOTTED LINES ON E895 INDICATE LEADS PRINTED ON BOARD.
4. * LEAD CONFIGURATION OF TRANSISTORS:
   E-EMITTER
   B-BASE
   C-COLLECTOR
5. SHIELDED WIRES ARE DESIGNATED:
   ▽ .106 I.D. WHITE VINYL TUBING.
6. # THESE LEADS, WIRE POINT TO POINT AND SHOULD BE NO MORE THAN 1" LONG

Figure 6-33A. Radio Frequency Amplifier AM-2121/WRT-2, Reflectometer Wiring Diagram, Sets Serials 264 and up

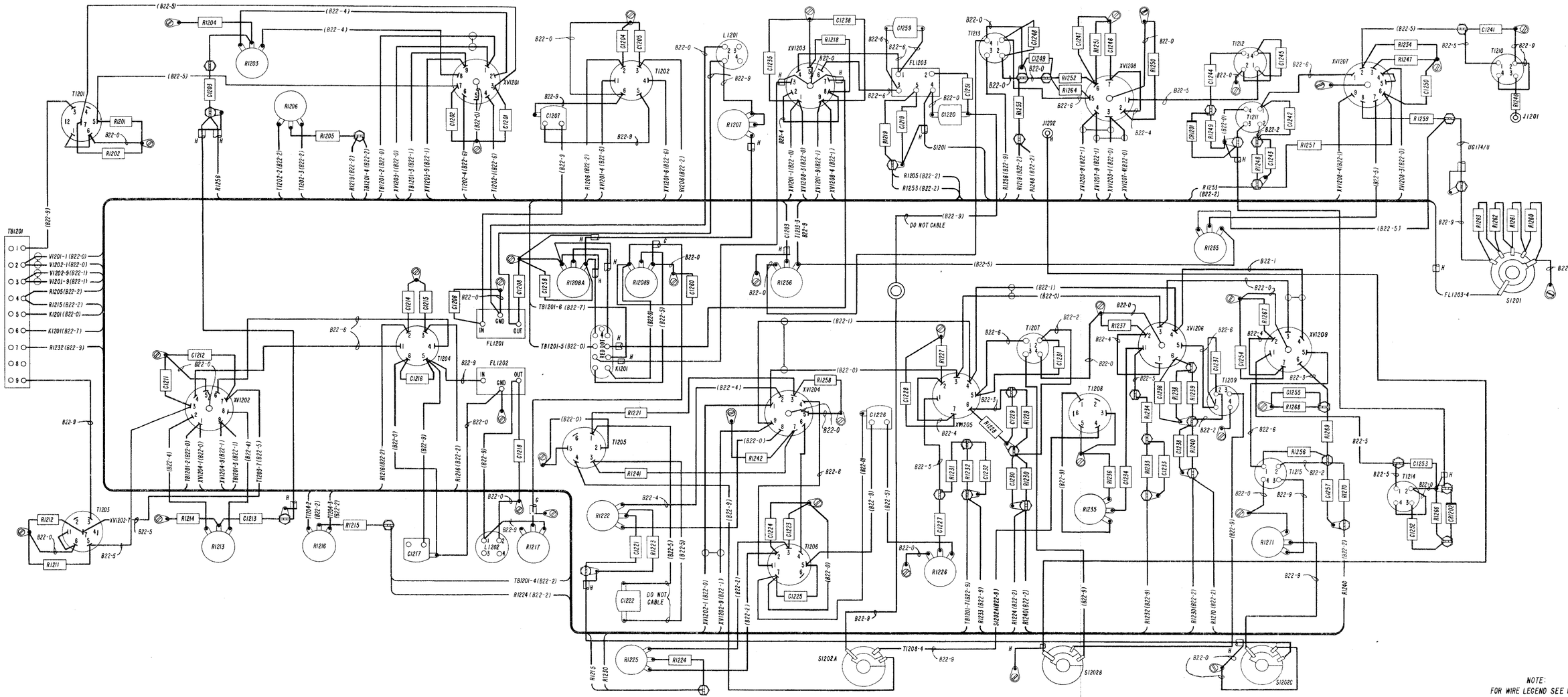

Figure 6-34. Radio Frequency Oscillator O-581/WRT-2, Modulator Chassis, Wiring Diagram

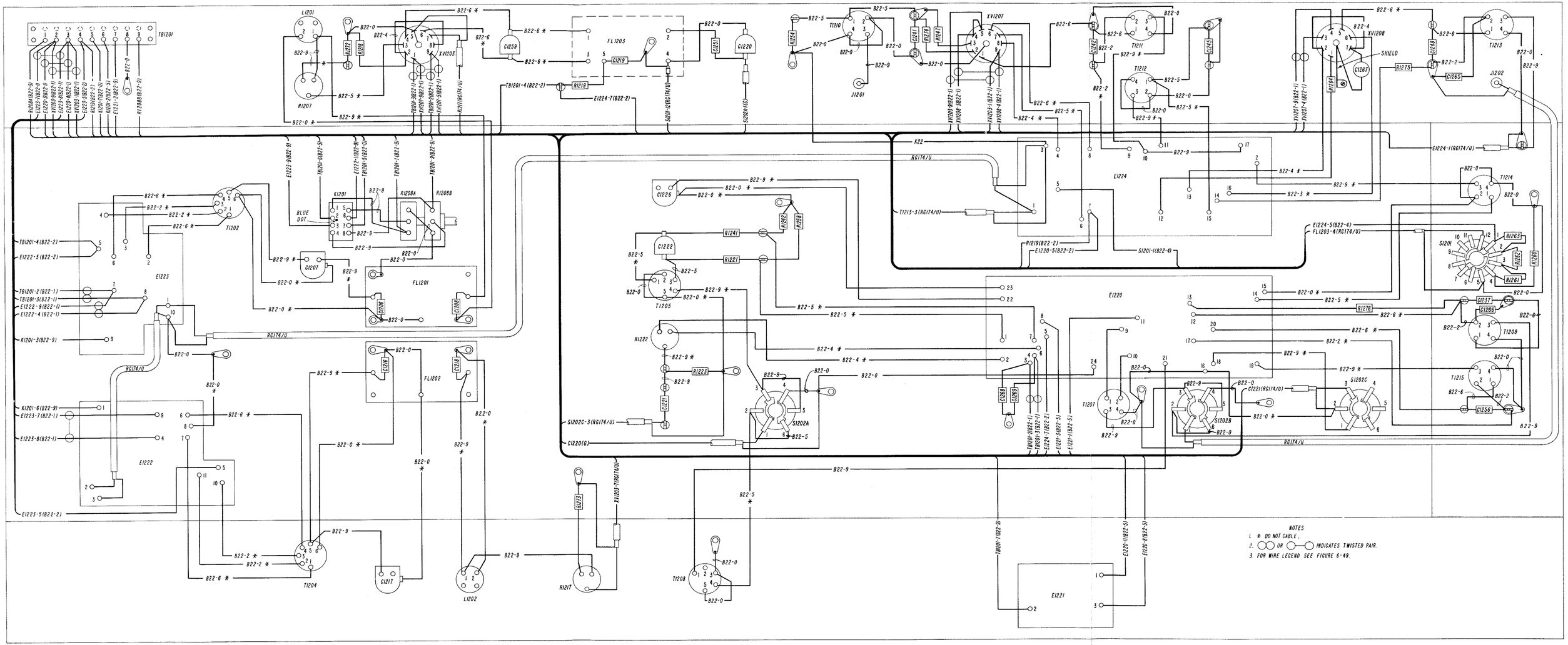

Figure 6-34A. Radio Frequency Oscillator O-581/WRT-2, Modulator Chassis, Wiring Diagram, Sets Serials 445 and up

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NOTES:
1. FOR WIRING CODE AND INSTRUCTIONS SEE FIG. 6-49 51-D-3647

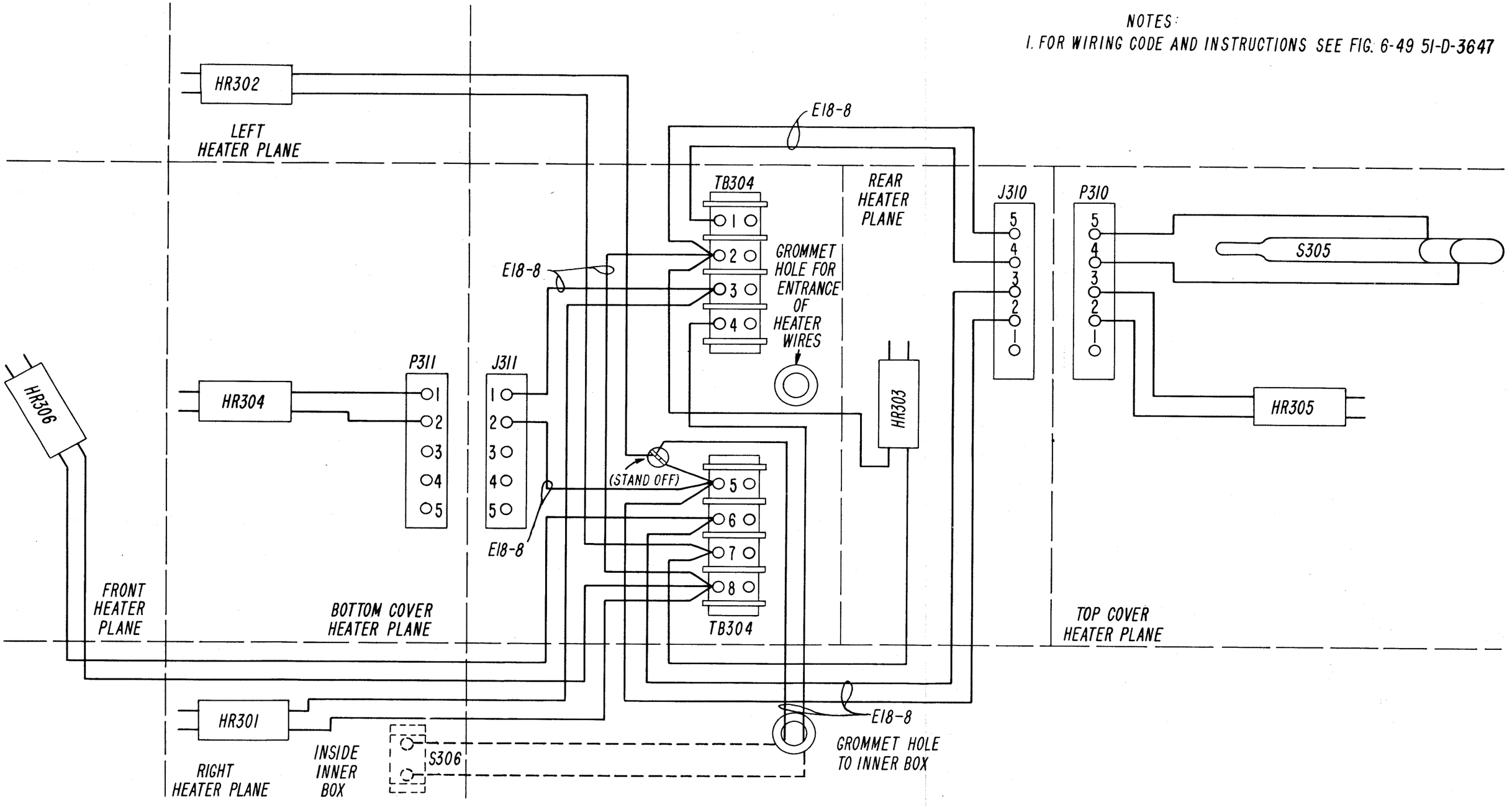

Figure 6-35. Radio Frequency Oscillator O-581/WRT-2, Oven Heaters, Wiring Diagram

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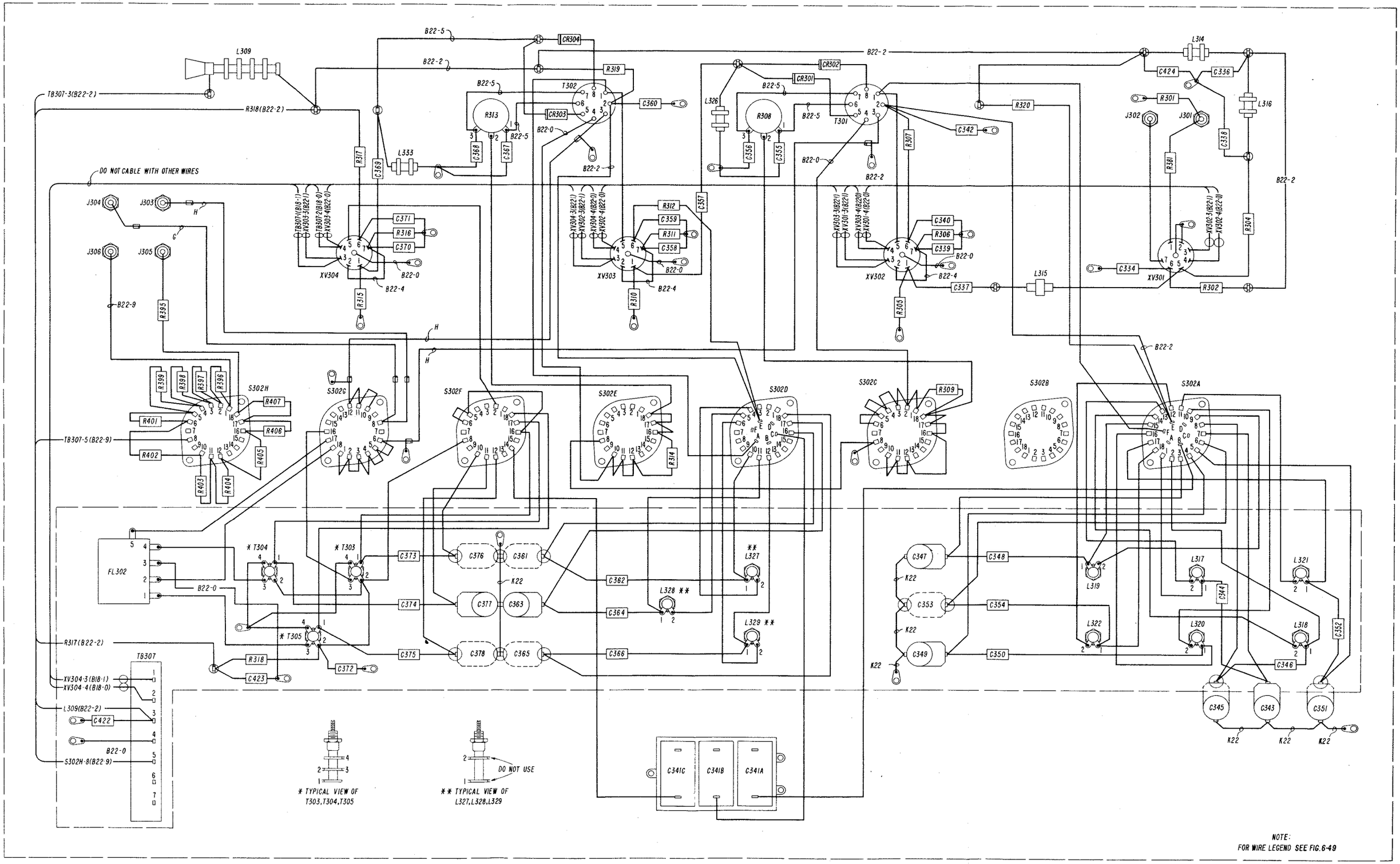


Figure 6-36. Radio Frequency Oscillator O-581/WRT-2, Amplifier Doubler, Wiring Diagram

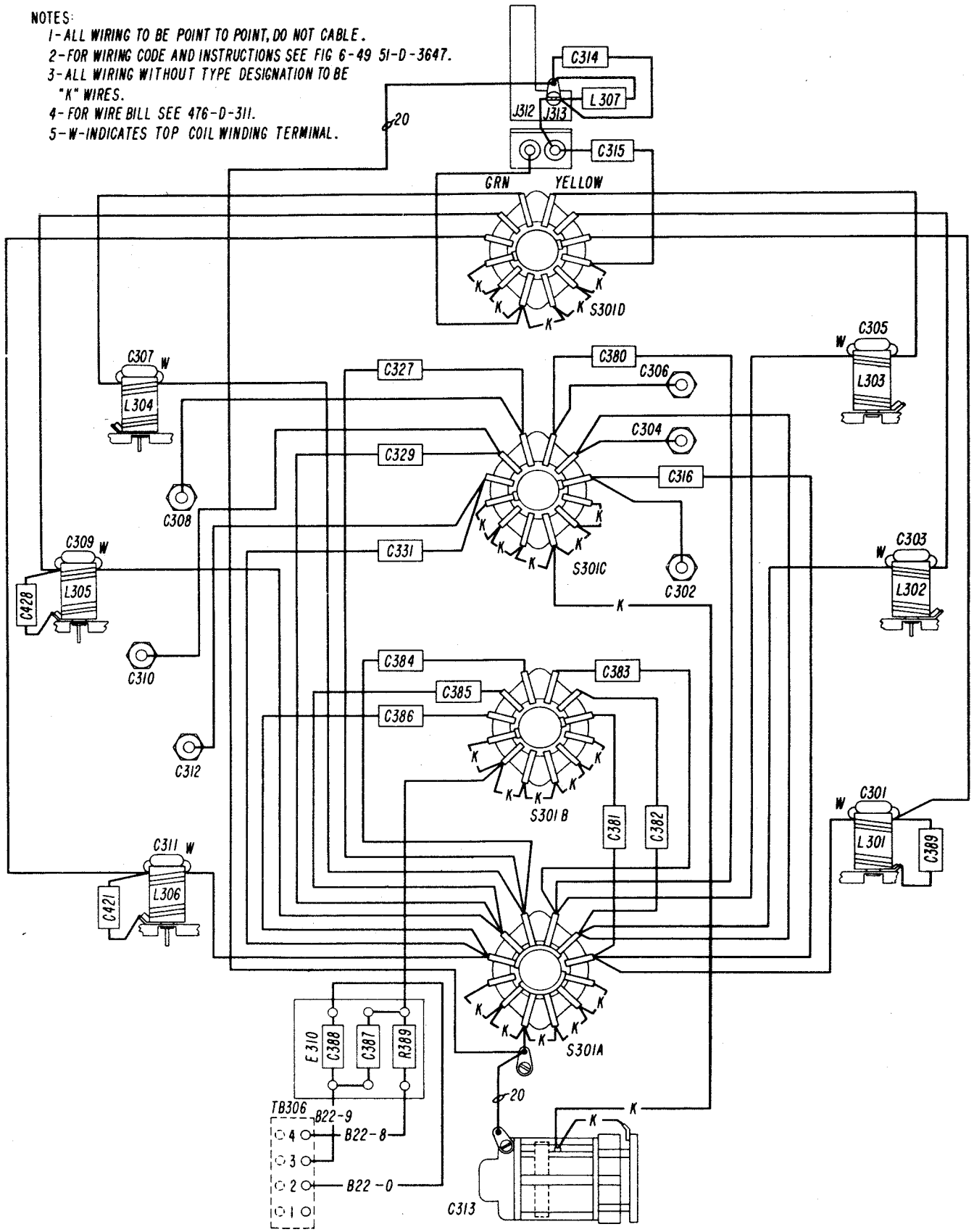
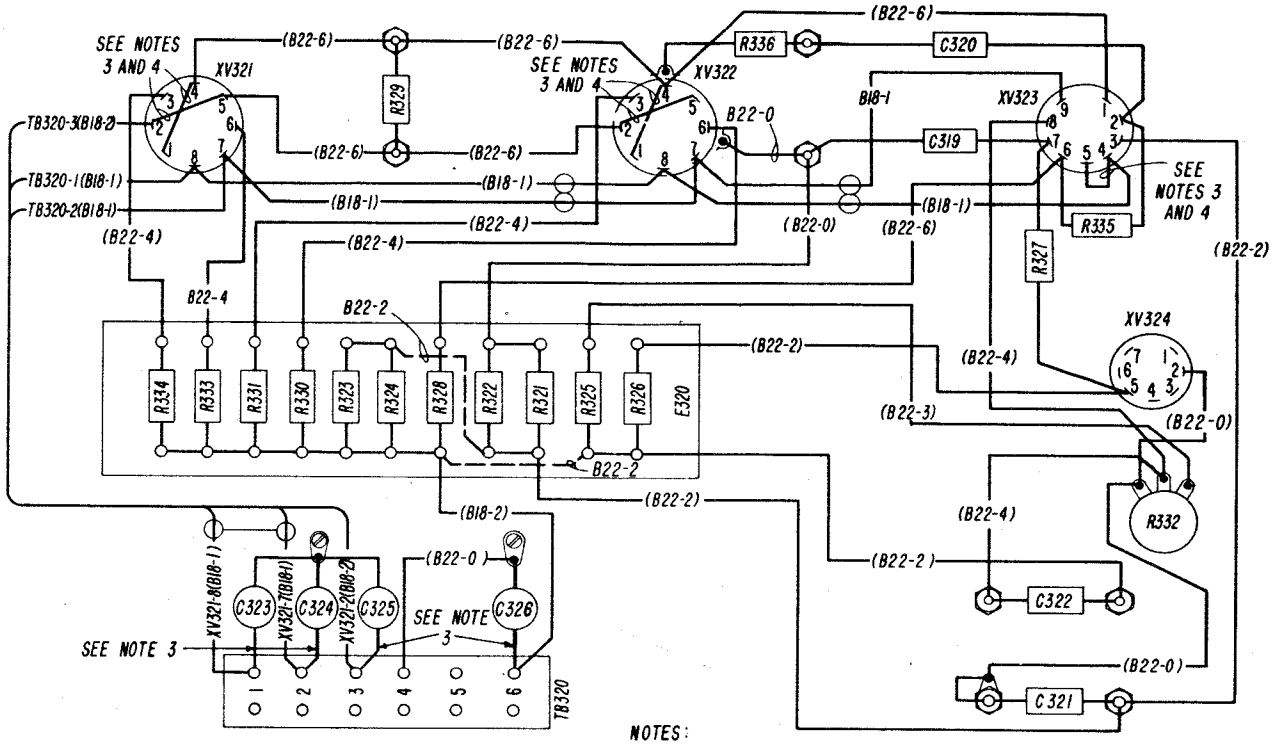


Figure 6-37. Radio Frequency Oscillator O-581/WRT-2, Oven Deck, Wiring Diagram



NOTES:

1. FOR WIRE LEGEND SEE FIG. 6-49
2. ΦΦ OR Φ–Φ INDICATES TWISTED PAIR
3. FOR WIRING CODE AND INSTRUCTIONS SEE 51-D-3647
4. USE .042I.D.X.016 WALL WHITE VINYL TUBING 7800-3
5. USE 0.032 DIA. BUS WIRE 2003-2

Figure 6-38. Radio Frequency Oscillator O-581/WRT-2, Regulator Sub-Chassis, Wiring Diagram

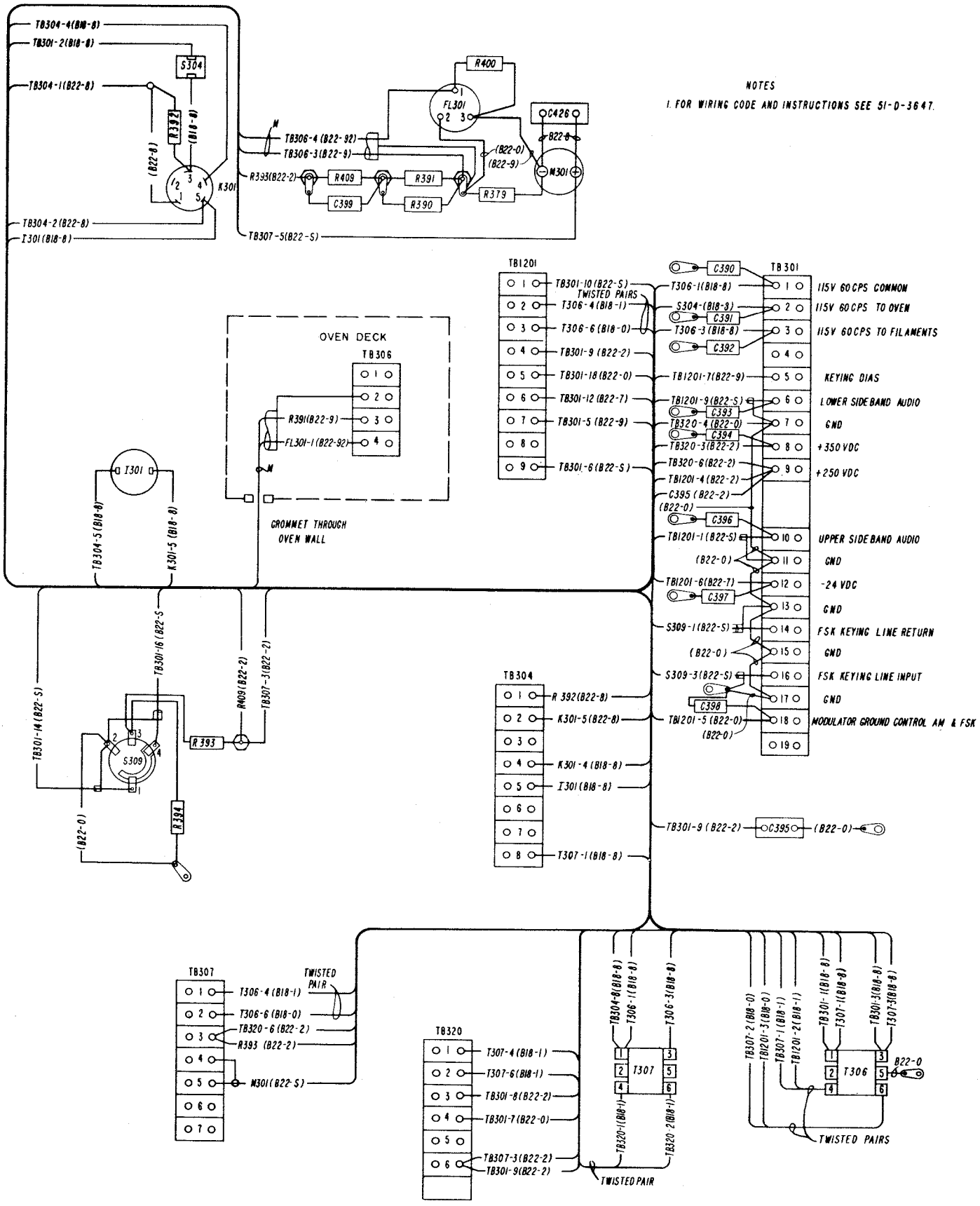


Figure 6-39. Radio Frequency Oscillator O-581/WRT-2, Interconnection Diagram

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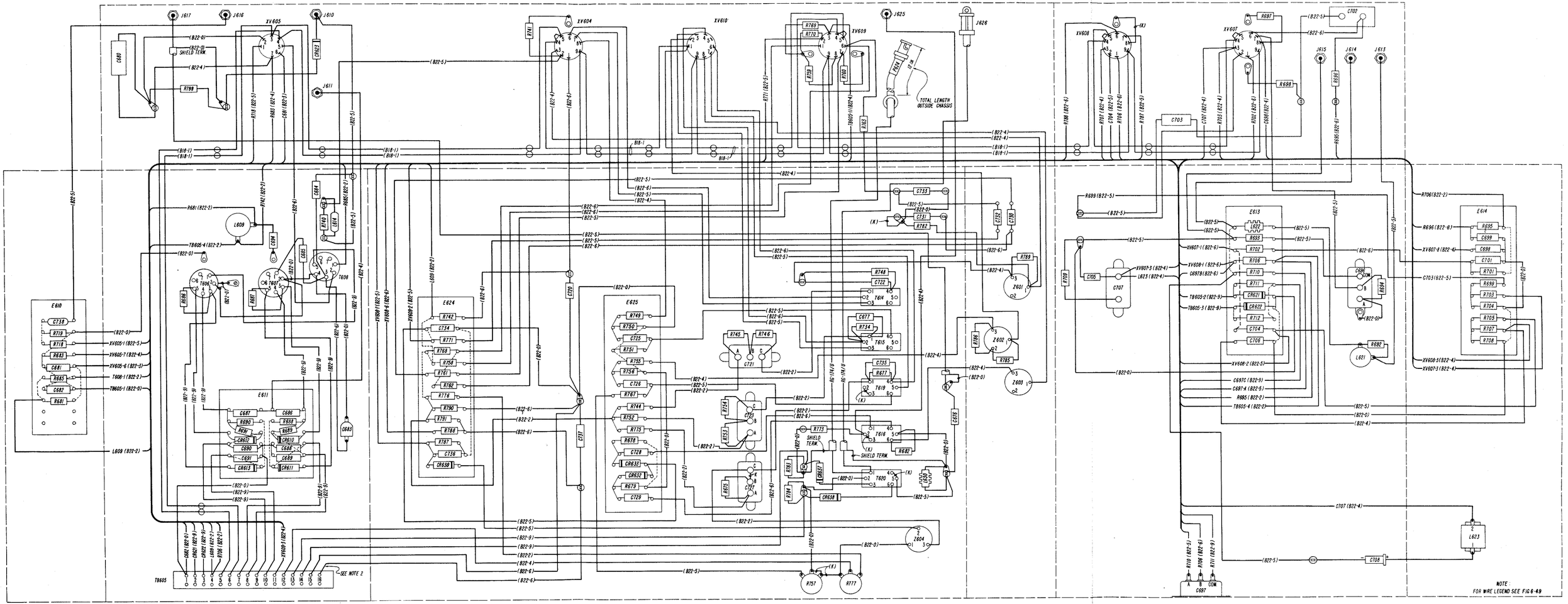

Figure 6-40. Electrical Frequency Control C-2764/WRT-2, Standard Frequency Generator Wiring Diagram, Sets Serials 1 to 263

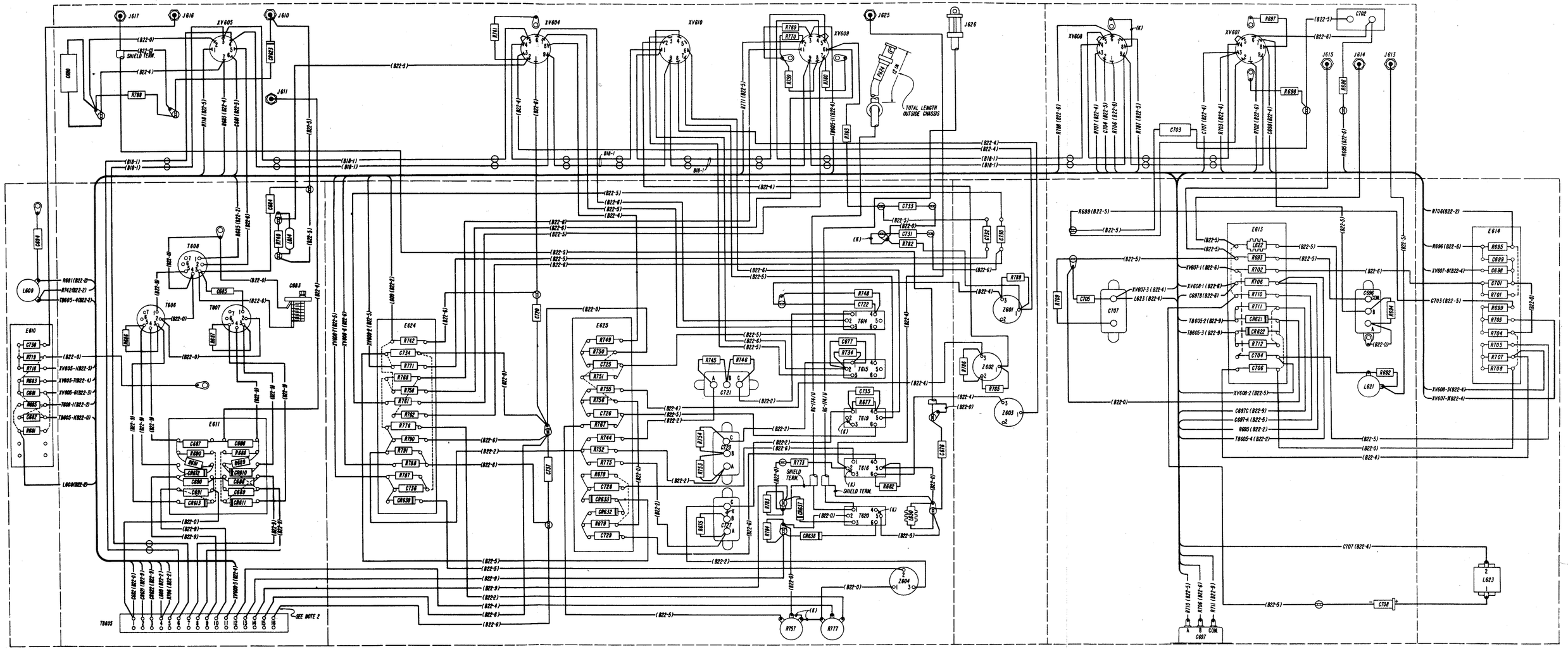

Figure 6-40A. Electrical Frequency Control C-2764/WRT-2, Standard Frequency Generator Wiring Diagram, Sets Serials 264 and up

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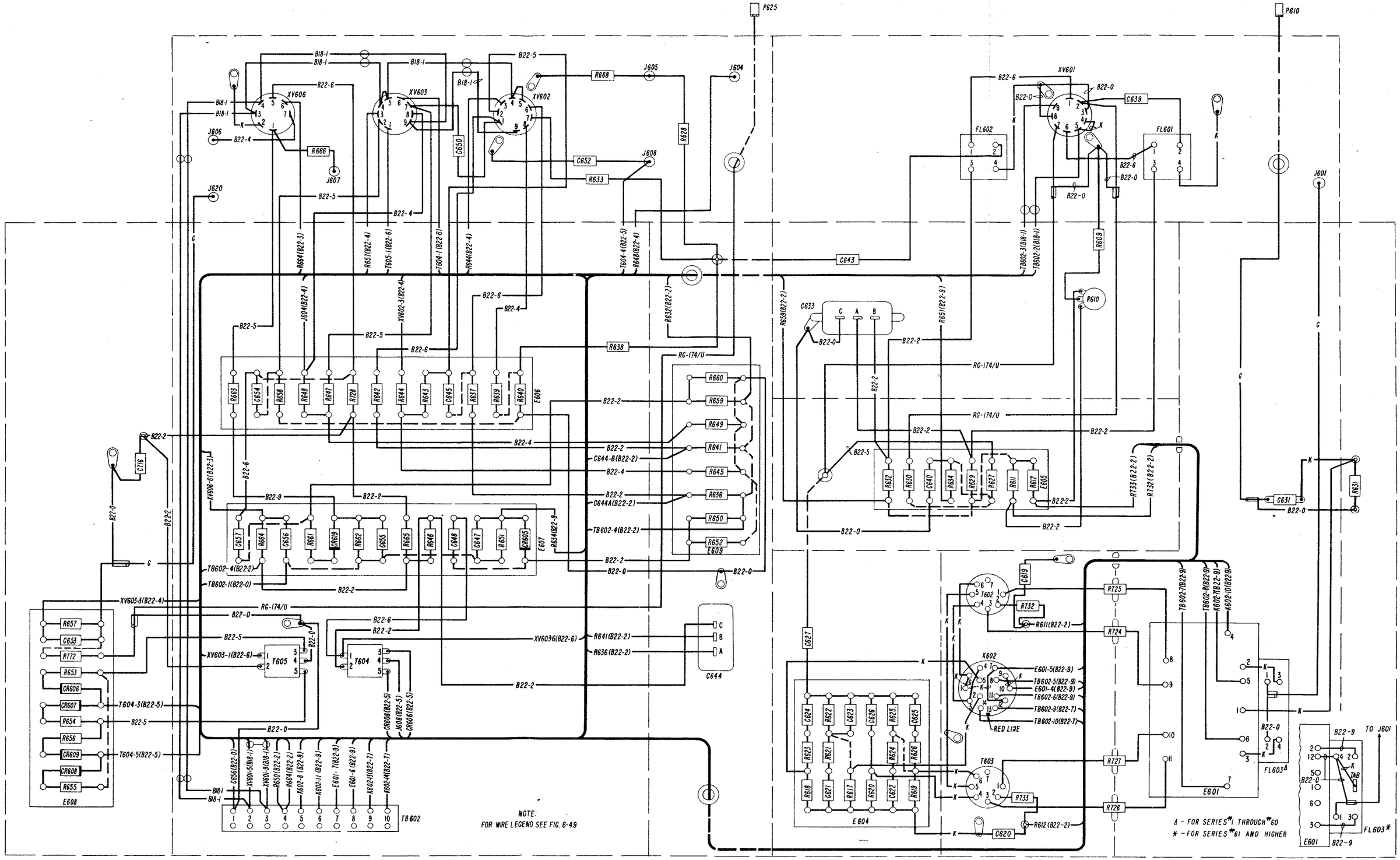

Figure 6-41. Electrical Frequency Control C-2764/WRT-2, Frequency Comparator, Wiring Diagram

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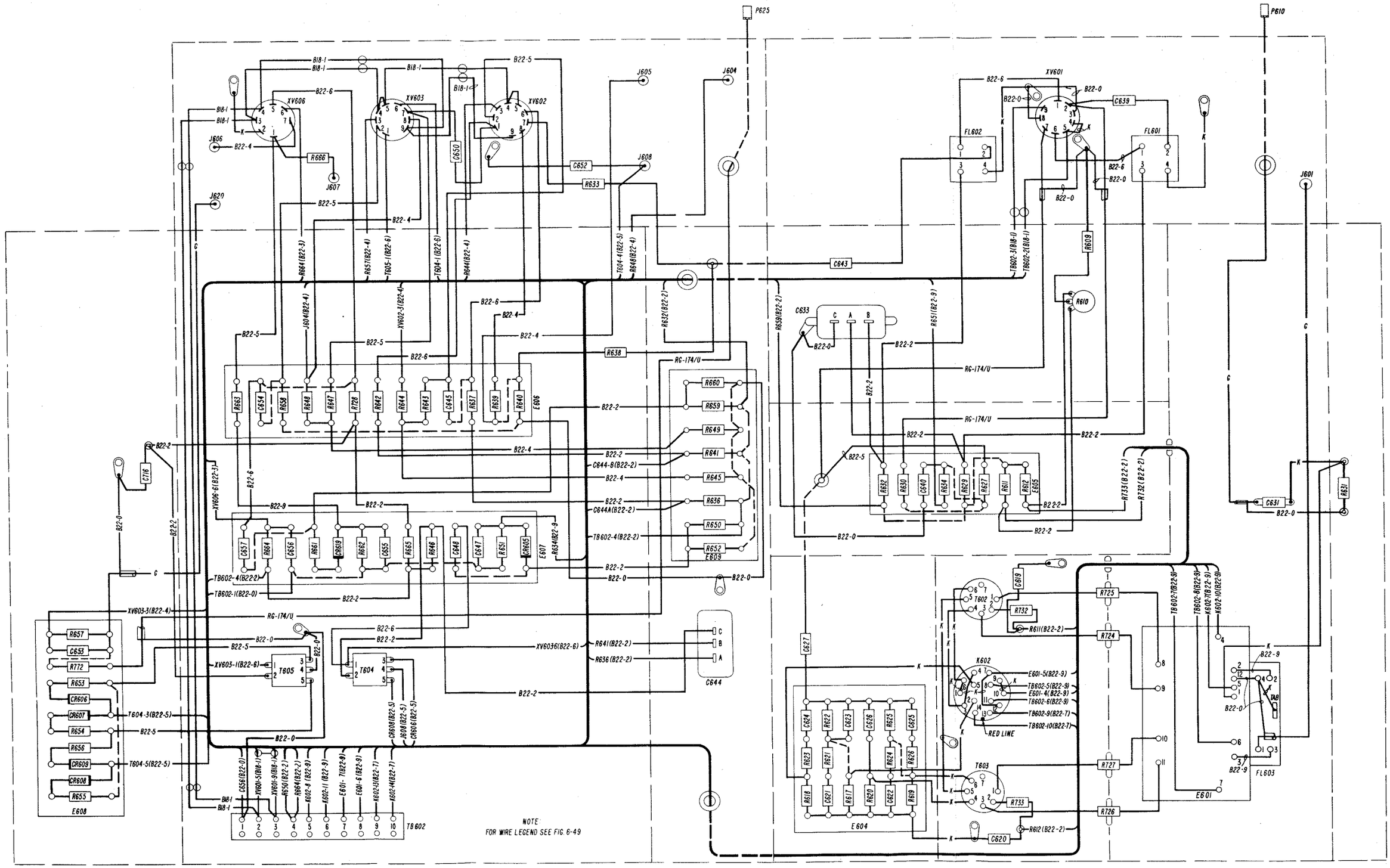

Figure 6-41A. Electrical Frequency Control C-2764/WRT-2, Frequency Comparator Wiring Diagram, Sets Serials 264 and up

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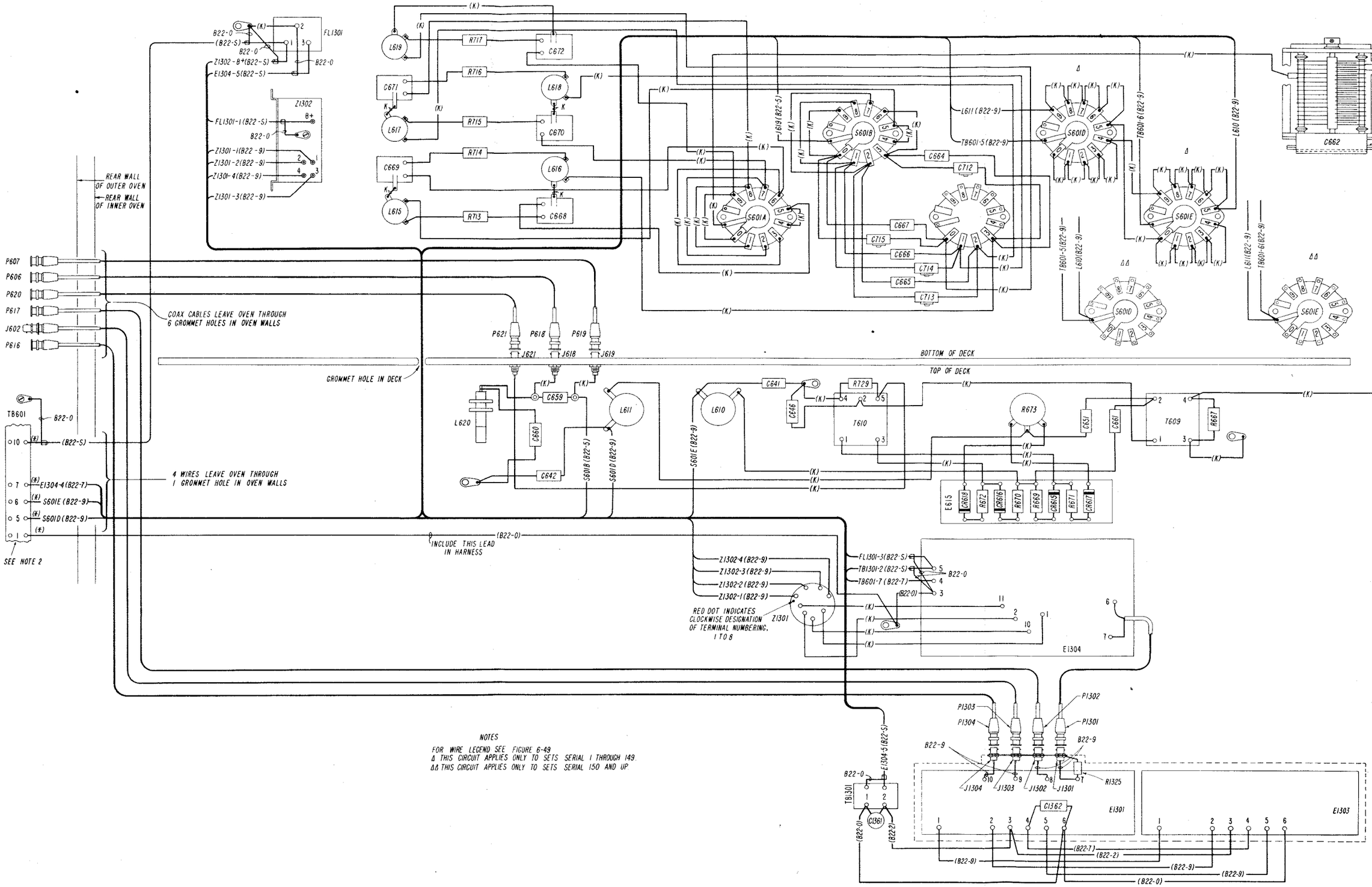

NOTES

FOR WIRE LEGEND SEE FIGURE 6-49
Δ THIS CIRCUIT APPLIES ONLY TO SETS SERIAL 1 THROUGH 149.
ΔΔ THIS CIRCUIT APPLIES ONLY TO SETS SERIAL 150 AND UP.

Figure 6-42. Electrical Frequency Control C-2764/WRT-2, Oven Deck, Wiring Diagrams, Sets Serials 1 to 263

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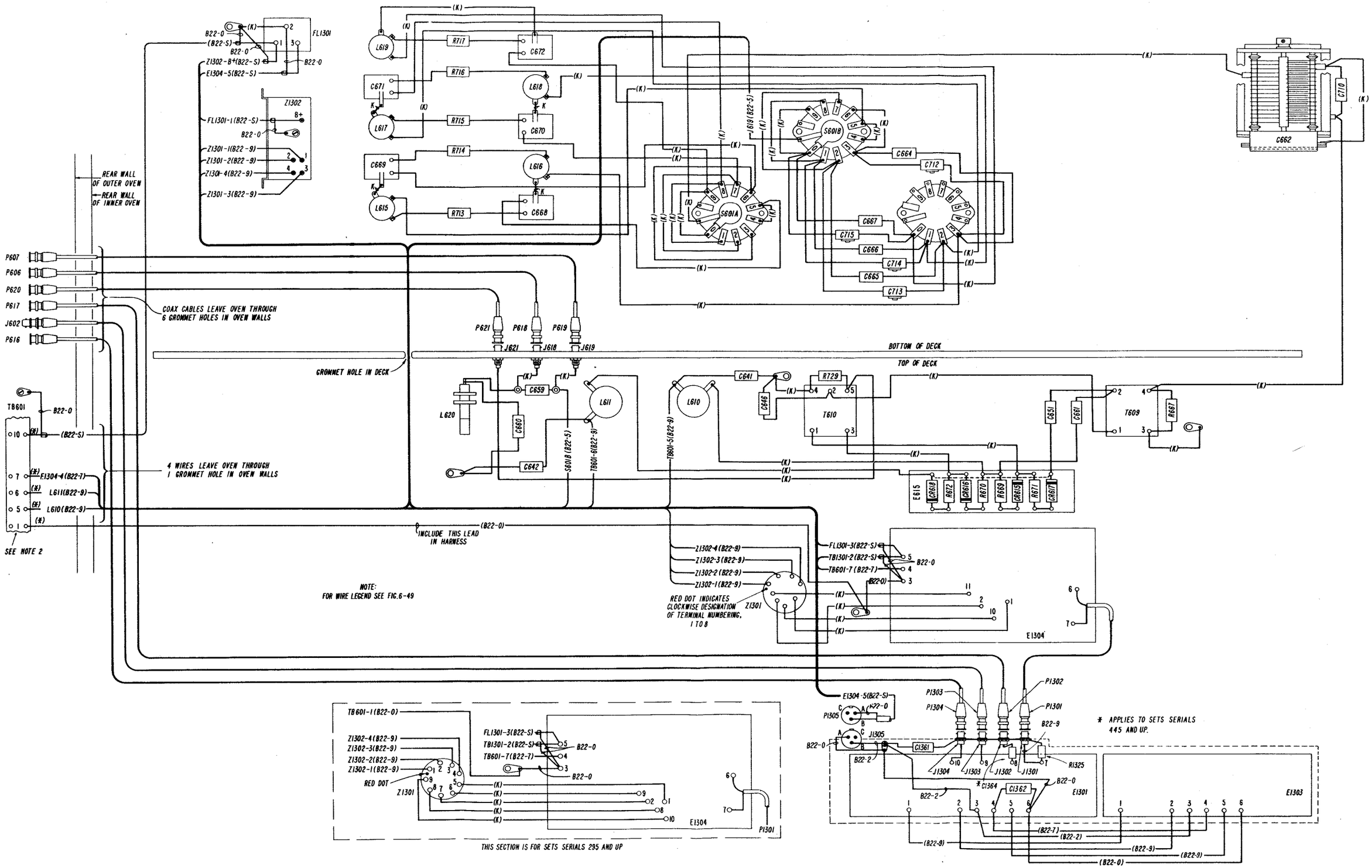


Figure 6-42A. Electrical Frequency Control C-2764/WRT-2, Oven Deck, Wiring Diagram, Sets Serials 264 and up

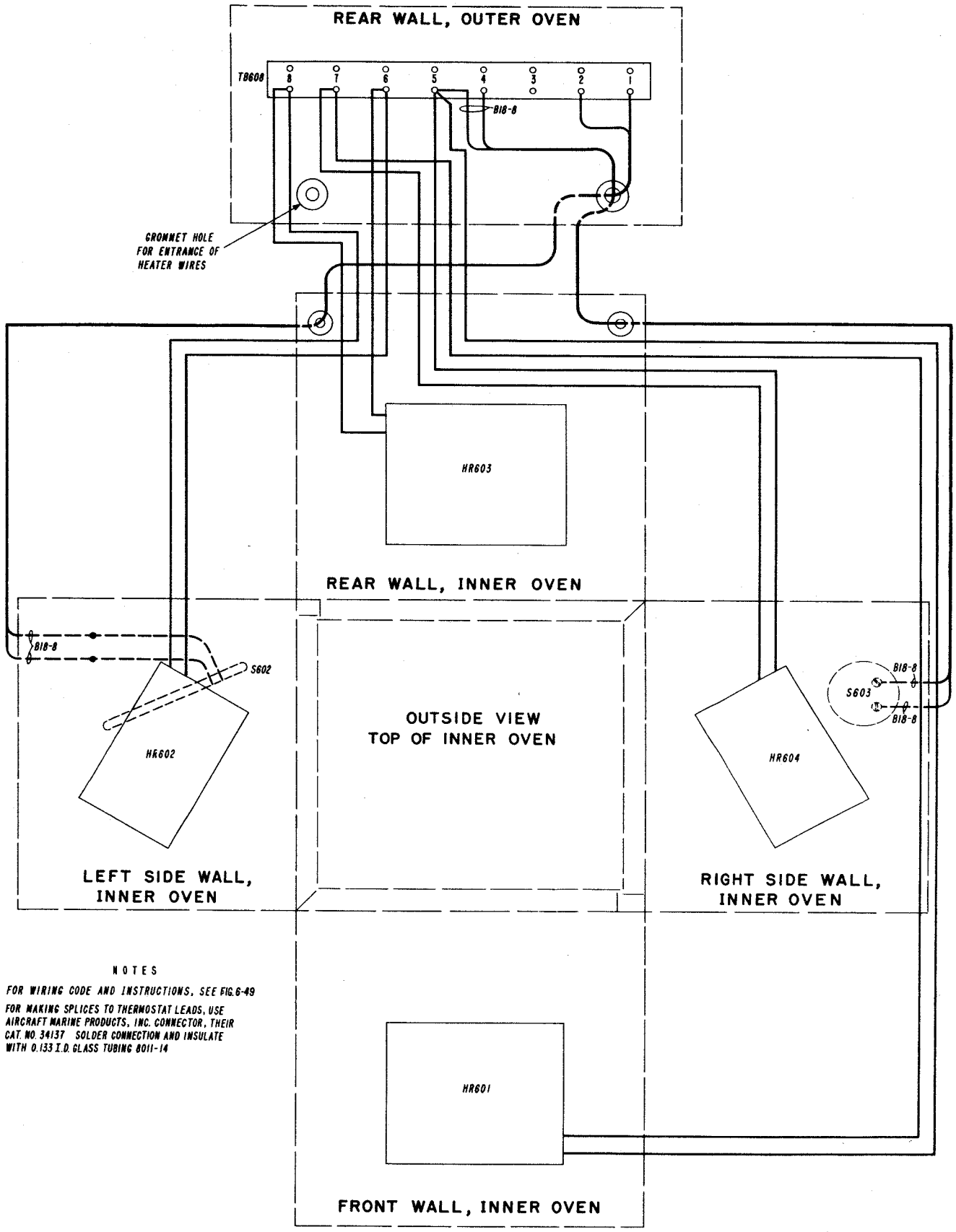
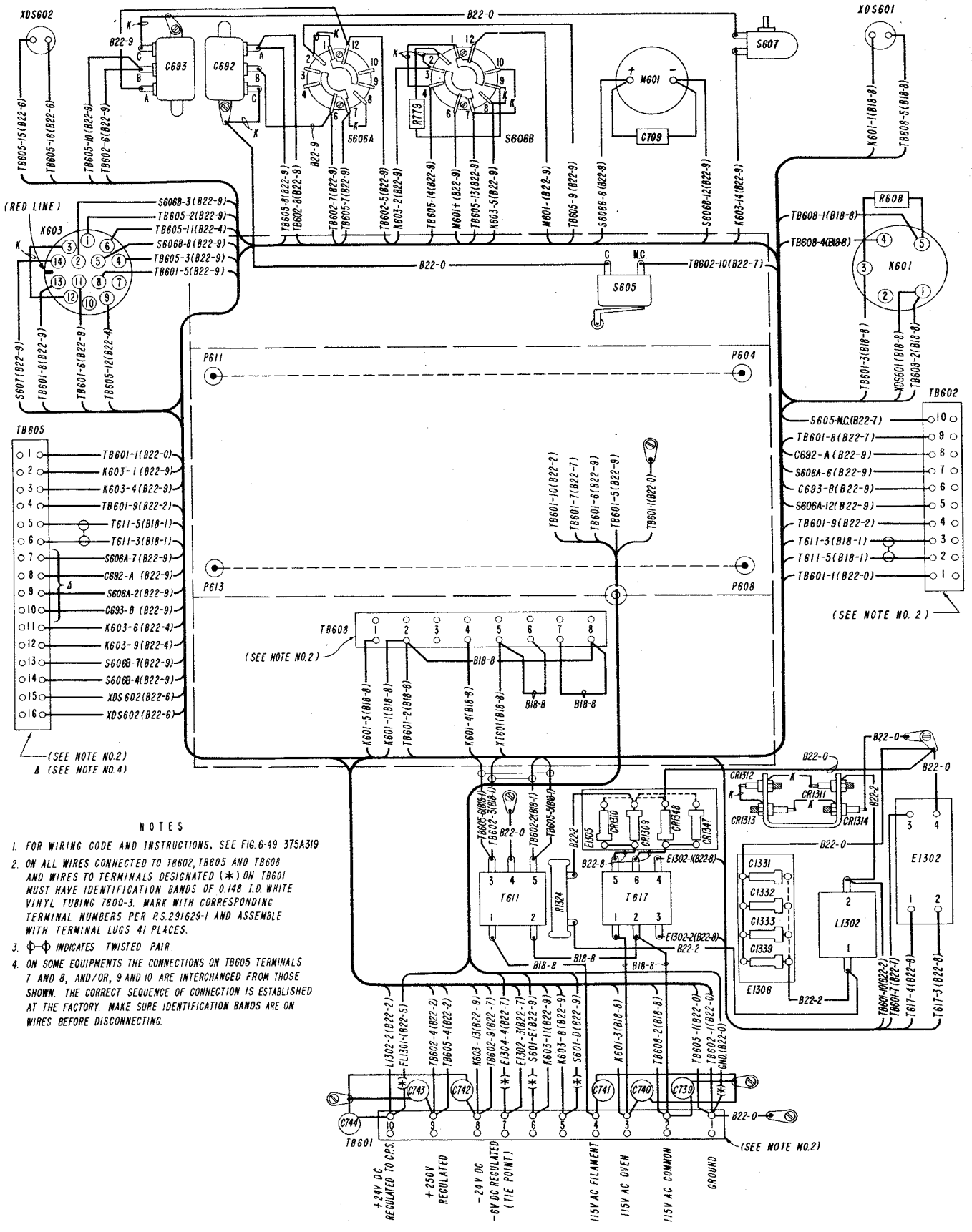


Figure 6-43. Electrical Frequency Control C-2764/WRT-2, Oven Heaters, Wiring Diagram



NOTES

1. FOR WIRING CODE AND INSTRUCTIONS, SEE FIG. 6-49 375A319
2. ON ALL WIRES CONNECTED TO TB602, TB605 AND TB608 AND WIRES TO TERMINALS DESIGNATED (*) ON TB601 MUST HAVE IDENTIFICATION BANDS OF 0.148 I.D. WHITE VINYL TUBING 7800-3. MARK WITH CORRESPONDING TERMINAL NUMBERS PER P.S.291629-1 AND ASSEMBLE WITH TERMINAL LUGS 41 PLACES.
3. ⊕—⊕ INDICATES TWISTED PAIR.
4. ON SOME EQUIPMENTS THE CONNECTIONS ON TB605 TERMINALS 7 AND 8, AND/OR, 9 AND 10 ARE INTERCHANGED FROM THOSE SHOWN. THE CORRECT SEQUENCE OF CONNECTION IS ESTABLISHED AT THE FACTORY. MAKE SURE IDENTIFICATION BANDS ARE ON WIRES BEFORE DISCONNECTING.

Figure 6-44. Electrical Frequency Control C-2764/WRT-2, Interconnection Diagram

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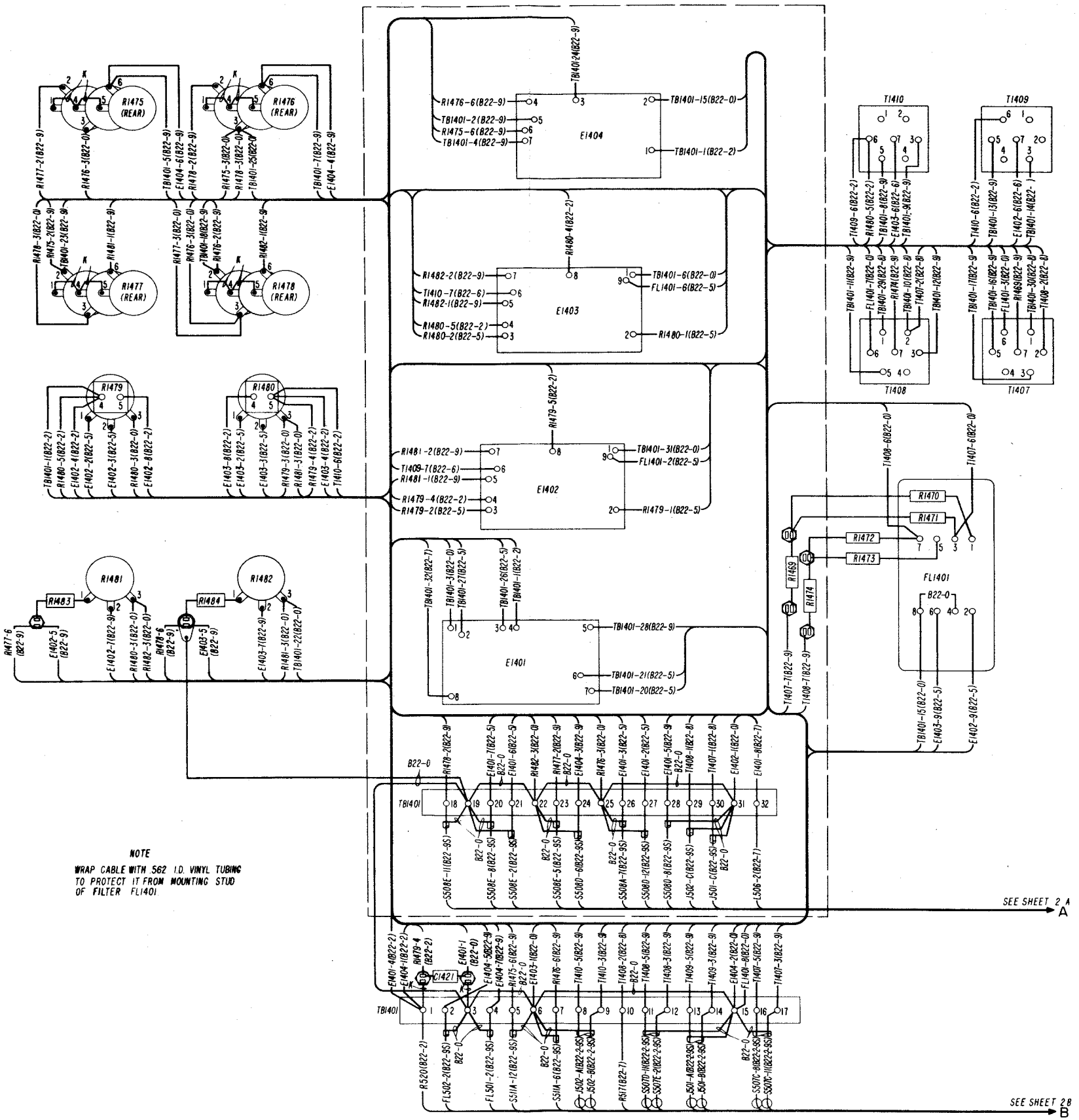

Figure 6-45. Amplifier-Power Supply AM-2122/WRT-2, Wiring Diagram (Sheet 1 of 2)

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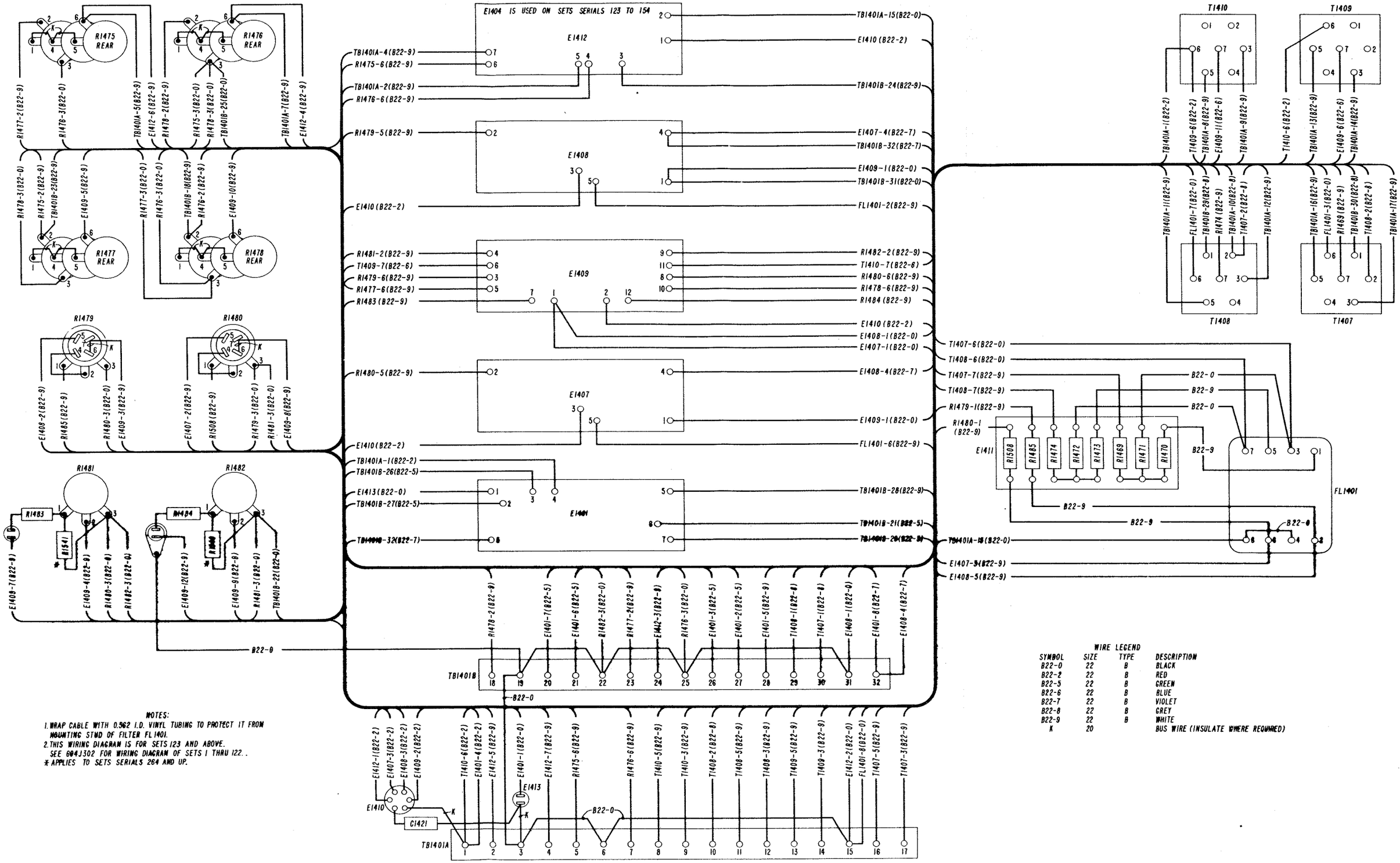

Figure 6-45A. Amplifier-Power Supply AM-2122/WRT-2 Speech Amplifier, Wiring Diagram, Sets Serials 123 and up

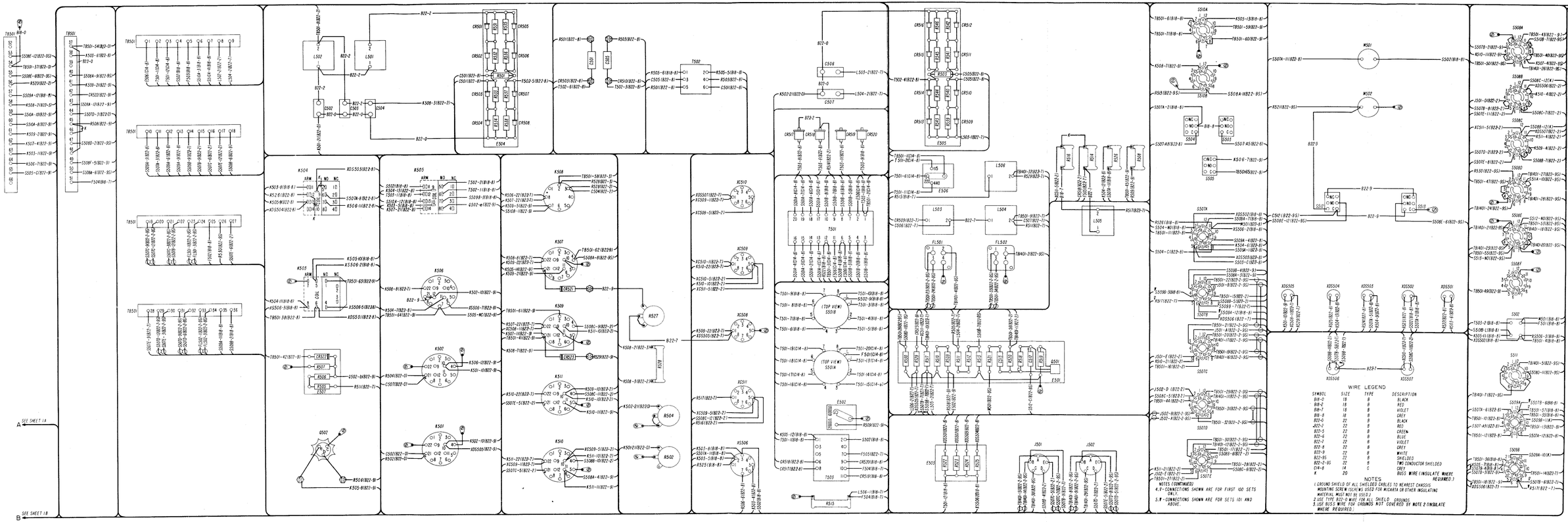

Figure 6-45. Amplifier-Power Supply AM-2122/WRT-2, Wiring Diagram (Sheet 2 of 2)

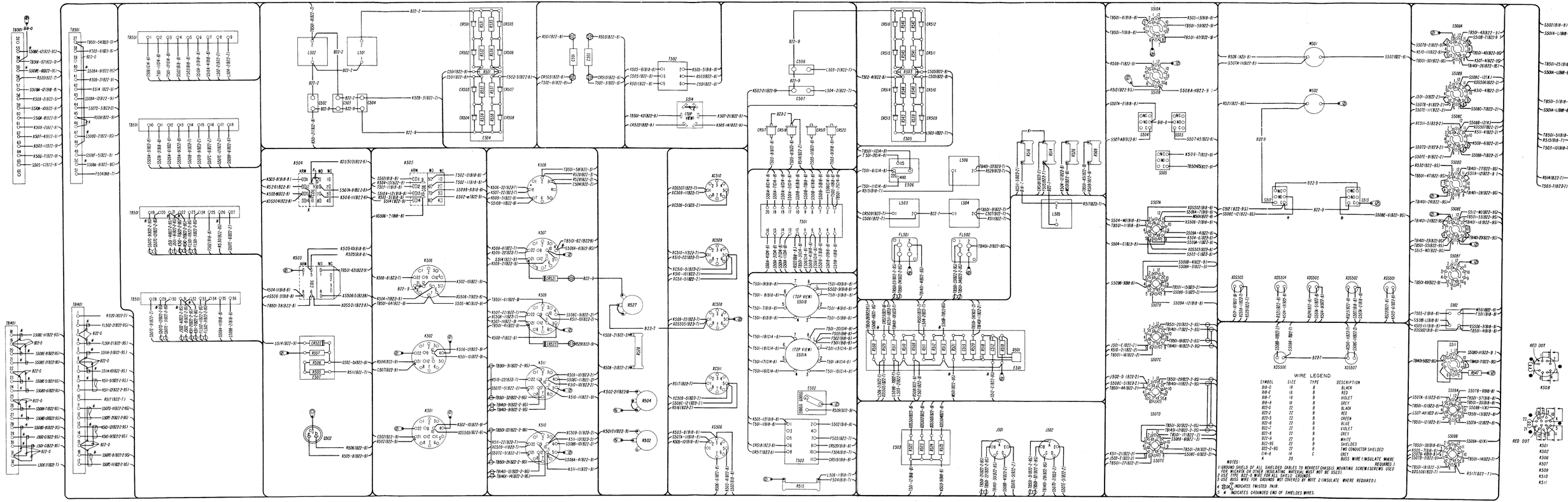

Figure 6-45B. Amplifier-Power Supply AM-2122/WRT-2, Wiring Diagram, Sets Serials 264 and up

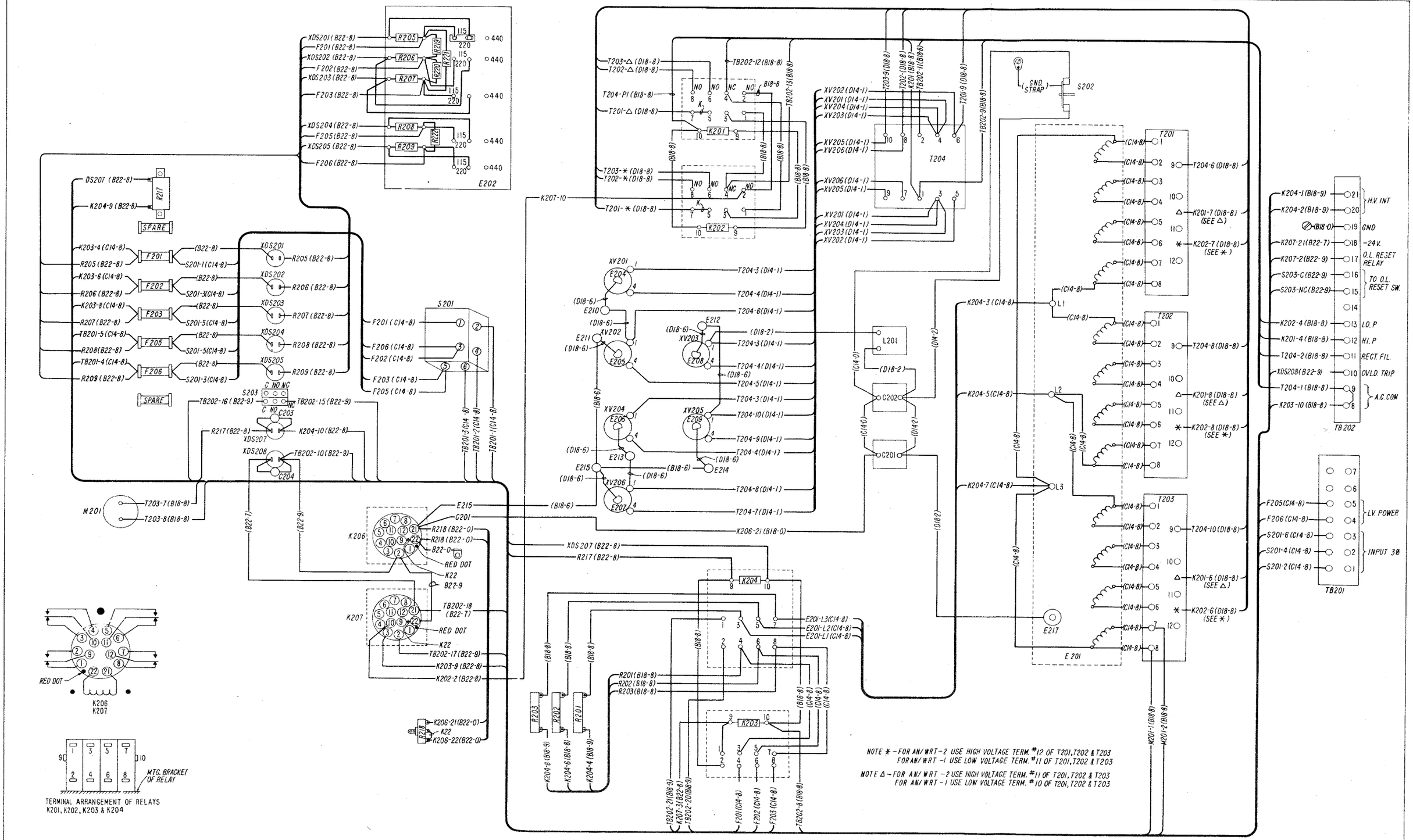

Figure 6-46. Power Supply PP-2222/WRT-2, Wiring Diagram

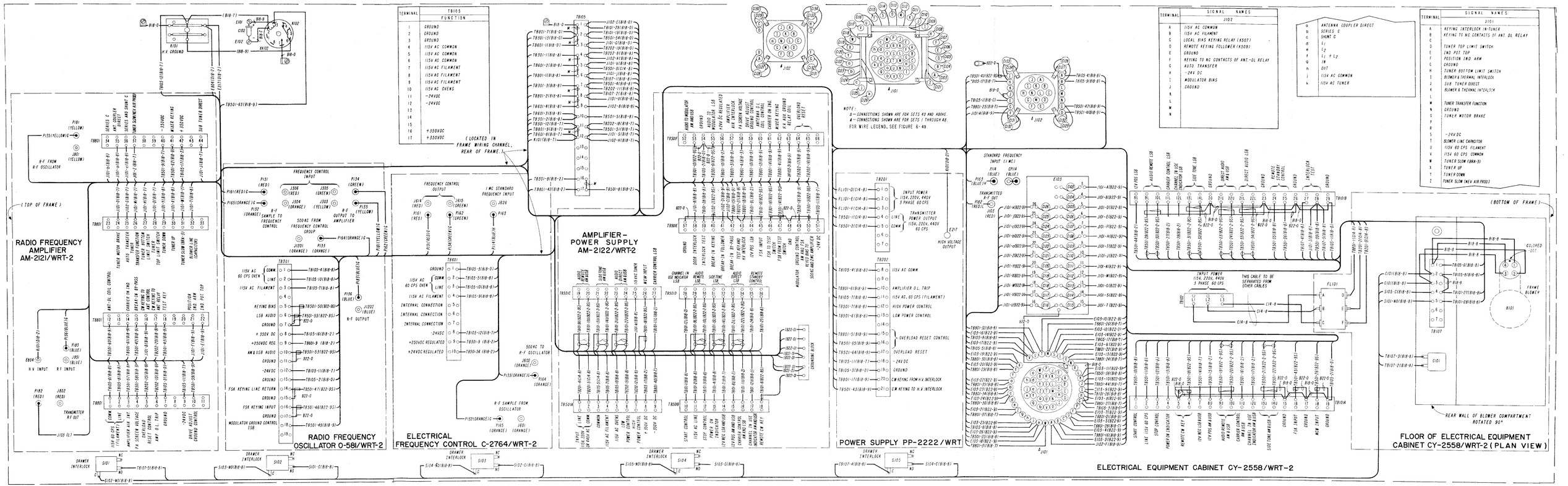

Figure 6-47. Electrical Equipment Cabinet CY-2558/WRT-2, Wiring Diagram

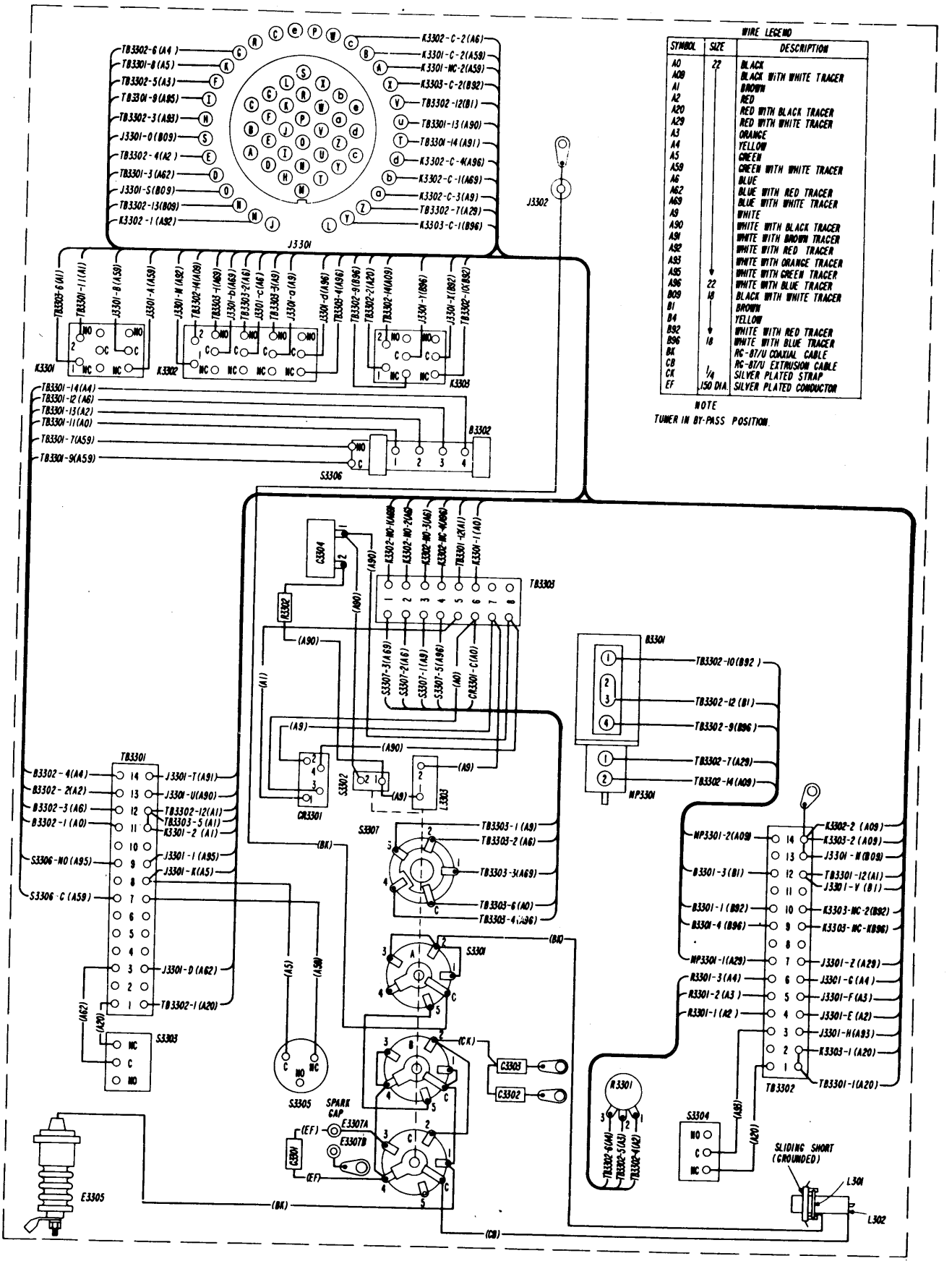

Figure 6-48. Radio Frequ ncy Tun r TN-342/WRT-2, Wiring Diagram

FOR STANDARD STRANDED WIRE, THE FIRST LETTER ON WIRE SYMBOLS INDICATES VOLTAGE AS FOLLOWS:

B = 600 VOLTS

C = 1000 VOLTS

D = 3000 VOLTS

E = 600 VOLTS WITH HIGH TEMP. RATING

THE TWO DIGITS FOLLOWING THE FIRST LETTER INDICATE SIZE OF WIRE.

IN ALL CASES EXCEPT "TWISTED PAIRS", THE THIRD DIGIT (FOLLOWING THE FIRST DASH) INDICATES COLOR IN THE FOLLOWING CODE:

0—BLACK

1—BROWN

2—RED

3—ORANGE

4—YELLOW

5—GREEN

6—BLUE

7—VIOLET

8—GREY

9—WHITE

IN THE CASE OF "TWISTED PAIRS", THE THIRD DIGIT WILL BE "2" AND THE FOURTH DIGIT BECOMES THE COLOR CODE AS INDICATED ABOVE.

THE LETTER "S" FOLLOWING THE COLOR CODE DIGIT INDICATES THAT THE WIRE OR PAIR IS SHIELDED.

THE FOLLOWING SPECIAL CODES ARE USED FOR OTHER TYPES OF CONNECTION MATERIAL:

G	93 OHM COAX 327C705H05
H	RE-174/U
J	$\frac{5}{16}$ × .010 SILVER PLATES (28AA03) COPPER STRAP
K	#20 TINNED COPPER WIRE (SOLID) .032 DIAM. WITH 2003-2 .042 I.D. VINYL TUBING
K18	#18 SOLID TINNED COPPER WIRE
K22	#22 SOLID TINNED COPPER WIRE
L	RG-8A/U COAX CABLE
N	VINYL TUBING 2003-2 .042 I.D.
P	RG-58/U COAX CABLE
Q	⅛ × .010 SILVER PLATED (28AA03) COPPER STRAP
R	$\frac{5}{16}$ × .025 SILVER PLATED (28AA03) COPPER STRAP

Figure 6-49. Wire Legend for Wiring Diagrams in Transmitter Group OA-2175/WRT-2

SECTION 7A

SUPPLEMENTARY PARTS LIST

7-0. SCOPE OF PARTS LIST CHANGES.

a. The stock numbers and support information that appear in this section have been revised. For Federal Stock Numbers and Source, Maintenance and Recoverability Codes refer to the appropriate Stock Number Identification Table (SNIT) issued by the Electronic Supply Office. The SNIT, rather than this publication, shall govern if there is any conflict between stock numbers and support information.

b. The numbers in the NOTES column in Tables 7-1 and 7-1A refer to the following additional information:

1—Used only in AN/WRT-2 equipments with serial numbers 1 through 106.
2—Used only in AN/WRT-2 equipments with serial numbers 1 through 122.
3—Used only in AN/WRT-2 equipments with serial numbers 1 through 154.
4—Used only in AN/WRT-2 equipments with serial numbers 155 and up.
5—Used only in AN/WRT-2 equipments with serial numbers 1 through 263.
6—Used only in AN/WRT-2 equipments with serial numbers 264 and up.
7—Used only on AN/WRT-2 equipments with serial numbers 61 and up.
8—Used only on AN/WRT-2 equipments with serial numbers 1 through 119.
9—Used only on AN/WRT-2 equipments with serial numbers 120 through 263.
10—Used only on AN/WRT-2 equipments with serial numbers 123 and up.
11—Used only on AN/WRT-2 equipments with serial numbers 38 through 155.
12—Used only on AN/WRT-2 equipments with serial numbers 107 and up.
13—Used only on AN/WRT-2 equipments with serial numbers 1 through 444.
14—Used only on AN/WRT-2 equipments with serial numbers 445 and up.

No number in the NOTES column means that the part is used on all sets.

c. The parts list section has been corrected by means of the following supplementary table. Always refer to the appropriate supplementary table for a given item first as it completely supersedes any corresponding listing in the basic table. If no information is shown for a given item, then refer to the basic table for the required information.

SUPPLEMENTARY TABLE 7-1A. RADIO TRANSMITTING SET AN/WRT-2, SUPPLEMENTARY MAINTENANCE PARTS LIST

CABINET, ELECTRICAL EQUIPMENT CY-2558/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
C127		Same as C103.	Filter Capacitor Fig. 6-47
C128		Same as C103.	Filter Capacitor Fig. 6-47
C129		Same as C103.	Filter Capacitor Fig. 6-47
C130		Same as C103.	Filter Capacitor Fig. 6-47
C131		Same as C103.	Filter Capacitor Fig. 6-47
C132		Same as C103.	Filter Capacitor Fig. 6-47
C133		Same as C103.	Filter Capacitor Fig. 6-47
C134		Same as C103.	Filter Capacitor Fig. 6-47
C135 thru C199		Not Used.	
T201ALT.A	6	TRANSFORMER, POWER STEP-UP: Open frame, 4 primary windings, each 110V, 60 cycles, single phase, 1 secondary winding, 803V, tapped at 373V and 545V, 2100V max insulation, air-cooled, impregnated, mfr 89661, 376A501H01.	HV Rectifier Plate Fig. 6-46
T202ALT.A	6	Same as T201ALT.A.	HV Rectifier Plate Fig. 6-46
T203ALT.A	6	Same as T201ALT.A.	HV Rectifier Plate Fig. 6-46

SUPPLEMENTARY TABLE 7-1A. RADIO TRANSMITTING SET AN/WRT-2, SUPPLEMENTARY MAINTENANCE PARTS LIST—C ntinu d

OSCILLATOR, RADIO FREQUENCY 0-581/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
C313ALT.A	6	CAPACITOR, VARIABLE, AIR DIELECTRIC: 71.25 μμf, rotor and stator soldered brass, nickel plated, mfr 89661, dwg 484D511H01.	RF Oscillator Main Tuning Fig. 6-37
C341		CAPACITOR, VARIABLE, AIR DIELECTRIC: 3 section gang, 5.3 μμf to 67 μμf each section, mfr 89661, dwg 342C542H01.	Doubler Tuning For V302, V303, V304 Fig. 6-36
L301ALT.A	6	COIL, RADIO FREQUENCY: 1 winding, close wound, 101 turns of 0.0080 in. dia wire, 76.2 μh inductance, Q of 70 at 1.50 MC, ceramic coil form, mfr 89661, dwg 341C010G01.	Band #1 RF Oscillator Fig. 6-37
L302ALT.A	6	COIL, RADIO FREQUENCY: 1 winding, space wound, 73 turns of 0.0100 in. dia wire, 41.9 μh inductance, Q of 70 at 2.00 MC, ceramic coil form, mfr 89661, dwg 341C010G02.	Band #2 RF Oscillator Fig. 6-37
L303ALT.A	6	COIL, RADIO FREQUENCY: 1 winding, space wound, 55 turns of 0.0126 in. dia wire, 22.3 μh inductance, Q of 70 at 2.75 MC, ceramic coil form mfr 89661, dwg 341C010G03.	Band #3 RF Oscillator Fig. 6-37
L304ALT.A	6	COIL, RADIO FREQUENCY: 1 winding, space wound, 40 turns of 0.0159 in. dia wire, 12.2 μh inductance, Q of 70 at 3.75 MC, ceramic coil form, mfr 89661, dwg 341C010G04.	Band #4 RF Oscillator Fig. 6-37
L305ALT.A	6	COIL, RADIO FREQUENCY: 1 winding, space wound, 30 turns of 0.0159 in. dia wire, 7.02 μh inductance, Q of 70 at 5.00 MC, ceramic coil form, mfr 89661, dwg 341C010G05.	Band #5 RF Oscillator Fig. 6-37
L306ALT.A	6	COIL, RADIO FREQUENCY: 1 winding, space wound, 24 turns of 0.0159 in. dia wire, 4.42 μh inductance, Q of 70 at 6.25 MC, ceramic coil form, mfr 89661, dwg 341C010G06.	Band #6 RF Oscillator Fig. 6-37
M301ALT.A	6	AMMETER: Milliampere scale 1-0.1, white face, ruggedized, auxiliary stops each end, mfr 89661, dwg 327C893H09.	Frequency Zero Adjust Fig. 6-39
MP362	12	GEAR, BEVEL: 20 deg pressure angle, 32 teeth, mfr 89661, dwg 233B149H01.	Replaces MP351 Fig. 5-32A
MP363	12	WHEEL DETENT: Stainless steel, 12 equal spaces at 30 deg, mfr 89661, dwg 233B208H01.	Replaces MP350 Fig. 5-32A
MP364	5	SPRING, HELICAL, EXTENSION: 20 coils close wound, 0.051 in. dia wire, 0.31 in. mean dia, mfr 89661, dwg 375A301H01.	Detent Spring Fig. 5-32A
MP365	5	GEAR, BEVEL: 20 deg pressure angle, 24 teeth, mfr 89661, dwg 233B149H02.	Bevel Drive Fig. 5-32A
MP366		RETAINER, ELECTRON TUBE: 1.625 in. id closed, 0.88 in. w, w/holding spurs mfr 91506, type 148U1-333F(HS).	Tube Clamp for V231
MP367		Same as MP366.	Tube Clamp for V322
MP368 thru MP399		Not Used.	
S301		SWITCH, ROTARY: 4 pole, 6 position, 20 amp at 115 VAC, mfr 89661, dwg 342C503H03.	RF Oscillator Band Switch Fig. 6-37

AMPLIFIER-POWER SUPPLY AM-2122/WRT-2

CR501ALT.A	14	SEMICONDUCTOR DEVICE, DIODE: Silicon, 600V peak inverse, 350 to 600 ma at 150 deg C, type 1N547, spec MIL-E-1.	Plus 350V Rectifier Fig. 6-45
CR502ALT.A thru CR516ALT.A	14	Same as CR501ALT.A.	Same as CRA501LT.A
F501ALT.A	4	FUSE, CARTRIDGE: 5 amp, 250V, MS90078-14-1, spec MIL-F-15160.	Transmitter 115 V AC Filament Fig. 6-45B
F502ALT.A	4	FUSE, CARTRIDGE: 3 amp, 250V, MS90078-12-1, spec MIL-F-15160.	Transmitter 115 V AC Tuner Fig. 6-45 B
F503ALT.A	4	Same as F501ALT.A.	Transmitter 115 V AC Oven Fig. 6-45B
F504ALT.A	4	FUSE, CARTRIDGE: 4 amp, 250V, MS90078-13-1, spec MIL-F-15160.	Minus 24V Control Fig. 6-45B
F505ALT.A	4	FUSE, CARTRIDGE: 2 amp, 250V, MS90078-11-1, spec MIL-F-15160.	12V Radio-Phone Fig. 6-45B
M501ALT.A	4	VOLTMETER: 150 full scale value, measures AC current, white face, ruggedized, zero adjust, mfr 89661, dwg 331C215H04.	Voltmeter Fig. 6-45B

SUPPLEMENTARY TABLE 7-1A. RADIO TRANSMITTING SET AN/WRT-2, SUPPLEMENTARY MAINTENANCE PARTS LIST—C ntinued

AMPLIFIER-POWER SUPPLY AM-2122/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
Q502ALT.A	6	TRANSISTOR, POWER: 3 amp, 20 w, mfr 97966, type 2N1330.	Switching Transistor Fig. 6-45B
R547	6	RESISTOR, FIXED COMPOSITION: 270 ohms +5%, ½w RC20GF271J, spec MIL-R-11.	Switch 511A Ground Resistor Fig. 6-45B
S514	6	SWITCH, TOGGLE: Double pole, 3 position, 125 V AC, 25 amp, ST52N, spec MIL-S-21195.	Keying Fig. 6-45B
XF501ALT.A	6	FUSEHOLDER: Indicating type, 250V, 22 amp, sealed, FHL17G, spec MIL-F-19207.	For F501ALT.A Fig. 6-45B
XF502ALT.A	6	Same as XF501ALT.A.	For F502ALT.A Fig. 6-45B
XF503ALT.A	6	Same as XF501ALT.A.	For F503ALT.A Fig. 6-45B
XF504ALT.A	6	FUSEHOLDER: Indicating type, 250V, 22 amp, sealed, FHL18G, spec MIL-F-19207.	For F504ALT.A Fig. 6-45B
XF505ALT.A	6	FUSEHOLDER: Indicating type, amber knob, brown body, incandescent lamp, 10 to 14V, mfr 71400, type HKT-W.	For F505ALT.A Fig. 6-45B

CONTROL, ELECTRICAL FREQUENCY C-2764/WRT-2

C641ALT.A	6	CAPACITOR, FIXED, CERAMIC DIELECTRIC: 1000 μμf ±5%, 300 V DC, CY15C102J, spec MIL-C-11272.	Interpolation Oscillator Phase Detector Filter Fig. 6-42A
C642ALT.A	6	Same as C641ALT.A.	Interpolation Oscillator Phase Detector Filter Fig. 6-42A
C646ALT.A	6	CAPACITOR, FIXED, CERAMIC DIELECTRIC: 10,000 μμf ±5%, 300V, CY30C103J, spec MIL-C-11272.	Bypass for T610 Fig. 6-42A
C651ALT.A	6	Same as C646ALT.A.	Interpolation Oscillator Phase Detector Filter Fig. 6-42A
C661ALT.A	6	Same as C646ALT.A.	Interpolation Oscillator Phase Detector Filter Fig. 6-42A
C683ALT.A	6	CAPACITOR, VARIABLE, AIR DIELECTRIC: 6.0 to 75.0 μμf, lock type shaft, CT1C075, spec JAN-C-92.	Plate Tuning V605 Fig. 6-40A
C684ALT.A	6	CAPACITOR, FIXED, MICA DIELECTRIC: 330 μμf ±2%, 1000 v dc, mfr 72136, type VCM20D331G.	Pulse Shaping Fig. 6-40A
C685ALT.A	6	CAPACITOR, FIXED, MICA DIELECTRIC: 10 μμf ±1%, 1000 v dc, mfr 72136, type VCM20D100K.	Coupling T606 Fig. 6-40A
CR632ALT.A	6	SEMICONDUCTOR DEVICE, DIODE: Reverse recovery, 50V, mfr 82577, type 1N659.	1 KC Phase Detector Diode Fig. 6-40A
CR633ALT.A	6	Same as CR632ALT.A.	1 KC Phase Detector Diode Fig. 6-40A
E610ALT.A	6	BOARD, MOUNTING: 16 solder stud terminals, micarta board, 3.71 in. lg, 1.75 in. w, mfr 89661, dwg 237B330G01.	Wiring Tie Point Fig. 6-40A
E615ALT.A	6	BOARD, MOUNTING: 16 solder stud terminals, mfr 89661, dwg 341C564G01.	Component Mtg. In Oven Assembly Fig. 6-42A
E667		SHIELD, ELECTRON TUBE: Heat dissipating, S0967, spec MIL-S-19786. Same as E323.	Tube Shield for V601
E668		Same as E667.	Tube Shield for V602
E669		Same as E667.	Tube Shield for V603
E670		Same as E667.	Tube Shield for V604

SUPPLEMENTARY TABLE 7-1A. RADIO TRANSMITTING SET AN/WRT-2, SUPPLEMENTARY MAINTENANCE PARTS LIST—Continued

CONTROL, ELECTRICAL FREQUENCY C-2764/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
E671		Same as E667.	Tube Shield for V607
E672		Same as E667.	Tube Shield for V608
E673		Same as E667	Tube Shield for V609
E674		SHIELD, ELECTRON TUBE: Heat dissipating, S0962, spec MIL-S-19786. Same as E301.	Tube Shield for V605
E675		Same as E674.	Tube Shield for V606
M601ALT.A	6	AMMETER: Micro amp DC scale, 100-0-100 scale reading, white dial, black markings, ruggedized, with auxilliary stops both ends, mfr 89661, dwg 327C893H08.	Deviation Calibrate Zero Adjust. Fig. 6-44
MP633ALT.A	9	CHAIN, ROLLER: 98 pitches, 3/16 in. pitch, 5/32 in. wide, side flanged, stainless steel, mfr 89661, dwg 152A046H11.	Drive Chain Fig. 5-35
R671ALT.A	6	Same as R669.	Interpolation Oscillator Phase Detector Load Fig. 6-42A
R672ALT.A	6	Same as R669.	Interpolation Oscillator Phase Detector Load Fig. 6-42A
R673ALT.A		Not Used.	
R748ALT.A	14	RESISTOR, FIXED, FILM: 133,000 ohms ±1%, 1/2 watt, RN70B1333F, spec MIL-R-10509.	Grid Bias V604B Fig. 6-40

AMPLIFIER, RADIO FREQUENCY AM-2121/WRT-2

AT801	6	RESISTOR ASSEMBLY: C/O nine 2 watt resistors, a cable and standoff disk, mfr 89661, dwg 341C768G01.	Terminates T804 Fig. 6-33A
AT802 thru AT899		Not Used.	
C813ALT.A	6	CAPACITOR, FIXED, MICA DIELECTRIC: 91 μμf ±5%, 500 v dc working, CM20C910J, spec MIL-C-5.	Coupling Grid V802 Fig. 6-31
C834ALT.A	6	CAPACITOR, FIXED, MICA DIELECTRIC: 27 μμf ±5%, 500 v dc working, CM20C270J, spec MIL-C-5.	Divider Grid V802 Fig. 6-31
C857ALT.A	6	CAPACITOR, FIXED, CERAMIC DIELECTRIC: 10,000 μμf ±20%, 500 v dc working, CK63AW103M, spec MIL-C-11015.	Bypass for M805 Fig. 6-32A
C883ALT.A	6	CAPACITOR, FIXED, ELECTROLYTIC: 60 μf −15 +50%, 50 v dc working, CL44BJ600 TP1, spec MIL-C-3965.	Cathode Bypass V802 Fig. 6-31
C888ALT.A	15	CAPACITOR, FIXED, MICA DIELECTRIC: 750 μμf ±5%, 500 v dc working, CM30C751J, spec MIL-C-5.	Bypass Plate V802 Fig. 6-31
CR806ALT.A	6	SEMICONDUCTOR DEVICE, DIODE: Germanium, 80 V inverse working, 75 ma at 75 deg C, mfr 72982, type USN 1N933.	Directional Coupler Fig. 6-33A
CR807ALT.A	6	Same as CR806ALT.A.	Directional Coupler Fig. 6-33A
CR812ALT.A	6	Same as CR806ALT.A.	Directional Coupler Fig. 6-33A
CR813ALT.A	6	Same as CR806ALT.A.	Directional Coupler Fig. 6-33A
CR819	6	SEMICONDUCTOR DEVICE, DIODE: Germanium crystal, 125 reverse peak voltage, 5.0 ma min forward current, mfr 99180, type 1N277.	Reverse Current Limiting M805 Fig. 6-33A
CR820	6	Same as CR801.	Bias Rectifier K810 Fig. 6-33A
CR821	6	SEMICONDUCTOR DEVICE, DIODE: Zener voltage type, 12.0 Zener volts, 400 mw, mfr 03877, type 1N759A.	Bias Level Control K810 Fig. 6-33A
CR822	6	Same as CR821.	Bias Level Control K810 Fig. 6-33A
CR823	6	Same as CR821.	Reverse Voltage Limiting Q804 Fig. 6-33A
CR824	6	Same as CR819.	Base Circuit Shunt Q803 Fig. 6-33A
CR825	6	SEMICONDUCTOR DEVICE, DIODE: 70 v dc, 600 ma, 1N457, spec MIL-E-1.	Emitter Bias Q803 Fig. 6-33A

SUPPLEMENTARY TABLE 7-1A. RADIO TRANSMITTING SET AN/WRT-2, SUPPLEMENTARY MAINTENANCE PARTS LIST—Continued

AMPLIFIER, RADIO FREQUENCY AM-2121/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
CR826 thru CR899		Not Used.	
DL801	6	CABLE, SPECIAL PURPOSE ELECTRICAL: 4½ in. lg cable, with braid pigtails, mfr 89661, dwg 239B108H01.	Couples T803 To AT801 Fig. 6-33A
DL802 thru DL899		Not Used.	
DS805	6	Same as DS802.	High SWR Alarm Indicator Light Fig. 6-33A
E895ALT.A	6	PRINTED CIRCUIT ASSEMBLY: Consists of various components mounted on a printed board, mfr 89661, dwg 345C571G01.	High SWR Alarm Control Fig. 6-33A
E897	6	PRINTED CIRCUIT ASSEMBLY: Consists of various components mounted on a printed board, mfr 89661, dwg 345C573G01.	RF Rectifier for Control Circuit Fig. 6-33A
E898	6	RESISTOR BOARD ASSEMBLY: C/O 2 resistors, 2 diodes and a transistor, mfr 89661, dwg 346C143G01.	High SWR Alarm Light Control Fig. 6-33A
E899	6	RESISTOR BOARD ASSEMBLY: C/O 3 resistors and 3 diodes, mfr 89661, dwg 346C066G01.	Plate Power Alarm Circuitry Fig. 6-33A
K801ALT.A	6	RELAY, ARMATURE: DC sensitive, 2 coils, SPDT, hermetically sealed, mfr 78277, type 94036.	PA Overload Relay Fig. 6-33A
K804ALT.A	6	RELAY, ARMATURE: 24 v dc, 700 ohms ±10%, mfr 82415, type 5416-1HS.	Interlock Relay Fig. 6-32A
K810ALT.A	6	RELAY, ARMATURE: DC sensitive, 2 coils, SPDT, hermetically sealed, mfr 78277, type 94541.	PA Overload Fig. 6-33A
M801ALT.A	6	AMMETER: 0-150 ma, white face with black markings, mfr 89661, dwg 342C658H01.	TEST AMMETER Fig. 6-32A
M802ALT.A	6	AMMETER: 0-1.5 amp and 0-300 ma, 5.0 v, white face with black markings, mfr 89661, dwg 342C657H03.	PA CATHODE CURRENT Fig. 6-32A
M803ALT.A	6	VOLTMETER: 0-2 kv and 0-500 v, 1.0 ma, white face with black markings, mfr 89661, dwg 342C657H01.	HV PLATE METER Fig. 6-32A
M805ALT.A	6	WATTMETER: 0-600 w and 120% modulation, 100 μa, white face with black markings, mfr 89661, dwg 342C657H02.	POWER OUTPUT Meter Fig. 6-32A
Q803	6	TRANSISTOR: Medium power, germanium transistor, −40 v breakdown voltage, mfr 96214, type 2N1039.	SWR Alarm Fig. 6-33A
Q804	6	TRANSISTOR: Germanium crystal, PNP type, 3 terminals, mfr 24454, type 2N396.	SWR Alarm Fig. 6-33A
R806ALT.A	6	RESISTOR, FIXED, COMPOSITION: 1800 ohms ±10%, 1W, RC32GF182K, spec MIL-R-11.	Grid Resistor V802 Fig. 6-31
R807ALT.A	6	RESISTOR, FIXED, COMPOSITION: 180 ohms ±10%, 2W, RC42GF181K, spec MIL-R-11.	Cathode Resistor V802 Fig. 6-31
R808ALT.A	6	RESISTOR, FIXED, COMPOSITION: 27,000 ohms ±10%, 2W, RC42GF273K, spec MIL-R-11.	Voltage Divider Screen V802 Fig. 6-31
R830ALT.A	6	RESISTOR, FIXED, COMPOSITION: 330 ohms ±10%, 1 w, RC32GF331K, spec MIL-R-11.	Directional Coupler Fig. 6-33A
R831ALT.A	6	RESISTOR, VARIABLE, COMPOSITION: 500 ohms ±10%, 2 w, RV4LAYSA501A, spec MIL-R-94.	RF Balance Fig. 6-33A
R832ALT.A	6	Same as R830ALT.A.	Directional Coupler Fig. 6-33A
R833ALT.A	6	RESISTOR, FIXED, COMPOSITION: 39,000 ohms ±10%, ½ w, RC20GF393K, spec MIL-R-11. Same as R302.	Plate to Grid of V802 Fig. 6-31
R843ALT.A	6	RESISTOR, FIXED, FILM: 196 ohms ±1%, ½ w, RN70B1960F, spec MIL-R-11. Same as R397.	Directional Coupler Fig. 6-33A
R844ALT.A	6	RESISTOR, FIXED, COMPOSITION: 1000 ohms ±10%, 1 w, RC32GF102K, spec MIL-R-10509. Same as R501.	Directional Coupler Fig. 6-33A
R845ALT.A	6	Same as R844ALT.A.	Directional Coupler Fig. 6-33A
R848	6	Same as R830ALT.A.	
R854ALT.A	6	RESISTOR, FIXED, COMPOSITION: 10,000 ohms ±10%, ½ w, RC20GF103K, spec MIL-R-11. Same as R310.	Modulation Monitor Filter Fig. 6-33

SUPPLEMENTARY TABLE 7-1A. RADIO TRANSMITTING SET AN/WRT-2, SUPPLEMENTARY MAINTENANCE PARTS LIST—C ntinu d

AMPLIFIER, RADIO FREQUENCY AM-2121/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
R858ALT.A	6	RESISTOR, FIXED, COMPOSITION: 680 ohms ±10%, ½ w, RC20GF681K, spec MIL-R-11. Same as R709.	Modulation Monitor Divider Fig. 6-33A
R864ALT.A	6	Same as R831.	PA Overload Fig. 6-33A
R869ALT.A	6	RESISTOR, FIXED, COMPOSITION: 8200 ohms ±10%, 2 w, RC42GF822K, spec MIL-R-11.	PA Grid Fig. 6-32
R880	6	RESISTOR, VARIABLE: Wirewound, 12.5W, 50 ohms ±10%, 0.88 in. dia, 1.17 in. lg, overall, 0.25-32 thd mounting bushing, 3 solder lug terminals mfr 44655, type E-50-L01.	Tube −1 Cathode Bias Adj. Fig. 6-32A
R881	6	Same as R880.	Tube −2 Cathode Bias Adj. Fig. 6-32A
R882	6	Same as R880.	Tube −3 Cathode Bias Adj. Fig. 6-32A
R883	6	Same as R880.	Tube −4 Cathode Bias Adj. Fig. 6-32A
R895	6	Same as R831ALT.A	Cathode Current Overload Fig. 6-33A
R896	6	RESISTOR, VARIABLE, COMPOSITION: 25,000 ohms ±10%, 2 w, RV4LAYSA253A, spec MIL-R-94.	PA Overload Set Fig. 6-33A
R897	6	Same as R888.	Bias Resistor Q804 Fig. 6-33A
R898	6	Same as R854ALT.A	Collector Load Q804 Fig. 6-33A
R899	6	RESISTOR, FIXED, COMPOSITION: 15,000 ohms ±10%, ½ w, RC20GF153K, spec MIL-R-11. Same as R660.	D.C. Coupling Q804 and Q803 Fig. 6-33A
S801		SWITCH, ROTARY: 2 position, 2 pole, non-shorting type contacts, mfr 89661, dwg 335C923H03.	Meter Switch M801 Fig. 6-32A
S802		SWITCH, WAFER: 1 section, 5 position, non-shorting type contacts, mfr 89661, dwg 341C670H01.	Meter Switch M802 Fig. 6-32A
S803		SWITCH, WAFER: 1 section, 3 position, non-shorting type contacts, mfr 89661, dwg 341C669H01.	Meter Switch M803 Fig. 6-32A
S806ALT.A	6	SWITCH, ROTARY: 2 section, 25 terminals, panel mounted, mfr 89661, dwg 239B041H01.	Antenna Coupler Control Fig. 6-32A
XDS804		Not Used.	
XDS805	6	LIGHT INDICATOR: 28 v accommodates T-3¼ lamp, plain red lens, LH62BR2, spec MIL-L-3661. Same as XDS207.	For DS805 Fig. 6-33A
XDS806 thru XDS899		Not Used.	
C980	6	Same as C804.	RF Bypass Fig. 6-33A
C989		Not Used.	
C989ALT.A	6	CAPACITOR, FIXED, MICA DIELECTRIC: 470 μμf ±10%, 500 v dc working, CM20B471K, spec MIL-C-5. Same as C357.	Reflectometer RF Bypass Fig. 6-33A
C990	6	CAPACITOR, FIXED, ELECTROLYTIC: 40 μf −15 +50%, 30 v dc working, CL44B4400TP1, spec MIL-C-3965. Same as C102.	Surge Capacitor for K810 Fig. 6-33A
C991 thru C998		Not Used.	
C999		Not Used.	
E903		Not Used.	
E904	6	Same as E811.	Wiring Tie Point Fig. 6-33A
E905	6	Same as E811.	Wiring Tie Point Fig. 6-33A
E906		SHIELD, ELECTRON TUBE: Heat dissipating, S0966, spec MIL-S-19786.	Tube Shield for V951
MP907ALT.A	14	CHAIN, ROLLER: 86 pitches 3/16 in. w, side flanged, stainless steel, mfr 89661, dwg 152A046H12.	Drive Chain Fig. 5-44
MP908ALT.A	6	CHAIN, ROLLER: 98 pitches, 3/16 in. pitches, 5/32 in. wide, side flanged, stainless steel, mfr 89661, dwg 152A046H11.	Drive Chain Fig. 5-44
R917ALT.A	6	RESISTOR, FIXED, COMPOSITION: 680 ohms ±10%, ½ w, RC20GF681K, spec MIL-R-11. Same as R709.	Current Limiting CR810 Fig. 6-33A

SUPPLEMENTARY TABLE 7-1A. RADIO TRANSMITTING SET AN/WRT-2, SUPPLEMENTARY MAINTENANCE PARTS LIST—Continued

AMPLIFIER, RADIO FREQUENCY AM-2121/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
R918	5	Same as R830ALT.A	Voltage Divider SWR alarm Fig. 6-33
R920	5	Same as R854ALT.A.	Protection for Q801 base Fig. 6-33
R920ALT.A	6	RESISTOR, FIXED, COMPOSITION: 1500 ohms ±10%, ½ w, RC20GF152K, spec MIL-R-11.	Voltage Comparator Circuit Fig. 6-33A
R924ALT.A	6	Same as R917ALT.A.	Current Limiting CR805 Fig. 6-33A
R925	5	Same as R830ALT.A	Emitt r Bias Resistor Q801 Fig. 6-33
R948	6	Same as R808ALT.A.	Voltage Divider Screen V802 Fig. 6-32A
R956	6	RESISTOR, FIXED, FILM: 121 ohms ±1%, ½ watt; RN70B1210F, spec MIL-R-10509.	Relay K810A Bypass Fig. 6-32A
R957	6	RESISTOR, FIXED, FILM: 3160 ohms ±1%, ½ watt, RN70B3161F, spec MIL-R-10509.	Series Resistor M805 Fig. 6-32A
MP1074		SPRING, HELICAL COMPRESSION: 8 turns of 0.128 in dia. wire, 3¾ in. lg, 11.2 lbs force required to close spring, mfr 89661, dwg 230B899H02.	Retains Capacitor
MP1075		GEAR, SPUR: 46 teeth, 64 pitch, 20 deg pressure angle, mfr 89661, dwg 239B136H01.	Drive Gear
MP1076		Same as MP1075.	
MP1077		SHAFT: Stainless steel, 1 in. lg. 0.2497 in. dia., mfr 89661, dwg 228B315H13.	Drive Gear Transmits Rotation
MP1078		SHAFT: Stainless steel, 1 7/16 in. lg, 0.2497 in. dia, mfr 89661, dwg 228B315H14.	Transmits Rotation
MP1126		RETAINER, ELECTRON TUBE: 1.593 in. clamp dia, 0.8125 in. w, w/o holding spurs, mfr 91506, type 1003-2.	Tube Clamp for V801
MP1127		Same as MP1126.	Tube Clamp for V801

OSCILLATOR, RADIO FREQUENCY O-581/WRT-2

C1208ALT.A	14	CAPACITOR, FIXED, MICA DIELECTRIC: 20 μμf ±10%, 500 v dc working, CM20B220K, spec MIL-C-5.	FL1201 Termination Fig. 6-34
C1225ALT.A	14	CAPACITOR, FIXED, MICA: 100 μμf ±10%, 500 v dc working, CM20B101K, spec MIL-C-5.	T1206 Tuning Fig. 6-34
C1237ALT.A	14	CAPACITOR, FIXED, MICA DIELECTRIC: 27 μμf ±10%, 500 v dc working, CM20B270K, spec MIL-C-5.	T1209 Tuning Fig. 6-34
C1241ALT.A	14	CAPACITOR, FIXED, MICA DIELECTRIC: 390 μμf ±10%, 500 v dc working, CM20B391K, spec MIL-C-5.	T1210 Tuning Fig. 6-34
C1242ALT.A	14	Same as C1241ALT.A.	T1211 Tuning Fig. 6-34
C1245ALT.A	14	Same as C1208ALT.A.	T1212 Tuning Fig. 6-34
C1248ALT.A	14	Same as C1208ALT.A.	T1213 Tuning Fig. 6-34
C1253		CAPACITOR, FIXED, MICA DIELECTRIC: 100 μμf ±10%, 500 v dc working, CM20B101K, spec MIL-C-5.	T1214 Tuning Fig. 6-34
C1261	14	Same as C323.	Filament Filter V1201
C1262	14	Same as C323.	Filament Filter V1201
C1263	14	Same as C323.	Filament Filter V1202
C1264	14	Same as C323.	Filament Filter V1202
C1265	14	Same as C323.	Bypass T1213 Fig. 6-34A
C1266	14	Same as C323.	Bypass T1209 Fig. 6-34A

SUPPLEMENTARY TABLE 7-1A. RADIO TRANSMITTING SET AN/WRT-2, SUPPLEMENTARY MAINTENANCE PARTS LIST—Continued

OSCILLATOR, RADIO FREQUENCY O-581/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
C1267	14	Same as C323.	Bypass Cathode V1208 Fig. 6-43A
C1268	14	Same as C323.	Bypass 6.3 V AC Fig. 6-43A
C1269	14	Same as C323.	Bypass 6.3 V AC Fig. 6-43A
C1270 thru C1299		Not Used.	
E1201ALT.A	14	SHIELD, ELECTRON TUBE: Heat dissipating, R0966, spec MIL-S-19786.	Tube Shield for V1201
E1202ALT.A	14	Same as E1201ALT.A.	Tube Shield for V1202
E1204ALT.A	14	Same as E1202ALT.A.	Tube Shield for V1204
E1205ALT.A	14	SHIELD ELECTRON TUBE: Heat dissipating, R0762, spec MIL-S-19786.	Tube Shield for V1205
E1206ALT.A	14	Same as E1205ALT.A.	Tube Shield for V1206
E1209ALT.A	14	Same as E1205ALT.A.	Tube Shield for V1209
E1220	14	PRINTED CIRCUIT BOARD: C/O board with 24 stud type terminals and 153 eyelets, mfr 89661, dwg 345C936G03.	500 KC Modulator Board Fig. 6-34A
E1221	14	PRINTED CIRCUIT BOARD: C/O board, 3 stud type terminals and 12 eyelets, mfr 89661, dwg 345C938G02.	Keying Voltage Divider Board Fig. 6-34A
E1222	14	PRINTED CIRCUIT BOARD: C/O board 11 stud type terminals and 52 eyelets, mfr 89661, dwg 345C942G02.	LSB Modulator Board Fig. 6-34A
E1223	14	PRINTED CIRCUIT BOARD: C/O board, 10 stud type terminals and 52 eyelets, mfr 89661, dwg 345C934G02.	USB Modulator Board Fig. 6-34A
E1224	14	PRINTED CIRCUIT BOARD: C/O board, 17 stud type terminals and 44 eyelets, mfr 89661, dwg 345C940G02.	Voltage Divider Board Fig. 6-34A
K1201ALT.A	6	RELAY, ARMATURE: DPDT, 26.5 v dc, 675 ohms, 1.5 w, at 25°C, hermetically sealed, mfr 71482, type RP7640.	Sideband Level Selector Fig. 6-34
K1201ALT.B	14	RELAY, ARMATURE: DPDT, 26.5 v dc, 675 ohms, 1.75 watt at 25°C, hermetically sealed, mfr 71482, tvpe RP7640-G80.	Sideband Level Selector Fig. 6-34
R1208ALT.A	14	RESISTOR, VARIABLE, COMPOSITION: Dual section, 1000 ohms ±10% each section, 2 watt, mfr 89661, dwg 327C920H24.	Sideband Selector Fig. 6-34
R1242ALT.A	14	RESISTOR, FIXED, COMPOSITION: 22,000 ±10%, ½ watt, RC20GF223K, spec MIL-R-11.	Input Divider for V1204
R1256ALT.A	14	RESISTOR, VARIABLE, COMPOSITION: 100,000 ohms ±10%, ½ watt, RV6 LAYSA104A, spec MIL-R-94.	2.0 MC Level Set Fig. 6-34
R1258ALT.A	14	Same as R1242ALT.A.	V1207B Voltage Divider Fig. 6-34
R1264ALT.A	14	Same as R1246.	Grid Resistor V1208 Fig. 6-34A
R1272ALT.A	14	RESISTOR, FIXED, COMPOSITION: 5600 ohms ±10%, ½ watt, RC20GF562K, spec MIL-R-11. Same as R653.	USB Filter Output Divider Fig. 6-34A
R1273	14	Same as R1272.	LSB Filter Output Divider Fig. 6-34A
R1274	14	Same as R1272.	Grid Resistor V1207A Fig. 6-34A
R1275	14	Same as R1204.	Decoupling Plate V1208 Fig. 6-43A
R1276	14	Same as R1204.	Decoupling Plate V1206 Fig. 6-43A
R1277 thru R1299		Not Used.	
S1201ALT.A	14	SWITCH, ROTARY: 1 section, 5 position 30 deg throw, shorting type contacts, mfr 89661, dwg 239B875H01.	Carrier Reinsert Fig. 6-34
T1208ALT.A	14	TRANSFORMER, RADIO FREQUENCY: 2 Mc frequency, 25 v working, 1 primary winding, 1 secondary winding, mfr 89661, dwg 377A720H01.	500 KC Modulator Input Fig. 6-34
XV1201-ALT.A	14	SOCKET, ELECTRON TUBE: 9 pin miniature, phenolic body, for 1/16 in. thk printed board, mfr 71785, type 44P24429.	For V1201
XV1202-ALT.A	14	Same as XV1201ALT.A.	For V1202

SUPPLEMENTARY TABLE 7-1A. RADIO TRANSMITTING SET AN/WRT-2, SUPPLEMENTARY MAINTENANCE PARTS LIST—C ntinued

OSCILLATOR, RADIO FREQUENCY O-581/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
XV1204-ALT.A	14	Same as XV1201ALT.A.	For V1204
XV1205-ALT.A	14	SOCKET, ELECTRON TUBE: 7 pin miniature, phenolic body, for 1/16 in. thk, printed board, mfr 71785, type 53P24400.	For V1205
XV1206-ALT.A	14	Same as XV1205ALT.A.	For V1206
XV1208-ALT.A	14	SOCKET, ELECTRON TUBE: 7 pin miniature, plastic body, TS102P02, spec JAN-S-28.	For V1208
XV1209-ALT.A	14	Same as XV1205ALT.A.	For V1209

CONTROL, ELECTRICAL FREQUENCY C-2764/WRT-2

A1301	6	PROPORTIONAL OVEN AND CONTROL UNIT: C/O oven, heater element and electric control, furnished in a matched set, mfr 89661, dwg 378A349G01.	
C1363	14	CAPACITOR, FIXED, PAPER DIELECTRIC: 10,000 μμf ±10%, CP09A1KB103K, spec MIL-C-25.	Coupling Fig. 5-25
C1364	6	CAPACITOR, FIXED, MICA DIELECTRIC: 470 μμf ±5%, 300 v dc working, CM15C471J, spec MIL-R-5.	500 KC Coupling to J1302 Fig. 6-42A
CR1346	6	SEMICONDUCTOR DEVICE DIODE: Mfr 96214, type IN756A. Same as CR816.	Voltage Reference Diode Fig. 5-26
E1304ALT.A	6	PRINTED CIRCUIT ASSEMBLY: 1 MC oscillator, mfr 89661, dwg 378A349H03.	1 MC Oscillator Fig. 6-42
J1305	6	CONNECTOR, RECEPTACLE, ELECTRICAL: Pin type, mfr 71468, type MC14E8-3PN(F79).	Mates with P1305
P1305	6	CONNECTOR, PLUG, ELECTRICAL: Socket type, copper alloy contacts with gold plate finish, mfr 71468, type MC11E8-3SN(F79).	Mates with J1305
Q1305ALT.A	6	TRANSISTOR: High frequency, micro alloy type germanium; mfr 87217, type T1720.	Binary No. 1 Fig. 5-25
Q1306ALT.A	6	Same as Q1305ALT.A.	Binary No. 1 Fig. 5-25
Q1307ALT.A	6	Same as Q1305ALT.A.	Binary No. 2 Fig. 5-26
Q1308ALT.A	6	Same as Q1305ALT.A.	Binary No. 2 Fig. 5-26
Q1313ALT.A	6	Same as Q1305ALT.A.	Binary No. 3 Fig. 5-26
Q1314ALT.A	6	Same as Q1305ALT.A.	Binary No. 3 Fig. 5-26
Q1315ALT.A	6	Same as Q1305ALT.A.	Feedback Counter Fig. 5-25
Q1316ALT.A	6	Same as Q1305ALT.A.	Feedback Counter Fig. 5-25
R1321ALT.A	6	RESISTOR, FIXED, COMPOSITION: 51 ohms ±5%, 1/2 watt, RC20G510J, spec MIL-R-11. Same as R667.	Emitter Resistor Q1306, Q1305 Fig. 5-25
R1345ALT.A	6	Same as R693.	Emitter Resistor Q1307, Q1308, Fig. 5-26
R1355ALT.A	6	Same as R0693.	Emitter for Q1313 and Q1314 Fig. 5-26
R1364ALT.A	6	Same as R0693.	
Z1301ALT.A	6	PROPORTIONAL OVEN: Mfr 89661, dwg 378A349H01. Listed for reference only.	Part of A1301 Fig. 6-42
Z1302ALT.A	6	OVEN CONTROL UNIT: Mfr 89661, dwg 378A349H02. Listed for reference only.	Part of A1301 Fig. 6-42

SUPPLEMENTARY TABLE 7-1A. RADIO TRANSMITTING SET AN/WRT-2, SUPPLEMENTARY MAINTENANCE PARTS LIST—Continu d

AMPLIFIER-POWER SUPPLY AM-2122/WRT-2

REFERENCE DESI NATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
C1406 thru C1419		Used on unit serial 1 thru 122.	
C1420ALT.A	4	CAPACITOR, FIXED ELECTROLYTIC: 2.5 μf +75 −15%, 50 v dc, mfr 56289, type 113D255C7050D1.	Coupling to Q1412 Fig. 5-23A
C1421ALT.A	10	Same as C1405.	Base Bypass Q1413 Fig. 5-23A
C1422	10	CAPACITOR, FIXED, ELECTROLYTIC: 5 μf −15 +50%, 50 v dc, CL44BJ050TP1, spec MIL-C-3965.	Input Coupling Q1415 Fig. 5-23A
C1423	10	Same as C512.	Input Coupling Q1419 Fig. 5-23B
C1424	10	Same as C512.	Output Coupling Q1419 Fig. 5-23B
C1425	10	Same as C1422.	Input Coupling Q1416 Fig. 5-23A
C1426	10	CAPACITOR, FIXED, PAPER DIELECTRIC: 47,000 μμf ±10%, 200 v dc, working, CP05A1EC473K, spec MIL-C-25.	Input Coupling Q1417 Fig. 5-23A
C1427	10	Same as C1407.	Collector Decoupling E1408 Fig. 5-23A
C1428	10	Same as C1426.	Output Coupling Q1417 Fig. 5-32A
C1429	10	Same as C512.	Input Filter Q1418 Fig. 5-23A
C1430	10	Same as C512.	Input Coupling Q1414 Fig. 5-23B
C1431	10	Same as C1405.	Base Bypass Q1420 Fig. 5-23B
C1432	10	Same as C1422.	Input Coupling Q1422 Fig. 5-23B
C1433	10	Same as C512.	Input Coupling Q1426 Fig. 5-23B
C1434	10	Same as C512.	Output Coupling Q1426 Fig. 5-23B
C1435	10	Same as C1422.	Output Coupling Q1422 Fig. 5-23B
C1436	10	Same as C1426.	Output Coupling Q1423 Fig. 5-23B
C1437	10	Same as C1407.	Collector Decoupling E1407 Fig. 5-23B
C1438	10	Same as C1426.	Output Coupling Q1424 Fig. 5-23B
C1439	10	Same as C512.	Input Filter Q1425 Fig. 5-23B
C1440	10	Same as C512.	Output Coupling Q1421 Fig. 5-23B
C1441	4	Same as C1407.	Emitter Bypass for Q1411 Fig. 5-23A
C1442	4	CAPACITOR, FIXED, PAPER DIELECTRIC: 33,000 μμf ±10%, 100 v dc, CP05A1EB333K, spec MIL-C-25.	Phase Shifting Network Fig. 5-23A
C1443	4	Same as C1442.	Phase Shifting Network Fig. 5-23A
C1444	4	Same as C1442.	Phase Shifting Network Fig. 5-23A
C1445	4	Same as C1442.	Phase Shifting Network Fig. 5-23A
C1446 thru C1499		Not Used.	
CR1410 thru CR1418		Used on unit serial 1 thru 122.	
CR1420	10	Same as CR521.	AGC Detector E1408 Fig. 5-23A

SUPPLEMENTARY TABLE 7-1A. RADIO TRANSMITTING SET AN/WRT-2, SUPPLEMENTARY MAINTENANCE PARTS LIST—Continued

AMPLIFIER-POWER SUPPLY AM-2122/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATIN FUNCTION
CR1421	10	Same as CR521.	
CR1422	10	SEMICONDUCTOR DEVICE, DIODE: Glass, hermetically sealed, 4.7 V ±5%, mfr 01295, type 1N750A.	AGC Detector E1407 Fig. 5-23B Test Oscillator Fig. 5-23A
CR1423 thru CR1499		Not Used.	
E1406		Not Used.	
E1407	10	AGC PRINTED CIRCUIT: Mfr 89661, dwg 344C488G01.	AGC Amplifi r LSB Fig. 5-23B
E1408	10	AGC PRINTED CIRCUIT: Mfr 89661, dwg 344C486G01.	AGC Amplifier USB Fig. 5-23A
E1409	10	AUDIO AMPLIFIER, PRINTED CIRCUIT: Mfr 89661, dwg 344C490G01.	Audio Amplifier Fig. 5-23B
E1410		Not Used.	
E1411	10	BOARD, COMPONENT MOUNTING: Mfr 89661, dwg 239B118G02.	Resistor Board Fig. 6-45A
E1412	4	BOARD, PRINTED CIRCUIT: C/O capacitors, resistors, diodes, transistors, a transformer and associated hardware, mfr 89661, dwg 344C954G01.	Test Oscillator Fig. 5-23A
E1413 thru E1499		Not Used.	
Q1403 thru Q1410		Used on unit serial 1 thru 122.	
Q1413	10	Same as Q1401.	
Q1414	10	Same as Q1403.	Gain Control E1408 Fig. 5-23A
Q1415	10	Same as Q1401.	Sidetone Amplifier E1409 Fig. 5-23B
Q1416	10	Same as Q1401.	Audio Amplifier E1408 Fig. 5-23A
Q1417	10	Same as Q1401.	Audio Amplifier E1408 Fig. 5-23A
Q1418	10	Same as Q1401.	Audio Amplifier E1408 Fig. 5-23A
Q1419	10	Same as Q1401.	D.C. Amplifier E1408 Fig. 5-23A
Q1420	10	Same as Q1401.	Audio Amplifier E1409 Fig. 5-23B
Q1421	10	Same as Q1403.	Gain Control E1407 Fig. 5-23B
Q1422	10	Same as Q1401.	Sidetone Amplifier E1409 Fig. 5-23B
Q1423	10	Same as Q1401.	Audio Amplifier E1407 Fig. 5-23B
Q1424	10	Same as Q1401.	Audio Amplifier E1407 Fig. 5-23B
Q1425	10	Same as Q1401.	Audio Amplifier E1407 Fig. 5-23B
Q1426	10	Same as Q1401.	D.C. Amplifier E1407 Fig. 5-23B
Q1427 thru Q1499		Not Used.	Audio Amplifier E1409 Fig. 5-23B
R1426 thru R1453		Used on unit serial 1 thru 122.	
R1455 thru R1462		Used on unit serial 1 thru 154.	

SUPPLEMENTARY TABLE 7-1A. RADIO TRANSMITTING SET AN/WRT-2, SUPPLEMENTARY MAINTENANCE PARTS LIST—Continued

AMPLIFIER-POWER SUPPLY AM-2122/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
R1483ALT.A	6	Same as R1403.	USB Sidetone Series Resistor Fig. 6-45
R1484ALT.A	6	Same as R1403.	
R1485	10	RESISTOR, FIXED, COMPOSITION: 47 ohms ±10%, ½ w, RC20GF470K, spec MIL-R-11. Same as R397.	Voltage Divider FL1401 Output Fig. 6-45A
R1486	10	Same as R1427.	Input Line Termination E1408 Fig. 5-23A
R1487	10	RESISTOR, FIXED, COMPOSITION: 330,000 ohms ±10%, ½ w, RC20GF334K, spec MIL-R-11.	Voltage Divider E1408 Fig. 5-23A
R1488	10	Same as R1487.	Base Bias Q1415 Fig. 5-23A
R1489	10	Same as R1471.	Emitter Bias Q1415 Fig. 5-23A
R1490	10	RESISTOR, FIXED, COMPOSITION: 10,000 ohms ±10%, ½ w, RC20GF103K, spec MIL-R-11. Same as R310.	Collector Resistor Q1415 Fig. 5-23A
R1491	10	Same as R1437.	Collector Resistor Q1419 Fig. 5-23B
R1492	10	RESISTOR, FIXED, COMPOSITION: 150,000 ohms ±10%, ½ w, RC20GF154K, spec MIL-R-11. Same as R888.	Base Bias Q1419 Fig. 5-23B
R1493	10	Same as R1459.	Emitter Bias Q1419 Fig. 5-23B
R1494	10	Same as R1471.	Emitter Bias Q1416 Fig. 5-23A
R1495	10	RESISTOR, FIXED, COMPOSITION: 270,000 ohms ±5%, ½ w, RC20GF274J, spec MIL-R-11. Same as R518.	Base Bias Q1416 Fig. 5-23A
R1496	10	Same as R1490.	Collector Resistor Q1416 Fig. 5-23A
R1497	10	Same as R1495.	Base Bias Q1417 Fig. 5-23A
R1498	10	Same as R1490.	Collector Resistor Q1417 Fig. 5-23A
R1499	10	Same as R1471.	Emitter Bias Q1417 Fig. 5-23A
R1501	10	Same as R1403.	Collector Decoupling E1408 Fig. 5-23A
R1502	10	Same as R507.	Voltage Divider E1408 Fig. 5-23A
R1503	10	Same as R1411.	Input Filter Q1418 Fig. 5-23A
R1504	10	Same as R1409.	Voltage Divider E1408 Fig. 5-23A
R1505	10	Same as R518.	Collector Resistor Q1418 Fig. 5-23A
R1506	10	Same as R518.	Base Bias Q1414 Fig. 5-23B
R1507	10	RESISTOR, FIXED, COMPOSITION: 68 ohms ±10%, ½ w, RC20GF680K, spec MIL-R-11. Same as R403.	Emitter Bias Q1414 Fig. 5-23B
R1508	10	Same as R1485.	Voltage Divider FL1401 Output Fig. 6-45A
R1509	10	Same as R1427.	Input Line Termination E1407 Fig. 5-23B
R1510	10	Same as R1487.	Voltage Divider E1407 Fig. 5-23B
R1511	10	Same as R1487.	Base Bias Q1422 Fig. 5-23B
R1512	10	Same as R1471.	Emitter Bias Q1422 Fig. 5-23B
R1513	10	Same as R1490.	Collector Resistor Q1422 Fig. 5-23B
R1514	10	Same as R1437.	Collector Resistor Q1426 Fig. 5-23B

SUPPLEMENTARY TABLE 7-1A. RADIO TRANSMITTING SET AN/WRT-2, SUPPLEMENTARY MAINTENANCE PARTS LIST—C ntinued

MOUNTING, VIBRATION AND SHOCK MT-2170A/WRT (Set Serials 445 and up)

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
R1515	10	Same as R1492.	Base Bias Q1426 Fig. 5-23B
R1516	10	Same as R1459.	Emitter Bias Q1426 Fig. 5-23B
R1517	10	Same as R1471.	Emitter Bias Q1423 Fig. 5-23B
R1518	10	Same as R518.	Base Bias Q1423 Fig. 5-23B
R1519	10	Same as R1490.	Collector Resistor Q1423 Fig. 5-23B
R1520	10	Same as R1497.	Base Bias Q1424 Fig. 5-23B
R1521	10	Same as R1490.	Collector Resistor Q1424 Fig. 5-23B
R1522	10	Same as R1471.	Emitter Resistor Q1424 Fig. 5-23B
R1523	10	Not Used.	
R1524	10	Same as R1403.	Collector Decoupling E1407 Fig. 5-23B
R1525	10	Same as R507.	Voltage Divider E1407 Fig. 5-23B
R1526	10	Same as R1411.	Input Filter Q1425 Fig. 5-23B
R1527	10	Same as R1409.	Voltage Divider E1407 Fig. 5-23B
R1528	10	Same as R518.	Collector Resistor Q1425 Fig. 5-23B
R1529	10	Same as R518.	Base Bias Q1421 Fig. 5-23B
R1530	10	Same as R1507.	Emitter Bias Q1421 Fig. 5-23B
R1531	10	RESISTOR, FIXED, FILM: 68,100 ohms ±1%, ⅛ w, RN60B6812F, spec MIL-R-10509.	Biasing Resistor for Q1411 Fig. 5-23A
R1532	10	RESISTOR, FIXED, COMPOSITION: 2200 ohms ±5%, ½ w, RC20GF222J, spec MIL-R-11.	Biasing Resistor for Q1411 Fig. 5-23A
R1533	10	RESISTOR, FIXED, FILM: 5620 ohms ±1%, ⅛ w, RN60B5621F, spec MIL-R-10509.	Collector Resistor For Q1411 Fig. 5-23A
R1534	10	RESISTOR, FIXED, FILM: 1540 ohms ±1%, ⅛ w, RN60B1541F, spec MIL-R-10509.	Biasing Resistor For Q1411 Fig. 5-23A
R1535	10	RESISTOR, FIXED, COMPOSITION: 12,000 ohms ±5%, ½ w, RC20GF123J, spec MIL-R-11.	Phase Shifting Network Fig. 5-23A
R1536	10	RESISTOR, FIXED, COMPOSITION: 5600 ohms ±5%, ½ w, RC20GF562J, spec MIL-R-11.	Phase Shifting Network Fig. 5-23A
R1537	10	Same as R1535.	Phase Shifting Network Fig. 5-23A
R1538	10	Same as R1428.	Biasing Resistor For Q1412 Fig. 5-23A
R1539	10	Same as R1428.	Biasing Resistor For Q1412 Fig. 5-23A
R1540	6	Same as R1403.	Loading Fig. 6-45A
R1541	6	Same as R1403.	Loading Fig. 6-45A
R1542 thru R1599		Not Used.	

MOUNTING, VIBRATION AND SHOCK MT-2170A/WRT (Set Serials 445 and up)

3600 SERIES.		MOUNTING, VIBRATION AND SHOCK: Resilient members stainless steel, rigid members stainless steel plate, 930 to 975 lbs at 0.125 in. deflection load rating, natural frequency 7 cycles per second, 19.62 in. w, 29.25 in. d, and 72.0 in. h overall, mfr 51116. Model W970-3, navy type MT-2170A-WRT. Used on unit serial 445 and up.	

SUPPLEMENTARY TABLE 7-1A. RADIO TRANSMITTING SET AN/WRT-2, SUPPLEMENTARY MAINTENANCE PARTS LIST—C ntinued

MOUNTING, VIBRATION AND SHOCK MT-2170A/WRT (Set Serials 445 and up)

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
MP3601		BASE, MOUNTING: C/O base, 2 tray assemblies, 16 springs, 16 cushions, 6 pads and necessary mounting hardware, mfr 51116, dwg W970-3SA1.	Supports Shockmounts Fig. 5-29A
MP3602		BASE, SUBASSEMBLY: Steel, mfr 51116, dwg R15832-1.	Supports Shockmounts Fig. 5-29A
MP3603		TRAY SUBASSEMBLY: C/O steel tray and inserts, mfr 51116, dwg R15838-1.	Supports Shockmounts Fig. 5-29A
MP3604		TRAY SUBASSEMBLY: C/O steel tray and inserts, mfr 51116, dwg R15838-2.	Supports Shockmounts Fig. 5-29A
MP3605		BOLT: Steel, ½-13 thds hexagon head, 0.73 in. across flats, 0.75 in. lg, cadmium plated, mfr 51116, type H1157-21. Same as MP1105.	Retains Parts Fig. 5-29A
MP3606		WASHER, FLAT: Stainless steel, 2.06 in. od, 0.516 in. id, 0.188 in. thk, mfr 51116, dwg STD 1306-267. Same as MP1106.	Thrust Washer Fig. 5-29A
MP3607		WASHER, FLAT: Stainless steel, 2.06 in. od, 1.172 in. id, 0.062 in. thk, mfr 51116, dwg STD 1306-269. Same as MP1107.	Thrust Washer Fig. 5-29A
MP3608		STRIP, BRONZE: Phosphor bronze, cadmium plated, mfr 51116, dwg STD 1447-9.	Bonding Strip Fig. 5-29A
MP3609		NUT, PLAIN, HEXAGON: Cadmium plated brass, 6-32 thd, mfr 51116, dwg STD 1492-1.	Retains Parts Fig. 5-29A
MP3610		SLEEVE, SPACER: Steel, 1.10 in. id, 1.55 in. od, 0.82 in. lg, mfr 51116, dwg R15418-3.	Mounting Spacer Fig. 5-29A
MP3611		WASHER, FLAT: Stainless steel, 2.88 in. lg, 1.188 in. id, 0.022 in. thk, mfr 51116, dwg STD 1306-212.	Thrust Washer Fig. 5-29A
MP3612		PAD, SHOCKMOUNT: Stainless steel knitted wire, 2.438 in. od, 1.215 in. id, 0.50 in. thk, mfr 51116, dwg MP797.	Shockmount and Damping Fig. 5-29A
MP3613		PAD, SHOCKMOUNT: Stainless steel knitted wire, 2.875 in. od, 1.250 in. id, 0.33 in. thk, mfr 51116, dwg MP798.	Shockmount and Damping Fig. 5-29A
MP3614		PAD, SHOCKMOUNT: Stainless steel knitted wire, 3.812 in. od, 3.344 in. id, 1.594 in. thk, mfr 51116, dwg MP796.	Shockmount and Damping Fig. 5-29A
MP3615		SPRING, HELICAL, COMPRESSION: 0.135 in. dia stainless steel wire, 5.20 in. free height, 2.22 in. od, mfr 51116, dwg S222.	Shockmount Fig. 5-29A
MP3616		PAD, SHOCKMOUNT: Stainless steel knitted wire, 1.870 in. od, 2.879 in. h, mfr 51116, dwg MC793.	Shockmount and Damping Fig. 5-29A
MP3617		STABILIZER: C/O base, frame, 8 pads, 4 springs and necessary mounting hardware, mfr 51116, dwg W970-3SA2.	Stabilizes Radio Equipment Fig. 5-29A
MP3618		BASE, MOUNTING: C/O base and riveted frame assembly, mfr 51116, dwg R15840-1.	Shockmount Support Fig. 5-29A
MP3619		BRACKET, MOUNTING: C/O bracket and inserts, mfr 51116, dwg R15747-1.	Secures Frame Fig. 5-29A
MP3620		BRACKET, MOUNTING: C/O bracket and inserts, mfr 51116, dwg R15841-1.	Secures Frame Fig. 5-29A
MP3621		NUT, SELF-LOCKING, HEXAGON: Steel, cadmium plated, ⅝-11 thds, mfr 51116, type H1024-18.	Retains Parts Fig. 5-29A
MP3622		BOLT: Steel, cadmium plated, hexagon head, ⅝-11 thds, 10 in. lg, mfr 51116, type H1157-36.	Retains Parts Fig. 5-29A
MP3623		SLEEVE, SPACER: Steel, 1.50 in. od, 0.650 in. id, 4.109 in. lg, cadmium plated, mfr 51116, dwg STD 1566-108.	Mounting Spacer
MP3624		WASHER, FLAT: Steel, 2.38 in. od, 0.656 in. id, 0.125 in. thk, cadmium plated, mfr 51116, dwg STD 1306-248.	Thrust Washer Fig. 5-29A
MP3625		WASHER, FLAT: Steel, 3.176 in. od, 2.188 in. id, 0.125 in. thk, cadmium plated, mfr 51116, dwg STD 1306-246.	Thrust Washer Fig. 5-29A
MP3626		RING, RETAINING: Spring steel, mfr 51116, type H1226-2.	Retains Parts Fig. 5-29A
MP3627		SPRING, HELICAL, COMPRESSION: Conical, 0.135 in. dia stainless steel wire, 2.75 in. h, 2.969 in. od one end, 1.562 in. od one end, mfr 51116, dwg S223.	Shockmount Fig. 5-29A
MP3628		PAD, SHOCKMOUNT: Stainless steel knitted wire, 3.125 in. od, 1.438 in. id, 1.0 in. thk, mfr 51116, dwg MP794.	Shockmount and Damping Fig. 5-29A
MP3629		PAD, SHOCKMOUNT: Stainless steel knitted wire, 3.094 in. od, 1.719 in. id, 0.50 in. thk, mfr 51116, dwg MP799.	Shockmount and Damping Fig. 5-29A
MP3630		ANGLE SUBASSEMBLY: Steel, mfr 51116, dwg R15752-1.	Upright Spacer Fig. 5-29A
MP3631		ANGLE SUBASSEMBLY: Steel, mfr 51116, dwg R15752-2.	Upright Spacer Fig. 5-29A

SECTION 7

PARTS LIST

7-1. INTRODUCTION.

Reference designations (previously referred to as circuit symbols, reference symbols, etc.) have been assigned to identify all maintenance parts of the equipment. They are used for marking the equipment (adjacent to the part they identify) and are included on drawings, diagrams and the parts list. The letters of a reference designation indicate the kind of part (generic group), such as resistor, amplifier, electron tubes, etc. The number differentiates between parts of the same generic group. Parts of the same first major unit are numbered from 1 to 199; parts of the second 201 to 299, etc. Two consecutive series of numbers have been assigned to major units in which there are more than 100 parts of the same generic group. Sockets associated with a particular plug-in device, such as an electron tube or a fuse, are identified by a reference designation which includes the reference designation of the plug-in device. For example, the socket for fuse F201 is designated XF201.

7-2. MAINTENANCE PARTS LIST.

Table 7-1 lists all major units and their maintenance parts. The parts of each major unit are grouped together. Column 1 lists the reference series of each major unit, followed by the reference designations of the various parts in alphabetical and numerical order. Column 2 refers to the explanatory notes. Column 3 gives the name and describes the various parts. Complete information is given for all key parts (parts differing from any part previously listed in this table) and sub-key parts (parts identical with a key part but appearing for the first time for a major unit). The name and description are omitted for other parts. Howev r, reference is made to the key part or sub-key part for the data. Column 4 indicates how the part is used and gives its functional location in the equipment. It also includes the figure number of the pictorial illustration on which the part is identified.

7-3. STOCK NUMBER IDENTIFICATION AND LIST OF PARTS SUPPLIED.

Stock Number Identification Tables (SNITS) issued by the Electronics Supply Office include Federal Stock Numbers and Source Maintenance and Recoverability Codes. Therefore, reference shall be made to the SNIT for this information.

7-4. STOCK NUMBER CROSS REFERENCE.

Only federal stock numbers have been assigned to the parts in Radio Transmitting Set AN/WRT-2.

7-5. LIST OF MANUFACTURERS.

Table 7-2 lists manufacturers of parts used in Radio Transmitting Set AN/WRT-2. The first column lists the code number of the manufacturer, the second column lists the name of the manufacturer and the third lists the address of the manufacturer.

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST

CABINET, ELECTRICAL EQUIPMENT CY-2558/WRT-2

REFERENCE DESI NATION	NOTES	NAME AND DESCRIPTION	L CATING FUNCTION
100 Series		CABINET, ELECTRICAL EQUIPMENT: Steel, gray enamel finish, provides for five slide mounted drawers, includes mounted capacitors, fan, filter, relays, switches and terminal boards, wired, 24½ in. lg, 18 in. w, 71¼ in. h, mfr 89661, dwg 55C2376, Navy type. CY2558/WRT-2.	Frame Housing For AN/WRT-2
B101		FAN, AXIAL: 115 v, 50-60 cps, 320 cfm at 3400 rpm, mfr 89661, dwg 335C711H01.	Frame Blower Fig. 6-47
B102 thru B199		Not Used.	
C101		CAPACITOR, FIXED, PAPER DIELECTRIC: 1 µf ±10% 633 v dc working, CP54B1EF105K, spec MIL-C-25.	Blower Motor Capacitor Fig. 6-47
C102		CAPACITOR, FIXED, ELECTROLYTIC: 40 µf −15 +30%, 30 v dc working, CL44BH400TP, sp c MIL-C-3965.	Time Delay For K102 Fig. 6-47
C103		CAPACITOR, FIXED; CERAMIC DIELECTRIC: 10,000 µµf +100 −20%, 500 v dc working, CK63Y103Z, spec MIL-C-11015.	Filter Capacitor Fig. 6-47

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

CABINET, ELECTRICAL EQUIPMENT CY-2558/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
C104		Same as C103.	Filter Capacitor Fig. 6-47
C105		Same as C103.	Filter Capacitor Fig. 6-47
C106		Same as C103.	Filter Capacitor Fig. 6-47
C107		Same as C103.	Filter Capacitor Fig. 6-47
C108		Same as C103.	Filter Capacitor Fig. 6-47
C109		Same as C103.	Filter Capacitor Fig. 6-47
C110		Same as C103.	Filter Capacitor Fig. 6-47
C111		Same as C103.	Filter Capacitor Fig. 6-47
C112		Same as C103.	Filter Capacitor Fig. 6-47
C113		Same as C103.	Filter Capacitor Fig. 6-47
C114		Same as C103.	Filter Capacitor Fig. 6-47
C115		Same as C103.	Filter Capacitor Fig. 6-47
C116		Same as C103.	Filter Capacitor Fig. 6-47
C117		Same as C103.	Filter Capacitor Fig. 6-47
C118		Same as C103.	Filter Capacitor Fig. 6-47
C119		Same as C103.	Filter Capacitor Fig. 6-47
C120		Same as C103.	Filter Capacitor Fig. 6-47
C121		Same as C103.	Filter Capacitor Fig. 6-47
C122		Same as C103.	Filter Capacitor Fig. 6-47
C123		Same as C103.	Filter Capacitor Fig. 6-47
C124		Same as C103.	Filter Capacitor Fig. 6-47
C125		Same as C103.	Filter Capacitor Fig. 6-47
C126		Same as C103.	Filter Capacitor Fig. 6-47
C127 thru C199		Not Used.	
CP101 thru CP103		Not Used.	
CP104		ADAPTER, CONNECTOR, ELECTRICAL: Coax type, weather-proof, adapts male c to female bnc rf connectors, type UG-635/U, REB49237.	Standard Frequency Input Fig. 6-47
CP105 thru CP113		Not Used.	
CP114		ADAPTER, RADIO FREQUENCY CABLE: Bulkhead type, one male and one female contact, pressurized mfr, 74868, type 47200.	Standard Frequency Input (1mc) Fig. 6-47
CP115 thru CP199		Not Used.	

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

CABINET, ELECTRICAL EQUIPMENT CY-2558/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
E101		INSULATOR, STANDOFF MELAMINE INSULATOR: Tin coated brass terminal, mfr 81312, type 775.	Standoff Fig. 6-47
E102		Same as E101.	Standoff Fig. 6-47
E103		BOARD, MOUNTING: c/o 24 capacitors mounted on a printed board, mfr 89661, dwg 344C474G01.	Component Mounting Fig. 6-47
E104 thru E199		Not Used.	
FL101		FILTER, RADIO INTERFERENCE: 20 amp, 440 v ac, 40 db attenuation from 0.2 to 150 mc, hermetically sealed, 4 mtg holes, 6 stud type terminals, mfr 82376, type AF1232.	Line Filter Fig. 6-47
FL102 thru FL199		Not Used.	
J101		CONNECTOR, RECEPTACLE, ELECTRICAL POLARIZED: Straight box type, solid shell, socket contacts rated amp, MS3102A32-7S, spec MIL-C-5015.	Antenna Tuning Interconnection Fig. 6-47
J102		CONNECTOR, RECEPTACLE, ELECTRICAL POLARIZED: Straight box type, solid shell, 14 socket contacts rated 22 amp, MS3102A20-27S, spec MIL-C-5015.	Antenna Coupler Fig. 6-47
J103		CONNECTOR, RECEPTACLE, ELECTRICAL: Straight type, one female contact, plastic body, copper base alloy shell, UG-570/U, spec REB49190.	RF Output Fig. 6-47
J104 thru J199		Not Used.	
K101		RELAY, ARMATURE: 24 v dc coil, 3.5 w nom power, screw type terminals, mfr 35344, type 1407MX24VDC.	HV Ground Relay Fig. 6-47
K102		RELAY, ARMATURE: SPDT, 5 amp, 28 v dc, 115 v ac, 2 amp, 1000 ohms coil resistance, ±10%, 14 ma operating, hermetically sealed, mfr 78277, type 41J01000G.	Time Delay For K101 Fig. 6-47
K103 thru K199		Not Used.	
MP101		CLEANER ELEMENT: Air impingement type, aluminum, anodized, non-replaceable element, mfr 89661, dwg 54B2490.	Air Cleaner Element Fig. 5-31
MP102		BEARING, PLAIN: Flanged, 0.126 in. id, 0.1885 in. od, ¼ in. lg, mfr 89856, type F101-1.	Mounting Track Bearing Fig. 5-31
MP103		Same as MP102.	Mounting Track Bearing Fig. 5-31
MP104		Same as MP102.	Mounting Track Bearing Fig. 5-31
MP105		Same as MP102.	Mounting Track Bearing Fig. 5-31
MP106		Same as MP102.	Mounting Track Bearing Fig. 5-31
MP107		Same as MP102.	Mounting Track Bearing Fig. 5-31
MP108		Same as MP102.	Mounting Track Bearing Fig. 5-31
MP109		Same as MP102.	Mounting Track Bearing Fig. 5-31
MP110		Same as MP102.	Mounting Track Bearing Fig. 5-31
MP111		Same as MP102.	Mounting Track Bearing Fig. 5-31
MP112		Same as MP102.	Mounting Track Bearing Fig. 5-31
MP113		Same as MP102.	Mounting Track Bearing Fig. 5-31
MP114		Same as MP102.	Mounting Track Bearing Fig. 5-31
MP115		Same as MP102.	Mounting Track Bearing Fig. 5-31

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

CABINET, ELECTRICAL EQUIPMENT CY-2558/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
MP116		Same as MP102.	Mounting Track Bearing Fig. 5-31
MP117		Same as MP102.	Mounting Track Bearing Fig. 5-31
MP118		BEARING, PLAIN: Flanged, mfr 89856, type F206.	Mounting Track Bearing Fig. 5-31
MP119		Same as MP118.	Mounting Track Bearing Fig. 5-31
MP120		BEARING, THRUST: 0.203 in. id, 0.4375 in. od, 1/16 in. thk, mfr 89856, type T401.	Latch Bearing Fig. 5-31
MP121		Same as MP120.	Latch Bearing Fig. 5-31
MP122		Same as MP120.	Latch Bearing Fig. 5-31
MP123		Same as MP120.	Latch Bearing Fig. 5-31
MP124		Same as MP120.	Latch Bearing Fig. 5-31
MP125		Same as MP120.	Latch Bearing Fig. 5-31
MP126		Same as MP120.	Latch Bearing Fig. 5-31
MP127		Same as MP120.	Latch Bearing Fig. 5-31
MP128		Same as MP120.	Latch Bearing Fig. 5-31
MP129		Same as MP120.	Latch Bearing Fig. 5-31
MP130		Same as MP120.	Latch Bearing Fig. 5-31
MP131		Same as MP120.	Latch Bearing Fig. 5-31
MP132 thru MP199		Not Used.	
P101		CONNECTOR, PLUG, ELECTRICAL: 35 pin contacts, straight type, MS3106B32-7P, spec MIL-C-5015.	Mates With J101
P102		CONNECTOR, PLUG, ELECTRICAL: 14 pin contacts, straight type, MS3106B20-27P, spec MIL-C-5015.	Mates With J102
P103		CONNECTOR, PLUG, ELECTRICAL: W/jacket clamp, 1500 v peak, 50 ohm impedance, UG-943A/U, REB49195.	Mates J103
P104		Same as P103.	Standard Frequency Input (1mc)
P105 thru P113		Not Used.	
P114		CONNECTOR, PLUG, ELECTRICAL: Silver plated, w/jacket clamp, 13/16 in. lg, mfr 74868, type 48825.	Standard Frequency Input (1mc) Fig. 6-47
P115 thru P130		Not Used.	
P131		CONNECTOR, PLUG, ELECTRICAL: Silver plated, w/jacket clamp, 3/4 in. by 3/4 in. l shape, mfr 74868, type 44550.	Frequency Control Input Fig. 6-47
P132		CONNECTOR, PLUG, ELECTRICAL: Silver plated, w/jacket clamp, for 0.120 to 0.145 in. od cable, mfr 74868, type 44525.	RF Sample To Frequency Control Fig. 6-47
P133		Same as P131.	500 KC From Frequency Control Fig. 6-47
P134		Same as P132.	Frequency Control Input Fig. 6-47
P135		Same as P131.	RF Output To RF Amplifier Fig. 6-47
P136		Same as P131.	RF Output To RF Amplifier Fig. 6-47

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—C ntinu d

CABINET, ELECTRICAL EQUIPMENT CY-2558/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
P137 thru P160		Not Used.	
P161		Same as P132.	Frequency Control Output Fig. 6-47
P162		Same as P132.	Frequency Control Output Fig. 6-47
P163		Same as P132.	IMC Standard Frequency Input Fig. 6-47
P164		Same as P132.	500 KC To RF Oscillator Fig. 6-47
P165		Same as P131.	RF Sample From Oscillator Fig. 6-47
P166 thru P180		Not Used.	
P181		Same as P131.	RF From Oscillator Fig. 6-47
P182		CONNECTOR, PLUG, ELECTRICAL: One male contact, silver plated, bayonet latch, 0.437 max. 5 amps, UG-573A/U.	Transmitter RF Output To J103 Fig. 6-47
P183		Same as P131.	RF Input From P136 Fig. 6-47
P184 thru P199		Not Used.	
S101		SWITCH, INTERLOCK, DOOR: SPDT, normally opened and closed, 250 v max, 5 amps, mfr 74059, type 2AC6.	Drawer Interlock Fig. 6-47
S102		Same as S101.	Drawer Interlock Fig. 6-47
S103		Same as S101.	Drawer Interlock Fig. 6-47
S104		Same as S101.	Drawer Interlock Fig. 6-47
S105		Same as S101.	Drawer Interlock Fig. 6-47
S106 thru S199		Not Used.	
TB101		TERMINAL BOARD ASSEMBLY: Consists of two terminal boards, 19 terminals ea. Listed for reference only.	Trunk Terminal Board Fig. 6-47
TB101A		TERMINAL BOARD: Barrier type 19 double screw type terminals, phenolic board, mfr 89661, dwg 233B360G02.	
TB101B		Same as TB101A.	
TB102		TERMINAL BOARD: Plastic, brass connector strips, 4 terminals, 3⅞ in. lg, 1⅝ in. w, mfr 71785, type 4-150D.	Input Power Terminal Board Fig. 6-47
TB103		Not Used.	
TB104		Not Used.	
TB105		TERMINAL BOARD: Mica filled phenolic board, 17 double screw type terminals, barrier type, mfr 89661, dwg 233B360G01.	Power Distribution Terminal Board Fig. 6-47
TB106		Not Used.	
TB107		TERMINAL BOARD: Mica filled phenolic, 7 double screw type terminals, barrier type, mfr 75173, type 7-164DP.	Mtg For Blower Controls Fig. 6-47
TB108 thru TB199		Not Used.	
XK101		Not Used.	
XK102		SOCKET, ELECTRON TUBE: 8 contact, regularly spaced 45 deg apart on 0.687 in. dia pin circle, TS101P01, JAN-S-28A.	For K102 Fig. 6-47
XK103 thru XK199		Not Used.	

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

POWER SUPPLY PP-2222/WRT

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
200 Series		POWER SUPPLY: Electronic full wave rectification, 800 v dc, 1.2 amp, 1250 v dc, 1.2 amp, 115 v, 60 cps, 3 phase outputs, operates on 220/440 v ac, 60 cps, 3 phase, 22 in. lg, 17½ in. w, 10¾ in. h, filter, included, mfr 89661, dwg 55C2370, Navy type PP-2222/WRT.	Supplies Plate Power For RF Amplifier
C201		CAPACITOR, FIXED, PAPER DIELECTRIC: 15 μf ±10%, 600 v dc working, CP70E1FJ156K, spec MIL-C-25.	+1250 V DC Filter Fig. 6-46
C202		Same as C201.	+1250 V DC Filter Fig. 6-46
C203		CAPACITOR, FIXED, CERAMIC DIELECTRIC: 4700 μμf +100 −20%, 500 v dc working, CK62Y472Z, spec MIL-C-11015.	RF Bypass For DS207 Fig. 6-46
C204		Same as C203.	RF Bypass For DS208 Fig. 6-46
C205 thru C299		Not Used.	
DS201		LAMP, GLOW NEON GAS: 1/25 w at 105 to 125 v, 1/10 w at 210 to 250 v, 100,000 ohm external resistance required, NE51, spec MIL-L-15098.	High Voltage Rectifier Line Indicator Fig. 6-46
DS202		Same as DS201.	High Voltage Rectifier Line Indicator Fig. 6-46
DS203		Same as DS201.	High Voltage Rectifier Line Indicator Fig. 6-46
DS204		Same as DS201.	Low Voltage Rectifier Filament Line Indicator Fig. 6-46
DS205		Same as DS201.	Low Voltage Rectifier Filament Line Indicator Fig. 6-46
DS206		Not Used.	
DS207		LAMP, INCANDESCENT, SINGLE CONTACT: Miniature bayonet base, 28 v, MIL type 15571-6.	High Voltage On Indicator Fig. 6-46
DS208		Same as DS207.	High Voltage Overload Indicator Fig. 6-46
DS209 thru DS299		Not Used.	
E201		TERMINAL BOARD: 24 stud terminals, 1 feedthru insulator, mfr 89661, dwg 59A1778.	Common Terminal Board For HV Transformers Fig. 6-46
E202		TERMINAL BOARD: Consists of resistors and terminals, 6 in. lg, 3¾ in. w, mfr 89661, dwg 329C135.	Resistor Mounting Board Fig. 6-46
E203		Not Used.	
E204		CLIP, ELECTRICAL: Spring phosphor bronze, hot tinned, designed to fit over 9/16 in. dia plate contact, mfr 76487, type 36001.	Plate Cap For V201 Fig. 6-46
E205		Same as E204.	Plate Cap For V202 Fig. 6-46
E206		Same as E204.	Plate Cap For V203 Fig. 6-46
E207		Same as E204.	Plate Cap For V204 Fig. 6-46
E208		Same as E204.	Plate Cap For V205 Fig. 6-46
E209		Same as E204.	Plate Cap For V206 Fig. 6-46
E210		INSULATOR, STANDOFF CERAMIC: Grade L-5, white, glazed finish, no voltage rating, JAN type NS5W0208, spec JAN-I-8.	Termination For E204 Fig. 6-46
E211		Same as E210.	Termination For E205 Fig. 6-46
E212		Same as E210.	Termination For E206 Fig. 6-46
E213		Same as E210.	Termination For E207 Fig. 6-46

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

POWER SUPPLY PP-2222/WRT

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
E214		Same as E210.	Termination For E208 Fig. 6-46
E215		Same as E210.	Termination For E209 Fig. 6-46
E216		INSULATOR, STANDOFF CERAMIC: Grade L-3, white glazed finish, no voltage rating, JAN type NS3W0104, spec JAN-I-8.	Insulator For S202
E217		INSULATOR ASSEMBLY: c/o two steatite insulators, listed for reference only.	Component Mounting Fig. 6-46
E217A		INSULATOR, STANDOFF CERAMIC: Grade L-5, white, glazed finish, no voltage rating, hole in center for mtg, JAN type NS5W4101, spec JAN-I-8.	Standoff
E217B		INSULATOR, STANDOFF CERAMIC: Grade L-5, white, glazed finish, no voltage rating, JAN type NS5W4201, spec JAN-I-8.	Standoff
E218		BOARD, MOUNTING: For Fuses F201, F202, mfr 89661, dwg 337C103H01.	Fuse Mounting Board
E219		BOARD, MOUNTING: For fuses F203, F205, F206, mfr 89661, dwg 337C105H01.	Fuse Mounting Board
E220		Same as E216.	Standoff
E221 thru E299		Not Used.	
F201		FUSE, CARTRIDGE: 6 amp, 250 v dc, time lag blowing, 2 brass ferrule type terminals, non-indicating type F15G6R00B, spec MIL-F-15160B.	Input Power Line Fuse Fig. 6-46
F202		Same as F201.	Input Power Line Fuse Fig. 6-46
F203		Same as F201.	Input Power Line Fuse Fig. 6-46
F204		Same as F201 (Listed for reference only.)	Spare
F205		FUSE, CARTRIDGE: 10 amp, 250 v dc, time lag blowing, 2 brass ferrule type terminals, non-indicating type, F15G10R0B, spec MIL-F-15160B.	Low Voltage Rectifier And Filament Fig. 6-46
F206		Same as F205.	Low Voltage Rectifier And Filament Fig. 6-46
F207		Same as F205 (Listed for reference only.)	Spare
F208 thru F299		Not Used.	
K201		RELAY, ARMATURE: 4 contact, 3 normally open, 1 normally closed, mfr 89661, dwg 342C037H02.	Low Power Relay Fig. 6-46
K202		Same as K201.	High Power Relay Fig. 6-46
K203		RELAY, ARMATURE: 4 normally open contacts, 110 v, 60 cycles, mfr 89661, dwg 342C037H01.	HV Start Relay Fig. 6-46
K204		Same as K203.	HV Run Relay Fig. 6-46
K205		Not Used.	
K206		RELAY, ARMATURE: 4 pdt, single break 6.0 v dc, 214 ma, mfr 70309, type SKHX663.	+1250 V DC Overload Fig. 6-46
K207		RELAY, ARMATURE: 4 pdt, single break 24 v dc, 57 ma, mfr 70309, type SKHX664.	Overload Lock-Out Relay Fig. 6-46
K208 thru K299		Not Used.	
L201		REACTOR FIXED INDUCTANCE: Type, 1 coil, 0.4 henry min, 1.25 amp dc, 4.4 ohms ±15% dc resistance, 3.2 kv rms test, mfr 89661, dwg 52C2176-1-1.	+1250 V DC Filter Fig. 6-46
L202 thru L299		Not Used.	
M201		METER, TIME TOTALIZING, ELECTRIC: Calibrated in hrs, 9999.9 hrs max reading, 0.1 hr smallest increment, black numerals, white background, synchronous type motor, 115 v ac, 60 cycles, mfr 14907, type 5986.	Filament Hours Meter Fig. 6-46

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

POWER SUPPLY PP-2222/WRT

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
M202 thru M299		Not Used.	
R201		RESISTOR, FIXED: Wirewound, 16 ohms ±5%, 38 watts, RW35G160, spec MIL-R-26.	Step Start Resistor Fig. 6-46
R202		Same as R201.	Step Start Resistor Fig. 6-46
R203		Same as R201.	Step Start Resistor Fig. 6-46
R204		Not Used.	
R205		RESISTOR, FIXED: Composition 100,000 ohms ±10%, ½ w, RC20GF104K, spec MIL-R-11.	Series Resistor For DS201 Fig. 6-46
R206		Same as R205.	Series Resistor For DS202 Fig. 6-46
R207		Same as R205.	Series Resistor For DS203 Fig. 6-46
R208		Same as R205.	Series Resistor For DS204 Fig. 6-46
R209		Same as R205.	Series Resistor For DS205 Fig. 6-46
R210 thru R216		Not Used.	
R217		RESISTOR, FIXED: Wirewound, 2500 ohms ±5%, 10 w, RW31G252, spec MIL-R-26.	Series Resistor For DS207 Fig. 6-46
R218		RESISTOR, VARIABLE: Wirewound element, 1 section, 10 ohms ±10%, 25 w, std A taper, phenolic body, metal case, enclosed, RP101SD100KK, spec MIL-R-22.	HV Overload Trip Adjust Fig. 6-46
R219		RESISTOR, FIXED: Composition, 220,000 ohms ±10%, 2 w, RC42GF224K, spec MIL-R-11.	Blown Fuse Bleeder Fig. 6-46
R220		Same as R219.	Blown Fuse Bleeder Fig. 6-46
R221		Same as R219.	Blown Fuse Bleeder Fig. 6-46
R222		Same as R219.	Blown Fuse Bleeder Fig. 6-46
R223 thru R299		Not Used.	
S201		SWITCH, TOGGLE: 3 pst, 250 v ac nom max, 10 amp, 125 v ac, 20 amp, lever type handle and mtg ears, mfr 04009, type 81393W.	Emergency Stop Fig. 6-46
S202		SUBASSEMBLY, SWITCHING: c/o bracket mtg base, screw type plunger, compression spring, insulated high voltage connection, grounding strap, shorting bar and associated hardware, mfr 89661, dwg 54B2526.	+1250 V DC Grounding Switch Fig. 6-46
S203		SWITCH, PUSH MOMENTARY ACTION: Rated 30 v dc, 3 amps inductive, mfr 74059, type 2PB2.	Overload Reset Switch Fig. 6-46
S204 thru S299		Not Used.	
T201		TRANSFORMER, POWER STEP-UP: open frame, 4 primary windings, ea 110 v, 50 to 60 cycles, single phase, 1 secondary winding, 550 v, 0.9 amp, tapped at 355 v, 3000 v max insulation, air-cooled, impregnated, mfr 89661, dwg 52C2174-1-1.	HV Rectifier Plate Fig. 6-46
T202		Same as T201.	HV Rectifier Plate Fig. 6-46
T203		Same as T201.	HV Rectifier Plate Fig. 6-46
T204		TRANSFORMER, POWER, STEP-DOWN: Open frame, 1 primary winding 115 v, 60 cycles ±5%, single phase, 4 secondary 15 amp, No. 2, 3, 4 secondaries 5 amp, mfr 89661, dwg 52C2175-1-1.	HV Rectifier Filament Fig. 6-46
T205 thru T299		Not Used.	

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

POWER SUPPLY PP-2222/WRT

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
TB201		TERMINAL BOARD: Barrier type, 7 double screw type terminals, mfr 71785, type 7-150D.	Wire Termination Fig. 6-46
TB202		TERMINAL BOARD: Barrier type, 14 double screw type terminals, mfr 71785, type 14-141D.	Wire Termination Fig. 6-46
TB203 thru TB299		Not Used.	
V201		ELECTRON TUBE GLASS ENVELOPE: Half-wave gas rectifier, 3B28, spec MIL-E-1.	+1250 V DC Rectifier Fig. 3-7
V202		Same as V201.	+1250 V DC Rectifier Fig. 3-7
V203		Same as V201.	+1250 V DC Rectifier Fig. 3-7
V204		Same as V201.	+1250 V DC Rectifier Fig. 3-7
V205		Same as V201.	+1250 V DC Rectifier Fig. 3-7
V206		Same as V201.	+1250 V DC Rectifier Fig. 3-7
V207 thru V299		Not Used.	
XDS201		LIGHT, INDICATOR: 125 v integral resistor, accommodates T-3¼ lamp, yellow lens LH64BY2, spec MIL-L-3661.	For DS201 Fig. 6-46
XDS202		Same as XDS201.	For DS202 Fig. 6-46
XDS203		Same as XDS201.	For DS203 Fig. 6-46
XDS204		Same as XDS201.	For DS204 Fig. 6-46
XDS205		Same as XDS201.	For DS205 Fig. 6-46
XDS206		Not Used.	
XDS207		LIGHT, INDICATOR: 28 v, accommodates T-3-¼ lamp, plain red lens, LH62BR2, spec MIL-L-3661.	For DS207 Fig. 6-46
XDS208		LIGHT, INDICATOR: 28 v, accommodates T-3-¼ lamp, plain white lens, LH62PW2, spec MIL-L-3661.	For DS208 Fig. 6-46
XDS209 thru XDS299		Not Used.	
XF201		FUSEHOLDER: Phosphor bronze material, mfr 89811, type 9-16CL.	For F201 Fig. 6-46
XF202		Same as XF201.	For F202 Fig. 6-46
XF203		Same as XF201.	For F203 Fig. 6-46
XF204		Same as XF201.	For F204 Fig. 6-46
XF205		Same as XF201.	For F205 Fig. 6-46
XF206		Same as XF201.	For F206 Fig. 6-46
XF207		Same as XF201.	For F207 Fig. 6-46
XF208 thru XF299		Not Used.	
XV201		SOCKET, ELECTRON TUBE: 4 contacts, porcelain base, aluminum body, no provision for mtg tube shield, mfr 74970, type 123-210.	For V201 Fig. 6-46
XV202		Same as XV201.	For V202 Fig. 6-46
XV203		Same as XV201.	For V203 Fig. 6-46
XV204		Same as XV201.	For V204 Fig. 6-46
XV205		Same as XV201.	For V205 Fig. 6-46
XV206		Same as XV201.	For V206 Fig. 6-46
XV207 thru XV299		Not Used.	

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—C ntinued

OSCILLATOR, RADIO FREQUENCY O-581/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATIN FUNCTION
300, 400 and 1200 Series		OSCILLATOR, RADIO FREQUENCY: 300 kc to 1.5 mc, 12 bands, master oscillator frequency control, 0.05 w power output, requires 115 v ac, 60 cps, 3 phase, −24/+250/−350 v dc, integral power supply and coils, 20 5/16 in. lg, 17 1/2 in. w, 12 1/4 in. h, mfr 89661, dwg 473D698, Navy type O-581/WRT-2.	Provides The RF Carrier And Voice Modulation For AN/WRT-2
C301		CAPACITOR, FIXED, GLASS DIELECTRIC: 39 μμf ±1%, 300 v dc working, mfr 89661, dwg 231B743H01.	Band #1 Coupling Capacitor Fig. 6-37
C302		CAPACITOR, VARIABLE: 1 μμf capacity range ±1%, 1000 v dc working, screwdriver adjustment, 1 wire lead type terminal, mfr 89661, dwg 150A943 H02.	Band #1 Trimmer Capacitor Fig. 6-37
C303		CAPACITOR, FIXED, GLASS DIELECTRIC: 36 μμf ±1%, 300 v dc working, mfr 89661, dwg 231B743H02.	Band #2 Coupling Capacitor Fig. 6-37
C304		Same as C302.	Band #2 Trimmer Capacitor Fig. 6-37
C305		Same as C301.	Band #3 Coupling Capacitor Fig. 6-37
C306		Same as C302.	Band #3 Trimmer Capacitor Fig. 6-37
C307		CAPACITOR, FIXED, GLASS DIELECTRIC: 43 μμf ±1%, 300 v dc working, mfr 89661, dwg 231B743H03.	Band #4 Coupling Capacitor Fig. 6-37
C308		Same as C302.	Band #4 Trimmer Capacitor Fig. 6-37
C309		CAPACITOR, FIXED, GLASS DIELECTRIC: 56 μμf ±1%, 300 v dc working, mfr 89661, dwg 231B743H04.	Band #5 Coupling Capacitor Fig. 6-37
C310		Same as C302.	Band #5 Trimmer Capacitor Fig. 6-37
C311		CAPACITOR, FIXED, GLASS DIELECTRIC: 72 μμf ±1%, 300 v dc working, mfr 89661, dwg 231B743H05.	Band #6 Coupling Capacitor Fig. 6-37
C312		Same as C302.	Band #6 Trimmer Capacitor Fig. 6-37
C313		CAPACITOR, VARIABLE AIR DIELECTRIC: 71.25 μμf ±0.5 μμf, rotor and stator soldered brass, nickel plated, mfr 89661, dwg 473D541H01.	RF Oscillator Main Tuning Fig. 6-37
C314		CAPACITOR, FIXED, GLASS DIELECTRIC: 330 μμf ±2%, 500 v dc working, CY15C331G, spec MIL-C-11272.	RF Oscillator Feedback Fig. 6-37
C315		CAPACITOR, FIXED, GLASS DIELECTRIC: 130 μμf ±2%, 300 v dc working, CY10C131G, spec MIL-C-11272.	RF Oscillator Feedback Fig. 6-37
C316		CAPACITOR, FIXED, GLASS DIELECTRIC: 1470 μμf ±1%, 300 v dc working, mfr 89661, dwg 231B743H06.	Band #1 Padder Fig. 6-37
C317		Not Used.	
C318		Not Used.	
C319		CAPACITOR, FIXED, PAPER DIELECTRIC: 15,000 μμf ±10%, 200 v dc working, CP05A1KC153K, spec MIL-C-25.	Grid Bypass Fig. 6-38
C320		CAPACITOR, FIXED, MICA DIELECTRIC: 1000 μμf ±10%, 300 v dc working, CM20B102K, spec MIL-C-5A.	Filter For V323 Plate Fig. 6-38
C321		CAPACITOR, FIXED, PAPER DIELECTRIC: 100,000 μμf ±10%, 600 v dc working, CP05A1EF104K, spec MIL-C-25A.	Cathode Bypass For V323 Fig. 6-38
C322		Same as C321.	Cathode Coupling For V323 Fig. 6-38
C323		CAPACITOR, FIXED, CERAMIC DIELECTRIC: 10,000 μμf +100-20%, 500 v dc working, CK63Y103Z, spec MIL-C-11015.	RF Bypass On Filaments Fig. 6-38
		Same as C103.	
C324		Same as C323	RF Bypass On Filaments Fig. 6-38
C325		Same as C323.	Plate Bypass For V321, V322 Fig. 6-38
C326		Same as C323.	+250 V Filter Fig. 6-38
C327		CAPACITOR, FIXED, GLASS DIELECTRIC: 1300 μμf ±1%, 500 v dc working, mfr 89661, dwg 231B743H07.	Band #4 Padder Fig. 6-37
C328		Not Used.	
C329		CAPACITOR, FIXED, GLASS DIELECTRIC: 400 μμf ±1%, 500 v dc working, mfr 89661, dwg 231B743H08.	Band #5 Padder Fig. 6-37
C330		Not Used.	
C331		CAPACITOR, FIXED, GLASS DIELECTRIC: 255 μμf ±1%, 500 v dc working, mfr 89661, dwg 231B743H09.	Band #6 Padder Fig. 6-37

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—C ntinu d

OSCILLATOR, RADIO FREQUENCY O-581/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATIN FUNCTION
C332		Not Used.	
C333		Not Used.	
C334		CAPACITOR, FIXED, CERAMIC DIELECTRIC: 3300 μμf +100 −20%, 500 v dc working, CK62Y332Z, spec MIL-C-11015.	RF Bypass For V301 Fig. 6-36
C335		Not Used.	
C336		Same as C323.	RF Bypass For V301 Fig. 6-36
C337		CAPACITOR, FIXED, MICA DIELECTRIC: 2200 μμf ±10%, 500 v dc working, CM30B222K, spec MIL-C-5A.	Grid Coupling For V302 Fig. 6-36
C338		CAPACITOR, FIXED, MICA DIELECTRIC: 5 μμf ±20%, 500 v dc working, CM20B050M, spec MIL-C-5.	Plate Load Fig. 6-36
C339		Same as C323.	Cathode Bypass For V302 Fig. 6-36
C340		CAPACITOR, FIXED, CERAMIC DIELECTRIC: 1500 μμf +100 −20%, 500 v dc working, CK61Y152Z, spec MIL-C-11015.	Screen Bypass For V302 Fig. 6-36
C341		CAPACITOR, VARIABLE, AIR DIELECTRIC: mfr 89661, dwg 332C673H01.	Doubler Tuning For V302, V303, V304 Fig. 6-36
C342		CAPACITOR, FIXED, CERAMIC DIELECTRIC: 4700 μμf +100 −20%, 500 v dc working, CK62Y472Z, spec MIL-C-11015.	Bypass For V303 Fig. 6-36
C343		Same as C203. CAPACITOR, VARIABLE, CERAMIC DIELECTRIC: 7 μμf, 500 v dc working CV11A070, spec MIL-C-81.	Band #1 Plate Tuning V302 Fig. 6-36
C344		CAPACITOR, FIXED, MICA DIELECTRIC: 160 μμf ±10%, 500 v dc working, CM20B161K, spec MIL-C-5.	Plate Tuning Padd r For V302 Fig. 6-36
C345		Same as C343.	Band #2 Plate Tuning V302 Fig. 6-36
C346		CAPACITOR, FIXED, MICA DIELECTRIC: 180 μμf ±10%, 500 v dc working, CM20B181K, spec MIL-C-5.	Plate Tuning Padder For V302 Fig. 6-36
C347		Same as C343.	Band #3 Plate Tuning V302 Fig. 6-36
C348		Same as C346.	Plate Tuning Padder For V302 Fig. 6-36
C349		Same as C343.	Band #4 Plate Tuning V302 Fig. 6-36
C350		Same as C344.	Plate Tuning Padder For V302 Fig. 6-36
C351		Same as C343.	Band #5 Plate Tuning V302 Fig. 6-36
C352		CAPACITOR, FIXED, MICA DIELECTRIC: 120 μμf ±10%, 500 v dc working, CM20B121K, spec MIL-C-5.	Plate Tuning Padder For V302 Fig. 6-36
C353		Same as C343.	Band #6 Plate Tuning V302 Fig. 6-36
C354		CAPACITOR, FIXED, MICA DIELECTRIC: 82 μμf ±10%, 500 v dc working, CM20B820K, spec MIL-C-5.	Plate Tuning Padder For V302 Fig. 6-36
C355		CAPACITOR, FIXED, CERAMIC DIELECTRIC: 820 μμf +100 −20%, 500 v dc working, CK60Y821Z, spec MIL-C-11015.	RF Bypass For T301 Fig. 6-36
C356		Same as C355.	RF Bypass For T301 Fig. 6-36
C357		CAPACITOR, FIXED, MICA DIELECTRIC: 470 μμf ±10%, 500 v dc working, CM20B471K, spec MIL-C-5.	Grid Coupling For V303 Fig. 6-36
C358		Same as C334.	Cathode Bypass For V303 Fig. 6-36
C359		Same as C355.	Screen Bypass For V303 Fig. 6-36
C360		Same as C323.	Screen Bypass For V303 Fig. 6-36
C361		CAPACITOR, VARIABLE, CERAMIC DIELECTRIC: 13 μμf, 500 v dc, CV11B130, spec MIL-C-81.	Band #9 Plate Tuning V303 Fig. 6-36
C362		Same as C344.	Plate Tuning Padder For V303 Fig. 6-36
C363		CAPACITOR, VARIABLE, CERAMIC DIELECTRIC: 30 μμf max, 500 v dc, CV11C300, spec MIL-C-81.	Band #10 Plate Tuning For V303 Fig. 6-36
C364		Same as C352.	Plate Tuning Padder For V303 Fig. 6-36

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

OSCILLATOR, RADIO FREQUENCY O-581/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
C365		CAPACITOR, VARIABLE, CERAMIC DIELECTRIC: 7 μμf min, 45 μμf max, 500 v dc, CV11D450, spec MIL-C-81.	Band #11 Plate Tuning For V303 Fig. 6-36
C366		Same as C354.	Plate Tuning Padder For V303 Fig. 6-36
C367		Same as C355.	RF Bypass For T302 Fig. 6-36
C368		Same as C355.	RF Bypass For T302 Fig. 6-36
C369		Same as C357.	Grid Coupling For V304 Fig. 6-36
C370		Same as C340.	Cathode Bypass For V304 Fig. 6-36
C371		Same as C355.	Screen Bypass For V304 Fig. 6-36
C372		Same as C340.	RF Bypass For V304 Fig. 6-36
C373		CAPACITOR, FIXED, MICA DIELECTRIC: 130 μμf ±5%, 500 v dc working, CM20B131J, spec MIL-C-5.	Plate Tuning Padder For V304 Fig. 6-36
C374		Same as C354.	Plate Tuning Padder For V304 Fig. 6-36
C375		CAPACITOR, FIXED, MICA DIELECTRIC: 68 μμf ±10%, 500 v dc working, CM20B680K, spec MIL-C-5.	Plate Tuning Padder For V304 Fig. 6-36
C376		Same as C365.	Band #12 Plate Tuning For V304 Fig. 6-36
C377		Same as C365.	Band #13 Plate Tuning For V304 Fig. 6-36
C378		Same as C365.	Band #13 Plate Tuning For V304 Fig. 6-36
C379		Not Used.	
C380		CAPACITOR, FIXED, GLASS DIELECTRIC: 5100 μμf ±1%, 300 v dc working, mfr 89661, dwg 231B743H13.	Band #3 Padder Fig. 6-37
C381		CAPACITOR, FIXED, GLASS DIELECTRIC: 20 μμf ±0.25 μμf, 300 v dc working, mfr 89661, dwg 231B743H14.	Band #1 Control Decoupling Fig. 6-37
C382		Same as C381.	Band #2 Control Decoupling Fig. 6-37
C383		CAPACITOR, FIXED, GLASS DIELECTRIC: 18 μμf ±0.25 μμf, 300 v dc working, mfr 89661, dwg 231B743H15.	Band #3 Control Decoupling Fig. 6-37
C384		CAPACITOR, FIXED, GLASS DIELECTRIC: 15 μμf ±0.25 μμf, 300 v dc working, mfr 89661, dwg 231B743H12.	Band #4 Control Decoupling Fig. 6-37
C385		Same as C384.	Band #5 Control Decoupling Fig. 6-37
C386		Same as C384.	Band #6 Control Decoupling Fig. 6-37
C387		CAPACITOR, SILICON: Mfr 73293, type HC7001.	Master Oscillator Control Reactance Fig. 6-37
C388		Same as C323.	Control Line Decoupling Fig. 6-37
C389		Same as C303.	Band #1 Ratio Fig. 6-37
C390		Same as C323.	Filter For 115 V AC Line Fig. 6-39
C391		Same as C323.	Filter For 115 V AC Line Fig. 6-39
C392		Same as C323.	Filter For 115 V AC Line Fig. 6-39
C393		Same as C342.	Filter For LSB Audio Line Fig. 6-39
C394		Same as C323.	Filter For +250 V DC Line Fig. 6-39
C395		CAPACITOR, FIXED, PAPER DIELECTRIC: 2 μf ±20%, 600 v dc, CP54B1EF205M, spec MIL-C-25.	Filter For +250 V DC Line Fig. 6-39
C396		Same as C342.	Filter For USB Audio Line Fig. 6-39
C397		Same as C323.	Filter For −24 V DC Line Fig. 6-39

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

OSCILLATOR, RADIO FREQUENCY O-581/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
C398		Same as C323.	Filter For Modulator Key Fig. 6-39
C399		CAPACITOR, FIXED, ELECTROLYTIC: 25 μf −15 +50%, 125 v dc working, CL44BP250TP1, spec MIL-C-3965.	Filter For +250 V DC Line Fig. 6-39
C399		Cont. See C401.	
CR301		SEMI CONDUCTOR DEVICE DIODE: 100 v peak inverse voltage, 5.0 ma min forward current at 25 deg C temp, 1N198, spec MIL-E-1.	Frequency Doubling Diode For T301 Fig. 6-36
CR302		Same as CR301.	Frequency Doubling Diode For T301 Fig. 6-36
CR303		Same as CR301.	Frequency Doubling Diode For T302 Fig. 6-36
CR304		Same as CR301.	Frequency Doubling Diode For T302 Fig. 6-36
CR305 thru CR399		Not Used.	
CR399		Cont. See CR1201.	
DS301		LAMP, GLOW NEON GAS: 1/25 w at 105 to 125 v, 1/10 w at 210 to 250 v, 100,000 ohms external resistance required, mfr 89661, type NE51. Same as DS201.	Oven Heater Indicator Fig. 6-39
DS302 thru DS399		Not Used.	
E301		SHIELD, ELECTRON TUBE: Heat dissipating, S0762, spec MIL-S-19786.	Tube Shield For V301
E302		Same as E301.	
E303		Same as E301.	Tube Shield For V302
E304		Same as E301.	Tube Shield For V303
E305 thru E309		Not Used.	Tube Shield For V304
E310		BOARD, MOUNTING: Phenolic board, solder terminals, mfr 89661, dwg 231B757G02.	Component Mounting Fig. 6-37
E311 thru E319		Not Used.	
E320		BOARD, MOUNTING: Phenolic board, for 11 resistors, mfr 89661, dwg 336C487G02.	Component Board, Regulator Fig. 6-38
E321		Not Used.	
E322		Not Used.	
E323		SHIELD, ELECTRON TUBE: S0967, spec MIL-S-19786A.	Tube Shield For V323
E324		SHIELD, ELECTRON TUBE: Ventilated type, mfr 91662, type 120 VP35.	Tube Shield For V324
E325		INSULATOR, STANDOFF MINIATURE: Solder lug type, 5/8 in. lg, 1/4 in. across flats, mfr 89661, dwg 54B7174H01.	Wiring Tie Point
E326		Same as E325.	
E327		STRIP, INSULATING PHENOLIC SHEET: Mfr 89661, dwg 54B6913H02.	Wiring Tie Point Wiring Tie Point
E328		Same as E325.	
E329		Same as E325.	Wiring Tie Point
E330		Same as E325.	Wiring Tie Point
E331		Same as E325.	Wiring Tie Point
E332		Same as E325.	Wiring Tie Point
E333		Same as E325.	Wiring Tie Point
E334		KNOB BLACK PHENOLIC: 1 7/16 in. dia knob, 1 1/2 in. dia skirt, accommodates 1/4 in. dia shaft, mfr 88365, type VIZE.	Wiring Tie Point Control Knob Fig. 5-37
E335		KNOB ALUMINUM: Flatted knurled sides, 1 1/2 in. dia knurled skirt, two 6-32 tapped holes at right angle in skirt, accommodates 1/4 in. dia shaft, mfr 89661, dwg 230B131H01.	Control Knob Fig. 5-37
E336		KNOB BLACK PHENOLIC W/POINTER: 1 in. dia knob, 1 1/16 in. dia skirt, accommodates 1/4 in. shaft, mfr 88365, type VIZA.	Control Knob Fig. 5-37

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

OSCILLATOR, RADIO FREQUENCY O-581/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
E337		Same as E336.	Control Knob Fig. 5-37
E338		Same as E334.	Control Knob Fig. 5-37
E339		Same as E336.	Control Knob Fig. 5-37
E340		DIAL BARREL TYPE: Scales at top and bottom, mfr 89661, dwg 333C629G01.	Calibration Dial Fig. 5-37
E341		Same as E325.	
E342 thru E399		Not Used.	
E399		Cont. See E1201.	
FL301		FILTER, BAND PASS: 1 kc, uses 10,000 μμf capacitance, 2.5 h inductance, mfr 89661, dwg 376A513H01.	1 KC Trap Fig. 6-37
FL302		FILTER, BAND PASS: 2 channel 20-25 mc and 25-30 mc, 40 ohms, less than 1 db insertion loss, mfr 89661, dwg 378A005H01.	Filter for V303 Fig. 6-36
FL303 thru FL399		Not Used.	
HR301		HEATER: 4 in. w, 4½ in. lg, 160 ohms, 57.5 v, mfr 89661, type 150A574H03.	Oven Heater Fig. 6-35
HR302		Same as HR301.	Oven Heater Fig. 6-35
HR303		Same as HR301.	Oven Heater Fig. 6-35
HR304		Same as HR301.	Oven Heater Fig. 6-35
HR305		Same as HR301.	Oven Heater Fig. 6-35
HR306		Same as HR301.	Oven Heater Fig. 6-35
HR307 thru HR399		Not Used.	
J301		CONNECTOR, RECEPTACLE, ELECTRICAL: Round male contact, straight type, solid shell, panel mounted, mfr 91577, type 2914.	V301 Grid To Oscillator Tank Fig. 6-36
J302		Same as J301.	V301 Cathode To Oscillator Tank Fig. 6-36
J303		CONNECTOR, RECEPTACLE, ELECTRICAL: KEL-F, insulator, silver plated brass body, straight type, mfr 74868, type 48925.	RF Output To Driver Fig. 6-36
J304		CONNECTOR, RECEPTACLE, ELECTRICAL: KEL-F, insulator, silver plated brass body, straight type, mfr 74868, type 44575.	RF Output To Frequency Control Fig. 6-36
J305		Same as J301.	Reactor Sweep Current Input Fig. 6-36
J306		Same as J301.	Reactor Sweep Current Input Fig. 6-36
J307		Not Used.	
J308		Not Used.	
J309		Not Used.	
J310		CONNECTOR, RECEPTACLE, ELECTRICAL: Female contacts, low-loss plastic body, straight shape, mfr 08484, type EC3150.	Oven Heater Receptacle Fig. 6-35
J311		Same as J310.	Oven Heater Receptacle Fig. 6-35
J312		Same as J301.	RF Oscillator Grid To V301 Fig. 6-37
J313		Same as J301.	RF Oscillator Cathode To V301 Fig. 6-37
J314 thru J399		Not Used.	
J399		Cont. See J1201.	

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—C ntinu d

OSCILLATOR, RADIO FREQUENCY O-581/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
K301		RELAY, ARMATURE: SPDT, single break, 28 v dc, 5 amp, 120 v ac, 5 amp, 1 inductive winding, 120 v ac nom, 90 v ac operating 5000 ohms, hermetically sealed, mfr 78277, type 41-RJZ-5000ACG.	Oven Heater Control Fig. 6-39
K302 thru K399		Not Used.	
K399		Cont. See K1201.	
L301		COIL, RADIO FREQUENCY: 1 winding, close wound, 101 turns of 0.0080 in. wire, 76.2 μh inductance, q of 70 at 2.5 mc, phenolic coil form, mfr 89661, dwg 223B729-1-1.	Band #1 RF Oscillator Fig. 6-37
L302		COIL, RADIO FREQUENCY: 1 winding, space wound, 73 turns of 0.0100 in. dia wire, 41.9 μh inductance, q of 70 at 2.5 mc, phenolic coil form, mfr 89661, dwg 223B729-1-6.	Band #2 RF Oscillator Fig. 6-37
L303		COIL, RADIO FREQUENCY: 1 winding, space wound, 55 turns of 0.0126 in. dia wire, 22.3 μh inductance, q of 70 at 2.5 mc, phenolic coil form, mfr 89661, dwg 223B729-1-11.	Band #3 RF Oscillator Fig. 6-37
L304		COIL, RADIO FREQUENCY: 1 winding, space wound, 40 turns of 0.0159 in. dia wire, 12.2 μh inductance, q of 70 at 2.5 mc, phenolic coil form, mfr 89661, dwg 223B729-1-16.	Band #4 RF Oscillator Fig. 6-37
L305		COIL, RADIO FREQUENCY: 1 winding, space wound, 30 turns of 0.0159 in. dia wire, 7.02 μh inductance, q of 70 at 7.9 mc, phenolic coil form, mfr 89661, dwg 223B729-1-21.	Band #5 RF Oscillator Fig. 6-37
L306		COIL, RADIO FREQUENCY: 1 winding, space wound, 24 turns of 0.0159 in. dia wire, 4.42 μh inductance, q of 70 at 7.9 mc, phenolic coil form, mfr 89661, dwg 223B729-1-26.	Band #6 RF Oscillator Fig. 6-37
L307		COIL, RADIO FREQUENCY: 750 μh inductance, 50 ma max current, 17 ohms dc resistance, hermetically sealed in glass envelope, mfr 42498, type R33, 750 μh.	Cathode Return For V1201 Fig. 6-37
L308		Not Used.	
L309		COIL, RADIO FREQUENCY: 10 mh inductance, 75 ma max current, 150 ohms dc resistance, ceramic coil form, wire lead type terminals, mfr 89661, dwg 150A974H01.	+250 V DC Filter For Doubler Fig. 6-36
L310 thru L313		Not Used.	
L314		Same as L307.	
L315		COIL, RADIO FREQUENCY: 25 μh, 250 ma max, 3.0 ohms dc resistance, single prewound, phenolic coil form, 2 wire lead type terminals, mfr 76487, type 34300, 25 μh.	Plate Load For V301 Fig. 6-36 Peaking Coil For V301 Fig. 6-36
L316		CHOKE, RADIO FREQUENCY, MOLDED: 6.8 μh ±10%, q of 40, 1.10 ohms, 800 ma dc, MS91189-5 spec MIL-C-15305.	Decoupling Filter For V301 Fig. 6-36
L317		COIL, RADIO FREQUENCY, VARIABLE: 120 to 243 μh, q of 85, approx 6 ohms dc resistance, mfr 71279, type X2060-8.	Band #1 Plate Load For V302 Fig. 6-36
L318		COIL, RADIO FREQUENCY, VARIABLE: 61 to 122 μh, q of 80, approx 4 ohms, dc resistance, mfr 71279, type X2060-7.	Band #2 Plate Load For V302 Fig. 6-36
L319		COIL, RADIO FREQUENCY, VARIABLE: 28 to 63 μh, q of 85, approx 2.5 ohms dc resistance, mfr 71279, type X2060-6.	Band #3 Plate Load For V302 Fig. 6-36
L320		COIL, RADIO FREQUENCY, VARIABLE: 16 to 28 μh, q of 83, approx 2 ohms dc resistance, mfr 71279, type X2060-5.	Band #4 Plate Load For V302 Fig. 6-36
L321		COIL, RADIO FREQUENCY, VARIABLE: 10 to 18 μh, q of 79, approx 1.5 ohms dc resistance, mfr 71279, type X2060-4.	Band #5 Plate Load For V302 Fig. 6-36
L322		COIL, RADIO FREQUENCY, VARIABLE: 6.5 to 10.6 μh, q of 70, approx 1.25 ohms dc resistance, mfr 71279, type X2060-3.	Band #6 Plate Load For V302 Fig. 6-36
L323 thru L325		Not Used.	
L326		Same as L307.	
L327		COIL, RADIO FREQUENCY, VARIABLE: 5.75 to 8.05 μh, q of 110 at 7.5 mc, mfr 89661, dwg 51C8082-1-11.	Filter Choke For T301 Fig. 6-36 Load For V303 Fig. 6-36
L328		COIL, RADIO FREQUENCY, VARIABLE: 3.4 to 4.9 μh, q of 110 at 10.0 mc, mfr 89661, dwg 51C8082-1-16.	Load For V303 Fig. 6-36

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

OSCILLATOR, RADIO FREQUENCY O-581/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
L329		COIL, RADIO FREQUENCY, VARIABLE: 2.1 to 3.0 μh, q of 125 at 12.5 mc, mfr 89661, dwg 51C8082-1-21.	Load for V303 Fig. 6-36
L330 thru L332		Not Used.	
L333		Same as L307.	Filter Choke For T202 Fig. 6-36
L334 thru L399		Not Used.	
L399		Cont. See L1201.	
M301		AMMETER, MILLIAMPERE: Scale 1-0-1, white face, ruggedized, MR26W1U1DCMAR, spec MIL-M-10304.	Frequency Zero Adjust Fig. 6-39
M302 thru M399		Not Used.	
MP301		GEARING ASSEMBLY, SPEED REDUCER: 24 to 1 ratio, mfr 89661, dwg 225B659H02.	Tuning Speed Reduction Fig. 5-32
MP302		LOCK, SHAFT BRASS, NICKEL PLATED: 1/2 in. across flats, 23/32 in. approx lg, 3/8 in. −32 internal thd extending 1/2 in. deep from base, accommodates 1/4 in. dia shaft, mfr 76487, type 10061.	Control Shaft Lock
MP303		BEARING, SLEEVE, PLAIN: Oilite bronze, 3.252 in. od, 1/4 in. thk, mfr 89661, dwg 333C656H02.	Shaft Retainer and Bearing Fig. 5-32
MP304		SPROCKET WHEEL: 30 teeth, 1 17/32 in. wide incl hub, mfr 89661, dwg 225B729H01.	Drive Sprocket Fig. 5-32
MP305		SPROCKET WHEEL: 15 teeth, 5/8 in. dia less teeth, 13/32 in. wide incl hub, mfr 89661, dwg M7424442-1.	Drive Sprocket Fig. 5-32
MP306		Same as MP305.	Drive Sprocket Fig. 5-32
MP307		Same as MP305.	Drive Sprocket Fig. 5-32
MP308		Same as MP305.	Drive Sprocket Fig. 5-32
MP309		Same as MP305.	Drive Sprocket Fig. 5-32
MP310		CHAIN, ROLLER: 42 pitches, stainless steel, 3/16 in. pitch, 5/32 in. wide, side flanged, mfr 89661, dwg 152A010H01.	Drive Chain Fig. 5-32
MP311		CHAIN, ROLLER: 52 pitches, stainless steel, 3/16 in. pitch, 5/32 in. wide, flanged, mfr 89661, dwg 152A010H02.	Drive Chain Fig. 5-32
MP312		CHAIN, ROLLER: 68 pitches, stainless steel, 3/16 in. pitch, 5/32 in. wide, side flanged, mfr 89661, dwg 152A010H03.	Drive Chain Fig. 5-32
MP313		CHAIN, ROLLER: 110 pitches, stainless steel, 3/16 in. pitch, 5/32 in. wide, side flanged, mfr 89661, dwg 152A010H04.	Drive Chain Fig. 5-32
MP314		SPROCKET WHEEL: 15 teeth, 5/8 in. dia less teeth, 1/4 in. wide, mfr 89661, dwg M7424443G1.	Drive Sprocket Idler Fig. 5-32
MP315		CHAIN, ROLLER: 50 pitches, stainless steel, mfr 89661, dwg 152A010H05.	Drive Chain Fig. 5-32
MP316		GEAR, HELICAL: 44 teeth, 24 pitch, 20 deg pressure angle, mfr 89661, dwg 333C626G01.	Split Drive Gear Fig. 5-32
MP317		GEAR, WORM: 4 threads, 15.453 pitch, 20 deg pressure angle, mfr 89661, dwg 228B247H01.	Righthand Worm Gear Fig. 5-32
MP318		GEAR, WORM: 4 threads, 24 pitch, 20 deg pressure angle, mfr 89661, dwg 228B248H01.	Lefthand Worm Gear Fig. 5-32
MP319		GEAR, HELICAL: 16 teeth, 16 pitch, 20 deg pressure angle, mfr 89661, dwg 228B249H01.	Drive Gear Fig. 5-32
MP320		GEAR, SPUR: 72 teeth, 48 pitch, 20 deg pressure angle, mfr 89661, dwg 225B688H01.	Drive Gear Fig. 5-32
MP321		GEAR, SPUR: 72 teeth, 64 pitch, 20 deg pressure angle, mfr 89661, dwg 225B689H01.	Drive Gear Fig. 5-32
MP322		Same as MP321.	Drive Gear Fig. 5-32
MP323		GEAR SPUR: 72 teeth, 48 pitch, 20 deg pressure angle, mfr 89661, dwg 225B708G01.	
MP324		SPROCKET WHEEL: 15 teeth, 0.625 in. dia less teeth, 13/32 in. wide incl hub, mfr 89661, dwg 225B721H01.	Drive Sprocket Fig. 5-32
MP325		SPROCKET WHEEL: 15 teeth, 5/8 in. dia less teeth, 9/16 in. wide incl hub, mfr 89661, dwg 228B250H01.	Drive Sprocket Fig. 5-32

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—C ntinued

OSCILLATOR, RADIO FREQUENCY O-581/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
MP326		BEARING, SLEEVE: Oilite bronze, 0.255 in. id, 0.500 in. od, mfr 70901, type TT504.	Thrust Bearing Fig. 5-32
MP327 thru MP337		Not Used.	
MP338		SPRING, HELICAL EXTENSION: 10 turns, loopends, 9/16 in. approx free, mfr 89661, dwg 225B777H01.	Gearing Assembly Tension Fig. 5-32
MP339		Same as MP338.	Gearing Assembly Tension Fig. 5-32
MP340		RETAINER AND BEARING ASSEMBLY: Oilite bearing, bronze retainer, mfr 89661, dwg 333C568G01.	Shaft Retainer And Bearing Fig. 5-32
MP341		Same as MP314.	Drive Sprocket Idler Fig. 5-32
MP342		Same as MP314.	Drive Sprocket Idler Fig. 5-32
MP343		SPROCKET WHEEL DUAL: 15 and 30 teeth, 1 17/32 in. max dia excl teeth, 1/2 in. wide overall, mfr 89661, dwg 225B730H01.	Drive Sprocket Idler Fig. 5-32
MP344		Same as MP305.	Drive Sprocket Fig. 5-32
MP345		BEARING, SLEEVE: Flanged oilite bronze, 0.250 in. id, 1/2 in. od, 10.062 in. thk flange, mfr 89661, dwg 51C1819H10.	Drive Sprocket Fig. 5-32
MP346		Same as MP346.	Thrust Bearing Fig. 5-32
MP347		BEARING, SLEEVE: Flanged oilite bronze, 0.250 in. id, 1/2 in. od, 10.062 in. thk flanged, mfr 89661, dwg 51C1819H09.	Thrust Bearing Fig. 5-32
MP348		Same as MP348.	Thrust Bearing Fig. 5-32
MP349		GEAR SUBASSEMBLY GEAR: 42 teeth, 24 pitch, 20 deg pressure angle, incl detent and follower, mfr 89661, dwg 333C556H01.	Drive Gear And Detent Fig. 5-32
MP350		GEAR, BEVEL (PAIR) GEAR: One 48 teeth gear two 24 teeth, both gears 24 pitch, 20 deg pressure angle, mfr 89661, dwg 228B062H01.	Fig. 5-32
MP351		P/O MP351. Listed for reference only.	
MP351A		P/O MP351. Listed for reference only.	
MP351B		GEAR, SPUR: 63 teeth, 24 pitch 20 deg pressure angle, mfr 89661, dwg 228B063H01.	Bevel Drive
MP352		Not Used.	Bevel Drive Drive Gear Fig. 5-32
MP353		Not Used.	
MP354		Not Used.	
MP355		BEARING, SLEEVE THRUST: 0.255 in. id, 1/2 in. od, 0.028 in. thk, mfr 70901, type T-504-3.	
MP356		SPRING, HELICAL EXTENSION: 34 turns, loopends, 2 in. approx free length, mfr 89661, dwg 228B073H01.	Thrust Bearing Fig. 5-32
MP357		COUPLING, SHAFT, FLEXIBLE: Accommodates 1/4 in. shafts, 7/8 in. lg, 1 in. dia overall, 1/2 in. hubs, mfr 89661, dwg 228B338H01.	Detent Spring Fig. 5-32
MP358		UNIVERSAL JOINT: 1/4 in. shaft accepter each end, 1/2 in. dia lg, mfr 88797, type MB360.	Shaft Coupling Fig. 5-32
MP359		Same as MP314.	Shaft Universal Fig. 5-32
MP360		TOOL, TERMINAL: Mfr 08484, type EC-T553.	Drive Sprocket Idler Fig. 5-32
MP361		Not Used.	
MP362 thru MP399		CONNECTOR, PLUG, ELECTRICAL: Silver plated, w/jacket clamp, for 0.120 to 0.145 in. od cable, mfr 74868, type 44525, same as P132.	V301 Grid To Osc. Tank
P301		Same as P301.	V301 Cath. To Osc. Tank
P302		Not Used.	
P303 thru P309		CONNECTOR, PLUG, ELECTRICAL: 5 solid pin type contacts, low-loss plastic body, straight shape, mfr 89661, dwg 233B349H01.	Oven Heater Connect Fig. 6-35
P310			

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

OSCILLATOR, RADIO FREQUENCY O-581/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
P311		CONNECTOR, PLUG, ELECTRICAL: Solid pin type contacts, low-loss plastic body, straight shape, mfr 08484, type EC3149.	Oven Heater Connect Fig. 6-35
P312		Same as P301.	V301 Grid To Osc. Tank
P313		Same as P301.	V301 Cath. To Osc. Tank
P314 thru P399		Not Used.	
R301		RESISTOR, FIXED: Composition 68,000 ohms ±10%, ½ w, RC20GF683K, spec MIL-R-11.	Grid Return For V301 Fig. 6-36
R302		RESISTOR, FIXED: Composition 39,000 ohms ±10%, ½ w, RC20GF393K, spec MIL-R-11.	Screen Decoupling For V301 Fig. 6-36
R303		Not Used.	
R304		RESISTOR, FIXED: Composition 1200 ohms ±10%, ½ w, RC20GF122K, spec MIL-R-11.	Plate Load For V301 Fig. 6-36
R305		RESISTOR, FIXED: Composition 100,000 ohms ±10%, ½ w, RC20GF104K, spec MIL-R-11. Same as R205.	Grid Return For V302 Fig. 6-36
R306		RESISTOR, FIXED: Composition 220 ohm ±10%, ½ w, RC20GF221K, spec MIL-R-11.	Cathode Bypass For V302 Fig. 6-36
R307		RESISTOR, FIXED: Composition 33,000 ohms ±10%, ½ w, RC20GF333K, spec MIL-R-11.	Screen Decoupling For V302 Fig. 6-36
R308		RESISTOR, VARIABLE: Composition 10,000 ohms ±10%, 2 w, RV4LAYSA103A, spec MIL-R-94.	T301 Balance Fig. 6-36
R309		Same as R305.	Disabling For T301 Fig. 6-36
R310		RESISTOR, FIXED: Composition 10,000 ohms ±10%, ½ w, RC20GF103K, spec MIL-R-11.	Grid Resistor For V303 Fig. 6-36
R311		RESISTOR, FIXED: Composition 180 ohms ±10%, ½ w, RC20GF181K, spec MIL-R-11.	Cathode Bias For V303 Fig. 6-36
R312		Same as R307.	Screen Decoupling For V303 Fig. 6-36
R313		RESISTOR, VARIABLE: Composition, 5000 ohms ±10%, 2 w, RV4LAYSA502A, spec MIL-R-94.	T302 Balance Fig. 6-36
R314		Same as R305.	Disabling For T302 Fig. 6-36
R315		Same as R310.	Grid Resistor For V304 Fig. 6-36
R316		Same as R311.	Cathode Bias For V304 Fig. 6-36
R317		Same as R307.	Screen Decoupling For V304 Fig. 6-36
R318		RESISTOR, FIXED: Composition 1000 ohms ±10%, ½ w, RC20GF102K, spec MIL-R-11.	Plate Decoupling For V302 Fig. 6-36
R319		Same as R318.	Plate Decoupling For V303 Fig. 6-36
R320		Same as R318.	Plate Decoupling For V302 Fig. 6-36
R321		RESISTOR, FIXED: Composition, 33,000 ohms ±10%, 2 w, RC42GF333K, spec MIL-R-11.	Cathode Voltage Ref For V323 Fig. 6-38
R322		Same as R321.	Cathode Voltage Ref For V323 Fig. 6-38
R323		RESISTOR, FIXED: Composition, 22,000 ohms ±10%, 2 w, RC42GF223K, spec MIL-R-11.	Cathode Voltage Ref For V323 Fig. 6-38
R324		Same as R323.	Cathode Voltage Ref For V323 Fig. 6-38
R325		RESISTOR, FIXED: Composition, 15,000 ohms ±10%, 2 w, RC42GF153K, spec MIL-R-11.	Voltage Adjust Divider Fig. 6-38
R326		RESISTOR, FIXED: Composition, 68,000 ohms ±10%, 1 w, RC32GF683K, spec MIL-R-11.	Current Limiter For V324 Fig. 6-38
R327		RESISTOR, FIXED: Composition, 1 meg ±10%, ½ w, RC20GF105K, spec MIL-R-11.	Grid Return For V323 Fig. 6-38
R328		RESISTOR, FIXED: Composition, 470,000 ohms ±10%, 1 w, RC32GF474K, spec MIL-R-11.	Plate Load For V323 Fig. 6-38
R329		RESISTOR, FIXED: Composition, 470,000 ohms ±10%, 2 w, RC42GF474K, spec MIL-R-11.	Grid Return For V321 Fig. 6-38

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—C ntinued

OSCILLATOR, RADIO FREQUENCY O-581/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
R330		RESISTOR, FIXED: Composition, 47 ohms ±10%, 2 w, RC42GF470K, spec MIL-R-11.	Cathode Balance For V322 Fig. 6-38
R331		Same as R330.	Cathode Balance For V322 Fig. 6-38
R332		RESISTOR, VARIABLE: Composition, 25,000 ohms ±10%, 2 w, RV4NAYSD253A, spec MIL-R-94.	+250 Volt Level Adjust Fig. 6-38
R333		Same as R330.	Cathode Balance For V321 Fig. 6-38
R334		Same as R330.	Cathode Balance For V321 Fig. 6-38
R335		Same as R327.	Grid Return For V323 Fig. 6-38
R336		RESISTOR, FIXED: Composition, 220,000 ohms ±10%, ½ w, RC20GF224K, spec MIL-R-11.	Grid Resistor For V323 Fig. 6-38
R337 thru R378		Not Used.	
R379		RESISTOR, FIXED: Composition, 6800 ohms ±10%, ½ w, RC20GF682K, spec MIL-R-11.	Control Bias Fig. 6-39
R380		Not Used.	
R381		RESISTOR, FIXED: Composition, 10 ohms ±10%, ½ w, RC20GF100K, spec MIL-R-11.	Grid Insulation For V301 Fig. 6-36
R382 thru R388		Not Used.	
R389		Same as R305.	RF Oscillator Control Decoupling Fig. 6-37
R390		RESISTOR, FIXED: Composition, 12,000 ohms ±10%, ½ w, RC20GF123K, spec MIL-R-11.	Voltage Dropping For C387 Bias Fig. 6-39
R391		Same as R307.	Bias Divider M301 Fig. 6-39
R392		RESISTOR, FIXED: Composition, 10,000 ohms ±10%, 2 w, RC42GF103K, spec MIL-R-11.	Current Limiter For K301 Fig. 6-39
R393		RESISTOR, FIXED: Composition, 82,000 ohms ±10%, 1 w, RC32GF823K, spec MIL-R-11.	FSK Test Divider Fig. 6-39
R394		RESISTOR, FIXED: Composition, 47,000 ohms ±10%, 1 w, RC32GF473K, spec MIL-R-11.	FSK Test Divider Fig. 6-39
R395		RESISTOR, FIXED: Composition, 470 ohms ±10%, ½ w, RC20GF471K, spec MIL-R-11.	Stabilizer Gain Control Fig. 6-36
R396		RESISTOR, FIXED: Composition, 56 ohms ±10%, ½ w, RC20GF560K, spec MIL-R-11.	Stabiliz r Control Fig. 6-36
R397		RESISTOR, FIXED: Composition, 47 ohms ±10%, ½ w, RC20GF470K, spec MIL-R-11.	Stabilizer Feedback Fig. 6-36
R398		RESISTOR, FIXED: Composition, 39 ohms ±10%, ½ w, RC20GF390K, spec MIL-R-11.	Stabilizer Feedback Fig. 6-36
R399		RESISTOR, FIXED: Composition, 33 ohms ±10%, ½ w, RC20GF330K, spec MIL-R-11.	Stabilizer Feedback Fig. 6-36
R399		Cont. See R401.	
S301		SWITCH, ROTARY: 4 section, mfr 89661, dwg 337C353H01.	RF Oscillator Band Switch Fig. 6-37
S302		SWITCH, ROTARY: 8 section shorting type contacts, no stop, mfr 89661, dwg 332C638H01.	Oscillator Doubler Band Change Fig. 6-36
S303		Not Used.	
S304		SWITCH, TOGGLE: SPST, rated 15 amp at 125 v ac, phenolic body, 2 solder lug terminals, ST42A, JAN-S-23.	Oven Heater Control Fig. 6-39
S305		SWITCH, THERMOSTATIC: 65 ±0.05 deg c operating temperature, 2 terminals mercury in glass, mfr 48620, type 28807.	Oven Temp Control Fig. 6-35
S306		SWITCH, THERMOSTATIC: SPST type automatic, enclosed disc type, cup and mtg flange stainless steel, mfr 78043, type C4370-23.	Oven High Temp Protection Fig. 6-35
S307		Not Used.	
S308		Not Used.	
S309		SWITCH, ROTARY: 1 section, 4 position 2 stops, non-shorting type contacts, solid silver alloy contact and rotors, mfr 89661, dwg 231B746H01.	FSK Test Control Fig. 6-39

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

OSCILLATOR, RADIO FREQUENCY O-581/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
S310 thru S399		Not Used.	
S399		Cont. See S1201.	
T301		TRANSFORMER, RADIO FREQUENCY: 1 primary, 3 secondary windings, 8 solder post terminals, mfr 89661, dwg 150A902H01.	RF Coupling For V302 Plate Fig. 6-36
T302		TRANSFORMER, RADIO FREQUENCY: 1 primary, 3 secondary windings, 8 solder post terminals, mfr 89661, dwg 150A840H01.	RF Coupling For V303 Plate Fig. 6-36
T303		TRANSFORMER, RADIO FREQUENCY: Adjustable, q of 140 at 15.0 mc, mfr 89661, dwg 51C8069-1-1.	Frequency Tracking Components For V304 Fig. 6-36
T304		TRANSFORMER, RADIO FREQUENCY: Adjustable, q of 150 at 20.0 mc, mfr 89661, dwg 51C8069-1-8.	Frequency Tracking Components For V304 Fig. 6-36
T305		TRANSFORMER, RADIO FREQUENCY: Adjustable, q of 150 at 25.0 mc, mfr 89661, dwg 51C8069-1-15.	Frequency Tracking Components For V304 Fig. 6-36
T306		TRANSFORMER, POWER STEP-DOWN: Primary 115 v, 50-60 cps, secondary 6.3 v, 5.3 amp or 6.5 v, 5.0 amp, mfr 89661, dwg 150A646H01.	Filament Transformer Fig. 6-37
T307		Same as T306.	Filament Transformer Fig. 6-39
T308 thru T399		Not Used.	
T399		Cont. See T1201.	
TB301		TERMINAL BOARD: Barrier type, phenolic board, 20 double screw type terminals, tenth terminal from lefthand side drilled to 3/16 in. dia, mfr 89661, dwg 227B115H01.	RF Osc Drawer Input Fig. 6-39
TB302		Not Used.	
TB303		Not Used.	
TB304		TERMINAL BOARD: Barrier type, phenolic board, 4 double screw type terminals, mfr 71785, type 4-141D.	Oven Heater Connection Fig. 6-35
TB305		Not Used.	
TB306		Same as TB304.	Oven Input Connection Fig. 6-39
TB307		TERMINAL BOARD: Barrier type, phenolic board, 7 double screw type terminals, mfr 71785, type 7-141D.	Output Terminal Fig. 6-36
TB308 thru TB319		Not Used.	
TB320		TERMINAL BOARD: Barrier type, 6 double screw type terminals, mfr 71785, type 6-140D.	Regulator Input Terminal Board Fig. 6-38
TB321 thru TB399		Not Used.	
TB399		Cont. See TB1201.	
V301		ELECTRON TUBE GLASS ENVELOPE: Sharp-cutoff pentode, 6AU6WA, spec MIL-E-1B.	RF Oscillator Fig. 3-7
V302		Same as V301.	Oscillator Amplifier Fig. 3-7
V303		Same as V301.	Oscillator First Doubler Amplifier Fig. 3-7
V304		Same as V301.	Oscillator Second Doubler Amplifier Fig. 3-7
V305 thru V320		Not Used.	
V321		ELECTRON TUBE RECEIVING: Twin-triode, 6080WA, spec MIL-E-1.	Series Regulator Fig. 3-7
V322		Same as V321.	Series Regulator Fig. 3-7

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—C ntinued

OSCILLATOR, RADIO FREQUENCY O-581/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
V323		ELECTRON TUBE MINIATURE TWIN TRIODE: Recurring, 12AT7WA, spec MIL-E-1.	Fig. 3-7
V323A		Part of V323. Listed for reference only.	
V323B		Part of V323. Listed for reference only.	Regulator Amplifier
V324		ELECTRON TUBE VOLTAGE REGULATOR: 5651WA, spec MIL-E-1.	Regulator Amplifier Voltage Reference Fig. 3-7
V325 thru V399		Not Used.	
V399		Cont. See V1201.	
XDS301		LIGHT, INDICATOR: 115 v, with integral resistor, for T-3 ¼ 1 lamp clear lens, LH64BC2, spec MIL-L-3661.	For DS301 Lampbulb
XDS302 thru XDS399		Not Used.	
XV301		SOCKET, ELECTRON TUBE: 7 contact miniature, no missing contacts, plastic body, provisions for mtg bayonet type electron tube shield, TS102P01, JAN-S-28.	For V301 Fig. 6-36
XV302		Same as XV301.	For V302 Fig. 6-36
XV303		Same as XV301.	For V303 Fig. 6-36
XV304		Same as XV301.	For V304 Fig. 6-36
XV305 thru XV320		Not Used.	
XV321		SOCKET, ELECTRON TUBE: 7 contact miniature, beryllium copper, silver plated contacts, w/shock shield base TTS101P02, MIL-S-12883.	For V321 Fig. 6-38
XV322		Same as XV321.	For V322 Fig. 6-38
XV323		SOCKET, ELECTRON TUBE: 9 contact miniature, plastic body, provisions for mtg layout type electron tube shield, TS103P01, JAN-S-28.	For V323 Fig. 6-38
XV324		Same as XV301.	For V324 Fig. 6-38
XV325 thru XV399		Not Used.	
XV399		Cont. See XV1201.	
C401 thru C420		Not Used.	
C421		CAPACITOR, FIXED, GLASS DIELECTRIC: 62 μμf ±1%, 300 v dc, mfr 89661, dwg 231B743H11.	Band #5 Ratio Fig. 6-37
C422		CAPACITOR, FIXED, CERAMIC DIELECTRIC: 2200 μμf +100 −20%, 500 v dc working, CK62Y222Z, spec MIL-C-11015.	+250 V Reg Filter Fig. 6-36
C423		Same as C342.	+250 V Reg Filter Fig. 6-36
C424		Same as C323.	+250 V Reg Filter Fig. 6-36
C425		Not Used.	
C426		CAPACITOR, FIXED, PAPER DIELECTRIC: 100,000 μμf ±10%, 1000 v dc working, CP53B1EG104K, spec MIL-C-25A.	RF Bypass For M301 Fig. 6-39
C427		Not Used.	
C428		Same as C384.	Band #6 Ratio Fig. 6-37
C429		Not Used.	Band #2 Ratio Fig. 6-37
C430 thru C499		Not Used.	
C499		Cont. See C1201.	
R400		RESISTOR, FIXED, COMPOSITION: 27,000 ohms ±10%, ½ w, RC20GF273K, spec MIL-R-11.	
R401		RESISTOR, FIXED, COMPOSITION: 22 ohms ±10%, ½ w, RC20GF220K, spec MIL-R-11.	Stabilizer Feedback Fig. 6-36
R402		RESISTOR, FIXED, COMPOSITION: 100 ohms ±10%, ½ w, RC20GF101K, spec MIL-R-11A.	Stabilizer Feedback Fig. 6-36

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

OSCILLATOR, RADIO FREQUENCY O-581/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
R403		RESISTOR, FIXED, COMPOSITION: 68 ohms ±10%, ½ w, RC20GF680K, spec MIL-R-11.	Stabilizer Feedback Fig. 6-36
R404		Same as R398.	Stabilizer Feedback Fig. 6-36
R405		Same as R397.	Stabilizer Feedback Fig. 6-36
R406		Same as R399.	Stabilizer Feedback Fig. 6-36
R407		RESISTOR, FIXED, COMPOSITION: 18 ohms ±10%, ½ w, RC20GF180K, spec MIL-R-11.	Stabilizer Feedback Fig. 6-36
R408		Not Used.	Stabilizer Feedback Fig. 6-39
R409		Same as R326.	250 V Voltage Divider Fig. 6-39
R410 thru R499		Not Used.	
R499		Cont. See R1201.	

AMPLIFIER-POWER SUPPLY AM-2122/WRT-2

500 and 1400 Series		AMPLIFIER-POWER SUPPLY: Manual control type, requires 115/220/440 v ac, 60 cps, 3 phase power, aluminum case, gray enamel finish, 20 5/16 in. lg, 17½ in. w, 10¾ in. h, mfr 89661, dwg 476D324, Navy type AM-2122/WRT-2.	Supplies Unregulated Plate And Bias DC Voltages And Contains Speech Amplifier
C501		CAPACITOR, FIXED, PAPER DIELECTRIC: 50,000 μμf ±10%, 1500 v dc working, CP26A1EH503K, spec MIL-C-25A.	Suppressor +350 V Rectifier Fig. 6-45
C502		CAPACITOR, FIXED, PAPER DIELECTRIC: 10 μf ±10%, 600 v dc working, CP70B1EF106K, spec MIL-C-25A.	Filter +350 V Supply Fig. 6-45
C503		Same as C502.	Filter +350 V Supply Fig. 6-45
C504		Same as C502.	Filter +350 V Supply Fig. 6-45
C505		Same as C501.	Suppressor 350 V Rectifier Fig. 6-45
C506		CAPACITOR, FIXED, PAPER DIELECTRIC: 2 μf ±10%, 600 v dc working, CP70B1EF205K, spec MIL-C-25A.	Filter −350 V Supply Fig. 6-45
C507		CAPACITOR, FIXED, PAPER DIELECTRIC: 4 μf ±10%, 600 v dc working, CP70B1EF405K, spec MIL-C-25A.	Filter −350 V Supply Fig. 6-45
C508		CAPACITOR, FIXED, ELECTROLYTIC: 800 μμf −10 +150%, 50 v working, CE51C801G, spec MIL-C-62.	Filter −350 V Supply Fig. 6-45
C509		CAPACITOR, FIXED, ELECTROLYTIC: 1500 μμf −10 +150%, 50 v working, CE51C152F, MIL-C-62.	Filter 12 V Supply Fig. 6-45
C510		Same as C509.	Filter 12 V Supply Fig. 6-45
C511		Same as C509.	Filter 12 V Supply Fig. 6-45
C512		CAPACITOR, FIXED, ELECTROLYTIC: Tantalum, 50 v dc working, 2.5 mfd, +75 −15%, mfr 93561, type 102D1216A1.	DC Blocking Fig. 6-45
C513		Same as C512.	DC Blocking Fig. 6-45
C514 thru C599		Not Used.	
C599		Cont. See C1401.	
CR501		SEMICONDUCTOR, DEVICE, DIODE: 800 v peak inverse voltage, 1.5 ma, 175 deg c max temp, mfr 05277, type 1N1226.	+350 V DC Rectifier Bridge Fig. 6-45
CR502		Same as CR501.	+350 V Rectifier Fig. 6-45
CR503		Same as CR501.	+350 V Rectifier Fig. 6-45
CR504		Same as CR501.	+350 V Rectifier Fig. 6-45

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

AMPLIFIER-POWER SUPPLY AM-2122/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
CR505		Same as CR501.	+350 V Rectifier Fig. 6-45
CR506		Same as CR501.	+350 V Rectifier Fig. 6-45
CR507		Same as CR501.	+350 V Rectifier Fig. 6-45
CR508		Same as CR501.	+350 V Rectifier Fig. 6-45
CR509		Same as CR501.	−350 V Rectifier Fig. 6-45
CR510		Same as CR501.	−350 V Rectifier Fig. 6-45
CR511		Same as CR501.	−350 V Rectifier Fig. 6-45
CR512		Same as CR501.	−350 V Rectifier Fig. 6-45
CR513		Same as CR501.	Rectifier Fig. 6-45
CR514		Same as CR501.	−350 V Rectifier Fig. 6-45
CR515		Same as CR501.	−350 V Rectifier Fig. 6-45
CR516		Same as CR501.	−350 V Rectifier Fig. 6-45
CR517		SEMICONDUCTOR DEVICE, DIODE: Silicone, 80 amp peak surge current, mfr 05277, type 1N1202.	12 V Rectifier Fig. 6-45
CR518		Same as CR517.	12 V Rectifier Fig. 6-45
CR519		SEMICONDUCTOR DEVICE, DIODE: Silicone, 80 amp peak surge current, mfr 05277, type 1N1204.	−24 V Rectifier Fig. 6-45
CR520		Same as CR519.	−24 V Rectifier Fig. 6-45
CR521		SEMICONDUCTOR DEVICE, DIODE: 100 v peak inverse voltage, 5.0 ma min forward current at 25 deg c temp 1N198, spec MIL-E-1.	Insulation Diode Fig. 6-45
CR522		Same as CR301.	
CR523		Same as CR521.	Insulation Diode Fig. 6-45
CR524 thru CR599		Not Used.	Shunt 50509A Fig. 6-45
CR599		Cont. See CR1401.	
DS501		LAMP, INCANDESCENT SINGLE CONTACT: Miniature bayonet base, 28 v, MIL type MS15571-6.	Door Interlock Indicator Fig. 6-45
DS502		Same as DS207.	Filament Power On Indicator Fig. 6-45
DS503		Same as DS501.	Rectifier On Indicator Fig. 6-45
DS504		Same as DS501.	L.V. Rectifier On Indicator Fig. 6-45
DS505		Same as DS501.	L.V. Rectifier Overload Indicator Fig. 6-45
DS506		LAMP, INCANDESCENT: 14 v, bayonet type base, type TS22, MS15571-8.	USB Indicator Fig. 6-45
DS507		Same as DS506.	LSB Indicator Fig. 6-45
DS508 thru DS599		Not Used.	
E501		RESISTOR BOARD: Board with 28 terminals, mfr 89661, dwg 337C065G02.	Meter A47396 And Resistor Board Fig. 6-45
E502		TERMINAL BOARD: c/o 3 terminals and other mounting hardware, mfr 89661, dwg 231B936G01.	FSK Termination Fig. 6-45

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

AMPLIFIER-POWER SUPPLY AM-2122/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
E503		RESISTOR BOARD: c/o 8 terminals and other mounting hardware, mfr 89661, dwg 231B916G02.	Lamp Resistor Board Fig. 6-45
E504		RECTIFIER BOARD: c/o 14 terminals and other mounting hardware, mfr 89661, dwg 337C057G02.	+350 V Rectifier Board Fig. 6-45
E505		RECTIFIER BOARD: c/o 14 terminals and other mounting hardware, mfr 89661, dwg 337C061G02.	−350 V Rectifier Board Fig. 6-45
E506		TERMINAL BOARD: c/o 4 terminals and other mounting hardware, mfr 89661, dwg 231B869G01.	Input Power Adjustment Board Fig. 6-45
E507		RESISTOR BOARD: c/o 8 terminals and other mounting hardware, mfr 89661, dwg 231B954G02.	Resistors For Biasing Q502 Fig. 6-45
E508		INSULATOR STANDOFF: Mineral filled melamine, brass, tin coated terminal, mfr 81312, type 776.	Wiring Tie Point
E509		KNOB BLACK PHENOLIC: W/pointer, 3/4 in. dia knob, 1 3/16 in. dia skirt accommodates 1/4 in. dia shaft, mfr 88365, type VIZG w/flats.	Control Knob Fig. 5-37
E510		KNOB BLACK PHENOLIC: W/pointer, flatted sides, 1 1/16 in. dia skirt, accommodates 1/4 in. shaft, mfr 88365, type VIZA w/flats.	Control Knob Fig. 5-37
E511		Same as E508.	Wiring Tie Point
E512		Same as E508.	Wiring Tie Point
E513		Same as E508.	Wiring Tie Point
E514		Same as E508.	Wiring Tie Point
E515 thru E599		Not Used.	
E599		Cont. See E1401.	
F501		FUSE, CARTRIDGE: 5 amp, 250 v, F10G5R00A, spec MIL-F-15160.	Transmitter 115 V AC Filament Fig. 6-45
F502		FUSE, CARTRIDGE: 3 amp, 250 v, F10G3R00A, spec MIL-F-15160.	Transmitter 115 V AC Tuner Fig. 6-45
F503		Same as F501.	Transmitter 115 V AC Oven Fig. 6-45
F504		FUSE, CARTRIDGE: 4 amp, 250 v, F10G4R00A, spec MIL-F-15160.	−24 V Control Fig. 6-45
F505		FUSE, CARTRIDGE: 2 amp, 250 v, F10G2R00A, spec MIL-F-15160.	12 V Radiophone Fig. 6-45
F506 thru F599		Not Used.	
FL501		LOW PASS: 0-10,000 cps, 600 ohms input, 600 ohms output, 4 solder lug terminals, mfr 89661, dwg 152A493H01.	Filter, Low Passline (AM And USB) Fig. 6-45
FL502		Same as FL501.	Filter, Low Passline LSB Fig. 6-45
FL503 thru FL599		Not Used.	
FL599		Cont. See FL1401.	
J501		CONNECTOR, RECEPTACLE, ELECTRICAL: 7/8-20 coupling thread, 5 socket contacts, AN3102A-14S-5S, spec MIL-C-5015.	USB Hand Set Jack Fig. 6-45
J502		Same as J501.	LSB Hand Set Jack Fig. 6-45
J503 thru J599		Not Used.	
K501		RELAY, ARMATURE: 4 pdt, single break, 6 v dc, 214 ma, mfr 70309, type SKHX663. Same as K206.	+350 V Overload Relay Fig. 6-45
K502		RELAY, ARMATURE: 4 pdt, single break, 24 v dc, 57 ma, mfr 70309, type SKHX664. Same as K207.	−350 V Overload Relay Fig. 6-45
K503		RELAY, ARMATURE: DPDT, single break, 115 v ac, 15 amp, mfr 70309, type B0-6A-115.	Door Interlock Relay Fig. 6-45
K504		RELAY, ARMATURE: 4 pdt, single break, 115 v ac, 15 amp, 1 inductive winding, 90 v ac, 0.10 amp, 112 ohms, mfr 70309, type PON-12A-90V (90 v ac coil).	Rectifier Power Control Relay Fig. 6-45

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

AMPLIFIER-POWER SUPPLY AM-2122/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
K505		RELAY, ARMATURE: 4 pdt, 145 ohms, 0.100 amp, 115 v ac, mfr 70309, type PON-12A-115V.	L.V. Rectifier Relay Fig. 6-45
K506		Same as K502.	Overload Auxiliary Relay Fig. 6-45
K507		RELAY, ARMATURE: 4 pdt, single break, 15.5 v dc, 60.4 ma, mfr 70309, type SKHX661.	Bias Keying Relay Fig. 6-45
K508		RELAY, ARMATURE: 24 v dc coil, mfr 82415, type 5397-12HS.	Carrier Suppress Delay Open Relay Fig. 6-45
K509		Same as K507.	Break-In Follower Relay Fig. 6-45
K510		RELAY, ARMATURE: 4 pdt, single break, 10.13 v dc, 91.2 ma, mfr 70309, type SKHX662.	Push To Talk AM And USB Relay Fig. 6-45
K511		Same as K510.	Push To Talk LSB Relay Fig. 6-45
K512 thru K599		Not Used.	
L501		REACTOR: 2.5 henries, 0.55 amp, 175 c at 120 cps, 17.6 ohms dc resistance, mfr 89661, dwg 378A140G01.	Filter +350 V Supply Fig. 6-45
L502		Same as L501.	Filter +350 V Supply Fig. 6-45
L503		REACTOR: 10 henries, 0.10 amp, 175 v at 120 cps, 140 ohms dc resistance, mfr 89661, dwg 150A716H01.	Filter −350 V Supply Fig. 6-45
L504		Same as L503.	Filter −350 V Supply Fig. 6-45
L505		REACTOR: 0.063 henries, 6 v, 1.2 amp, 120 cps, 1.73 ohms dc resistance, mfr 89661, dwg 150A719H01.	Filter 12 V Supply Fig. 6-45
L506		REACTOR: 0.063 henries, 12 v, 120 cps, 0.3 amp, 1.91 ohms dc resistance, mfr 89661, dwg 150A737H01.	Filter 24 V Supply Fig. 6-45
L507 thru L599		Not Used.	
L599		Cont. See L1401.	
M501		VOLTMETER: 150 full scale value measures ac current, white face, ruggedized, MR26W150ACVVR, spec MIL-M-10304.	Voltmeter Fig. 6-45
M502		METER, AUDIO LEVEL: Calibrated 0 to +3 vu, 0 to −20 vu, metal case, meter movement adjusted to 3900 ohms, mfr 88287, type 1522.	Filament Voltage Fig. 6-45
M503 thru M599		Not Used.	
Q501		TRANSISTOR: 2 mc, 30 ohms min, 90 ohms ma, 2N119, spec MIL-T-19500.	Meter Amplifier For M502 Fig. 6-45
Q502		TRANSISTOR: Power, 200 ohms ma resistance, +30 v collector voltage, +1.5 amp collector current dc, 2.0 w total dissipation in free air, mfr 90139, type 2N95.	Switching Transistor Fig. 6-45
Q503 thru Q599		Not Used.	
R501		RESISTOR, FIXED: Composition 1000 ohms ±10%, 1 w, RC32GF102K, spec MIL-R-11.	Suppressor, +350 V Rectifier Fig. 6-45
R502		RESISTOR, VARIABLE: Wirewound, 100 ohms, 2 w, RA20LASB100A, spec MIL-R-19.	Adjust, +350 V Rectifier Overload Relay Fig. 6-45
R503		Same as R501.	Suppressor −350 V Rectifier Fig. 6-45
R504		RESISTOR, VARIABLE: Wirewound, 250 ohms, 2 w, RA20LASB251A, spec MIL-R-19.	Adjust −350 V Rectifier Overload Relay Fig. 6-45
R505		RESISTOR, FIXED: Composition 33,000 ohms ±10%, 2 w, RC42GF333K, spec MIL-R-11. Same as R321.	Bias Keying For Q502 Fig. 6-45
R506		Same as R505.	Bias Keying For Q502 Fig. 6-45
R507		RESISTOR, FIXED: Composition 6800 ohms ±10%, ½ w, RC20GF682K, spec MIL-R-11. Same as R379.	Bias Keying For Q502 Fig. 6-45

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

AMPLIFIER-POWER SUPPLY AM-2122/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
R508		RESISTOR, FIXED: Wirewound, 2000 ohms, ±5%, 10 w, RW31G202, spec MIL-R-26.	FSK Termination Fig. 6-45
R509		RESISTOR, FIXED: Composition 2200 ohms ±10%, 2 w, RC42GF222K, spec MIL-R-11.	FSK Termination Fig. 6-45
R510		Same as R509.	FSK Termination Fig. 6-45
R511		Same as R505.	Bias Voltage Divider Q502 Fig. 6-45
R512		Same as R505.	Bias Voltage Divider Q502 Fig. 6-45
R513		RESISTOR, FIXED: Composition 10,000 ohms ±10%, ½ w, RC20GF103K, spec MIL-R-11. Same as R310.	Bias Voltage Divider Q502 Fig. 6-45
R514		RESISTOR, FIXED: Wirewound, 500 ohms, ±5%, 10 w, RW31G500, spec MIL-R-26.	Bleeder 12 V Supply Fig. 6-45
R515		RESISTOR, FIXED: Wirewound, 50 ohms ±5%, 10 w, RW35G500, spec MIL-R-26.	Bleeder −24 V Supply Fig. 6-45
R516		RESISTOR, FIXED: Wirewound noninductive winding, 100 ohms ±5%, 10 w, 275 c max continuous operating temp, 25 c ambient temp, tab type terminals, RW31G101, spec MIL-R-26.	Bleeder 12 V Supply Fig. 6-45
R517		RESISTOR, FIXED: Composition 120 ohms ±10%, 2 w, RC42GF121K, spec MIL-R-11.	Filter 12 V Supply Fig. 6-45
R518		RESISTOR, FIXED: Composition 220,000 ohms ±10%, ½ w, RC20GF224K, spec MIL-R-11. Same as R336.	Bias Resistor For Q501 Fig. 6-45
R519		RESISTOR, FIXED: Composition, 180 ohms ±10%, ½ w, RC20GF181K, spec MIL-R-11. Same as R311.	Emitter Resistor Q501 Fig. 6-45
R520		RESISTOR, FIXED: Composition, 3900 ohms ±10%, ½ w, RC20GF392K, spec MIL-R-11.	Series Dropping Q501 Fig. 6-45
R521		Same as R520.	Series Calibration M502 Fig. 6-45
R522		RESISTOR, FIXED: Wirewound, 2500 ohms ±5%, 7 w, RW55V252, spec MIL-R-26B.	Series Dropping For DS501 Fig. 6-45
R523		Same as R522.	Series Dropping For DS502 Fig. 6-45
R524		Same as R522.	Series Dropping For DS503 Fig. 6-45
R525		Same as R522.	Series Dropping For DS504 Fig. 6-45
R526		RESISTOR, FIXED: Wirewound, 310 ohms ±5%, 10 w, RW31G311, spec MIL-R-26B.	Limiting Resistor For K504 Fig. 6-45
R527		RESISTOR, VARIABLE: Composition, 2500 ohms ±10%, 2 w, RV4LAYSA252A, spec MIL-R-94.	Bias Keying Relay K507 Adjust Fig. 6-45
R528		RESISTOR, FIXED: Wirewound, 8000 ohms ±5%, 18 w, RW33G802, spec MIL-R-26B.	Series PH Screen Dropping Fig. 6-45
R529		RESISTOR, FIXED: Composition, 150 ohms ±10%, 1 w, RC32GF151K, spec MIL-R-11.	Suppressor For K509 Fig. 6-45
R530		RESISTOR, FIXED: Composition, 22,000 ohms ±10%, 2 w, RC42GF223K, spec MIL-R-11. Same as R323.	FSK Termination Fig. 6-45
R531		RESISTOR, FIXED: Composition, 180,000 ohms ±10%, 1 w, RC32GF184K, spec MIL-R-11.	Equalizing Resistor Fig. 6-45
R532		Same as R531.	Equalizing Resistor Fig. 6-45
R533		Same as R531.	Equalizing Resistor Fig. 6-45
R534		Same as R531.	Equalizing Resistor Fig. 6-45
R535		Same as R531.	Equalizing Resistor Fig. 6-45
R536		Same as R531.	Equalizing Resistor Fig. 6-45
R537		Same as R531.	Equalizing Resistor Fig. 6-45
R538		Same as R531.	Equalizing Resistor Fig. 6-45

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—C ntinued

AMPLIFIER-POWER SUPPLY AM-2122/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
R539		Same as R531.	Equalizing Resistor Fig. 6-45
R540		Same as R531.	Equalizing Resistor Fig. 6-45
R541		Same as R531.	Equalizing Resistor Fig. 6-45
R542		Same as R531.	Equalizing Resistor Fig. 6-45
R543		Same as R531.	Equalizing Resistor Fig. 6-45
R544		Same as R531.	Equalizing Resistor Fig. 6-45
R545		Same as R531.	Equalizing Resistor Fig. 6-45
R546		Same as R531.	Equalizing Resistor Fig. 6-45
R547 thru R599		Not Used.	
R599		Cont. See R1401.	
S501		SWITCH, ROTARY: 2 sections, 8 positions, 2 pole, contact ratings, 30 amp, 230 v ac, mfr 82121, type JS2200.	Control Bias Fig. 6-45
S502		SWITCH, TOGGLE: DPST, rated 25 amp, 125 v ac, bakelite body, 4 solder lug type terminals, ST52K, spec JAN-S-23.	Filament Power Fig. 6-45
S503		SWITCH, PUSH, MOMENTARY ACTION: Rated 30 v dc, 3 amp inductive, mfr 74059, type 2PB2. Same as S203.	Plate Power On Fig. 6-45
S504		Same as S503.	Plate Power-Off Fig. 6-45
S505		Same as S503.	L.V. Rectifier Overload Reset Fig. 6-45
S506		RELAY, THERMAL, TIME DELAY, NORMALLY OPEN: mfr 93929, type RM-30-NO-115.	Filament Time Delay Fig. 6-45
S507		SWITCH, ROTARY: 2 position, 20 pole, 5 section, non-shorting type contacts, mfr 89661, dwg 335C736H01.	Local-Remote Switch Fig. 6-45
S508		SWITCH, ROTARY: 5 position, 12 pole, 6 section, non-shorting type contacts, mfr 89661, dwg 335C735H01.	Emission Selector Fig. 6-45
S509		SWITCH, ROTARY: 8 pole, 2 position, 2 section, non-shorting type contacts, mfr 89661, dwg 335C725H01.	6 Wire Remote—2 Wire Remote Switch Fig. 6-45
S510		SWITCH, ROTARY: 4 pole, 4 position, 2 section, non-shorting type contacts, mfr 89661, dwg 335C723H01.	Power Selector Fig. 6-45
S511		SWITCH, ROTARY: 2 pole, 4 position, 1 section, non-shorting type contacts, mfr 89661, dwg 335C734H01.	Test Tone Fig. 6-45
S512		Same as S503.	USB To VU Meter Fig. 6-45
S513		Same as S503.	LSB To VU Meter Fig. 6-45
S514 thru S599		Not Used.	
T501		TRANSFORMER, POWER STEP-DOWN AND STEP-UP: 3 input voltages, 16 output voltages, mfr 89661, dwg 152A502H01.	Input Power Step-Down Fig. 6-45
T502		TRANSFORMER, POWER: Step-Up, 1 primary, 220 v, 2 secondaries, 420 v and 425 v, mfr 89661, dwg 150A723H01.	+350 V −350 V Fig. 6-45
T503		TRANSFORMER, POWER: Step-Down, 1 primary, 6 secondaries, 535 v working, mfr 89661, dwg 150A725H01.	12 V And −24 V Rectifier Fig. 6-45
T504 thru T599		Not Used.	
T599		Cont. See T1401.	
TB501		BLOCK: c/o two modified 141-D16 terminal boards, and four modified 141-D9 terminal boards. Listed for reference only.	Fig. 6-45
TB501A		BOARD, TERMINAL, BARRIER TYPE: 15 double screw type terminals, mfr 89661, dwg 231B987G01.	Input Terminal Board
TB501B		Same as TB501A.	Input Terminal Board

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

AMPLIFIER-POWER SUPPLY AM-2122/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
TB501C		BOARD, TERMINAL, BARRIER TYPE: 9 double screw type terminals, mfr 89661, dwg 54B6647H09.	Input Terminal Board
TB501D		Same as TB501C.	Input Terminal Board
TB501E		Same as TB501C.	Input Terminal Board
TB501F		Same as TB501C.	Input Terminal Board
TB502 thru TB599		Not Used.	
TB599		Cont. See TB1401.	
XC501 thru XC507		Not Used.	
XC508		SOCKET, ELECTRON TUBE: 7 contact, miniature, beryllium copper silver plated contacts, w/shock shield base TS101P02, spec MIL-S-12883. Same as XV321.	For C508 Fig. 6-45
XC509		Same as XC508.	For C509 Fig. 6-45
XC510		Same as XC508.	For C510 Fig. 6-45
XC511		Same as XC508.	For C511 Fig. 6-45
XC512 thru XC599		Not Used.	
XDS501		LIGHT, INDICATOR: 28 v, plain white lens, for T-3-1/4 lamp LH62PW2, spec MIL-L-3661. Same as XDS208.	Socket For DS501 Fig. 6-45
XDS502		LIGHT, INDICATOR: Brass w/black nickel finish, amber lens, for T-3-1/4 bayonet base lamp, LH62BA2, spec MIL-L-3661.	Socket For DS502 Fig. 6-45
XDS503		LIGHT, INDICATOR: Brass w/black nickel finish, plain blue convex lens, for T-3-1/4 lamp, LH62BB2, spec MIL-L-3661.	Socket For DS503 Fig. 6-45
XDS504		LIGHT, INDICATOR: 28 v, accommodates T-3-1/4 lamp, plain red lens, LH62BR2, spec MIL-L-3661. Same as XDS207.	Socket For DS504 Fig. 6-45
XDS505		Same as XDS501.	Socket For DS505 Fig. 6-45
XDS506		Same as XDS501.	Socket For DS506 Fig. 6-45
XDS507		Same as XDS501.	Socket For DS507 Fig. 6-45
XDS508 thru XDS599		Not Used.	
XF501		FUSE HOLDER NONINDICATING TYPE: 250 v, 22 amp, unsealed, FHN22U, spec MIL-F-19207.	For F501 Fig. 6-45
XF502		Same as XF501.	For F502 Fig. 6-45
XF503		Same as XF501.	For F503 Fig. 6-45
XF504		Same as XF501.	For F504 Fig. 6-45
XF505		Same as XF501.	For F505 Fig. 6-45
XF506 thru XF599		Not Used.	
XS501 thru XS505		Not Used.	
XS506		SOCKET, ELECTRON TUBE: 7 contact, saddle type with shield base, TS102P03, spec MIL-S-12883.	For Switch S506 Fig. 6-45
XS507 thru XS599		Not Used.	

CONTROL, ELECTRICAL FREQUENCY C-2764/WRT-2

600-700 and 1300 Series		CONTROL, ELECTRICAL FREQUENCY AUTOMATIC: 16 mc center frequency, 14 mc control range each side of center frequency, requires 115 v, 60 cps, single phase and −24 v dc unregulated, +24 v dc and +250 v dc regulated, 20 5/16 in. lg, 17 1/2 in. w, 12 1/4 in. h, mfr 89661, dwg 476D575, Navy type C-2764/WRT-2.	Provides Precise Setting For Master Oscillator Frequency
C601 thru C608		Not Used.	

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

CONTROL, ELECTRICAL FREQUENCY C-2764/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
C609		CAPACITOR, FIXED, CERAMIC DIELECTRIC: 10,000 μμf +100 −20%, 500 v dc working, CK63Y103Z, spec MIL-C-11015	Mixer Balance Voltage Filter Fig. 5-29
C610		Same as C103.	
C611		Same as C609.	Mixer Balance Voltage Filter Fig. 5-29
C612		Not Used.	
C613		Not Used.	
C614		Same as C609	Mixer Balance Voltage Filter Fig. 5-29
C615		Same as C609.	Mixer Balance Voltage Filter Fig. 5-29
C616		CAPACITOR, FIXED, MICA DIELECTRIC: 150 μμf ±5%, 300 v dc working, CM15C151J, spec MIL-C-5.	Bypass T602 Fig. 5-29
C617		Same as C615.	
C618		Same as C615.	Bypass T602 Fig. 5-29
C619		Same as C615.	Bypass T603 Fig. 5-29
C620		Same as C609.	Bypass T603 Fig. 5-29
C621		Same as C609.	Side Band Balance Filter Fig. 6-41
C622		CAPACITOR, FIXED, MICA DIELECTRIC: 670.5 μμf ±1%, 300 v dc working, mfr 89661, dwg 331C063H09.	Side Band Balance Filter Fig. 6-41
C623		CAPACITOR, FIXED, MICA DIELECTRIC: 957.5 μμf ±1%, 300 v dc working, mfr 89661, dwg 331C063H12.	Phase Shift Network Fig. 6-41
C624		CAPACITOR, FIXED, MICA DIELETRIC: 448.5 μμf ±1%, 500 v dc working, mfr 89661, dwg 331C063H07.	Phase Shift Network Fig. 6-41
C625		Same as C622.	Phase Shift Network Fig. 6-41
C626		Same as C621.	Phase Shift Network Fig. 6-41
C627		Same as C623.	Phase Shift Network Fig. 6-41
C628		CAPACITOR, FIXED, MICA DIELECTRIC: 10,000 μμf ±10%, 300 v dc working, CM35C103K, spec MIL-C5.	Grid Coupling V601A Fig. 6-41
C629		Not Used.	
C630		Not Used.	
C631		Not Used.	
C632		CAPACITOR, VARIABLE, CERAMIC DIELECTRIC: 7 μμf min, 45 μμf max, 500 v dc, CV11D450, spec MIL-C-81. Same as C365.	Plus Coupling To Mixer Fig. 6-41
C633		Not Used.	
C634 thru C638		CAPACITOR, FIXED, PAPER DIELECTRIC: 2 sections, 500,000 μμf +20-10% ea section, 1000 v dc working CP54B4EG503V, spec MIL-C-25.	250 V Bypass Fig. 6-41
C639		Not Used.	
C640		Same as C627.	Coupling For V601B Fig. 6-41
C641		CAPACITOR, FIXED, MICA DIELECTRIC: 10,000 μμf ±10%, 300 v dc, CM40B103K, spec MIL-C-5.	AGC Filter Fig. 6-41
C642		CAPACITOR, FIXED, MICA DIELECTRIC: 1000 μμf ±10%, 500 v dc, CM30B102K, spec MIL-C-5.	Interpolation Oscillator Phase Detector Filter Fig. 6-42
C643		Same as C641.	Interpolation Oscillator Phase Detector Filter Fig. 6-42
C644		CAPACITOR, FIXED, PAPER DIELECTRIC: 50,000 μμf ±20%, 600 v dc, CP53B5EF503M, spec MIL-C-25.	Grid Coupling V602A Fig. 6-41 Plate Decoupling V602A, V602B, V603A Fig. 6-41

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

CONTROL, ELECTRICAL FREQUENCY C-2764/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
C645		Same as C641.	Grid Coupling V602B, V603A Fig. 6-41
C646		Same as C640.	Bypass For T610 Fig. 6-42
C647		Same as C627.	Grid Bypass Fig. 6-41
C648		CAPACITOR, FIXED, MICA DIELECTRIC: 560 μμf, ±10%, 500 v dc, CM30B561K, spec MIL-C-5.	Coupling IF Amplifier Fig. 6-41
C649		Not Used.	
C650		Same as C641.	Interpolation Oscillator Phase Detector Filter Fig. 6-41
C651		Same as C640.	Interpolation Oscillator Phase Detector Filter Fig. 6-42
C652		CAPACITOR, FIXED, MICA DIELECTRIC: 3300 μμf ±10%, 500 v dc, CM30B332K, spec MIL-C-5.	Master Oscillator Phase Detector Filter Fig. 6-41
C653		Same as C627.	Cathode Bypass V603B Fig. 6-41
C654		Same as C627.	Coupling For V603B Fig. 6-41
C655		CAPACITOR, FIXED, MICA DIELECTRIC: 5600 μμf ±10%, 500 v dc, CM35B562K, spec MIL-C-5.	Interpolation Oscillator AGC Filter Fig. 6-41
C656		CAPACITOR, FIXED, MICA DIELECTRIC: 4700 μμf ±10%, 500 v dc working, CM35B472K, spec MIL-C-5A.	Screen Bypass V606 Fig. 6-41
C657		Same as C656.	Coupling For CR619 Fig. 6-41
C658		Not Used.	
C659		CAPACITOR, FIXED, GLASS DIELECTRIC: 1128 μμf ±1%, 300 v dc, mfr 89661, dwg 231B743H20.	Coupling Grid To Cathode V606 Fig. 6-42
C660		CAPACITOR, FIXED, PAPER DIELECTRIC: 33,000 μμf ±10%, 400 v dc, CP09A1KE333K, spec MIL-C-25.	Voltage Feedback To Oscillator Tank Fig. 6-42
C661		Same as C640.	Interpolation Oscillator Phase Detector Filter Fig. 6-42
C662		CAPACITOR, VARIABLE, AIR DIELECTRIC: 10.0 μμf min, 248.75 μμf max, shaft adjustment, 180 deg ccw rotation viewed from shaft end, steatite insulation, mfr 89661, dwg 220B774-1-1.	Interpolation Oscillator Tuning Fig. 6-42
C663		Not Used.	
C664		CAPACITOR, FIXED, GLASS DIELECTRIC: 2438 μμf ±1%, 500 v dc, mfr 89661, dwg 231B743H16.	Fixed Padder 60 To 70 KC Band Fig. 6-42
C665		CAPACITOR, FIXED, GLASS DIELECTRIC: 1084 μμf ±1%, 300 v dc, mfr 89661, dwg 231B743H17.	Fixed Padder 70 To 80 KC Band Fig. 6-42
C666		CAPACITOR, FIXED, GLASS DIELECTRIC: 789 μμf ±1%, 300 v dc, mfr 89661, dwg 231B743H18.	Fixed Padder 80 To 90 KC Band Fig. 6-42
C667		CAPACITOR, FIXED, GLASS DIELECTRIC: 609 μμf ±1%, 300 v dc, mfr 89661, dwg 231B743H19.	Fixed Padder 90 To 100 KC Band Fig. 6-42
C668		CAPACITOR, VARIABLE, AIR DIELECTRIC: 7.5 to 99.0 μμf, 850 v dc, CT1C100.	Trimmer 50 To 60 KC Band Fig. 6-42
C669		Same as C668.	Trimmer 60 To 70 KC Band Fig. 6-42
C670		Same as C668.	Trimmer 70 To 80 KC Band Fig. 6-42
C671		Same as C668.	Trimmer 80 To 90 KC Band Fig. 6-42
C672		Same as C668.	Trimmer 90 To 100 KC Band Fig. 6-42
C673		Not Used.	

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

CONTROL, ELECTRICAL FREQUENCY C-2764/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
C674		Not Used.	
C675		Not Used.	
C676		CAPACITOR, FIXED, MICA DIELECTRIC: 470 μμf ±10%, 500 v dc, working, CM20B471K, spec MIL-C-5. Same as C357.	IMC Phase Detector Filter Fig. 6-40
C677		CAPACITOR, FIXED, MICA DIELECTRIC: 110 μμf ±5%, 500 v dc, CM20C111J, spec MIL-C-5.	Bypass T615 Fig. 6-40
C678		Not Used.	
C679		Not Used.	
C680		CAPACITOR, FIXED, PAPER DIELECTRIC: 100,000 μμf ±10%, 200 v dc, CP29A3EC104K, spec MIL-C-25.	Cathode Bypass V605 Fig. 6-40
C681		Same as C627.	Screen Bypass V605 Fig. 6-40
C682		Same as C660.	Plate Decoupling V605 Fig. 6-40
C683		Same as C631.	Plate Tuning V605 Fig. 6-40
C684		CAPACITOR, FIXED, MICA DIELECTRIC: 330 μμf ±2%, 500 v dc, CM20D331G, spec MIL-C-5.	Pulse Shaping Fig. 6-40
C685		CAPACITOR, FIXED, MICA DIELECTRIC: 10 μμf ±10%, 500 v dc working, CM20B100K, spec MIL-C-5.	Coupling T606 Fig. 6-40
C686		CAPACITOR, FIXED, MICA DIELECTRIC: 2200 μμf ±10%, 500 v dc working, CM30B222K, spec MIL-C-5A. Same as C337.	Coupling T606 Fig. 6-40
C687		Same as C686.	Coupling T606 Fig. 6-40
C688		Same as C656.	100 KC Phase Detector Filter Fig. 6-40
C689		Same as C656.	100 KC Phase Detector Filter Fig. 6-40
C690		Same as C656.	100 KC Phase Detector Filter Fig. 6-40
C691		Same as C656.	100 KC Phase Detector Filter Fig. 6-40
C692		CAPACITOR, FIXED, PAPER DIELECTRIC: 2 section, 2 μf ±20%, each section, 200 v dc working, mfr 83125, type 2MPDK2-2.	100 KC Phase Detector Filter Fig. 6-44
C693		Same as C692.	100 KC Phase Detector Filter Fig. 6-44
C694		Same as C627.	Plate Decoupling V605 Fig. 6-40
C695		Not Used.	
C696		CAPACITOR, FIXED, PAPER DIELECTRIC: 0.5 to 0.5 μf, 400 v dc working, mfr 89661, dwg 152A109H02.	Grid Coupling V607A Fig. 6-40
C697		CAPACITOR, FIXED, PAPER DIELECTRIC: 2 to 2 μf, 400 v dc workng, mfr 89661, dwg 152A109H01.	Output Coupling V608A Fig. 6-40
C698		Same as C656.	Cathode Bypass V607A Fig. 6-40
C699		CAPACITOR, FIXED, MICA DIELECTRIC: 150 μμf, ±10%, 500 v dc working, CM20B151K, spec MIL-C-5.	Plate Load Filter, V607A Fig. 6-40
C699		Cont. See C701.	
CP601 thru CP623		Not Used.	
CP624		ADAPTER RADIO FREQUENCY CABLE: Bulk head type, 1 male and 1 female contact, pressurized, mfr 74868 type 47200. Same as CP114.	Standard Frequency Input (1 mc) Fig. 6-47
CP625 thru CP699		Not Used.	
CR601		SEMICONDUCTOR DEVICE, DIODE: 100 v peak inverse voltage 5.0 ma min, forward current at 25 deg. C temp, 1N198, spec MIL-E-1. Same as CR301.	Mixer Diode Fig. 5-29
CR602		Same as CR601.	
CR603		Same as CR601.	Mixer Diode Fig. 5-29
CR604		Same as CR601.	Mixer Diode Fig. 5-29

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

CONTROL, ELECTRICAL FREQUENCY C-2764/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
CR605		Same as CR601.	AGC Rectifier Fig. 6-41
CR606		Same as CR601.	Master Oscillator Phase Detector Diode Fig. 6-41
CR607		Same as CR601.	Master Oscillator Phase Detector Diode Fig. 6-41
CR608		Same as CR601.	Master Oscillator Phase Detector Diode Fig. 6-41
CR609		Same as CR601.	Oscillator Phase Detector Diode Fig. 6-41
CR610		Same as CR601.	100 KC Phase Detector Diode Fig. 6-40
CR611		Same as CR601.	100 KC Phase Detector Diode Fig. 6-40
CR612		Same as CR601.	100 KC Phase Detector Diode Fig. 6-40
CR613		Same as CR601.	100 KC Phase Detector Diode Fig. 6-40
CR614		Not Used.	
CR615		Same as RC601.	Interpolation Oscillator Phase Detector Diode Fig. 6-42
CR616		Same as CR601.	Interpolation Oscillator Phase Detector Diode Fig. 6-42
CR617		Same as CR601.	Interpolation Oscillator Phase Detector Diode Fig. 6-42
CR618		Same as CR601.	Interpolation Oscillator Phase Detector Diode Fig. 6-42
CR619		Same as CR601.	Interpolation Oscillator AGC Rectifier Fig. 6-41
CR620		Not Used.	
CR621		Same as CR601.	Meter Rectifier M601 Fig. 6-40
CR622		Same as CR601.	Meter Rectifier M601 Fig. 6-40
CR623		Same as CR601.	1 KC Alarm Detector Fig. 6-40
CR624 thru CR631		Not Used.	
CR632		SEMI CONDUCTOR DEVICE, DIODE: 35 v peak inverse voltage, 100 ma reverse current, mfr 73293, type 1N626.	1 KC Phase Detector Diode Fig. 6-40
CR633		Same as CR632.	1 KC Phase Detector Diode Fig. 6-40
CR634		Not Used.	
CR635		Not Used.	
CR636		Not Used.	

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

CONTROL, ELECTRICAL FREQUENCY C-2764/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
CR637		Same as CR601.	
CR638		Same as CR601.	1 MC Phase Detector Diode Fig. 6-40
CR639		Same as CR601.	1 MC Phase Detector Diode Fig. 6-40
CR640 thru CR699		Not Used.	Grid Bypass V608 Fig. 6-40
CR699		Cont. See CR1301.	
DS601		LAMP, GLOW NEON GAS: 1/25 w at 105 to 125 v, 1/10 w at 210 to 250 v, 100,000 ohm external resistance required, mfr 89661, type NE51. Same as DS201.	Oven Heater Indication Fig. 6-44
DS602		LAMP, GLOW, NEON GAS: 1/25 w at 105 to 125 v, mfr 89661, type NE51H.	1 KC Alarm Indication Fig. 6-44
DS603 thru DS699		Not Used.	
E601		PRINTED CIRCUIT ASSEMBLY, DIODE MIXER: c/o various electronic parts, mounted on a printed board, mfr 89661, dwg 339C648G01. Used on units serial 1 thru 60.	Input Mixer Fig. 6-41
E601 ALT.		PRINTED CIRCUIT ASSEMBLY, DIODE MIXER: c/o various electronic parts, mounted on a printed board, mfr 89661, dwg 339C648G03. Used on units serial 61 on.	
E602		Not Used.	
E603		Not Used.	
E604		TERMINAL BOARD MICARTA PLATE: W/24 terminals, mfr 89661, dwg 333C595G01.	Component Mtg In Side Band Generator Subchassis Fig. 6-41
E605		TERMINAL BOARD MICARTA PLATE: W/16 terminals, mfr 89661, dwg 333C604G01.	Component Mtg In Side Band Generator Subchassis Fig. 6-41
E606		TERMINAL BOARD MICARTA BOARD: W/26 terminals, mfr 89661, dwg 333C583G02.	Component Mtg In Side Band Generator Subchassis Fig. 6-41
E607		BOARD, MOUNTING: 26 terminals, mfr 89661, dwg 333C585G02.	Component Mtg In Side Band Generator Subchassis Fig. 6-41
E608		BOARD, MOUNTING: 16 terminals, mfr 89661, dwg 333C587G02.	Component Mtg In Side Band Generator Subchassis Fig. 6-41
E609		BOARD, MOUNTING: 16 terminals, mfr 89661, dwg 333C591G02.	Component Mtg In Side Band Generator Subchassis Fig. 6-41
E610		BOARD, MOUNTING: 20 solder stud terminals, mfr 89661, dwg 228B146G01.	Wiring Tie Point Fig. 6-40
E611		BOARD, MOUNTING: 24 solder stud terminals, mfr 89661, dwg 336C444G01	Component Mtg In Frequency Generator Sub Unit Fig. 6-40
E612		Not Used.	
E613		BOARD, MOUNTING: 22 solder stud terminals, mfr 89661, dwg 336C439G01.	Wiring Tie Point Fig. 6-40
E614		BOARD, MOUNTING: 22 solder stud terminals, mfr 89661, dwg 336C436G01.	Shield For V606 Fig. 6-40
E615		BOARD, MOUNTING: 16 solder stud terminals, mfr 89661, dwg 337C029G01.	Component Mtg In Oven Assembly Fig. 6-42
E616 thru E623		Not Used.	
E624		BOARD, MOUNTING: c/o micarta board and various electronic components, mfr 89661, dwg 336C430G01.	Wiring Tie Point Fig. 6-40
E625		BOARD, MOUNTING: 34 solder stud terminals, mfr 89661, dwg 336C433G01.	Wiring Tie Point Fig. 6-40

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

CONTROL, ELECTRICAL FREQUENCY C-2764/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
E626		KNOB, BLACK PHENOLIC KNOB: 1 7/16 in. dia knob, 1 1/2 in. dia skirt, accommodates 1/4 in. dia shaft, mfr 88365, type VIZE. Same as E334.	Control Knob Fig. 5-37
E627		KNOB BLACK PHENOLIC: W/pointer, 3/4 in. dia knob, 13/16 in. dia skirt, accommodates 1/4 in. dia shaft, mfr 88365, type VIZG.	Control Knob Fig. 5-37
E628		KNOB, CRANK: Marked with 50-0-50 ohm scale, aluminum characters, mfr 89661, dwg 337C015G01.	Control Knob Fig. 5-37
E629		KNOB BLACK PHENOLIC: W/pointer, 1 in. dia knob, 1 1/16 in. dia skirt, accommodates 1/4 in. shaft, mfr 88365, type VIZA. Same as E336.	Control Knob Fig. 5-37
E630		Same as E629.	Wiring Tie Point
E631		INSULATOR, STANDOFF: Miniature solder lug type, 5/8 in. lg, 1/4 in. across flats, mfr 89661, dwg 54B7174H01. Same as E325.	Wiring Tie Point
E632		ISULATOR, STANDOFF, CERAMIC SILICONE INSULATOR: Solder stud terminal, tapped for 6-32 mtg screw, 5/16 in. across flats, mfr 71279, type X1942-F6.	Wiring Tie Point
E633		Same as E632.	Wiring Tie Point
E634		Same as E632.	Wiring Tie Point
E635		Same as E632.	Wiring Tie Point
E636		Same as E632.	Wiring Tie Point
E637		Same as E631.	Wiring Tie Point
E638		Same as E631.	Wiring Tie Point
E639		Same as E631.	Wiring Tie Point
E640		Same as E631.	Wiring Tie Point
E641		Same as E631.	Wiring Tie Point
E642		Same as E631.	Wiring Tie Point
E643		Same as E631.	Wiring Tie Point
E644		Same as E631.	Wiring Tie Point
E645		Same as E631.	Wiring Tie Point
E646		Same as E631.	Wiring Tie Point
E647		Same as E631.	Wiring Tie Point
E648		Same as E631.	Wiring Tie Point
E649		Same as E631.	Wiring Tie Point
E650		Same as E631.	Wiring Tie Point
E651		Same as E631.	Wiring Tie Point
E652		Same as E631.	Wiring Tie Point
E653		Same as E631.	Wiring Tie Point
E654		Same as E631.	Wiring Tie Point
E655		Same as E631.	Wiring Tie Point
E656		Same as E631.	Wiring Tie Point
E657		Same as E631.	Wiring Tie Point
E658		Same as E631.	Wiring Tie Point
E659		Same as E631.	Wiring Tie Point
E660		Same as E631.	Wiring Tie Point
E661		Same as E631.	Shield For V610
E662		Same as E631.	Shield For V607
E663		Same as E631.	Wiring Tie Point
E664		Same as E631.	Wiring Tie Point
E665		INSULATOR STANDOFF: Melamine insulator, tin coated brass terminal, mfr 81312, type 775. Same as E101.	Wiring Tie Point
E666		Same as 665.	
E667 thru E699		Not Used.	
E699		Cont. See E1301.	
FL601		FILTER, BAND-PASS, 40 to 110 kc, 10,000 ohms input, 10,000 ohms output, stud mtd., mfr 89661, dwg 150A790H01.	Band-Pass Filter V601A Fig. 6-41
FL602		Same as FL601.	Band-Pass Filter V601B Fig. 6-41
FL603		NETWORK: 1.5 to 30 mc, 90 deg phase network, mfr 89661, dwg 152A700H01. Used on units serial 1 thru 60.	Phase Shift Network Fig. 6-41
FL603 ALT.		NETWORK: 1.5 to 30 mc, 90 deg phase network, mfr 89661, dwg 376A439H01. Used on units serial 61 on.	Phase Shift Network Fig. 6-41

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

CONTROL, ELECTRICAL FREQUENCY C-2764/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
FL604 thru FL699		Not Used.	
HR601		HEATING ELEMENT, ELECTRICAL: 230 ohms ±7%, 115 v, copper wire lead terminals, mfr 89661, dwg 335C732H01.	Oven Heater Element Fig. 6-43
HR602		Same as HR601.	Oven Heater Element Fig. 6-43
HR603		Same as HR601.	Oven Heater Element Fig. 6-43
HR604		Same as HR601.	Oven Heater Element Fig. 6-43
HR605 thru HR699		Not Used.	
J601		CONNECTOR, RECEPTACLE, ELECTRICAL: Body, straight type, mfr 74868, KEL-F insulator, silver plated brass, type 44575. Same as J304.	RF Input Fig. 6-41
J602		Same as J601.	500 KC Output Fig. 6-42
J603		Not Used.	
J604		CONNECTOR, RECEPTACLE, ELECTRICAL: 1 round male contact, straight type, solid shell, panel mounted, mfr 91577, type 2914. Same as J301.	AGC Amplifier Cathode V603A Fig. 6-41
J605		Same as J604.	Test Jack V602A Fig. 6-41
J606		Same as J604.	Interpolation Oscillator V606 Fig. 6-41
J607		Same as J604.	Interpolation Oscillator Grid V606 Fig. 6-41
J608		Same as J604.	Master Oscillator Phase Detector Output Fig. 6-41
J609		Not Used.	
J610		Same as J604.	100 KC Pulse Output Fig. 6-40
J611		Same as J604	Amplifier Cathode V603A Fig. 6-40
J612		Not Used.	
J613		Same as J604.	Master Oscillator Phase Detector Output Fig. 6-40
J614		Same as J604.	Frequency Control Output Fig. 6-40
J615		Same as J604.	Frequency Control Output Fig. 6-40
J616		Same as J604.	100 KC Amplifier Output Fig. 6-40
J617		Same as J604.	Input 1 MC Phase Detector Fig. 6-40
J618		Same as J604.	Interpolation Oscillator Cathode V606 Fig. 6-42
J619		Same as J604.	Interpolation Oscillator Grid V606 Fig. 6-42
J620		Same as J601.	Cathode V603B Fig. 6-41
J621		Same as J604.	Amplifier Cathode V603B Fig. 6-42
J622		Not Used.	
J623		Not Used.	
J624		Not Used.	
J625		Same as J604.	Signal From Interpolation Oscillator Fig. 6-40
J626		Same as J604.	External 1mc Input Standard Fig. 6-40

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

CONTROL, ELECTRICAL FREQUENCY C-2764/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
J627 thru J699		Not Used.	
J699		Cont. See J1301	
K601		RELAY, ARMATURE: SPDT, signal break, 24 v dc, 2 amp, 115 v ac, 2 amp, 1 inductive winding, 120 v ac nom, 90 v ac operating, 124,000 ohms, hermetically sealed, mfr 78277, type 41-RJZ-5000 ACG. Same as K301.	Oven Heater Control Fig. 6-44
K602		RELAY, ARMATURE: 266 ohms ±10%, at 25 deg C, 4 from C contact arrangement, mfr 77523 type 22310-5	Mixer Output Control Fig. 6-41
K603		Same as K602.	1KC Oscillator Tuning Fig. 6-44
K604 thru K699		Not Used	
L601 thru L608		Not Used.	
L609		COIL, RADIO FREQUENCY: 5.0 mh, 41 ohms, 125 ma, mfr 89661, dwg 152A110H02.	Plate Decoupling V605 Fig. 6-40
L610		COIL, RADIO FREQUENCY: 60 mh, 200 ohm, 100 ma, mfr 89661, dwg 152A912H01.	Interpolation Oscillator Phase Detector Filter Fig. 6-42
L611		Same as L610.	Interpolation Oscillator Phase Detector Filter Fig. 6-42
L612		Not Used.	
L613		Not Used.	
L614		COIL, RADIO FREQUENCY: 31 μh, 3.3 ohms dcr at 25 deg C, mfr 89661, dwg 150A863H01.	Pulse Forming Fig. 6-40
L615		COIL, RADIO FREQUENCY: 1 winding, 3 pie universal wound, 1155 turns, signal silk insulation, q of 40 min at 79 kc, mfr 89661, dwg 55C6156-1-25.	Interpolation Oscillator Tank 50 To 60 KC Band Fig. 6-42
L616		COIL, RADIO FREQUENCY: 1 winding, 3 pie universal wound, 1080 turns, signal silk insulation, q of 50 min at 79 kc, mfr 89661, dwg 55C6156-1-5.	Interpolation Oscillator Tank 60 To 70 KC Band Fig. 6-42
L617		COIL, RADIO FREQUENCY: 1 winding, 3 pie universal wound, 975 turns, signal silk insulation, q of 45 min at 79 kc, mfr 89661, dwg 55C6156-1-9.	Interpolation Oscillator Tank 70 To 80 KC Band Fig. 6-42
L618		COIL, RADIO FREQUENCY: 1 winding, 3 pie universal wound, 900 turns, signal silk insulation, q of 45 min at 79 kc, mfr 89661, dwg 55C6156-1-13.	Interpolation Oscillator Tank 80 To 90 KC Band Fig. 6-42
L619		COIL, RADIO FREQUENCY: 1 winding, 3 pie universal wound, 825 turns, signal silk insulation, q of 45 at 79 kc, mfr 89661, dwg 55C6156-1-17.	Interpolation Oscillator Tank 90 To 100 KC Band Fig. 6-42
L620		COIL, RADIO FREQUENCY: 65 deg C max ambient temperature, 100% duty cycle, mfr 89661, dwg 375A500.	Interpolation Oscillator Cathode Choke V604 Fig. 6-42
L621		COIL, RADIO FREQUENCY: 20 mh, 100 ohm, 125 ma, mfr 89661, dwg 152A110H01.	Master Oscillator Phase Detector Filter Fig. 6-40
L622		CHOKE, RADIO FREQUENCY: 3 mh ±10% at 1000 cps, 73 ohms dc resistance, mfr 89661, dwg 55C3795-1-1.	Master Oscillator Phase Detector Filter Fig. 6-40
L623		REACTOR FIXED INDUCTANCE: Type, 1 coil, 16 h min at 60 cycles, 0.004 amp dc, 560 ohms ±15% dc resistance 1.5 5 v rms test, mfr 89661, dwg 55C3741-1-1	Feedback Amplifier Filter V607B Fig. 6-40

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

CONTROL, ELECTRICAL FREQUENCY C-2764/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
L624 thru L629		Not Used.	
L630		COIL, RADIO FREQUENCY: Pie wound, 3 pies, 1 mh, 7 ohms, 125 ma, mfr 89661, dwg 152A110H03.	IMC Phase Detector Fig. 6-40
L631 thru L699		Not Used.	
L699		Cont. See L1301.	
M601		AMMETER, MICRO AMP DC SCALE: 100-0-100 scale reading, white dial, black markings, ruggedized, MR26W1H1DCUAR, spec MIL-M-10304.	Deviation Calibrate Zero Adjust Fig. 6-44
M602		COUNTER, MECHANICAL: Three wheels, ccw rotation, 800 rpm, nylon wheels, mfr 18911, type 3-Y-8823RSAC.	1 MC Oscillator Log Fig. 6-15
M603		COUNTER, MECHANICAL: Eight wheels numbered 0-9, 1 bank cw rotation, 1 bank ccw rotation, mfr 89661, dwg 337C257H01.	Frequency Interpretation Fig. 5-33
M604 thru M699		Not Used.	
MP601		GEAR, SPUR: 64 pitch, 20 deg pressure angle, 128 teeth, 2.00 nom pitch dia, mfr 89661, dwg 231B918H01.	Drive Gear Fig. 5-33
MP602		GEAR, SPUR: 64 pitch, 20 deg pressure angle, 64 teeth, 1.00 nom pitch dia, mfr 89661, dwg 231B917H01.	Drive Gear Fig. 5-33
MP603		GEAR, SPUR: 64 pitch, 20 deg pressure angle, 64 teeth, 1.00 nom pitch dia, mfr 89661, dwg 231B921H01.	Drive Gear Fig. 5-33
MP604		DISC, GEAR: Brass, 1¼ in. dia, 0.19 in. thk, outer edge knurled, mfr 89661, dwg 231B923H01.	Drive Gear Fig. 5-33
MP605		GEAR, BEVEL: (Pair), 32 pitch, 20 deg pressure angle, 24 teeth, 0.750 pitch dia, mfr 89661, dwg 226B997H01.	Fig. 5-33
MP605A		Part of MP605. Listed for reference only.	Drive Gear
MP605B		Part of MP605. Listed for reference only.	Drive Gear
MP606		TOOL, ALIGNMENT: Mfr 72653, type 8276.	
MP607		COUPLING, SHAFT FLEXIBLE BRASS NICKEL PLATED HUB: 0.251 in. bore both ends, mfr 99934, type A-201.5.	Shaft Coupling
MP608		Same as MP607.	Shaft Coupling
MP609		BEARING, SLEEVE OILITE BRONZE: 0.255 in. id, 0.500 in. od, mfr 70901, type TT504. Same as MP326.	Thrust Bearing
MP610		DRIVER, GENEVA: 16 pitch, 20 deg pressure angle, index for 15 teeth, 0.9375 pitch dia, mfr 89661, dwg 332C489H01.	Geneva Driver Fig. 5-36
MP611		GEAR, SPUR: 64 pitch, 20 deg pressure angle, 32 teeth, 0.500 pitch dia, mfr 89661, dwg 232B118H01.	Drive Gear Fig. 5-36 Fig. 5-33
MP612		Same as MP611.	Drive Gear Fig. 5-36
MP613		GEAR, SPUR: 64 pitch, 20 deg pressure angle, 64 teeth, 1.000 pitch dia, mfr 89661, dwg 232B119H01.	Drive Gear Fig. 5-36
MP614		GEAR, SPUR: 64 pitch, 20 deg pressure angle, 38 teeth, 0.5938 pitch dia, mfr 89661, dwg 232B120H01.	Drive Gear Fig. 5-35
MP615		GEAR, SPUR: 64 pitch, 20 deg pressure angle, 110 teeth, 1.7187 pitch dia, mfr 89661, dwg 232B121H01.	Drive Gear Fig. 5-35
MP616		GEAR, SPUR: 64 pitch, 20 deg pressure angle, 178 teeth, 2.7813 pitch dia, mfr 89661, dwg 232B122H01.	Drive Gear Fig. 5-35
MP617		GEAR, SPUR: 64 pitch, 20 deg pressure angle, 110 teeth, 1.7187 pitch dia, mfr 89661, dwg 232B123H01.	Drive Gear Fig. 5-36
MP618		GEAR, SPUR: 64 pitch, 20 deg pressure angle, 110 teeth, 1.7187 pitch dia, mfr 89661, dwg 232B124H01.	Drive Gear Fig. 5-36
MP619		GEAR, SPUR: 64 pitch, 20 deg pressure angle, 48 teeth, 0.7500 pitch dia, mfr 89661, dwg 232B125H01.	Drive Gear Fig. 5-36
MP620		Same as MP619.	Drive Gear Fig. 5-36
MP621		GEAR, SPUR: 64 pitch, 20 deg pressure angle, 48 teeth, 0.7500 pitch dia, mfr 89661, dwg 232B126H01.	Drive Gear Fig. 5-36
MP622		GEAR, SPUR: 16 pitch, 20 deg pressure angle, 24 teeth, 1.500 pitch dia, mfr 89661, dwg 232B127H01.	Drive Gear Fig. 5-36
MP623		GEAR, BEVEL: 32 pitch, 20 deg pressure angle, 30 teeth, 0.9375 pitch dia, mfr 89661, dwg 232B128H01.	Drive Gear Fig. 5-36
MP624		Same as MP623.	Drive Gear Fig. 5-36

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

CONTROL, ELECTRICAL FREQUENCY C-2764/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
MP625		Same as MP623.	Drive Gear Fig. 5-36
MP626		Same as MP623.	Drive Gear Fig. 5-36
MP627		GEAR, BEVEL: 48 pitch, 20 deg pressure angle, 66 teeth, 1.3750 pitch dia, mfr 89661, dwg 232B129H01.	Drive Gear Fig. 5-36
MP628		SPROCKET WHEEL: 15 teeth, 0.901 pitch dia, incl bearing, mfr 89661, dwg 232B142G01.	Drive Sprocket Fig. 5-35
MP629		SPROCKET WHEEL: 15 teeth, 0.625 in. dia less teeth, 13/32 in. w incl hub, mfr 89661, dwg 225B721H01. Same as MP324.	Drive Sprocket Fig. 5-35
MP630		SPROCKET WHEEL: For 3/16 in. pitch, 5/32 in. w, side flanged, link belt silent chain, 20 teeth, mfr 89661, dwg 230B711H01.	Drive Sprocket Fig. 5-35
MP631		SPROCKET WHEEL: For 3/16 in. pitch, 5/32 in. w, side flanged, link belt silent chain, 24 teeth, mfr 89661, dwg 230B845H01.	Drive Sprocket Fig. 5-35
MP632		CHAIN, ROLLER: 90 pitches, 3/16 in. pitch, 5/32 in. wide, side flanged, stainless steel, mfr 89661, dwg 152A046H10.	Drive Chain Fig. 5-35
MP633		CHAIN, ROLLER: 94 pitches, 3/16 in. pitch, 5/32 in. wide, side flanged, stainless steel, mfr 89661, dwg 152A046H01.	Drive Chain Fig. 5-35
MP634		Same as MP609.	Thrust Bearing Fig. 5-36
MP635		Same as MP609.	Thrust Bearing Fig. 5-35
MP636		Same as MP609.	Thrust Bearing Fig. 5-36
MP637		Same as MP609.	Thrust Bearing Fig. 5-36
MP638		Same as MP609.	Thrust Bearing Fig. 5-36
MP639		Same as MP609.	Thrust Bearing Fig. 5-36
MP640		Same as MP609.	Thrust Bearing Fig. 5-36
MP641		Same as MP609.	Thrust Bearing Fig. 5-36
MP642		Same as MP609.	Thrust Bearing Fig. 5-36
MP643		Same as MP609.	Thrust Bearing Fig. 5-35
MP644		Same as MP609.	Thrust Bearing Fig. 5-36
MP645		Same as MP609.	Thrust Bearing Fig. 5-35
MP646		Same as MP609.	Thrust Bearing Fig. 5-36
MP647		Same as MP609.	Thrust Bearing Fig. 5-36
MP648		Same as MP609.	Thrust Bearing Fig. 5-36
MP649		Same as MP609.	Thrust Bearing Fig. 5-36
MP650		Same as MP609.	Thrust Bearing Fig. 5-35
MP651		Same as MP609.	Thrust Bearing Fig. 5-35
MP652		Same as MP609.	Thrust Bearing Fig. 5-36
MP653		Same as MP609.	Thrust Bearing Fig. 5-35
MP654		Same as MP609.	Thrust Bearing Fig. 5-36
MP655		Same as MP609.	Thrust Bearing Fig. 5-36
MP656		Same as MP609.	Thrust Bearing Fig. 5-35
MP657		Same as MP609.	Thrust Bearing Fig. 5-36

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

CONTROL, ELECTRICAL FREQUENCY C-2764/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
MP658		Same as MP609.	Thrust Bearing Fig. 5-35
MP659		BEARING, SLEEVE, PLAIN OILITE BRONZE: 0.377 in. od, 0.250 in id, 13/16 in. lg, mfr 89661, dwg 225B387H03.	Support Bearing Fig. 5-36
MP660		Same as MP659.	Support Bearing Fig. 5-36
MP661		Same as MP659.	Support Bearing Fig. 5-36
MP662		Same as MP659.	Support Bearing Fig. 5-36
MP663		Same as MP659.	Support Bearing Fig. 5-36
MP664		Same as MP659.	Support Bearing Fig. 5-36
MP665		Same as MP659.	Support Bearing Fig. 5-35
MP666		Same as MP659.	Support Bearing Fig. 5-36
MP667		Same as MP659.	Support Bearing Fig. 5-36
MP668		Same as MP659.	Support Bearing
MP669		Same as MP659.	Support Bearing
MP670		Same as MP659.	Support Bearing
MP671		Same as MP659.	Support Bearing Fig. 5-36
MP672		Same as MP659.	Support Bearing Fig. 5-36
MP673		Same as MP659.	Support Bearing Fig. 5-36
MP674		Same as MP659.	Support Bearing Fig. 5-36
MP675		Same as MP659.	Support Bearing Fig. 5-36
MP676		Same as MP659.	Support Bearing Fig. 5-36
MP677		Same as MP659.	Support Bearing Fig. 5-36
MP678		Same as MP659.	Support Bearing Fig. 5-36
MP679		Same as MP659.	Support Bearing Fig. 5-36
MP680		Same as MP659.	Support Bearing Fig. 5-36
MP681		Same as MP659.	Support Bearing Fig. 5-36
MP682		BEARING, ROLLER, NEEDLE, OPEN END: 1 in. dia shaft, 1 1/4 in. od, 37 rollers 0.0925 in. dia, mfr 80648, type GB168AS.	Support Bearing Fig. 5-36
MP683		BEARING, SLEEVE, OILITE BRONZE: 0.377 in. od, 0.2505 in. id, 1/4 in. lg, mfr 89661, dwg 225B387H02.	Sleeve Bearing Fig. 5-36
MP684		Same as MP682.	Support Bearing Fig. 5-36
MP685		SHAFT, STAINLESS STEEL: 3.06 in. lg, 0.2497 in. dia, both ends chamferred, mfr 89661, dwg 232B145H01.	Transmits Rotation Fig. 5-36
MP686		Same as MP685.	Prevents Rotation Fig. 5-36
MP687		POSITIONER, GENEVA: 16 pitch, 20 deg pressure angle, 15 teeth, 0.9375 pitch dia, mfr 89661, dwg 332C300H01.	Geneva Positioner Fig. 5-36
MP688		PLATE, STOP, STAINLESS STEEL: 1/8 in. wide slot, 1 1/16 in. od, 1/4 in. dia center hole, mfr 89661, dwg 228B189H01.	Prevents Rotation Fig. 5-36
MP689		WASHER, STOP, STAINLESS STEEL: 0.750 in. dia, 1/4 in. dia center hole, stop extends 0.23 in., mfr 89661, dwg 225B326H01.	Prevents Shaft Rotation Fig. 5-36
MP690 thru MP694		Not Used.	
MP695		Same as MP627.	Transmits Rotation Fig. 5-36

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

CONTROL, ELECTRICAL FREQUENCY C-2764/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
MP696 thru MP699		Not Used.	
MP699		Cont. See MP701.	
P601		Not Used.	
P602		Not Used.	
P603		Not Used.	
P604		CONNECTOR, PLUG, ELECTRICAL: Silver plated w/jacket clamp, for 0.120 to 0.145 in. od cable, mfr 74868, type 44525. Same as P132.	Mates With J604 Fig. 6-44
P605		Not Used.	
P606		Same as P604.	Mates With J606 Fig. 6-42
P607		Same as P604.	Mates With J607 Fig. 6-42
P608		CONNECTOR, PLUG, ELECTRICAL: Silver plated, w/jacket clamp, $^{13}/_{16}$ in lg, mfr 74868, type 48825. Same as P114.	Feeds Frequency Control Signal To P613 Fig. 6-44
P609		Not Used.	
P610		Same as P604.	Mates With J610 Fig. 6-41
P611		Same as P604.	Mates With J611 Fig. 6-44
P612		Not Used.	
P613		Same as P604.	Mates With J613 Fig. 6-44
P614		Same as P604.	Mates With J614
P615		Same as P604.	Mates With J615
P616		Same as P604.	Mates With J616 Fig. 6-42
P617		Same as P604.	Mates With J617 Fig. 6-42
P618		Same as P604.	Mates With J618 Fig. 6-42
P619		Same as P604.	Mates With J619 Fig. 6-42
P620		Same as P604.	Mates With J620 Fig. 6-42
P621		Same as P604.	Mates With J621 Fig. 6-42
P622		Not Used.	
P623		Not Used.	
P624		Same as P608.	Mates With J624 Fig. 6-40
P625		Same as P608.	Mates With J625 Fig. 6-41
P626		Not Used.	
P627		CONNECTOR, PLUG, ELECTRICAL: 50 ohms 500 v, quick disconnect, UG-88C/U, MS 35168.	Mates With J627
P628 thru P699		Not Used.	
P699		Cont. See P1301.	
R601		RESISTOR, FIXED FILM: 100 ohms ±1%, ⅛ watt, RN60B1000F, spec MIL-R-10509. Used on unit serial 1 thru 60.	Divider For Operating Voltage Fig. 5-29
R601ALT.		RESISTOR, FIXED FILM: 178 ohms ±1%, ⅛ w, RN60B1780F, spec MIL-R-10509. Used on unit serial 61 on.	Divider For Operating Voltage Fig. 5-29
R602		RESISTOR, FIXED FILM: 39.2 ohms ±1%, ⅛ watt, RN60B39R2F, spec MIL-R-10509. Used on unit serial 1 thru 60.	Divider For Operating Voltage Fig. 5-29
R602ALT.		RESISTOR, FIXED FILM: 169 ohms ±1%, ⅛ w, RN60B1690F, spec MIL-R-10509. Used on unit serial 61 on.	Divider For Operating Voltage Fig. 5-29
R603		Same as R601. Used on unit serial 1 thru 60.	Divider For Operating Voltage Fig. 5-29
R603ALT.		Same as R601ALT. Used on unit serial 61 on.	Divider For Operating Voltage Fig. 5-29

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

CONTROL, ELECTRICAL FREQUENCY C-2764/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
R604		Same as R602. Used on unit serial 1 thru 60.	Divider For Operating Voltage Fig. 5-29
R604ALT.		Same as R602ALT. Used on unit serial 61 on.	Divider For Operating Voltage Fig. 5-29
R605		Not Used.	
R606		RESISTOR, FIXED, COMPOSITION: 75 ohms ±5%, ½ w, RC20GF750J, spec MIL-R-11. Used on unit serial 1 thru 60.	Load For T612 Fig. 5-29
R606ALT.		RESISTOR, FIXED, FILM: 75 ohms ±1%, ⅛ w, RN60B75R0F, spec MIL-R-10509. Used on unit serial 61 on.	Load For T612 Fig. 5-29
R607		Same as R606. Used on unit serial 1 thru 60.	Load For T612 Fig. 5-29
R607ALT.		Same as R606ALT. Used on unit serial 61 on.	Load For T612 Fig. 5-29
R608		RESISTOR, FIXED, COMPOSITION: 10,000 ohms ±10%, 2 w, RC42GF103K, spec MIL-R-11. Same as R392.	Dropping K601 Fig. 6-44
R609		RESISTOR, FIXED, FILM: 909 ohms ±1%, ½ w, RN70B9090F, spec MIL-R-10509.	Bias Divider Fig. 6-41
R610		RESISTOR, VARIABLE WIREWOUND ELEMENT: 1 section, 1500 ohms ±10%, 2 w, std a type, enclosed phenolic metal case, RA20A1SD152AK, MIL-R-19.	Sideband Balance Adjust Pot Fig. 6-41
R611		RESISTOR, FIXED, COMPOSITION: 120,000 ohms ±10%, 1 w, RC32GF124K, spec MIL-R-11.	Bias Divider Fig. 6-41
R612		Same as R611.	
R613		Same as R606. Used on unit serial 1 thru 60.	Bias Divider Fig. 6-41
R613ALT.		Same as R606ALT. Used on unit serial 61 on.	Load For T613 Fig. 5-29
R614		Not Used.	Load For T613 Fig. 5-29
R615		Not Used.	
R616		Same as R606. Used on unit serial 1 thru 60.	Load For T613 Fig. 5-29
R616ALT.		Same as R606ALT. Used on unit serial 61 on.	Load For T613 Fig. 5-29
R617		RESISTOR, FIXED, COMPOSITION: 390 ohms ±10%, ½ w, RC20GF391K, spec MIL-R-11.	Load T602 Fig. 6-41
R618		Same as R617.	
R619		Same as R617.	Load T602 Fig. 6-41
R620		Same as R617.	Load T603 Fig. 6-41
R621		RESISTOR, FIXED, FILM: 3400 ohms ±1%, RN65B3401F, spec MIL-R-10509.	Load T603 Fig. 6-41
R622		RESISTOR, FIXED, FILM: 20,000 ohms ±1%, RN65B2002F, spec MIL-R-10509.	Phase Shift Network Fig. 6-41
R623		RESISTOR, FIXED, FILM: 604 ohms ±1%, RN65B6040F, spec MIL-R-10509.	Phase Shift Network Fig. 6-41
R624		Same as R623.	Phase Shift Network Fig. 6-41
R625		Same as R622.	Phase Shift Network Fig. 6-41
R626		Same as R621.	Phase Shift Network Fig. 6-41
R627		RESISTOR, FIXED, COMPOSITION: 100,000 ohms ±10%, ½ w, RC20GF105K, spec MIL-R-11. Same as R205.	Grid V601A Fig. 6-41
R628		RESISTOR, FIXED, COMPOSITION: 220,000 ohms ±10%, ½ w, RC20GF224K, spec MIL-R-11. Same as R336.	Attenuator For J605 Fig. 6-41
R629		RESISTOR, FIXED, COMPOSITION: 33,000 ohms ±10%, 2 w, RC42GF333K, spec MIL-R-11. Same as R321.	Plate Load V601A Fig. 6-41
R630		RESISTOR, FIXED, COMPOSITION: 10,000 ohms ±10%, ½ w, RC20GF103K, spec MIL-R-11. Same as R310.	Grid V601B Fig. 641
R631		RESISTOR, FIXED, COMPOSITION: 220 ohm ±5%, ½ w, RC20GF221J, spec MIL-R-11.	Pulse Shaping Fig. 6-41
R632		Same as R629.	Plate Load V601B Fig. 6-41
R633		RESISTOR, FIXED, COMPOSITION: 68 ohms ±10%, ½ w, RC20GF680K, spec MIL-R-11. Same as R403.	Parasitic Suppressor V602A Fig. 6-41
R634		RESISTOR, FIXED, COMPOSITION: 1 meg ±10%, ½ w, RC20GF105K, spec MIL-R-11. Same as R327.	AGC Line Filter Fig. 6-41
R635		Not Used.	

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

CONTROL, ELECTRICAL FREQUENCY C-2764/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
R636		RESISTOR, FIXED, COMPOSITION: 1000 ohms ±10%, ½ w, RC20GF102K, spec MIL-R-11. Same as R318.	Plate Recoupling V602A Fig. 6-41
R637		RESISTOR, FIXED, COMPOSITION: 15,000 ohms ±10%, 2 w, RC42GF153K, spec MIL-R-11. Same as R325.	Plate Load V202A Fig. 6-41
R638		Same as R630.	Grid V602A Fig. 6-41
R639		RESISTOR, FIXED, COMPOSITION: 220 ohms ±10%, ½ w, RC20GF221K, spec MIL-R-11. Same as R306.	Cathode V602A Fig. 6-41
R640		RESISTOR, FIXED, COMPOSITION: 330 ohms ±10%, ½ w, RC20GF331K, spec MIL-R-11.	Cathode V602A Fig. 6-41
R641		Same as R636.	Plate Decoupling V603A Fig. 6-41
R642		RESISTOR, FIXED, COMPOSITION: 22,000 ohms ±10%, 2 w, RC42GF223K, spec MIL-R-11. Same as R323.	Plate Load V603A Fig. 6-41
R643		Same as R627.	Grid V602B Fig. 6-41
R644		Same as R639.	Cathode V602B Fig. 6-41
R645		RESISTOR, FIXED, COMPOSITION: 150 ohms ±10%, ½ w, RC20GF151K, spec MIL-R-11.	Cathode V602B Fig. 6-41
R646		Same as R636.	Plate Decoupling V602B Fig. 6-41
R647		Same as R627.	Grid V603A Fig. 6-41
R648		Same as R639.	Cathode V603A Fig. 6-41
R649		Same as R636.	Cathode V603A Fig. 6-41
R650		RESISTOR, FIXED, COMPOSITION: 470,000 ohms ±10%, ½ w, RC20GF474K, spec MIL-R-11.	AGC Bias Divider Fig. 6-41
R651		RESISTOR, FIXED, COMPOSITION: 120,000 ohms ±10%, ½ w, RC20GF124K, spec MIL-R-11.	Filter, AGC Fig. 6-41
R652		RESISTOR, FIXED, COMPOSITION: 47,000 ohms ±10%, ½ w, RC20GF473K, spec MIL-R-11.	AGC Bias Divider Fig. 6-41
R653		RESISTOR, FIXED, COMPOSITION: 5600 ohms ±10%, ½ w, RC20GF562K, spec MIL-R-11.	Master Oscillator Phase Detector Load Fig. 6-41
R654		Same as R653.	Master Oscillator Phase Detector Load Fig. 6-41
R655		Same as R653.	Master Oscillator Phase Detector Load Fig. 6-41
R656		Same as R653.	Master Oscillator Phase Detector Load Fig. 6-41
R657		Same as R639.	Cathode V603B Fig. 6-41
R658		Same as R650.	Grid V603B Fig. 6-41
R659		RESISTOR, FIXED, COMPOSITION: 180,000 ohms ±10%, ½ w, RC20GF184K, spec MIL-R-11.	Interpolation Oscillator AGC Bias Divider Fig. 6-41
R660		RESISTOR, FIXED, COMPOSITION: 15,000 ohms ±10%, ½ w, RC20GF153K, spec MIL-R-11.	Interpolation Oscillator AGC Bias Divider Fig. 6-41
R661		Same as R636.	Cathode CR619 Fig. 6-41
R662		Same as R652.	Interpolation Oscillator AFC Filter Fig. 6-41
R663		Same as R650.	Grid V606 Fig. 6-41
R664		RESISTOR, FIXED, COMPOSITION: 39,000 ohms ±10%, ½ w, RC20GF393K, spec MIL-R-11. Same as R302.	Screen Dropping V606 Fig. 6-41
R665		Same as R636.	Plate Decoupling V606 Fig. 6-41

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

CONTROL, ELECTRICAL FREQUENCY C-2764/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
R666		RESISTOR, FIXED, COMPOSITION: 47 ohms ±10%, ½ w, RC20GF470K, spec MIL-R-11. Same as R397.	Parasitic Suppressor V606 Fig. 6-41
R667		RESISTOR, FIXED, COMPOSITION: 51 ohms ±5%, ½ w, RC20GF510J, spec MIL-R-11.	Load T609 Fig. 6-42
R668		Same as R636.	Attenuator J605 Fig. 6-41
R669		RESISTOR, FIXED, COMPOSITION: 4700 ohms ±10%, ½ w, RC20GF472K, spec MIL-R-11.	Interpolation Oscillator Phase Detector Load Fig. 6-42
R670		Same as R669.	Interpolation Oscillator Phase Detector Load Fig. 6-42
R671		RESISTOR, FIXED, COMPOSITION: 3900 ohms ±10%, ½ w, RC20GF392K, spec MIL-R-11. Same as R520.	Interpolation Oscillator Phase Detector Load Fig. 6-42
R672		Same as R671.	Interpolation Oscillator Phase Detector Load Fig. 6-42
R673		RESISTOR, VARIABLE, COMPOSITION: 1000 ohms ±10%, 2 w, RV4LAVS102A, spec MIL-R-94.	Interpolation Oscillator Detector Balance Fig. 6-42
R674		Not Used.	
R675		RESISTOR, FIXED, COMPOSITION: 8200 ohms ±10%, ½ w, RC20GF822K, spec MIL-R-11.	Plate Load V610B Fig. 6-40
R676		Not Used.	
R677		Same as R675.	Load For T619 Fig. 6-40
R678		RESISTOR, FIXED, COMPOSITION: 1.5 meg ±10%, ½ w, RC20GF155K, spec MIL-R-11.	1 KC Phase Detector Load Fig. 6-40
R679		Same as R678.	1 KC Phase Detector Load Fig. 6-40
R680		Not Used.	
R681		RESISTOR, FIXED, COMPOSITION: 27,000 ohms ±10%, ½ w, RC20GF273K, spec MIL-R-11. Same as R400.	Screen Dropping V605 Fig. 6-40
R682		RESISTOR, FIXED, COMPOSITION: 91 ohms ±5%, ½ w, RC20GF910J, spec MIL-R-11.	Cathode Resistor For V610B Fig. 6-40
R683		RESISTOR, FIXED, COMPOSITION: 180 ohms ±10%, ½ w, RC20GF181K, spec MIL-R-11. Same as R311.	Cathode V605 Fig. 6-40
R684		Not Used.	
R685		RESISTOR, FIXED, COMPOSITION: 3300 ohms ±10%, ½ w, RC20GF332K, spec MIL-R-11.	Plate Decoupling V605 Fig. 6-40
R686		Same as R636.	Load T606 Fig. 6-40
R687		Same as R636.	Load T607 Fig. 6-40
R688		RESISTOR, FIXED, COMPOSITION: 2.2 meg ±5%, ½ w, RC20GF225J, spec MIL-R-11.	100 KC Phase Detector Load Fig. 6-40
R689		Same as R688.	100 KC Phase Detector Load Fig. 6-40
R690		Same as R688.	100 KC Phase Detector Load Fig. 6-40
R691		Same as R688.	100 KC Phase Detector Load Fig. 6-40
R692		RESISTOR, FIXED, COMPOSITION: 2400 ohms ±5%, ½ w, RC20GF242J, spec MIL-R-11.	Master Oscillator Phase Detector Filter Fig. 6-40
R693		RESISTOR, FIXED, COMPOSITION: 100 ohms ±10%, ½ w, RC20GF101K, spec MIL-R-11. Same as R402.	Grid V607A Fig. 6-40
R694		RESISTOR, FIXED, COMPOSITION: 270,000 ohms ±10%, ½ w, RC20GF274K, spec MIL-R-11.	Grid V607A Fig. 6-40
R695		RESISTOR, FIXED, COMPOSITION: 27,000 ohms ±10%, 1 w, RC32GF273K, spec MIL-R-11.	Plate Load V607A Fig. 6-40
R696		Same as R653.	Plate Load V607A Fig. 6-40
R697		Same as R645.	Cathode V607A Fig. 6-40
R698		Same as R627.	Grid of V607 Fig. 6-40

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continu d

CONTROL, ELECTRICAL FREQUENCY C-2764/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
R699		Same as R650.	Grid V607B Fig. 6-40
R699		Cont. See R701.	
S601		SWITCH, ROTARY: 4 pole, 12 position, shorting type contacts, rotor and contacts solid silver alloy, mfr 89661, dwg 337C036H01.	Band Selector Fig. 6-42
S602		SWITCH, THERMOSTATIC: 65 deg C ±.05 C operating temperature, mercury in glass, 2 pigtail leads, mfr 89661, dwg 150A962H01.	Oven Temp Control Fig. 6-43
S603		SWITCH, THERMOSTATIC: SPST, contacts open at 162 ±5 deg F, close at 140 ±5 deg F, mfr 78043, type 20400L29-104.	Oven Temp Control Fig. 6-43
S604		Not Used.	
S605		SWITCH, SENSITIVE: SPDT, 3 screw type terminals, AN3234-1, spec MIL-S-6743.	Sideband K602 Energize Fig. 6-44
S606		SWITCH, ROTARY: 4 pole, 4 position, non-shorting type contacts, mfr 89661, dwg 335C723H02.	Meter M601 Selection Switch Fig. 6-44
S607		SWITCH, ROTARY: 2 position, 1 pole, 3 amp, 250 v ac/dc, mfr 89661, dwg 335C720H01.	Intermediate Tuning Fig. 6-44
S608 thru S699		Not Used.	
T601		Not Used.	
T602		TRANSFORMER, RADIO FREQUENCY: 1 primary, 1 secondary, center tapped, 25 v working, mfr 89661, dwg 150A906H01.	Modulator Fig. 6-41
T603		Same as T602.	Modulator Fig. 6-41
T604		TRANSFORMER, RADIO FREQUENCY: 1 primary, 1 secondary, center tapped, mfr 89661, dwg 55C3733-1-1.	Plate V602B Fig. 6-41
T605		Same as T604.	Plate V603B Fig. 6-41
T606		TRANSFORMER, RADIO FREQUENCY: 1 primary, 1 secondary, center tapped, 35 v working, mfr 89661, dwg 152A514H01.	Phase Detector Fig. 6-40
T607		Same as T606.	Phase Detector Fig. 6-40
T608		TRANSFORMER, RADIO FREQUENCY: 1 primary, 260 v, tapped, 1 secondary, 2 v, mfr 89661, dwg 150A907H01.	Plate V605 Fig. 6-40
T609		TRANSFORMER, RADIO FREQUENCY: 50 kc to 100 kc, 2 windings, primary winding, 32 mh min at 1000 cycles, 300 turns, 0.0063 in. dia (No. 34 wire), secondary winding 30 turns 0.0179 in. dia (No. 25 wire) mfr 89661, dwg 55C3786-1-1.	Grid V606 Fig. 6-42
T610		TRANSFORMER, RADIO FREQUENCY: 50 kc to 100 kc, 2 windings, centertapped primary winding, 100 mh min at 1000 cycles, mfr 89661, dwg 55C3787-1-1.	Cathode V603B Fig. 6-42
T611		TRANSFORMER, POWER STEP-DOWN: primary 115 v, 60 cycles ±5%, single phase, 1 secondary winding, 6.3 v at 3.0 amps, mfr 89661, dwg 52C2140-1-1.	Filament Fig. 6-44
T612		TRANSFORMER, RADIO FREQUENCY: 1.5 to 30 mc, 90 ohms source resistance feed 180 ohm balanced load, 7.07 v working, mfr 89661, dwg 152A710H01.	Comparison Signal Fig. 5-29
T613		Same as T612.	Comparison Signal Fig. 5-29
T614		TRANSFORMERS PULSE: 3 windings, 10, 12, 13 ohms respectfully, 25 deg C dc resistance, 100% duty cycle, mfr 89661, dwg 150A600H01.	Blocking Oscillator Transformer For V604B Fig. 6-40
T615		Same as T614.	Blocking Oscillator Transformer For V610A Fig. 6-40
T616		Same as T614.	1 KC Phase Detector Fig. 6-40
T617		TRANSFORMER, POWER STEP-DOWN: 115 v, 60 cps primary, 25 v, 18.4 ma and 76 v, 300 ma, mfr 89661, dwg 152A731H01.	Plus 24-6V Regulated Fig. 6-44
T618		Not Used.	
T619		Same as T614	4:1 Frequency Divider Fig. 6-40
T620		Same as T614.	1 MC Phase Detector Fig. 6-40
T621 thru T699		Not Used.	

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—C ntinued

CONTROL, ELECTRICAL FREQUENCY C-2764/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
T699		Cont. See T1301.	
TB601		TERMINAL BOARD, MICA PHENOLIC: 10 double screw type terminals, barrier type, mfr 71785, type 10-141D.	Wire Termination Fig. 6-44
TB602		Same as TB601.	Wire Termination Fig. 6-41
TB603		Not Used.	
TB604		Not Used.	
TB605		BOARD, TERMINAL, BARRIER TYPE: 16 double screw type terminals, mfr 89661, dwg 230B934G01.	Wire Termination Fig. 6-40
TB606		Not Used.	
TB607		Not Used.	
TB608		BOARD, TERMINAL, BARRIER TYPE: 8 double screw type terminals, mfr 71785, type 8-141D.	Wire Termination Fig. 6-43
TB609 thru TB699		Not Used.	
TB699		Cont. See TB1301.	
V601		ELECTRON TUBE MINIATURE TWIN TRIODE: Recurring, 12AT7WA, spec MIL-E-1. Same as V323.	Fig. 3-7
V601A		Part of V601. Listed for reference only.	First I-F Amplifier
V601B		Part of V601. Listed for reference only.	Second I-F Amplifier
V602		Same as V601.	Fig. 3-7
V602A		Part of V602. Listed for reference only.	Third I-F Amplifier
V602B		Part of V602. Listed for reference only.	Fourth I-F Amplifier
V603		Same as V601.	Fig. 3-7
V603A		Part of V603. Listed for reference only.	AGC Amplifier
V603B		Part of V603. Listed for reference only.	Buffer Amplifier
V604		Same as V601.	Fig. 3-7
V604A		Part of V604. Listed for reference only.	Buffer Amplifier
V604B		Part of V604. Listed for reference only.	Frequency Divider
V605		ELECTRON TUBE, GLASS ENVELOPE: Sharp cutoff pentode, 6AU6WA, spec MIL-E-1. Same as V301.	Buffer Amplifier Fig. 3-7
V606		Same as V605.	Interpolation Oscillator Fig. 3-7
V607		Same as V601.	Fig. 3-7
V607A		Part of V607. Listed for reference only.	First Feedback Amplifier
V607B		Part of V607. Listed for reference only.	Second Feedback Amplifier
V608		Same as V601.	Fig. 3-7
V608A		Part of V608. Listed for reference only.	Third Feedback Amplifier
V608B		Part of V608. Listed for reference only.	Third Feedback Amplifier
V609		Same as V601.	Fig. 3-7
V609A		Part of V609. Listed for reference only.	Sweep Oscillator And D-C Amplifier
V609B		Part of V609. Listed for reference only.	Sweep Oscillator
V610		ELECTRON TUBE, MINIATURE RECEIVING, TWIN TRIODE: 5670, spec MIL-E-1.	Fig. 3-7
V610A		Part of V610. Listed for reference only.	5:1 Frequency Divider
V610B		Part of V610. Listed for reference only.	4:1 Frequency Divider
V611 thru V699		Not Used.	
XDS601		LIGHT, INDICATOR: 115 v, with integral resistor, for T-3-¼ lamp, clear lens, LH64BC2, spec MIL-L-3661. Same as XDS301.	For DS601 Fig. 6-44
XDS602		LIGHT, INDICATOR: 28 v, accommodates T-3-¼ lamp, plain red lens, LH62BR2, spec MIL-L-3661. Same as XDS207.	For DS602 Fig. 6-44
XDS603 thru XDS699		Not Used.	
XV601		SOCKET, ELECTRON TUBE: 9 contact miniature, plastic body, provisions for mtg layout type electron tube shield, TS103P01, spec JAN-S-28. Same as XV323.	For V601 Fig. 6-41

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

CONTROL, ELECTRICAL FREQUENCY C-2764/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
XV602		Same as XV601.	For V602 Fig. 6-41
XV603		Same as XV601.	For V603 Fig. 6-41
XV604		Same as XV601.	For V604 Fig. 6-40
XV605		SOCKET, ELECTRON TUBE: 7 contact miniature, no missing contacts, plastic body, provisions for mtg bayonet type electron tube shield, TS102P01, spec JAN-S-28. Same as XV301.	For V605 Fig. 6-40
XV606		Same as XV605.	For V606 Fig. 6-41
XV607		Same as XV601.	For V607 Fig. 6-40
XV608		Same as XV601.	For V608 Fig. 6-40
XV609		Same as XV601.	For V609 Fig. 6-40
XV610		Same as XV601.	For V610 Fig. 6-40
XV611 thru XV699		Not Used.	
Z601		RINGING CIRCUIT: Consists of 2 tuned circuits, which are resonant at 47.5 kc and 30.0 kc respectively, mfr 89661, dwg 150A872H01.	Ringing Grid Of V604B Fig. 6-40
Z602		RINGING CIRCUIT: Consists of 2 tuned circuits, which are resonant at 9.4 kc and 6.0 kc respectively, mfr 89661, dwg 150A871H01.	Ringing Cathode Of V610A Fig. 6-40
Z603		RINGING CIRCUIT: Consists of 2 tuned circuits, which are resonant at 1.5 kc and 2.35 kc respectively, mfr 89661, dwg 150A785H01.	Ringing Cathode Of V610B Fig. 6-40
Z604		RINGING CIRCUIT: Consists of 1 tuned circuit, which is resonant at 927 cps, mfr 89661, dwg 152A479H01.	Ringing Grid Of V608 Fig. 6-40
Z605 thru Z699		Not Used.	
Z699		Cont. see Z1301.	
C701		CAPACITOR, FIXED: Mica dielectric, 2700 μμf ±10%, 500 v, CM30B272K, spec MIL-C-5.	Plate Load V607B Fig. 6-40
C702		CAPACITOR, FIXED: Paper dielectric, 1 μf ±10%, 400 v, CP91B1EE105K, spec MIL-C-25.	Coupling V607B Fig. 6-40
C703		CAPACITOR, FIXED: Paper dielectric, 100,000 μμf ±10%, 600 v, CP29A1EF104K, spec MIL-C-25.	Coupling V607B Fig. 6-40
C704		CAPACITOR, FIXED: Mica dielectric, 6800 μμf ±10%, 300 v, CM35C682K, spec MIL-C-5.	Coupling V608A Fig. 6-40
C705		CAPACITOR, FIXED: Mica dielectric, 200 μμf ±5%, 500 v, CM20C201J, spec MIL-C-5.	Cathode Bypass V607B Fig. 6-40
C706		CAPACITOR, FIXED, MICA DIELECTRIC: 2000 μμf ±5%, 500 v, CM30D202J, spec MIL-C-5.	Cathode Bypass V608A Fig. 6-40
C707		CAPACITOR, FIXED, MICA DIELECTRIC: 1 μf ±10%, 100 v, CP54B1EB105K, spec MIL-C-25.	Cathode Coupling Fig. 6-40
C708		CAPACITOR, FIXED, ELECTROLYTIC: 40 μf −15 +50%, 30 v dc working, CL44BH400TP, spec MIL-C-3965. Same as C102.	Cathode Coupling V607 Fig. 6-40
C709		Same as C655.	Bypass M601 Fig. 6-44
C710		CAPACITOR, FIXED, GLASS DIELECTRIC: 265 μμf ±1%, 500 v dc, mfr 89661, dwg 335C813H29.	Interpolation Oscillator Tuning Fig. 6-42
C711		Not Used.	
C712		Same as C631.	Variable Padder 60 To 70 KC Band Fig. 6-42
C713		Same as C631.	Variable Padder 70 To 80 KC Band Fig. 6-42
C714		Same as C631.	Variable Padder 80 To 90 KC Band Fig. 6-42
C715		Same as C631.	Variable Padder 90 To 100 KC Band Fig. 6-42

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—C ntinued

CONTROL, ELECTRICAL FREQUENCY C-2764/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
C716		CAPACITOR, FIXED, PAPER DIELECTRIC: 50,000 μμf ±20%, 600 v dc working, CP29A1EF503M, spec MIL-C-25A.	Plate Decoupling V606 Fig. 6-41
C717		Not Used.	
C718		Not Used.	
C719		Not Used.	
C720		CAPACITOR, FIXED, PAPER DIELECTRIC: 100,000 μμf ±10%, 400 v dc working, CP05A1EE104K, spec MIL-C-25A.	Bypass Plate For V604A Fig. 6-40
C721		CAPACITOR, FIXED, PAPER DIELECTRIC: 100,000 μμf +100%, −20%, 600 v dc working, CP54B5EF104V, spec MIL-C-25A.	Plate Decoupling For V604A Fig. 6-40
C722		CAPACITOR, FIXED, MICA DIELECTRIC: 360 μμf ±5%, 500 v dc working, CM20C361J, spec MIL-C-5.	First 5.1 Freq Divider Ringing Fig. 6-40
C723		Same as C721.	Plate V610A Fig. 6-40
C724		Not Used.	
C725		CAPACITOR, FIXED, MICA DIELECTRIC: 560 μμf ±5%, 300 v dc working, CM20C561J, spec MIL-C-5.	Second 5.1 Freq Divider Ringing Fig. 6-40
C726		CAPACITOR, FIXED, MICA DIELECTRIC: 6200 μμf ±5%, 500 v dc working, CM35D622J, spec MIL-C-5.	Second 4.1 Freq Divider Ringing Fig. 6-40
C727		Same as C721.	Blocking Oscillator V610B Fig. 6-40
C728		Same as C627.	Coupling 1 KC Phase Detector Fig. 6-40
C729		Same as C627.	Coupling 1 KC Phase Detector Fig. 6-40
C730		CAPACITOR, FIXED, PAPER DIELECTRIC: 47,000 μμf ±10%, 400 v dc working, CP05A1EE473K, spec MIL-C-25A.	Coupling For V609B Fig. 6-40
C731		Same as C730.	Bypass Plate For V609A Fig. 6-40
C732		Same as C730.	Feedback Capacitor For V609A Fig. 6-40
C733		Same as C730.	Bypass Plate For V609B Fig. 6-40
C734		Same as C676.	Decoupler Fig. 6-40
C735		CAPACITOR, FIXED, MICA DIELECTRIC: 220 μμf ±10%, 500 v dc working, CM20B221K, spec MIL-C-5.	Bypass T619 Fig. 6-40
C736		CAPACITOR, FIXED, MICA DIELECTRIC: 680 μμf ±10%, 300 v dc working, CM20B681K, spec MIL-C-5.	Bypass Grid V608B Fig. 6-40
C737		CAPACITOR, FIXED, PAPER DIELECTRIC: 470,000 μμf ±10%, 200 v dc working, CP05A1EC474K, spec MIL-C-25A.	Bypass DS602 Fig. 6-40
C738		Same as C609.	RF Bypass On Filaments Fig. 6-40
C739		Same as C609.	Filter For 115 VAC Line Fig. 6-44
C740		Same as C609.	Filter For 115 VAC Line Fig. 6-44
C741		Same as C609.	Filter For 115 VAC Line Fig. 6-44
C742		Same as C609.	Filter For −24 VDC Supply Fig. 6-44
C743		Same as C609.	+250 VDC Regulated Supply Fig. 6-44
C744		Same as C609.	+24 VDC Regulated Supply Fig. 6-44
C745 thru C799		Not Used.	
C799		Cont. See C1301.	
MP701		SHAFT, STAINLESS STEEL: 1.94 in. lg, 0.249 in. dia, 0.028 in. groove 0.78 in. from one end, 0.03 in. chamfer both ends, mfr 89661, dwg 232B146H01.	Transmits Rotation Fig. 5-35
MP702		Same as MP701.	Transmits Rotation Fig. 5-36
MP703		SHAFT, STAINLESS STEEL: 2.66 in. long 0.249 in. dia, 0.03 chamfer both ends, mfr 89661, dwg 232B147H01.	Transmits Rotation Fig. 5-35

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

CONTROL, ELECTRICAL FREQUENCY C-2764/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
MP704		SHAFT, STAINLESS STEEL: 2.19 in. long 0.2497 in. dia, 0.030 in. chamfer both ends, mfr 89661, dwg 232B148H01.	Transmits Rotation Fig. 5-35
MP705		SHAFT, STAINLESS STEEL: 2.34 in. long, 0.2497 in. dia, 0.030 in. chamfer both ends, mfr 89661, dwg 232B149H01.	Transmits Rotation Fig. 5-35
MP706		Same as MP705.	Transmits Rotation Fig. 5-36
MP707		SHAFT, STAINLESS STEEL: 3.49 in. long, 0.2497 in. dia, 0.030 in. chamfer both ends, mfr 89661, dwg 232B150H01.	Transmits Rotation Fig. 5-35
MP708		COLLAR, STOP: 7/8 in. lg, 1/2 in. w, 1/4 in. thk, pressed in pin, mfr 89661, dwg 223B156G01.	Stops Rotation Fig. 5-36
MP709		COLLAR, STOP: 7/8 in. long, 1/2 in. w, 1/4 in. thk, pressed in pin, mfr 89661, dwg 232B158G01.	Stops Rotation Fig. 5-36
MP710		SHUTTER ARM AND SHAFT ASSEMBLY: Includes shutter arm and shaft secured by roll pin, mfr 89661, dwg 232B161G01.	Dial Change Fig. 5-36
MP711		VERNIER AND SHAFT ASSEMBLY: Consists of vernier and shaft secured by roll pin, mfr 89661, dwg 232B169G01.	Fine Tuning Dial Fig. 5-36
MP712		SHAFT SUPPORT ASSEMBLY: Consists of support and 0.250 in. id bearing, mfr 89661, dwg 232B171G01.	Transmits Rotation Fig. 5-36
MP713		BRACKET, LOCK, STAINLESS STEEL: 0.94 in. long, 0.44 in. wide, 0.30 in. leg lg, mfr 89661, dwg 232B175H01.	Dial Clamp Fig. 5-36
MP714		CAP SCREW, KNURLED HEAD: Brass 1.22 in. long, 10-32 thd, mfr 89661, dwg 232B176H01.	Dial Lock Fig. 5-36
MP715		ADAPTER, SWITCH ACTUATOR: Stainless steel frame, oil impregnated bronze roller, 5 oz operating force, mfr 89661, dwg 54B6831H02.	Actuates V605 Fig. 5-36
MP716		PIN, SPRING, STAINLESS STEEL: 3/8 in. lg, 0.078 in. dia, mfr 89661, dwg 50D5596H02.	Attach Gearing Fig. 5-36
MP717		Same as MP716.	Attach Gearing Fig. 5-36
MP718		Same as MP716.	Attach Gearing Fig. 5-35
MP719		Same as MP716.	Attach Gearing Fig. 5-36
MP720		RING, RETAINING CARDON SPRING: Steel for 0.250 in. dia shaft 0.025 in. groove, mfr 89462, type 5100-25-MD.	Attach Gearing Fig. 5-36
MP721		Same as MP720.	Attach Gearing Fig. 5-36
MP722		Same as MP720.	Attach Gearing Fig. 5-36
MP723		Same as MP720.	Attach Gearing Fig. 5-36
MP724		Same as MP720.	Attach Gearing Fig. 5-35
MP725		Same as MP720.	Attach Gearing Fig. 5-35
MP726		Same as MP720.	Attach Gearing Fig. 5-36
MP727		Same as MP720.	Attach Gearing Fig. 5-35
MP728		Same as MP720.	
MP729		Not Used.	
MP730		SHAFT, STAINLESS STEEL: 2.66 in. long, 0.2497 in. dia, 0.030 chamfer both ends, mfr 89661, dwg 232B144H02.	Transmit Rotation Fig. 5-35
MP731		SHAFT, STAINLESS STEEL: 1.78 in. long, 0.249 in. dia, 0.03 chamfer both ends, mfr 89661, dwg 231B925H01.	Transmit Rotation Fig. 5-35
MP732		Same as MP720.	Attach Gearing Fig. 5-33
MP733 thru MP799		Not Used.	
MP799		Cont. See MP1301.	
R701		RESISTOR, FIXED, COMPOSITION: 18,000 ohms ±10%, 1/2 w, RC20GF183K, spec MIL-R-11.	Plate Load V607B Fig. 6-40
R702		Same as R671.	Plate Load V607B Fig. 6-40
R703		RESISTOR, FIXED, COMPOSITION: 560 ohms ±10%, 1/2 w, RC20GF561K, spec MIL-R-11.	Cathode V607B Fig. 6-40
R704		RESISTOR, FIXED, COMPOSITION: 2700 ohms ±10%, 1/2 w, RC20GF272K, spec MIL-R-11.	Cathode V607B Fig. 6-40
R705		Same as R652.	Grid V608A Fig. 6-40
R706		Same as R637.	Plate Load V608A Fig. 6-40
R707		RESISTOR, FIXED, COMPOSITION: 56 ohms ±10%, 1/2 w, RC20GF560K, spec MIL-R-11. Same as R396.	Cathode V608A Fig. 6-40
R708		Same as R666.	Cathode V608 Fig. 6-40
R709		RESISTOR, FIXED, COMPOSITION: 680 ohms ±10%, 1/2 w, RC20GF681K, spec MIL-R-11.	Grid V607A Fig. 6-40

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—C ntinued

CONTROL, ELECTRICAL FREQUENCY C-2764/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATIN FUNCTION
R710		Same as R669.	Filter Phase Det ctor Fig. 6-40
R711		RESISTOR, FIXED, COMPOSITION: 22,000 ohms ±10%, ½ w, RC20GF223K, spec MIL-R-11.	Load For CR621 Fig. 6-40
R712		Same as R711.	Load For CR622 Fig. 6-40
R713		RESISTOR, FIXED, COMPOSITION: 430 ohms ±5%, ½ w, RC20GF431J, spec MIL-R-11.	Tank Circuit Loading 50 To 60 KC Band Fig. 6-42
R714		RESISTOR, FIXED, COMPOSITION: 180 ohms ±5%, ½ w, RC20GF181J, spec MIL-R-11.	Tank Circuit Loading 60 To 73 KC Band Fig. 6-42
R715		RESISTOR, FIXED, COMPOSITION: 100 ohms ±5%, ½ w, RC20GF101J, spec MIL-R-11.	Tank Circuit Loading 70 To 80 KC Band Fig. 6-42
R716		RESISTOR, FIXED, COMPOSITION: 68 ohms ±5%, ½ w, RC20GF680J, spec MIL-R-11.	Tank Circuit Loading 80 To 90 KC Band Fig. 6-42
R717		RESISTOR, FIXED, COMPOSITION: 27 ohms ±5%, ½ w, RC20GF270J, spec MIL-R-11.	Tank Circuit Loading 90 To 100 KC Band Fig. 6-42
R718		Same as R627.	Voltage Divider Grid V605 Fig. 6-40
R719		Same as R650.	Voltage Divider Grid V605 Fig. 6-40
R720		Not Used.	
R721		Not Used.	
R722		Not Used.	
R723		Not Used.	
R724		RESISTOR, FIXED, COMPOSITION: 1000 ohms ±5%, ½ w, RC20GF102J, spec MIL-R-11.	Isolation T602 Fig. 6-41
R725		Same as R724.	Isolation T602 Fig. 6-41
R726		Same as R724.	Isolation T603 Fig. 6-41
R727		Same as R724.	Isolation T603 Fig. 6-41
R728		RESISTOR, FIXED, COMPOSITION: 5600 ohms ±10%, 1 w, RC32GF562K, spec MIL-R-11.	Plate Load V606 Fig. 6-41
R729		Same as R669.	Load T610 Fig. 6-42
R730		Not Used.	
R731		Not Used.	
R732		RESISTOR, FIXED, COMPOSITION: 68,000 ohms ±10%, ½ w, RC20GF683K, spec MIL-R-11. Same as R301.	Sideband Balance Filter T602 Fig. 6-41
R733		Same as R732.	Sideband Balance Filter T603 Fig. 6-41
R734		Same as R669.	Load Resistor T615 Fig. 6-40
R735		Not Used.	
R736		Not Used.	
R737		Not Used.	
R738		Not Used.	
R739		Not Used.	
R740		Same as R660.	Isolating Resistor For 100 KC Signal Fig. 6-40
R741		RESISTOR, FIXED, COMPOSITION: 5100 ohms ±5%, ½ w, RC20GF512J, spec MIL-R-11.	Grid Resistor For V604A Fig. 6-40
R742		RESISTOR, FIXED, COMPOSITION: 10,000 ohms ±10%, 1 w, RC32GF103K, spec MIL-R-11.	Plate Load V604A Fig. 6-40
R743		Not Used.	
R744		Same as R636.	Plate Coupling V604B Fig. 6-40
R745		Same as R636.	Plate Coupling V604B Fig. 6-40

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

CONTROL, ELECTRICAL FREQUENCY C-2764/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
R746		Same as R636.	Plate Coupling V604B Fig. 6-40
R747		Not Used.	
R748		RESISTOR, FIXED, COMPOSITION: 150,000 ohms ±5%, ½ w, RC20GF154J, spec MIL-R-11.	Grid Bias V604B Fig. 6-40
R749		RESISTOR, FIXED, COMPOSITION: 300 ohms ±5%, ½ w, RC20GF301J, spec MIL-R-11.	Cathode Bias V604B Fig. 6-40
R750		Same as R715.	Cathode Bias V604B Fig. 6-40
R751		RESISTOR, FIXED, COMPOSITION: 330,000 ohms ±5%, ½ w, RC20GF334J, spec MIL-R-11.	Load T615 Fig. 6-40
R752		Same as R636.	Plate Decoupler For V610A Fig. 6-40
R753		Same as R636.	Plate Decoupler For V610A Fig. 6-40
R754		Same as R636.	Plate Decoupler For V610A Fig. 6-40
R755		Same as R682	Voltage Divider Cathode V610A Fig. 6-40
R756		RESISTOR, FIXED, COMPOSITION: 62 ohms ±5%, ½ w, RC20GF620J, spec MIL-R-11.	Voltage Divider Cathode V610A Fig. 6-40
R757		RESISTOR, VARIABLE, COMPOSITION: 100,000 ohms ±10%, 2 w, RV4LAYSA104A, spec MIL-R-94.	Grid Bias V610B Fig. 6-40
R758		Same as R627.	Plate Load V609B Fig. 6-40
R759		Same as R636.	Cathode Bias V609B Fig. 6-40
R760		Same as R634.	Grid Bias V609B Fig. 6-40
R761		RESISTOR, FIXED, COMPOSITION: 4.7 meg ±10%, ½ w, RC20GF475K, spec MIL-R-11.	Isolating Resistor V609B Fig. 6-40
R762		Same as R761.	Isolating Resistor V609B Fig. 6-40
R763		Same as R761.	Feedback Resistor V609B Fig. 6-40
R764		Not Used.	
R765		Not Used.	
R766		Not Used.	
R767		Same as R627.	Grid Limiting For V610B Fig. 6-40
R768		Same as R627.	Plate Load V609A Fig. 6-40
R769		RESISTOR, FIXED, COMPOSITION: 7500 ohms ±5%, ½ w, RC20GF752J spec MIL-R-11.	Cathode Bias V609A Fig. 6-40
R770		Same as R761.	Grid Bias V609A Fig. 6-40
R771		Same as R761.	Feedback Resistor Grid Of V609A Fig. 6-40
R772		Same as R669.	Cathode V603B Fig. 6-41
R773		Same as R675.	Load Resistor T616 Fig. 6-40
R774		Not Used.	
R775		Same as R636.	Plate Load V610B Fig. 6-40
R776		RESISTOR, FIXED, COMPOSITION: 47,000 ohms ±10%, 2 w, RC42GF473K, spec MIL-R-11.	Lock-In Simmetry Fig. 6-40
R777		RESISTOR, VARIABLE, COMPOSITION: 1000 ohms ±10%, 2 w, RV4LAYSA102A, spec MIL-R-94.	Lock-In Simmetry Pot Fig. 6-40
R778		Not Used.	
R779		RESISTOR, FIXED, COMPOSITION: 820 ohms ±10%, ½ w, RC20GF821K, spec MIL-R-11.	M601 Series Resistor Fig. 6-44

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

CONTROL, ELECTRICAL FREQUENCY C-2764/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
R780		Not Used.	
R781		Not Used.	
R782		Same as R636.	Cathode V604A Fig. 6-40
R783		Same as R636.	Cathode CR637 Fig. 6-40
R784		Same as R636.	Cathode CR638 Fig. 6-40
R785		RESISTOR, FIXED, COMPOSITION: 33,000 ohms ±10%, ½ w, RC20GF333K, spec MIL-R-11. Same as R307.	Cathode V610A Fig. 6-40
R786		Same as R785.	Cathode V610A Fig. 6-40
R787		RESISTOR, FIXED, COMPOSITION: 2.2 meg ±10%, ½ w, RC20GF225K, spec MIL-R-11.	Grid V608B Fig. 6-40
R788		Same as R627.	Plate Load V608B Fig. 6-40
R789		Same as R627.	Cathode V604A Fig. 6-40
R790		Same as R634.	Series Dropping For DS602 Fig. 6-40
R791		Same as R628.	Plate Load V608B Fig. 6-40
R792		Same as R627.	Mixer T612 Fig. 5-29
R793		Same as R627.	Mixer T612 Fig. 5-29
R794		Same as R627.	Mixer T613 Fig. 5-29
R795		Same as R627.	Mixer T614 Fig. 5-29
R796		Not Used.	
R797		Not Used.	
R798		Not Used.	
R799		Same as R633.	Load For CR623 Fig. 6-40
R799		Cont. See R1301.	

AMPLIFIER, RADIO FREQUENCY AM-2121/WRT-2

800-900 Series		AMPLIFIER, RADIO FREQUENCY: 300 kc to 1.5 mc, 500 w output, 0.05 w required for excitation, operates on 1250/1850 v, 20 5/16 in. lg, 17½ in. w, 17½ in. h, mfr 89661, dwg 476D318, Navy type AM-2121/WRT-2.	Raises Output Of RF Oscillator To Desired Frequency And Power Level
B801		FAN, CENTRIFUGAL, COUNTER CLOCK WISE ROTATION: 12 o'clock blast 115/230 v, mfr 89661, dwg 477D817H01.	Blower Motor Fig. 6-32
B802 thru B899		Not Used.	
C801		CAPACITOR, VARIABLE, CERAMIC DIELECTRIC: Rotary type, 7 μμf min, 45 μμf max, 500 v dc working, CV11C450, spec MIL-C-81.	Trimmer For V951 Plate Fig. 6-31
C802		CAPACITOR, FIXED, MICA DIELECTRIC: 75 μμf ±5%, 500 v dc working, CM20C750J, spec MIL-C-5.	Coupling Grid V801 Fig. 6-31
C803		CAPACITOR, VARIABLE, AIR DIELECTRIC: 25 μμf to 500 μμf, 750 v dc working, mfr 89661, dwg 335C713H01.	Plate Tuning For V951 Fig. 6-31
C804		CAPACITOR, FIXED, CERAMIC DIELECTRIC: 4700 μμf +100 −20%, 500 v dc working, CK62Y472Z, spec MIL-C-11015. Same as X203.	Bypass Plate V951 Fig. 6-31
C805		Same as C804.	V801 Cathode Bypass Fig. 6-31
C806		Same as C804.	V801 Filament Fig. 6-31
C807		Not Used.	
C808		CAPACITOR, FIXED, CERAMIC DIELECTRIC: 1000 μμf +30 −80%, 500 v dc working, CK61Y102Z, spec MIL-C-11015.	Reflectometer R-F Bypass Fig. 6-33
C809		Same as C808.	Reflectometer R-F Bypass Fig. 6-33

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

AMPLIFIER, RADIO FREQUENCY AM-2121/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
C810		Same as C808.	Reflectometer R-F Bypass Fig. 6-33
C811		Not Used.	
C812		Same as C804.	Plate Bypass V801 Fig. 6-31
C813		CAPACITOR, FIXED, MICA DIELECTRIC: 56 μμf ±5%, 500 v dc working, CM20C560J, spec MIL-C-5.	Coupling Grid V802 Fig. 6-31
C814		CAPACITOR, FIXED, CERAMIC DIELECTRIC: 10,000 μμf +100 −20%, 500 v dc working, CK63Y103Z, spec MIL-C-11015. Same as C323.	Reflectometer Circuit RF Bypass Fig. 6-33
C815		Same as C103.	Reflectometer Circuit RF Bypass Fig. 6-33
C816		Not Used.	
C817		Same as C814.	Bypass For TB803-7 Fig. 6-31
C818		CAPACITOR, FIXED, CERAMIC DIELECTRIC: 3300 μμf +100 −20%, 500 v dc working, CK62Y332Z, spec MIL-C-11015. Same as C334.	P. A. Screen Bypass Fig. 6-32
C819		Same as C818.	P. A. Screen Bypass Fig. 6-32
C820		Same as C818.	P. A. Screen Bypass Fig. 6-32
C821		Not Used.	
C822		CAPACITOR, FIXED, CERAMIC DIELECTRIC: 3300 μμf, +40 −20%, 2500 v dc working, mfr 00656, type HPB30BC.	P. A. Cathode Bypass Fig. 6-32
C823		Same as C822.	P. A. Cathode Bypass Fig. 6-32
C824		Same as C822.	P. A. Cathode Bypass Fig. 6-32
C825		Same as C822.	P. A. Cathode Bypass Fig. 6-32
C826		Not Used.	
C827		CAPACITOR, FIXED, CERAMIC DIELECTRIC: 6800 μμf, +40% −20%, 2500 v dc working, mfr 00656, type HPB42BC.	Coupling P. A. Plate To Tank Circuit Fig. 6-32
C828		Same as C827.	Bypass Plate Circuit P. A. Tubes Fig. 6-32
C829		Same as C804.	Filament Bypass V801 Fig. 6-31
C830		Same as C804.	Screen Bypass V801 Fig. 6-31
C831		Not Used.	
C832		Same as C803.	Main Tuning Plate Tank V801 Fig. 6-31
C833		Same as C804.	Filament Bypass V802 Fig. 6-31
C834		Same as C813.	Divider Grid V802 (Impedance Matching) Fig. 6-31)
C835		Same as C804.	V802 Cathode Bypass Fig. 6-31
C836		CAPACITOR, VARIABLE, VACUUM DIELECTRIC: 7 to 750 μμf, 5000 v dc working, mfr 89661, dwg 333C646H01.	Plate Tank Tuning P. A. Fig. 6-32
C837		CAPACITOR, VARIABLE, VACUUM DIELECTRIC: 20 to 1500 μμf, 3000 v dc working, mfr 89661, dwg 333C647H01.	Plate Tank Tuning P. A. Fig. 6-32
C838		Same as C804.	V802 Bypass Filam nt Fig. 6-31
C839		Not Used.	
C840		Same as C803.	Main Tuning Plate Tank Fig. 6-31
C841		Same as C814.	Bypass For TB803-2 Fig. 6-31

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

AMPLIFIER, RADIO FREQUENCY AM-2121/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
C842		Same as C814.	Bypass For TB803-4 Fig. 6-31
C843		Not Used.	
C844		Same as C804.	Meter Bypass M801 Fig. 6-32
C845		Not Used.	
C846		Same as C804.	Bypass For Meter M802 Fig. 6-32
C847		Same as C804.	M803 Bypass Fig. 6-32
C848		Same as C804.	Filament Bypass V802 Fig. 6-31
C849		Same as C804.	Filament Bypass V802 Fig. 6-31
C850		CAPACITOR, VARIABLE, CERAMIC DIELECTRIC: 4.5 to 25 μμf, 1100 v dc working, CV11A250, spec MIL-C-81A.	Plate Tank Trimmer V951 Fig. 6-31
C851		Same as C804.	V802 Grid Load Coupling Fig. 6-32
C852		Same as C804.	Filament Bypass V801 Fig. 6-31
C853		CAPACITOR, FIXED, MICA DIELECTRIC: 10 μμf ±10%, 300 v dc working, CM15B100K, spec MIL-C-5.	Bypass For R874 Fig. 6-33
C854		Same as C804.	Bypass For Meter M804 Fig. 6-32
C855		Same as C804.	Bypass For Meter M806 Fig. 6-32
C856		Same as C827.	RF Bypass Fig. 6-32
C857		Same as C804.	Bypass For M805 Fig. 6-32
C858		CAPACITOR, FIXED, ELECTROLYTIC: 15 μf −15 +50%, 15 v dc working CL44BE150TP, spec MIL-C-3965.	Reflectometer RF Bypass Fig. 6-33
C859		Same as C827.	Reflectometer RF Bypass Fig. 6-33
C860		Not Used.	
C861		Not Used.	
C862		CAPACITOR, FIXED, PAPER DIELECTRIC: 1 μf ±10%, 1000 v dc working CP70E1EG105K, spec MIL-C-25A.	Phase Splitter For Timer Blower Fig. 6-32
C863		CAPACITOR, FIXED, PAPER DIELECTRIC: 6 μf ±20%, 600 v dc, CH70B1MF605M, spec MIL-C-18312.	Phase Splitter For Timer Motor Fig. 6-32
C864		Same as C853.	Bypass For R875 Fig. 6-33
C865		Not Used.	
C866		CAPACITOR, FIXED, PAPER DIELECTRIC: 2 μf ±10%, 600 v dc working, CP53B1EF205K, spec MIL-C-25A.	Phase Splitter For B801 Fig. 6-32
C867		Same as C866.	Phase Splitter For B801 Fig. 6-32
C868		CAPACITOR, FIXED, CERAMIC DIELECTRIC: 1000 μμf ±20%, 5000 v dc working, −750 μμf/μf/deg C, mfr 71590, type 858S1000	P. A. Cathode Bypass Fig. 6-32
C869		Same as C814.	Bypass TB803-3 Fig. 6-31
C870		Same as C804.	Bias Voltage Bypass For PA Fig. 6-32
C871		Same as C868.	PA Cathode Bypass Fig. 6-32
C872		Same as C801.	V801 Trimm r Fig. 6-31
C873		Same as C804.	Screen Bypass For V802 Fig. 6-31
C874		Same as C868.	Cathode Bypass For PA Fig. 6-32
C875		Same as C868.	Cathode Bypass For PA Fig. 6-32
C876		Same as C814.	Bypass TB803-7 Fig. 6-31

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—C ntinued

AMPLIFIER, RADIO FREQUENCY AM-2121/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
C877		Same as C808.	Bias Voltage Bypass For PA Fig. 6-32
C878		Not Used.	
C879		CAPACITOR, FIXED, ELECTROLYTIC: 16 μf −15 +75%, 270 v dc working, CL15CS160UP, spec MIL-C-3965.	Screen Bypass V802 Fig. 6-31
C880		Not Used.	
C881		CAPACITOR, FIXED, CERAMIC DIELECTRIC: 1500 μμf +100 −20%, 500 v dc working, CK61Y152Z, spec MIL-C-11015. Same as C340.	Plate Bypass V801 Fig. 6-31
C882		CAPACITOR, CERAMIC DIELECTRIC: 1500 μμf, +40% −20%, mfr 00656, type HPA20BC.	Plate Bypass V802 Fig. 6-31
C883		CAPACITOR, FIXED, ELECTROLYTIC: 8 μf −15 +50%, 30 v dc working, CL44BH080TP, spec MIL-C-3965.	Cathode Bypass V802 Fig. 6-31
C884		Same as C804.	Cathode Decoupling V802 Fig. 6-31
C885		Same as C804.	Filament Bypass V801 Fig. 6-31
C886		Same as C881.	Decoupling For V801 Plate Fig. 6-31
C887		Same as C804.	Bypass For DS802 Fig. 6-32
C888		CAPACITOR, FIXED, MICA DIELECTRIC: 750 μμf ±5%, 300 v dc working, CM20C751J, spec MIL-C-5.	Bypass Plate V802 Fig. 6-31
C889		Same as C804.	Bypass For DS801 Fig. 6-32
C890		Not Used.	
C891		CAPACITOR, FIXED, MICA DIELECTRIC: 130 μμf ±5%, 500 v dc working, CM20C131J, spec MIL-C-5.	Driver 30 PA Coupling Fig. 6-32
C892		Same as C808.	Directional Coupler Fig. 6-33
C893		Same as C808.	Directional Coupler Fig. 6-33
C894		Same as C804.	Bypass For DS803 Fig. 6-32
C895		Same as C858.	Modulation Monitor Fig. 6-33
C896		CAPACITOR, FIXED, MICA DIELECTRIC: 820 μμf ±10%, 500 v dc working, CM30B821K, spec MIL-C-5.	Modulation Monitor Fig. 6-33
C897		Same as C896.	Modulation Monitor Fig. 6-33
C898		Not Used.	
C899		Same as C808.	Modulation Monitor Fig. 6-33
C899		Cont. See C901.	
CR801		SEMICONDUCTOR DEVICE, DIODE: 100 v peak inverse voltage, 5.0 ma min forward current at 25 deg C temp, 1N198, spec MIL-E-1. Same as CR301.	PA Cathode Overload Circuit Fig. 6-32
CR802		Same as CR801.	PA Cathode Overload Circuit Fig. 6-32
CR803		Same as CR801.	PA Cathode Overload Circuit Fig. 6-32
CR804		Same as CR801.	PA Cathode Overload Circuit Fig. 6-32
CR805		Same as CR801.	PA Cathode Fig. 6-33
CR806		Same as CR801.	Directional Coupler Fig. 6-33
CR807		Same as CR801.	Directional Coupler Fig. 6-33
CR808		Same as CR801.	Modulation Monitor Fig. 6-33
CR809		Same as CR801.	Modulation Monitor Fig. 6-33
CR810		Same as CR801.	Modulation Monitor Fig. 6-33

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—C ntinued

AMPLIFIER, RADIO FREQUENCY AM-2121/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
CR811		Same as CR801.	Modulation Monitor Fig. 6-33
CR812		Same as CR801.	Directional Coupler Fig. 6-33
CR813		Same as CR801.	Directional Coupler Fig. 6-33
CR814		Not Used.	
CR815		Same as CR801.	Directional Coupler Fig. 6-33
CR816		SEMICONDUCTOR DEVICE DIODE: Mfr 96214, type 1N756A.	Collector For SWR Transistors Fig. 6-32
CR817		Same as CR816.	Collector For SWR Transistors Fig. 6-32
CR818		Same as CR816.	Collector For SWR Transistors Fig. 6-32
CR819 thru CR899		Not Used.	
DS801		LAMP, INCANDESCENT: T-1¾ bulb, midget flange base, clear, 28 v —.04 amps, AN3140-327, spec W-L-111.	High Voltage Overload Indicator Fig. 6-32
DS802		LAMP, INCANDESCENT SINGLE CONTRACT: Miniature bayonet base 28 v, MIL type MS15571-6. Same as DS207.	Carrier On Indicator Fig. 6-32
DS803		Same as DS802.	Tuner In Fig. 6-32
DS804		Same as DS801.	Switch Indicator Fig. 6-32
DS805 thru DS899		Not Used.	
E801		Not Used.	
E802		Not Used.	
E803		Not Used.	
E804		INSULATOR, STANDOFF: ¾ in. lg x ½ in. dia, white glaze ceramic, NS5W0206, spec JAN-I-8.	Component Insulation Fig. 6-32
E805		SUPPRESSOR, PARASITIC: 1 winding, space wound, 5 turns 0.032 in. dia wire, single silk insulation, mfr 89661, dwg 223B283-1-30.	Parasitic Suppressor Fig. 6-31
E806		Same as E805.	Parasitic Suppressor Fig. 6-31
E807		Same as E805.	Parasitic Suppressor Fig. 6-31
E808		Same as E805.	Parasitic Suppressor Fig. 6-31
E809		BOARD, MOUNTING, MICARTA BOARD: 30 solder stud type terminals, mfr 89661, dwg 341C024G01.	Mtg Board Fig. 6-32
E810		BOARD, MOUNTING, MICARTA BOARD: 7 solder stud type terminals, 2 riveted clamps, dwg 337C090G01, riveted clamps, mfr 89661, dwg 337C090G01.	Mtg Board Fig. 6-33
E811		INSULATOR, STANDOFF: Miniature, melamine insulator, tin coated brass terminals, mfr 81312, type 773.	Wiring Tie Point Fig. 6-32
E812		INSULATOR, STANDOFF: Miniature, melamine insulator, tin coated brass terminal, mfr 81312, type 750.	Wiring Tie Point Fig. 6-31
E813		Same as E812.	Wiring Tie Point Fig. 6-31
E814		Same as E812.	Wiring Tie Point Fig. 6-31
E815		Same as E812.	Wiring Tie Point Fig. 6-31
E816		Same as E812	Wiring Tie Point Fig. 6-31
E817		Same as E812.	Wiring Tie Point Fig. 6-31
E818		Same as E812.	Wiring Tie Point Fig. 6-31
E819		Same as E811.	Wiring Tie Point
E820		Same as E811.	Wiring Tie Point
E821		Same as E811.	Wiring Tie Point

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

AMPLIFIER, RADIO FREQUENCY AM-2121/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
E822		INSULATOR, STANDOFF: 3/4 in. lg x 3/8 in. dia, white glaze ceramic, NS5W0106, spec JAN-I-8.	Component Insulation
E823		Same as E822.	Component Insulation
E824		INSULATOR, STANDOFF: Melamine insulator, tin coated brass terminal, mfr 81312, type 775. Same as E101.	Wiring Tie Point
E825		Same as E811.	Wiring Tie Point
E826		KNOB ASSEMBLY, SPINNER TYPE: 1 pointer, 2 set screws, aluminum, mfr 89661, dwg 337C205G01.	Control Knob Fig. 5-37
E827		KNOB, BLACK PHENOLIC: W/pointer, flatted sides, 1 1/16 in. dia skirt, accommodates 1/4 in. dia shaft, mfr 88365, type VIZA/flats Same as E510.	Control Knob Fig. 5-37
E828		KNOB, BLACK PHENOLIC: W/pointer, 3/4 in. dia knob, 13/16 in. dia skirt, accommodates 1/4 in. dia shaft, mfr 88365, type VIZG.	Control Knob Fig. 5-37
E829		KNOB, BLACK PHENOLIC: W/pointer, 1 in. dia knob, 1 1/16 in. dia skirt, accommodates 1/4 in. shaft, mfr 88365, type VIZA. Same as E336.	Control Knob Fig. 5-37
E830		Same as E829.	Control Knob Fig. 5-37
E831		KNOB, BLACK PHENOLIC: 2 in. dia knob, 2 1/8 in. dia skirt, accommodates 1/4 in. dia shaft, mfr 88365, type VIZD.	Control Knob Fig. 5-37
E832		KNOB ASSEMBLY, SPINNER TYPE: 1 pointer, 2 set screws, aluminum, Mfr 89661, dwg 337C123G01.	Control Knob Fig. 5-37
E833		Same as E811.	Wiring Tie Point
E834		Same as E824.	Wiring Tie Point
E835		Same as E812.	Wiring Tie Point
E836		Same as E812.	Wiring Tie Point
E837		Same as E812.	Wiring Tie Point
E838		Same as E812.	Wiring Tie Point
E839		Same as E812.	Wiring Tie Point
E840		INSULATOR, STANDOFF: 1 in. lg x 3/8 in. x 3/8 in., white glaze ceramic NS5W1008, JAN-1-8.	Wiring Tie Point
E841		DIAL ASSEMBLY: Consists of a dial and 1 spur gear 48 pitch, 144 teeth, mfr 89661, dwg 228B276G01.	Tuning Dial Fig. 5-44
E842		INSULATOR, STANDOFF: Turret type, mineral filled melamine, brass terminals, mfr 81312, type 864.	Wiring Tie Point Fig. 6-33
E843		INSULATOR, STANDOFF: Miniature, solder lug type, 5/8 in. lg, 1/4 in. across flats, mfr 89661, dwg 54B7174H01. Same as E325.	Wiring Tie Point Fig. 6-33
E844		Same as E843.	Wiring Tie Point
E845		Same as E843.	Wiring Tie Point
E846 thru E851		Not Used.	
E852		INSULATOR, STANDOFF: 5/8 in. lg x 1/2 in. dia, white glaze ceramic, NS5W0205, JAN-1-8.	Component Insulation
E853		INSULATOR, STANDOFF: 1 1/4 in. lg x 3/8 in. dia, white glaze ceramic, NS5W0110, JAN-1-8.	Component Insulation
E854		Same as E811.	Wiring Tie Point
E855		Not Used.	
E856		DISC, STANDOFF, BRASS: 7/8 in. od, 0.032 in. thk, 1/8 in. dia center hole, 8 holes 1/16 in. dia equally spaced 3/32 in. from outer edge, mfr 89661, dwg 228B170H01.	Wiring Tie Point Fig. 6-33
E857 thru E862		Not Used.	
E863		BRACKET, ANGLE, BRASS: 1 11/16 in. lg, 5/16 in. w, 1/8 in. flange, mfr 89661, dwg 228B164H01.	Wiring Tie Point Fig. 6-33
E864		BRACKET, ANGLE, BRASS: 1 11/16 in. lg, 5/16 in. w, 1/8 in. flange, mfr 89661, dwg 228B163H01.	Wiring Tie Point Fig. 6-33
E865		Same as E824.	Wiring Tie Point
E866		Same as E812.	Wiring Tie Point
E867		Not Used.	
E868		Not Used.	
E869		Same as E824.	Wiring Tie Point
E870		Same as E824.	Wiring Tie Point
E871		Same as E824.	Wiring Tie Point
E872		Same as E824.	Wiring Tie Point

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

AMPLIFIER, RADIO FREQUENCY AM-2121/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
E873		INSULATOR, STANDOFF: Mineral filled melamine, tin coated brass terminal, mfr 81312, type 776. Same as E508.	Wiring Tie Point
E874 thru E877		Not Used.	
E878		Same as E824.	
E879		Same as E824.	Wiring Tie Point
E880		Same as E829.	Wiring Tie Point
E881		Same as E829.	Control Knob Fig. 5-37
E882		Same as E829.	Control Knob Fig. 5-37
E883		Same as E829.	Control Knob Fig. 5-37
E884		Same as E829.	Control Knob Fig. 5-37
E885		Same as E829.	Control Knob Fig. 5-37
E886		Same as E829.	Control Knob Fig. 5-37
E887		BOARD, MOUNTING: Micarta board, 12 solder stud terminals, mfr 89661, dwg 233B217G01.	Control Knob Fig. 5-37
E888		PUSHBUTTON, ROUND BUTTON SHAPE: Insignia white, translucent, supply with rubber O ring, mfr 81640, type B040-615.	Component Mounting Fig. 6-32
E889		Same as E812.	Pushbutton For S804 Fig. 5-37
E890 thru E894		Not Used.	Wiring Tie Point
E895		PRINTED CIRCUIT ASSEMBLY: Consists of various components mounted on a printed board, mfr 89661, dwg 343C161G03.	Printed Circuit Board Fig. 6-33
E896		BOARD, MOUNTING: Micarta board, 5 solder stud terminals, mfr 89661, dwg 236B495G01.	Mounting Board Fig. 6-33
E897 thru E899		Not Used.	
E899		Cont. See E901.	
J801		CONNECTOR, RECEPTACLE, ELECTRICAL: 1 round male contact, straight type, solid shell, panel mounted, mfr 91577, type 2914. Same as J301.	RF From Oscillator Fig. 6-31
J802		CONNECTOR, RECEPTACLE, ELECTRICAL: Weatherproof, quick disconnect, 1000 v peak, brass body, silver plate finish, single contact, UG-569/U, dwg MS35323.	RF Output Fig. 6-33
J803		CONNECTOR, RECEPTACLE, ELECTRICAL: Miniature quick discount, 12 pin contacts, panel mtd, square flange, mfr 17419, type DM9606-12P.	Main Chassis To Reflectometer Connection Fig. 6-32
J804 thru J899		Not Used.	
J899		Cont. See J901	
K801		RELAY, ARMATURE: 400 ohms ±10%, coil resistance at 25 deg C, 115 v ac, non-inductive, mfr 82415, type 5303-1-HP.	PA Overload Cathode Fig. 6-32
K802		Not Used.	
K803		RELAY, ARMATURE: 115 v ac, .052 amps, 380 ohms working, mfr 70309 PB12A115VAC.	Air Interlock Fig. 6-32
K804		RELAY, ARMATURE: 24 v dc, 700 ohms, ±10%, working, mfr 70309, type MEH6D24VDC.	Interlock Relay Fig. 6-32
K805 thru K808		Not Used.	
K809		RELAY, ARMATURE: 28 v dc working, mfr 82415, type 5709-168X.	Antenna To Driving Fig. 6-33
K810		RELAY, ARMATURE: 500 ohms ±10%, coil resistance at 25 deg C, 115 vac non-inductive, mfr 82415, type 5303-2-HP.	PA Overload Fig. 6-32

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

AMPLIFIER, RADIO FREQUENCY AM-2121/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
K811 thru K899		Not Used.	
K899		Cont. See K901.	
L801		CHOKE, RADIO FREQUENCY: 1 winding, close wound, 20 turns 0.032 in. dia wire, single silk insulation, 4 μh, phenolic coil form, mfr 89661, dwg 223B283-1-23.	RF Filter Filament V801 Fig. 6-31
L802		Same as L801.	RF Filter Filament V801 Fig. 6-31
L803		COIL ROTOR ASSEMBLY: Wound with 305 inches coil wire on a barrel shape coil form, combination phenolic and metal shaft, 0.33 μh to 33 μh, mfr 89661, dwg 221B829-1-10.	PA Plate Tuning Fig. 6-32
L804		COIL ROTOR ASSEMBLY: Wound with 344 inches coil wire on a barrel shape coil form, combination phenolic and metal shaft, 0.33 μh to 33 μh, mfr 89661, dwg 221B829-1-25.	PA Plate Tuning Fig. 6-32
L805		COIL ROTOR ASSEMBLY: Wound with 344 inches coil wire on a barrel shape coil form, combination phenolic and metal shaft, 0.33 μh to 33 μh, mfr 89661, dwg 221B829-1-40.	PA Plate Tuning Fig. 6-32
L806		Same as L801.	RF Filter Filament V802 Fig. 6-31
L807		Same as L801.	RF Filter Filament V802 Fig. 6-31
L808		COIL, RADIO FREQUENCY: Wound with 60 ft of 0.0159 in. dia wire, 0.350 μh, mfr 89661, dwg 221B971-1-1.	Decoupling For PA Plate Voltage Fig. 6-32
L809		COIL, RADIO FREQUENCY: 1 winding, variable, 0.2 μh to 13 μh, mfr 89661, dwg 336C319G01.	V951 Plate Tank Main Tuning Fig. 6-31
L810		COIL, RADIO FREQUENCY: Wound with 0.010 in. dia silk covered enamel wire, 360 μh, mfr 89661, dwg 222B154-1-1.	PA Grid RF Filter Fig. 6-32
L811		COIL, RADIO FREQUENCY: 750 μh inductance, 50 ma max current, 17 ohms dcr, hermetically sealed in glass envelope, mfr 42498, type R33, 750 μh. Same as L307.	Modulation Monitor Fig. 6-33
L812		Not Used.	
L813		COIL ASSEMBLY: Wound with 37 inches of 0.102 in. dia wire, silver plated coil form, pie wound, 1.25 μh, mfr 89661, dwg 221B829-3-30.	PA Tank Fig. 6-32
L814		COIL ASSEMBLY: 1.0-1.2 μh inductance at 7.9 mc, cw winding, silver plated wire, mfr 89661, dwg 221B829-3-13.	PA Tank Fig. 6-32
L815		COIL ASSEMBLY: 5 turns of 0.040 in. dia copper wire, variable, 0.16 μh to 0.22 μh, mfr 89661, dwg 231B837G01.	Trimmer Coil V951 Plate Tank Fig. 6-31
L816		Not Used.	
L817		COIL ASSEMBLY: 6 turns of 0.040 in. dia copper wire, variable, 0.22 μh to 0.29 μh, mfr 89661, dwg 231B837G02.	Trimmer Coil V801 Plate Tank Fig. 6-31
L818		Same as L809.	Main Tuning V801 Tank Fig. 6-31
L819		Not Used.	Main Tuning V802 Tank Fig. 6-31
L820		Same as L809.	
L821		Not Used.	V802 Tank Output Control Fig. 6-31
L822		COIL, RADIO FREQUENCY: Wound with 0.102 in. dia copper wire, variable, mfr 89661, dwg 231B719G01.	Decoupling Plate V802 Fig. 6-31
L823		COIL, RADIO FREQUENCY: Powdered iron form, 300 ma, 28 ohms dcr, q of 85 at 2.5 mc, mfr 76493, type 4626.	
L824		Not Used.	Filament RF Filter V951 Fig. 6-31
L825		Same as L801.	Filament RF Filter V951 Fig. 6-31
L826		Same as L801.	
L827		Not Used.	RF Filter Choke For CR801 Fig. 6-32
L828		Same as L307.	RF Filter Choke CR802 Fig. 6-32
L829		Same as L307.	RF Filter Choke For CR803 Fig. 6-32
L830		Same as L307.	

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

AMPLIFIER, RADIO FREQUENCY AM-2121/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
L831		Same as L307.	RF Filter Choke CR804
L832		Same as L307.	Filter For Mixer Input Keying Fig. 6-31
L833 thru L899		Not Used.	
M801		AMMETER: 0-150 ma, white face with black markings, mfr 89661, dwg 222B064H01.	Test Ammeter Fig. 6-32
M802		AMMETER: 0-1.5 amp and 0-300 ma, white face with black markings, mfr 89661, dwg 222B065H01.	PA Cathode Current Fig. 6-32
M803		VOLTMETER: 0-2 kv and 0-500 v, white face with black markings, mfr 89661, dwg 222B066H01.	HV Plate Meter Fig. 6-32
M804		INDICATOR: Standing wave ratio, dc movement, mfr 89661, dwg 221B821H01.	Standing Wave Ratio Indicator Fig. 6-32
M805		WATTMETER: 0-600 w and 120% modulation, white face with black markings, mfr 89661, dwg 221B822H01.	Power Output Meter Fig. 6-32
M806		AMMETER: 0-100 full scale value, white face with black markings, measures microamperes, MR26W100DCUAR, spec MIL-M-10304.	Tuner Position Indicator Fig. 6-32
M807 thru M899		Not Used.	
MP801		GEAR, BEVEL: Pair 64 pitch, 32 teeth, 0-500 pitch dia, mfr 00141, type N2-1.	Fig. 5-42
MP801A		Part of MP801. Listed for reference only.	Drive Gear
MP801B		Part of MP801. Listed for reference only.	Drive Gear
MP802		GEAR, SPUR: 48 pitch, 48 teeth, 1.0000 pitch dia, 20 deg pressure angle, stainless steel, mfr 00141, type G3-48.	Drive Gear Fig. 5-42
MP803		Same as MP802.	Drive Gear Fig. 5-40
MP804		Same as MP802.	Drive Gear Fig. 5-40
MP805		Same as MP802.	Drive Gear Fig. 5-40
MP806		GEAR, SPUR: 48 pitch, 42 teeth, 20 deg pressure angle, 0.8750 pitch dia, mfr 89661, dwg 230B800H01.	Drive Gear Fig. 5-40
MP807		Same as MP806.	Drive Gear Fig. 5-40
MP808		GEAR, SPUR: 48 pitch, 24 teeth, 20 deg pressure angle, 0.500 pitch dia, mfr 89661, dwg 230B801H01.	Drive Gear Fig. 5-40
MP809		Same as MP808.	Drive Gear Fig. 5-40
MP810		WASHER, THRUST: Mfr 70901, type T504-3. Same as MP356.	Thrust Bearing Fig. 5-40
MP811		PIN, SPRING, STAINLESS STEEL: 3/8 in. lg, 0.094 in. dia, mfr 89661, dwg 50D5595H09.	Attach Gearing Fig. 5-41
MP812		PIN, SPRING, STAINLESS STEEL: 7/8 in. lg, 0.094 in. dia, mfr 89661, dwg 50D5595H13.	Attach Gearing Fig. 5-40
MP813		PIN, SPRING, STAINLESS STEEL: 0.375 in. lg, 0.062 in. dia, type MS171434.	Attach Gearing Fig. 5-40
MP814		PIN, SPRING, STAINLESS STEEL: 0.500 in. lg, 0.062 in. dia, type MS171436.	Attach Gearing Fig. 5-41
MP815		PIN, SPRING, STAINLESS STEEL: 0.312 in. lg, 0.062 in. dia, type MS171433.	Attach Gearing Fig. 5-42
MP816		PIN, SPRING, STAINLESS STEEL: 5/8 in. lg, 0.094 in. dia, mfr 89661, dwg 50D5595H11.	Attach Gearing Fig. 5-40
MP817		WASHER, THRUST: Mfr 89661, dwg 152A802H01.	Thrust Bearing Fig. 5-40
MP818		SPROCKET WHEEL: For 3/16 in. pitch 5/32 in. w, side flanged, link belt chain, 17 teeth, 1.020 pitch dia, mfr 89661, dwg 228B273H01.	Drive Sprocket Fig. 5-42
MP819		Same as MP818.	Drive Sprocket Fig. 5-42
MP820		Same as MP818.	Drive Sprocket Fig. 5-42
MP821		SPROCKET, WHEEL: For 3/16 in. pitch, 5/32 in. w, side flanged, link belt silent chain, 20 teeth, mfr 89661, dwg 230B711H01. Same as MP630.	Drive Sprocket Fig. 5-40
MP822		SPROCKET, WHEEL: For 3/16 in. pitch, 5/32 in. w, side flanged, link belt silent chain, 24 teeth, mfr 89661, dwg 230B845H01. Same as MP631.	Drive Sprocket Fig. 5-40

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

AMPLIFIER, RADIO FREQUENCY AM-2121/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
MP823		SPROCKET, WHEEL: For 3/16 in. pitch, 5/32 in. w, side flanged, link belt silent chain, 17 teeth, 1.020 pitch dia, mfr 89661, dwg 228B335G01.	Drive Sprocket Idler Fig. 5-40
MP824		Same as MP823.	Drive Sprocket Idler Fig. 5-40
MP825		SPROCKET, WHEEL: 26 teeth, 1.548 pitch dia, stainless steel, accommodates 1/4 in. shaft, mfr 89661, dwg 230B367H01.	Drive Sprocket Fig. 5-42
MP826		CHAIN: 70 pitches, 3/16 in. pitch 5/32 in. wide, side flange, stainless steel, mfr 89661, dwg 152A046H05.	Drive Chain Fig. 5-41
MP827		CHAIN, ROLLER: 84 pitches, 3/16 in. pitch 5/32 in. wide, side flanged, steel, mfr 89661, dwg 152A046H04. Same as MP633.	Drive Chain Fig. 5-40
MP828		GEAR, WORM: 64 pitches, 0.500 pitch dia, 14 1/2 deg pressure angle, stainless steel, mfr 00141, type Q6-3.	Drive Worm Fig. 5-40
MP829		GEAR, WORM WHEEL: 64 pitch, 60 teeth 14 1/2 deg pressure angle, 0.937 pitch dia, mfr 00141, type Q5-9.	Drive Gear Fig. 5-40
MP830		GEAR, HELICAL: 64 pitch, 15 teeth, 20 deg pressure angle, 0.331 pitch dia, 45 deg helix angle rh, mfr 89661, dwg 230B871H01.	Helical Drive Gear Fig. 5-42
MP831		GEAR, HELICAL: 64 pitch, 30 teeth 20 deg pressure angle 0.663 pitch dia, 45 deg helix angle rh, mfr 89661, dwg 230B872H01.	Helical Drive Gear Fig. 5-41
MP832		GEAR, SPUR: 48 pitch, 21 teeth, 20 deg pressure angle, 0.4375 pitch dia mfr 00141, type G1-21.	Drive Gear Fig. 5-40
MP833		Same as MP832.	Drive Gear Fig. 5-40
MP834		GEAR, SPUR: 48 pitch, 21 teeth, 20 deg pressure angle, 0.4375 pitch dia mfr 01351, type 154-21.	Drive Gear Fig. 5-41
MP835		GEAR, SPUR: 48 pitch, 65 teeth 20 deg pressure angle, 1.3541 pitch dia, mfr 00141, type G3-65.	Drive Gear Fig. 5-41
MP836		Same as MP835.	Drive Gear Fig. 5-42
MP837		Same as MP835.	Drive Gear Fig. 5-42
MP838		Same as MP835.	Drive Gear Fig. 5-41
MP839		GEAR, SPUR: 48 pitch, 65 teeth, 20 deg pressure angle, 1.3541 pitch dia, mfr 89661, dwg 230B716H01.	Drive Gear Fig. 5-41
MP840		Same as MP839.	Drive Gear Fig. 5-40
MP841		Same as MP893.	Drive Gear Fig. 5-40
MP842		Same as MP802.	Drive Gear Fig. 5-40
MP843		GEAR, SPUR: 48 pitch, 105 teeth, 20 deg pressure angle, 2.1875 pitch dia stainless steel, mfr 00141, type G3-105.	Drive Gear Fig. 5-42
MP844		GEAR, SPUR: 48 pitch, 24 teeth 14 1/2 deg pressure angle, 0.500 pitch dia, mfr 89661, dwg 230B840G01.	Idler Lock Fig. 5-42
MP845		GEAR, SPUR: 48 pitch, 48 teeth, 14 1/2 deg pressure angle, 1.000 pitch dia, mfr 89661, dwg 230B837H01.	Drive Gear Fig. 5-41
MP846		BEARING, SLEEVE OILITE BRONZE: 0.255 in. id, 0.500 in. od, mfr 70901, type TT504. Same as MP326.	Thrust Bearing Fig. 5-40
MP847		WASHER, STOP STAINLESS STEEL: 0.750 in. dia, 1/4 in. dia center hole, stop extends 0.23 in mfr 89661, dwg 225B326H01. Same as MP689.	Stops Rotation Fig. 5-42
MP848		SPLINE EXTENSION: 0.365 in. dia, mfr 89661, dwg 236B084G01.	Couples Rotation Fig. 5-41
MP849		SPLINE EXTENSION: 0.365 in. dia, mfr 89661 dwg 236B084G02.	Couples Rotation Fig. 5-41
MP850		SPLINE EXTENSION: 0.365 in. dia, mfr 89661, dwg 236B084G03.	Couples Rotation Fig. 5-41
MP851		SHAFT, STAINLESS STEEL: 4 7/8 in. lg 0.2497 in. dia, 1/32 in. chamfer both ends, mfr 89661, dwg 228B315H11.	Transmits Rotation Fig. 5-41
MP852		SHAFT, STAINLESS STEEL: 1 5/8 in. lg, 0.2497 in. dia, 1/32 in. chamfer both ends, mfr 89661, dwg 225B325H01.	Transmits Rotation Fig. 5-41
MP853		SHAFT, STAINLESS STEEL: 3 1/8 in. long, 0.2497 in. dia, 1/32 in. chamfer both ends, mfr 89661, dwg 228B315H06.	Transmits Rotation Fig. 5-41
MP854		SHAFT, STAINLESS STEEL: 1 7/8 in. lg, 0.2497 in. dia, 1/32 in. chamfer both ends, mfr 89661, dwg 228B315H04.	Transmits Rotation Fig. 5-41
MP855		SHAFT, STAINLESS STEEL: 4.12 in. lg, 0.2497 in. dia, 0.020 in. chamfer both ends, flatted one end, mfr 89661, dwg 230B989H01.	Transmits Rotation Fig. 5-41
MP856		SHAFT, STAINLESS STEEL: 1.82 in. lg, 0.2497 in. dia, 0.020 in. chamfer, both ends, mfr 89661, dwg 230B990H01.	Transmits Rotation Fig. 5-41
MP857		SHAFT, STAINLESS STEEL: 2 1/4 in. lg, 0.1872 in. dia, 1/64 in. chamfer both ends, mfr 89661, dwg 230B868H01.	Transmits Rotation Fig. 5-41
MP858		SHAFT, STAINLESS STEEL: 1 3/4 in. lg, 0.1872 in. dia, 1/64 in. chamfer both ends, mfr 89661, dwg 230B868H02.	Transmits Rotation Fig. 5-41
MP859		SHAFT, STAINLESS STEEL: 1 1/4 in. lg, 0.1872 in. dia, 1/64 in. chamfer both ends, mfr 89661, dwg 230B868H03.	Transmits Rotation Fig. 5-41

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

AMPLIFIER, RADIO FREQUENCY AM-2121/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
MP860		SHAFT, STAINLESS STEEL: 8 3/8 in. lg, 0.2497 in. dia, 1/32 in. chamfer both ends, mfr 89661, dwg 228B315H10.	Transmits Rotation Fig. 5-40
MP861		SHAFT, SPROCKET, STAINLESS STEEL: 1 1/2 in. lg, 0.250 in. dia sprocket end, 10-32 thd 3/8 in. lg other end, mfr 89661, dwg 230B851H01.	Transmits Rotation Fig. 5-40
MP862		SHAFT, SPROCKET, STAINLESS STEEL: 1 11/16 in. lg, one end threaded 10-32, other end 8-32, mfr 89661, dwg 230B852H01.	Transmits Rotation Fig. 5-42
MP863		SHAFT, SPROCKET, STAINLESS STEEL: 1 7/16 in. lg, one end threaded 10-32, other end grooved 0.017 w, mfr 89661, dwg 230B853H01.	Transmits Rotation Fig. 5-40
MP864		GEAR, SPUR: 48 pitch, 54 teeth, 14 1/2 deg, pressure angle, 1 1/8 in. pitch dia, mfr 89661, dwg 230B841G01.	Drive Gear Fig. 5-41
MP865		GEAR, SPUR: 48 pitch, 42 teeth, 20 deg, pressure angle, 7/8 pitch dia, mfr 89661, dwg 230B839G01.	Drive Gear Fig. 5-42
MP866		SHAFT, LOCK: 29/32 in. lg, 1/2 in. dia one end, 0.248 in. dia other end, 8-32 tapped hole large end, mfr 89661, dwg 230B854H01.	Transmits Rotation Fig. 5-41
MP867		BAR, LOCK, BRASS: 1 1/4 in. lg, 7/16 in. w, 1/32 in. thk, two 0.194 in. dia holes 0.815 c to c, mfr 89661, dwg 230B857H01.	Stops Shaft Rotation Fig. 5-41
MP868		SPACER, STAINLESS STEEL: 1 7/16 in. lg, 6-32 thd both ends, mfr 89661, dwg 230B646H01.	
MP869		SPACER, STAINLESS STEEL: 1 15/16 in. lg, 8-32 thd both ends, mfr 89661, dwg 230B735H01.	Spaces Mounting Plates Fig. 5-42
MP870		WASHER, THRUST: Phosphor bronze, 7/16 in. od, 0.196 in. id, 0.032 in. thk, mfr 89661, dwg 152A798H01.	Thrust Bearing Fig. 5-41
MP871		WASHER, THRUST: Brass, 3/8 in. od, 0.191 in. id, 0.090 in. thk, mfr 89661, dwg 152A799H01.	Thrust Bearing Fig. 5-40
MP872		WASHER, THRUST: Brass, 1/2 in. od, 1/4 in. id, 0.090 in. thk, mfr 89661, dwg 152A800H01.	Thrust Bearing Fig. 5-40
MP873		TAPE, DIAL: Black numerals and index lines on white background, numbered 2.0 to 30.0, mfr 89661, dwg 476D555G01.	Provides Frequency Settings Fig. 5-41
MP874		ROLLER, DIAL ALUMINUM: 1.120 in. lg, 1 in. dia flanges, 5/8 in. dia spool, 1/4 in. bore, mfr 89661, dwg 230B858H01.	Stores Dial Fig. 5-41
MP875		WASHER, THRUST: Oilite bronze, mfr 70901, type T304-1.	
MP876		PIN, SPRING: Stainless steel, 3/4 in. lg, 0.094 in. dia, mfr 89661, dwg 50D5595H12.	Drive Assy Bearing Fig. 5-40
MP877		RING, RETAINING: Carbon spring steel for 0.188 in. dia shaft, 0.015 groove, mfr 89462, type 5100-18MD.	Attach Gearing Fig. 5-40
MP878		RING, RETAINING: Carbon spring steel for 0.250 in. dia shaft, 0.029 in. w groove, mfr 89462, type 5100-25MD. Same as MP720.	Attach Gearing Fig. 5-41
MP879		PIN, SPRING: Stainless steel, 1/2 in. lg, 0.094 in. dia, mfr 89661, dwg 50D5595H10.	Attach Gearing Fig. 5-40
MP880		WASHER, THRUST: Oilite bronze, 1/2 in. od, 3/16 in. id, 1/8 in. thk, mfr 89661, dwg 152A803H01.	Attach Gearing Fig. 5-40
MP881		WASHER, THRUST: Oilite bronze, mfr 70901, type T504-1.	Thrust Bearing Fig. 5-40
MP882		Same as MP825.	Drive Assembly Bearing
MP883		SPROCKET, WHEEL: For 3/16 pitch, 5/32 w, side flanged, link belt silent chain, 28 teeth, 1.674 pitch dia, mfr 89661, dwg 228B277H01.	Sprocket Fig. 5-44
MP884		Same as MP883.	Drive Sprocket Fig. 5-45
MP885		Same as MP818.	Drive Sprocket Fig. 5-45
MP886		Same as MP823.	Drive Sprocket Fig. 5-46
MP887		Same as MP823.	Drive Sprocket Idler Fig. 5-46
MP888		Same as MP823.	Drive Sprocket Idler Fig. 5-46
MP889		Same as MP823.	Drive Sprocket Idler Fig. 5-46
MP890		GEAR, SPUR: 32 pitch, 24 teeth, 20 deg pressure angle, 0.750 pitch dia, mfr 89661, dwg 228B200H01.	Drive Sprocket Idler Fig. 5-43 Drive Gear Fig. 5-44

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

AMPLIFIER, RADIO FREQUENCY AM-2121/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
MP891		GEAR, SPUR: 32 pitch, 48 teeth, 20 deg pressure angle, 1.500 pitch dia, 2 stop pins located 100 deg apart, mfr 89661, dwg 228B312G01.	Drive Gear Fig. 5-45
MP892		GEAR, SPUR: 32 pitch, 36 teeth, 20 deg pressure angle, 1.1250 pitch dia, mfr 00141, type G43-36.	Drive Gear Fig. 5-45
MP893		GEAR, SPUR: 32 pitch, 48 teeth, 20 deg pressure angle, 1.5000 pitch dia, mfr 00141, type G43-48.	Drive Gear Fig. 5-44
MP894		Same as MP893.	Drive Gear Fig. 5-45
MP895		GEAR, HELICAL: 48 pitch, 28 teeth, 20 deg pressure angle, 0.8249 pitch dia, 45 deg helix angle lh, mfr 89661, dwg 228B198H01.	Drive Gear Fig. 5-44
MP896		GEAR, HELICAL: −48 normal pitch, 40 teeth, 0.2498 in. bore, mfr 00141, type AD1-40.	Drive Gear Fig. 5-44
MP897		GEAR, SPUR: 32 pitch, 48 teeth, 20 deg pressure angle, 1.500 pitch dia, mfr 89661, dwg 228B336H01.	Drive Gear Fig. 5-43
MP898		GEAR, SPUR: 32 pitch, 28 teeth, 20 deg pressure angle, 0.8750 pitch dia, mfr 89661, dwg 233B391H01.	Drive Gear Fig. 5-43
MP899		GEAR, SPUR: 32 pitch, 56 teeth, 20 deg pressure angle, 1.7500 pitch dia, mfr 89661, dwg 228B184H01.	Drive Gear Fig. 5-44
MP899		Cont. See MP901.	
P801		Not Used.	
P802		Not Used.	
P803		CONNECTOR, PLUG, ELECTRICAL: 12 socket type contacts, miniature, 700 v dc, 500 v ac, 7.5 amp, Mfr 17419, type DM9700-12S.	Matches J803 Fig. 6-33
P804 thru P899		Not Used.	
P899		Cont. See P901.	
Q801		TRANSISTOR: 1 mc, 30 ohm min, 90 ohms max, 2N117, spec MIL-T-19500.	SWR Alarm Fig. 6-33
Q802		TRANSISTOR: 2 mc, 30 ohms min, 90 ohms max, 2N119, spec MIL-T-19500. Same as Q501.	SWR Alarm Fig. 6-33
Q803 thru Q899		Not Used.	
R801		RESISTOR, FIXED, COMPOSITION: 120 ohms ±10%, 1 w, RC32GF121K, spec MIL-R-11.	Cathode V801 Fig. 6-31
R802		RESISTOR, FIXED, COMPOSITION: 3900 ohms ±10%, 2 w, RC42GF392K, spec MIL-R-11.	RF Load V802 Fig. 6-32
R803		RESISTOR, FIXED, COMPOSITION: 22,000 ohms ±10%, 2 w, RC42GF223K, spec MIL-R-11. Same as R323.	Voltage Divider Screen V801 Fig. 6-31
R804		RESISTOR, FIXED, WIREWOUND: 5000 ohms, 18 watts working, RW33G502, spec MIL-R-26.	Decoupling V801 Plate Fig. 6-31
R805		RESISTOR, FIXED, COMPOSITION: 36,000 ohms ±10%, 2 w, RC42GF363K, spec MIL-R-11.	Voltage Divider Screen V801 Fig. 6-31
R806		RESISTOR, FIXED, COMPOSITION: 1200 ohms ±10%, 1 w, RC32GF122K, spec MIL-R-11.	Grid Resistor V802 Fig. 6-31
R807		RESISTOR, FIXED, COMPOSITION: 150 ohms ±10%, 2 w, RC42GF151K, spec MIL-R-11.	Cathode Resistor V802 Fig. 6-31
R808		RESISTOR, FIXED, COMPOSITION: 18,000 ohms ±10%, 2 w, RC42GF183K, spec MIL-R-11.	Voltage Divider Screen V802 Fig. 6-31
R809 thru R812		Not Used.	
R813		RESISTOR, FIXED, COMPOSITION: 200 ohms ±5%, 2 w, RC42GF201J, spec MIL-R-11.	Load Resistor Reflectometer Fig. 6-33
R814		RESISTOR, FIXED, WIREWOUND: 2000 ohms ±5%, 10 w, RW31G202, spec MIL-R-26. Same as R508.	PA Screen Voltage Divider Fig. 6-32
R815		RESISTOR, FIXED, FILM: 33.2 ohms ±1%, RN80B33R2F, spec MIL-R-10509.	Used When M801 Is Not In Circuit Fig. 6-32
R816		Same as R815.	Used When M801 Is Not In Circuit Fig. 6-32

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—C ntinued

AMPLIFIER, RADIO FREQUENCY AM-2121/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
R817		Same as R813.	
R818		RESISTOR, FIXED, COMPOSITION: 33 ohms ±10%, ½ w, RC20GF330K, spec MIL-R-11. Same as R399.	Reflectometer Load Resistor Fig. 6-33
R819		Same as R818.	PA Resonance Control Fig. 6-32
R820		Same as R818.	PA Resonance Control Fig. 6-32
R821		Same as R813.	PA Resonance Control Fig. 6-32
R822		RESISTOR, FIXED, WIREWOUND: 16.67 ohms ±1%, 5 w, mfr 89661, dwg 335C768H60.	Reflectometer Load Resistor Fig. 6-33
R823		Same as R822.	Cathode Metering Circuit V804 Fig. 6-32
R824		Same as R822.	Cathode Metering Circuit V805 Fig. 6-32
R825		Same as R1813.	Cathode Metering Circuit V806 Fig. 6-32
R826		RESISTOR, FIXED, WIREWOUND: 3.33 ohms, 8 w, mfr 54294, type G102K.	Reflectometer Load Resistor Fig. 6-33
R827		Same as R813.	PA Cathode Metering Total Current Fig. 6-32
R828		Same as R813.	Reflectometer Load Resistor Fig. 6-33
R829		Not Used.	Reflectometer Load Resistor Fig. 6-33
R830		RESISTOR, FIXED, COMPOSITION: 510 ohms ±10%, ½ w, RC20GF511K, spec MIL-R-11.	Directional Coupler Fig. 6-33
R831		RESISTOR, VARIABLE: 250 ohms ±10%, RV4LAYSA251A, spec MIL-R-94.	RF Balance Fig. 6-33
R832		Same as R830.	
R833		RESISTOR, FIXED, COMPOSITION: 22,000 ohms ±10%, ½ w, RC20GF223K, spec MIL-R-11. Same as R711.	Directional Coupler Fig. 6-33
R834		Same as R807.	Plate To Grid V802 Fig. 6-31
R835		Same as R807.	Directional Coupler Fig. 6-33
R836		Same as R831.	Directional Coupler Fig. 6-33
R837		Same as R831.	Zero Adjustment M805 Fig. 6-33
R838		RESISTOR, FIXED, COMPOSITION: 620 ohms ±5%, ½ w, RC20GF621J, spec MIL-R-11.	Calibration M805 Fig. 6-33
R839		RESISTOR, FIXED, FILM: 52 ohms ±10%, 110 v, 50 w, mfr 14674, type H37, 52 ohms, 110 v.	Directional Coupler Fig. 6-32
R840		Not Used.	Dummy Load Fig. 6-32
R841		Same as R813.	
R842		Same as R813.	Reflectometer Load Resistor Fig. 6-33
R843		RESISTOR, FIXED, COMPOSITION: 39 ohms ±10%, 1 w, RC32GF390K, spec MIL-R-11.	Reflectometer Load Resistor Fig. 6-33
R844		RESISTOR, FIXED, COMPOSITION: 470 ohms ±10%, 1 w, RC32GF471K, spec MIL-R-11.	Directional Coupler Fig. 6-32
R845		Same as R844.	Directional Coupler Fig. 6-32
R846		RESISTOR, VARIABLE, WIREWOUND: 1000 ohms, RA20NASD102A, spec MIL-R-19.	Directional Coupler Fig. 6-32
R847		RESISTOR, FIXED, COMPOSITION: 510 ohms ±5%, ½ w, RC20GF511J, spec MIL-R-11.	Standing Wave Ratio Calibrate Fig. 6-32
			Series Resistor For M804 Fig. 6-32

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—C ntinued

AMPLIFIER, RADIO FREQUENCY AM-2121/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
R848		RESISTOR, FIXED, COMPOSITION: 1000 ohms ±10%, ½ w, RC20GF102K, spec MIL-R-11. Same as R318.	Standing Wave Ratio M804 Fig. 6-32
R849		RESISTOR, VARIABLE, WIREWOUND: 2500 ohms, 2 w, RA20NASB252A, spec MIL-R-19.	Modulation Calibrate Fig. 6-32
R850		RESISTOR, VARIABLE: 1000 ohms, RV4NAYSK102A, spec MIL-R-94.	RF Set For Modulator Fig. 6-33
R851		Not Used.	
R852		Not Used.	
R853		RESISTOR, FIXED, COMPOSITION: 1000 ohms ±10%, 2 w, RC42GF102K, spec MIL-R-11.	Modulation Monitor, Filter Fig. 6-33
R854		Same as R853.	Modulation Monitor, Filter Fig. 6-33
R855		RESISTOR, FIXED, COMPOSITION: 120,000 ohms ±10%, 2 w, RC42GF124K, spec MIL-R-11.	Voltage Divider For SWR Transistor Supply Fig. 6-32
R856		Same as R855.	Voltage Divider For SWR Transistor Supply Fig. 6-32
R857		Same as R855.	Voltage Divider For SWR Transistor Supply Fig. 6-32
R858		RESISTOR, FIXED, COMPOSITION: 3300 ohms ±10%, ½ w, RC20GF332K, spec MIL-R-11. Same as R685.	Modulation Monitor Divider Fig. 6-33
R859		RESISTOR, FIXED, FILM: 511,000 ohms ±1%, 1 w, RN75B5113F, spec MIL-R-10509.	Meter M803 Series Fig. 6-32
R860		RESISTOR, FIXED, COMPOSITION: 100,000 ohms ±10%, 2 w, RC42GF104K, spec MIL-R-11.	High Voltage Meter Line Fig. 6-32
R861		Same as R859.	M803, HV Series Resistor Fig. 6-32
R862		RESISTOR, FIXED FILM: 487,000 ohms ±1%, 1 w, RN75B4873F, spec MIL-R-10509.	M803, HV Series Resistor Fig. 6-32
R863		Same as R862.	Multiplier For M803 Fig. 6-32
R864		RESISTOR, VARIABLE COMPOSITION: 1000 ohms ±10%, 2 w, RV4LAYSA102A, spec MIL-R-94. Same as R777.	M803 HV Series Resistor Fig. 6-32
R865		RESISTOR, FIXED, FILM: 196,000 ohms ±1%, 1 watt, RN75B1963F, spec MIL-R-10509.	Series Resistor For M803 Fig. 6-32
R866		RESISTOR, FIXED, COMPOSITION: 27,000 ohms ±10%, 2 w, RC42GF273K, spec MIL-R-11.	Voltage Divider v 802 Screen Fig. 6-31
R867		Same as R802.	Bias Control PA Grid Fig. 6-32
R868		Same as R802.	Bias Control PA Grid Fig. 6-32
R869		RESISTOR, FIXED, COMPOSITION: 2700 ohms ±10%, 2 w, RC42GF272K, spec MIL-R-11.	PA Grid Fig. 6-32
R870		Same as R814.	PA Screen Voltage Divider Fig. 6-32
R871		RESISTOR, FIXED, WIREWOUND: 11,000 ohms ±5%, 38 w, RW35G113, spec MIL-R-26.	PA Screen Voltage Divider Fig. 6-32
R872		Not Used.	
R873		Not Used.	
R874		RESISTOR, FIXED, COMPOSITION: 150 ohms ±5%, ½ w, RC20GF151J, spec MIL-R-11.	Directional Coupler Fig. 6-33
R875		Same as R874.	Directional Coupler Fig. 6-33
R876		Not Used.	
R877		Not Used.	
R878		RESISTOR, FIXED, WIREWOUND: 10,000 ohms ±5%, 38 w, RW35G103, spec MIL-R-26.	PA Voltage Divider Bias Grid Circuit Fig. 6-32
R879		RESISTOR, FIXED, COMPOSITION: 470 ohms ±10%, ½ w, RC20GF471K, spec MIL-R-11. Same as R395.	Voltage Dropping For M804 Fig. 6-32
R880 thru R883		Not Used.	

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—C ntinu d

AMPLIFIER, RADIO FREQUENCY AM-2121/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
R884		RESISTOR, FIXED, COMPOSITION: 15 ohms ±10%, 2 w, RC42GF150K, spec MIL-R-11.	Current Limiting For T803 Fig. 6-33
R885		Same as R859.	M803 HV Seri s Resistor Fig. 6-32
R886		RESISTOR, FIXED, COMPOSITION: 330 ohms ±10%, ½ w, RC20GF331K, spec MIL-R-11. Same as R640.	Current Limiting For CR803 Fig. 6-33
R887		RESISTOR, FIXED, WIREWOUND: 10 ohms 18 w, RW33G100, spec MIL-R-26.	Tuner Motor Brak Fig. 6-32
R888		RESISTOR, FIXED COMPOSITION: 150,000 ohms, ±10%, ½ w, RC20GF154K spec MIL-R-11.	Series Resistor For M806 Fig. 6-32
R889		RESISTOR, VARIABLE, COMPOSITION: 100,000 ohms ±10%, 2 w, RV4LAYSA104A, spec MIL-R-94. Same as R757.	Max Adjust For M806 Fig. 6-32
R890		RESISTOR, FIXED, COMPOSITION: 68,000 ohms ±10%, 2 w, RC42GF683K, spec MIL-R-11.	Voltage Divider Form 350 v Line Fig. 6-32
R891		RESISTOR, FIXED, COMPOSITION: 47,000 ohms ±10%, 2 w, RC42GF473K, spec MIL-R-11. Same as R776.	Voltage Divid r For M816 Fig. 6-32
R892		RESISTOR, VARIABLE: 10,000 ohms ±10%, 2 w, RV4LAYSA103A, spec MIL-R-94. Same as R308.	Zero Adjust For M806 Fig. 6-32
R893		RESISTOR, FIXED, COMPOSITION: 39,000 ohms ±10%, 2 w, RC42GF393K, spec MIL-R-11.	Dropping Resistor For M806 Fig. 6-32
R894		RESISTOR, FIXED, COMPOSITION: 22 ohms ±10%, 2 w, RC42GF220K, spec MIL-R-11.	P/O E805 Fig. 6-31
R895 thru R899		Not Used.	
R899		Cont. See R901.	
RT801		THERMISTOR: 25,000 ohms ±10%, at 37.8 deg c, 0.375 watt at 25 deg c, mfr 75263, type L0903-25K140R.	Temperature Compensation SWR Fig. 6-33
RT802 thru RT899		Not Used.	
S801		SWITCH, WAFER: 1 section, 3 positions, non-shorting type contacts, mfr 89661, dwg 54B3284.	Meter Switch M801 Fig. 6-32
S802		SWITCH, WAFER: 1 section, 5 position, non-shorting type contacts, mfr 89661, dwg 330C439.	Meter Switch M802 Fig. 6-32
S803		Same as S801.	Meter Switch M803 Fig. 6-32
S804		SWITCH, PUSH: SPST, contact rating 28 v dc, 20 amp, mfr 81640, type A3247-AU.	Overload Reset Fig. 6-32
S805		SWITCH, AIRFLOW: Snap action switching, enclosed, normally open, 50 v ac max, 5 amp max, mfr 89661, dwg 335C780H01.	Air Interlock Fig. 6-32
S806		SWITCH, ROTARY TWO SECTIONS: 25 terminals panel mtd, mfr 89661, dwg 227B181.	Antenna Coupl r Control Fig. 6-32
S807		SWITCH: 3 pdt, normally open or normally closed, black button, panel mounted, mfr 74059, type 4PB242-T2.	Antenna Wave Ratio Meter Fig. 6-32
S808		SWITCH, PUSH, MOMENTARY ACTION: Rated 30 v dc, 3 amp inductive, mfr 74059, type 2PB2. Same as S203.	Antenna Tuner Up Switch Fig. 6-32
S809		Same as S808.	Antenna Tuner Down Switch Fig. 6-32
S810		SWITCH, TOGGLE: 125 v, 2 amp, on-off-on positions, solder lug terminals, mfr 88140, type ST52T.	Tuner Control Fig. 6-32
S811		Not Used.	
S812		Same as S810.	Carrier Test Key Fig. 6-32
S813		Not Used.	
S814		Not Used.	
S815		SWITCH, ROTARY: 3 position, 2 pole, mfr 81716, type 75628F1C.	Meter Switch M805 Fig. 6-32
S816 thru S824		Not Used.	
S825		SWITCH, THERMOSTATIC: 115 v ac, 1 amp, contacts open on temp rise 350 degrees ±10%, operating temp, mfr 89661, dwg 335C927H01.	Thermo Overload Fig. 6-32

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

AMPLIFIER, RADIO FREQUENCY AM-2121/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
S826		Same as S825.	Thermo Overload Fig. 6-32
S827		Same as S825.	Thermo Overload Fig. 6-32
S828		Same as S825.	Thermo Overload Fig. 6-32
S829 thru S899		Not Used.	
T801		Not Used.	
T802		Not Used.	
T803		TRANSFORMER, RADIO FREQUENCY: 1 primary 1 turn 1 secondary 20 turn 50 μh at 2.5 mc, mfr 89661, dwg 223B852-1-1.	Voltage Step-Down Transformer Fig. 6-33
T804		TRANSFORMER, RADIO FREQUENCY: 1 primary, 1 turn, 1 secondary, 20 turns centertapped, mfr 89661, dwg 223B852-1-20.	Reflectometer Current Transformer Fig. 6-33
T805		Not Used.	
T806		TRANSFORMER, POWER, STEP-DOWN: Open frame, 1 primary winding, 115 v, 50/160 cycles, single phase, 3 secondary windings, 6 v, 10.4 amp, 6.3 v, 2.5 amp, 6.3 v, 2.1 amp, 2000 v insulations air-cooled, impregnated, mfr 89661, dwg 55C3600-1-1.	Filament Transformer Fig. 6-32
T807		TRANSFORMER, POWER: Step-Down primary winding, 115 v, 50 to 60 cycles, single phase, 1 secondary winding, 25 v, 0.015 amp, mfr 89661, dwg 222B281-1-1.	Bias Supply For Reflectometer Rectifiers Fig. 6-32
T808 thru T899		Not Used.	
T899		Cont. See T901.	
TB801		TERMINAL BOARD ASSEMBLY: Listed for reference only.	Fig. 6-32 Main Terminal Board
TB801A		TERMINAL BOARD, BARRIER TYPE: 11 double screw type terminals, mfr 71785, type 11-141D.	Main Terminal Board
TB801B		Same as TB801A.	Main Terminal Board
TB801C		Same as TB801A.	Main Terminal Board
TB801D		Same as TB801A.	Blower Terminal Board
TB802		TERMINAL BOARD: 4 double screw type terminals, mica phenolic, barrier type, mfr 71785, type 4-141D. Same as TB304.	Driver Main Terminals Board Fig. 6-32
TB803		TERMINAL BOARD MICA PHENOLIC: 10 double screw type terminals, barrier type, mfr 71785, type 10-141D. Same as TB601.	
TB804		Not Used.	Thermo Interlock Terminal Fig. 6-32
TB805		TERMINAL BOARD BARRIER TYPE: 2 double screw type terminals, mfr 71785, type 2-140D.	
TB806 thru TB899		Not Used.	
TB899		Cont. See TB901.	
V801		ELECTRON TUBE: Beam power amplifier receiving, 5933WA, spec MIL-E-1B.	First Driver Fig. 3-7 Second Driver Fig. 3-7
V802		Same as V801.	
V803		Not Used.	Power Amplifier Fig. 3-7
V804		ELECTRON TUBE, TETRODE: 300 w, plate dissipation, 2500 v, plate voltage, mfr 72092, type 4CX300A.	Power Amplifier Fig. 3-7
V805		Same as V804.	Power Amplifier Fig. 3-7
V806		Same as V804.	Power Amplifier Fig. 3-7
V807		Same as V804.	
V808 thru V899		Not Used.	
V899		Cont. See V901.	
XDS801		Not Used.	
XDS802		LIGHT INDICATOR, BRASS: W/black nickel finish, plain green lens, for T-3-¼ lamp, LH62BG2, spec MIL-L-3661.	For DS802 Fig. 6-32

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—C ntinued

AMPLIFIER, RADIO FREQUENCY AM-2121/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
XDS803		LIGHT INDICATOR: 28 v, accommodates T-3-¼ lamp, plain white lens, LH62PW2, spec MIL-L-3661. Same as XDS208.	For DS803 Fig. 6-32
XDS804 thru XDS899		Not Used.	
XK801		SOCKET, ELECTRON TUBE: 7 contact miniature, beryllium copper, silver plated contacts, w/shock shield base, TS101P02, spec JAN-S-28. Same as XV321.	For K801 Fig. 6-32
XK802 thru XK809		Not Used.	
XK810		Same as XK801.	For K810 Fig. 6-32
XK811 thru XK899		Not Used.	
XV801		SOCKET, ELECTRON TUBE: Mfr 02660, type 49RSS5M.	For V801 Fig. 6-31
XV802		Same as XV801.	For V802 Fig. 6-31
XV803		Not Used.	
XV804		SOCKET, ELECTRON TUBE: Mfr 72092, type Y-151.	For V804 Fig. 6-32
XV805		Same as XV804.	For V805 Fig. 6-32
XV806		Same as XV804.	For V806 Fig. 6-32
XV807		Same as XV804.	For V807 Fig. 6-32
XV808 thru XV899		Not Used.	
XV899		Cont. See XV901.	
C901		Same as C818.	Screen Bypass Fig. 6-32
C902		CAPACITOR, FIXED, MICA DIELECTRIC: 560 μμf ±5%, 300 v dc working, CM20C561J, spec MIL-C-5. Same as C725.	Coupling SWR Alarm Fig. 6-33
C903		CAPACITOR, FIXED, MICA DIELECTRIC: 1000 μμf ±5%, 300 v dc working, CM20C102J, spec MIL-C-5.	Coupling SWR Alarm Fig. 6-33
C904		Same as C808.	SWR Relay Bypass Fig. 6-33
C905		CAPACITOR, FIXED, ELECTROLYTIC: 10 μμf −10 +50%, 450 v working, CE51F100F, spec MIL-C-62.	Bias Filter PA Fig. 6-32
C906		Same as C905.	PA Audio Bypass Fig. 6-32
C907		CAPACITOR, FIXED, PAPER DIELECTRIC: 0.1 μf, 500 v ac, 500 v dc, 25 amp, mfr 88124, type NFT1F247.	Line Filtering For PA Fig. 6-32
C908		Same as C907.	Line Filtering For PA Fig. 6-32
C909		CAPACITOR, VARIABLE, AIR DIELECTRIC: 4.7 μμf to 13 μμf ±10%, 4500 v dc working, mfr 89661, dwg 236B458H01.	
C910		Not Used.	
C911		Not Used.	
C912		CAPACITOR, FIXED, MICA DIELECTRIC: 150 μμf ±2%, 300 v dc working, CM20D511G, spec MIL-C-5.	Plate To Grid Feedback V802 Fig. 6-31
C913		Same as C814.	RF Bypass V804-V807 Fig. 6-32
C914		Same as C814.	Filter For Fig. 6-32 CR801
C915		Same as C814.	Filter For CR802 Fig. 6-32
C916		Same as C814.	Filter For CR803 Fig. 6-32
C917		Same as C814.	Filter For CR804 Fig. 6-32
C918		CAPACITOR, FIXED, CERAMIC DIELECTRIC: 4700 μμf +100 −20%, 500 v dc working, CK62Y472Z, spec MIL-C-11015. Same as C0203.	
C919		Same as C808.	
C920		Same as C808.	

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

AMPLIFIER, RADIO FREQUENCY AM-2121/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
C921		Same as C808.	
C922		Same as C808.	
C923		Same as C814.	Filter For TB0801 Input Lines Fig. 6-32
C924		Same as C814.	Filter For TB0801 Input Lines Fig. 6-32
C925		Same as C814.	Filter For TB0801 Input Lines Fig. 6-32
C926		Same as C814.	Filter For TB0801 Input Lines Fig. 6-32
C927		Same as C814.	Filter For TB0801 Input Lines Fig. 6-32
C928		Same as C814.	Filter For TB0801 Input Lines Fig. 6-32
C929		Same as C814.	Filter For TB0801 Input Lines Fig. 6-32
C930		Same as C814.	Filter For TB0801 Input Lines Fig. 6-32
C931		Same as C814.	Filter For TB0801 Input Lines Fig. 6-32
C932		Same as C814.	Filter For TB0801 Input Lines Fig. 6-32
C933		Same as C814.	Filter For TB0801 Input Lines Fig. 6-32
C934		Same as C814.	Filter For TB801 Input Lines Fig. 6-32
C935		Same as C814.	Filter For TB801 Input Lines Fig. 6-32
C936		Same as C814.	Filter For TB801 Input Lines Fig. 6-32
C937		Same as C814.	Filter For TB801 Input Lines Fig. 6-32
C938		Same as C814.	Filter For TB801 Input Lines Fig. 6-32
C939		Same as C814.	Filter For TB801 Input Lines Fig. 6-32
C940		Same as C814.	Filter For TB801 Input Lines Fig. 6-32
C941		Same as C814.	Filter For TB801 Input Lines Fig. 6-32
C942		Same as C814.	Filter For TB801 Input Lines Fig. 6-32
C943		Same as C814.	Filter For TB801 Input Lines Fig. 6-32
C944		Same as C814.	Filter For TB801 Input Lines Fig. 6-32
C945		Same as C814.	Filter For TB801 Input Lines Fig. 6-32
C946		Same as C814.	Filter For TB801 Input Lines Fig. 6-32
C947		Same as C814.	Filter For TB801 Input Lines Fig. 6-32
C948		Same as C814.	Filter For TB801 Input Lines Fig. 6-32
C949		Same as C814.	Filter For TB801 Input Lines Fig. 6-32
C950		Same as C814.	Filter For TB801 Input Lines Fig. 6-32
C951		Not Used.	
C952		Same as C814.	Cathode Bypass V951 Fig. 6-31
C953		Same as C814.	Cathode Bypass V951 Fig. 6-31
C954		Same as C882.	Plate Bypass V802 Fig. 6-31

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—C ntinu d

AMPLIFIER, RADIO FREQUENCY AM-2121/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
C955		Same as C804.	
C956		Same as C804.	Plate Bypass V802 Fig. 6-31 Filament Bypass V951 Fig. 6-31
C957 thru C974		Not Used.	
C975		Same as C814.	
C976		Same as C814.	Filter For TB801 Input Lines Fig. 6-32
C977		Same as C814.	Filter For TB801 Input Lines Fig. 6-32
C978		Same as C814.	Filter For TB801 Input Lines Fig. 6-32
C979		Same as C814.	Filter For TB801 Input Lines Fig. 6-32
C980		Not Used.	Filter For TB801 Input Lines Fig. 6-32
C981		Not Used.	
C982		CAPACITOR, FIXED, CERAMIC DIELECTRIC: 3 μμf ±0.25 μμf, 500 v dc working, CC20CJ030C, spec JAN-C-20A.	Grid Cathode Balance For V951 Fig. 6-31
C983		Same as C982.	Grid Cathode Balance For V951 Fig. 6-31
C984		Same as C814.	Bypass TB803 And TB809 Fig. 6-31
C985		CAPACITOR, FIXED, MICA DIELECTRIC: 20 μμf ±5%, 300 v dc working, CM20C200J, spec MIL-C-5.	Plate V951 Fig. 6-31
C986		Same as C814.	RF Bypass Key UP V951 Fig. 6-31
C987		Not Used.	
C988		Same as C814.	TB803-5 Bypass Fig. 6-31
C989 thru C999		Not Used.	
E901		Same as E812.	Wiring Tie Point
E902		Same as E812.	Wiring Tie Point
E903 thru E999		Not Used.	
J901 thru J950		Not Used.	
J951		Same as J801.	RF Input From Modulator Fig. 6-31
J952		Same as J801.	RF Connection To Level Control Circuit Fig. 6-31
J953		Same as J801.	Level Control Circuit To Mixer Connection Fig. 6-31
J954 thru J999		Not Used.	
K901 thru K951		Not Used.	
K952		RELAY, ARMATURE: DPDT 26.5 v dc, 657 ohms ±10%, dcr at 25 deg C, hermetically sealed, mfr 89661, dwg 335C623H01.	Power Level Adjust Fig. 6-31
K953 thru K999		Not Used.	
MP901		GEAR, SPUR: 56 teeth, 32 pitch, 20 deg pressure angle, mfr 00141, type G43-56.	Drive Gear Fig. 5-44
MP902		Same as MP901.	Drive Gear Fig. 5-44

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

AMPLIFIER, RADIO FREQUENCY AM-2121/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
MP903		GEAR ASSEMBLY: Pair 1 spur gear, 32 pitch, 52 teeth and 1 bevel gear 32 pitch, 32 teeth, mfr 89661, dwg 333C612H01.	Drive Gear Assembly Fig. 5-43
MP904		GEAR, BEVEL: 32 pitch, 32 teeth, 20 deg pressure angle, 1.000 pitch dia, mfr 89661, dwg 333C612H02.	Drive Bevel Pinion Fig. 5-43
MP905		GEAR, BEVEL: Pair 32 pitch, 18 teeth, 20 deg pressure angle, 0.5625 pitch dia, mfr 89661, dwg 333C612H03.	Drive Bevel Pinion Fig. 5-43
MP906		SPROCKET AND GEAR ASSEMBLY: Consists of a sprocket with 22 teeth and a bevel gear with 32 pitch, 32 teeth, mfr 89661, dwg 228B209G01.	Drive Sprocket and Gear Assembly Fig. 5-43
MP907		CHAIN ROLLER: 82 pitches, 3/16 in. pitch, 5/32 in. wide, side flanged, stainless steel, mfr 89661, dwg 152A046H08.	Drive Chain Fig. 5-44
MP908		CHAIN, ROLLER: 94 pitches, 3/16 in. pitches, 5/32 in. wide, side flanged, stainless steel, mfr 89661, dwg 152A046H01.	Drive Chain Fig. 5-44
MP909		CHAIN, ROLLER: 100 pitches, 3/16 in. pitch, 5/32 in. w, side flanged, stainless steel, mfr 89661, dwg 152A046H02.	Drive Chain Fig. 5-44
MP910		CHAIN, ROLLER: 102 pitches, 3/16 in. pitch, 5/32 in. w, side flanged, stainless steel, mfr 89661, dwg 152A046H09.	Drive Chain Fig. 5-44
MP911		BEARING, BALL, THRUST: Single row stainless steel balls and race, 1/4 in. id, 9/16 in. od, mfr 83678, type FT05.	Thrust Bearing Fig. 5-43
MP912		Same as MP911.	Thrust Bearing Fig. 5-43
MP913		Same as MP911.	Thrust Bearing Fig. 5-43
MP914		WASHER, THRUST: 1 1/8 in. od, 1/4 in. thk, mfr 89661, dwg 228B212G01.	Adjustable Drive Bearing Fig. 5-44
MP915		Same as MP911.	Thrust Bearing Fig. 5-46
MP916		Same as MP911.	Thrust Bearing Fig. 5-45
MP917		Same as MP911.	Thrust Bearing Fig. 5-45
MP918		Same as MP911.	Thrust Bearing Fig. 5-45
MP919		GEAR, WORM: 36 pitch, 20 deg pressure, 0.5307 pitch dia, lh single thread, mfr 89661, dwg 228B300H01.	Drive Worm Fig. 5-45
MP920		Same as MP883.	Drive Sprocket Fig. 5-44
MP921		GEAR, HELICAL: 36 pitch, 34 teeth, 20 deg pressure angle, 0.9457 pitch dia, 3 deg helix angle lh, mfr 89661, dwg 228B291H01.	Helical Drive Gear Fig. 5-44
MP922		CAM, CONTROL: Stainless steel, 0.2498 in. bore, mfr 89661, dwg 473D737G01.	Tuning Cam Assembly Fig. 5-44
MP923		BEARING, BALL: Annular corrosion resistant steel, mfr 89661, dwg 152A818H01.	Support Bearing Fig. 5-44
MP924		Same as MP923.	Support Bearing Fig. 5-44
MP925		SPROCKET, WHEEL: 16 teeth, 0.7561 pitch, for 0.1475 pitch sierra roller chain, mfr 89661, dwg 228B295H01.	Drive Sprocket Fig. 5-44
MP926		Same as MP925.	Drive Sprocket Fig. 5-44
MP927		SPROCKET, WHEEL: 16 teeth, 0.7561 pitch for 0.1475 pitch sierra roller chain, mfr 89661, dwg 228B296H01.	Sprocket Idler Fig. 5-44
MP928		GEAR, WORM: Single thd, 48 pitch, 20 deg pressure angle, 0.4775 pitch dia, mfr 89661, dwg 228B297H01.	Drive Worm Fig. 5-46
MP929		SPROCKET, WHEEL: 22 teeth, 1.317 pitch for 3/16 pitch, 5/32 w, side flanged link belt silent chain, mfr 89661, dwg 228B268H01.	Drive Sprocket Fig. 5-44
MP930		GEAR, HELICAL: 50 teeth, 48 pitch, 20 deg pressure angle, mfr 89661, dwg 228B298H01.	Helical Drive Gear Fig. 5-44
MP931		GEAR, SPUR: 48 pitch, 36 teeth, 20 deg pressure angle, 0.7500 pitches dia, mfr 141, type G7-36.	Drive Gear Fig. 5-44
MP932		Same as MP931.	Drive Gear Fig. 5-44
MP933		Same as MP806.	Drive Gear Fig. 5-44
MP934		Same as MP806.	Drive Gear Fig. 5-44
MP935		Same as MP808.	Drive Gear Fig. 5-44
MP936		Same as MP808.	

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

AMPLIFIER, RADIO FREQUENCY AM-2121/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
MP937		BEARING, THRUST: 0.255 in. id, 0.625 in. od, 1/16 in. thk, mfr 70901, type TT601.	Thrust Bearing Fig. 5-44
MP938		Same as MP937.	Thrust Bearing Fig. 5-44
MP939		Same as MP937.	Thrust Bearing Fig. 5-44
MP940		Same as MP937.	Thrust Bearing Fig. 5-44
MP941		Same as MP937.	Thrust Bearing Fig. 5-44
MP942		Same as MP937.	Thrust Bearing Fig. 5-44
MP943		Same as MP846.	Thrust Bearing Fig. 5-44
MP944		Same as MP846.	Thrust Bearing Fig. 5-44
MP945		Same as MP846.	Thrust Bearing Fig. 5-44
MP946		Same as MP846.	Thrust Bearing Fig. 5-44
MP947		Same as MP846.	Thrust Bearing Fig. 5-44
MP948		Same as MP846.	Thrust Bearing Fig. 5-44
MP949		Same as MP846.	Thrust Bearing Fig. 5-44
MP950		Same as MP881.	Thrust Bearing Fig. 5-44
MP951		Same as MP810.	Thrust Bearing Fig. 5-44
MP952		Same as MP810.	Thrust Bearing Fig. 5-44
MP953		FRONT CUP ASSEMBLY: Mfr 89661, dwg 231B826G01.	Front Cup Assembly
MP954		REAR CUP ASSEMBLY: Mfr 89661, dwg 231B827G01.	Rear Cup Assembly
MP955		BEARING, SLEEVE: Oilite bronze, 0.377 in. od, 0.2505 in. id, 3/8 in. lg, mfr 89661, dwg 225B387H04.	Sleeve Bearing Fig. 5-41
MP956		Same as MP955.	Sleeve Bearing Fig. 5-41
MP957		Same as MP955.	Sleeve Bearing Fig. 5-42
MP958		Same as MP955.	Sleeve Bearing Fig. 5-42
MP959		Same as MP955.	Sleeve Bearing Fig. 5-41
MP960		Same as MP955.	Sleeve Bearing Fig. 5-41
MP961		Same as MP955.	Sleeve Bearing Fig. 5-41
MP962		Same as MP955.	Sleeve Bearing Fig. 5-41
MP963		Same as MP955.	Sleeve Bearing Fig. 5-40
MP964		BEARING, SLEEVE: Oilite bronze, 0.377 in. od, 0.2505 in. id, 1/4 in. lg mfr 89661, dwg 225B387H02. Same as MP683.	Sleeve Bearing Fig. 5-42
MP965		BEARING, SLEEVE: Oilite bronze, 0.3145 in. od, 0.1885 in. id, 5/16 in. lg, mfr 89661, dwg 227B916H06.	Sleeve Bearing Fig. 5-41
MP966		Same as MP965.	Sleeve Bearing Fig. 5-41
MP967		Same as MP965.	Sleeve Bearing Fig. 5-41
MP968		Same as MP965.	Sleeve Bearing Fig. 5-41
MP969		Same as MP965.	Sleeve Bearing Fig. 5-41
MP970		Same as MP965.	Sleeve Bearing Fig. 5-41
MP971		BEARING, SLEEVE: Oilite bronze, 0.377 in. od, 0.2505 in. id, 5/16 in. lg, mfr 89661, dwg 225B387H08.	Sleeve Bearing Fig. 5-42

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

AMPLIFIER, RADIO FREQUENCY AM-2121/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
MP972		Same as MP971.	Sleeve Bearing Fig. 5-41
MP973		Same as MP971.	Sleeve Bearing Fig. 5-41
MP974		Same as MP971.	Sleeve Bearing Fig. 5-41
MP975		Same as MP971.	Sleeve Bearing Fig. 5-41
MP976		Same as MP971.	Sleeve Bearing Fig. 5-41
MP977		Same as MP971.	Sleeve Bearing Fig. 5-41
MP978		Same as MP971.	Sleeve Bearing Fig. 5-41
MP979		Same as MP971.	Sleeve Bearing Fig. 5-41
MP980		Same as MP971.	Sleeve Bearing Fig. 5-41
MP981		Same as MP971.	Sleeve Bearing Fig. 5-41
MP982		BEARING, SLEEVE: Oilite bronze, 0.377 in. od, 0.2505 in. id, 7/16 in. lg, mfr 89661, dwg 225B387H05.	Support Bearing Fig. 5-45
MP983		BEARING, BALL: Annular, stainless steel, double shielded, single row, mfr 21335, type AS3K-DD.	Support Bearing Fig. 5-45
MP984		Same as MP983.	Support Bearing Fig. 5-43
MP985		Same as MP983.	Support Bearing Fig. 5-43
MP986		Same as MP983.	Support Bearing Fig. 5-43
MP987		Same as MP983.	Support Bearing Fig. 5-43
MP988		Same as MP983.	Support Bearing Fig. 5-45
MP989		Same as MP983.	Drive Sprocket Fig. 5-31
MP990		Same as MP929.	Drive Sprocket Fig. 5-31
MP991		SPROCKET, WHEEL: 17 teeth, 1.020 pitch, for 3/16 in. pitch, 5/32 in. w, side flanged link belt silent chain, mfr 89661, dwg 221B718.	Drive Sprocket Fig. 5-46
MP992		GEAR AND SPROCKET ASSEMBLY: Mfr 89661, dwg 228B304.	Drive Sprocket Fig. 5-31
MP993		Same as MP929.	Drive Gear Fig. 5-31
MP994		GEAR, SPUR: 24 teeth, 32 pitch, 20 pressure angle, mfr 89661, dwg 228B266.	Drive Gear
MP995		GEAR, SPUR: 64 pitch, 46 teeth, 20 deg pressure angle, 0.7188 pitch dia, mfr 00141, type G13-46.	
MP996		Not Used.	
MP997		COLLAR, STOP: 1 1/8 in. lg, 1/4 in. thk, pin pressed in, mfr 89661, dwg 231B717G01.	Stops Rotation Fig. 5-42
MP998		PIN, SPRING: Stainless steel, 3/8 in. lg, 0.078 in. dia, mfr 89661, dwg 50D5596H02. Same as MP716.	Attach Gearing Fig. 5-40
MP999		COUPLING, SHAFT: Flexible, brass, nickel plated hub, 0.251 in. bore both ends, mfr 99934, type A-201.5. Same as MP607.	Shaft Coupling Fig. 5-40
MP999		Cont. See MP1001.	
P901 thru P951		Not Used.	
P952		CONNECTOR, PLUG: Electrical, silver plated, w/jacket clamp, 13/16 in. lg, mfr 74868, type 48825. Same as P114.	Mates With J952 Fig. 6-31
P953		Same as P952.	Mates With J953 Fig. 6-31
P954 thru P999		Not Used.	

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continu d

AMPLIFIER, RADIO FREQUENCY AM-2121/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
R901		RESISTOR, FIXED, COMPOSITION: 56 ohms ±10%, ½ w, RC20GF560K, spec MIL-R-11. Same as R396.	Drive Adjust Shunt Fig. 6-31
R902 thru R913		Not Used.	
R914		RESISTOR, VARIABLE, COMPOSITION: 5000 ohms ±10%, 2 w, RV4LAYSA502A, spec MIL-R-94. Same as R313.	Bias Adjust For PA Fig. 6-32
R915		Not Used.	
R916		Same as R818.	
R917		RESISTOR, FIXED, COMPOSITION: 4700 ohms ±10%, ½ w, RC20GF472K, spec MIL-R-11. Same as R669.	PA Resonance Control Voltage Divider SWR Alarm Fig. 6-33
R918		Same as R848.	Voltage Divider SWR Alarm Fig. 6-33
R919		Same as R822.	Cathode Metering Circuit V807 Fig. 6-32
R920		RESISTOR, FIXED, COMPOSITION: 10,000 ohms ±10%, ½ w, RC20GF103K, spec MIL-R-11. Same as R310.	Protection For Q801 Base Fig. 6-33
R921		RESISTOR, FIXED, COMPOSITION: 68,000 ohms ±10%, ½ w, RC20GF683K, spec MIL-R-11. Same as R301.	Part Of Temperature Compensation Fig. 6-33
R922		Not Used.	
R923		Not Used.	
R924		Same as R858.	Voltage Divider SWR Alarm Fig. 6-33
R925		Same as R847.	Emitter Bias Resistor Q801 Fig. 6-33
R926		Same as R917.	Voltage Divider SWR Alarm Fig. 6-33
R927		RESISTOR, VARIABLE, COMPOSITION: 10,000 ohms ±10%, ½ w, RV6LAYSA103A, spec MIL-R-94.	SWR Relay Adjust Fig. 6-33
R928		RESISTOR, VARIABLE, COMPOSITION: 100,000 ohms ±10%, ½ w, RV6LAYSA104A, spec MIL-R-94.	SWR Alarm Trip Adjust Fig. 6-33
R929 thru R948		Not Used.	
R949		RESISTOR, FIXED, COMPOSITION: 220 ohms ±10%, ½ w, RC20GF221K, spec MIL-R-11. Same as R306.	Cathode Bias For V951 Fig. 6-31
R950		Same as R847.	Load For T952 Fig. 6-31
R951		RESISTOR, FIXED, COMPOSITION: 100 ohms ±10%, ½ w, RC20GF101K, spec MIL-R-11. Same as R402.	Grid Resistor Load V951 Fig. 6-31
R952		Same as R951.	Grid Resistor For V951 Fig. 6-31
R953		Not Used.	
R954		Not Used.	
R955		RESISTOR, VARIABLE, COMPOSITION: 1000 ohms ±10%, 2 w, RV4NAYSB102A, spec MIL-R-94.	Cathode Balance For V951 Fig. 6-31
R956 thru R974		Not Used.	
R975		RESISTOR, FIXED, COMPOSITION: 47 ohms ±10%, ½ w, RC20GF470K, spec MIL-R-11. Same as R397.	Input Signal Attenuator Fig. 6-31
R976		RESISTOR, FIXED, COMPOSITION: 68 ohms ±10%, ½ w, RC20GF680K, spec MIL-R-11. Same as R403.	Input Signal Attenuator Fig. 6-31
R977 thru R985		Not Used.	
R986		RESISTOR, VARIABLE COMPOSITION: 100 ohms, mfr 89661, dwg 327C920H11.	Drive Level Control Fig. 6-31
R987 thru R991		Not Used.	
R992		Same as R891.	Volt Divider For Plate V951 Fig. 6-31

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

AMPLIFIER, RADIO FREQUENCY AM-2121/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
R993		Same as R893.	Volt Divider For Plate V951 Fig. 6-31
R994		RESISTOR, FIXED, COMPOSITION: 47,000 ohms ±10%, 1 w, RC32GF473K, spec MIL-R-11. Same as R394.	Grid Resistor V801 Fig. 6-31
R995		Not Used.	
R996		Not Used.	
R997		Same as R951.	Suppressor Resistor V951 Fig. 6-31
R998		Same as R951.	Suppressor Resistor V951 Fig. 6-31
R999		Same as R830.	Load For T952 Fig. 6-31
T901 thru T950		Not Used.	
T951		TRANSFORMER, RADIO FREQUENCY: 2 primary, 1 secondary, 2.0 – 30.0 meg, 1 phase, mfr 89661, dwg 223B066-1-1.	Modulator Input Fig. 6-31
T952		TRANSFORMER, RADIO FREQUENCY: 1 primary, 2 secondary, 7.6 v working, mfr 89661, dwg 150A885H01.	RF Input From Oscillator Fig. 6-31
T953 thru T999		Not Used.	
TB901 thru TB975		Not Used.	
TB976		TERMINAL BOARD BARRIER TYPE: 3 double screw type terminals, mfr 71785, type 3-140D.	Mixer Terminal Board Fig. 6-31
TB977 thru TB999		Not Used.	
V901 thru V950		Not Used.	
V951		ELECTRON TUBE: Miniature receiving twin-triode, 5670, spec MIL-E-1B. Same as V610.	Mixer Fig. 3-7
V952 thru V999		Not Used.	
XC901 thru XC904		Not Used.	
XC905		Same as XK801.	For C905 Fig. 6-32
XC906		Same as XK801.	For C906 Fig. 6-32
XC907 thru XC999		Not Used.	
XV901 thru XV950		Not Used.	
XV951		SOCKET, ELECTRON TUBE: 9 contact miniature, plastic body, provisions for mtg layout type electron tube shield, TS103P01, MIL-S-12883. Same as XV323.	For V951 Fig. 6-31
XV952 thru XV999		Not Used.	

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

AMPLIFIER, RADIO FREQUENCY AM-2121/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
MP1001		SHAFT, STAINLESS STEEL: 1 1/32 in. lg, 0.2497 in. dia, 1/32 in. chamfer both ends, mfr 89661, dwg 230B802H01.	Transmits Rotation Fig. 5-40
MP1002		SHAFT, BRASS: 1 1/8 in. lg, 0.313 in. dia, 0.078 in. wide groove 0.070 in. from 1 end, 1/64 chamfer both ends, mfr 89661, dwg 230B796H01.	Transmits Rotation Fig. 5-40
MP1003		SHAFT, STAINLESS STEEL: 2 11/16 in. lg, 0.2497 in. major dia, 0.1872 in. minor dia, 1/16 in. by 0.010 in. deep undercut 1/2 in. from one end, mfr 98661, dwg 230B797H01.	Transmits Rotation Fig. 5-41
MP1004		SHAFT, STAINLESS STEEL: 2 3/32 in. lg, 0.249 in. dia, 1/64 in. chamfer both ends, mfr 89661, dwg 230B798H01.	Transmits Rotation Fig. 5-42
MP1005		SHAFT: 2 1/8 in. lg, 0.2497 in. dia, 1/32 in. chamfer both ends, mfr 89661, dwg 225B325H03.	Transmits Rotation Fig. 5-40
MP1006		DIFFERENTIAL DRIVE ASSY: c/o one housing with gears, bearings, shafts and necessary hardware, mfr 89661, dwg 336C379G01.	Transmit Rotation Fig. 5-40
MP1007		GEAR, SPUR: Includes two stop pins, extending 0.039 in. from face, mfr 89661, dwg 228B311H01.	Drive Gear Fig. 5-46
MP1008		GEAR, SPUR: 21 teeth, 48 pitch, includes shaft and retaining pin, mfr 89661, dwg 228B263G01.	Drive Gear Fig. 5-44
MP1009		Not Used.	
MP1010		Not Used.	
MP1011		Same as MP999.	Shaft Coupling Fig. 5-30
MP1012		Same as MP999.	Shaft Coupling Fig. 5-30
MP1013		Same as MP846.	Shaft Coupling Fig. 5-43
MP1014		WASHER, THRUST: Phosphor bronze, 5/16 in. od, 0.160 in. id, 0.032 in. thk, mfr 89661, dwg 150A529H01.	Thrust Bearing Fig. 5-44
MP1015		WASHER, THRUST: Phosphor bronze, 0.500 in. od, 0.257 in. id, 0.010 in. thk, mfr 89661, dwg 152A048H01.	Thrust Bearing Fig. 5-43
MP1016		POST AND LEVER ASSEMBLY: Stainless steel, lever 2 5/8 in. lg, 1/4 in. w, 3/16 in thk, incl 1/4 in. dia post one end, mfr 89661, dwg 228B274G01.	Used With MP1019 Fig. 5-44
MP1017		STUD, LEVER LOCKING: Stainless steel, 1 9/16 in. lg, 3/8 in. across hex flats, mfr 89661, dwg 228B191H01.	Locks Lever Fig. 5-44
MP1018		SPRING, HELICAL, EXTENSION: Stainless steel wire, 19 turns close wound, 1 9/64 in. lg, 1/4 in. dia coil ea end, mfr 89661, dwg 230B315H01.	Gearing Assembly Tension Fig. 5-44
MP1019		CAM, LEVEL, LOCKING: Stainless steel 7/16 in. lg, 1/2 in. od hub, accommodates 1/4 in. shaft, mfr 89661, dwg 228B194H01.	Drive Cam Fig. 5-44
MP1020		RING, RETAINING: Carbon spring steel for 0.156 in. dia shaft, 0.012 in. w, groove, mfr 89462, type 5100-15MD.	Attach Gearing Fig. 5-44
MP1021		Same as MP878.	Attach Gearing Fig. 5-43
MP1022		SHAFT, DIFFERENTIAL: Stainless steel, 3 11/32 in. lg, 0.2497 in. dia shaft ea end, 1/32 in. chamfer ea end, 1/2 in. od by 0.418 in. lg center hub w/o .2498 in. thru hole, mfr 89661, dwg 228B238H01.	Transmits Rotation Fig. 5-44
MP1023		SHAFT: Stainless steel, 0.2497 in. od, 1 3/4 in. lg, 1/32 chamfer both ends, 0.028 in. w, groove one end, mfr 89661, dwg 228B255H01.	Transmits Rotation Fig. 5-44
MP1024		SHAFT: Stainless steel, 3 7/8 in. lg, 0.2497 in. od, 1/32 in. chamfer both ends, mfr 89661, dwg 228B256H01.	Transmits Rotation Fig. 5-44
MP1025		SHAFT: Stainless steel, 2 7/8 in. lg, 0.2497 in. dia, 1/32 in. chamfer ea end, mfr 89661, dwg 225B325H02.	Transmits Rotation Fig. 5-44
MP1026		SHAFT: Stainless steel, 4 in. lg, 0.2497 in. dia, 1/32 in. chamfer ea end, mfr 89661, dwg 228B344H01.	Transmits Rotation Fig. 5-43
MP1027		SHAFT: Stainless steel, 2 3/4 in. lg, 0.2497 in. dia, 1/32 in. chamfer ea end, mfr 89661, dwg 225B325H12.	Transmits Rotation Fig. 5-44
MP1028		Same as MP854.	Transmits Rotation Fig. 5-45
MP1029		SHAFT: Stainless steel, 2 1/4 in. lg, 0.2497 in. dia, 1/32 in. chamfer ea end, mfr 89661, dwg 228B315H05.	Transmits Rotation Fig. 5-44
MP1030		Same as MP853.	Transmits Rotation Fig. 5-44
MP1031		SHAFT: Stainless steel, 0.2497 in. od, 2 in. lg, mfr 89661, dwg 228B315H07.	Transmits Rotation Fig. 5-43
MP1032		STUD: Idler stainless steel, 1 1/2 in. lg, 1/2 in. across hex flats, mfr 89661, dwg 228B243H01.	Support Sprocket Fig. 5-43
MP1033		ROLLER, DIAL: Aluminum, 1.184 in. lg, 5/8 in. dia spool, 1 in. dia hubs, mfr 89661, dwg 228B263H01.	Support Sprocket Fig. 5-44
MP1034		Same as MP1033.	Support Dial Tape Fig. 5-44

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

AMPLIFIER, RADIO FREQUENCY AM-2121/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
MP1035		DIAL, TAPE: Black numerals and index lines on white background, numbered 2.0 to 30.0, mfr 89661, dwg 475D733G01.	Support Dial Tape Fig. 5-44
MP1036		COLLAR: Stainless steel, ½ in. od, 7/32 in. thk, ¼ in. bore, mfr 89661, dwg 152A049H01.	Stops Rotation Fig. 5-43
MP1037		Same as MP998.	Attach Gearing Fig. 5-44
MP1038		COLLAR: Stop, assembly, stainless steel, 1⅛ in. dia, collar, ¼ in. thk, incl 2 7/32 in. lg, pins, mfr 89661, dwg 228B323G01.	Stops Rotation Fig. 5-43
MP1039		Same as MP847.	Stops Rotation Fig. 5-43
MP1040		Same as MP879.	Attach Gearing Fig. 5-43
MP1041		Same as MP816.	Attach Gearing Fig. 5-44
MP1042		PIN, SPRING: Stainless steel, 1 in. lg, 0.094 in. dia, mfr 89661, dwg 50D5595H14.	Attach Gearing Fig. 5-43
MP1043		Same as MP876.	Attach Gearing Fig. 5-45
MP1044		PIN, SPRING: Stainless steel, ½ in. lg, 0.125 in. dia, mfr 89661, dwg 50D5595H17.	Attach Gearing Fig. 5-45
MP1045		RING, RETAINING: Carbon spring steel for 7/64 in. dia shaft, 0.018 in. w groove, mfr 89462, type X5133-11MD.	Attach Gearing Fig. 5-44
MP1046		Same as MP878.	Attach Gearing Fig. 5-44
MP1047		CAM, CONTROL: Stainless steel, 0.2498 in. dia bore, mfr 89661, dwg 473D738H01.	Control Cam Fig. 5-44
MP1048		SPRING, HELICAL, COMPRESSION: 10 turns of 0.135 in. dia, stainless steel wire, 14 lbs force required to close spring, mfr 89661, dwg 230B899H01.	Retains Capacitor Fig. 5-45
MP1049		Same as MP814.	Attach Gearing Fig. 5-45
MP1050		SWIVEL: Stainless steel, 0.359 in. od hub, mfr 89661, dwg 228B310H01.	Retains Linkage To Capacitor Fig. 5-45
MP1051		RETAINER, SWIVEL: Stainless steel, mfr 89661, dwg 228B314H01.	Retains Linkage To Capacitor Fig. 5-45
MP1052		CHAIN, ROLLER: 21 pitches, 0.147 in. pitch, mfr 89661, dwg 152A039H01.	Drive Chain Fig. 5-31
MP1053		CHAIN, ROLLER: 31 pitches, 0.147 in. pitch, mfr 89661, dwg 152A040H01.	Drive Chain Fig. 5-31
MP1054		Same as MP852.	Transmits Rotation Fig. 5-46
MP1055		Same as MP1031.	Transmits Rotation Fig. 5-46
MP1056		SHAFT: Stainless steel, 0.2497 in. od, 2½ in. lg, mfr 89661, dwg 228B315H01.	Transmits Rotation Fig. 5-44
MP1057		SHAFT: Stainless steel, 0.2497 in. od, 3¾ in. lg, mfr 89661, dwg 228B315H12.	Transmits Rotation Fig. 5-44
MP1058		SHAFT: Stainless steel, 0.2497 in. od, 1½ in. lg, mfr 89661, dwg 228B315H03.	Transmits Rotation Fig. 5-44
MP1059		Same as MP1002.	Transmits Rotation Fig. 5-44
MP1060		SHAFT: Stainless steel, 2 9/16 in. lg, 0.2497 in. dia, 1/32 in. chamfer both ends, mfr 89661, dwg 228B327H01.	Transmits Rotation Fig. 5-44
MP1061		SHAFT: Idler, one end threaded 10-32, other end grooved 0.028 in. w, mfr 89661, dwg 228B305H01.	Transmits Rotation Fig. 5-44
MP1062		NUT, SELF LOCKING: Hex, brass, 0.164-32NC-3B thk, nickel plated, 0.378 in. across flats, mfr 89661, dwg 54B6954H03.	
MP1063		PIN, SPRING: Stainless steel, 0.250 in. lg, 0.062 in. dia, type MS171432.	Attach Gearing Fig. 5-45
MP1064		Same as MP811.	Attach Gearing Fig. 5-46
MP1065		PIN, SPRING: Stainless steel, 0.438 in. lg, 0.094 in. dia, type MS171495.	Attach Gearing Fig. 5-44
MP1066		Same as MP879.	Attach Gearing Fig. 5-44
MP1067		Same as MP1042.	Attach Gearing Fig. 5-44
MP1068		COLLAR: Stainless steel, ½ in. od, ¼ in. id, ¼ in. thk, mfr 89661, dwg 228B303H01.	Stops Rotation Fig. 5-45
MP1069		WASHER, THRUST: Phosphor bronze, 0.218 in. od, 0.120 in. id, 0.032 in. thk, mfr 89661, dwg 152A028H01.	Thrust Bearing Fig. 5-44
MP1070		Same as MP1069.	Thrust Bearing Fig. 5-44
MP1071		SCREW MACHINE: Stainless steel, 2 7/32 in. lg, 8-32 thd, ⅞ in. lg, screwdriver slot head ¼ in. dia, mfr 89661, dwg 228B280H01.	Mounting Screw Fig. 5-44
MP1072		SCREW, MACHINE: Stainless steel, 1⅜ in. lg, 8-32 thd 15/16 in. lg, screwdriver slot head ¼ in. dia, mfr 89661, dwg 228B283H01.	Mounting Screw Fig. 5-46
MP1073		SCREW, MACHINE: Stainless steel, 1 in. lg, ¼-28 thd, ⅜ in. dia head, mfr 89661, dwg 228B308H01.	Mounting Screw Fig. 5-45

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—C ntinued

AMPLIFIER, RADIO FREQUENCY AM-2121/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
MP1074 thru MP1099 1100 Series		Not Used.	
MP1101		MOUNTING, VIBRATION AND SHOCK: Resilient members stainless steel, rigid members steel, plate stainless steel, 930 to 975 lbs at ⅛ in. deflection load rating, natural frequency 6 cycles per second, 19½ in. w, 29¼ in. deep, 72 in. high overall, mfr 51116, model W583-1, Navy type MT-2170-WRT.	
MP1102		SPRING, HELICAL: Compression, stainless steel, 2.13 in. free height, 1.40 in. dia, mfr 51116, dwg S173.	Shockmount Fig. 5-38A
MP1103		PAD, SHOCKMOUNT: Stainless steel knitted wire, 1.85 in. free height, 1.10 in. dia, mfr 51116, dwg MC646.	Shockmount And Damping Fig. 5-38A
MP1104		PAD, SHOCKMOUNT: Stainless steel knitted wire, 0.50 in. free height, 2.42 in. od, 1.25 in. id, mfr 51116, dwg MP643.	Shockmount And Damping Fig. 5-38A
MP1105		PAD, SHOCKMOUNT: Stainless steel knitted wire, 0.40 in. free height, 2.88 in. od, 1.25 in. id, mfr 51116, dwg MP642.	Shockmount And Damping Fig. 5-38A
MP1106		BOLT: Steel, ½-13 thds, hex head, 0.73 in. across flats, 0.75 in. lg, mfr 51116, dwg H1157-21.	Secures Parts Fig. 5-38A
MP1107		WASHER, FLAT: Stainless steel, 2.06 in. od, 0.516 in. id, 0.188 in. thk, mfr 5116, dwg STD1306-267.	Thrust Washer Fig. 5-38A
MP1108		WASHER, FLAT: Stainless steel, 2.06 in. od, 1.172 in. id, 0.062 in. thk, mfr 51116, dwg STD1306-269.	Thrust Washer Fig. 5-38A
MP1109		BASEPLATE SUBASSEMBLY: Consists of an angle, limiter cup, stiffener, gusset, limiter support, cup, cushion cup and plate spot welded together, mfr 51116, dwg R14365-1.	Supports Shockmounts Fig. 5-38A
MP1110		INTERMEDIATE BEAM SUBASSEMBLY: Consists of a side plate, cushion bracket and cushion cup spot welded together, mfr 51116, dwg R14367-1.	Supports Shockmounts Fig. 5-38A
MP1111		TRAY SUBASSEMBLY: Consists of an insert, plate, stud, stiffener channel, the channel, cushion cup and tray beam, spot welded together, mfr 51116, dwg R14371-1.	Supports Shockmounts Fig. 5-38A
MP1112		PIN, SPRING: Carbon steel, 0.187 in. dia, 1.750 in. lg, mfr 51116, dwg H1006-45.	Retain Parts Fig. 5-38A
MP1113		SPRING, HELICAL, COMPRESSION: Stainless steel, 1.62 in. free height, 1.30 in. dia, mfr 51116, dwg S175.	Shockmount Fig. 5-38A
MP1114		SPRING ASSEMBLY: Covered cushion, stainless steel wire, 1.44 in. compressed length, mfr 51116, dwg MF648.	Shockmount Fig. 5-38A
MP1115		SPRING, HELICAL- COMPRESSION: 2.20 in. free height, 1.40 in. dia, mfr 51116, dwg S174.	Shockmount Fig. 5-38A
MP1116		PAD, SHOCKMOUNT: Stainless steel, 1.70 in. free height, 1.10 in. dia, mfr 51116, dwg MC647.	Shockmount and Damping Fig. 5-38A
MP1117		PAD, SHOCKMOUNT: Stainless steel knitted wire, 1.00 in. free height, 2.38 in. od, 1.44 in. id, mfr 51116, dwg MP645.	Shockmount and Damping Fig. 5-38A
MP1118		PAD, SHOCKMOUNT: Stainless steel knitted wire, 0.25 in. free height, 2.62 in. od, 1.13 in. id, mfr 51116, dwg MP644.	Shockmount and Damping Fig. 5-38A
MP1119		SPRING, HELICAL, TORSION: Stainless steel wire, 0.81 in. lg, 0.38 in. w, 0.66 in. h, mfr 51116, dwg R14399-1.	Shockmounts Fig. 5-38A
MP1120		BOLT: ¾-10 thds, hex head, 0.73 in. across flats, 1 in. lg, mfr 51116, dwg H1157-22.	Retain Parts Fig. 5-38A
MP1121		WASHER, SPECIAL: Stainless steel, 1.84 in. od, 0.765 in. id, 0.188 in. thk, mfr 51116, dwg STD1593-11.	Thrust Washer Fig. 5-38A
MP1122		STUD SUBASSEMBLY: Consists of a stud and insert, stainless steel, mfr 51116, dwg R14392-1.	Retain Parts Fig. 5-38A
MP1123		CAM, LOCK: Steel, 1.7 in. lg, 1.19 in. w, 0.88 in. h, mfr 51116, dwg R14400-1.	Secures Frame Fig. 5-38A
MP1124		BASEPLATE SUBASSEMBLY: Consists of a drive screw, installation placard, 3 cups, 2 brackets, pedestal, baseplate, plate and spacer spot welded together, mfr 51116, dwg R14386-1.	Support Shockmounts Fig. 5-38A
MP1125		INTERMEDIATE SUBASSEMBLY: Consists of a corner tab, plate, cup, limiter cup and intermediate beam spot welded together, mfr 51116, dwg R14382-1.	Support Shockmounts Fig. 5-38A
MP1126 thru MP1199		TRAY SUBASSEMBLY: Consists of inserts, tapping blocks, cups, plates, spacer and tray spot welded together, mfr 51116, dwg R14378-1.	Support Shockmounts Fig. 5-38A
		Not Used.	

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

OSCILLATOR, RADIO FREQUENCY O-581/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
C1201		Same as C337.	RF Bypass For V1201 Fig. 6-34
C1202		Same as C337.	RF Bypass For V1201 Fig. 6-34
C1203		CAPACITOR, FIXED, MICA DIELECTRIC: 10,000 μμf ±10%, 300 v dc working, CM35C103K, spec MIL-C-5. Same as C627.	Grid Coupling For V1201 Fig. 6-34
C1204		Same as C323.	V1201 Decoupling Fig. 6-34
C1205		Same as C323.	V1201 Decoupling Fig. 6-34
C1206		CAPACITOR, FIXED, MICA DIELECTRIC: 47 μμf ±10%, 500 v dc, CM20B470K, spec MIL-C-5.	T1202 Tuning Fig. 6-34
C1207		CAPACITOR, VARIABLE, AIR DIELECTRIC: 4.5-100 μμf, 600 rms, 60 cps, mfr 80583, type MAPC-100.	T1202 Tuning Fig. 6-34
C1207A		Part of V1207. Listed for reference only.	
C1208		CAPACITOR, FIXED, MICA DIELECTRIC: 10 μμf ±10%, 500 v dc working, CM20B100K, spec MIL-C-5. Same as C685.	FL1201 Terminating Fig. 6-34
C1209		Not Used.	
C1210		Not Used.	
C1211		Same as C337.	RF Bypass For V1202 Fig. 6-34
C1212		Same as C337.	RF Bypass For V1202 Fig. 6-34
C1213		Same as C1203.	Grid Coupling For V1202 Fig. 6-34
C1214		Same as C323.	V1202 Decoupling Fig. 6-34
C1215		Same as C323.	V1202 Decoupling Fig. 6-34
C1216		Same as C1206.	T1204 Tuning Fig. 6-34
C1217		Same as C1207.	T1204 Tuning Fig. 6-34
C1218		Same as C1208.	FL1202 Termination Fig. 6-34
C1219		Same as C323.	V1202 Decoupling Fig. 6-34
C1220		Same as C365.	FL1203 Tuning Fig. 6-34
C1221		Same as C1203.	V1204 Decoupling Fig. 6-34
C1222		Same as C365.	T1205 Tuning Fig. 6-34
C1223		Same as C323.	V1204 Decoupling Fig. 6-34
C1224		Same as C323.	V1204 Decoupling Fig. 6-34
C1225		CAPACITOR, FIXED, MICA DIELECTRIC: 560 μμf ±10%, 300 v dc working, CM20B561K, spec MIL-C-5.	T1206 Tuning Fig. 6-34
C1226		Same as C1207.	T1207 Tuning Fig. 6-34
C1227		Same as C320.	V1205 Coupling Fig. 6-34
C1228		Same as C323.	Cathode Bypass For V1205 Fig. 6-34
C1229		Same as C422.	Screen Bypass For V1205 Fig. 6-34
C1230		Same as C323.	Plate Decoupling For V1205 Fig. 6-34
C1231		CAPACITOR, FIXED, MICA DIELECTRIC: 270 μμf ±10%, 500 v dc working, CM20B271K, spec MIL-C-5.	T1207 Tuning Fig. 6-34
C1232		Same as C422.	V1205 Keying Filter Fig. 6-34

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

OSCILLATOR, RADIO FREQUENCY O-581/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
C1233		Same as C422.	V1206 Keying Filter Fig. 6-34
C1234		Same as C1227.	V1206 Coupling Fig. 6-34
C1235		Same as C323.	V1203 Filter Bypass Fig. 6-34
C1236		Same as C422.	V1206 Screen Bypass Fig. 6-34
C1237		CAPACITOR, FIXED, MICA DIELECTRIC: 33 μμf ±10%, 500 v dc working, CM20B330K, spec MIL-C-5.	T1209 Tuning Fig. 6-34
C1238		Same as C323.	Filament Bypass For V1203 Fig. 6-34
C1239		Same as C323.	
C1240		Same as C323.	
C1241		Same as C357.	T1201 Tuning Fig. 6-34
C1242		Same as C357.	T1211 Tuning Fig. 6-34
C1243		Same as C323.	Decoupling For V1207A Fig. 6-34
C1244		Same as C1225.	2.0 MC Differentiator Fig. 6-34
C1245		Same as C1237.	T1212 Tuning Fig. 6-34
C1246		Same as C323.	Cathode Bypass For V1208 Fig. 6-34
C1247		Same as C323.	Screen Bypass For V1208 Fig. 6-34
C1248		Same as C1237.	T1213 Tuning Fig. 6-34
C1249		Same as C323.	Decoupling For V1208 Fig. 6-34
C1250		Same as C323.	Decoupling For V1207B Fig. 6-34
C1251		CAPACITOR, FIXED, MICA DIELECTRIC: 820 μμf ±10%, 500 v dc working, CM20B821K, spec MIL-C-5.	Coupling Capacitor Fig. 6-34
C1252		Same as C1225.	1.5 MC Differentiator Fig. 6-34
C1253		CAPACITOR, FIXED, MICA DIELECTRIC: 100 μμf ±10%, 500 v dc working, CM20B101K, spec MIL-C-5.	T1214 Tuning Fig. 6-34
C1254		Same as C323.	V1209 Bypass Fig. 6-34
C1255		Same as C323.	V1209 Screen Bypass Fig. 6-34
C1256		Same as C1253.	T1215 Tuning Fig. 6-34
C1257		Same as C323.	FL1203 Termination Fig. 6-34
C1258		CAPACITOR, FIXED, MICA DIELECTRIC: 27 μμf ±10%, 500 v dc working, CM20B270K, spec MIL-C-5A.	FL1203 Termination Fig. 6-34
C1259		Same as C365.	FL1203 Termination Fig. 6-34
C1260		CAPACITOR, FIXED, MICA DIELECTRIC: 18 μμf ±10%, 500 v dc working, CM20B180K, spec MIL-C-5.	FL1203 Termination Fig. 6-34
C1261 thru C1299		Not Used.	
CR1201		Same as CR301.	2.0 Generator Fig. 6-34
CR1202		Same as CR301.	1.5 MC Generator Fig. 6-34
CR1203 thru CR1299		Not Used.	
E1201		SHIELD, ELECTRON TUBE: Accommodates RMA tube envelope, T-5½, horizontal joint, S0966, spec MIL-S-19786.	Tube Shield For V1201

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

OSCILLATOR, RADIO FREQUENCY O-581/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
E1202		Same as E1201.	Tube Shield For V1202
E1203		Same as E1201.	Tube Shield For V1203
E1204		SHIELD, ELECTRON TUBE: Accommodates RMA tube envelope, T-5½, horizontal joint, TS103U01, spec JAN-S-28.	Tube Shield For V1204
E1205		SHIELD, ELECTRON TUBE: Brass, horizontal joint, straight cylinder shape w/flared ends, mounts on shock shield base, TS102U02, spec JAN-S-28.	Tube Shield For V1205
E1206		Same as E1205.	Tube Shield For V1206
E1207		Same as E323.	Tube Shield For V1207
E1208		Same as E301.	Tube Shield For V1208
E1209		Same as E1205.	Tube Shield For V1209
E1210		Same as E325.	Wiring Tie Point
E1211		Same as E325.	Wiring Tie Point
E1212		Same as E325.	Wiring Tie Point
E1213		Same as E325.	Wiring Tie Point
E1214		Same as E325.	Wiring Tie Point
E1215		Same as E325.	Wiring Tie Point
E1216		Same as E325.	Wiring Tie Point
E1217		Same as E325.	Wiring Tie Point
E1218		Same as E325.	Wiring Tie Point
E1219		Same as E325.	Wiring Tie Point
E1220 thru E1299		Not Used.	
FL1201		FILTER, RADIO INTERFERENCE: 2 mc, upper sideband, mfr 89661, dwg 152A237H01.	Upper Sideband Filter Fig. 6-34
FL1202		FILTER, RADIO INTERFERENCE: 2 mc, lower sideband, mfr 89661, dwg 152A237H02.	Lower Sideband Filter Fig. 6-34
FL1203		FILTER, RADIO INTERFERENCE: 2 mc, 10,000 ohms input, mfr 89661, dwg 150A888H01.	Carrier Reject Filter Fig. 6-34
FL1204 thru FL1299		Not Used.	
J1201		Same as J301.	500 KC Input Fig. 6-34
J1202		Same as J303.	Modulator Output Fig. 6-34
J1203 thru J1299		Not Used.	
K1201		RELAY, ARMATURE: DPDT, 26.5 v dc, 657 ohms ±10% dcr at 25 deg C, hermetically sealed, mfr 89661, dwg 335C623H01. Same as K952.	Sideband Level Selector Fig. 6-34
K1202 thru K1299		Not Used.	
L1201		COIL, RADIO FREQUENCY: Oscillating type, 80 μh, 2 mc, mfr 89661, dwg 150A836H01.	FL1201 Termination Fig. 6-34
L1202		Same as L1201.	FL1202 Termination Fig. 6-34
L1203 thru L1299		Not Used.	
R1201		Same as R395.	T1201 Termination Fig. 6-34
R1202		Same as R1201.	T1201 Termination Fig. 6-34
R1203		RESISTOR, VARIABLE, COMPOSITION: 100 ohms ±10%, ½ w, RV6LAVSA101A, spec MIL-R-94.	Balance For V1201 Fig. 6-34
R1204		Same as R318.	Bias For V1201 Fig. 6-34
R1205		Same as R310.	V1201 Decoupling Fig. 6-34
R1206		RESISTOR, VARIABLE, COMPOSITION: 10,000 ohms ±10%, ½ w, RV6LAVSA103A, spec MIL-R-94.	Plate Balance For V1201 Fig. 6-34

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

OSCILLATOR, RADIO FREQUENCY O-581/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
R1207		RESISTOR, VARIABLE, COMPOSITION: 1000 ohms ±10%, ½ w, RV6LAVSA102A, spec MIL-R-94.	Level Set For USB Fig. 6-34
R1208		RESISTOR, VARIABLE, COMPOSITION: 5000 ohms ±10%, 2 watts, dual section, mfr 89661, dwg 327C920H10.	Sideband Selector Fig. 6-34
R1209		Not Used.	
R1210		Not Used.	
R1211		Same as R1201.	T1203 Termination Fig. 6-34
R1212		Same as R1201.	T1203 Termination Fig. 6-34
R1213		Same as R1203.	Balance For V1202 Fig. 6-34
R1214		Same as R318.	Bias For V1202 Fig. 6-34
R1215		Same as R310.	V1202 Decoupling Fig. 6-34
R1216		Same as R1206.	Plate Balance For V1202 Fig. 6-34
R1217		Same as R1207.	Level Set For LSB Fig. 6-34
R1218		Same as R318.	Bias For V1203 Fig. 6-34
R1219		Same as R310.	V1203 Decoupling Fig. 6-34
R1220		Not Used.	
R1221		RESISTOR, FIXED, COMPOSITION: 4700 ohms ±10%, ½ w, RC20GF472K, spec MIL-R-11. Same as R669.	T1205 Load Fig. 6-34
R1222		RESISTOR, VARIABLE, COMPOSITION: 100 ohms ±10%, ½ watt, RV6LAYSA101A, spec MIL-R-94.	Bias For V1204 Fig. 6-34
R1223		Same as R318.	Bias For V1204 Fig. 6-34
R1224		Same as R310	V1204 D coupling Fig. 6-34
R1225		Same as R1206.	Plate Balance For V1204 Fig. 6-34
R1226		RESISTOR, VARIABLE, COMPOSITION: 5000 ohms ±10%, ½ w, RV6LAVSA502A, spec MIL-R-94.	T1206 Load Fig. 6-34
R1227		RESISTOR, FIXED, COMPOSITION: 270 ohms ±10%, ½ w, RC20GF271K spec MIL-R-11.	Bias For V1205 Fig. 6-34
R1228		RESISTOR, FIXED, COMPOSITION: 33,000 ohms ±10%, 1 w, RC32GF333K, spec MIL-R-11.	Screen Decoupling For V1205 Fig. 6-34
R1229		RESISTOR, FIXED, COMPOSITION: 150,000 ohms ±10%, 1 w, RC32GF153K, spec MIL-R-11.	Screen Dropping For V1205 Fig. 6-34
R1230		Same as R318.	Plate Decoupling For V1205 Fig. 6-34
R1231		RESISTOR, FIXED, COMPOSITION: 47,000 ohms ±10%, ½ w, RC20GF473K, spec MIL-R-11. Same as R652.	Grid Return For V1205 Fig. 6-34
R1232		Same as R310.	V1205 Keying Input Fig. 6-34
R1233		Same as R310.	V1206 Keying Input Fig. 6-34
R1234		Same as R1231.	Grid Return For V1206 Fig. 6-34
R1235		RESISTOR, VARIABLE, COMPOSITION: 10,000 ohms ±10%, ½ w, RV6LAYSA103A, spec MIL-R-94. Same as R927.	2.0 MC Level Set Fig. 6-34
R1236		Same as R307.	T1208 Terminating Fig. 6-34
R1237		Same as R1227	Bias For V1206 Fig. 6-34
R1238		Same as R1228.	Screen Dropping For V1206 Fig. 6-34
R1239		Same as R1229.	Screen Decoupling For V1206 Fig. 6-34
R1240		Same as R318.	V1206 Decoupling Fig. 6-34

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

OSCILLATOR, RADIO FREQUENCY O-581/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
R1241		Same as R1221.	
R1242		RESISTOR, FIXED, COMPOSITION: 20,000 ohms ±5%, ½ w, RC20GF203J, spec MIL-R-11.	
R1243 thru R1245		Not Used.	
R1246		RESISTOR, FIXED, COMPOSITION: 150 ohms ±10%, ½ w, RC20GF151K, spec MIL-R-11. Same as R645.	V1207A Input Divider Fig. 6-34
R1247		Same as R1227.	Bias For V1207A Fig. 6-34
R1248		RESISTOR, FIXED, COMPOSITION: 10,000 ohms ±10%, 1 w, RC32GF103K, spec MIL-R-11. Same as R742.	V1207A Decoupling Fig. 6-34
R1249		Same as R1201.	2.0 MC Differentiator Fig. 6-34
R1250		Same as R1227.	Bias For V1208 Fig. 6-34
R1251		Same as R1228.	V1208 Screen Dropping Fig. 6-34
R1252		RESISTOR, FIXED, COMPOSITION: 22000 ohms ±10%, 1 w, RC32GF223K, spec MIL-R-11.	V1208 Screen Decoupling Fig. 6-34
R1253		Same as R318.	V1208 Decoupling Fig. 6-34
R1254		Same as R310.	V1207A Input Divider Fig. 6-34
R1255		Same as R1206.	V1207B Input Divider Fig. 6-24
R1256		Same as R1207.	2.0 MC Level Set Fig. 6-34
R1257		RESISTOR, FIXED, COMPOSITION: 8200 ohms ±10%, 2 w, RC42GF822K, spec MIL-R-11.	V1207B Decoupling Fig. 6-34
R1258		Same as R1242.	V1207B Voltage Divider Fig. 6-34
R1259		Same as R402.	Carrier Reinsert Adjust Fig. 6-34
R1260		RESISTOR, FIXED, COMPOSITION: 6.8 ohms ±10%, 1 w, RC32GF6R8K, spec MIL-R-11.	−20 DB Carrier Insert Fig. 6-34
R1261		Same as R401.	−10 DB Carrier Insert Fig. 6-34
R1262		Same as R403.	0 DB Carrier Insert Fig. 6-34
R1263		Same as R398.	3 DB Carrier Insert Fig. 6-34
R1264		Same as R1231.	
R1265		Not Used.	
R1266		Same as R1201.	1.5 MC Differentiator Fig. 6-34
R1267		Same as R1227.	Bias For V1209 Fig. 6-34
R1268		Same as R1228.	V1209 Screen Dropping Fig. 6-34
R1269		Same as R1252.	V1209 Screen Decoupling Fig. 6-34
R1270		Same as R318.	V1209 Decoupling Fig. 6-34
R1271		RESISTOR, VARIABLE, COMPOSITION: 1000 ohms ±10%, ½ watt, RV6LAYSA102A, spec MIL-R-94.	1.5 MC Level Set Fig. 6-34
R1272 thru R1299		Not Used.	
S1201		SWITCH, ROTARY: 1 section, 5 position, 30 deg throw, shorting type contacts, mfr 89661, dwg 230B738H01.	Carrier Reinsert Fig. 6-34

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—C ntinued

OSCILLATOR, RADIO FREQUENCY O-581/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
S1202		SWITCH, ROTARY: 3 section, 2 position, 60 deg throw, non-shorting type contacts, mfr 89661, dwg 230B742H01.	Auxiliary Range Fig. 6-34
S1203 thru S1299		Not Used.	
T1201		TRANSFORMER, AUDIO FREQUENCY: 600 ohms primary impedance, 468 ohms primary resistance, 186 ohms secondary resistance, hermetically sealed, mfr 89661, dwg 147A936H01.	USB Audio Input Fig. 6-34
T1202		TRANSFORMER, RADIO FREQUENCY: 2.0 mc, 70 v, 3 windings, mfr 89661, dwg 376A507.	USB Modulator Fig. 6-34
T1203		Same as T1201.	LSB Audio Input Fig. 6-34
T1204		Same as T1202.	LSB Modulator Fig. 6-34
T1205		TRANSFORMER, RADIO FREQUENCY: 1 primary winding, center tapped, 1 secondary, 25 v working, mfr 89661, dwg 150A837H01.	500 KC Modulator Input Fig. 6-34
T1206		TRANSFORMER, RADIO FREQUENCY: 2 primary, 1 secondary, center tapped, 500 kc, 1 w, 1 phase, 175 v working, mfr 89661, dwg 223B057-1-1.	500 KC Modulator Output Fig. 6-34
T1207		TRANSFORMER, RADIO FREQUENCY: 500 kc frequency, 85 v primary, 0.0026 amp, 4.7 v secondary, 0.047 amp, mfr 89661, dwg 223B062-1-1.	500 KC Output Fig. 6-34
T1208		Same as T1205.	2.0 MC Amplifier Input Fig. 6-34
T1209		TRANSFORMER, RADIO FREQUENCY: 1 primary, 1 secondary, 250 mw, 1 phase, 250 v working, mfr 89661, dwg 223B061-1-1.	2.0 MC Output Fig. 6-34
T1210		TRANSFORMER, RADIO FREQUENCY: 1 primary, 85 v, 1 secondary, 7.1 v, 500 k, 250 mw, 1 phase, 250 v working, mfr 89661, dwg 223B056-1-1.	500 KC Input Fig. 6-34
T1211		Same as T1210.	500 KC Output Fig. 6-34
T1212		Same as T1209.	2.0 MC Input Fig. 6-34
T1213		Same as T1209.	2.0 MC Output Fig. 6-34
T1214		TRANSFORMER, RADIO FREQUENCY: 500 kc frequency, 85 v primary, 0.00385 amp, 8.5 v secondary, 0.00385 amp, mfr 89661, dwg 223B059-1-1.	1.5 MC Input Fig. 6-34
T1215		Same as T1214.	1.5 MC Output Fig. 6-34
T1216 thru T1299		Not Used.	
TB1201		TERMINAL BOARD: Barrier type, 9 double screw type terminals, mfr 71785, type 9-140D.	ISB Modulator Input Fig. 6-34
TB1202 thru TB1299		Not Used.	
V1201		ELECTRON TUBE, MINIATURE: Receiving twin triode, 5670, spec MIL-E-1. Same as V610.	USB Modulator Fig. 3-7
V1202		Same as V1201.	LSB Modulator Fig. 3-7
V1203		Same as V1201.	Sideband Combiner Fig. 3-7
V1204		Same as V1201.	500 KC Modulator Fig. 3-7
V1205		Same as V301.	500 KC Amplifier Fig. 3-7
V1206		Same as V301.	2.0 MC Amplifier Fig. 3-7
V1207		Sam as V323.	Fig. 3-7
V1207A		Part of V1207. Listed for referenc only.	500 kc Amplifier
V1207B		Part of V1207. Listed for reference only.	500 KC Carrier Insert

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—C ntinued

OSCILLATOR, RADIO FREQUENCY O-581/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
V1208		Same as V301.	2.0 MC Selector Fig. 3-7
V1209		Same as V301.	1.5 MC Selector Fig. 3-7
V1210 thru V1299		Not Used.	
XV1201		Same as XV323.	For V1201 Fig. 6-34
XV1202		Same as XV323.	For V1202 Fig. 6-34
XV1203		Same as XV323.	For V1203 Fig. 6-34
XV1204		Same as XV323.	For V1204 Fig. 6-34
XV1205		Same as XV301.	For V1205 Fig. 6-34
XV1206		Same as XV301.	For V1206 Fig. 6-34
XV1207		Same as XV323.	For V1207 Fig. 6-34
XV1208		Same as XV301.	For V1208 Fig. 6-34
XV1209		Same as XV301.	For V1209 Fig. 6-34
XV1210 thru XV1299		Not Used.	

CONTROL, ELECTRICAL FREQUENCY C-2764/WRT-2

C1301		CAPACITOR, FIXED, MICA DIELECTRIC: 130 μμf ±5%, 300 v dc working, CM15C131J, spec MIL-C-5.	Tuning For 1 MC Fig. 5-27
C1302		CAPACITOR, FIXED, MICA DIELECTRIC: 110 μμf ±5%, 300 v dc working, CM15C111J, spec MIL-C-5.	Tuning For 1 MC Fig. 5-27
C1303		CAPACITOR, FIXED, MICA DIELECTRIC: 56 μμf ±5%, 300 v dc working, CM15C560J, spec MIL-C-5.	Tuning For 1 MC Fig. 5-27
C1304		CAPACITOR, VARIABLE, CERAMIC DIELECTRIC: Rotary type, 7 μμf min, 45 μμf max, 500 v dc working, CV11C450, spec MIL-C-81. Same as C801.	Variable Tuning For 1 MC Fig. 5-27
C1305		Same as C1304.	Variable Tuning For 1 MC Fig. 5-27
C1306		Same as C1304.	Emitter Bypass For Q1304 Fig. 5-27
C1307		Same as C609.	DC Blocking, Q1301 Fig. 5-27
C1308		Same as C609.	Coupling Q1301 Fig. 5-27
C1309		Same as C609.	DC Blocking Q1302 Fig. 5-27
C1310		Same as C609.	Emitter Bypass For Q1303 Fig. 5-27
C1311		Same as C609.	Coupling For Q1302 Fig. 5-27
C1312		CAPACITOR, FIXED, CERAMIC DIELECTRIC: 20,000 μμf +80 −20%, 450 v dc working, mfr 72982 type 817-02.	Coupling For Q1303 Fig. 5-27
C1313		Same as C609.	RF Bypass T1304 Fig. 5-27
C1314		Same as C609.	Coupling For Q1304 Fig. 5-27
C1315		Same as C609.	RF Bypass For Q1304 Fig. 5-27
C1316		Not Used.	Input Coupling Binary #1 Fig. 5-25
C1317		Same as C609.	Input Coupling For Q1306 Fig. 5-25
C1318		Same as C609.	Time Constant For Q1306 Fig. 5-25
C1319		CAPACITOR, FIXED, MICA DIELECTRIC: 200 μμf ±10%, 500 v dc, mfr 72136, type DM15(200 μμf).	Time Constant For Q1305 Fig. 5-25
C1320		CAPACITOR, FIXED, MICA DIELECTRIC: 390 μμf ±2%, 500 v dc, mfr 72136 type DM15(390 μμf).	
C1321		Same as C1320.	

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—C ntinued

CONTROL, ELECTRICAL FREQUENCY C-2764/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATIN FUNCTION
C1322		CAPACITOR, FIXED, PAPER DIELECTRIC: 33,000 μμf ±10%, 100 v dc, CP05A1EB333K, spec MIL-C-25.	Emitter Bypass Q1305, Q1306 Fig. 5-25
C1323		Same as C1319.	Coupling For Q1305 Fig. 5-25
C1324		Same as C609.	Coupling To 500 KC Output J1302 And J1303 Fig. 5-25
C1325		Not Used.	
C1326		CAPACITOR, FIXED, MICA DIELECTRIC: 75 μμf ±10%, 500 v dc, mfr 72136 type DM15(75 μμf).	Coupling For Q1307 Fig. 5-26
C1327		CAPACITOR, FIXED, MICA DIELECTRIC: 51 μμf ±10%, 500 v dc, mfr 72136, type DM15(51 μμf).	Time Constant For Q1307 Fig. 5-26
C1328		Same as C1322.	Emitter Bypass For Q1307, Q1308 Fig. 5-26
C1329		Same as C1320.	Time Constant For Q1308 Fig. 5-26
C1330		Same as C1326.	Coupling For Q1308 Fig. 5-26
C1331		CAPACITOR, FIXED, ELECTROLYTIC: 50 μμf −15 +50%, 60 v, CL44BK500TP, spec MIL-C-3965.	+24 V DC Regulated Supply Filter Fig. 6-44
C1332		Same as C1331.	Regulated Supply Filter Fig. 6-44
C1333		Same as C1331.	+ 24 V DC Regulated Supply Filter Fig. 6-44
C1334		Not Used.	
C1335		Not Used.	
C1336		Same as C708.	−6 V Power Supply Fig. 5-28
C1337		Same as C708.	−6 V Power Supply Fig. 5-28
C1338		Same as C708.	−6 V Power Supply Fig. 5-28
C1339		Same as C1331.	+24 V DC Regulated Supply Filter Fig. 6-44
C1340		CAPACITOR, VARIABLE, GLASS DIELECTRIC: Mfr 14674 type 682048.	Tuning Capacitor Fig. 5-27
C1341		Same as C1326.	Coupling For Q1313 Fig. 5-26
C1342		Same as C1322.	Emitter Bypass For Q1313, Q1314 Fig. 5-26
C1343		Same as C1320.	Time Constant For Q1313 Fig. 5-26
C1344		Same as C1320.	Time Constant For Q1314 Fig. 5-26
C1345		Same as C1326.	Coupling For Q1314 Fig. 5-26
C1346		Same as C1326.	Coupling For Q1315 Fig. 5-25
C1347		Same as C1320.	Time Constant For For Q1315 Fig. 5-25
C1348		Same as C1322.	Emitter Bypass For Q1315, Q1316 Fig. 5-25
C1349		Same as C1320.	Time Constant For Q1316 Fig. 5-25
C1350		Same as C1326.	Coupling For Q1316 Fig. 5-25
C1351		CAPACITOR, FIXED, ELECTROLYTIC: 50 v dc working, 2.5 μf +75 −15%, mfr 93561, type 102D1216A1. Same as C512.	Coupling For Q1317 Fig. 5-25

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

CONTROL, ELECTRICAL FREQUENCY C-2764/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
C1352		Same as C1351.	Collector Load For Q1314 Fig. 5-25
C1353		CAPACITOR, FIXED, MICA DIELECTRIC: 6200 μμf ±5%, 300 v dc, mfr 72136, type DM20(6200 μμf).	Time Constant And Bias For Q1313 Fig. 5-25
C1354		CAPACITOR, FIXED, MICA DIELECTRIC: 1800 μμf ±5%, 500 v dc, mfr 72136, type DM20(1800 μμf).	Bias For Q1313 Fig. 5-25
C1355		Same as C1351.	Emitter Resistance For Q1313, Q1314 Fig. 5-25
C1356		Same as C609.	Bias For Q1314
C1357 thru C1360		Not Used.	
C1361		CAPACITOR, FIXED, ELECTROLYTIC: 4 μμf −15 +50%, 60 v dc, CL44BK040TP, spec MIL-C-3965.	+24 V DC Regulated Supply Filter Fig. 6-42
C1362		CAPACITOR, FIXED, PAPER DIELECTRIC: 100,000 μμf ±10%, 100 v dc, CP05A1EB104K, spec MIL-C-25.	
C1363 thru C1399		Not Used.	
CR1301		Same as CR601.	6 Volt Bias Supply
CR1302		Same as CR601.	6 Volt Bias Supply
CR1303		Same as CR601.	6 Volt Bias Supply
CR1304		Same as CR601.	6 Volt Bias Supply
CR1305		Same as CR601.	6 Volt Bias Supply Fig. 5-28
CR1306		Same as CR601.	6 Volt Bias Supply Fig. 5-28
CR1307		Same as CR601.	6 Volt Bias Supply Fig. 5-28
CR1308		Same as CR601.	6 Volt Bias Supply Fig. 5-28
CR1309		SEMICONDUCTOR DEVICE DIODE: Silicon diffused junction rectifier, wire type, mfr 88570, type 1N538.	+24 V DC Regulated Supply Rectifier Fig. 6-44
CR1310		Same as CR1309.	+24 V DC Regulated Supply Rectifier Fig. 6-44
CR1311		SEMICONDUCTOR DEVICE DIODE: Zener power type, 6 v ±5% output, 10 w, mfr 99180, type SV2007.	P/O CR1349 Fig. 6-44
CR1312		Same as CR1311.	P/O CR1349 Fig. 6-44
CR1313		Same as CR1311.	P/O CR1349 Fig. 6-44
CR1314		Same as CR1311.	P/O CR1349 Fig. 6-44
CR1315		SEMICONDUCTOR DEVICE, DIODE: Silicon junction reference, 200 mw power dissipation at 25 deg C, wire lead terminals, mfr 28959, type 1N429.	−6 V DC Regulated Supply Rectifier Fig. 5-28
CR1316		SEMICONDUCTOR DEVICE, DIODE: Germanium crystal, 125 reverse peak voltage, 5.0 ma min forward current, mfr 99180, type 1N277.	Steering Diode For Q1305 Fig. 5-25
CR1317		Same as CR1316.	Steering Diode For Q1306 Fig. 5-25
CR1318		Same as CR1316.	Voltage Reference For Q1306 Fig. 5-25
CR1319		Same as CR1316.	Clamping Diode Fig. 5-25
CR1320		Same as CR1316.	Clamping Diode Fig. 5-25
CR1321		Same as CR1316.	Steering Diode For Q1305 Fig. 5-25
CR1322		Same as CR1316.	Voltage Reference For Q1305 Fig. 5-25
CR1323		Same as CR1316.	Steering Diode For Q1307 Fig. 5-26

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—C ntinued

CONTROL, ELECTRICAL FREQUENCY C-2764/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
CR1324		Same as CR1316.	Voltage Reference For Q1307 Fig. 5-26
CR1325		Same as CR1316.	Clamping Diode Fig. 5-26
CR1326		Same as CR1316.	Clamping Diode Fig. 5-26
CR1327		Same as CR1316.	Voltage Reference For Q1308 Fig. 5-26
CR1328		Same as CR1316.	Steering Diode For Q1308 Fig. 5-26
CR1329		Same as CR1316.	Steering Diode For Q1308 Fig. 5-26
CR1330		Same as CR1316	Steering Diode For Q1313 Fig. 5-26
CR1331		Same as CR1316.	Voltage Reference For Q1313 Fig. 5-26
CR1332		Same as CR1316.	Clamping Diode Fig. 5-26
CR1333		Same as CR1316.	Clamping Diode Fig. 5-26
CR1334		Same as CR1316.	Voltage Reference For Q1314 Fig. 5-26
CR1335		Same as CR1316.	Steering Diode For Q1314 Fig. 5-26
CR1336		Same as CR1316	Diode For Q1316 Fig. 5-25
CR1337		Same as CR1316.	Voltage Reference For Q1316 Fig. 5-25
CR1338		Same as CR1316.	Clamping Diode Fig. 5-25
CR1339		Same as CR1316.	Clamping Diode Fig. 5-25
CR1340		Same as CR1316.	Voltage Reference For Q1315 Fig. 5-25
CR1341		Same as CR1316.	Steering Diode For Q1315 Fig. 5-25
CR1342		Same as CR1316.	And Gate For 100 KC Output Fig. 5-25
CR1343		Same as CR1316.	And Gate For 100 KC Fig. 5-25
CR1344		Same as CR1316.	And Gate For 100 KC Output Fig. 5-25
CR1345		SEMICONDUCTOR DEVICE, DIODE: 4.3 to 5.4 volts at 25 deg C, 50 amps at 25 deg C, mfr 99180 type SV-5	Voltage Reference Diodes Fig. 5-26
CR1346		Same as CR1345.	Voltage Reference Diodes Fig. 5-26
CR1347		Same as CR1309.	+24 V DC Regulated Supply Rectifier Fig. 6-44
CR1348		Same as CR1309.	+24 V DC Regulated Supply Rectifier Fig. 6-44
CR1349		DIODE ASSEMBLY: c/o CR1311 thru CR1314, mfr 89661, dwg 233B304G01.	
CR1350 thru CR1399		Not Used.	
E1301		PRINTED CIRCUIT ASSEMBLY: 10:1 frequency driver, mfr 89661, dwg 480D329G01.	Binary No. 1 Feedback Counter, −100 KC Amplifier Fig. 6-42
E1302		PRINTED CIRCUIT ASSEMBLY: −6 v bias supply, mfr 89661, dwg 336C700G01.	−6 V DC Regulated Power Supply Fig. 6-44
E1303		PRINTED CIRCUIT ASSEMBLY: 10:1 frequency divider, mfr 89661, dwg 480D330G01.	Binary No. 2 And Binary No. 3 Fig. 6-42

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

CONTROL, ELECTRICAL FREQUENCY C-2764/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
E1304		PRINTED CIRCUIT ASSEMBLY: 1 mc oscillator, mfr 89661, dwg 336C762G01.	1 MC Oscillator And 1 MC Amplifier Fig. 6-42
E1305		BOARD, COMPONENT MOUNTING: Micarta board, 8 solder stud terminals, mfr 89661, dwg 233B300G01.	Rectifier Mounting Fig. 6-44
E1306		BOARD, COMPONENT MOUNTING: Micarta board, 8 solder stud terminals, mfr 89661, dwg 233B322G01.	Capacitor Mounting Fig. 6-44
E1307 thru E1399		Not Used.	
FL1301		FILTER, LOW PASS: Rejection at 120 cycles, 32 db, rated 0.12 henries min, includes coils and capacitors hermetically sealed, mfr 89661, dwg 376A508H01.	
FL1302 thru FL1399		Not Used.	
J1301		Same as J604.	1 MC Input To Binary No. 1 Fig. 6-42
J1302		Same as J604.	Matches P1302 Fig. 6-42
J1303		Same as J604.	Matches P1303 Fig. 6-42
J1304		Same as J604.	Matches P1304 Fig. 6-42
J1305 thru J1399		Not Used.	
L1301		Not Used.	
L1302		REACTOR: 0.63 hy, 20 v at 120 cps, 0.41 amp dc, mfr 89661, dwg 152A741H01.	+24 V DC Supply Filter Choke Fig. 6-44
L1303 thru L1399		Not Used.	
MP1301		BRACKET, MTG DIODE: Mfr 89661, dwg 233B303H01.	
MP1302 thru MP1399		Not Used.	
P1301		Same as P608.	1 MC Output Fig. 6-42
P1302		Same as P604.	500 KC Output To 1 MC Monitor Fig. 6-42
P1303		Same as P604.	500 KC To Master Oscillator Fig. 6-42
P1304		Same as P604.	100 KC Output Fig. 6-42
P1305 thru P1399		Not Used.	
Q1301		TRANSISTOR, SILICON: 20 ma emitter current, 20 ma collector current, tetrode, mfr 96214, type J334.	1 MC Oscillator Fig. 5-27
Q1302		TRANSISTOR, SILICON: NPN, 20 ma collector current, mfr 96214, type 2N338.	1 MC Oscillator Fig. 5-27
Q1303		Same as Q1302.	1 MC Amplifier Fig. 5-27
Q1304		Same as Q1302.	1 MC Amplifier Fig. 5-27
Q1305		TRANSISTOR, HIGH FREQUENCY: Micro alloy type, germanium, mfr 87216, type T-1720.	Binary No. 1 Fig. 5-25
Q1306		Same as Q1305.	Binary No. 1 Fig. 5-25
Q1307		Same as Q1305.	Binary No. 2 Fig. 5-26

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—C ntinued

CONTROL, ELECTRICAL FREQUENCY C-2764/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
Q1308		Same as Q1305.	Binary No. 2 Fig. 5-26.
Q1309 thru Q1312		Not Used.	
Q1313		Same as Q1305.	Binary No. 3 Fig. 5-26
Q1314		Same as Q1305.	Binary No. 3 Fig. 5-26
Q1315		Same as Q1305.	Feedback Counter Fig. 5-25
Q1316		Same as Q1305.	Feedback Counter Fig. 5-25
Q1317		TRANSISTOR: 32 mc, 30 v, npn, silicon type, mfr 96214, type 2N119. Same as Q501.	100 KC Amplifier Fig. 5-25
Q1318 thru Q1399		Not Used.	
R1301		RESISTOR, FIXED, FILM: 33.2 ohms ±1%, ⅛ w, RN60B33R2F spec MIL-R-10509.	1 MC Bridge Circuit Fig. 5-27
R1302		Same as R711.	
R1303		Same as R861.	Load For T1301 Fig. 5-27
R1304		RESISTOR, FIXED, COMPOSITION: 470 ohm ±10%, ½ w, RC20GF471K, spec MIL-R-11. Same as R1201.	24 V Decoupling Q1301 Fig. 5-27
R1305		Same as R704.	Bias For Q1301 Emitter Fig. 5-27
R1306		Same as R1304.	24 V Decoupling For 1302 Fig. 5-27
R1307		Same as R671.	Bias For Q1302 Emitter Fig. 5-27
R1308		Same as R701.	Bias For Q1301 Base Fig. 5-27
R1309		RESISTOR, FIXED, COMPOSITION: 240,000 ohms ±5%, ½ w, RC20GF244J, spec MIL-R-11.	Bias For Q1303 Base Fig. 5-27
R1310		Same as R1304.	Feedback Resistor For Q1303 Fig. 5-27
R1311		Same as R1304.	24 V Decoupling For Q1303 Fig. 5-27
R1312		RESISTOR, FIXED, COMPOSITION: 150,000 ohms ±10%, ½ w, RC20GF154K, spec MIL-R-11. Same as R888.	Bias For Q1304 Base Fig. 5-27
R1313		Same as R1304.	Feedback For Q1304 Fig. 5-27
R1314		Same as R704.	Load For Q1304 Fig. 5-27
R1315		Same as R1304.	24 V Decoupling Q1304 Fig. 5-27
R1316		Same as R669.	RC Time Constant For DC Restorer Fig. 5-25
R1317		Same as R1304.	Bias For Q1306 Fig. 5-28
R1318		Same as R653.	Time Constant And Bias For Q1306 Fig. 5-25
R1319		Same as R660.	Ground For CR1318 And CR1316 Fig. 5-25
R1320		Same as R653.	Collector Load For Q1305 Fig. 5-25
R1321		RESISTOR, FIXED, COMPOSITION: 10 ohms ±10%, ½ w, RC20GF100K, spec MIL-R-11. Same as R381.	Emitter Resistor Q1306, Q1305 Fig. 5-25
R1322		Sam as R1304.	Filter −6 V Supply Fig. 5-28

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

CONTROL, ELECTRICAL FREQUENCY C-2764/WRT-2

REFERENCE DESI NATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
R1323		Same as R1304.	Filter −6 V Supply Fig. 5-28
R1324		RESISTOR, FIXED: Wirewound, 140 ohms ±5%, 26 watt, RW33V141, spec MIL-R-26.	+24 V DC Supply Filter Fig. 6-44
R1325		Same as R636.	
R1326 thru R1329		Not Used.	
R1330		Same as R704.	Load For Collector Q1306 Fig. 5-25
R1331		Same as R653.	Bias And Time Constant Base Q1305 Fig. 5-25
R1332		RESISTOR, FIXED, COMPOSITION: 1500 ohms ±10%, ½ w, RC20GF152K, spec MIL-R-11.	Bias For Q1305 Fig. 5-25
R1333		Not Used.	
R1334		RESISTOR, FIXED, COMPOSITION: 120 ohms ±10%, ½ w, RC20GF121K, spec MIL-R-11. Same as R395.	Ground For CR1321 And CR1322 Fig. 5-25
R1335		Same as R1304.	Filter −6 V Supply Fig. 5-28
R1336		Not Used.	
R1337		Same as R1332.	Binary No. 1 Output Load Fig. 5-25
R1338		Not Used.	
R1339		Same as R711.	Voltage Divider For Q1304 Base Fig. 5-27
R1340		Same as R1304.	Voltage Divider For 500 KC Output Fig. 5-25
R1341		Same as R1332.	Bias For Q1307 Fig. 5-26
R1342		Same as R681.	Ground Return For CR1323, CR1324 Fig. 5-26
R1343		Same as R653.	Collector Load For Q1308 Fig. 5-26
R1344		Same as R653.	Time Constant And Bias For Q1307 Fig. 5-26
R1345		Same as R1321.	Emitter Resistance For Q1307, Q1308 Fig. 5-26
R1346		Same as R1332.	Bias For Q1308 Fig. 5-26
R1347		Same as R653.	Time Constant And Bias For Q1308 Fig. 5-26
R1348		Same as R653.	Collector Load For Q1307 Fig. 5-26
R1349		Same as R681.	Ground For CR1317 And CR1318 Fig. 5-26
R1350		Same as R704.	Load For Zener CR1345 And CR1346 Fig. 5-26
R1351		Same as R681.	Ground For CR1330 And CR1331 Fig. 5-26
R1352		Same as R653.	Collector Load For Q1314 Fig. 5-26
R1353		Same as R653.	Time Constant And Bias For Q1313 Fig. 5-26

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

CONTROL, ELECTRICAL FREQUENCY C-2764/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
R1354		Same as R1332.	Bias For Q1313 Fig. 5-26
R1355		Same as R1321.	Emitter Resistor For Q1313, Q1314 Fig. 5-26
R1356		Same as R1332.	Bias For Q1314 Fig. 5-26
R1357		Same as R653.	Time Constant And Bias For Q1314 Fig. 5-26
R1358		Same as R653.	Collector Load For Q1313 Fig. 5-26
R1359		Same as R681.	Ground For CR1334 And CR1335 Fig. 5-26
R1360		Same as R681.	Ground For CR1330 And CR1331 Fig. 5-25
R1361		Same as R653.	Collector Load For Q1316 Fig. 5-25
R1362		Same as R653.	Time Constant And Bias For Q1315 Fig. 5-25
R1363		Same as R1332.	Bias For Q1315 Fig. 5-25
R1364		Same as R1321.	Emitter Resistor For Q1315, Q1316 Fig. 5-25
R1365		Same as R1332.	Bias For Q1316 Fig. 5-25
R1366		Same as R653.	Time Constant And Bias For Q1316 Fig. 5-25
R1367		Same as R653.	Collector Load For Q1315 Fig. 5-25
R1368		Same as R681.	Ground For CR1336 And CR1337 Fig. 5-25
R1369		Same as R681.	Ground For And Gate Fig. 5-25
R1370		Same as R711.	Blocking Resistor For Base Of Q1317
R1371		Same as R1304.	Bias For Q1317 Fig. 5-25
R1372		Same as R1309.	Emitter Resistor For Q1317 Fig. 5-25
R1373		Same as R639.	Load For Emitter Of Q1317 Fig. 5-25
R1374		Same as R1332.	Bias For Q1306 Fig. 5-25
R1375 thru R1399		Not Used.	
RT1301		LAMP, TELEPHONE: Mfr 90044, type E1.	Temperature Sensitive Lamp, 1 MC Oscillator Fig. 5-27
RT1302 thru RT1399		Not Used.	
T1301		TRANSFORMER, RADIO FREQUENCY: 1 primary, 160 μh, 1.93 ohms dcr, 1 secondary, 0.162 ohms dcr, mfr 89661, dwg 152A519H01.	1 MC Crystal Coupling Transformer Fig. 5-27
T1302		Same as T1301.	1 MC Crystal Coupling Transformer Fig. 5-27

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—C ntinued

CONTROL, ELECTRICAL FREQUENCY C-2764/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
T1303		TRANSFORMER, RADIO FREQUENCY: 1 primary, 2 secondary, 35 v working, mfr 89661, dwg 376A575.	1 MC Coupling Transfomer Fig. 5-27
T1304		TRANSFORMER, RADIO FREQUENCY: 1 primary, 1 secondary, pie wound, 2.0 mh, 100 kc, mfr 89661, dwg 375A514H01.	1 MC Coupling Transformer Fig. 5-25
T1305 thru T1399		Not Used.	
TB1301		TERMINAL BOARD: Barrier type, 2 double screw type terminals, mfr 71785, type 2-140D. Same as TB805.	Frequency Divider Wiring Fig. 6-42
TB1302 thru TB1399		Not Used.	
Z1301		PROPORTIONAL OVEN: Mfr 89661, dwg 152A919H01.	Proportional Oven Fig. 6-42
Z1302		OVEN CONTROL UNIT: Mfr 89661, dwg 152A919H02.	Control Unit For Z1301 Fig. 6-42
Z1303 thru Z1399		Not Used.	

AMPLIFIER-POWER SUPPLY AM-2122/WRT-2

C1401		Same as C512.	Coupling Capacitor For Flip-Flop Fig. 5-21
C1402		CAPACITOR, FIXED, MICA DIELECTRIC: 10 μμf ±10%, 500 v dc working, CM20B100K, spec MIL-C-5. Same as C685.	Collector To Base Coupling Capacitor Fig. 5-21
C1403		Same as C1402.	Collector To Base Coupling Capacitor Fig. 5-21
C1404		CAPACITOR, FIXED, ELECTROLYTIC: 1.7 μf −15 +50%, 125 v dc, CL44BP1R7TP, spec MIL-C-3965.	Emitter Bypass Fig. 5-21
C1405		CAPACITOR, FIXED, ELECTROLYTIC: 8 μf −15 +50%, 30 v dc working, CL44BH080TP1, spec MIL-C-3965.	Filter for FSK Switch Fig. 5-21
C1406		Same as C512.	Coupling Capacitor For Q1403 Fig. 5-22
C1407		CAPACITOR, FIXED, ELECTROLYTIC: 40 μf −15 +50%, 30 v dc working, CL44BH400TP, spec MIL-C-3965. Same as C102.	Filter For AGC Fig. 5-22
C1408		Same as C512.	Coupling For Q1404 Fig. 5-22
C1409		Same as C512.	Coupling For Q1405 Fig. 5-22
C1410		Same as C512.	Blocking From Q1406 Fig. 5-22
C1411		Same as C512.	Coupling To Q1406 Fig. 5-22
C1412		Same as C512.	Coupling To Q1407 Fig. 5-23
C1413		Same as C1407.	Filter For AGC Fig. 5-23
C1414		Same as C512.	Coupling To Q1408 Fig. 5-23
C1415		Same as C512.	Coupling To Q1409 Fig. 5-23
C1416		Same as C512.	Blocking From Q1410 Fig. 5-23
C1417		Same as C512.	Coupling To Q1410 Fig. 5-23
C1418		CAPACITOR, FIXED, PAPER DIELECTRIC: 6800 μμf ±10%, 400 v dc working, CP05A1EE682K, spec MIL-C-25.	Phase Shift For Test Oscillator Fig.5-24

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—C ntinued

AMPLIFIER-POWER SUPPLY AM-2122/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
C1419		CAPACITOR, FIXED, PAPER DIELECTRIC: 22,000 μμf ±10%, 200 v dc working, CP05A1EC223K, spec MIL-C-25.	Time Constant For Test Oscillator Fig. 5-24
C1420		Same as C512.	Coupling To Q1412 Fig. 5-24
C1421		CAPACITOR, FIXED, PAPER DIELECTRIC: 100,000 μμf ±10%, 100 v dc, CP05A1EB104K, spec MIL-C-25. Same as C1362.	
C1422 thru C1499		Not Used.	
CR1401		Same as CR521.	
CR1402		SEMICONDUCTOR DEVICE, DIODE: 70 v dc 600 ma, 1N457, spec MIL-E-1.	Reference Diode For Flip-Flop Fig. 5-21
CR1403		Same as CR1402.	Switching Diodes For The Electronic Switch Fig. 5-21
CR1404		Same as CR1402.	Switching Diodes For The Electronic Switch Fig. 5-21
CR1405		Same as CR1402	Switching Diodes For The Electronic Switch Fig. 5-21
CR1406		Same as CR1402.	Switching Diodes For The Electronic Switch Fig. 5-21
CR1407		Same as CR1402.	Switching Diodes For The Electronic Switch Fig. 5-21
CR1408		Same as CR1402.	Switching Diodes For The Electronic Switch Fig. 5-21
CR1409		Same as CR1402.	Switching Diodes For The Electronic Switch Fig. 5-21
CR1410		Same as CR521.	Switching Diodes For The Electronic Switch Fig. 5-21
CR1411		Same as CR521.	Rectifier AGC Control Fig. 5-22
CR1412		Same as CR521.	Rectifier AGC Control Fig. 5-22
CR1413		Same as CR521.	Rectifier AGC Control Fig. 5-22
CR1414		SEMICONDUCTOR DEVICE SET, DIODES: Mfr 99180, type Q-40.	Rectifier AGC Control Fig. 5-22
CR1415		Same as CR521.	Variable Resistance For The AGC Fig. 5-22
CR1416		Same as CR521.	Rectifier AGC Control Fig. 5-23
CR1417		Same as CR521.	Rectifier AGC Control Fig. 5-23
CR1418		Same as CR521.	Rectifier AGC Control Fig. 5-23
CR1419		Same as CR1414.	Rectifier AGC Control Fig. 5-23
CR1420 thru CR1499		Not Used.	Variable Resistance For AGC Fig. 5-23
E1401		ELECTRONIC SWITCH ASSEMBLY: Printed circuit, mfr 89661, dwg 477D331G01.	Flip-Flop Board Fig. 6-45
E1402		SPEECH AMPLIFIER NO. 1: Printed circuit, mfr 89661, dwg 336C719G01.	Amplifier Board Fig. 6-45

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

AMPLIFIER-POWER SUPPLY AM-2122/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
E1403		SPEECH AMPLIFIER NO. 2: Printed circuit, mfr 89661, dwg 336C720G01.	Amplifier Board Fig. 6-45
E1404		TEST OSCILLATOR, PRINTED CIRCUIT: Mfr 89661, dwg 336C702G01.	Test Oscillator Board Fig. 6-45
E1405		Same as E508.	Wiring Tie Point
E1406 thru E1499		Not Used.	
FL1401		FILTER, BAND PASS: 2 channel, 300-3500 cps pass band, mfr 89661, dwg 152A494H01.	Band Pass Filter For Speech Amplifier Fig. 6-45
FL1402 thru FL1499		Not Used.	
L1401		REACTOR: 3.5 henries at 2 ma dc, 1 henry at 5 ma dc, mfr 89665, type DO-T8.	Audio Choke For Test Oscillator Fig. 5-24
L1402 thru L1499		Not Used.	
P1401		CONNECTOR, PLUG, ELECTRICAL: 5 pin contact, straight type, MS3106B-14S-5P, spec MIL-C-5015.	Mates With J1401
P1402		Same as P1401.	Mates With J1402
P1403 thru P1499		Not Used.	
Q1401		TRANSISTOR: 32 mc, 30 v, npn, silicon type, mfr 96214, type 2N119. Same as Q501.	Flip-Flop Fig. 5-21
Q1402		Same as Q1401.	Flip-Flop Fig. 5-21
Q1403		TRANSISTOR: 1 mc, 30 ohms min, 90 ohms max, 2N117, spec MIL-T-19500. Same as Q801.	AGC Amplifier Control Fig. 5-22
Q1404		Same as Q1401.	Emitter Follower, Speech Amplifier Fig. 5-22
Q1405		Same as Q1403.	Sidetone Amplifier Fig. 5-22
Q1406		Same as Q1401.	Speech Amplifier Fig. 5-22
Q1407		Same as Q1403.	AGC Amplifier Control Fig. 5-23
Q1408		Same as Q1401.	Emitter Follower, Speech Amplifier Fig. 5-23
Q1409		Same as Q1403.	Sidetone Amplifier Fig. 5-23
Q1410		Same as Q1401.	Speech Amplifier Fig. 5-23
Q1411		Same as Q1401.	Test Oscillator Fig. 5-24
Q1412		Same as Q1403.	Emitter Follower Form Test Oscillator Fig. 5-24
Q1413 thru Q1499		Not Used.	
R1401		RESISTOR, FIXED, COMPOSITION: 120,000 ohms ±10%, ½ w, RC20GF124K, spec MIL-R-11. Same as R651.	Voltage Dividers For Keying Flip-Flop Fig. 5-21
R1402		RESISTOR, FIXED, COMPOSITION: 100,000 ohms ±10%, ½ w, RC20GF104K, spec MIL-R-11. Same as R205.	Voltage Dividers For Keying Flip-Flop Fig. 5-21
R1403		RESISTOR, FIXED, COMPOSITION: 2200 ohms ±10%, ½ w, RC20GF222K, spec MIL-R-11. Same as R917.	Collector Load For Q1401 Fig. 5-21
R1404		Same as R507.	Collector Load For Q1401 Fig. 5-21
R1405		Same as R507.	Collector Load For Q1402 Fig. 5-21

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continu d

AMPLIFIER-POWER SUPPLY AM-2122/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
R1406		Same as R1402.	Bias For Q1402 Fig. 5-21
R1407		Same as R1402.	Bias For Q1401 Fig. 5-21
R1408		Same as R1403.	Collector Load For Q1402 Fig. 5-21
R1409		RESISTOR, FIXED, COMPOSITION: 1000 ohms ±10%, ½ w, RC20GF102K, spec MIL-R-11. Same as R318.	Input Dropping For Keying Flip-Flop Fig. 5-21
R1410		RESISTOR, FIXED, COMPOSITION: 330 ohms ±10%, ½ w, RC20GF331K, spec MIL-R-11. Same as R640.	Emitter Resistance For Q1401, Fig. 5-21
R1411		RESISTOR, FIXED, COMPOSITION: 22,000 ohms ±10%, ½ w, RC20GF223K, spec MIL-R-11. Same as R711.	Decoupling For Keying Flip-Flop Fig. 5-21
R1412		RESISTOR, FIXED, COMPOSITION: 47,000 ohms ±10%, ½ w, RC20GF473K, spec MIL-R-11. Same as R652.	Dropping For Keying Flip-Flop Fig. 5-21
R1413		RESISTOR, VARIABLE COMPOSITION: 100,000 ohms ±10%, ½ w, RV6LAYSA104A, spec MIL-R-94. Same as R928.	Variable Dropping For Keying Flip-Flop Fig. 5-21
R1414		RESISTOR, FIXED, COMPOSITION: 3300 ohms ±10%, ½ w, RC20GF332K, spec MIL-R-11. Same as R685.	Decoupling From The Keying Flip-Flop Fig. 5-21
R1415		RESISTOR, FIXED, COMPOSITION: 150 ohms ±10%, ½ w, RC20GF151K spec MIL-R-11. Same as R645.	Bridge In Switching Circuit Fig. 5-21
R1416		Same as R1415.	Bridge In Switching Circuit Fig. 5-21
R1417		Same as R1415.	Bridge in Switching Circuit Fig. 5-21
R1418		Same as R1415.	Bridge In Switching Circuit Fig. 5-21
R1419		Same as R1414.	Decoupling From The Keying Flip-Flop Fig. 5-21
R1420		Same as R1414.	Decoupling From The Keying Flip-Flop Fig. 5-21
R1421		Same as R1415.	Bridge In Switching Circuit Fig. 5-21
R1422		Same as R1415.	Bridge In Switching Circuit Fig. 5-21
R1423		Same as R1415.	Bridge In Switching Circuit Fig. 5-21
R1424		Same as R1415.	Bridge In Switching Circuit Fig. 5-21
R1425		Same as R1414.	Decoupling From The Keying Flip-Flop Fig. 5-21
R1426		Same as R1402.	Terminating Resistance For FL1401 Fig. 5-22
R1427		RESISTOR, FIXED, COMPOSITION: 680 ohms ±10%, ½ w, RC20GF681K, spec MIL-R-11. Same as R709.	Dropping For AGC Control Fig. 5-22
R1428		RESISTOR, FIXED, COMPOSITION: 180,000 ohms ±10%, ½ w, RC20GF184K, spec MIL-R-11. Same as R659.	Bias For Q1403 Fig. 5-22
R1429		RESISTOR, FIXED, COMPOSITION: 820 ohms ±10%, ½ w, RC20GF821K, spec MIL-R-11. Same as R779.	Emitter Feedback For Q1403 Fig. 5-22
R1430		RESISTOR, FIXED, COMPOSITION: 27,000 ohms ±10%, ½ w, RC20GF273K, spec MIL-R-11. Same as R681.	Filter AGC Control Fig. 5-22
R1431		RESISTOR, FIXED, COMPOSITION: 1800 ohms ±10%, ½ w, RC20GF182K, spec MIL-R-11.	Voltage Divider Input To Q1404 Fig. 5-22
R1432		Same as R1427.	Voltage Divider Input To Q1404 Fig. 5-22
R1433		Same as R1402.	Bias For Q1404 Fig. 5-22

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

AMPLIFIER-POWER SUPPLY AM-2122/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
R1434		Same as R507.	Emitter Load For Q1404 Fig. 5-22
R1435		RESISTOR, FIXED, COMPOSITION: 82,000 ohms ±10%, ½ w, RC20GF823K, spec MIL-R-11.	Bias For Q1405 Fig. 5-22
R1436		RESISTOR, FIXED, COMPOSITION: 82 ohms ±10%, ½ w, RC20GF820K, spec MIL-R-11.	Emitter Feedback For Q1405 Fig. 5-22
R1437		RESISTOR, FIXED, COMPOSITION: 4700 ohms ±10%, ½ w, RC20GF472K, spec MIL-R-11. Same as R669.	Collector Load For Q1406 Fig. 5-22
R1438		Same as R1402.	Bias For Q1406 Fig. 5-22
R1439		RESISTOR, FIXED, COMPOSITION: 33 ohms ±10%, ½ w, RC20GF330K, spec MIL-R-11. Same as R399.	Emitter Feedback For Q1406 Fig. 5-22
R1440		RESISTOR, FIXED, COMPOSITION: 1200 ohms ±10%, ½ w, RC20GF122K, spec MIL-R-11. Same as R304.	Terminating Resistance For FL1401 Fig. 5-23
R1441		Same as R1427	Dropping Resistance For AGC Control Fig. 5-23
R1442		Same as R1428.	Bias For Q1407 Fig. 5-23
R1443		Same as R1429.	Emitter Feedback For Q1407 Fig. 5-23
R1444		Same as R1430.	Filter AGC Control Fig. 5-23
R1445		Same as R1431.	Voltage Divider Input Q1408 Fig. 5-23
R1446		Same as R1427	Voltage Divider Input Q1408 Fig. 5-23
R1447		Same as R1402.	Bias For Q1408 Fig. 5-23
R1448		Same as R507.	Emitter Load For Q1408 Fig. 5-23
R1449		Same as R1435.	Bias For Q1409 Fig. 5-23
R1450		Same as R1436.	Emitter Feedback For Q1409 Fig. 5-23
R1451		Same as R1437.	Collector Load For Q1410 Fig. 5-23
R1452		Same as R1402.	Bias For Q1410 Fig. 5-23
R1453		Same as R1439.	Emitter Feedback For Q1410 Fig. 5-23
R1454		RESISTOR, VARIABLE, COMPOSITION: 5000 ohms ±10% ½ w, RV6LAYSA502A, spec MIL-R-94A.	Variable Resistance Time Constant Q1411 Fig. 5-24
R1455		Same as R1437.	Fixed Resistance Time Constant Q1411 Fig. 5-24
R1456		Same as R1428.	Bias For Q1411 Fig. 5-24
R1457		RESISTOR, FIXED, COMPOSITION: 12,000 ohms ±10%, ½ w, RC20GF123K, spec MIL-R-11. Same as R390.	Stabilizing For Q1411 Fig. 5-24
R1458		RESISTOR, VARIABLE, COMPOSITION: 1000 ohms ±10%, ½ w, RV6LAYSA102A, spec MIL-R-94. Same as R1271.	Variable Resistance, Emitter For Oscillator Gain Control Fig. 5-24
R1459		RESISTOR, FIXED, COMPOSITION: 220 ohms ±10%, ½ w, RC20GF221K, spec MIL-R-11. Same as R306.	Fixed Resistance, Emitter For Oscillator Gain Control Fig. 5-24
R1460		RESISTOR, FIXED, COMPOSITION: 68,000 ohms ±10%, ½ w, RC20GF683K, spec MIL-R-11. Same as R301.	Dropping For Q1412 Fig. 5-24
R1461		Same as R1401.	Bias For Q1412 Fig. 5-24

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—C ntinued

AMPLIFIER-POWER SUPPLY AM-2122/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATIN FUNCTION
R1462		Same as R1459.	Load For Q1412 Fig. 5-24
R1463		Same as R1410.	Alternating T-PAD Fig. 5-24
R1464		Same as R1410.	Alternating T-PAD Fig. 5-24
R1465		Same as R1410.	Alternating T-PAD Fig. 5-24
R1466		Same as R1410.	Alternating T-PAD Fig. 5-24
R1467		Same as R1410.	Alternating T-PAD Fig. 5-24
R1468		Same as R1410.	Alternating T-PAD Fig. 5-24
R1469		Same as R1462.	Input Attenuator And Termination FL1401 USB Fig. 6-45
R1470		Same as R1462.	Input Attenuator And Termination, FL1401 USB Fig. 6-45
R1471		RESISTOR, FIXED, COMPOSITION: 470 ohms ±10%, ½ w, RC20GF471K, spec MIL-R-11. Same as R1201.	Input Attenuator And Termination, FL1401 USB Fig. 6-45
R1472		Same as R1471.	Input Attenuator And Termination, FL1401 LSB Fig. 6-45
R1473		Same as R1462.	Input Attenuator And Termination, FL1401 LSB Fig. 6-45
R1474		Same as R1462.	Input Attenuator And Termination, FL1401 Fig. 6-45
R1475		ATTENUATOR, VARIABLE: Mfr 12697, type CM23319.	Variable T-PAD In Direct Line USB Fig. 6-45
R1476		Same as R1475.	Variable T-PAD In Direct Line LSB Fig. 6-45
R1477		Same as R1475.	Variable T-PAD Output Q1406
		Same as R1475.	Variable T-PAD Output Q1406 Fig. 6-45
R1478		Same as R1475.	Variable T-PAD Output Q1410 Fig. 6-45
R1479		RESISTOR, VARIABLE WIREWOUND: 5000 ohms ±10%, SPST switch mfr 75042, type 83-1156-3607.	Voltage Divider Base Q1404 Fig. 6-45
R1480		Same as R1479.	Voltage Divider Base Q1408 Fig. 6-45
R1481		RESISTOR, VARIABLE, COMPOSITION: 50,000 ohms ±10%, 2 w, RV4NAYSG503A, spec MIL-R-93.	Variable Attenuator Base Q1405 Fig. 6-45
R1482		Same as R1481.	Variable Attenuator Base Q1409 Fig. 6-45
R1483		Same as R507.	
R1484		Same as R507.	
R1485 thru R1499		Not Used.	

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

AMPLIFIER-POWER SUPPLY AM-2122/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
T1401		TRANSFORMER, AUDIO FREQUENCY: 1 primary, 42 ohms dcr, 25 v working, mfr 89661, dwg 152A477H01.	Input Transfomer, Electronic Switch Fig. 5-21
T1402		TRANSFOMER, AUDIO FREQUENCY, 1 primary, 19.9 ohms dcr, 1 secondary, 48.3 ohms dcr, 25 v working, mfr 89661, dwg 152A476H01.	Output Transfomer For LSB Electronic Switch Fig. 5-21
T1403		Same as T1402.	Output Transformer For USB From Electronic Switch Fig. 5-21
T1404		TRANSFORMER, AUDIO FREQUENCY: 1 primary, 1700 ohms dcr, 1 secondary, 99 ohms dcr, 14 v working, mfr 89661, dwg 152A774H01.	Collector Load Transformer For Q1403 Fig. 5-22
T1405		Same as T1404.	Collector Load Transfomer For Q1407 Fig. 5-23
T1406		TRANSFORMER, AUDIO FREQUENCY: 1 primary, 1260 ohms dcr, 1 secondary 284 ohms dcr, mfr 89661, dwg 152A504H01.	Emitter Load Transfomer For Q1412 Fig. 5-24
T1407		TRANSFORMER, AUDIO FREQUENCY: 1 primary, 600 ohms ct, other primary 35 ohms, 1 secondary 600 ohms, mfr 89661, dwg 152A475H01.	Input Transformer To Speech Amplifier USB Fig. 6-45
T1408		Same as T1407.	Input Transformer To Speech Amplifier LSB Fig. 6-45
T1409		Same as T1407.	Collector Load For Q1405 Fig. 6-45
T1410		Same as T1407.	Collector Load For Q1409 Fig. 6-45
T1411 thru T1499		Not Used.	
TB1401		TERMINAL BOARD ASSY: c/o one modified 140-D 15 terminal board, and one modified 140-D 17 terminal board. Listed for reference only.	Speech Amplifier Terminal Board Fig. 6-45
TB1401A		TERMINAL BOARD: Barrier type, 17 double screw type terminals, mfr 89661, dwg 231B875G01.	Speech Amplifier Terminal Board Fig. 6-45
TB1401B		TERMINAL BOARD: Barrier type, 15 double screw type terminals, mfr 89661, dwg 231B875G02.	Speech Amplifier Terminal Board Fig. 6-45

HANDSET H-169/U

1600 Series		DYNAMIC HANDSET: Consists of a handle, switch, cordset, dynamic receiver and dynamic noise-cancelling microphone incorporating a transistor amplifier, mfr 82872, type 10385/C. Navy type H-169/U for handset and CX-1846A/U for cordset.	Transmits and Receives Audio Communications
E1601		HANDLE, HANDSET: Thermosetting plastic, high impact, 9 3/64 in. lg, mfr 82872, dwg 14972.	Handset Body
E1602		CAP, ELECTRICAL, PHENOLIC: 2 1/2 in. dia, 53/64 in. thk, 2 1/4 in-24 thds, mfr 82872, dwg 14957.	Receiver Cap
E1603 thru E1699		Not Used.	
HT1601		EARPHONE ELEMENT: Dynamic type, 2 1/8 in. dia, 2 solder stud terminals 5/8 in. apart, mfr 82872, dwg 10379.	Telephone Receiver
HT1602 thru HT1699		Not Used.	
MK		MICROPHONE ELEMENT: Dynamic type, transistorized, 2 1/2 in. dia, 2 solder stud terminals 5/8 in. apart, mfr 82872, dwg 10367.	Telephone Transmitter
MK1602 thru MK1699		Not Used.	

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—C ntinued

HANDSET H-169/U

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
MP1601		PROTECTOR, TELEPHONE CORD: provided with knurled coupling nut for attachment to transmitter end, ½-24 thds, 2 9/16 in lg, mfr 82872, dwg 22130.	Protects Telephone Cord From Abrasion
MP1602 thru MP1699		Not Used.	
S1601		SWITCH, LEVER: Single pole make-make circuit, round button actuator, 2 55/64 in. lg, 5/8 in. w, 49/64 in. d, mfr 82872, dwg 10060.	Press To Talk Telephone Switch
S1602 thru S1699		Not Used.	
W1601		CABLE ASSEMBLY TELEPHONE BRANCHED: 51½ in. lg excluding an connector and cable clamp, color coded, mfr 82872, dwg 22140.	Telephone Power Cable
W1602 thru W1699		Not Used.	

TUNER, RADIO FREQUENCY TN-342/WRT-2

3300 Series		TUNER, RADIO FREQUENCY: Sliding short tuning, 1 section, 2 to 30 mc frequency range, 1 band, 16 15/32 in. by 13 3/8 in. by 48 7/8 in. overall dim, provides a means for tuning and matching an antenna to a 50 ohm transmission line, mfr 04677, dwg 2012801. Navy type TN-342/WRT-2.	Matches Antenna To A 50 ohm Transmission Line
A3301		MOUNT, VIBRATION: Round mtg, 40-65 lb load rating, 2 in. sq by 1½ in. h o/a, natural rubber cushion, mild steel case, mfr 81860, type 2060T6.	Shockmount For R-Tuner Fig. 5-38
A3302		Same as A3301.	Shockmount For RF Tuner Fig. 5-38
A3303		Same as A3301.	Shockmount For RF Tuner Fig. 5-38
A3304		Same as A3301.	Shockmount For RF Tuner Fig. 5-38
A3305 thru A3399		Not Used.	
B3301		MOTOR, ALTERNATING CURRENT SERVO MOTOR: 10 w max output, 115 v, 60 cycles, 4 poles, 2 phase, mfr 04677 dwg 2012231.	Tuning Drive Motor Fig. 6-48
B3302		BLOWER, CENTRIFUGAL: Dual centrifugal type, motor intergal, 115 v, 60 cycles, ccw rotation, ambient temp range −28 deg to −120 deg C, mfr 04677 dwg 2012044.	Blower Fig. 6-48
B3303		ACTUATOR, ELECTROMAGNETIC: Rotary type with interuptor switch and anti-over travel latch mechanism, 85 v dc continuous duty coil, 223 ohms, 20 position homing wafer switch, mfr 04677 dwg 2012015.	Antenna Transfer And Tuner Loading Switch Drive Fig. 5-39
B3304 thru B3399		Not Used.	
C3301		CAPACITOR, FIXED, VACUUM DIELECTRIC: 1 section, 75 μμf, 20,000 vrf peak rating, 60 amp max (RMS), pyrex glass enclosure, mfr 91651, type VC75-20.	Series Capacitor Fig. 6-48
C3302		CAPACITOR, FIXED, CERAMIC DIELECTRIC: 100 μμf ±10%, 15,000 v dc, mfr 04677, dwg 2011476.	Shunt Capacitor Fig. 6-48
C3303		Same as C3302.	Shunt Capacitor Fig. 6-48
C3304		CAPACITOR, FIXED, PAPER, DIELECTRIC: 0.5 μf ±10%, 400 v dc working, CP53B1KE504K, spec MIL-C-25.	S3302 ARC Suppression Fig. 6-48
C3305 thru C3399		Not Used.	

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

TUNER, RADIO FREQUENCY TN-342/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
CR3301		RECTIFIER, SELENIUM SIGNAL PHASE FULL WAVE BRIDGE: Convection cooling 130 v rms max ac input, dc output 80 v dc min at 125°C at 115 v ac input, 0.4 amp dc resistive or inductive load, mfr 04677, dwg 2012843.	Rectifier For B3303 Fig. 6-48
CR3302 thru CR3399		Not Used.	
E3301		CONTACT ASSEMBLY, ELECTRICAL: c/o spring fingers, 0.010 in. thk beryllium copper material silver plated, 15 contacts, mfr 04677 dwg 2010655.	Housing Contact Fingers Fig. 5-39
E3302		Same as E3301.	Housing Contact Fingers Fig. 5-39
E3303		CONTACT, ELECTRICAL: Laminated material, 0.007 beryllium copper, .003 coin silver, mfr 04677, dwg 2011191.	Rod Contact Fingers Fig. 5-39
E3304		CONTACT ASSEMBLY, ELECTRICAL: c/o silver alloy contact fingers, formed brass silver plated rings, 6 nylon feet, mfr 04677, dwg 2012004.	Coil Contact Fingers Fig. 5-39
E3305		TERMINAL, FEEDTHRU: Insulated teflon body, center conductor, retaining ring, and two o rings, mfr 04677, dwg 2010619.	RF Output Terminal Fig. 6-48
E3306		CONTACT, ELECTRICAL: Liminated material, 0.007 beryllium copper, .003 coin silver, mfr 04677, dwg 2010712.	Rod Contact Fingers Fig. 5-39
E3307		SPARK GAP: Part of S3303. Listed for reference only.	Part Of S3303 Fig. 6-48
E3308 thru E3312		Not Used.	
E3313		CONTACT, ELECTRICAL: 0.010 beryllium copper material silver plated, 2 welded contact points, mfr 04677 dwg 2010890.	Part Of S3306 Centrifugal Switc- Fig. 5-39
E3314		CONTACT, ELECTRICAL: 0.015 beryllium copper material silver plated, 1 welded contact point, mfr 04677, dwg 2010891.	Part Of S3306 Centrifugal Switch Fig. 5-39
E3315		CONTACT, ELECTRICAL: 0.015 beryllium copper material silver plated, 1 welded contact point, mfr 04677 dwg 2010889.	Part Of S3306 Centrifugal Switch Fig. 5-39
E3316		INSULATOR, WASHER: Liminated plastic material, mfr 04677 dwg 2010892.	Part Of S3306 Centrifugal Switch Fig. 5-39
E3317		INSULATOR, WASHER: Shoulder laminated plastic material, mfr 04677, dwg 2010893.	Part Of S3306 Centrifugal Switch Fig. 5-39
E3318		SWITCH, SUBASSEMBLY: Part of S3306.	Part Of S3306 Centrifugal Switch
E3319 thru E3399		Not Used.	
J3301		CONNECTOR, RECEPTACLE, ELECTRICAL: 6 size 12 contacts, 24 size 16 contacts, male round, polarized, mfr 91577, type BFH-32-8P-002.	Connects Control Cable Fig. 2-5
J3302		CONNECTOR, RECEPTACLE, ELECTRICAL: Special construction, UG-271/U and UG-287/U modified per mfr 04677, dwg 2010916.	RF Input Connector Fig. 2-5
J3303 thru J3399		Not Used.	
K3301		RELAY, ARMATURE: DPDT, ac coil data 115 v, 0.045 amp, 445 ohms, mfr 04677, dwg 2012006.	RF Keying Interlock Fig. 6-48
K3302		RELAY, ARMATURE: 4 PDT, dc coil data −24 v, 0.097 amp, 275 ohms, mfr 04677, dwg 2012033.	Transfer Switch Control Fig. 6-48
K3303		RELAY, ARMATURE: DPDT, dc coil data −24 v, 0.146 amps, 164 ohms, mfr 04677, dwg 2012033.	Top And Bottom Limit Relay Fig. 6-48

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

TUNER, RADIO FREQUENCY TN-342/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
K3304 thru K3301		Not Used.	
L3301		COIL SPECIAL CONSTRUCTION: Varying dia helix, 1 turn, 0.144 in. od copper wire silver plated, mfr 04677, dwg 2012020.	Coupling Coil Fig. 6-48
L3302		COIL ASSEMBLY SPECIAL CONSTRUCTION: 16 in. winding length, wound with 0.064 in. od silver clad copper wire on fiberglass 5⅝ in. dia coil from 12 in. at 10 tpi, 4 in. at 5 tpi, mfr 04677, dwg 2012019.	Main Coil Fig. 6-48
L3303		COIL, ACTUATOR: Par of B3303. Listed for reference only.	Solenoid Coil Fig. 6-48
L3304 thru L3399		Not Used.	
M3301		GAUGE, PRESSURE GAS: Dial and pointer type, 0 to 30 psi, brass case, ⅝ in. lg pipe with ⅛ in. pipe thd ⅜ in. lg, mfr 04677, dwg 2010896.	Pressure Gauge Fig. 2-5
M3302 thru M3399		Not Used.	
MP3301		DRIVE ASSEMBLY: 2 speed, 8.4 to 1, 1 to 1, mfr 04677, dwg 2012230.	Tuning Drive Fig. 5-39
MP3302		ACTUATOR, SENSITIVE SWITCH: Stainless steel material, mfr 74059, type JV-5.	Actuates Top Limit Switch Fig. 5-39
MP3303		Same as MP3302.	Actuates Bottom Limit Switch Fig. 5-39
MP3304		GEAR, SPUR: Steel material, 24 teeth, mfr 04677, dwg 2010656.	Drive For Rack Gear Fig. 5-39
MP3305		Same as MP3304.	Drive For Rack Gear Fig. 5-39
MP3306		GEAR, SPUR: Steel material, 18 teeth, mfr 04677, dwg 2010651.	Drive Gear Mates With MP3304 Fig. 5-39
MP3307		Same as MP3306.	Drive Gear Mat s With MP3303 Fig. 5-39
MP3308		GEAR, WORM: Steel material, 4 threads mfr 04677, dwg 2010644.	Drive Gear Mates With MP3309 Fig. 5-39
MP3309		GEAR, WORM: Bronze material, 100 teeth, mfr 04677, dwg 2010723.	Drive Gear Mates With MP3310 Fig. 5-39
MP3310		GEAR, WORM: Bronze material, 40 teeth, mfr 04677, dwg 2010731.	Drive Gear Mates With MP3307 Fig. 5-39
MP3311		GEAR, WORM: Hard steel material, signal thread, mfr 90150, type HLTH.	Output Shaft Gear Mates MP3308 Fig. 5-39
MP3312		Not Used.	
MP3313		BEARING, BALL: Single row radial unshielded, mfr 86174, type 38K.	Shaft Bearing Fig. 5-39
MP3314		Same as MP3313.	Shaft Bearing Fig. 5-39
MP3315		Not Used.	
MP3316		Not Used.	
MP3317		BEARING, BALL: Single row radial, unshielded, mfr 86174, type 36K.	For General Purpos Use Fig. 5-39
MP3318		Same as MP3317.	For Geneal Purpose Use Fig. 5-39
MP3319		Same as MP3317.	For General Purpose Use Fig. 5-39
MP3320		Same as MP3317.	For General Purpose Use Fig. 5-39

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

TUNER, RADIO FREQUENCY TN-342/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
MP3321		Same as MP3317	For General Purpose Use Fig. 5-39
MP3322		Same as MP3317.	For General Purpose Use Fig. 5-39
MP3323		Same as MP3317.	For General Purpose Use Fig. 5-39
MP3324		Same as MP3317.	For General Purpose Fig. 5-39
MP3325 thru MP3328		Not Used.	
MP3329		PACKING, PREFORMED: Neoprene materials, AN-6227B-23, spec MIL-P-5516	Used With J3302 Fig. 5-38
MP3330		Not Used.	
MP3331		PACKING, PREFORMED: Neoprene material, AN-6230B-5, spec MIL-P-5516.	Used With J3301 Fig. 5-38
MP3332		PACKING, PREFORMED: Neoprene material, AN-6227B-67, spec MIL-P-5516.	Main Drive Assembly Seal Fig. 5-39
MP3333		PACKING, PREFORMED: Neoprene material, AN-6227B-72, spec MIL-P-5516.	Main Drive Assembly Seal Fig. 5-39
MP3334		PACKING, PREFORMED: Neoprene material, AN-6227B-77, spec MIL-P-5516.	Main Drive Assembly Seal Fig. 5-39
MP3335		Same as MP3334.	Main Drive Assembly Seal Fig. 5-39
MP3336		Not Used.	
MP3337		ROLLER: Stainless steel material, mfr 04677, dwg 2010645.	Rack Gear Roller Fig. 5-39
MP3338		Same as MP3337.	Rack Gear Roller Fig. 5-39
MP3339		GEAR: Rack steel material, mfr 04677, dwg 2010685.	Shorting Ring Drive Fig. 5-39
MP3340		GEAR: Rack steel material, mfr 04677, dwg 2010686.	Shorting Ring Drive Fig. 5-39
MP3341		VALVE: Relief 30 ±5 psi working pressure, ⅛ in. male pipe thd, mfr 04677, dwg 2010918.	Pressure Relief Valve
MP3342		VALVE: Air charge valve for nitrogen brass, nickel plated, includes dome cap, mfr 04677, dwg 2010772.	Air Valve Fig. 5-38
MP3343		RING: Retaining external type, type NAS670-31.	Secures Rod Extension To Housing Bearing Unit Fig. 5-39
MP3344		Same as MP3343.	Secures Rod Extension To Housing Bearing Unit Fig. 5-39
MP3345		Same as MP3343.	Secures Rod Extension To Housing Bearing Unit Fig. 5-39
MP3346		RING, RETAINING: External type, type NAS670-25.	Used On Shockmount Bracket Shafts Fig. 5-38
MP3347		Same as MP3346.	Used On Shockmount Bracket Shafts Fig. 5-38
MP3348		Same as MP3346.	Used On Shockmount Bracket Shafts Fig. 5-38
MP3349		Same as MP3346.	Used On Shockmount Bracket Shafts Fig. 5-38
MP3350		Same as MP3346.	Used On Shockmount Bracket Shafts Fig. 5-38

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—C ntinued

TUNER, RADIO FREQUENCY TN-342/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
MP3351		Same as MP3346.	Used On Shockmount Bracket Shafts Fig. 5-38
3352		Same as MP3346.	Used On Shockmount Bracket Shafts Fig. 5-38
MP3353		Same as MP3346.	Used On Shockmount Bracket Shafts Fig. 5-38
MP3354		Same as MP3346.	Used On Shockmount Bracket Shafts Fig. 5-38
MP3355		Same as MP3346.	Used On Shockmount Bracket Shafts Fig. 5-38
MP3356		Same as MP3346.	Used On Shockmount Bracket Shafts Fig. 5-38
MP3357		Same as MP3346.	Used On Shockmount Bracket Shafts Fig. 5-38
MP3358		Same as MP3346.	Used On Shockmount Bracket Shafts Fig. 5-38
MP3359		Same as MP3346.	Used On Shockmount Bracket Shafts Fig. 5-38
MP3360		Same as MP3346.	Used on Shockmount Bracket Shafts Fig. 5-38
MP3361		Same as MP3346.	Used On Shockmount Bracket Shafts Fig. 5-39
MP3362		RING RETAINING: Internal type, stainless steel, type NAS50-75.	Used With MP3337 Fig. 5-39
MP3363		BALL, NYLON: ¼ od ball with .0635 hole drilled thru center, mfr 04677, dwg 2010894.	Part Of S3306 Centrifugal Switch Fig. 5-39
MP3364		SHAFT AND WEIGHT PLATE ASSEMBLY: c/o shaft, base and 2 weight plates assembled with rivets, mfr 04677 dwg 2012012.	Part Of S3306 Centrifugal Switch Fig. 5-39
MP3365		ADAPTER, SWITCH: Coupling keyway and clamp one end, slot other end, mfr 04677 dwg 2012845.	Couples B3303 To S3301 Fig. 5-39
MP3366		BEARING, NYLON: 7/16 id, for ½ in. hole, split type, mfr 83049, type 7L2-FF.	Bearing For MP3365 Fig. 5-39
MP3367 thru MP3399		Not Used.	
P3301		CONNECTOR, PLUG, ELECTRICAL: Straight plug-cord connector, 30 female contacts, AN3106E-32-8S, spec MIL-C-5015.	Cable Plug Connects To J3302 Fig. 6-48
P3302		CONNECTOR, PLUG, ELECTRICAL: LC type, for radio frequency cables, type UG-154A/U, spec MIL-C-3650.	Cable Plug Connects To J3301 Fig. 6-48
P3303 thru P3399		Not Used.	
R3301		RESISTOR, VARIABLE COMPOSITION: 10,000 ohms ±10%, 2 w, linear taper type RV4ATRE103A per MIL-R-94.	Positioning Pot Fig. 6-48
R3302		RESISTOR, FIXED, COMPOSITION: 100 ohms ±10%, 1 w, RC32GF101K, spec MIL-R-11.	Fig. 6-48
R3303 thru R3399		Not Used.	
S3301		SWITCH, ROTARY: 5 position, non-shorting, 3 section, ceramic wafers and rotors shaft, high RF voltage and current type, mfr 04677 dwg 2012805.	Tuner Loading Switch Fig. 6-48

TABLE 7-1. RADIO TRANSMITTING SET AN/WRT-2 MAINTENANCE PARTS LIST—Continued

TUNER, RADIO FREQUENCY TN-342/WRT-2

REFERENCE DESIGNATION	NOTES	NAME AND DESCRIPTION	LOCATING FUNCTION
S3302		SWITCH, INTERRUPTOR: Part of B3303. Listed for reference only.	Interuptor For B3303 Actuator Fig. 6-48
S3303		SWITCH, SENSITIVE: SPDT, 3 screw type terminals, AN3234-1, spec MIL-S-6743. Same as S605.	Top Limit Switch Fig. 6-48
S3304		Same as S3303.	Bottom Limit Switch Fig. 6-48
S3305		SWITCH, THERMOSTATIC: SPDT, snap action type, contacts set to open at 100°C, close at 95°C, mfr 78043, type C-4370-13-10.	Thermal Cutout Switch Fig. 6-48
S3306		SWITCH ASSEMBLY CENTRIFUGAL: Type, c/o E3313, E3314, E3315, E3316, E3317, MP3363, MP3364, mfr 04677, dwg 2010882.	Blower And Protective Switch Fig. 6-48
S3307		SWITCH, WAFER: Part of B3303. Listed for reference only.	Homing Wafer For B3303 Fig. 6-48
S3308 thru S3399		Not Used.	
TB3301		TERMINAL BOARD: Barrier type, 14 terminals, thermosetting plastic material, mfr 71785, type 14-140.	Terminal Strip Fig. 6-48
TB3302		Same as TB3301.	Terminal Strip Fig. 6-48
TB3303		TERMINAL BOARD: Barrier type, 8 terminals, thermosetting plastic material, mfr 71785 type 8-140.	Terminal Strip Fig. 6-48
TB3304 thru TB3399		Not Used.	
W3301		Not Used.	
W3302		WIRE ELECTRICAL: 0.125 in. dia beryllium copper wire, silver plated 21 1/16 in. lg, mfr 04677, dwg 2010715.	Conductor For Contact Finger E3303 And E3304
W3303 thru W3399		Not Used.	

TABLE 7-2. RADIO TRANSMITTING SET AN/WRT-2, LIST OF MANUFACTURERS

CODE NO.	NAME	ADDRESS
00141	Pic Design Corp.	Lynbrook, L. I., N. Y.
00656	Aerovox Corp.	New Bedford, Mass.
01351	The Dynamic Gear Co.	Amityville, N. Y.
04009	Arrow, Hart & Hegeman Electric Co.	Hartford, Conn.
04677	Nevada Air Products Co.	Reno, Nevada
08484	Breeze Corporation, Inc.	Newark, N. J.
12697	Clarostat Mfg. Co., Inc.	Dover, N. H.
14674	Corning Glass Works	Corning, N. Y.
14907	The R. W. Cramer Co., Inc.	Centerbrook, Conn.
17419	The Deutsch Co.	Los Angeles, Calif.
18911	Durant Mfg. Co.	Milwaukee, Wis.
21335	The Fafnir Bearing Co.	New Britton, Conn.
35344	Leach Relay Co.	Los Angeles, Calif.
40228	Microswitch Corp.	Freeport, Ill.
41226	Molded Insulation Co.	Philadelphia, Pa.
42498	National Co., Inc.	Malden, Mass.
48620	Precision Instrument Co.	Philadelphia, Pa.
51116	Robinson Aviation Inc.	New York, N. Y.
54294	Shallcross Mfg. Co., Inc.	Collingdale, Pa.
70309	Allied Control Co., Inc.	New York, N. Y.
70901	Beemer Engineering Co.	Philadelphia, Pa.
71279	Cambridge Thermionic Corp.	Cambridge, Mass.
71590	Centralab Division of Globe Union, Inc.	Milwaukee, Wis.
72092	Eitel-McCullough Inc.	San Bruno, Calif.
72136	Electromotive Mfg. Co.	Willimantic, Conn.
72653	General Cement Mfg. Co.	Rockford, Ill.
73899	J. F. D. Mfg. Co., Inc.	Brooklyn, N. Y.
74059	Microswitch Corp.	Freeport, Ill.
74868	Industrial Products Co.	Danbury, Conn.
74970	E. F. Johnson	Waseca, Minn.
75173	H. B. Jones Co.	Chicago, Ill.
76487	James Millen Co., Inc.	Malden, Mass.
76493	J. W. Miller Co.	Los Angeles, Calif.
77523	R. B. M. Mfg. Co.	Fort Wayne, Ind.
78043	Spencer Thermostat Co., Inc.	Attleboro, Mass.
78277	Sigma Instruments Inc.	Boston, Mass.
80648	The Torrington Co.	South Bend, Ind.
81312	Winchester Electronics Co.	Glenbrook, Conn.
81716	Oak Mfg. Co.	Crystal Lake, Ill.
81860	Barry Corp.	Cambridge, Mass.
82872	Roanwell Corp.	Brooklyn, N. Y.
83049	Thomson Industries, Inc.	Long Island City, N. Y.
83125	Pyramid Electric Co.	Paterson, N. J.
86174	The Fafnir Bearing Co.	Los Angeles, Calif.
87216	Lansdale Tube Co.	Lansdale, Pa.
88124	Cornell-Dubilier Corp.	New York, N. Y.
88140	Cuttler-Hammer Inc.	New York, N. Y.
88287	Weston Electrical Instrument Corp.	New York, N. Y.
88570	Raytheon Mfg. Co.	Los Angeles, Calif.
88797	Kupfrian Mfg. Co.	Binghampton, N. Y.
89462	Waldes-Kohinoor Inc.	Cambridge, Mass.
89661	Westinghouse Electric Corp.	Baltimore, Maryland
89665	United Transformer Co.	Chicago, Ill.
89811	Atlas Corp.	Mountville, Pa.
89856	Chrysler Corp.	Dayton, Ohio
90044	Western Electric Co., Inc.	Baltimore, Md.
90139	Sylvania Electric Products, Inc.	Boston, Mass.
90150	Boston Gear Works	Chicago, Ill.
91577	Cannon Electric Co.	East Haven, Conn.
91651	Dolinko and Wilkens Co.	Hoboken, N. J.
91662	Elco Corp.	Philadelphia, Pa.
93511	Allen-Bradley Co.	Cleveland, Ohio
93561	Sprague Electric Co.	New York, N. Y.
93929	G. V. Controls Co.	East Orange, N. J.
93983	Transitron Inc.	New York, N. Y.
96214	Texas Instruments Inc.	Dallas, Texas
96502	Henry G. Dietz	Long Island City, N. Y.
99180	Transitron Electronics Corp.	Melrose, Mass.
99934	Rendbrandt Inc.	Cambridge, Mass.

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