

TM 11-6625-617-45

DEPARTMENT OF THE ARMY TECHNICAL MANUAL

**GS AND DEPOT
MAINTENANCE MANUAL INCLUDING
REPAIR PARTS AND SPECIAL TOOLS LIST
POWER SUPPLY PP-3514/U**



**HEADQUARTERS, DEPARTMENT OF THE ARMY
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POWER SUPPLY PP-3514/U

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* This manual supersedes TM 11-6625-617-45, 24 February 1965.

CHAPTER 1

FUNCTIONING OF EQUIPMENT

1-1. Scope

a. This manual contains general support and depot maintenance instructions for Power Supply PP-3514/U. It includes instructions appropriate for troubleshooting, testing, aligning, and repairing the equipment. It also lists tools, material, and test equipment required for general support and depot maintenance. Functional analysis is covered in paragraph 1-3.

b. The complete technical manual for this equipment includes TM 11-6625-617-12.

c. The direct reporting of errors, omissions, and recommendations for improving this equipment manual by the individual user is authorized and encouraged. DA Form 2028 will be used for reporting these improvements. This form may be completed by using pencil, pen, or typewriter. DA Forms 2028 will be completed by the individual using the manual and forwarded direct to Commanding General, U. S. Army Electronics Command, ATTN: AMSEL-MR-(NMP)-MA, Fort Monmouth, New Jersey 07703.

Note: For applicable forms and records, refer to TM 11-6625-617-12.

1-2. Index of Equipment Publications

Refer to the latest issue of DA Pam 310-4 to determine whether there are new editions, changes, or additional publications pertaining to this equipment. Department of the the Army Pamphlet No. 310-4 is an index of current technical manuals, technical bulletins, supply manuals (types 7, 8, and 9), supply bulletins, lubrication orders, and modification work orders that are available through publications supply

channels. The index lists the individual parts (-10, -20, -35P, etc) and the latest changes to and revisions of each equipment publication.

1-3. Block Diagram (fig. 1-1)

Power Supply PP-31514/U is a direct-current (dc) power supply used to supply power to other equipment. The signal paths are shown the block diagram and discussed in a through g below. Refer to the overall schematic diagram (fig. 7-3) for complete circuit detail

a. *Transformer.* The secondary of transformer T1 supplies alternating-current (ac) power to the power supply. The primary may be connected to 115 volts ac or 230 volts ac changing the jumpers on the primary.

b. *Rectifiers.* The power supply rectifiers provide approximately 43 volts dc to the regulator and -20 volts dc to the emitter follower and amplifier circuits.

c. *Regulator.* Regulator Q1 acts as a variable series resistance to control the voltage of the power supply output. The front panel VOLTAGE ADJUST control selects the voltage level.

d. *Emitter Follower.* Emitter follower Q4 supplies a constant reference voltage to the amplifiers.

e. *Amplifiers.* Amplifiers Q2 and Q3 amplify any change between the output voltage and the reference voltage to the constant voltage of the emitter follower. This voltage is applied to the regulator as a controlling voltage which maintains the output of the regulator at a constant value.