

DEPARTMENT OF THE ARMY TECHNICAL MANUAL

DEPARTMENT OF THE AIR FORCE TECHNICAL ORDER

TM 11-2583

TO 31S3-2TNH2-1

**SOUND RECORDER  
REPRODUCER SET  
AN/TNH-2**



*DEPARTMENTS OF THE ARMY AND THE AIR FORCE*

*NOVEMBER 1954*

TECHNICAL MANUAL }  
 No. 11-2583 }  
 TECHNICAL ORDER }  
 No. 31S3-2TNH2-1 }

DEPARTMENTS OF THE ARMY AND  
 THE AIR FORCE  
 WASHINGTON 25, D. C., 15 November 1954

SOUND RECORDER-REPRODUCER SET AN/TNH-2

	<i>Paragraph</i>	<i>Page</i>
CHAPTER 1. INTRODUCTION		
Section I. General	1, 2	2
II. Description and data	3-8	2
CHAPTER 2. INSTALLATION	9, 10	7
3. OPERATION		
Section I. Controls and their uses	11, 12	10
II. Operation under all conditions	13-18	13
CHAPTER 4. ORGANIZATIONAL MAINTENANCE		
Section I. Tools and equipment	19, 20	19
II. Preventive maintenance services	21-24	19
III. Lubrication and weatherproofing	25, 26	22
IV. Troubleshooting at organizational maintenance level	27-31	24
CHAPTER 5. THEORY OF OPERATION	32-35	28
6. FIELD MAINTENANCE		
Section I. Prerepair procedure	36-39	35
II. Troubleshooting at field maintenance level	40-45	36
III. Repairs	46-48	41
IV. Mechanical adjustments	49-58	47
V. Alinement procedures	59-64	50
VI. Final testing	65-68	58
CHAPTER 7. SHIPMENT AND LIMITED STORAGE AND DEMOLITION TO PREVENT ENEMY USE.	69-71	60
INDEX	-----	63

# CHAPTER 1

## INTRODUCTION

### Section I. GENERAL

#### 1. Scope

*a.* This manual contains information on the installation, operation, and maintenance of Sound Recorder-Reproducer Set AN/TNH-2.

*b.* A list of the nomenclature assignments for the equipment and its components is given below. A common name is indicated after each item.

<i>Nomenclature</i>	<i>Common name</i>
Sound Recorder-Reproducer Set AN/TNH-2.....	Recorder reproducer
Recorder-Reproducer Subassembly RD-132/TNH-2.....	Recorder-reproducer assembly
Amplifier, Power Supply Group OA-584/TNH-2.....	Amplifier, power supply group
Electrical Headset H-104/G.....	Headset
Electrical Power Cable Assembly CX-2619/U.....	Cable assembly

#### 2. Forms and Records

The following forms will be used for reporting unsatisfactory conditions of Army equipment and in performing preventive maintenance:

*a.* DD Form 6, Report of Damaged or Improper Shipment, will be filled out and forwarded as prescribed in SR 745-45-5 (Army); Navy Shipping Guide, Article 1850-4 (Navy); and AFR 71-4 (Air Force).

*b.* DA Form 468, Unsatisfactory Equipment Report, will be filled out and forwarded to the Office of the Chief Signal Officer, as prescribed in SR 700-45-5.

*c.* DD Form 535, Unsatisfactory Report, will be filled out and forwarded as prescribed in SR 700-45-5 and TO 00-35D-54.

*d.* DA Form 11-250, Operator First Echelon Maintenance Checklist for Signal Corps Equipment (Public Address, Recorder, Reproducer), will be prepared in accordance with instructions on the back of the form.

*e.* DA Form 11-251, Second and Third Echelon Maintenance Checklist for Signal Corps Equipment (Public Address, Recorder, Reproducer), will be prepared in accordance with instructions on the back of the form.

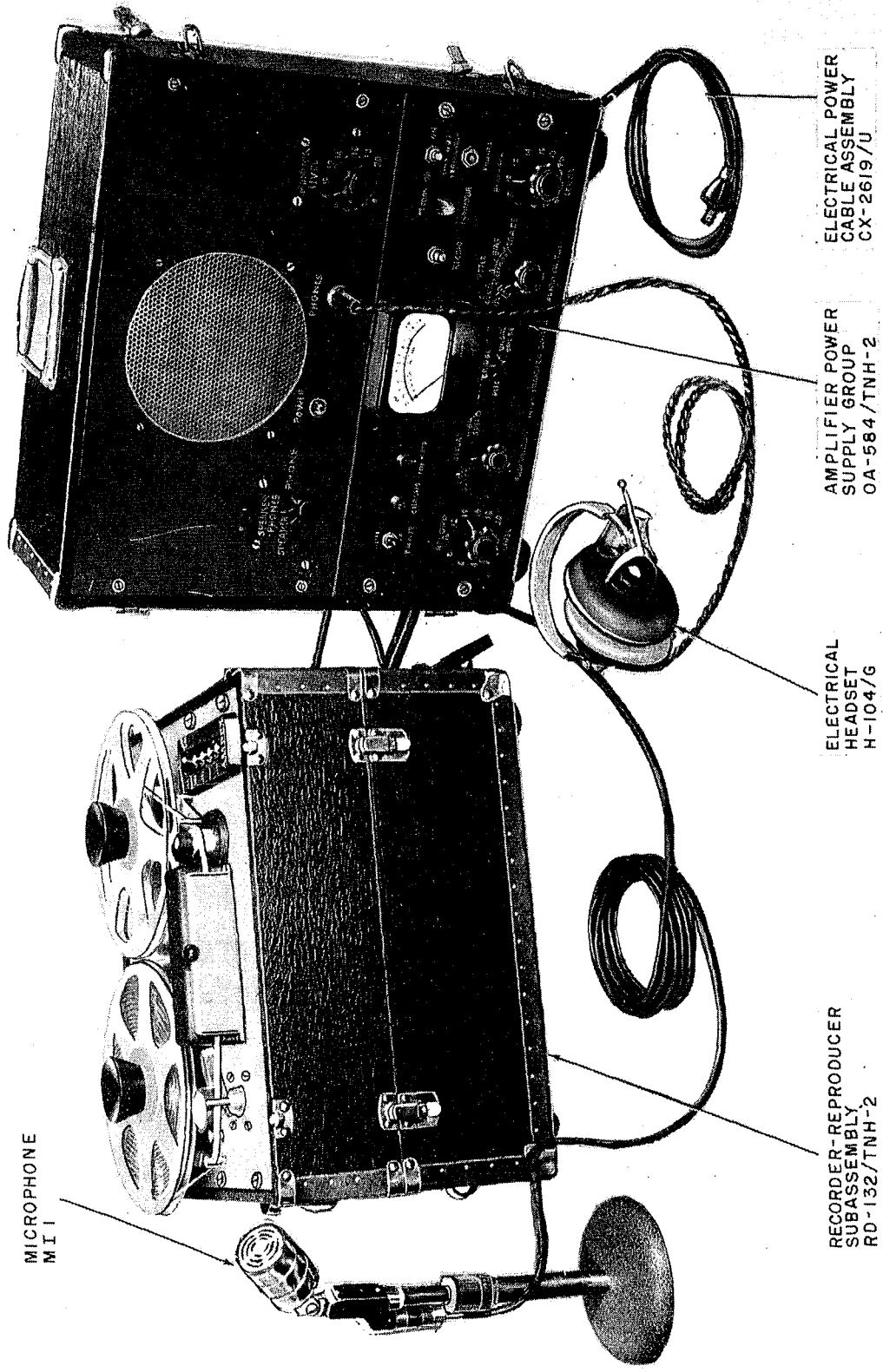
*f.* Use other forms and records as authorized.

### Section II. DESCRIPTION AND DATA

#### 3. Purpose and Use

*a.* Sound Recorder-Reproducer Set AN/TNH-2 (fig. 1) is a portable, self-contained, electromagnetic half-track tape recorder and reproducer. The use of half-track heads permits the recording of two separate audio tracks on a standard reel of tape; this provides twice the amount of program time that can be stored on a single tape. The equipment is operated from a 115-volt alternating-current (ac), 60-cycle power source. The equipment records voice, music, or data on a magnetic tape at either 7.5

or 15 inches per second. The normal uninterrupted recording or playing time for each track of 2,400-foot reel of tape is 64 minutes at 7.5 inches per second or 32 minutes at 15 inches per second. The entire tape is rewound in 1.5 minutes. A single input jack provides for a low-impedance microphone, telephone line, or other signal source. The recorded signal may be monitored through the self-contained loudspeaker or headset supplied with the equipment. After a recording has been made, it may be reproduced through the loudspeaker or headset.



MICROPHONE  
M I I

RECORDER-REPRODUCER  
SUBASSEMBLY  
RD-132/TNH-2

ELECTRICAL  
HEADSET  
H-104/G

AMPLIFIER POWER  
SUPPLY GROUP  
OA-584/TNH-2

ELECTRICAL POWER  
CABLE ASSEMBLY  
CX-2619/U

TM 2583-1

Figure 1. Sound Recorder-Reproducer Set AN/TNH-2, less case covers.

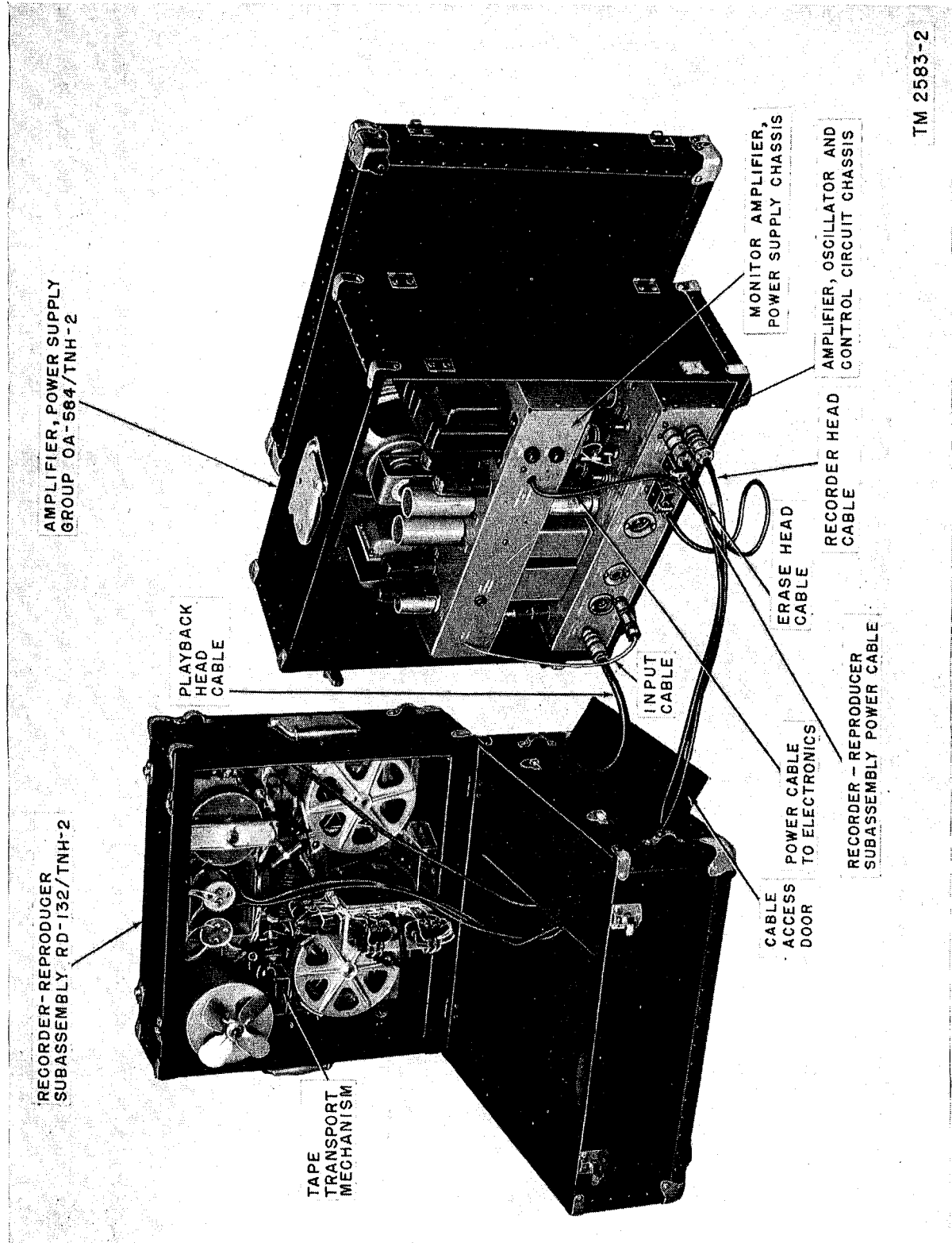


Figure 2. Recorder-Reproducer Subassembly RD-132/TNH-2, bottom view of tape transport mechanism, and Amplifier Power Supply Group OA-584/TNH-2, rear view.



## 7. Description of Components

Sound Recorder-Reproducer Set AN/TNH-2 consists of a Recorder-Reproducer Subassembly RD-132/TNH-2, Amplifier Power Supply Group OA-584/TNH-2, a microphone, a headset and the necessary connecting cables. Figure 1 shows the assembled equipment. A description of the components is given in *a* through *e* below.

*a. Recorder-Reproducer Subassembly RD-132/TNH-2* (figs. 1 and 2). The recorder-reproducer subassembly is a mechanical assembly made up of an erase-recorder-playback head assembly, a tape transport mechanism, and a control panel (fig. 4). The entire subassembly is mounted in a fibrickoid-covered wooden carrying case. The case cover is removable and permits access to the controls. The center section of the case contains the recorder-reproducer subassembly and has a screen ventilator. The bottom section contains a compartment for the storage of the microphone, headset, and connecting cables.

*b. Amplifier Power Supply Group OA-584/TNH-2*. The amplifier power supply group consists of two chassis—an amplifier, oscillator and control circuit chassis, and a monitor amplifier, power supply chassis. These two chassis contain the electronic circuits necessary for recording and reproducing the program. The front panels of the two chassis contain the necessary controls for controlling the recording and reproduction of sound. The entire power supply group is contained in a fibrickoid-covered wooden carrying case. The front and back covers of the case are secured by latches and hinges and may be removed completely.

(1) *Amplifier, oscillator and control circuit chassis*. This chassis (fig. 17) contains the recording amplifier circuit, the playback amplifier circuit, and the erase and bias oscillator circuit. The front panel of the chassis mounts the controls for the operation of the above circuits. The rear end of the chassis contains the necessary connectors to receive the connecting cables from the other units.

(2) *Monitor amplifier, power supply chassis*. This chassis (fig. 19) contains the monitor amplifier circuit, the power

supply for that monitor circuit, and the power supply for the amplifier, oscillator, and control circuit chassis. The front panel mounts the loudspeaker and the controls for the operation of the circuits. The rear end of the chassis contains interconnecting cables, fuses, and the external speaker jack.

*c. Microphone* (fig. 1). The microphone is a low-impedance, nondirectional, dynamic type. It contains an impedance switch and microphone cord connector. A 20-foot microphone cord is connected to the microphone. The bottom of the microphone is mounted to the swivel connector of the desk stand.

*d. Electrical Headset H-104/G* (fig. 1). The headset is a high-fidelity, dynamic-type of 600-ohm impedance. The phones are supplied with a 5-foot cord which terminates in a phone plug.

*e. Electrical Power Cable Assembly CX-2619/U* (fig. 1). The cable assembly is a two-conductor, rubber-covered, 6-foot cable for connecting the equipment to the power source. One end of the cable terminates in a female plug which connects to 115V AC POWER INPUT connector J409P on the rear of the amplifier, oscillator, and control circuit chassis. The other end of the cable terminates in a male plug which connects to the power source.

## 8. Running Spares

The following is a list of the running spares supplied with the recorder-reproducer:

- 1 tube 12SJ7 (selected)
- 1 tube 12SJ7
- 1 tube 6C5
- 1 tube VR150/OD3
- 1 tube 6SN7
- 1 tube 5Y3G
- 1 tube 12AT7
- 1 tube 6V6
- 2 fuses, 3-ampere, 3AG
- 2 fuses, 1-ampere, SLO BLO
- 1 fuse, 2-ampere, 3AG
- 5 spare panel lamps, No. 47
- 15 10½-inch reels, plastic base recording tape, ¼ inch by 2,400 feet, in individual metal cans.
- 2 splicing blocks
- 1 head, demagnetizer

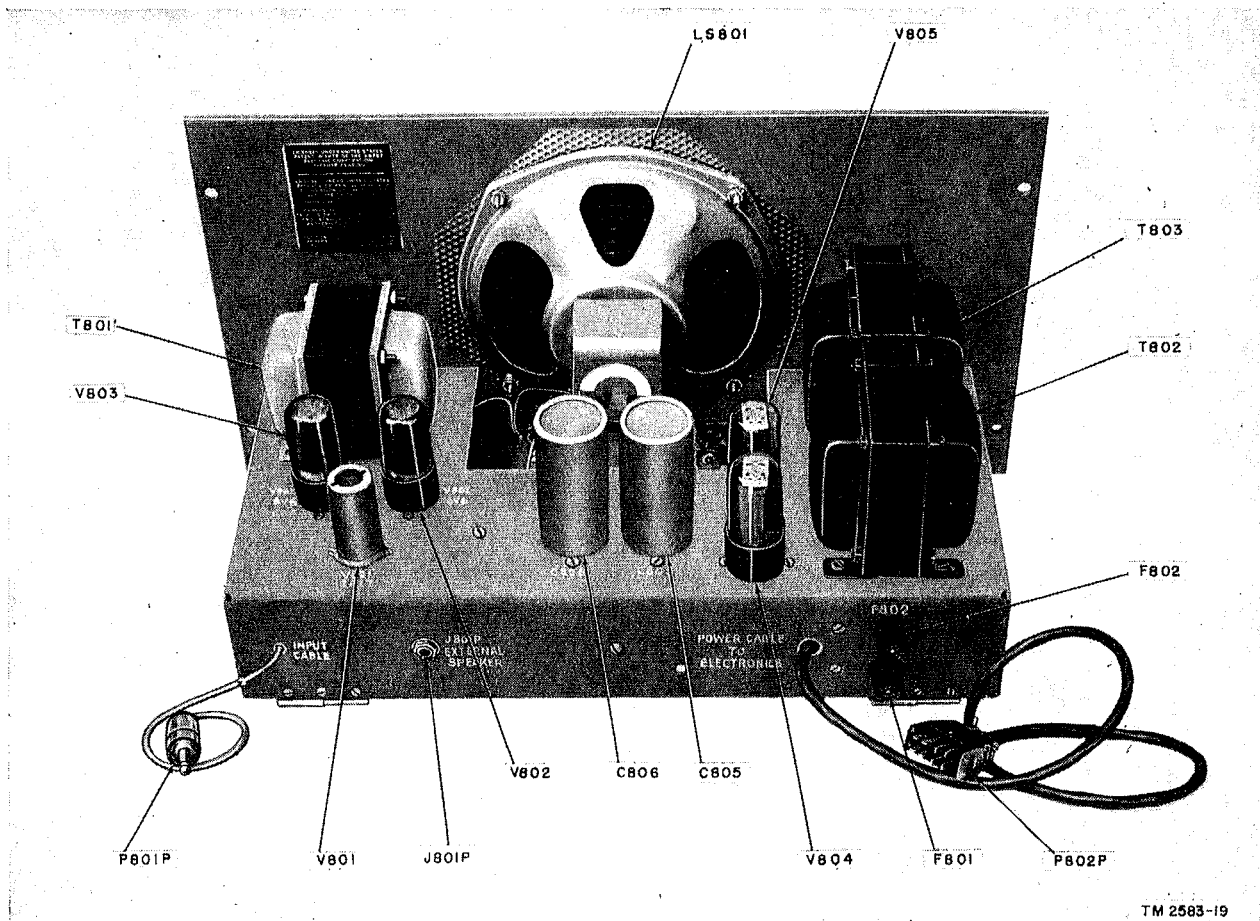
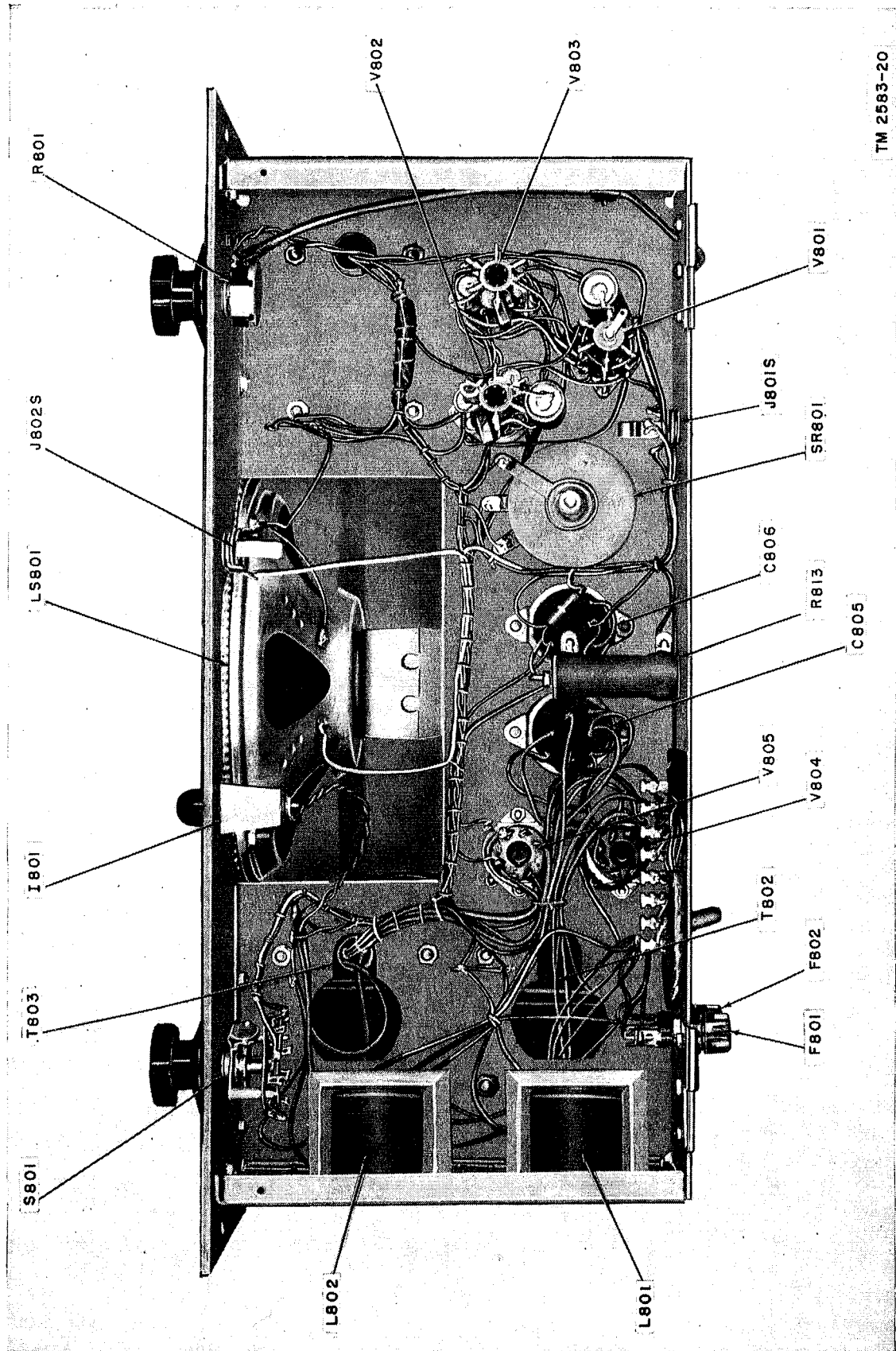


Figure 19. Monitor amplifier, power supply chassis, top and rear view.





TM 2583-20

Figure 20. Monitor amplifier, power supply chassis, bottom view.

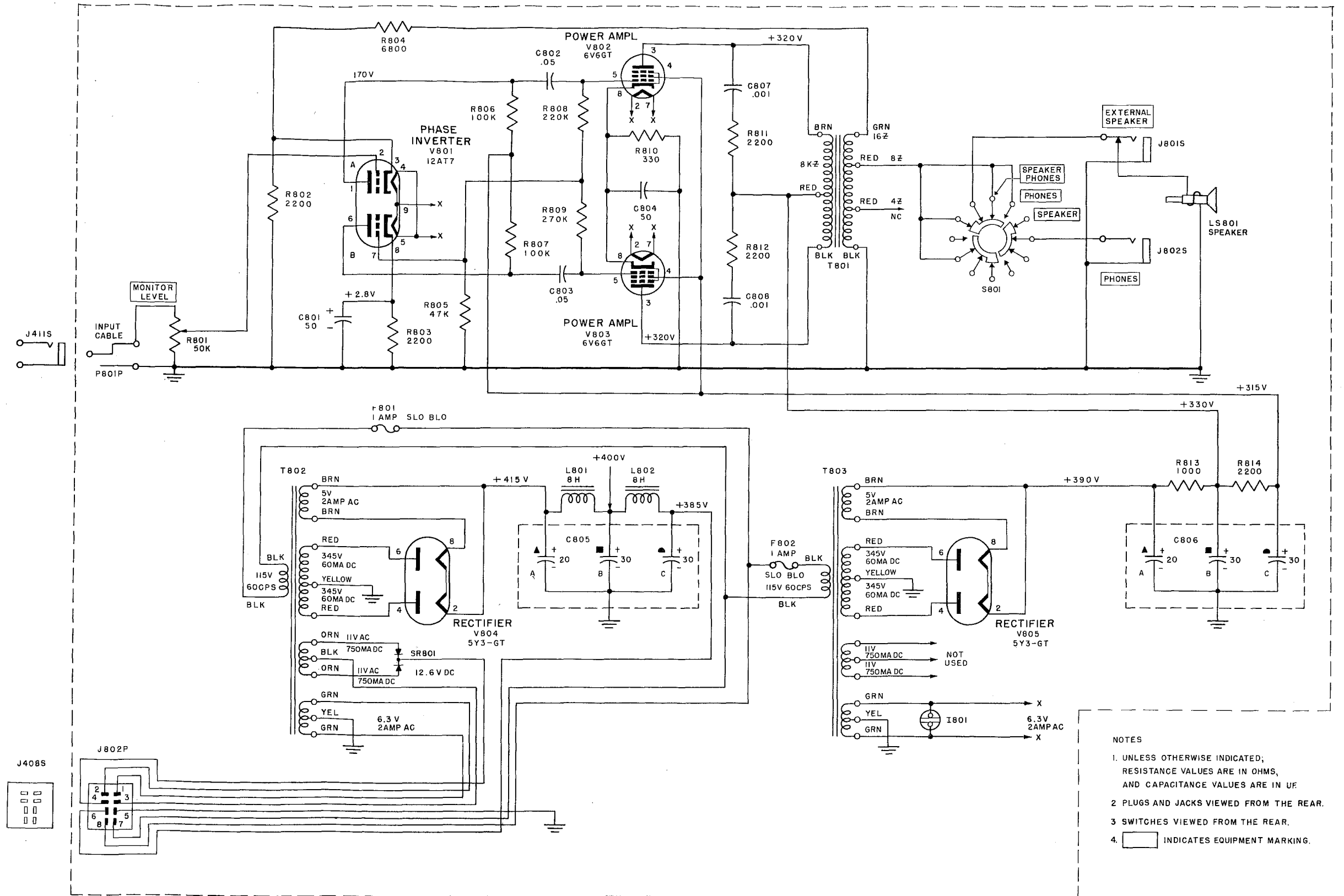


Figure 27. Monitor amplifier, power supply chassis, schematic diagram.