

TECHNICAL MANUAL

**RADIO RECEIVERS BC-312, -A, -C, -D, -E, -F, -G, -J, -L, -M,
-N, -HX, AND -NX
BC-342, -A, -C, -D, -F, -J, -L, -M, AND -N
BC-314, -C, -D, -E, -F, AND -G
BC-344 AND -D, AND
RADIO RECEIVER ASSEMBLIES OA-65/MRC-2 AND
OA-65A/MRC-2**

TM 11-850 }
CHANGES No. 3 }

DEPARTMENT OF THE ARMY
WASHINGTON 25, D. C., 7 September 1956

TM 11-850, 3 September 1946, is changed as follows:

Page 1. Part 1. Add the following note at the beginning of part 1:

Note. Power Supply PP-1499/G is similar to Rectifier RA-20-(*); information in this manual concerning these power supplies applies to Power Supply PP-1499/G unless otherwise specified.

Page 13. Paragraph 11*b* (C 1). Make the following changes:

Second sentence. Change "RA-2.0" to read: **RA-20**.

Third sentence. Add the following after "RA-20-B": and Power Supply PP-1499/G.

Page 15. Paragraph 12*c*. Make the following changes:

Line 3. Change "the rectifier" to read: **Rectifier RA-20-(*).**

Line 6. Insert the following after "as follows": for Rectifier RA-20, RA-20-A, or RA-20-B.

Add the following at the end of *c*: For Power Supply PP-1499/G, remove the two screws that secure the spacers (fig. 70.2) of the unit to the main chassis of the receiver. Remove the hinge pin that is located adjacent to the spare fuse holder (on the receiver). This permits the power supply to be pivoted around the other hinge (fig. 71.2) and makes it possible to remove the rectifier cover. Pivot the power supply back into place. The terminal board (TB1) is now exposed. Loosen the jumper screws and move the jumper from the 120 V post to the 110 V post position. Check to see that only posts X and Y are connected by the other two jumpers. These receivers must be in the unregulated position (par. 63*e*(2)(*a*)). Tighten the jumper screws and replace the cover, cover screws, hinge pin, and the spacer screws in the reverse order in which they were removed.

Page 16. Paragraph 12*d*. Delete the last sentence and substitute the following: Check Fuse FU-27 (2-ampere) in Rectifier RA-20, and the two fuses (2-ampere and 1/8-ampere) in Power Supply PP-1499/G.

12.1 Differences in Models

(Added)

Rectifiers RA-20-(*) are unregulated power supplies but Power Supply PP-1499/G can be operated in either a regulated or unregulated position. When Power Supply PP-1499/G is used in place of Rectifiers RA-20-(*), it has to be set in the unregulated position (par. 63e(2)(a)). Either power supply is used with Radio Receivers BC-312-(*), BC-342-(*), BC-314-(*), and BC-344-(*) but only Power Supply PP-1499/G, operated in the regulated position (par. 63e(2)(b)), is used with Radio Receivers R-336-(*)/GRC-26 and Radio Receiver Assemblies OA-65(*)/MRC-2.

Page 18. Paragraph 13g. Delete the last sentence and substitute the following: In ac models using Rectifier RA-20 or Power Supply PP-1499/G, an additional power switch is located on the power supply.

Page 19. Paragraph 13k. Delete the last sentence and substitute the following: In addition to the above fuses, there is a 2-ampere fuse in Rectifier RA-20 and two fuses, 2-ampere and 1/8-ampere, in Power Supply PP-1499/G.

Page 20. Paragraph 15a. Note. Add the following after "RA-20": or Power Supply PP-1499/G.

Page 21. Paragraph 15.1a(3) (C 2). Line 1. Change "OFF position" to read: **M. V. C. position.**

Page 23. Paragraph 18. Item 4. In the *Corrective measures* column, add the following after "RA-20": or Power Supply PP-1499/G.

Page 35. Paragraph 37a (C 1). Line 2. Add the following after "RA-20-B": and T1 in Power Supply PP-1499/G.

Page 35. Paragraph 37b. Delete the first sentence and substitute the following: Inspect power transformer T3 (T4 in Rectifiers RA-20-A and RA-20-B and T1 in Power Supply PP-1499/G), filter choke L35 (L1 in Power Supply PP-1499/G), and audio transformers T1 and T2 for signs of blistering, bulging, or leakage of tar or insulating compounds.

Page 38. Paragraph 44 (C 1). Lines 3, 5, and 8. Change "(RA-20 only)" to read: **(Rectifier RA-20 and Power Supply PP-1499/G only).**

Page 44. Paragraph 51c (2) (d). Add the following after (d):

(2.1) For Power Supply PP-1499/G, unsolder the six leads from the terminal strip adjacent to the power supply. Remove terminal board TB1, choke L1, and transformer T1.

Page 45. Paragraph 51e(8). Add the following at the end of the sentence: (Rectifier RA-20 only).

Page 48. Add the following note to figure 17:

NOTE: V10 IS A 5Y3/GT IN RECTIFIERS RA-20-A AND RA-20-B AND IS A 5Y3WGTA IN POWER SUPPLY PP-1499/G.

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Page 57. Paragraph 56a(3) (C 1). Add the following after "RA-20-B": and Power Supply PP-1499/G.

Page 70. Paragraph 63a (C 1). Line 1. Change "(figs. 70, 70.1, 71, 71.1)" to read: **(figs. 70, 70.1, 70.2, 71, 71.1, and 71.2).**

Page 70. Figure 32.1 (C 1). Add "L35" as reference symbol for the "14.5H" filter choke.

Page 71. Paragraph 63.

e. (Added) Power Supply PP-1499/G (fig. 32.2) operates from a 110- to 120-volt ac 60-cycle source. The input is provided with three posts marked *110 V* and *120 V*, located on terminal board TB1, and a jumper wire which is positioned for operation from either 110 or 120 volts ac (par. 12*c*). The power supply will function properly in either position with a variation of as much as 10 percent in source voltage. The output is provided with four posts marked *W*, *X*, *Y*, and *Z*, also located on TB1, and two other jumpers which are positioned to give three modes of operation. The general outline of operation of the power supply is given in (1) below and the particular mode of operation, with typical output voltages and current, is given in (2) below:

- (1) The general outline of operation is as follows: the input voltage is fed into power transformer T1 which produces the necessary filament and high voltages. The high voltage is rectified by V1 which is operated as a full-wave rectifier. The resulting pulsating dc is fed into a capacitor pi-type filter that consists of L1 and dual capacitor C3. In the unregulated position (posts X and Y jumpered), R3 and V2 are out of the circuit and R1 and R2 act as the bleeder. In the regulated position (post W and X jumpered), R1 and R2 function as voltage regulator tube dropping resistors in series with V2 and as part of the bleeder in series with R3.
- (2) The three modes of operation are as follows:
 - (a) The first mode is when the power supply is used in conjunction with Radio Receivers BC-342-(*) or BC-344-(*) and both jumpers connected between posts X and Y. Under these conditions, the typical outputs are 260 volts dc (unregulated) at 77 ma and 12.5 volts ac center-tapped at 3 amperes.
 - (b) The other two modes of operation are when the power supply is used in conjunction with dual diversity systems Radio Receivers R-336-(*)/GRC-26 or Radio Receiver Assemblies OA-65(*)/MRC-2. The power supply is operated in either the channel A or the channel B receiver with the proper settings of the jumpers as follows: when operating channel A receiver (second mode), one jumper is connected between terminals W and X and the other

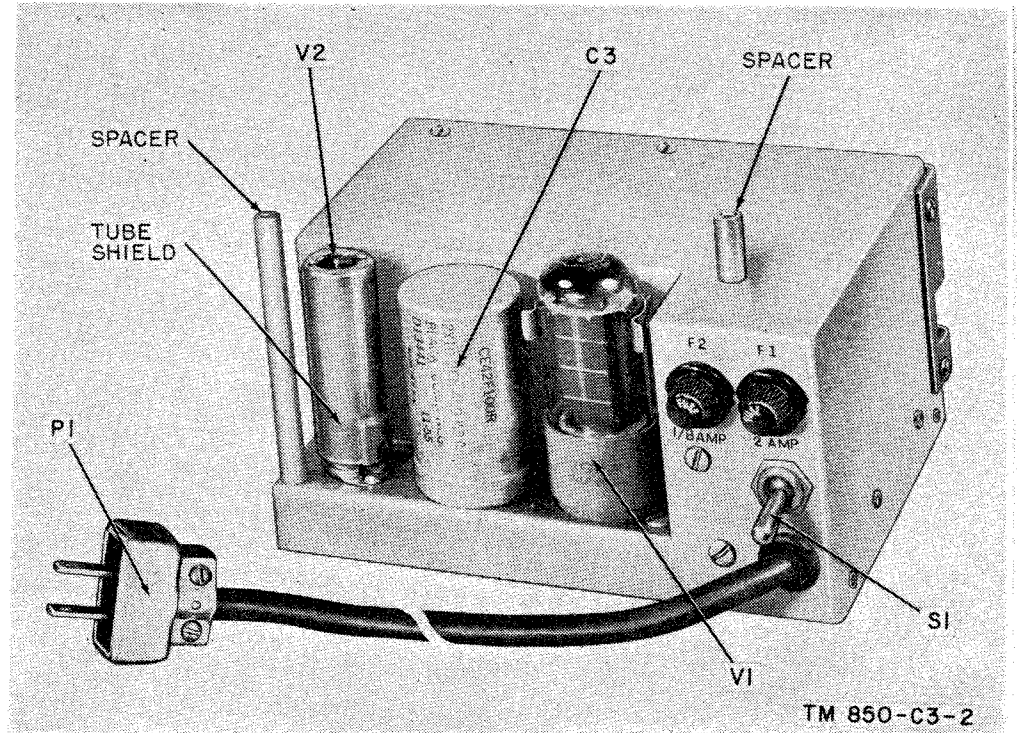


Figure 70.2. (Added) Power Supply PP-1499/G, top view.

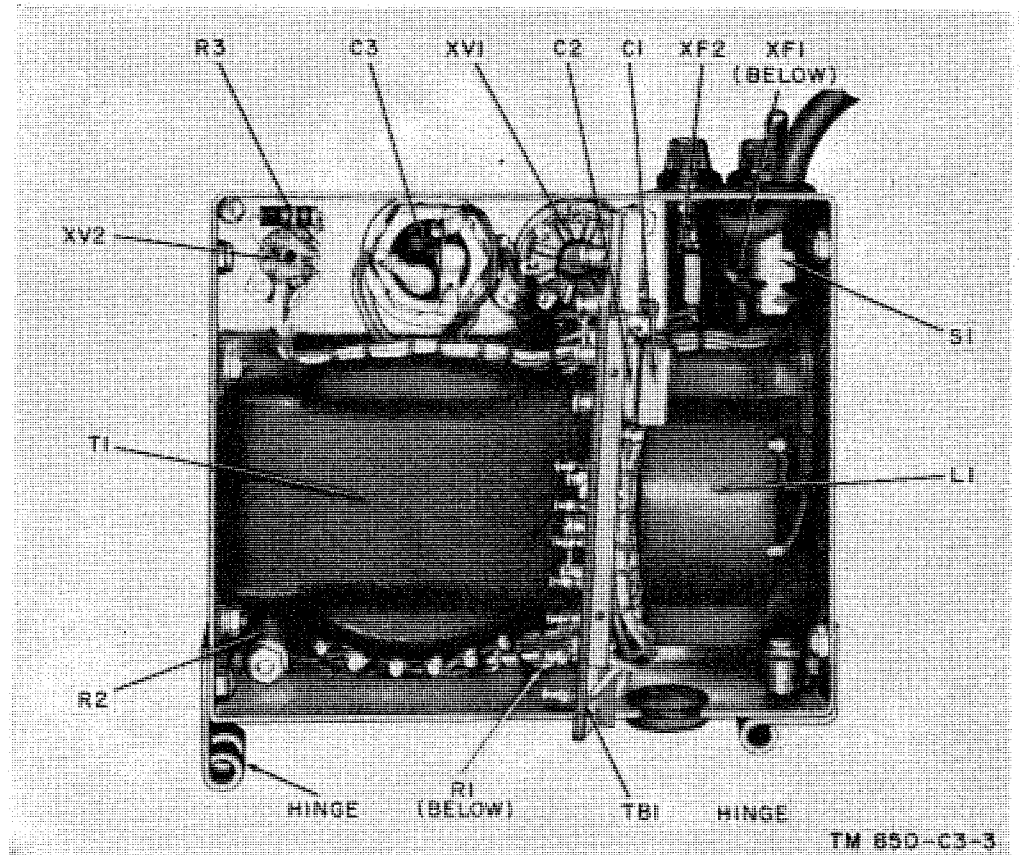


Figure 71.2. (Added) Power Supply PP-1499/G, bottom view.

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jumper is connected between terminals Y and Z. The typical outputs are 260 volts dc at 62 ma, 150 volts dc (regulated) at 20 ma, and 12.5 volts ac center-tapped at 3 amperes. For the channel B receiver (third mode), both jumpers are connected between terminals Y and Z. Typical outputs are 260 volts dc at 76 ma, 150 volts dc (regulated) at 10 ma, and 12.5 volts ac center-tapped at 3 amperes.

Page 71. Paragraph 64 (C 1). Lines 4 and 6. Add the following after "RA-20-B": and 5Y3WGTA in Power Supply PP-1499/G.

[AG 300.7 (22 Aug 56)]

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By Order of *Wilber M. Brucker*, Secretary of the Army:

MAXWELL D. TAYLOR,
General, United States Army,
Chief of Staff.

Official:

JOHN A. KLEIN,
Major General, United States Army,
The Adjutant General.

Distribution:

Active Army:

CNGB (1)
ASA (3)
Tec Svc, DA (1) except
CSIGO (30)
Tec Svc Bd (1)
Hq CONARC (5)
CONARC Bd (incl ea Test
Sec) (1)
Army AA Comd (2)
OS Maj Comd (5)
OS Base Comd (5)
Log Comd (5)
MDW (1)
Armies (5)
Corps (2)
Ft & Cp (2)
Sp Wpn Comd (2)
Army Cml Cen (4)
Gen & Br Svc Sch (5) except
Sig Sch (25)
Gen Depots (2) except
Atlanta Gen Depot (None)
Sig Sec, Gen Depots (10)
Sig Depots (17)
US Army Tng Cen (2)
POE (OS) (2)
Trans Terminal Comd (2)
Army Terminals (2)

OS Sup Agencies (2)
Army Elct PG (1)
Sig Fld Maint Shops (3)
Sig Lab (5)
PSYWAR Cen (5)
ACS (3)
Mil Dist (1)
Units organized under follow-
ing TOE's:
5-526R (2)
11-7C, Sig Co, Inf Div (2)
11-16C, Hq & Hq Co, Sig Bn,
Corps or Abn Corps (2)
11-57C, Armd Sig Co (2)
11-95R (2)
11-98R (2)
11-127R, Sig Rep Co (2)
11-128C, Sig Depot Co (2)
11-500R, Sig Svc Org (2)
11-557C, Abn Sig Co (2)
11-587R, Sig Base Maint Co
(2)
11-592R, Hq & Hq Co, Sig
Base Depot (2)
11-597R, Sig Base Depot Co
(2)
32-500R (2)

NG: State AG (6); units—same as Active Army except allowance is one copy to each unit.

USAR: None.

For explanation of abbreviations used, see SR 320-50-1.