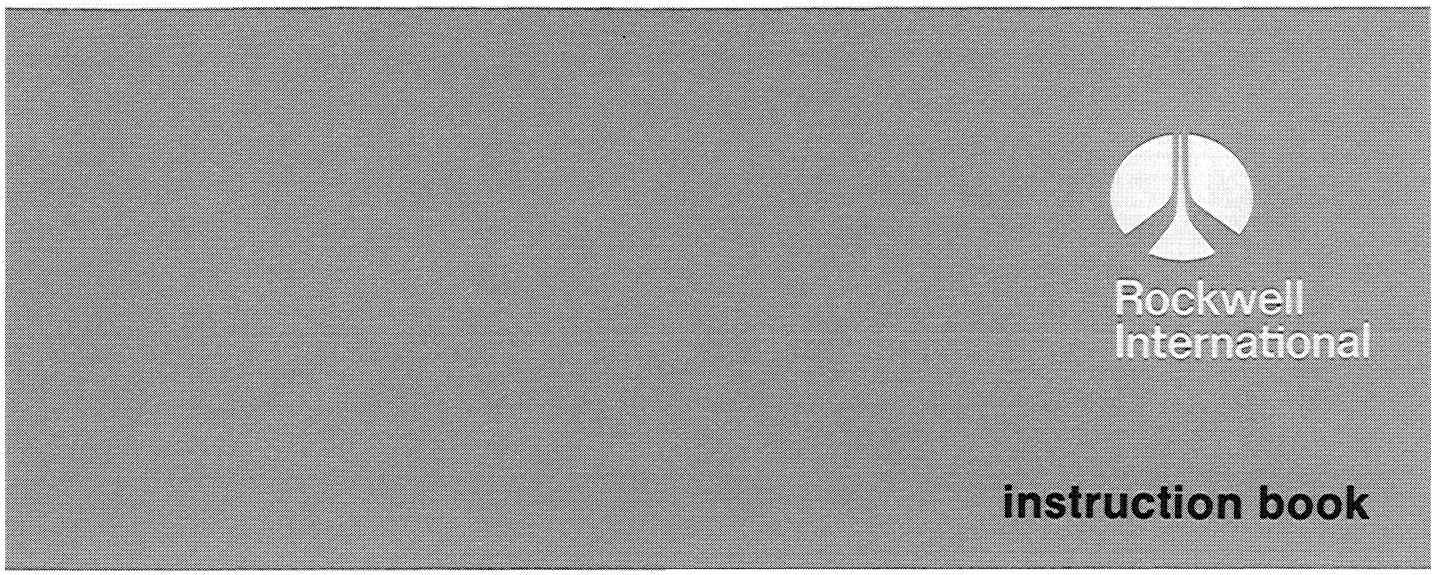

Collins Telecommunications Products Division

Collins KWM-2 and KWM-2A Transceivers

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Collins KWM-2 and KWM-2A Transceivers

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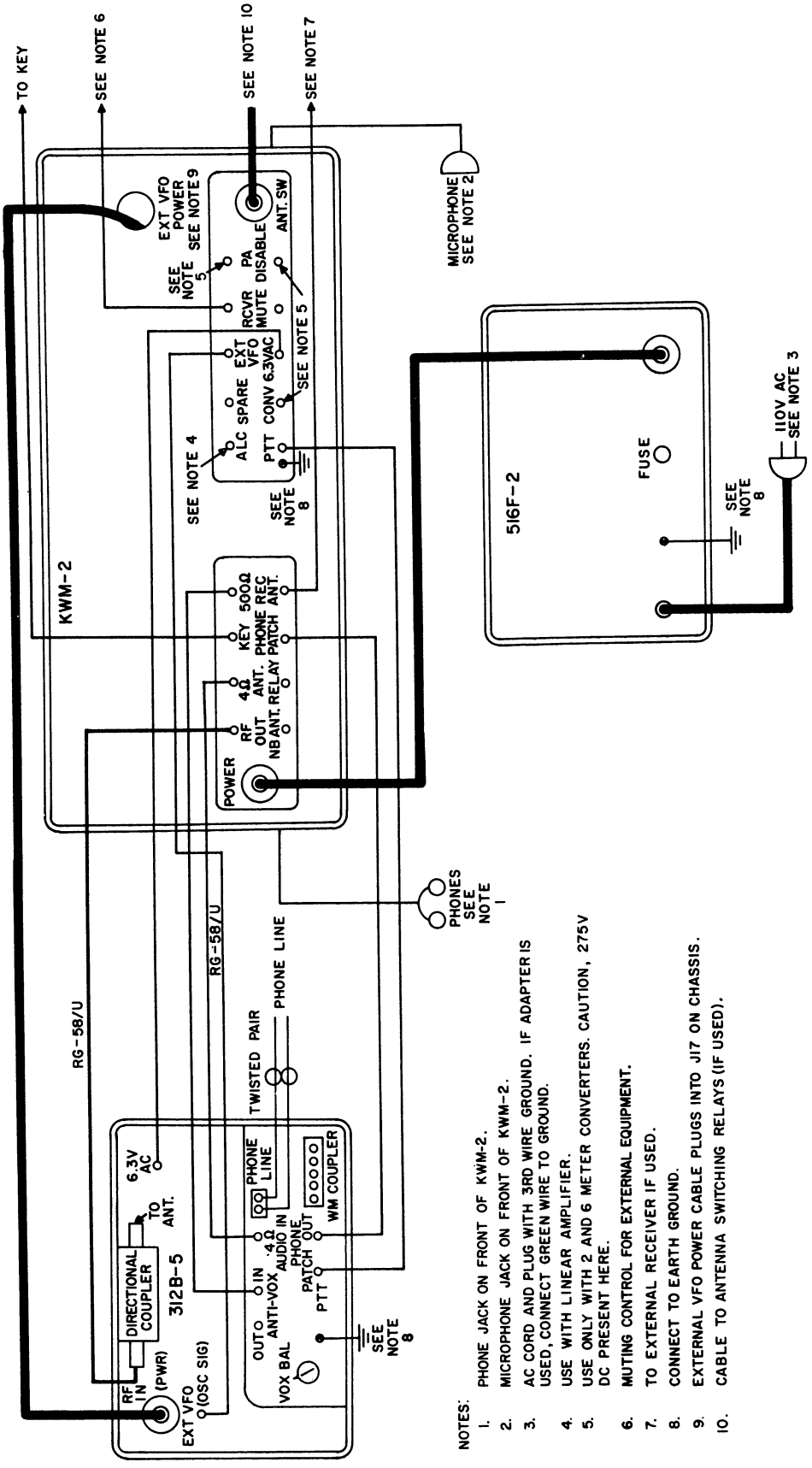


NOTES:

1. PHONE JACK ON FRONT OF KWM-2.
2. MICROPHONE JACK ON FRONT OF KWM-2.
3. AC CORD AND PLUG WITH 3RD WIRE GROUND. IF ADAPTER IS USED, CONNECT GREEN WIRE TO GROUND.
4. USE WITH LINEAR AMPLIFIER.
5. USE ONLY WITH 2 AND 6 METER CONVERTERS. CAUTION, 275V DC PRESENT HERE.
6. MUTING CONTROL FOR EXTERNAL EQUIPMENT.
7. TO EXTERNAL RECEIVER IF USED.
8. CONNECT TO EARTH GROUND.
9. EXTERNAL VFO POWER CABLE PLUGS INTO J17 ON CHASSIS.
10. CABLE TO ANTENNA SWITCHING RELAYS (IF USED).

Fixed Station Interconnections
Figure 1-1

section 1
installation

1.1 UNPACKING

Carefully lift the transceiver out of the packing material. Examine for visible damage. If transceiver has been damaged in shipment, save box and packing material, and notify the transportation company. Fill out and mail the equipment registration card. Check that all tubes and crystals are properly seated in sockets. Check tuning controls and switches for freedom of action. Check the equipment included with the receiver against table 1-1.

1.2 MOUNTING AND CABLING

1.2.1 General

Caution

The KWM-2/2A must be operated into a 50-ohm load with an swr not exceeding 2.0:1. Random-length wire antennas or light-bulb dummy loads cannot be used. Conventional half-wave dipoles and beam antennas may be used only at, or very near, their resonant frequency. Exceeding a vswr of 2.0:1 can destroy the components in the output stage of this transceiver.

For fixed station installation, refer to figure 1-1 or 1-3. For mobile installation, refer to figure 1-4. Traveling station interconnections are shown in figure 1-2.

1.2.2 Fixed Station Installation

1.2.2.1 Equipment Interconnection

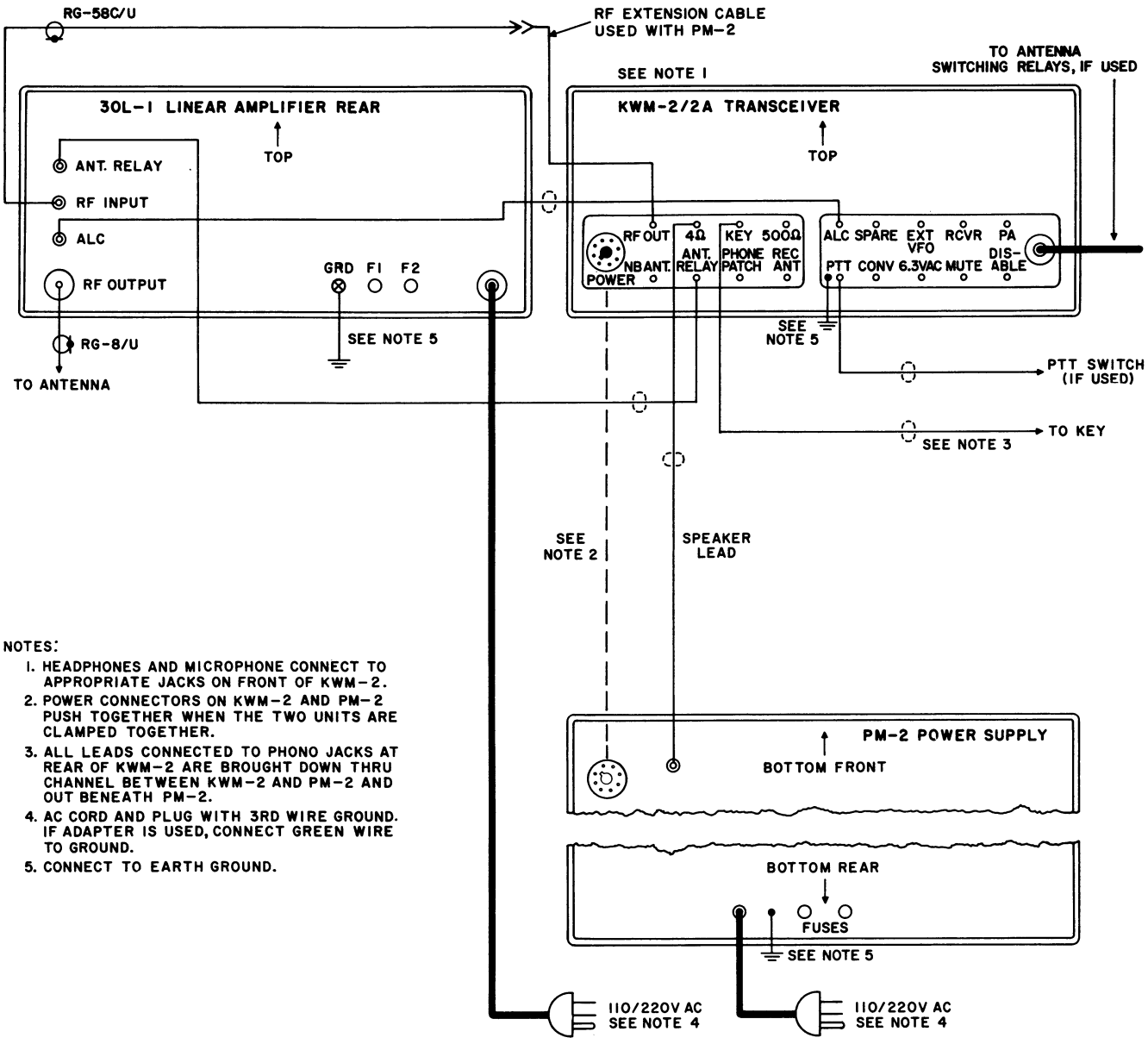
Connect associated equipment to the KWM-2 or KWM-2A as shown in figure 1-1 or 1-3. ANT. SW connector J25 supplies band information in the form of grounds for each 3.5-, 7-, 14-, 21-, and 28-MHz operating band. This system provides a convenient method of providing band information to automatically tuned antenna systems for both mobile and fixed station use.

1.2.2.2 Phone Patch Installation

The KWM-2/2A is set up for a high-impedance phone patch input (at the PHONE PATCH input J11) such as the phone patch supplied in a Collins 312B-4 and 312B-5 Station Control. A low-impedance phone patch, such as a Collins 189A-2, may be used by making the following change in the KWM-2/2A. Disconnect the two brown-white wires from pin F on terminal board E60 (figure 7-2). Using an ohmmeter, determine which of the two wires is connected

Table 1-1. Equipment Furnished With KWM-2/2A.

QUANTITY	DESCRIPTION	FUNCTION	PART NUMBER
1	Microphone plug	Microphone connection	361-0001-00
2	Phono plug	External connections	361-0062-00
1	Cable marker card	Cable callout	280-2946-00
1	Instruction book	Instructions	523-0176-000
1	Key SCH screw #10	Alignment	024-9710-00
1	Key SCH screw #8	Alignment	024-0019-00
1	Key SCH screw #6	Alignment	024-9730-00
1	Key SCH screw #4	Alignment	024-2900-00



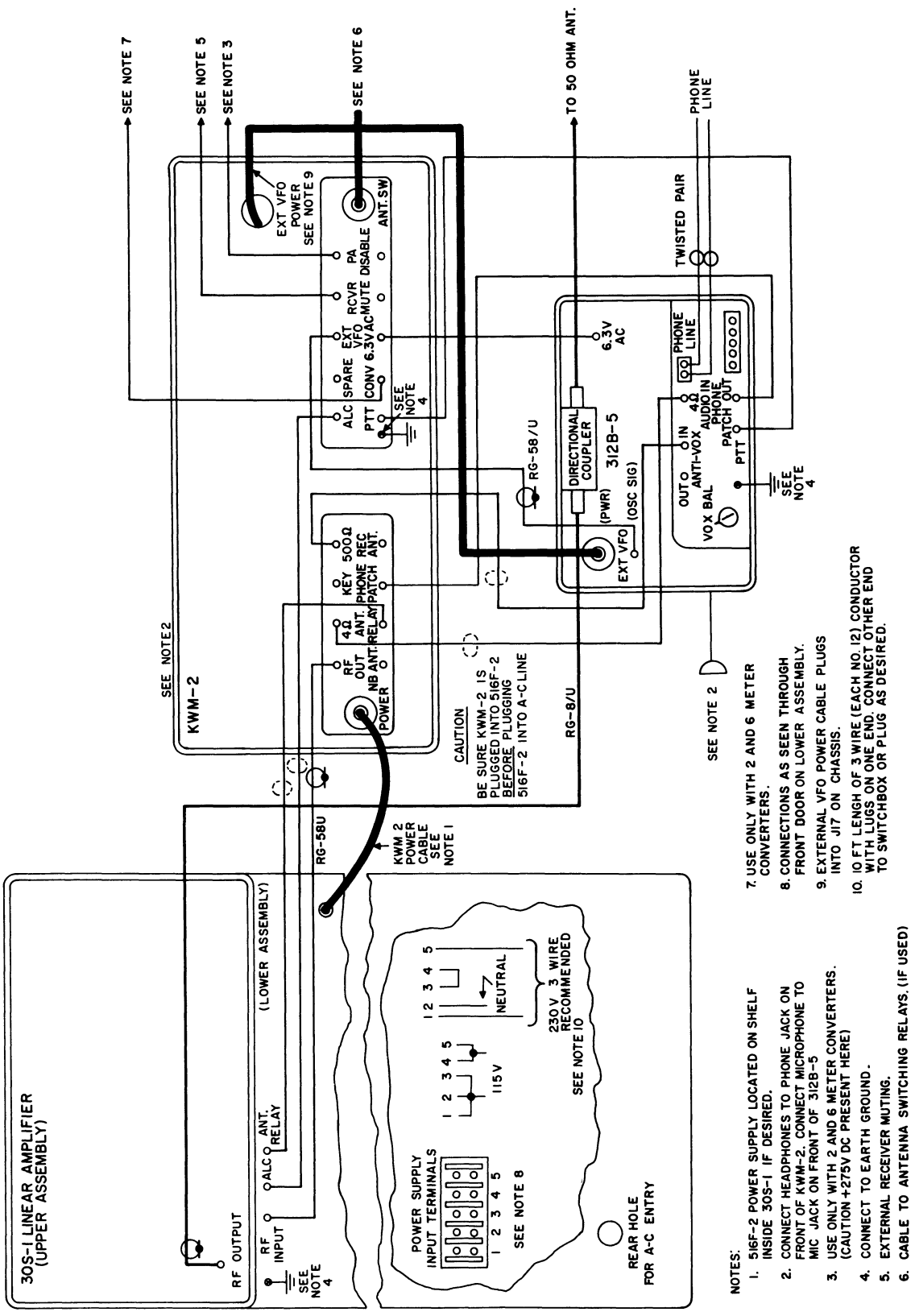
NOTES:
1. HEADPHONES AND MICROPHONE CONNECT TO APPROPRIATE JACKS ON FRONT OF KWM-2.
2. POWER CONNECTORS ON KWM-2 AND PM-2 PUSH TOGETHER WHEN THE TWO UNITS ARE CLAMPED TOGETHER.
3. ALL LEADS CONNECTED TO PHONO JACKS AT REAR OF KWM-2 ARE BROUGHT DOWN THRU CHANNEL BETWEEN KWM-2 AND PM-2 AND OUT BENEATH PM-2.
4. AC CORD AND PLUG WITH 3RD WIRE GROUND. IF ADAPTER IS USED, CONNECT GREEN WIRE TO GROUND.
5. CONNECT TO EARTH GROUND.

Traveling Station Interconnections With 30L-1
Figure 1-2

to PHONE PATCH jack J11. Connect this wire to pin 7 of V1. Resolder the other brown-white wire as originally connected.

1.2.3 Mobile Installation

a. Select a location in the car to install the transceiver. Allow clearance on all sides to assure adequate ventilation. If VOX operation is desired, leave enough space above the transceiver to allow opening the top cover for adjustment of VOX GAIN and ANTI-VOX GAIN controls, S-meter zero, etc. If a 351D-2 Mobile Mount is to be used, drill holes and fasten the adapter bracket to transmission hump with self-tapping screws. Attach the mount to the bracket. Swing the cantilever supports forward. Install the side slides in KWM-2/2A according to 351D-2 Mobile Mount Installation Instructions. Remove the plastic dust covers from the 351D-2 plugs, and store them in the



High-Power Station Interconnections
Figure 1-3

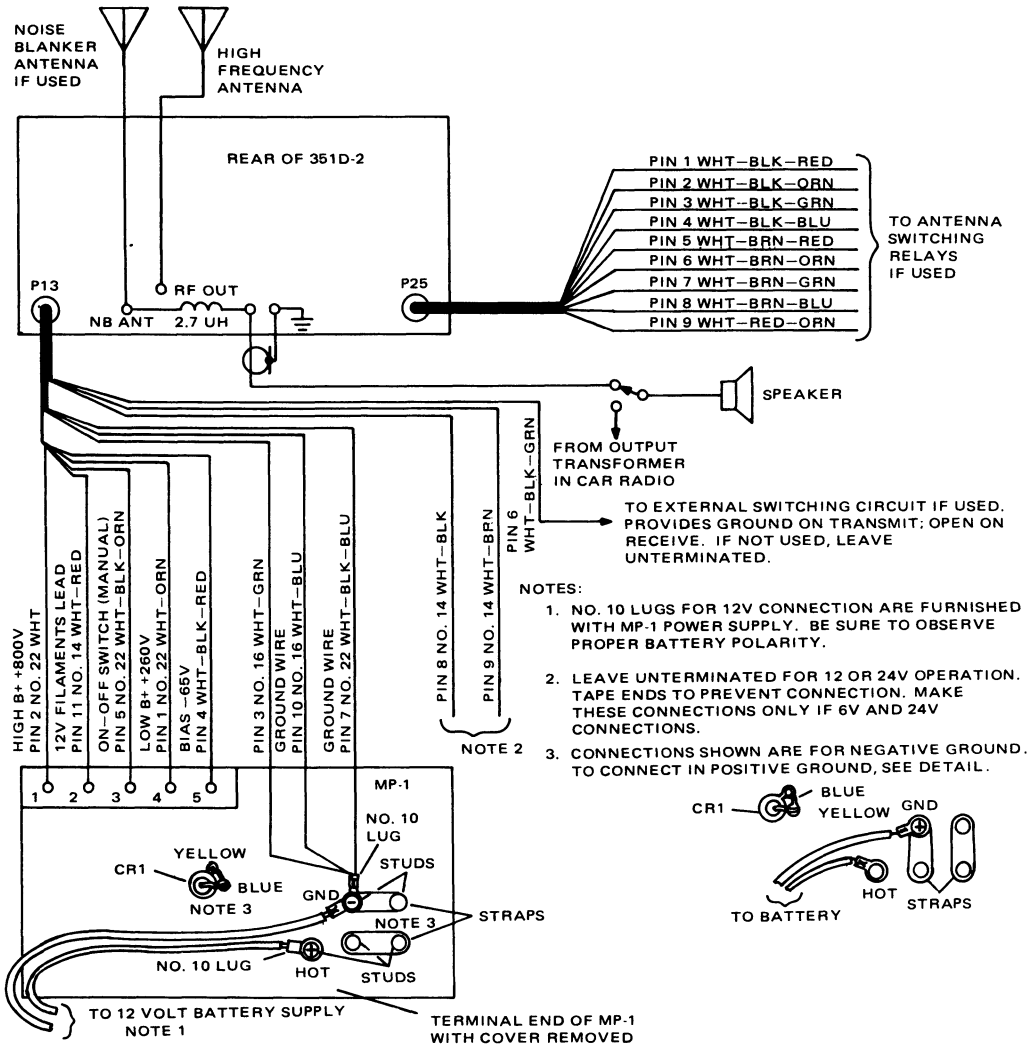
recesses of the mount. Slide the transceiver onto the mount and push back until the mount plugs have entered the transceiver sockets. Tighten the wing nuts on the sides of the transceiver. Refer to 351D-2 Instruction Sheet for mobile mount installation.

b. Select location in car for mounting MP-1 Power Supply. This location must be as clean and dry as possible. Location in luggage compartment, under seat, or on passenger side of fire wall is satisfactory. Mounting in the engine compartment is not recommended.

c. Install the power cable between the MP-1 and the KWM-2/2A. Connect power supply, speaker, and microphone as shown in figure 1-4.

Caution

Before making connections to the automobile electrical system, make sure



Mobile Station Interconnections
Figure 1-4

the primary circuits in the MP-1 are connected for proper ground polarity. Correct connections for either positive or negative ground systems are shown in figure 1-4.

The 440E-1 Power Cable may be used to connect the power supply to the transceiver when the 351D-2 is not used. Refer to table 5-2 for ordering information.

d. If operation is to be in boat or plane having a 115-volt, 400-Hz power supply, use 516F-2 Power Supply with C1 (0.05 μF) removed from across L1 in the filter circuit. If operation is to be in a boat or plane having a 24-volt dc power source, use a 516E-2 DC Power Supply with a 440E-1 cable to connect it to the transceiver. The 516F-2 can also be used with the 24-volt dc power source by using a dc-to-400-Hz converter capable of handling at least a 475-watt load (C1 should be removed from across L1 in the 516F-2 when using 400-Hz power for its operation).

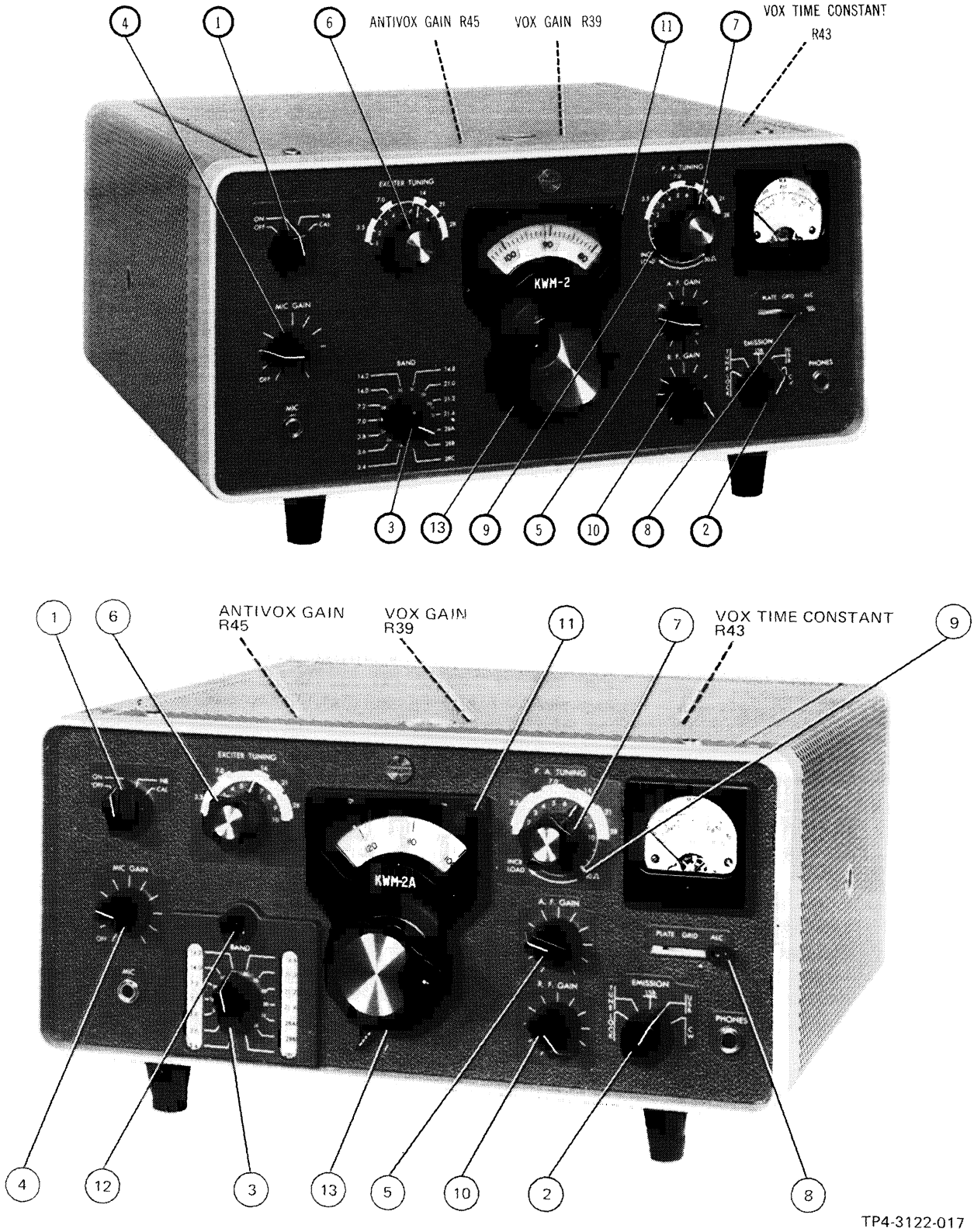
e. No mobile speaker is supplied. If desired, the speaker leads may be connected in parallel with the car radio voice coil terminals. If the car radio has a transistor output stage, connect the terminals of the car speaker as shown in figure 1-4. Break voice coil lead, and install a switch for transfer of speaker from car radio to KWM-2/2A. If installation is in boat or plane, use any good 4-ohm speaker and mount as desired.

For suppression of noise encountered in mobile operation, the following suggestions may be helpful.

1. Use resistor-type spark plugs.
2. Install coaxial bypass capacitors at ignition coil, generator, and voltage-regulator leads. Use bracket-mounted coaxial capacitors in the battery and generator leads to the voltage regulator and a 0.005- μF (or smaller) disc ceramic or mica capacitor from the field lead to ground. DO NOT use larger than 0.005-μF capacitor here unless a 4-ohm resistor is placed in series with it.
3. If capacitor bypasses are not satisfactory, remove them, and use chokes in series with the leads from field and armature terminals of generator. Place these chokes as close to the voltage regulator as possible.
4. For the field lead choke, wind 12 turns of #18 wire on a 1/4-inch diameter powdered-iron core. For the armature lead, wind 12 turns of #14 or larger wire on 1/4-inch diameter powdered-iron core.
5. Ground the rear end of the exhaust pipe to the car body with copper braid, using a radiator hose clamp to secure the braid to the tailpipe. General information concerning noise suppression is available in current handbooks.

1.3 INITIAL CHECKS (Refer to figure 2-1.)

Set MIC GAIN control (4) full counterclockwise until the switch clicks. Set OFF-ON-NB-CAL switch (1) to ON. Set meter switch (8) to PLATE and EMISSION switch (2) to LOCK. The transceiver is in receive condition during warmup, so the meter will read full scale until filaments have come to temperature. This is normal S-meter action. When the S-meter falls back to zero, the circuits will have switched to transmit condition, and the meter will indicate PA plate current. Read the no-signal PA plate current. It should be approximately 40 mA. If plate current is other than 40 mA, adjust BIAS ADJUST potentiometer on the power supply to set plate current to 40 mA. If the transceiver is to be used with a linear amplifier, set bias to produce 50-mA idling plate current.



KWM-2 and KWM-2A Transceivers, Operating Controls
Figure 2-1