Film-Tech

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Operating Instructions

TYPE PG-139-X,-DX,-SX

RCA PHOTOPHONE

High Fidelity Theatre Sound Reproducing Equipment

Operating Procedure

(a) Turn "on" the main amplifier a-c switch in the external power supply circuit at least thirty seconds before the time the equipment is to be used. If a motor generator set or rotary converter is employed, start this equipment before turning "on" the amplifier a-c control switch.

It is preferable to turn on the amplifier a reasonable length of time before the performance begins, in order to allow the tubes to reach proper operating temperature, and all components to reach a state of thermal stability. This will insure quietness of operation when the performance starts, and will also allow time to ascertain that the amplifying system is in proper operating condition.

(b) Check the tubes in the main amplifier using the meter and switch as explained below.

(c) Turn on the main switch for the projector motor supply.

(d) Examine the "Fader Setting Instruction Leader" of the film to determine whether it is a "Regular", "Hi-Range", or "Lo-Range" recorded print, and determine what the approximate fader setting is to be.

(e) Thread the film in the projectors and soundheads as shown in the soundhead instruction card.

Make sure that the sound is not "faded" to the soundhead being threaded or the soundhead to be started first, by checking the position of the fader knob located at the top of each preamplifier cabinet. The fader switches are so arranged that either switch may be used to "fade" the sound to either soundhead.

(f) When the performance is to begin, start the motor of the first soundhead by turning "On" the motor starting switch. When the motor has attained full running speed (in approximately two seconds) turn the fader control knob to the proper projector position.

(g) Adjust the volume control of the pre-amplifier, corresponding with the projector in operation, to the approximate setting determined in (d) above, to obtain the proper volume level in the auditorium.

Musical reproduction is usually more pleasing when reproduced at a higher volume level than dialogue. In "Hi-Range" recorded prints the dialogue passages are intentionally reduced in volume level compared to the musical passages so that a volume differential of approximately 6 db. is automatically provided between music and dialogue. When such a print is being reproduced the volume control must be raised at least 6 db. for proper dialogue volume. This reproduces the musical passages at a higher volume level, and gives the desired effect, without any additional adjustment of the volume control during the performance.

When "Regular" recorded prints are used, the volume level differentiation between music and dialogue reproduction may be accomplished manually, if so desired, by adjusting the volume control for more volume during musical passages.

The number of persons in the auditorium is an additional factor in the adjustment of the volume control. A full auditorium requires an advanced volume control setting compared to the setting when the auditorium is half filled.

(h) Adjust the monitor loudspeaker volume control to obtain proper sound level in the projection room.

(i) When the film in the first projector nears the end, watch for the motor cue on the screen, and when it appears switch on the motor of the second projector. When the changeover cue is observed on the screen, turn the fader control knob, of either pre-amplifier, to the other projector position.

STAND-BY Operation

EXCITER LAMP AND FIELD SUPPLY MI-9520-A:

Exciter lamp and field supply unit MI-9520-A is provided. A switch marked "Normal" and "Emerg." in the exciter lamp supply circuit is mounted on the front panel and should ordinarily be used in the "Normal" position. In case of exciter lamp voltage failure it may be used in the "Emerg." position. The two main a-c fuses are located in the lower left corner, one in each circuit (exciter lamp and field supply). Two other fuses on the chassis are in series with the exciter lamp filter capacitors, and in case of excessive hum these fuses should be checked and replaced if necessary. Never replace any fuse with one of higher rating.

MI-1792-CB
Printed in U.S.A.
1-52069-1550

PRE-AMPLIFIERS

Emergency operation for either MI-9202-B Pre-Amplifier is provided by means of the Stand-By Switch, MI-9381-A, located between the two pre-amplifiers on the front wall. The equipment should regularly be operated with this switch in the "NORMAL" position.

Located on the top of each pre-amplifier is a small toggle switch designated "OFF" and "ON". These switches should be operated in the "ON" position. Should failure occur in either pre-amplifier its associated switch should be thrown to the "OFF" position.

POWER AMPLIFIERS

The MI-9261-B Power Amplifier normally operates at all times in parallel with the Main Amplifier, MI-9260-B. A "NORMAL"-"EMERG" Switch is provided on the MI-9261-B Amplifier front panel which, when thrown to the "EMERG" position, switches filament and plate voltages for both MI-9202-B Pre-Amplifiers from the main power amplifier to the MI-9261-B Amplifier.

In order to make either amplifier inoperative remove their respective fuses.

STAGE LOUDSPEAKER

The stage loudspeaker circuit is arranged to allow for operation with the low frequency unit only. A switch having a "NORMAL" and "EMERG" position is provided in the front cover below the meter. In the "NORMAL" position the stage loudspeakers operate normally and in the "Emerg" position the low frequency stage loudspeaker only reproduces.

MI-9260-B Main Amplifier

FUSE

The amplifier fuse is located on the right hand terminal board of the amplifier chassis as shown in Figure 2. Remove the cabinet cover to gain access to the fuse.

IMPORTANT: Never replace the fuse with one of higher rating than 3 amperes.

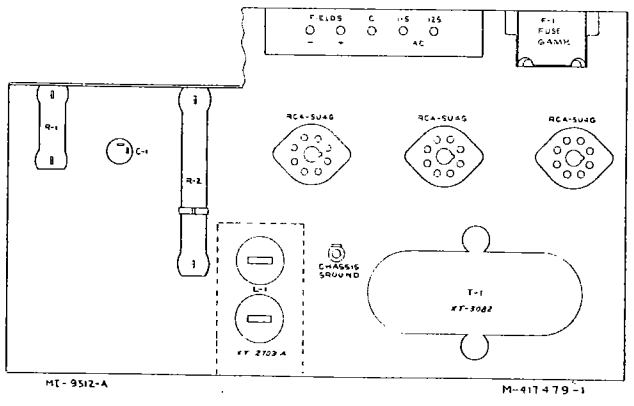

FIGURE 1 - LOCATION OF PARTS MI-9512-A

RADIOTRONS

A meter and switch are located on the front of the main amplifier to check the condition of the Radiotrons. The switch dial is numbered to correspond to the Radiotron numbers marked near the tube sockets on the top of the amplifier chassis. For each position of the meter switch, the meter pointer should fall within the green area of the dial. Radiotrons which indicate in the red dial areas should be replaced. If all Radiotrons check "low", replace the RCA 5U4G Rectifier Tubes, before replacing any other tubes.

Access to the tubes may be had by removing the thumb screws holding the front cabinet cover, and removing the cover.

CAUTION: Turn the power switch "OFF" before replacing Radiotrons or fuses.

MI-9261-B Auxiliary Amplifier.

Items above under the heading "Main Amplifier" also apply to the auxiliary amplifier. The switch on the front panel of the MI-9261-B should regularly be used in the "Normal" position.

Monitor Amplifier

Access to the fuse and Radiotrons in the MI-1228-B may be had by opening the front cover. The fuse in this unit is located on the terminal board on the right front side of the chassis. IMPORTANT: Never replace the fuse with one of higher rating than one ampere.

CAUTION: Turn the main power switch "Off" before replacing fuse or Radiotrons.

FIELD SUPPLY MI-9512-A
(Used on PG-139-SX Only)

Access to the fuse and Radiotrons may be had by opening the front cover. The fuse in this unit is located at the front right side of the chassis. IMPORTANT: Never replace the fuse with one of higher rating than six amperes.

CAUTION: Turn the main power switch "Off" before replacing fuse or Radiotrons.

REPLACEMENT PARTS

STOCK NO.	DESCRIPTION
	MI-9512-A FIELD SUPPLY UNIT (Used on PG-139-SX Only)
23540	Block - Fuse Block
18438	Capacitor - 50 Mfd., 350 Volt (C1)
23633	Fuse - 6 Amp. (F1)
28088	Reactor - XT-2709-A (L1)
28089	Resistor - 50 Ohms, 50 Watt (R2)
28090	Resistor - 6,000 Ohms, 25 Watt (R1)
18467	Socket - Tube Socket
28086	Transformer - Power Transformer, XT-3082 (T1)

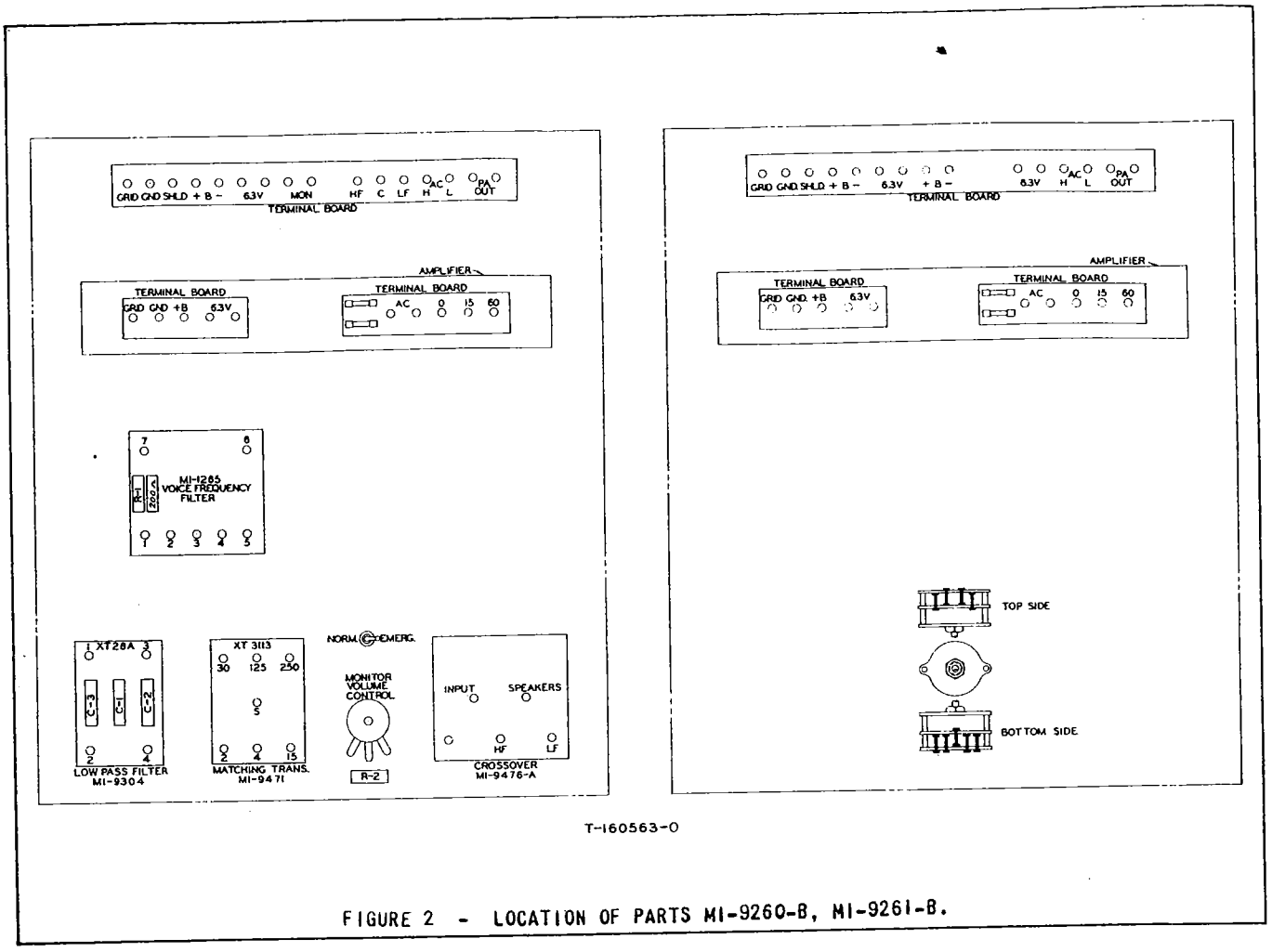

FIGURE 2 - LOCATION OF PARTS MI-9260-B, MI-9261-B.

REPLACEMENT PARTS

MI-9260-B and MI-9261-B AMPLIFIER ASSEMBLIES

STOCK NO.	DESCRIPTION
	MI-1265 Compensator
26400	Compensator - RT-434
26631	Resistor - 200 Ohms
	MI-9471 Transformer
28099	Transformer - XT-3113
	MI-9304 Compensator
27977	Compensator - XT-28-A
	MI-9476-A Cross-Over Network
28014	Capacitor - 1.5 Mfd.
28015	Capacitor - 2.5 Mfd.
28017	Reactor - XT-2947-A
28016	Reactor - XT-3078
28709	Switch - D.P.D.T

STOCK NO.	DESCRIPTION
	Miscellaneous Assemblies
12536	Capacitor - 820 Mmfd. (C2)
13054	Capacitor - 1,200 Mmfd. (C1, C3)
27990	Knob - Meter Switch Knob
28000	Knob - Switch Knob
28715	Resistor - Variable Resistor
28128	Resistor - 20 Ohms, 10 Watts (R2)
30561	Resistor - 100 Ohms, 10 Watts (R1)
	MI-9261-B Amplifier Cabinet Assembly
28037	Knob - Emergency Switch Knob
27990	Knob - Meter Switch Knob
28134	Switch - Meter Switch

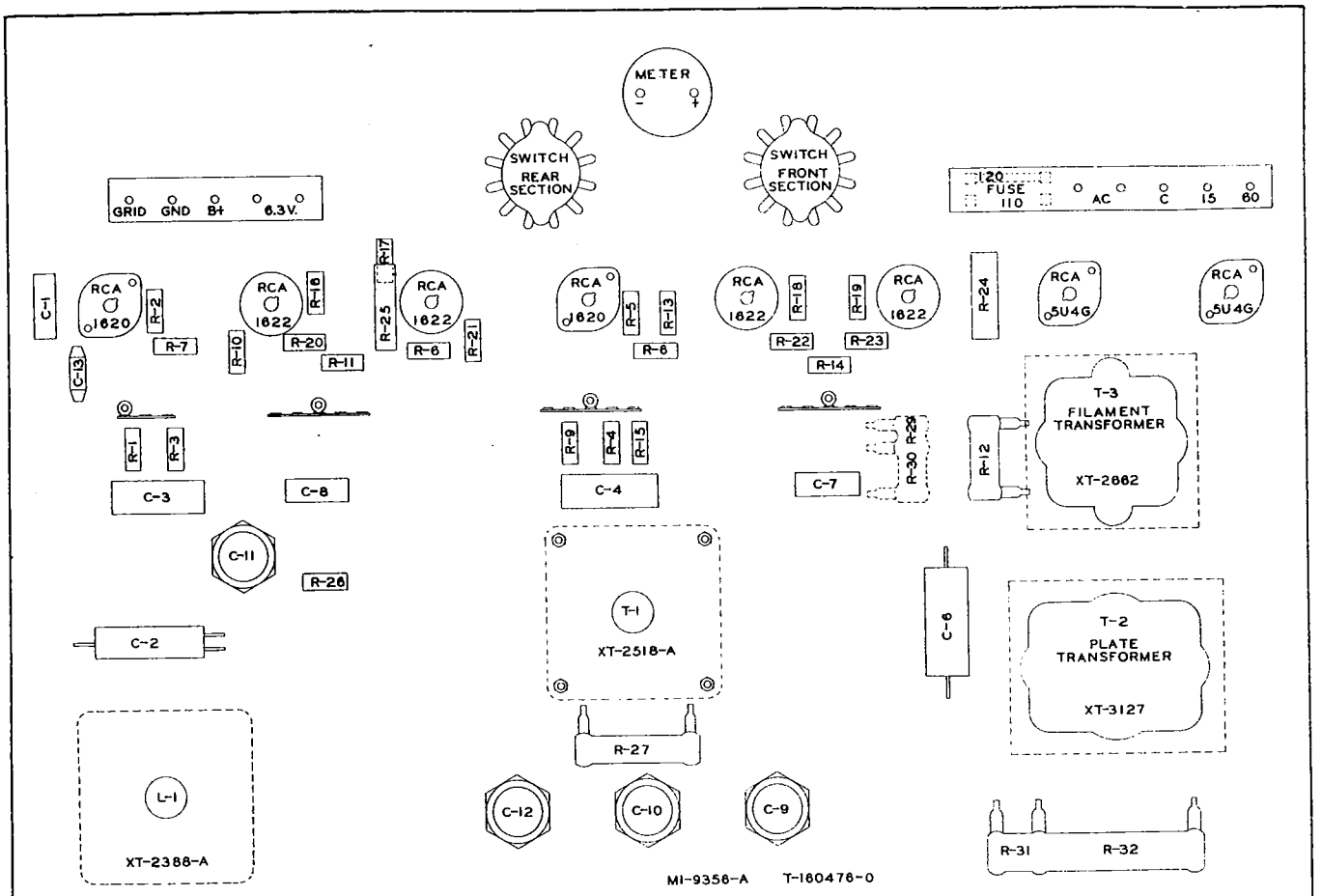

FIGURE 3 - LOCATION OF PARTS MI-9356-A.

REPLACEMENT PARTS

MI-9356-A AMPLIFIER ASSEMBLY

STOCK NO.	DESCRIPTION
12694	Capacitor - 220 Mmfd. (C13)
30851	Capacitor - .0035 Mfd. (C7, C8)
30847	Capacitor - .05 Mfd. (C1)
30848	Capacitor - .10 Mfd. (C3, C4)
14902	Capacitor - 10-10 Mfd. (C2)
31569	Capacitor - 16 Mfd. (C11)
30178	Capacitor - 20 Mfd. (C6)
31568	Capacitor - 25 Mfd. (C9, C10, C12)
10907	Fuse - 3 Amperes (F1)
28053	Meter - Control Meter (M1)
30172	Reactor - XT-2388A (L1)
28711	Resistor - 1 Ohm, 1/2 Watt (R16, R17, R18, R19)
30789	Resistor - 33 Ohms, 1/2 Watt (R3, R4)
18190	Resistor - 47 Ohms, 1 Watt (R20, R21, R22, R23)
31570	Resistor - 50 Ohms (R27)
30177	Resistor - 94 Ohms (R12)
32165	Resistor - 470 Ohms, 2 Watts (R24, R25)

STOCK NO.	DESCRIPTION
3526	Resistor - 2,200 Ohms, 1/2 Watt (R2, R5)
28710	Resistor - 7370 Ohms, (Tapped) (R29, R30)
30436	Resistor - 12,000 Ohms, 1/2 Watt (R9)
30787	Resistor - 47,000 Ohms, 1/2 Watt (R10, R11, R13, R14)
30175	Resistor - 50,000 Ohms - (Tapped) (R31, R32)
8064	Resistor - 82,000 Ohms, 1/2 Watt (R6, R7, R26)
30493	Resistor - 150,000 Ohms, 1/2 Watt (R8, R15)
30653	Resistor - 560,000 Ohms, 1/2 Watt (R1)
18007	Socket - 8-Contact Tube Socket - Moulded Type
33084	Socket - 8-Contact Tube Socket - Wafer Type
28054	Switch - Control Switch
30173	Transformer - XT-2518A (T1)
30171	Transformer - XT-2662 (T3)
28085	Transformer - XT-3127 (T2)

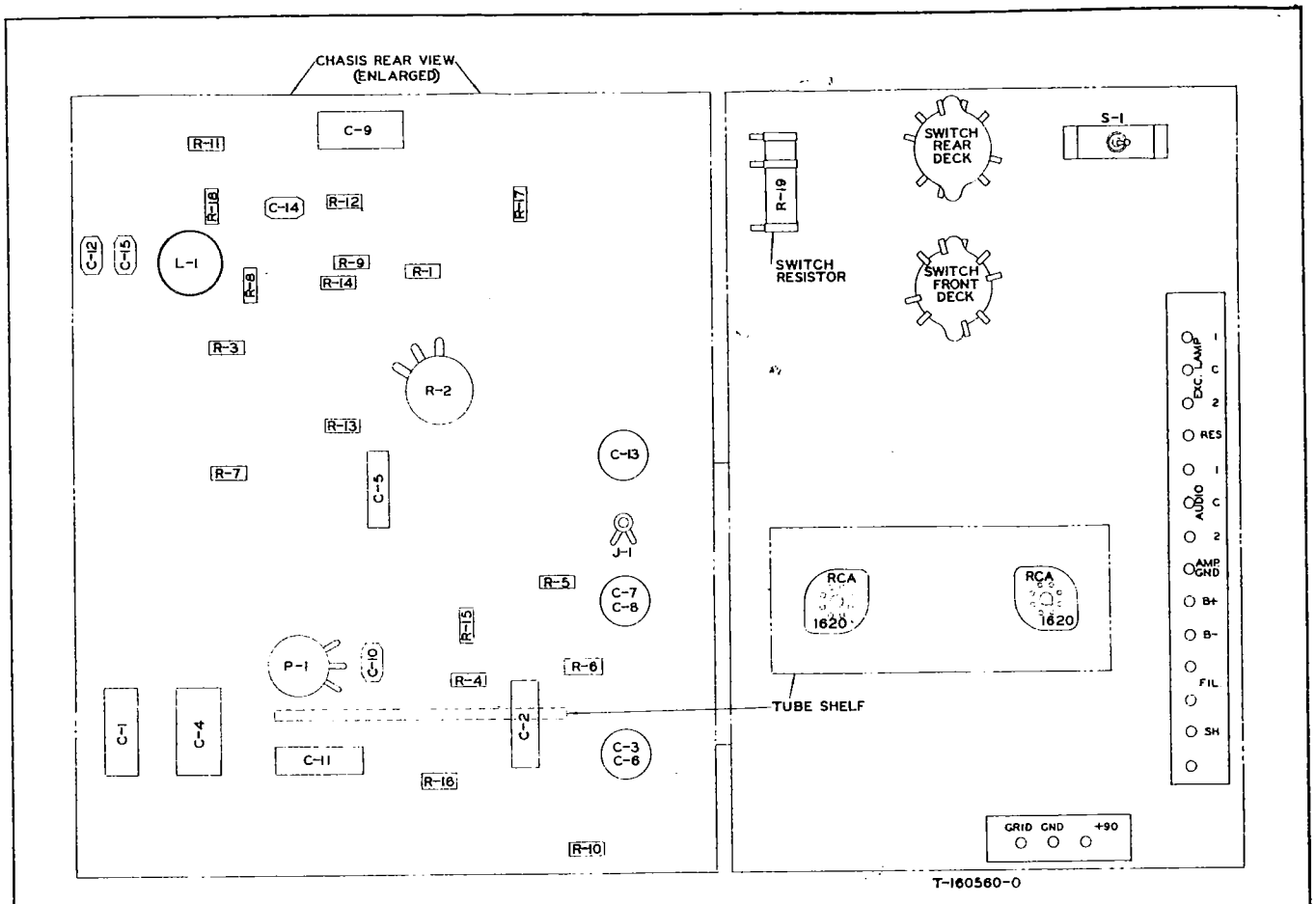

FIGURE 4 - LOCATION OF PARTS MI-9202-B.

REPLACEMENT PARTS

MI-9202-B PRE-AMPLIFIER AND FADER UNIT

STOCK NO.	DESCRIPTION
12694	Capacitor - 220 Mmfd., 400 Volts (C10)
12952	Capacitor - 330 Mmfd., 400 Volts (C12)
13894	Capacitor - 390 Mmfd., 400 Volts (C15)
30433	Capacitor - 470 Mmfd., 400 Volts (C14)
30857	Capacitor - .035 Mfd., 1,000 Volts (C11)
30847	Capacitor - .05 Mfd., 300 Volts (C2, C5)
30849	Capacitor - .25 Mfd., 500 Volts (C4)
30860	Capacitor - .5 Mfd., 200 Volts (C1)
28157	Capacitor - .5 Mfd., 400 Volts (C9)
32332	Capacitor - 10-10 Mfd., 450 Volts (C7, C8)
32400	Capacitor - 20 Mfd., 450 Volts (C13)
34061	Capacitor - 20-20 Mfd., 25 Volts (C3, C6)
28687	Catch - Lid Catch
28035	Gear - Miter Gear
28034	Gear - Miter Gear
23421	Jack - Input Jack (J1)
27990	Knob - Control Knob
17269	Knob - Switch Knob
28441	Reactor - Compensating Reactor (L1)
43228	Resistor - 1 Ohm, 25 Watts (R19)
30731	Resistor - 1,200 Ohms, 1/2 Watt (R6)

STOCK NO.	DESCRIPTION
30694	Resistor - 3,900 Ohms, 1/2 Watt (R10)
3078	Resistor - 10,000 Ohms, 1/2 Watt (R14)
30685	Resistor - 33,000 Ohms, 1/2 Watt (R9, R12)
30147	Resistor - 39,000 Ohms, 1/2 Watt (R18)
30650	Resistor - 56,000 Ohms, 1/2 Watt (R11)
8064	Resistor - 82,000 Ohms, 1/2 Watt (R8)
28094	Resistor - Variable Resistor - 100,000 Ohms (R2)
3252	Resistor - 100,000 Ohms, 1/2 Watt (R3, R5, R13)
11959	Resistor - 180,000 Ohms, 1/2 Watt (R1)
14583	Resistor - 220,000 Ohms, 1/2 Watt (R16)
30784	Resistor - 330,000 Ohms, 1/2 Watt (R15)
30648	Resistor - 470,000 Ohms, 1/2 Watt (R7)
28712	Resistor - Variable Resistor - 500,000 Ohms (P1)
30652	Resistor - 1 Meg., 1/2 Watt (R4, R17)
33084	Socket - 8-Contact Tube Socket
28713	Switch - Fader Switch
28449	Switch - Toggle Switch (S1)

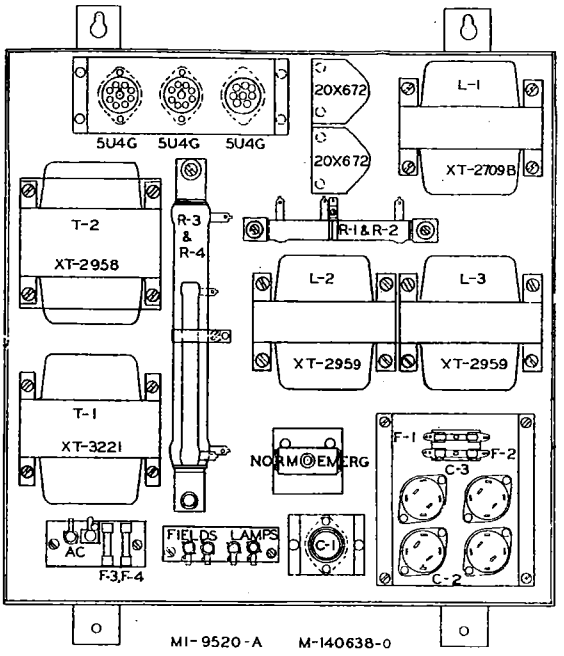

FIGURE 5 - LOCATION OF PARTS MI-9520-A

REPLACEMENT PARTS

MI-9520-A EXCITER LAMP & FIELD SUPPLY

STOCK NO.	DESCRIPTION
18438	Capacitor - 50 Mfd. (C1)
18374	Capacitor - 1,000 Mfd. (C2, C3)
3883	Fuse - 2 Amp. (F1, F2)
10907	Fuse - 3 Amp. (F3, F4)
28183	Reactor - XT-2709-B (L1)
28184	Reactor - XT-2959 (L2, L3)
28189	Resistor - 2 Ohms, 160 Watts (R3)
28190	Resistor - 30 Ohms, 55 Watts (R4)
28188	Resistor - 50 Ohms, 50 Watts (R2)
28187	Resistor - 6,000 Ohms, 25 Watts (R1)
23793	Socket - Rectifier Socket
33084	Socket - Tube Socket - 8 Contact
28191	Switch - Toggle Switch (S2)
28182	Transformer - XT-2958 (T2)
28181	Transformer - XT-3221 (T1)
29225	Tube - Rectifier Tube

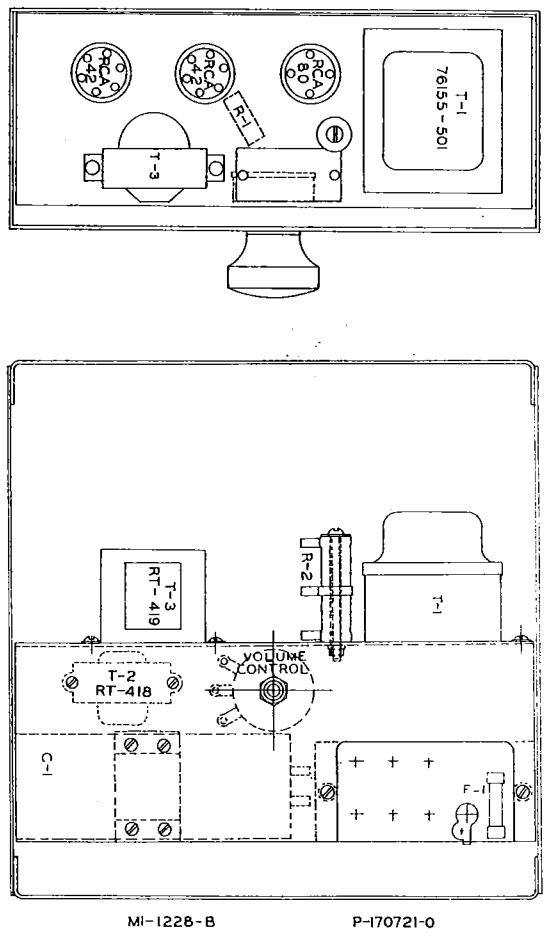

FIGURE 6 - LOCATION OF PARTS MI-1228-B

REPLACEMENT PARTS

MI-1228-B MONITOR AMPLIFIER

STOCK NO.	DESCRIPTION
14133	Fuse - 1 Amp. (F1)
13036	Capacitor - Filter capacitor, 25 Mfd.
23796	Control - Volume Control, 200 Ohms
13787	Insulator - Socket Insulator
25611	Knob - Control Knob
23797	Resistor - 400 Ohms (R1)
26964	Resistor - 1,000 Ohms (R2)
23471	Socket - 4 Prong Tube Socket
12143	Socket - 6 Prong Tube Socket
26295	Transformer - Input Transformer, RT-418 (T2)
11999	Transformer - Power Transformer (T1)
26296	Transformer - Output Transformer, RT-419 (T3)