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Colin Hinson
In the village of Blunham, Bedfordshire.

RESTRICTED

~~AN 16-40SCR718-3~~
12P5-3SCR718-2

HANDBOOK
MAINTENANCE INSTRUCTIONS

RADIO SETS SCR-718-A, SCR-718-AM, SCR-718-B, and SCR-718-C

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PUBLISHED UNDER AUTHORITY OF THE SECRETARY OF THE AIR FORCE
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RESTRICTED

Air Force-WPAFB-O-20 DEC 51 5,300

4 NOVEMBER 1944
REVISED 14 NOVEMBER 1951

LIST OF REVISED PAGES ISSUED

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DESTRUCTION OF ABANDONED MATERIEL IN THE COMBAT ZONE

In case it should become necessary to prevent the capture of this equipment and when ordered to do so, DESTROY IT SO THAT NO PART OF IT CAN BE SALVAGED, RECOGNIZED OR USED BY THE ENEMY. BURN ALL PAPERS AND BOOKS.

Means:—

1. Explosives, when provided.
2. Hammers, axes, sledges, machetes, or whatever heavy object is readily available.
3. Burning by means of incendiaries such as gasoline, oil, paper, or wood.
4. Grenades and shots from available arms.
5. Burying all debris or disposing of it in streams or other bodies of water, where possible and when time permits.

Procedure:—

1. Obliterate all identifying marks. Destroy nameplates and circuit labels.
2. Demolish all panels, castings, switch and instrument-boards.
3. Destroy all controls, switches, relays, connections, and meters.
4. Rip out all wiring and cut interconnections of electrical equipment. Smash gas, oil, and water-cooling systems in gas-engine generators, etc.
5. Smash every electrical or mechanical part, whether rotating, moving, or fixed.
6. Break up all operating instruments such as keys, phones, microphones, etc.
7. Destroy all classes of carrying cases, straps, containers, etc.
8. Bury or scatter all debris.

DESTROY EVERYTHING!

★

UNSATISFACTORY REPORT

For U. S. Army Air Force Personnel:

In the event of malfunctioning, unsatisfactory design, or unsatisfactory installation of any of the component units of this equipment, or if the material contained in this book is considered inadequate or erroneous, an Unsatisfactory Report, AAF Form No. 54, or a report in similar form, shall be submitted in accordance with the provisions of Army Air Force Regulation No. 15-54, listing:

1. Station and organization.
2. Nameplate data (type number or complete nomenclature if nameplate is not attached to the equipment).
3. Date and nature of failure.
4. Radio model and serial number.
5. Remedy used or proposed to prevent recurrence.
6. Handbook errors or inadequacies, if applicable.

For U. S. Navy Personnel:

Report of failure of any part of this equipment during its guaranteed life shall be made on Form N. Aer. 4112, "Report of Unsatisfactory or Defective Material," or a report in similar form, and forwarded in accordance with the latest instructions of the Bureau of Aeronautics. In addition to other distribution required, one copy shall be furnished to the inspector of Naval Materiel (location to be specified) and the Bureau of Ships. Such reports of failure shall include:

1. Reporting activity.
2. Nameplate data.
3. Date placed in service.
4. Part which failed.
5. Nature and cause of failure.
6. Replacement needed (yes—no).
7. Remedy used or proposed to prevent recurrence.

For British Personnel:

Form 1022 procedure shall be used when reporting failure of radio equipment.

SAFETY NOTICE

THIS EQUIPMENT EMPLOYS HIGH VOLTAGES WHICH ARE DANGEROUS AND MAY BE FATAL IF CONTACTED BY OPERATING PERSONNEL. EXTREME CAUTION SHOULD BE EXERCISED WHEN WORKING WITH THE EQUIPMENT. TURN OFF POWER BEFORE MAKING REPAIRS.

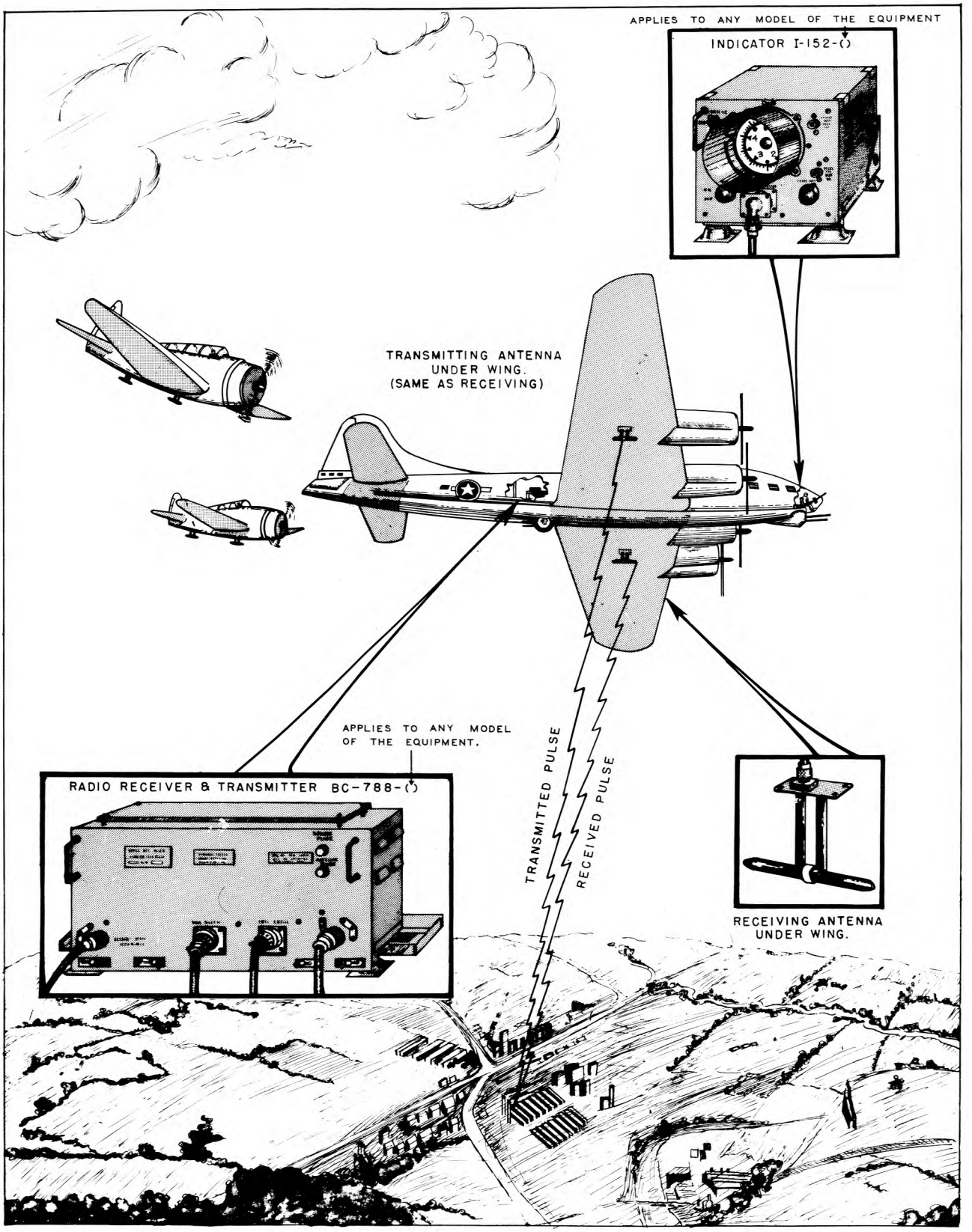

Figure 1-1. Radio Set SCR-718-(*)

SECTION I

GENERAL DESCRIPTION

1. GENERAL

* *a.* Radio Set SCR-718-(*) (high altitude radio altimeter) is complete equipment for installation in aircraft to determine height above terrain. (See fig. 1-1.) The nominal operating range of the equipment is 0 to 40,000 feet.

b. The necessary voltages, other than those of the primary power source, are generated with the radio set. The primary power source should be an aircraft a-c supply of 115 volts (± 5%). Provision has been made for operation of the equipment on a supply voltage of 80 volts when the proper connection and fuse changes have been made according to instructions in section II, paragraph 2*c*. Two fuses FU-27, separately packed, are supplied with the equipment for use when the radio set is operated on an 80-volt power source. The nominal frequency rating of the power supply should be between 400 and 2400 cps but its actual frequency may vary between 380 and 2600 cps. The power consumption of the radio set is 135 watts.

2. EQUIPMENT SUPPLIED.

The equipment supplied is listed in the following table.

Quantity	*Description*	*Army Type Designation*	*Navy Type Designation*	*Dimensions (inches)*	*Total Weight (pounds)*	*Numerical Series of Reference Symbols*
4	ADAPTER: Selectar, type APT-5, marked CSX-49192; for antenna connectors (used only when necessary)	M-359-A		1 5/16 x 1 5/16 x 11/16 OD	0.31	
2	ANTENNA	★AT-4/ARN-1	★AT-4/ARN-1	11 9/16 x 7 9/16 x 1 overall base plate 3 x 1 23/32	1.4*	
60 Feet†	RADIO FREQUENCY CABLE: antenna transmission line (supplied in bulk)	RG-8/U‡ (WC-549)	RG-8/U	0.415 OD	6.4	
50 feet	CABLE CONDUCTOR: for connections from receiver and transmitter to indicator (supplied in bulk)	MI-20 ▲		0.275 OD	2.4	
2	FUSE: (extra; for use when the radio set is operated on 80 volts; packed in separate containers)	FU-27#		1 1/4 lg x 1/4 OD	.05	
	INDICATOR	I-152-A		6 17/32 x 6 1/2 x 12 5/8 lg, overall	9.15	200

*Applies to Radio Sets SCR-718-A, SCR-718-AM, SCR-718-B or SCR-718-C

Quantity	*Description*	*Army Type Designation*	*Navy Type Designation*	*Dimensions (inches)*	*Total Weight (pounds)*	*Numerical Series of Reference Symbols*
	INDICATOR	I-152-AM		$6\frac{17}{32}$ x $6\frac{1}{2}$ x $12\frac{5}{8}$ lg, overall	9.15	200
1	INDICATOR	I-152-B		$6\frac{17}{32}$ x $6\frac{1}{2}$ x $12\frac{5}{8}$ lg, overall	9.7	200
	OR					
1	INDICATOR	I-152-C		$6\frac{17}{32}$ x $6\frac{1}{2}$ x $12\frac{5}{8}$ lg, overall	9.7	200
1	MOUNTING	FT-445-A		$6\frac{13}{16}$ x $5\frac{7}{8}$ x $12\frac{3}{8}$ lg, overall	1.65	
1	MOUNTING BASE	★MT-14/ARN-1	MT-14/ARN-1	$7\frac{5}{8}$ x $2\frac{1}{4}$ x $18\frac{1}{16}$ lg,	1.3	
1	PLUG with Cable Adapter AN3057-8 for receiver and transmitter interconnecting cord socket.	AN3106-16S-1P	AN3106-16S-1P	$2\frac{1}{8}$ x $1\frac{3}{16}$ OD	0.10	
1	PLUG with cable adapter AN3057-8 for indicator interconnecting cord socket	AN3108-16S-1S	AN3108-16S-1S	$2\frac{1}{2}$ x 2 x $1\frac{3}{16}$ OD	0.13	
1	PLUG with Cable Adapter AN3057-8 for receiver and transmitter "POWER SUPPLY" socket.	AN3106-12S-3S (PL-175)	AN3106-12S-3S	$2\frac{1}{16}$ x $1\frac{5}{16}$ OD	0.06	
4	PLUG for connections to Antenna Assembly ★AT-4/ARN-1	PL-259-A (or PL-259)	49190	$1\frac{9}{16}$ x $\frac{23}{32}$ OD	0.2	
1	RADIO RECEIVER AND TRANSMITTER with tubes and Crystal Unit DC-22-A	BC-788-A		$8\frac{11}{16}$ x $7\frac{25}{32}$ x $15\frac{1}{2}$ lg	9.9	100
	OR					
1	RADIO RECEIVER AND TRANSMITTER with tubes and Crystal Unit DC 22 A	BC-788-AM		$8\frac{11}{16}$ x $7\frac{25}{32}$ x $15\frac{1}{2}$ lg	9.9	100
	OR					
1	RADIO RECEIVER AND TRANSMITTER with tubes and Crystal Unit DC-22 A	BC-788-B		$8\frac{11}{16}$ x $7\frac{25}{32}$ x $15\frac{1}{2}$ lg	12.1	100
	OR					
1	RADIO RECEIVER AND TRANSMITTER with tubes and Crystal Unit DC-22-A	BC 788-C		$8\frac{11}{16}$ x $7\frac{25}{32}$ x $15\frac{1}{2}$ lg	10.2	100
1	VISOR	M-387		$2\frac{3}{4}$ x $3\frac{5}{8}$ OD	0.15	

*Estimated weight and size of a suitable type of conductor.
†Actual cable length will depend on installation requirements. The length stated here is the greatest that should be used in any installation.
‡Radio Frequency Cable RF-31 U (Cable WC-549-A or subsequent production) may be used in place of Radio Frequency Cable RG-8/U.
▲Radio Frequency Cable RG-49 U may be used in place of Cable Conductor MI-20
A supply voltage of 80 volts can be used providing the proper connections and fuse changes are made.

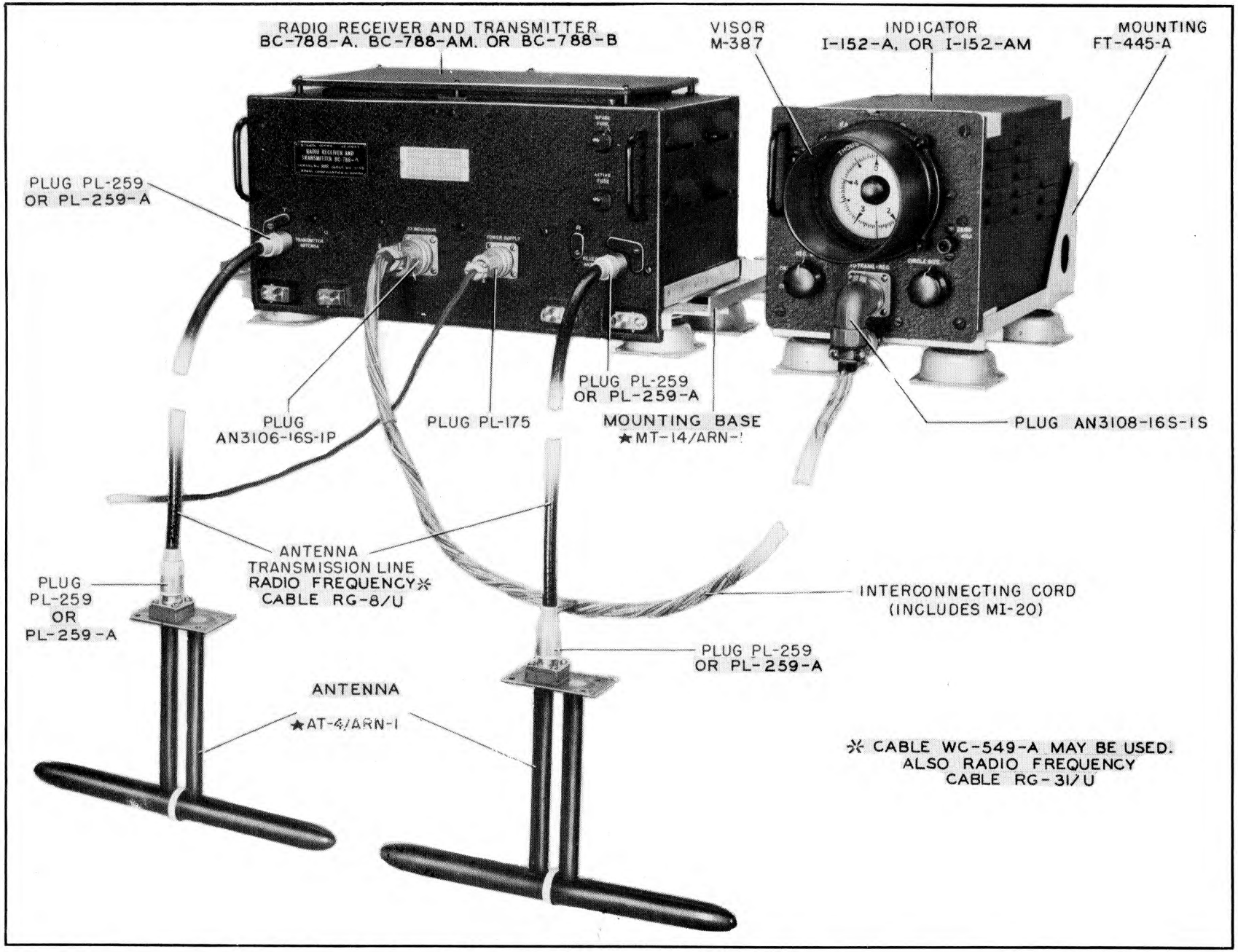

Figure 1-2. Radio Set SCR-718-(*) — Components

3. EQUIPMENT REQUIRED BUT NOT SUPPLIED.

Equipment required for operation but not supplied with the radio set is listed in the following table.

Quantity	*Description*	*Diameter (inches)*	*Weight (pounds)*
200 feet*	Cable conductor - unshielded for connections from receiver and transmitter to indicator.	0.093	1.4†
50 feet*	Cable conductor - shielded- for connections from receiver and transmitter to indicator.	0.120	0.7†

*Actual cable length will depend on installation requirements. The length stated here is the maximum to be used in any installation.
†Estimated weight of a suitable type of conductor.

4. DESCRIPTION OF EQUIPMENT.*

a. RADIO RECEIVER AND TRANSMITTER BC-788-(*). (See figs, *1-2 and 1-3.)*—The unit is housed in a metal cabinet suitable for mounting in a horizontal position on Mounting Base MT-14/ARN-1 which protects the unit from shock and vibration. Two fuses, (Littelfuse No. 1041), one active and one spare, are accessible from the front panel. All controls are mounted on the front panel. Crystal Unit DC-22-A is used inside the unit.

b. INDICATOR I-152-(*).—The indicator indicates aircraft height above terrain. (See figs. 1-4,

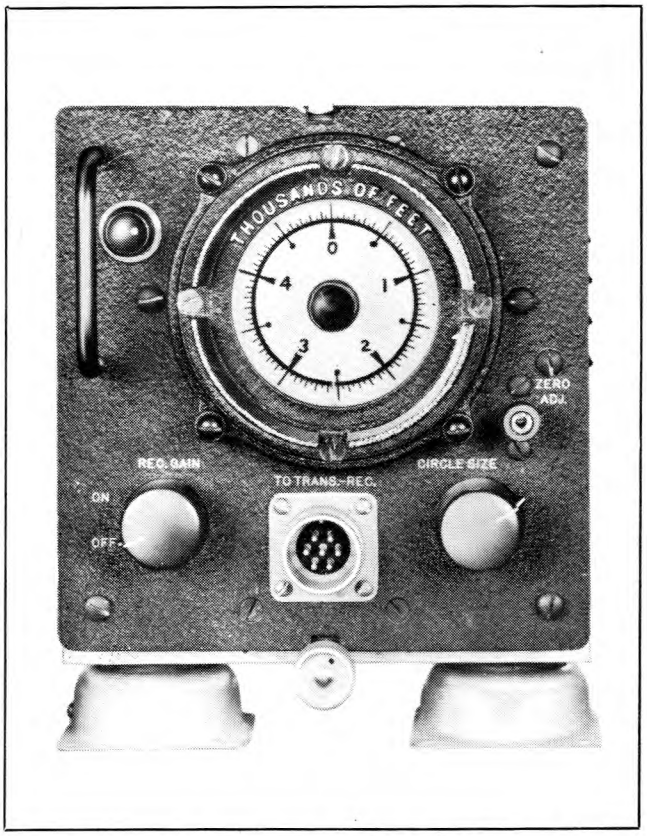

Figure 1-4. Indicator I-152-A or I-152-AM

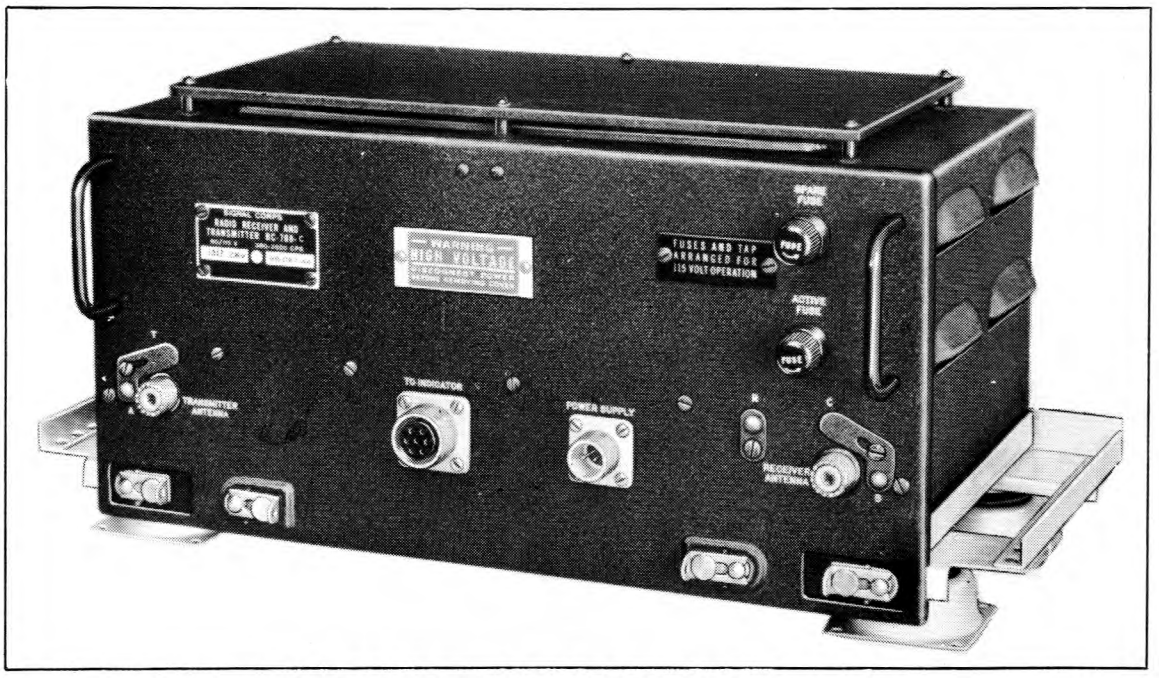

Figure 1-3. Radio Receiver and Transmitter BC-788-(*)

*On the last 2420 equipments manufactured by the RCA Victor Division, and on all those manufactured by the Stewart Warner Corporation on Order No. 98-DAY-44, Radio Receiver and Transmitter BC-788-C has "M_1" stencilled in red under the nameplate on the front panel. This modification symbol refers to the changes in accordance with the footnote in paragraph 4, section I. These changes were incorporated in order to reduce the variations in altimeter performance caused by different characteristics of JAN-6AG5 tubes used in the timing oscillator and clipper circuits.

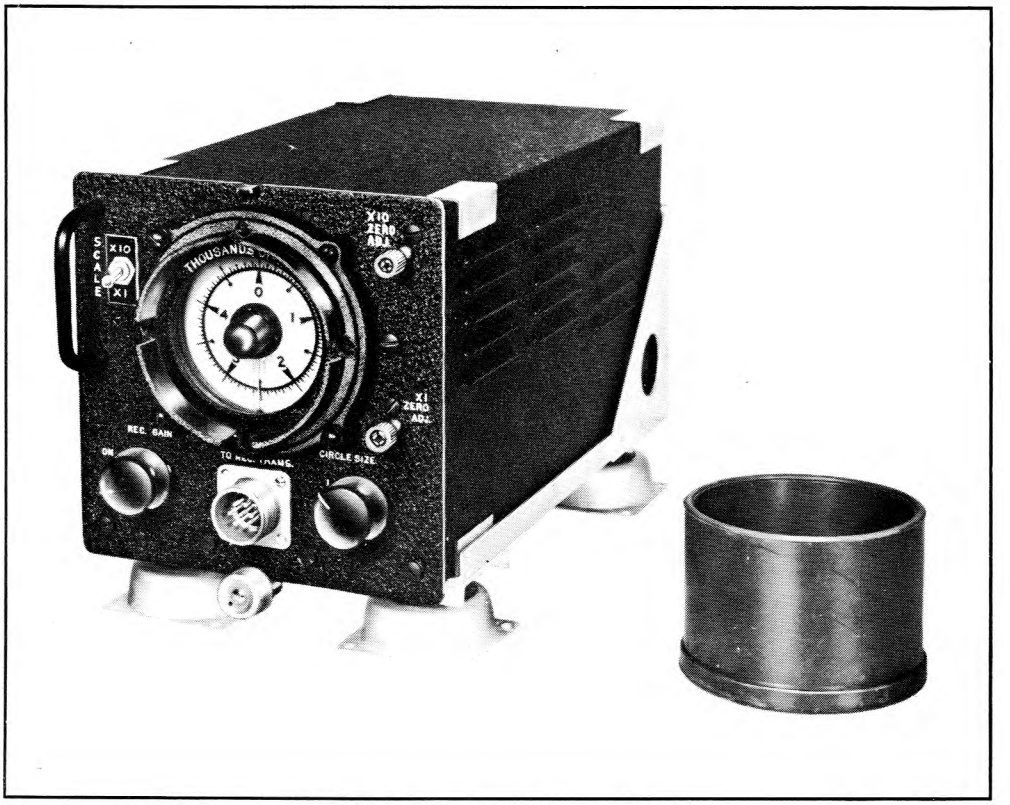

Figure 1-5A. Indicator I-152-B

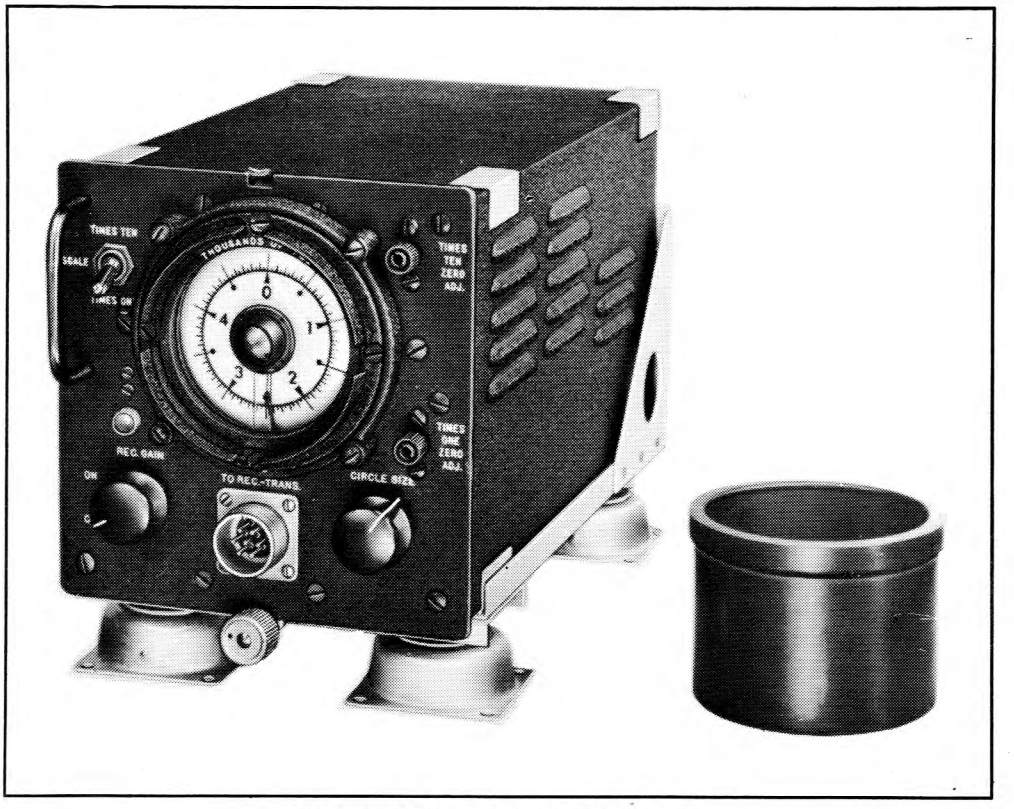

Figure 1-5B. Indicator I-152-C

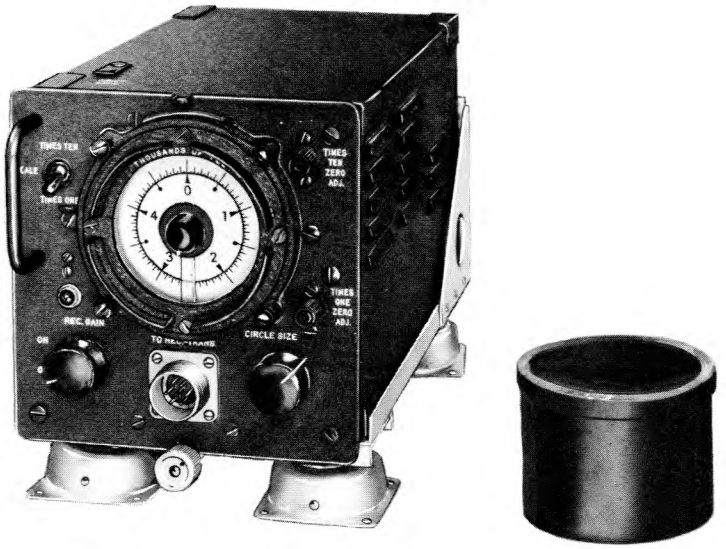

Figure 1-5C. Indicator I-152-C

1-5A and 1-5B.) It is housed in a metal cabinet suitable for mounting in either a horizontal or vertical position on Mounting FT-445-A which protects the unit from shock and vibration. Visor M-387 fits upon the front of the indicator and increases the clarity of indication.

(1) INDICATOR I-152-A or I-152-AM.—These indicators contain a cathode-ray tube over the face of which is fitted a scale graduated from 0 to 5000 feet. When the indicator is operated, a green trace in the form of a circle with two lobes upon it appears next to the scale. One lobe appears at 0 and the other at a point corresponding to aircraft height above terrain. Height is read from the scale in accordance with the instructions in section III, paragraph 3.

(2) INDICATOR I-152-B or I-152-C.—These indicators are similar to Indicators I-152-A and I-152-AM but provisions are made to change the scale by a switch from 0 to 5000 feet to 0 to 50,000 feet.

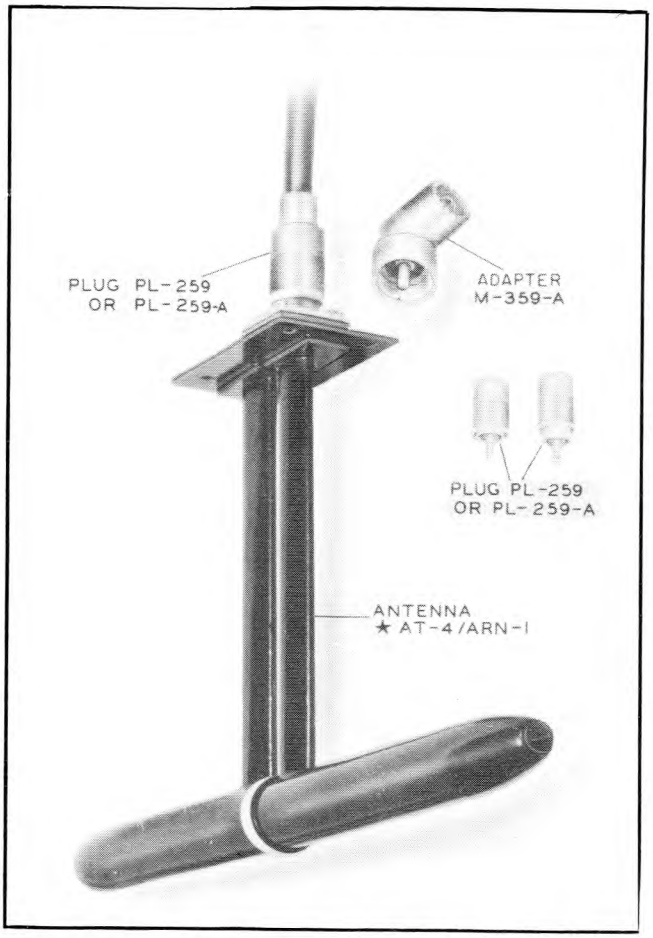

Figure 1-6. Antenna ★AT-4/ARN-1 and Plug

c. ANTENNA SYSTEM.—Two Antenna ★AT-4/ARN-1 are provided for attachment to a metal surface on the underside of the wings, fuselage or horizontal stabilizer of the aircraft. Each antenna is a dipole antenna of approximately one-half wave length. A mounting bracket places the dipole approximately one-quarter wave length from the body of the aircraft. Input impedance is 50 ohms. (See fig. 1-6.)

d. INTERCONNECTING AND POWER CORDS.—An interconnecting cord comprising six conductors with an AN3106-16S-1P plug and AN 3057-8 cable clamp at one end and with an AN3108-16S-1S plug and AN3057-8 cable clamp at the other end is used between Indicator I-152-(*) and Radio Receiver and Transmitter BC-788-(*). Five of the conductors, four unshielded and one shielded, are not furnished with Radio Set SCR-718-(*). The sixth conductor, cable MI-20, is furnished with the radio set, but is supplied in bulk and must be cut to length. Plug PL-175 and Cable Clamp AN3057-4 are used at the "POWER INPUT" socket on Radio Receiver and Transmitter BC-788-(*). No leads for connection to the power supply are furnished. (See fig. 1-7.)

5. TUBE COMPLEMENT.

a. The tube complement of the equipment is listed below:

Radio Receiver and Transmitter		*Indicator*	
Quantity	*Tube*	*Quantity*	*Tube*
3	JAN-6J6	1	JAN-2X2/879
9	JAN-6AG5	3	JAN-6AG5
1	JAN-5Y3GT/G	1	3DPI
1	JAN-6L6		

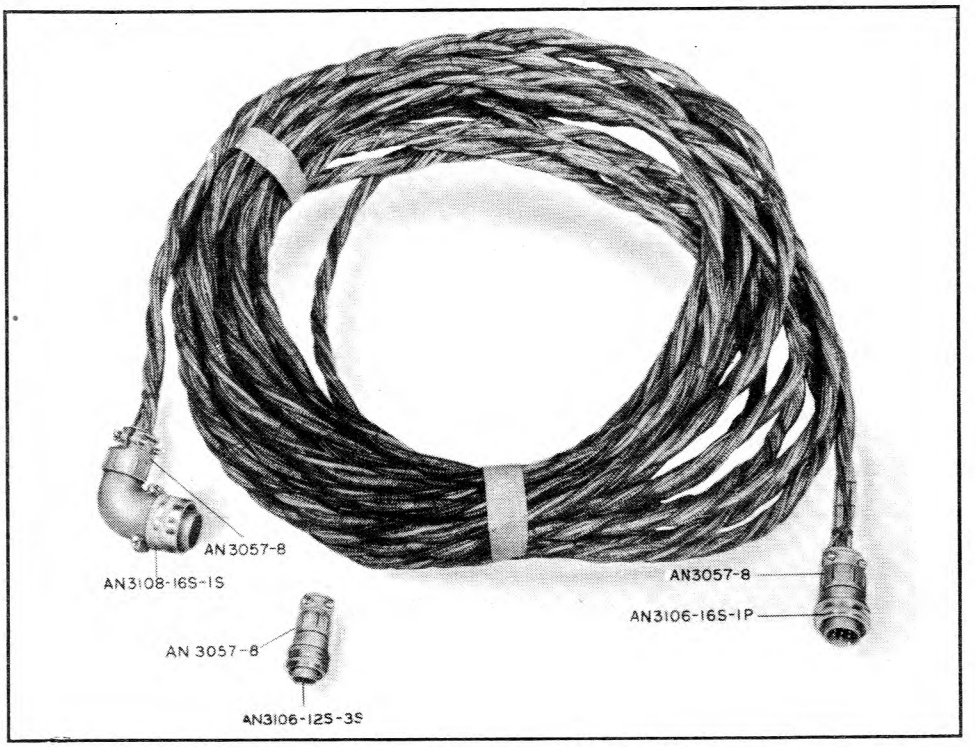

Figure 1-7. Interconnecting Cords and Plug

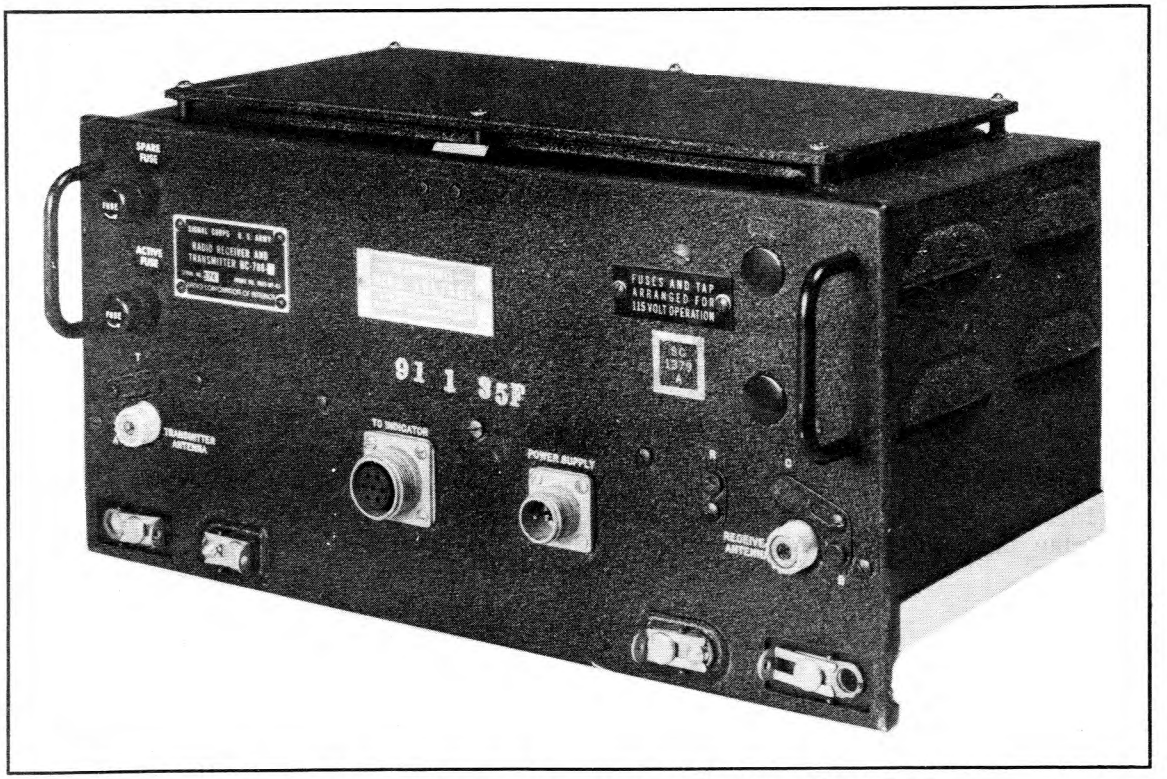

Figure 1-8. Radio Receiver and Transmitter BC-788-B

SECTION II
INSTALLATION AND ADJUSTMENT

1. INITIAL PROCEDURE.

a. UNPACKING. — Carefully remove all components from their packing, and check them against the equipment listed in Section I, Paragraph 2.

b. EXAMINATION. — Examine the components for mechanical damage.

c. TUBE CHECK.—Check that the tubes and crystal fit their sockets firmly.

d. PRE-INSTALLATION BENCH TEST.

(1) Connect the two components, receiver and transmitter, and indicator, using the proper cables as illustrated in figure 8-3, and plug in on power source. The antennas are not required. Turn on the power and check the lighting of the pilot lamp. Allow a five minute warm-up period and then proceed with the following tests.

(a) See that the green circle trace on the indicator dial (cathode ray indicator) is circular in shape.

(b) Adjust the "TIMES ONE ZERO ADJ." control and the "TIMES TEN ZERO ADJ." control in accordance with instructions in Section V, Paragraph 10 *a* to *e* inclusive.

(c) Measure the power output and frequency of the transmitter by means of Test Set TS-23/APN.

(d) Measure the sensitivity of the receiver by means of Delay Line and Attenuator Test Set TS-10/APN.

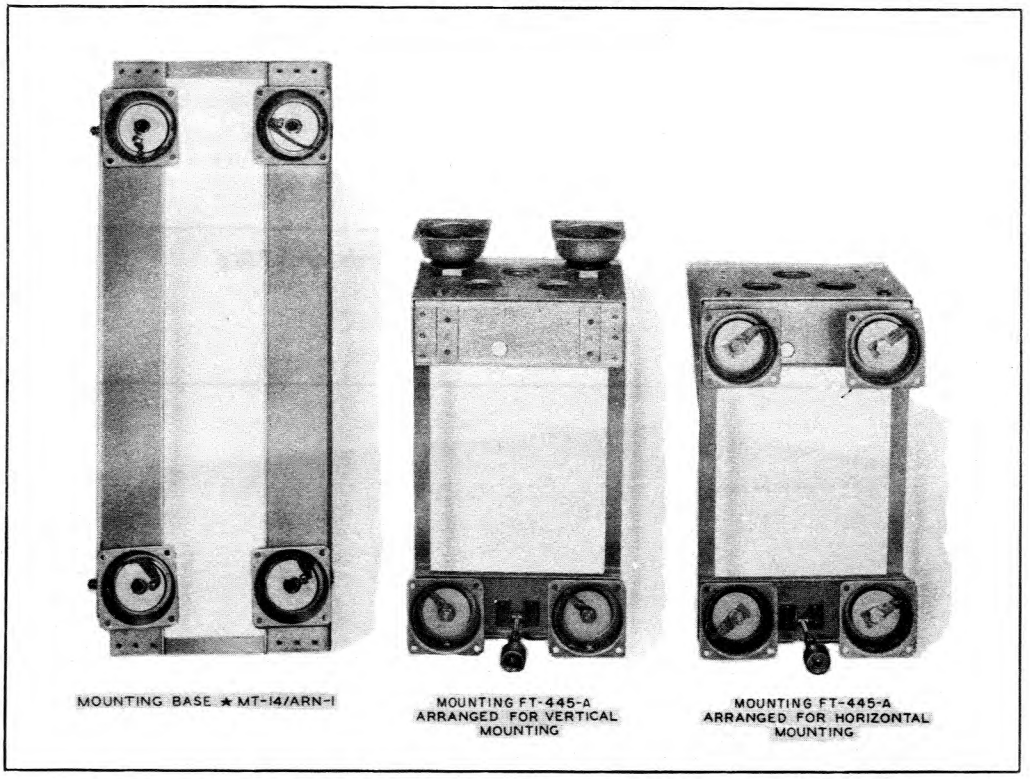

Figure 2-1. Mounting Base MT-14/ARN-1 and Mounting FT-445-A

2. INSTALLATION.

(See figure 2-1.)

CAUTION

If Indicator I-152-B or I-152-C is installed with an unmodified Radio Receiver and Transmitter BC-788-A or BC-788-AM, make sure that the scale switch is in the "XI" position. Wrap a length of safety wire around the screw below and to the right of the switch to prevent accidental throwing of the switch to the "X10" position.

a. RADIO RECEIVER AND TRANSMITTER BC-788-(*).

(1) GENERAL.—Mount the radio receiver and transmitter together or separately. Provide complete freedom of motion on the shock mounts to allow over ½-inch movement in lateral directions without striking fixed objects. Allow connections and accessibility to controls. Proper clearances are indicated on figure 8-6. See figure 8-3 for interconnections needed between the units and to the antennas.

(2) MOUNTING INSTRUCTIONS. — The radio receiver and transmitter is designed for installation in a horizontal position on Mounting Base ★MT-14/ARN-1. To mount the unit, proceed as follows:

(a) Drill 16 holes in the mounting surface according to the plan shown in figure 8-6.

(b) Fasten each of the four shock mounts on the mounting base to the aircraft structure by means of four No. 8-32 plated machine screws, flat washers, and elastic stop nuts (not supplied with the equipment).

(c) If the radio set is to be operated on 80 volts, make the following changes:

1. Disconnect at pin 3 of transformer T101 the lead which is connected to fuse F101.

2. Solder the disconnected lead to pin 2 of transformer T101.

3. Remove the 1.5-ampere active and spare fuses (Littelfuse No. 1041). Replace them with two 2-ampere Fuses FU-27 (Littelfuse No. 1042).

4. If the nameplate on the front panel of the receiver and transmitter reads "Fuses and tap arranged for 115-volt operation", turn it over so that it reads "Fuses and tap arranged for 80-volt operation".

(*d*) Slide the radio receiver and transmitter into place on the mounting base so that the centering pins on the back of the base are pushed into the holes in the receiver and transmitter case.

(*e*) Push the snap slides into position to hold the unit securely and fasten with safety wire.

b. INDICATOR I-152-(*).

(1) GENERAL. — Since the controls required for operating the radio set are on the indicator panel, mount the indicator within convenient reach and view of the operator. If possible, locate the unit so that a serviceman can clearly see its front panel either directly or by means of a mirror while making adjustments on the receiver and transmitter. The indicator is designed for installation on Mounting FT-445-A in any position between horizontal and vertical. In order that it may be viewed easily when installed vertically, it is built to fit upon the mounting in either of two positions: in one position, the bottom fits against the mounting; in the other, the top fits against the mounting.

(2) MOUNTING INSTRUCTIONS.

(*a*) Determine whether the indicator is to be installed in an essentially horizontal or vertical position. See figure 2-1 to find the corresponding proper position of the four shock mounts in the indicator mounting.

(*b*) Remove all shock mounts not in the proper position for the type of installation desired. To remove a shock mount, unscrew the two flat-head screws holding its top to the mounting frame.

(*c*) Fasten the shock mounts just removed to the mounting frame in the proper position for the type of installation desired.

(*d*) Drill 16 holes in the mounting surface according to the plan in figure 8-5.

(*e*) Fasten each of the four shock mounts on the mounting to the aircraft structure by means of four #8-32 plated machine screws, flat washers, and elastic stop nuts (not supplied with the radio set).

(*f*) Secure the eight flat-head screws which hold the four shock mounts to the mounting frame by peening metal from the frame into the slots in the screw heads.

Note

Do not secure these screws before this step because, in some inaccessible installations, it may be necessary to loosen the screws or remove the mounts from the frame in order to permit fastening them to the mounting surface.

(*g*) Place the indicator upon the mounting in the most convenient position for the operator. Slide it into place so that the centering pins on the mounting are pushed into the holes in the back of the indicator case.

(*h*) Pull the knurled head clamping screw up over the clamping bracket on the front panel of the indicator and tighten the screw and fasten with safety wire.

c. CABLING

Note

If the radio set is to be used in tropical climate, waterproof the plugs and sockets, except *UHF plugs and sockets* with Dow-Corning compound as directed in AAF Technical Order 08-1-10.

(1) INTERCONNECTING CORD. — The interconnection between the radio receiver and transmitter and the indicator is shown in figure 1-2. This interconnecting cord comprises one Plug AN3106-16S-1P with Cable Adapter AN3057-8, one Plug AN3108-16S-1S with Cable Adapter AN3057-8, and six conductors. Four of the conductors are unshielded Wire AN-20 in accordance with Army-Navy Aeronautical Specification AN-J-C-48a, Cable, Electric, Low Tention, Aircraft. One of the conductors is shielded Wire AN-20 in accordance with Army Specification 95-27273G, Cable, Shielded, Power and Lighting (for Aircraft). The remaining conductor is coaxial Cable MI-20. Cable MI-20 (Radio Frequency Cable RG-59/U may be used) is furnished in bulk, Signal Corps Stock No. 1BK-3016-8.

Cut the six conductors to the lengths required and assemble the interconnecting cord as shown in figure 8-2. Install the cord, allowing sufficient slack at the receiver and transmitter and at the indicator to permit free movement of the units on their mountings, and convenient disassembly from the mountings and ease of field testing and servicing.

Note

Ground connections are important to promote safety and to minimize interference with other radio equipment. Be sure that a tight mechanical and good electrical bond is made to the aircraft structure at each of the four shock mounts on the mounting for each unit. This will ground each unit through its locking devices and the grounding straps provided within the shock mounts.

(2) POWER CORD. — The cord from the radio receiver and transmitter to the primary power source is shown in figure 1-7. It comprises Plug PL-175 with Cable Adapter AN3057-4, and two conductors. Each conductor is unshielded Wire AN-20. Cut, assemble, and install the power cord according to the directions for the interconnecting cord in paragraph 2*c* (1) this section.

(3) ANTENNA CABLES. — The cable connections between the radio transmitter and receiver and each Antenna assembly *AT-4 ARN-1 are shown in figure 8-3.

(*a*) Cut two lengths of Radio Frequency Cable RG-8 U, as required for transmitting and receiving antenna cables. The total of these two lengths should not exceed fifty feet. Make sure that the cable which will be normally used to connect the receiving antenna cable to the "RECEIVER ANTENNA" socket on the receiver and transmitter unit is long enough to connect to the "TRANSMITTER ANTENNA" socket for test purposes.

(*b*) Attach Plug PL-259 or Plug PL-259-A to each end of the two cables, as shown in figure 8-8.

(*c*) Attach a receiver cable marker tag to the cable which will be used to connect one antenna to the "RECEIVER ANTENNA" socket. Mark the cable footage after the words "REC. CABLE LENGTH". Similarly, attach a transmitter cable marker tag to the cable which will be used to connect the other antenna to the "TRANSMITTER ANTENNA" socket and mark the corresponding cable footage following the words "TRANS. CABLE LENGTH". Place the tags at the ends of the cables.

IMPORTANT

The receiver and transmitter transmission lines *must not* be run parallel, taped or laced together; otherwise signal "feed through" will cause a large zero pulse which makes reading the indicator difficult at low altitudes.

(*d*) Install the cables as shown in figures 8-3 and 8-7. When it is necessary to use a right-angle connector to facilitate installation, insert Adapter M-359-A (selector type APT-5 marked DSX-49194) between any plug on the cable and the corresponding socket. Allow sufficient slack at the receiver and transmitter to permit free movement on its mounting and ease of field testing and servicing. Do not bend Radio Frequency Cable RG-8 U to a radius smaller than five inches.

CAUTION

When Radio Set *AN/ARN-1 or Radio Set *AN/APN-1 is used with this antenna installation, Adapter M-359-A (marked CSX-49192) must be installed at the transmitting antenna socket on the receiver and transmitter. If desirable, it may be installed at the receiving antenna socket on the receiver and transmitter unit. However, when using Radio Set SCR-718-A, SCR-718-AM, SCR-718-B or SCR-718-C with this antenna, install the adapter only when necessary.

(*e*) Check to be sure that the cable normally connected to the "RECEIVER ANTENNA" socket can also be connected to the "TRANSMITTER ANTENNA" socket.

d. ANTENNA INSTALLATION.

Note

Satisfactory performance of the radio set is dependent upon correct arrangement and installation of the antennas. Determination of the best antenna arrangement for a specific application involves technical considerations which are beyond the scope of this handbook. In every application which involves a new aircraft mock-up, the antenna layout should be approved by a competent technician who is thoroughly familiar with the basic principles involved.

(1) GENERAL.

(*a*) The main objectives of the antenna installation are:

1. To transmit signals downward to the earth.

2. To receive signals reflected upward from the earth.

3. To have the antennas as close to each other as possible, but at the same time to prevent the transfer of "feed-through" signal directly from the transmitting to the receiving antenna.

4. To have the received signal vary as little as possible with the position or attitude of the aircraft when executing a reasonable dive, bank, or climb.

(*b*) The transmitting and receiving antennas (see figure 1-6) are identical in mechanical and electrical characteristics. Unless there is a possibility of mutual interference with other radio equipment in the aircraft (refer to par. 2*d* (2) (*c*) this section), either antenna may be used for transmitting or receiving without affecting the operation of the altimeter in any way.

(*c*) Locate the antenna so that there are no obstructions such as struts, wires, tubes, etc. within 2 feet. In addition, no obstruction should exist in the shortest direct reflection path between the transmitting and receiving antenna (refer to par. 2*d* (4) (*a*), this section) at any flying position at which altimeter operation is required; the shielding effect of such obstructions may interrupt the transmitted signal.

(*d*) Mount each antenna upon a metal reflector at least 2 feet square. The reflector should be approximately flat, flush with and parallel to the base plate (mounting plate) of the antenna. The outer metal surface of a modern aircraft meets this requirement. If the aircraft surface is not of metal, install a separate thin metal plate centrally with respect to each antenna. A fabric aircraft surface may be metallized by a suitable metal spray. Thoroughly clean the reflector where the antenna base plate is fastened to insure good electrical contact between the reflector and each antenna.

(2) ANTENNA ARRANGEMENTS. — The following antenna arrangements are alternative methods. Either is satisfactory.

(*a*) "IN LINE" ANTENNA ARRANGEMENTS. — Mount the two antennas on the under surface of the fuselage with the horizontal portions of the antennas aligned on a common axis parallel to the axis of the fuselage. (See fig. 2-2) Since the signal is transmitted and received efficiently only from the sides and not the ends of the antennas, this arrangement prevents transfer of a direct "feed-through" signal between the antennas. Place the antennas at least 7 feet and, if possible, not more than 14 feet apart. Make sure that there is no nearby object (such as a torpedo, bomb, or float) so located that any appreciable signal will be reflected by the object from the side of the transmitting antenna to the side of the receiving antenna.

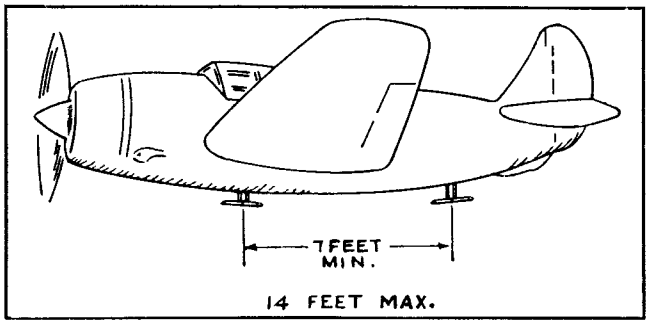

Figure 2-2 "In Line" Antenna Arrangement

(*b*) SHIELDED ANTENNA ARRANGEMENT. — Mount the antenna with their sides parallel with some metal part of the aircraft with suitable electrical continuity (such as fuselage or motor mounts, etc.) acting as shielding between the transmitting and receiving antennas. (See fig. 2-3) This type of installation is particularly suitable for midwing or highwing aircraft.

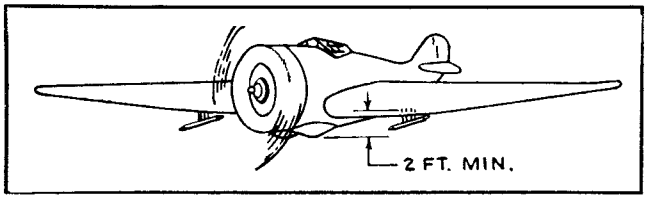

Figure 2-3. "Shielded" Antenna Arrangement

(*c*) ANTENNA POSITION. — In cases where this altimeter must work simultaneously with other radio transmitting equipment operating near the same frequency, give careful consideration to the antenna positions of both equipments. The main objective, insofar as this altimeter is concerned, is to arrange for minimum transfer of the signal from the transmitting antenna of the other equipment to the receiving antenna of the altimeter. This may be accomplished by considering the radiation patterns involved and utilizing the shielding effect of metal portions of the aircraft.

(3) MOUNTING INSTRUCTIONS FOR ANTENNA.

(*a*) Details of antenna installation are shown in figure 8-7. In all installations, mount each antenna with its horizontal radiating member parallel to the line of flight and with the thicker edges of the vertical members facing forward so as to obtain minimum slip-stream resistance.

(*b*) The drilling plan for mounting the antenna is shown in figure 8-4. Fasten each antenna securely with four No. 8-32 plated machine screws (not furnished with the radio set).

IMPORTANT

If at any time it becomes necessary to paint the antennas, do not get any paint on the insulator ring at the mid-section of the horizontal radiating member.

(4) RESIDUAL DELAY.

Note

To permit the use of other types of radio sets (for example: Radio Set *AN/ARN-1 or *AN APN-1) with the same antenna installation used with the equipment, determine the residual delay of the antenna system and attach properly labelled marked tags to both antenna cables. This will allow proper calibration of the low altitude altimeters.

(*a*) SHORTEST DIRECT REFLECTION PATH. — The shortest direct reflection path between transmitting and receiving antennas is the path formed by the signal which leaves the transmitting antenna, travels to the earth, and is reflected back to the receiving antenna in such a manner that the angle made by the signal when it hits the earth is the same as the angle made when it leaves the earth. This path depends on the relative positions of the antennas and the earth and varies with the height and position of the aircraft. Examples of shortest direct reflection paths are shown in figure 2-4. It is important that no obstruction exist in the shortest direction reflection path at any flying position at which altimeter operation is required, as the shielding effect of such obstructions may interrupt the transmitted signal.

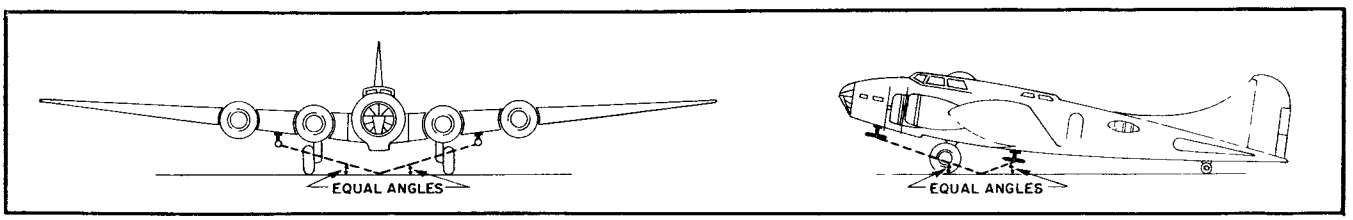

Figure 2-4. Shortest Direct Reflection Paths

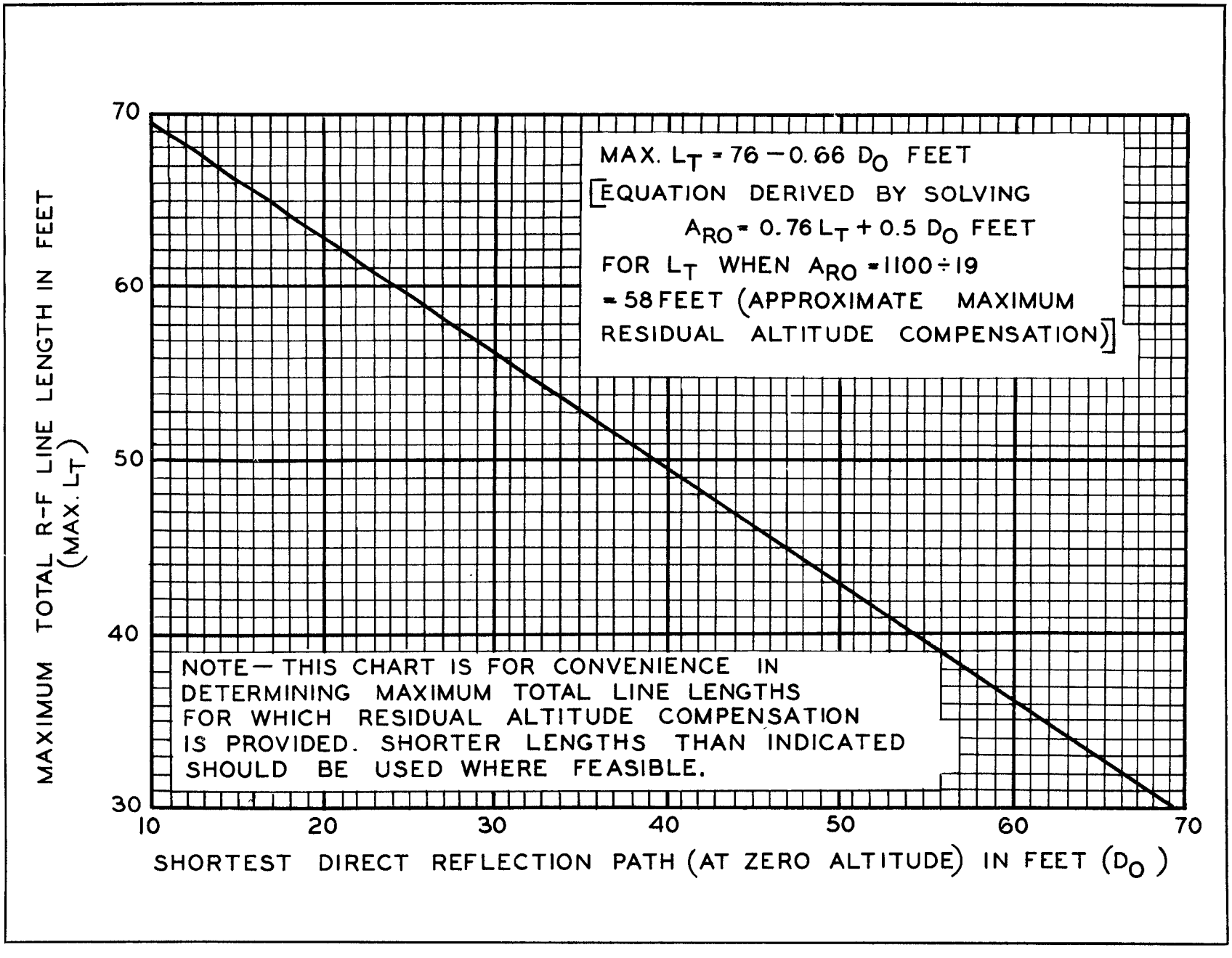

Figure 2-5. Line Length Circulation Chart

(*b*) DETERMINATION OF RESIDUAL DELAY. — The residual delay of the antenna installation is a value in feet to be added in making the zero adjustment. Proceed according to the following instructions to determine the residual delay. After it has been determined mark it upon each of the two cable marker tags following the words "RESIDUAL DELAYS".

1. Determine the shortest direct reflection path between transmitting and receiving antennas when the aircraft is resting on the ground. This is most easily done by visualizing a line from each antenna to a spot on the ground, and then moving the spot until both lines make the same angle with the ground.

2. Measure the total length in feet of the path determined in step *1* above. Multiply the path length by one-half.

3. Add together the length in feet of the receiving antenna cable and the transmitting antenna cable. Multiply the total cable length by three-quarters.

4. Add together one-half of the total reflection path length as computed in step *2* above and three-quarters of the total cable length as computed in step *3* above. The sum is the residual delay of the antenna installation. The computation of residual delay may be made clearer by use of the formula: residual delay = $^1/_2$ shortest direct reflection path with aircraft on ground + $^3/_4$ total antenna cable length.)

3. MECHANICAL CHECK AFTER INSTALLATION.

a. Check all cables. They must be clear of sharp edges and other interference. They must be long enough to facilitate servicing the receiver and transmitter and the indicator. Place them so as not to restrain the motion of the units on their shock mounts.

b. Check to be sure that all connectors are properly placed and are tight, and that the collar holding each plug in position is also tight.

c. Check to be sure that both shock mountings are firmly fastened to the aircraft structure, that the units are properly secured to the mountings, and that the units have sufficient clearance in which to move on their shock mounts.

d. Check to be sure that the antennas are properly fastened to the aircraft structure.

4. ELECTRICAL CHECK AFTER INSTALLATION.

a. Check the input voltage. This voltage should agree with the voltage indicated on the placard on the front panel. If the voltage available is not within ± 5%, the equipment should not be used until this condition is corrected.

b. Turn the equipment on by turning the "REC. GAIN" control clockwise. Check for the presence of green circle trace.

c. Check the transmitting antenna for radiation by using a sensitive wavemeter or field strength meter, or preferably, Indicator ID-98 APN or ID-98A APN, part of Test Set 10B APN.

d. Adjust "CIRCLE SIZE", "FOCUS CONTROL", "BRIL. CONTROL", and "ZERO ADJUSTMENT", "VERT. CENT." and "HORIZ. CENT." as indicated in section V, paragraph 8, 9 and 10.

Note

Indicator I-152-C and Radio Receiver and Transmitter BC-788-C must be aligned as a pair, and each installation may have to be bench aligned before use of the pairs get mixed.

SECTION III

OPERATION

1. STARTING AND STOPPING THE EQUIPMENT.

a. To start the radio set turn the "REC. GAIN" control on the indicator about one-half turn clockwise.

b. To stop the radio set turn the "REC. GAIN" control on the indicator counterclockwise to the "OFF" position.

2. FLIGHT OPERATION.

a. RADIO SET SCR-718-A OR SCR-718-AM; OR RADIO SET SCR-718-B OR SCR-718-C on "X1" OR "TIMES ONE" SCALE.

(1) When the set is turned on; a trace in the form of a green circle with one or more pulses on it will appear on the indicator screen.

(2) Make the following adjustments on the front panel of the indicator before the plane takes off:

(*a*) Adjust the "CIRCLE SIZE" control so that the circle trace is of a size required for normal operation. It will be of the proper size when it is just barely visible as a luminous ring at the outer edge of the black calibrated scale. (See fig. 3-1).

Note

When making the adjustments on Radio Set SCR-718-B. or SCR-718-C, make certain that the scale switch is set in the "X1" or the "TIMES ONE" position.

(*b*) Adjust the "REC. GAIN" control so that a pulse appears on the circle trace near 0 on the calibrated scale, and so that the pulse is approximately $^1/_4$ inch high.

(3) Make the following adjustments on the front panel of the indicator during and after take-off.

(*a*) When the wheels are about to leave the ground adjust the "ZERO ADJ." (X1) knob so that the lobe near 0 is moved exactly to 0. If this adjustment cannot be made during take-off and is adjusted during flight, there will be an error of approximately 25 feet at altitudes less than 50 feet. (This is sometimes known as "MUSHING" error caused by the fact that at this low altitude, the terrain becomes comparable with the distance between antennas.) It will be negligible at greater heights.

(*b*) When the aircraft is climbing, the lobe on the circle will move clockwise around the circle and will decrease in height. Turn the "REC. GAIN" control clockwise occasionally so that the height of this pulse is maintained at about $^1/_4$ inch. As the "REC. GAIN" control is turned clockwise, another pulse will appear on the circle at or near 0 and will remain in about the same position at all aircraft altitudes.

1. While the aircraft is low so that only one pulse is visible on the circle, obtain the height above terrain by reading the position of the pulse. It will usually be necessary to reduce the gain so that the zero pulse does not obscure the reflected pulse. However, at such low altitudes the reading may be somewhat in error unless the "ZERO ADJ." knob is set during take-off according to the directions in paragraph 2*a*(3)(*a*)

2. While the aircraft is high enough so that two pulses are visible on the circle when the altimeter is operated according to instructions in (*a*) above, obtain height above ground in one of the following ways. If the pulse which remains near 0, (the zero pulse) is exactly at 0, obtain the height by reading the position of the other pulse (the reflection pulse). If the zero pulse is not exactly at 0, adjust the "ZERO ADJ." so that the zero pulse is moved exactly to 0. Then obtain height above terrain by reading the position of the reflection pulse. Read the position of all pulses according to instructions in paragraph 3 this section.

b. RADIO SET SCR-718-B, OR SCR-718-C ON "X10" OR "TIMES TEN" SCALE.

(1) Adjust the "CIRCLE SIZE" control to place the trace $^1/_4$ inch inside the black calibrated circle.

(2) Adjust "REC. GAIN" for a 3 16 inch pulse.

(3) Vary the "X10" or the "TIMES TEN" "ZERO ADJ." to set the zero pulse at zero.

(4) Other adjustments are as in paragraph 2, *a* (3), this section.

3. READING ALTITUDE.

a. RADIO SET SCR-718-A OR SCR-718-AM.

(1) The black circular scale on the indicator is provided with a 0- to 5000-foot altitude calibration. Calibration marks are provided for every 50 feet of altitude, and are spaced widely enough so that readings can be estimated to nearest 25 feet. To read the position of any pulse, determine the point along the scale where the counterclockwise edge of the pulse intersects the luminous green circle. For example: on the indicator shown in figure 3-1, the zero pulse is at 0 and the reflection pulse at 2500.

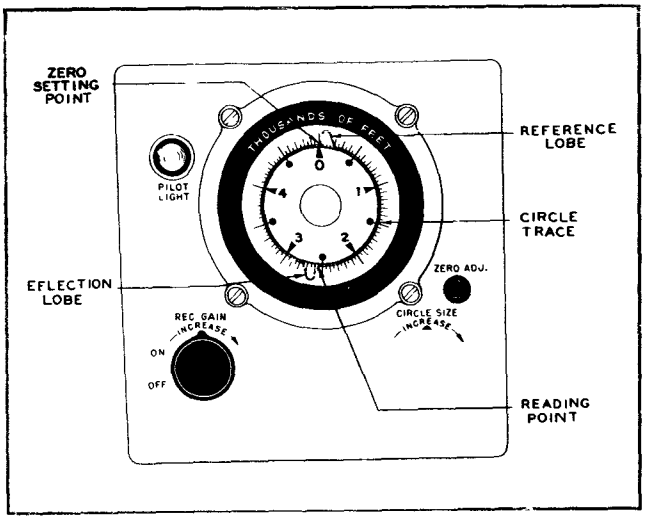

Figure 3-1. Indicator I-152-A and [illegible] — Dial and Controls

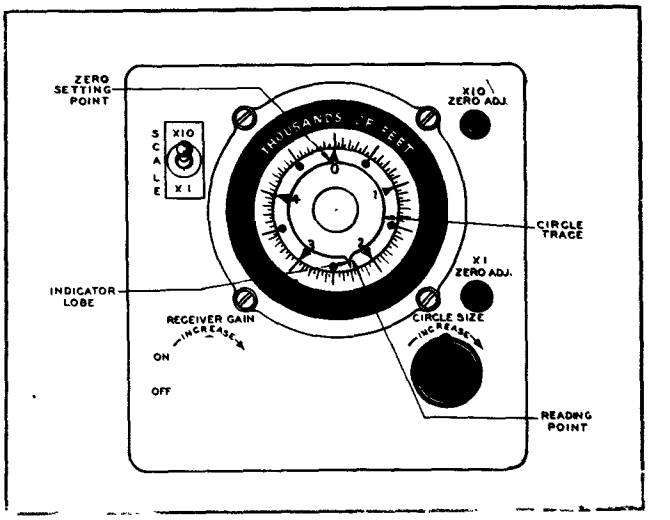

Figure 3-2. Indicator I-152-B — Dial and Controls

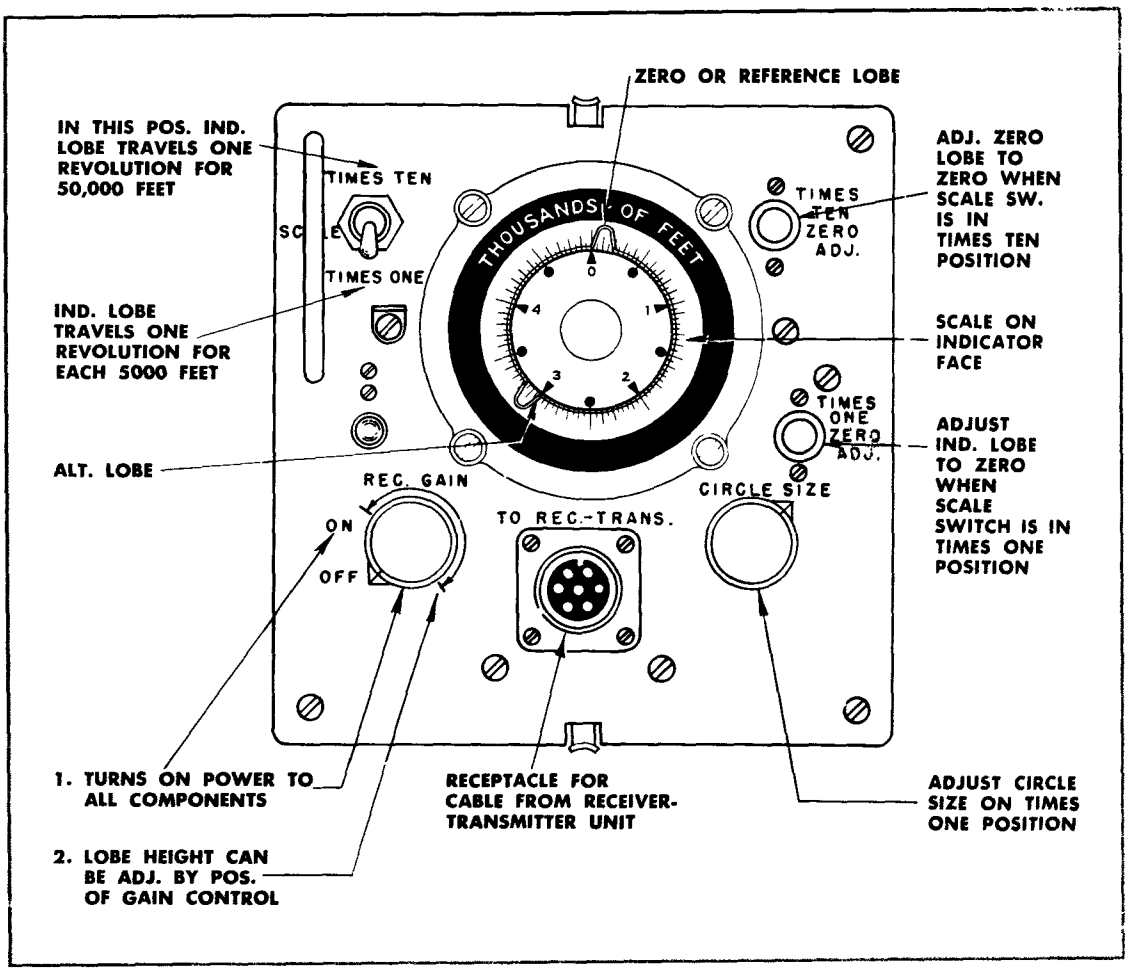

Figure 3-3. Indicator I-152-C — Dial and Controls

(2) Following take-off, the reflection pulse travels clockwise around the scale as aircraft height above ground increases. Until the aircraft reaches 5000 feet, read height merely by noting the positions of the pulses, (refer to par. 2 *a* (3) (*b*) *2* this section.) For example: pulse positions such as those in figure 3-1 would indicate 2500 feet.

(3) When the aircraft reaches 5000 feet, the reflection pulse will have progressed completely around the scale and will have returned to 0. As height above terrain increases up to 10,000 feet, the reflection pulse will travel clockwise on a second encirclement of the scale and 5000 feet must be added to the indication of the pulses. For example: pulse positions such as those in figure 3-1 would indicate a height of 7550 feet.

(4) When the aircraft reaches 10000 feet, the reflection pulse will have completed a second encirclement of the scale; and one further clockwise encirclement will take place for each additional 5000 feet of altitude attained. Similarly, a counterclockwise encirclement will take place for each drop of 5000 feet sustained.

(5) To obtain actual height above ground at any time, it is correct to add 5000 feet to the indication of the lobes for every previous clockwise encirclement and subtract 5000 feet from the indication of the pulses for every previous counterclockwise encirclement of the scale by the reflection pulse. However, it is generally more practicable to estimate the approximate height above ground (by use of an aneroid altimeter such as Kollsman and knowledge of approximate terrain height above sea level) and then to determine the exact height above terrain by adding to the reading of the indicator pulses an appropriate multiple of 5000 feet, such that the total closely checks the estimated height. For example: if the estimated height above terrain is 26,000 feet and the indication of the pulses is 1275 feet, then the exact height is 25,000 plus 1275 feet or 26,275 feet.

b. RADIO SET SCR-718-B, OR SCR-718-C.

(1) The indicator in Radio Set SCR-718-B has a scale switch with which the correct number of encirclements can be quickly determined. When the switch is in the "X1" or "TIMES ONE" position, operation of Radio Set SCR-718-B, or SCR-718-C is similar to that of Radio Set SCR-718-A, and the same procedure is used to read altitude. When the switch is in the "X10" or the "TIMES TEN" position however, the scale is automatically changed to 50,000 feet in a single encirclement. The circle is purposely made to decrease in size; do not change the "CIRCLE SIZE" control. The reflected pulse then points to the correct 5000-foot segment of altitude in which the aircraft is flying (23,000 feet in fig. 3-2). The scale switch may be left in the "X10" or the "TIMES TEN" position when it is desired to read altitude rapidly and approximately.

4. NOTES AND PRECAUTIONS.

a. EFFECT OF TERRAIN. — Flying over rough ground will produce fluctuating indications and flying over water will produce relatively steady indications.

b. BLIND SPOTS. — At altitudes of 5000 feet and all multiples thereof, the reflection pulse will occupy the same position as the zero pulse. The lobes will appear to merge and cause a blind spot, that is, a region about 250 feet wide in which the position of the reflection pulse cannot be accurately determined. These "BLIND SPOTS" will not appear when Radio Set SCR-718-B, or SCR-718-C is used with the indicator scale switch in the "X10" or the "TIMES TEN" position.

c. ACCURACY. — When the altimeter is operating properly, the deviation of its indication from exact height above ground is less than 50 feet at any altitude. When improper operation causes the error to become greater than stated above, the indicator circle generally becomes oval in shape.

d. OBSERVABLE DEFECTS. — Inaccurate readings will result from:

(1) A circle trace which is not truly circular.

(2) A circle trace that is off center.

(3) Shifting of the zero pulse unless the indicator is read exactly according to the directions in paragraph 3, this section.

e. EXCESSIVE ALTITUDE. — Use of the altimeter at heights greater than 40,000 feet above sea level may result in impaired operation although the accuracy of its indication will not be diminished. Its use at heights greater than 45,000 feet above sea level may result in permanent damage unless the indicator is in a pressurized cabin.

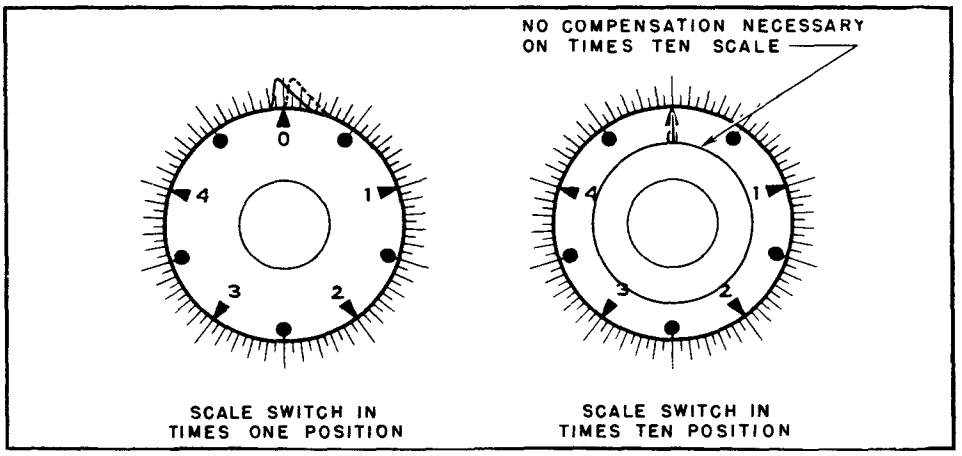

Figure 3-4. Indicator I-152-C — Reference Pulse Adjustment (to compensate for Residual Delay)

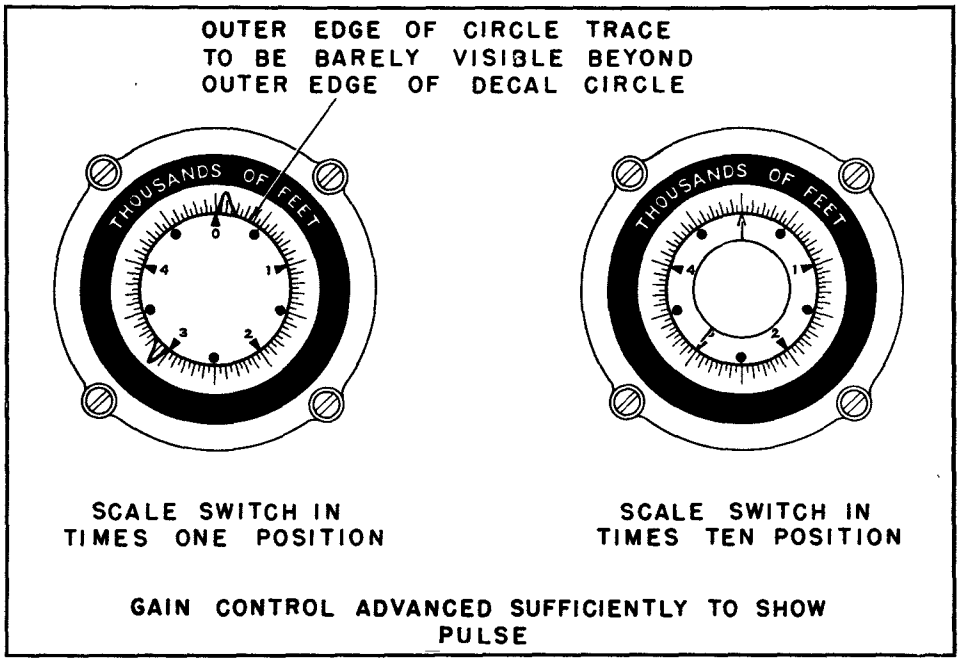

Figure 3-5. Indicator I-152-C — Circle Size

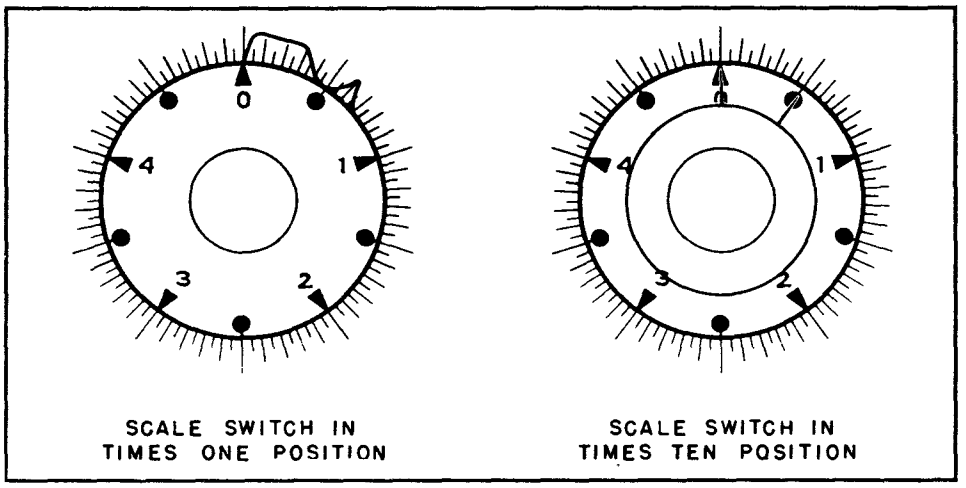

Figure 3-6. Indicator I-152-C — Indications Showing Secondary Pulses

SECTION IV
THEORY OF OPERATION

1. GENERAL.

a. The radio receiver and transmitter and the indicator of Radio Set SCR-718(*) accomplish the functions outlined in the following paragraphs. The radio receiver and transmitter includes circuits for signal generation, transmission and reception, and a low voltage power supply. The indicator includes circuits for measuring time intervals as indicated on the cathode-ray tube, and a high voltage power supply. (See fig. 4-1.)

b. The radio set transmits a signal earthward. When the transmitted signal reaches the earth, it is reflected and picked up by the receiving antenna. The antenna will register both a direct signal from the transmitting antenna and also a reflected signal. Since the distance traveled by the reflected signal is greater than that of the direct received signal, the distance from the earth can be measured by the time difference and the rate of travel of r-f waves in the air.

c. The indicator is calibrated in feet above the surface of the earth. Two indications (pulses) always appear on the indicator cathode-ray tube. The zero pulse appears at zero on the screen, while the reflection pulse appears at a place on the screen representing the distance above the earth. The calibrated scale of Indicator I-152-A or I-152-AM extends from 0 to 5000 feet. The scale on Indicator I-152-B, or I-152-C extends from 0 to 50,000 feet.

d. The transmitter produces both the signal output and a timing pulse that is fed to the indicator unit directly. This timing pulse produces a circular trace on the cathode-ray tube in the indicator unit. The output signal is transmitted and received, and after passing through the receiver unit, is presented in suitable form to the cathode-ray tube and appears as the indicating pulses on the circular trace.

2. RADIO RECEIVER AND TRANSMITTER BC-788-(*).

a. TRANSMITTER SECTION.

(1) Transmitter timing oscillator (tube V111) is crystal-controlled at a frequency of 98.356 kilocycles which corresponds to the time required to complete one circle trace on the indicator tube for a 5,000-foot scale. The plate circuit of the oscillator (tube V111) is tuned to the same frequency as the cathode circuit. Sine-wave voltages at a frequency of 98.356 kilocycles appear across the oscillator plate coil. At this point the circuit branches into two channels. One channel starts at a tap on the plate coil, feeds voltage over a shielded lead in the interconnecting cable to circuits in the indicator which produce a circle trace on indicator cathode-ray tube V205. B+ voltage for plate excitation of the tubes in the indicator is also supplied from this tap and over the shielded lead. The other channel leads the output voltage of the plate circuit of the oscillator (tube V111) to the clipper tube V112. The voltage applied to the grid of tube V112 is sufficient in amplitude to overdrive the grid which is self-biased. This clips the peaks of the signal and produces short pulses of plate current which excite the self-resonant plate circuits of the tube.

(2) Radio Receiver and Transmitter BC-788-B or BC-788-C contains a 9.8-kilocycle (approximate) tuned circuit, which can be switched in (by means of relay K101, remotely operated by the scale switch S202) to control the frequency of the timing oscillator tube V111). (See fig. 8-16, 8-17, 8-18, and 8-19.) A new plate load is provided, resonating at both timing oscillator frequencies. A tertiary winding is used to extract a small portion of the appropriate signal, which is fed to the circle-forming circuits in the indicator.

(3) The output of the clipper (tube V112) is essentially a damped voltage train in the order of 400 kilocycles, of which the first positive peak (highest) produces short pulses of plate current in the driver (tube V113). A damped voltage train of approximately 900 kilocycles appears across driver output transformer T111. (See fig. 4-3.) This frequency is determined by inductance L111A, capacitance C160, and circuit capacity. Capacitor C111A blocks the d-c component. R150 is the damping resistor for this circuit and also the d-c return path for the plate current of UHF output tube JAN-6J6 (V114).

(4) The UHF oscillator (tube V114) which operates at a frequency of 440 megacycles, derives its plate voltage entirely from the output of the driver stage (tube V113). No d-c potential appears on the plate of the UHF oscillator except for a small bias developed across resistor R150. The UHF oscillator is connected in push-pull, the two triodes being housed in the same envelope. The frequency of operation is controlled by the position of the shorting bar on plate tank circuit L-127 and circuit and tube capacity. The UHF oscillator circuit is basically a push-pull tuned grid oscillator circuit. The two grids of this tube are tuned by the tube capacity and are connected externally by a lead which is simply a jumper. Resistors R151 and R152 obtain higher efficiency and stabilize the output frequency with line voltage variations.

b. RECEIVER SECTION.

(1) The receiver portion of the radio receiver and transmitter is a conventional superheterodyne receiver having a converter (tube V101), a local oscillator (tube V102), six intermediate frequency (30-megacycle) stages (tubes V103 to V108 inclusive) and a

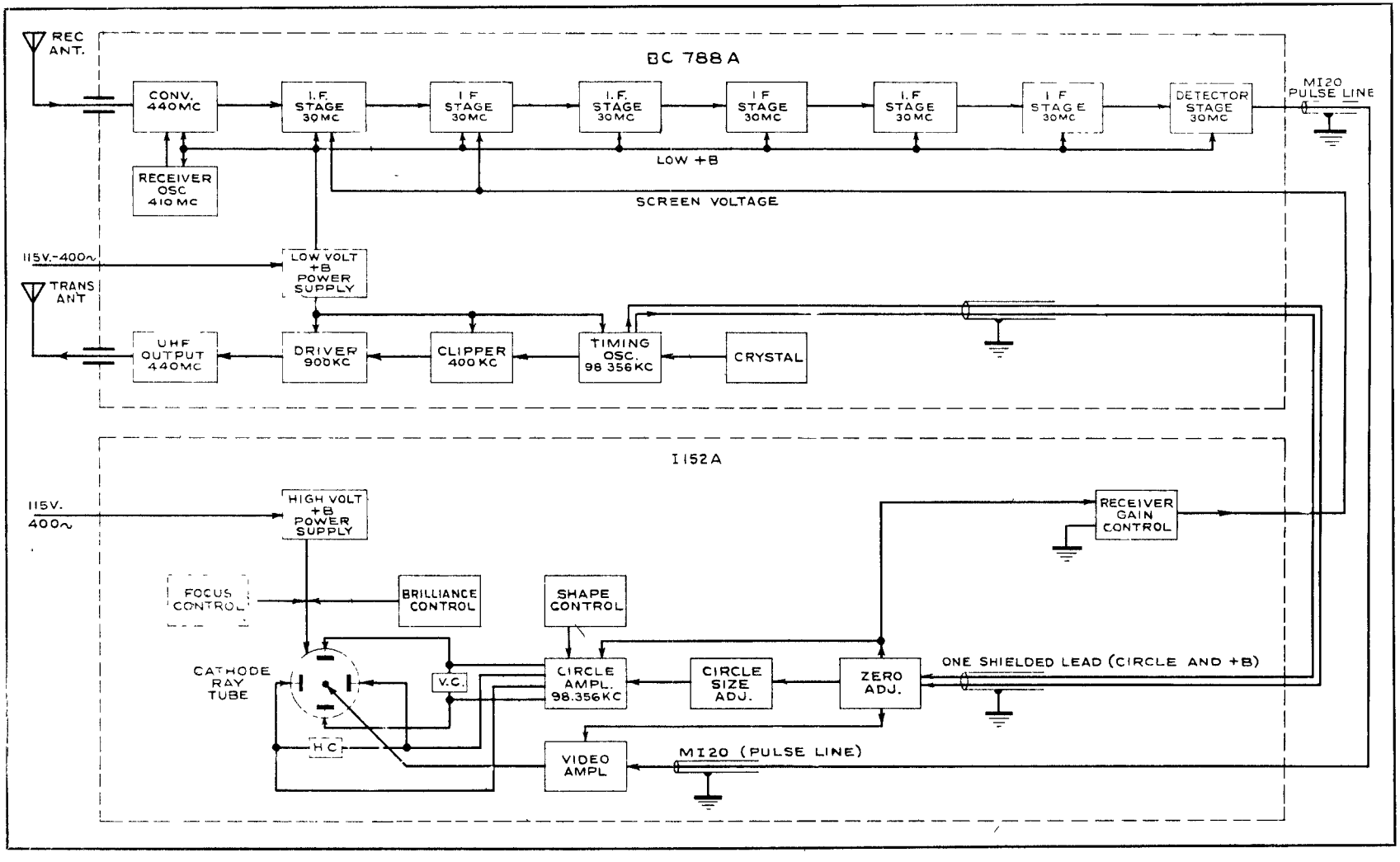

Figure 4-1. Radio Set SCR-718-(*) — Functional Block Diagram

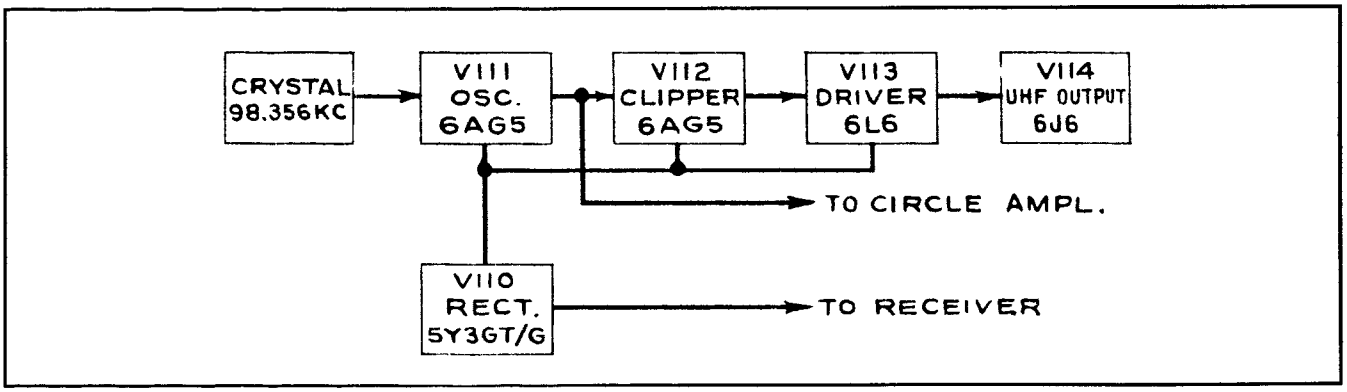

Figure 4-2. Radio Receiver and Transmitter BC-788 (*) — Block Diagram of Transmitter Section

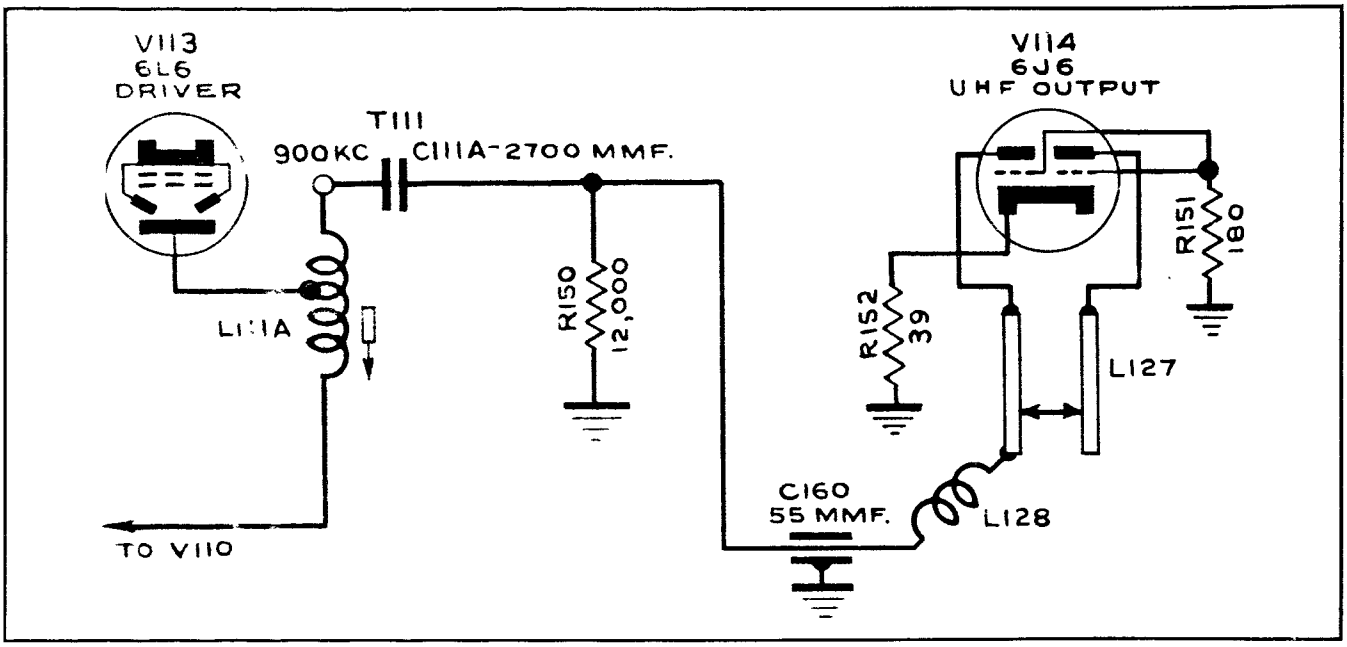

Figure 4-3. Radio Receiver and Transmitter BC-788-A — Functional Diagram of Driver and UHF Output

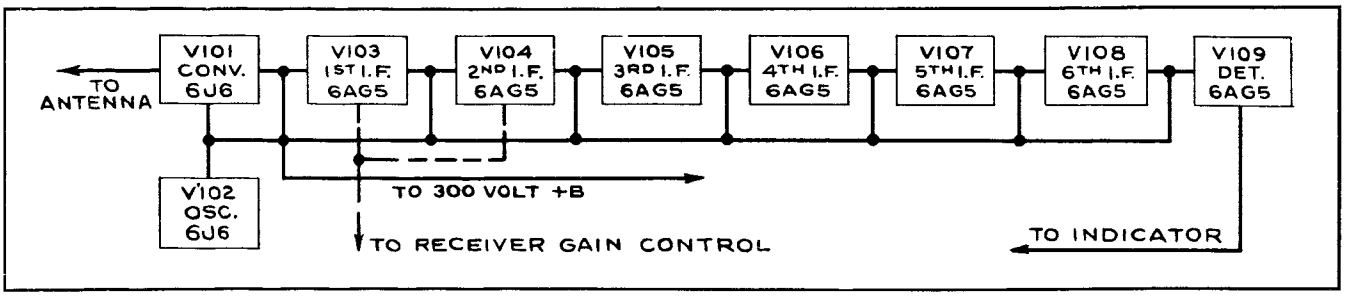

Figure 4-4. Radio Receiver and Transmitter BC-788-A — Functional Block Diagram of Receiver

detector (tube V109). (See fig. 4-4.) The receiver portion amplifies both the direct and reflected signals picked up by the receiving antenna and converts them into a form suitable for operating the indicator. The input circuit of the receiver (see fig. 4-5) comprises capacitor C119 and coil L131 and is coupled to converter grid tank circuit L114 and C116 which is aligned to 440 megacycles. The local oscillator (tube V102) is tuned to 410 megacycles by coil L115 with both triode elements of tube V102 operated in parallel. Output voltage from the local oscillator is coupled by means of link L130 to the grid of the converter (tube V101) where mixing occurs with the incoming received signal.

(2) The 30-megacycle intermediate frequency signal is taken from the plates of the converter (tube V101) which are in parallel, and then passed through six i-f stages in cascade. All six stages are similar in designs, comprising an amplifier tube, a transformer consisting of an adjustable primary and secondary, both permeability tuned, and a coupling capacitor. The primary and secondary circuits of these transformers are resonated at 30 megacycles. The coils are resonated with the tube and circuit capacities, no external capacities being used. A primary loading resistor is used to secure proper bandwidth.

Note

The i-f transformers of late production equipments are adjusted and sealed at the factory, and do not require further adjustment.

(3) The output of the detector (tube V109) is taken from its cathode and fed through a filter network comprising capacitors C145 and C146 and coil L122.

Note

Radio Receiver and Transmitter BC-788-B includes a special network at this point to provide the following: d-c path (R159) to ground which provides grid bias for the detector (tube V109); series blocking capacitor (C168) which isolates the detector; output from the direct current coming from the scale switch in the indicator to the relay in the radio receiver and transmitter; a filter resistor which conducts the relay control current to the relay without affecting the detector output signal.

(4) The output is then conveyed by means of a 75-ohm coaxial line in the interconnecting cable from the radio receiver and transmitter to the indicator, where it is used to produce indications on the cathode ray tube. Receiver gain control is accomplished by raising or lowering the screen voltage applied to the first two i-f tubes V103 and V104. Control is accomplished by varying "REC. GAIN" control which is located on the front panel of the indicator. Its action is under the supervision of the operator and the sensitivity of the receiver may be varied by rotating the control clockwise or counterclockwise.

3. INDICATOR I-152-(*).

a. The cathode output of the detector (tube V109) in the receiver section of the radio receiver and transmitter is at a relatively low level and must be amplified before it is of sufficient amplitude to actuate the radial electrode of the cathode-ray indicator (tube V205). This is accomplished by operating the video amplifiers (tubes V202 and V203) in parallel. (See fig. 4-6.) The frequency characteristics of this stage are determined by resistors R217 and R218, inductance L204, and the associated circuit capacities. (See fig. 8-14, 8-16, 8-18). This network is designed to give sharp indications on the indicator tube when a signal is received.

b. The transmitter crystal timing oscillator (tube V111) furnishes essentially sine-wave voltages to a shielded lead which is one of the leads in the interconnecting cable joining the radio receiver and transmitter and the indicator. This lead is fed to transformer T202 which serves two purposes; the first, to isolate the B+ voltages from the grid of the circle amplifier (tube V204) and to pass only the a-c timing voltages to this grid. Its other purpose is to function as a zero adjustment for correction of the positioning of the zero pulse. (See figures 4-7 and 4-8.) Voltage appearing across the primary is 90° out of phase with the voltage across the secondary and these voltages are applied through coupling capacitors C209, C210, and C212 to the vertical and horizontal deflecting plates of the cathode ray tube (V205). Centering controls R225 and R222 introduce the d-c voltages necessary for positioning the trace with respect to the calibrated scale. Shape control R227 and compensating resistor R203A control the relative voltages applied from the primary and secondary of transformer T203. This is necessary for producing a truly circular trace. Indicator I-152-B or I-152-C has an additional circle output transformer, tuned to 9.8 kilocycles connected in series with the 98-kilocycle transformer to produce a circular trace at either timing oscillator frequency. The 9.8-kilocycle transformer has its own circle shape control. These controls are located inside the indicator together with other service adjustment controls, "BRIL.," "FOCUS," "HORIZ.," and "VERT., CENTERING." These are accessible through labeled openings in the bottom of the case cover if adjustment is required.

Note

In the following paragraphs references to 9.8 and 98 kilocycles are made for the sake of simplicity and brevity. The actual frequencies are 9.8356 and 98.356 kilocycles.

c. This second function is accomplished by slightly shifting the phase of the circle voltage appearing at the grid of tube V204 with respect to the timing voltage used for the generation of pulses in the transmitter circuits. The "ZERO ADJ." knob on the front panel of the indicator controls this phase shift by tuning

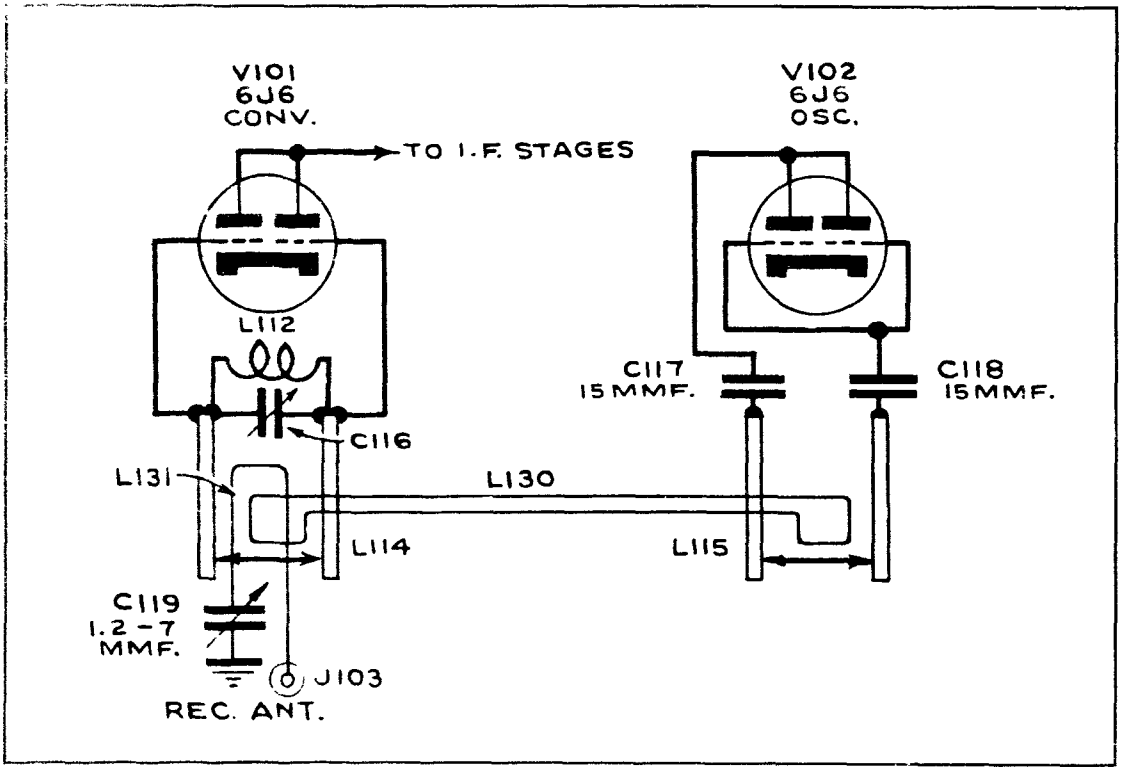

Figure 4-5. Radio Receiver and Transmitter BC-788-(*) — Functional Diagram of Receiver Converter-Oscillator

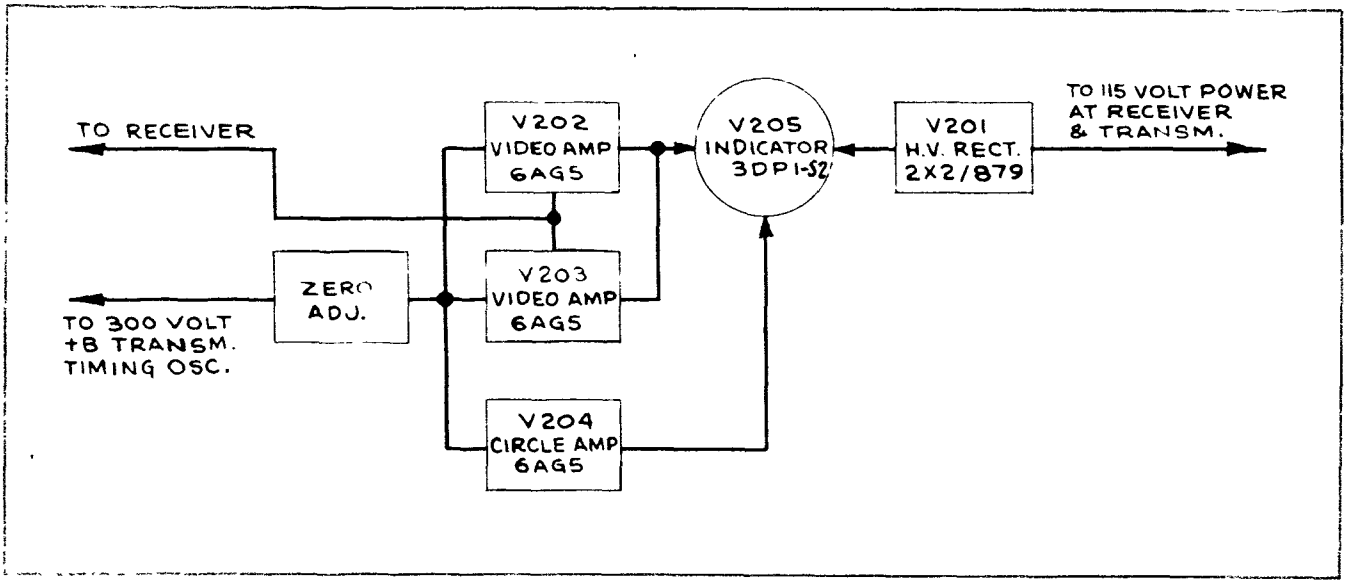

Figure 4-6. Indicator I-152-A — Functional Block Diagram

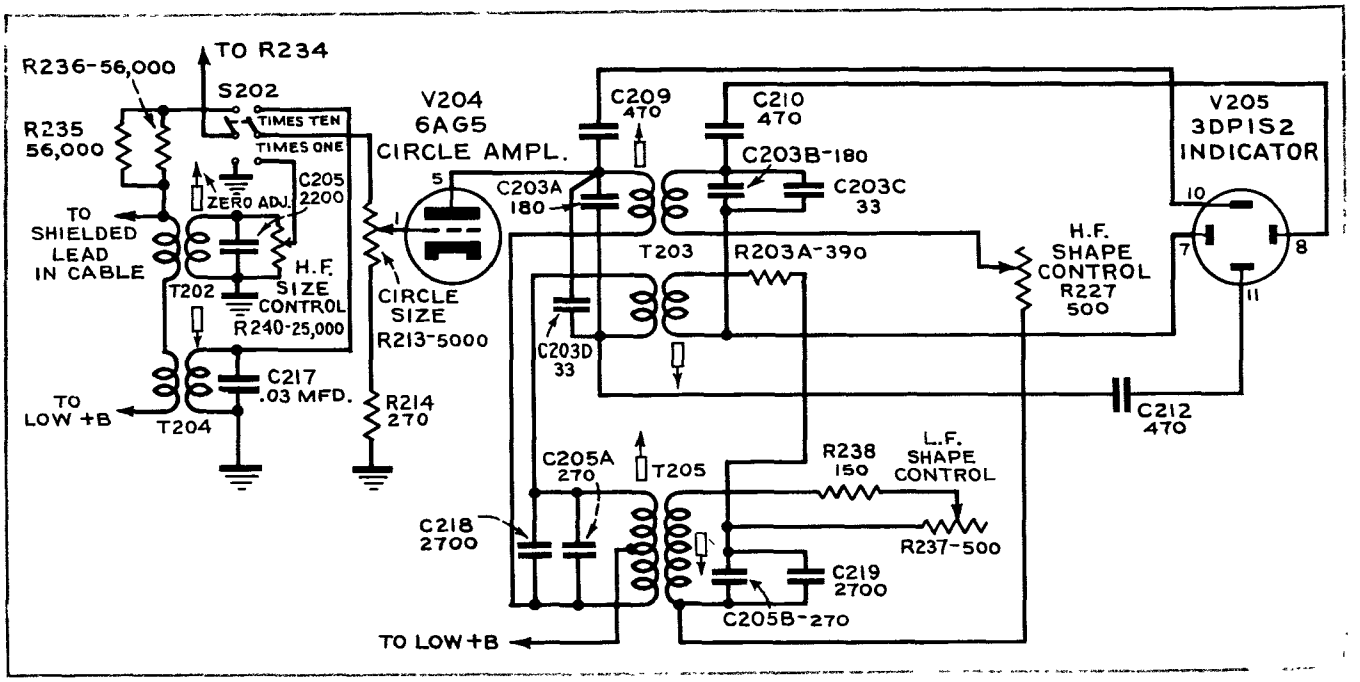

Figure 4-7. Indicator I-152-A—Functional Circle Forming Diagram

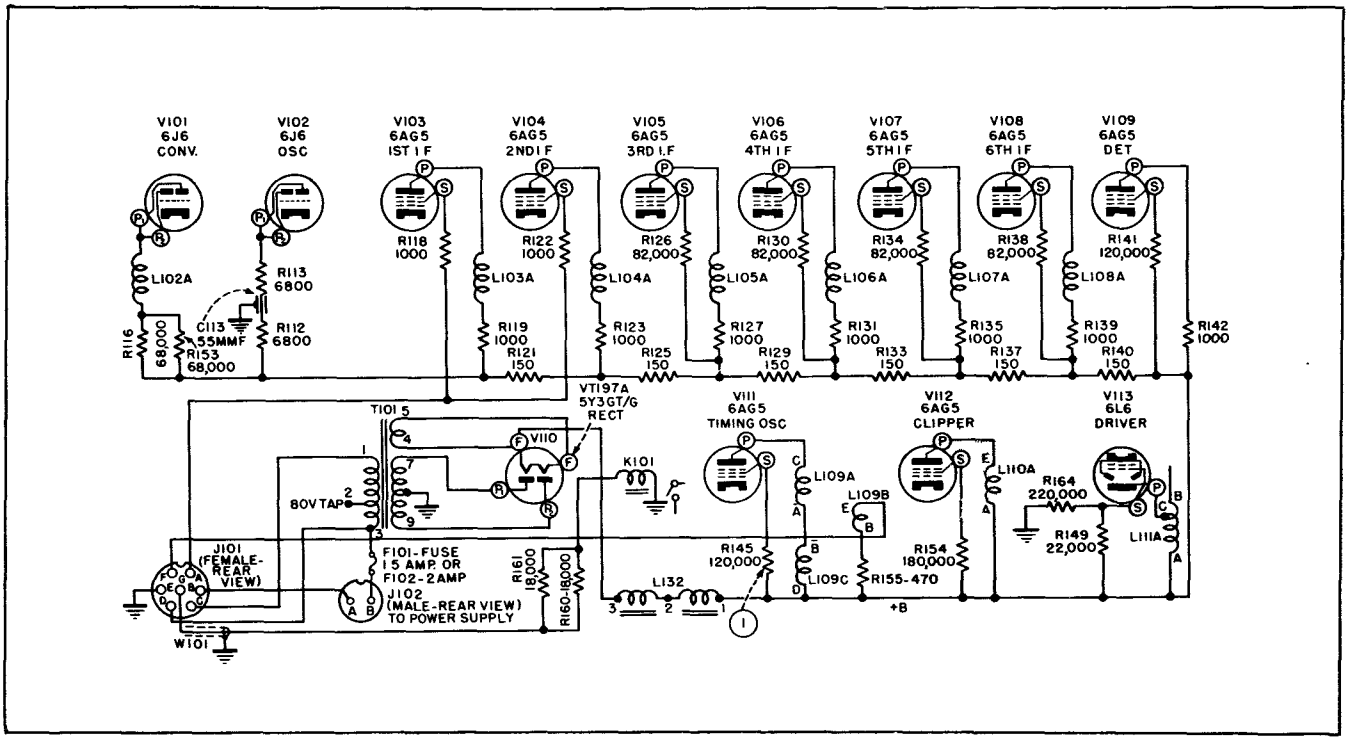

Figure 4-10. Radio Receiver and Transmitter BC-788-(*)—
Functional Diagram, Low Voltage Distribution

Note: Figures 4-8, 4-9 and 4-11 not included in this book

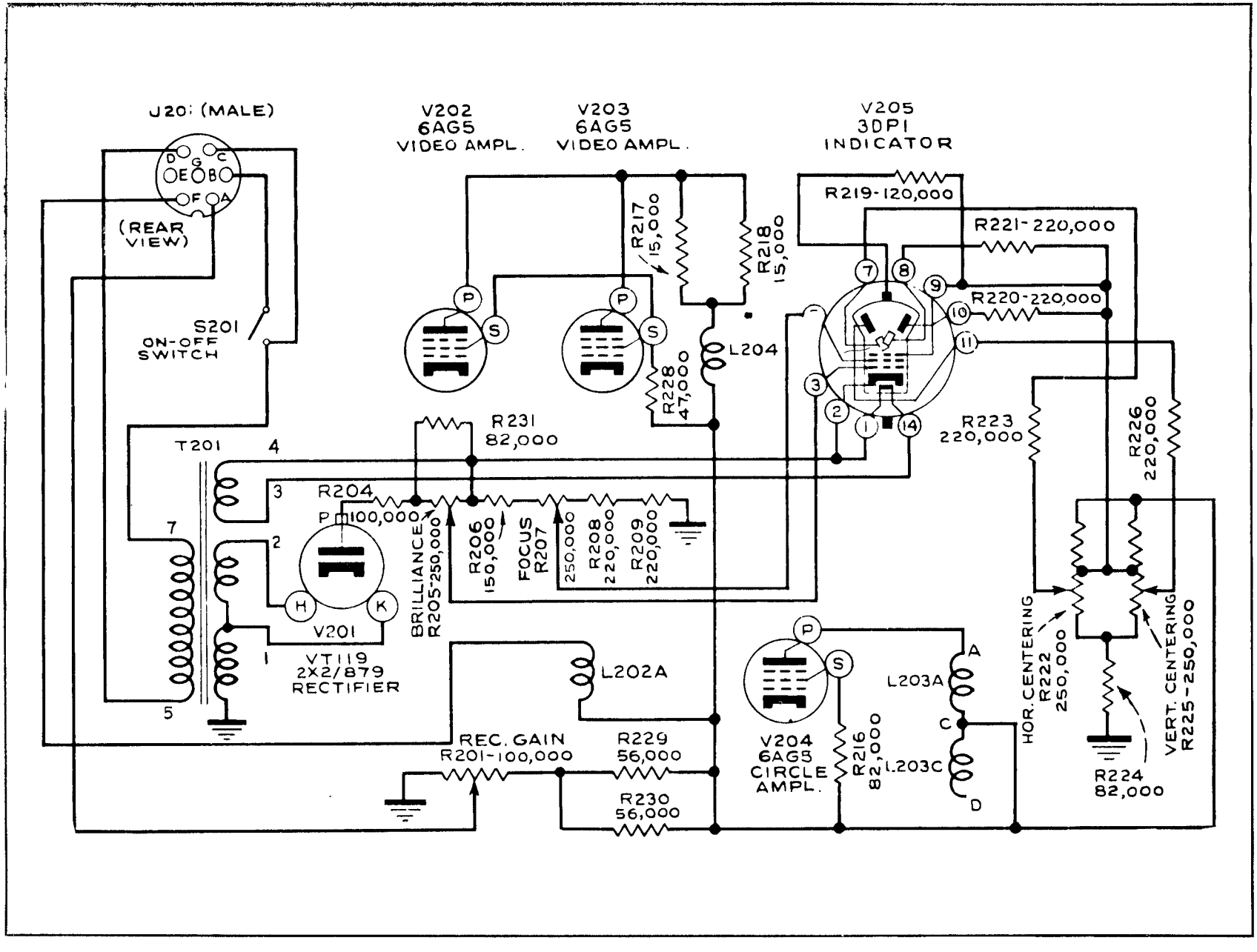

Figure 4-12. Indicator 1-152-A — Functional Diagram, High and Low Voltage Distribution

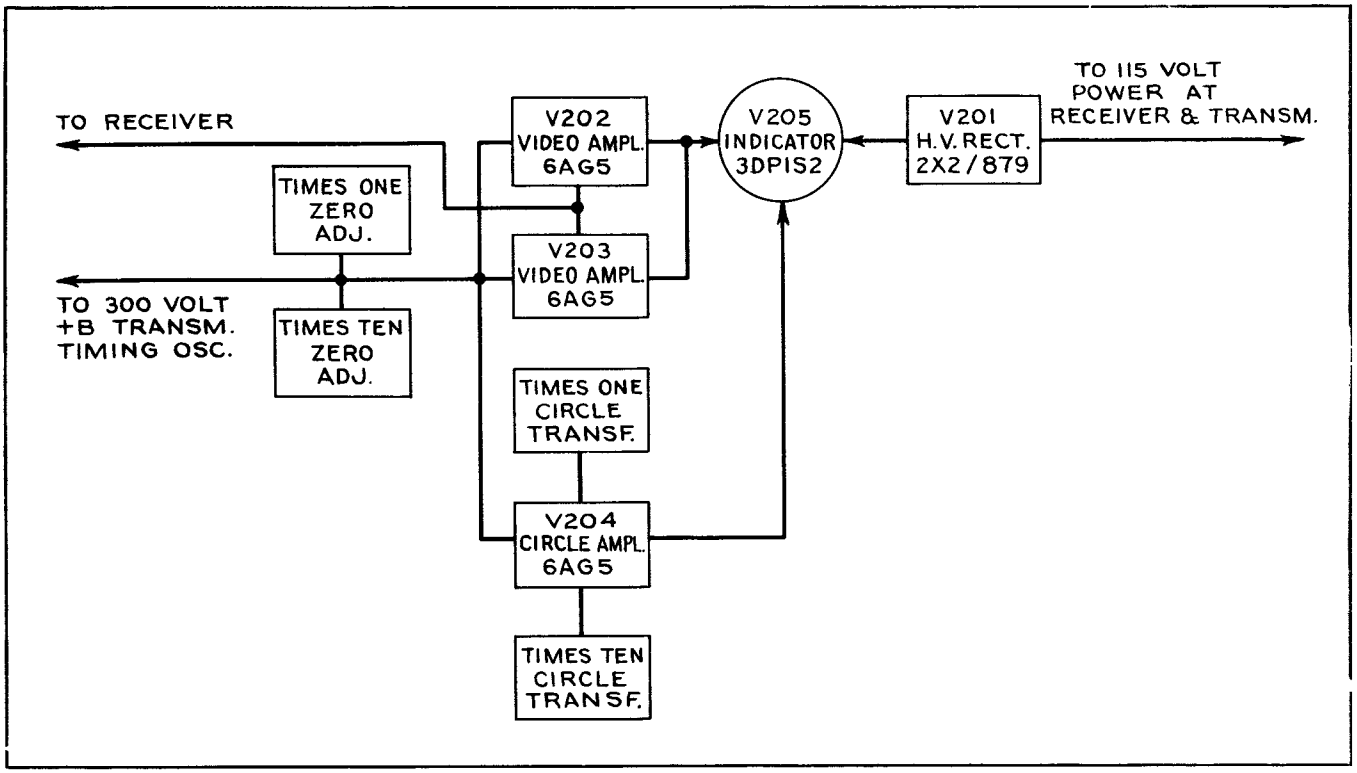

Figure 4-13. Indicator I-152-C — Block Diagram

the inductance of the secondary of transformer T202. The secondary of this transformer is heavily loaded to minimize amplitude changes with phase shifts. Indicator I-152-B or I-152-C has an additional circle input transformer for zero adjustment on the "X10" or "TIMES TEN" scale. (Refer to fig. 4-9.) The untuned primaries, and the tuned secondaries of both transformer T202 and the additional circle are connected in series, and the zero adjustments may be made independently. The scale switch is connected so as to short-circuit the primary of the 98-kilocycle transformer when the timing oscillator is generating 9.8-kilocycle signals, and vice versa. Resistor R242 is used to compensate for circle size changes at extremes of temperature.

d. The output from the circle amplifier tube V204, which governs the size of the circle trace, may be varied by operating the "CIRCLE SIZE" control (R213) on the indicator front panel. The plate load of the circle amplifier tube (V204) consists of transformer T203, whose primary and secondary are tuned to the timing frequency of 98.356 kilocycles.

4. POWER SUPPLIES.

a. 300-VOLT SUPPLY (LOW VOLTAGE). The positive 300-volt direct current requirements for the radio receiver and transmitter and the indicator are supplied by transformer T-101, the rectifier (tube V110) associated filter chokes, and capacitors L132, C149, and C151 in the receiver and transmitter (see fig. 4-10) and C202A, C204 and C213 in the indicator. All heaters of the radio receiver and transmitter are supplied by 6.3-volt windings on T101 except the heater for the rectifier. This rectifier heater voltage is supplied by a 5-volt winding in transformer T101. The a-c power input to the radio set is made at 115 or 80 volts ± 5 percent, 400 to 2400 cycles through jack J-101 and fuse F101 and is about 135 watts.

b. 1500-VOLT SUPPLY, (HIGH VOLTAGE). — The high voltage rectifier (tube V201) with its associated power transformer T201 is connected to the 115- or 80-volt supply through the interconnecting cable from the indicator to radio receiver and transmitter. (See fig. 4-12.) Transformer T201 supplies the plate and heater voltage for the high voltage rectifier and heater voltage for all amplifier tubes in the indicator and for the indicator tube V205. Filter and bleeder circuits associated with the high voltage supply are made up of capacitor C210A and C201B; resistors R204, R206, R208, and R209, and potentiometers R205 and R207. Potentiometers R205 and R207 function as the "BRIL." and "FOCUS" controls. A pilot light with a red indicator jewel (amber in later production models) shows when the power switch is in the "ON" position and the equipment is connected to the supply voltage. (Indicator I-152-B contains no pilot light.)

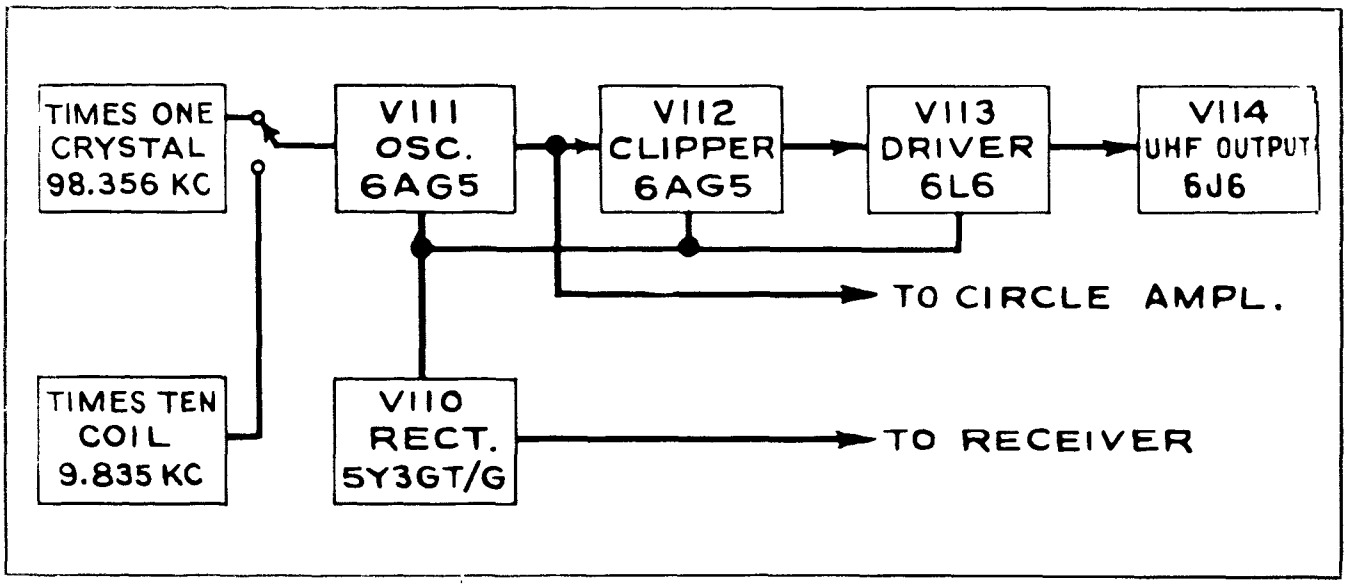

Figure 4-14. Radio Receiver and Transmitter BC-788-C — Block Diagram

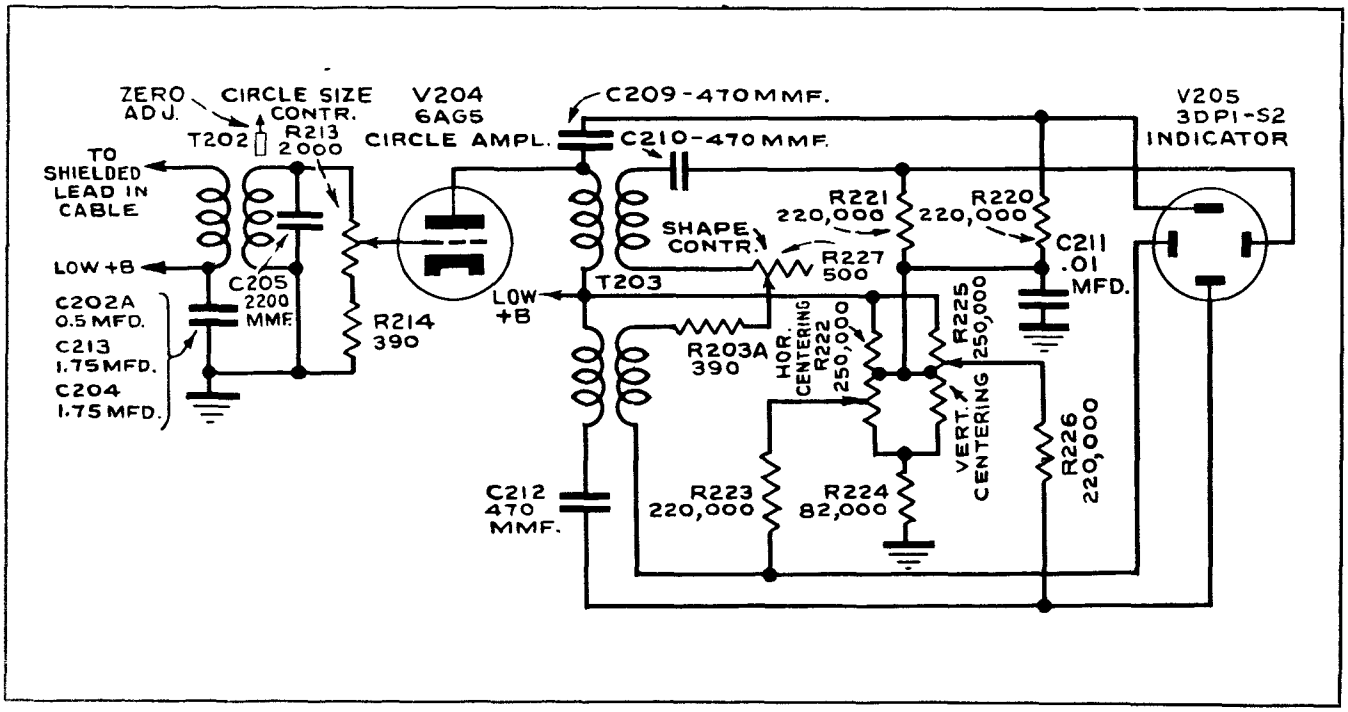

Figure 4-15. Indicator I-152-C — Functional Circle-Forming Circuit

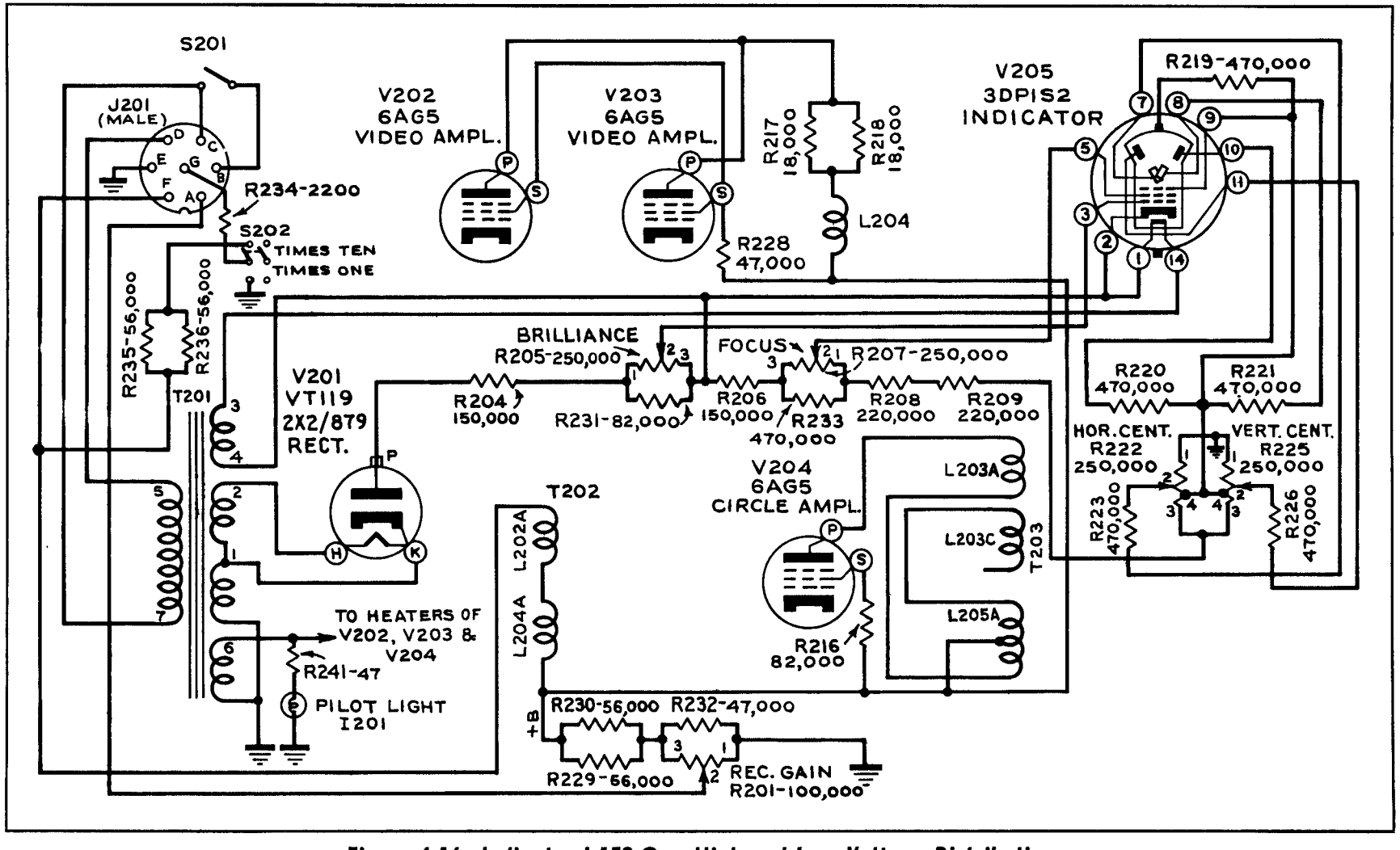

Figure 4-16. Indicator I-152-C — High and Low Voltage Distribution

SECTION V
MAINTENANCE

1. GENERAL PRECAUTIONS.

WARNING

Operation of this equipment involves the use of high voltages which are dangerous to life. Operating personnel must observe all safety regulations at all times.

a. Do not change tubes or make replacements inside the equipment with high voltage supply on. Always shut down power equipment.

b. Use extreme care when adjusting the operating and service controls with power on. Use a neutralizing tool for interior indicator adjustments.

c. Under certain conditions, dangerous potentials may exist in circuits with power controls in the off position, due to charges retained by capacitors, etc. To avoid casualties always sidecharge and ground circuits prior to touching them.

d. Never disconnect any unit while the equipment is in operation. Always turn off the power unless specifically instructed in this manual to do otherwise. In these special cases carefully follow the information given to prevent damage to the equipment.

e. Never operate Radio Receiver and Transmitter BC-788-(*) for a period longer than five minutes unless the transmitter antenna or a suitable dummy load is connected to the "TRANSMITTER ANTENNA" receptacle J104.

Note

Tropicalization: The equipment has been tropicalized and date is given with month and year on inside and outside of units. Before any soldering is done in maintaining the equipment, the tropicalization lacquer or fungus compound must be removed. After repairs, the parts affected must be resprayed for tropicalization.

2. INSPECTIONS.

a. PREFLIGHT CHECKS.

(1) Check units for secure mounting.

(2) Check all connectors and plugs for good contact.

(3) Turn the set on and allow to warm up for 5 minutes.

(4) Adjust "REC. GAIN" and "CIRCLE SIZE" controls and be sure the circle and pulse appear on the indicator screen.

(5) If the circle and pulse do not appear properly, check as stated in paragraph 3*b* through *q* of this section.

b. DAILY CHECK.

(1) Check the antennas for secure mounting, good electrical contact and absence of dirt and defects.

(2) Check units for secure mounting and free movement of the shock mountings.

(3) Check all connectors, knobs, screws, and grid caps for tight connections.

(4) Turn the set on and allow it to warm up for five minutes.

(5) Adjust "REC. GAIN" and "CIRCLE SIZE" control until the circle and pulse appear on the indicator screen.

Note

For Radio Set SCR-718-B or SCR-718-C only, set the scale switch to "X10" or "TIMES TEN." The circle size should decrease by approximately one-half inch in diameter and the zero pulse should get very narrow. Set "ZERO ADJ." "X10" or "TIMES TEN" to make the zero pulse appear at 0 on the indicator scale.

(6) Check the circle and pulse for proper size and brilliance. If this is not correct check as in paragraph 3*b* through *q* of this section.

c. 100-HOUR CHECK.

(1) Check antennas for secure mounting.

(2) Check all insulators for breaks and dirt.

(3) Check antennas for mechanical defects.

(4) Remove Radio Receiver and Transmitter BC-788-(*), and Indicator I-152-(*), from their mounting racks. Remove the chassis covers and perform the following checks:

(a) Check all wiring connections for corrosion or dirt.

(b) Check all tubes if testing facilities are available.

(c) Check all fuses.

(d) Replace chassis covers and reinstall the units on their mountings.

(5) Check that each unit has free movement on its shock mounting.

(6) Turn set on and allow it to warm up for five minutes.

(7) Adjust "REC. GAIN" and "CIRCLE SIZE" controls for proper circle size and be sure the brilliance is right. If this is wrong, check as in paragraph 3*b* through *q* of this section.

3. TROUBLE LOCATION AND REMEDY.

a. TEST EQUIPMENT REQUIRED.

(1) POWER SUPPLY. — Capable of delivering 115 volts 400 and 2,400 cps. (where required, 80 volts).

(2) CATHODE-RAY OSCILLOSCOPE. — A general purpose oscilloscope with 5-inch screen diameter and provisions for connecting directly to the deflecting plates. Oscilloscope TS-34/AP is suitable.

(3) TEST SET TS-23/APN. — Used to measure frequency and power output of transmitter section. Used to observe pulse output.

(4) TEST SET TS-10/APN. — Used to check tuning and sensitivity of the radio set. Paragraph 5 of this section gives instructions on the use of this test set. (*Test Set TS-10/APN because of its property of increasing attenuation of the delay coils should not be used if Test Set TS-10B/APN is available. Early production models of Test Set TS-10A/APN are also undesirable except those with the following nameplate data. RCA (CRV) Order No. 589-DAY-44, Serial No. 2661 and over; ECA (CTJ), Order No. 893-DAY-44, Serial No. 450 and over.*)

Note

Refer to figures 8-14, 8-15, 8-16, and figure 8-3 when making the following checks. The checks listed immediately below refer to Radio Set SCR-718-A, and to Radio Set SCR-718-B or SCR-718-C on the "X1" or "TIMES ONE" scale. For specific checks for Radio Sets SCR-718-B or SCR-718-C see paragraph 3*q*.

b. PILOT LAMP DOES NOT LIGHT WHEN RADIO SET IS SWITCHED ON.

(1) Check power supply by voltage measurement at socket J102 for correct voltage.

(2) Examine fuse on front panel of radio receiver and transmitter; if defective, replace.

(3) Test pilot light; if defective, replace.

(4) Check power at "ON-OFF" switch, remedy any defect.

(5) If fuse repeatedly blows when power is switched on, make the following tests:

(a) Resistance across capacitors C149A and C149B to ground; 50,000 to 100,000 ohms approximately with indicator connected.

(b) Resistance across capacitor C201 to ground; 1 megohm approximately.

(c) Disconnect the interconnecting cable from the receiver and transmitter. Connect terminals B and C of socket J101 with a jumper. This connects the 115-volt supply to the primary of transformer T101, thus energizing the receiver and transmitter independently of the indicator. If the fuse does not blow, the fault exists in the interconnecting cable or in the indicator. If the fuse continues to blow, the fault exists in the receiver and transmitter unit. Check circuit continuity according to figures 8-10, 8-17, 8-18.

c. NO TRACE APPEARS ON INDICATOR DIAL.

Note

The locations of screwdriver adjustments are shown in figure 5-1.

(1) Vary "BRIL." and "CIRCLE SIZE" controls simultaneously.

(a) If circle appears, align according to paragraph 9 of this section.

(b) If circle does not appear, proceed as in (2) below.

(2) Test high voltage rectifier V201 and replace if defective. If not defective, proceed as in (3), below.

(3) Trace the timing oscillator voltage to determine whether it reaches the indicator.

(4) Make the voltage and continuity check in accordance with par. 4, this section and figures 8-14, 8-16, 8-18.

d. TRACE TOO SMALL.

(1) Advance "CIRCLE SIZE" control to maximum.

(2) Measure plate, grid and screen voltages of oscillator tube V111 and circle amplifier V204, and check against values on typical voltage and current chart (refer to sec. V, par. 4).

(3) If values are incorrect, remove tubes, test in tube tester, and replace defective tubes. Otherwise replace tubes removed.

CAUTION

Never replace tube V114 with a new tube until the equipment has been turned off and given ample time to cool. A new cold V114 tube in "hot" (operating) equipment will cause damage to the tube.

(4) By means of an oscilloscope, measure oscillator voltage at terminal F of socket J101. This should be six volts (peak to peak) for Radio Set SCR-718-A, SCR-718-AM and 12 to 15 volts for Radio Set SCR-718-B or SCR-718-C. If low, proceed as in (5), below.

(5) By means of oscilloscope, measure circle amplifier (V204) grid voltage. This should be 2 to 12 volts, depending upon adjustment of "CIRCLE SIZE" control. If low, check alignment of T109 oscillator plate transformer for maximum output. Rotate "ZERO ADJ." control for maximum voltage.

(6) If low voltage is low, use oscilloscope to measure voltage at terminal A on top of transformer T203. This should be approximately 200 volts, peak to peak, for normal circle size. Adjust top core of T203 for maximum voltage.

(7) If trouble is not remedied, check complete circuit for continuity and elements for defects. Replace any defective parts.

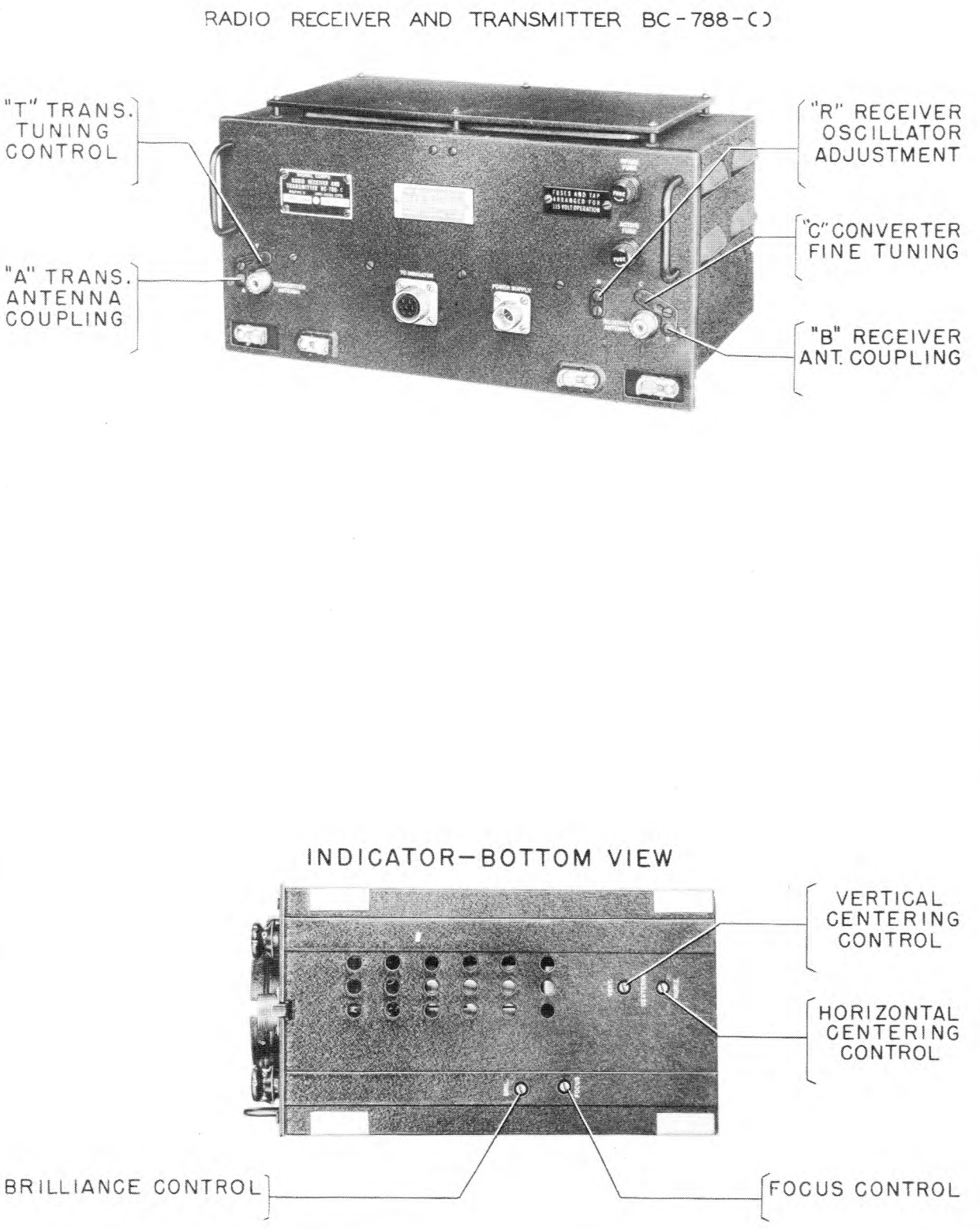

Figure 5-1. Radio Set SCR-718-(*) — Adjustment Locations

e. TRACE OFF CENTER.

(1) Adjust "HORIZ." and "VERT. CENTER" controls R222 and R225. If centering is not accomplished, proceed as in (2), below.

(2) Check indicator tube. Replace with one known to be satisfactory as instructed in paragraph 11*c*, this section, If trace cannot be centered, a complete circuit check is necessary.

f. FOCUS AND BRILLIANCE UNSATISFACTORY.

(1) Adjust "FOCUS" and "BRIL." controls.

(2) Check high voltage B+, and voltages along bleeder circuit to ground in accordance with section V, paragraph 4.

(3) Replace indicator tube with one known to be satisfactory as instructed in paragraph 11*c*, this section. If trouble is not remedied, make a complete circuit check.

g. TRACE DEFORMED.

(1) Follow alignment procedure in accordance with section V, paragraphs 9 and 10.

(2) Check voltage (above ground) on radial electrode. It should be approximately -220 volts d-c for Radio Set SCR-718-A, SCR-718-AM and -100 volts for Radio Set SCR-718-B, SCR-718-C.

(3) Remove tube and check continuity of leads from pins 7, 8, 10 and 11. See paragraph 11*c*, this section.

(4) Check individual component.

(5) Replace the indicator tube with one known to be satisfactory and if trouble is not remedied, make a complete circuit check.

h. TRACE TOO WIDE AT BEST FOCUS POINT.

(1) Check indicator tube by replacement as in paragraph 11*c* of this section.

(2) Check components of filter circuit, B+ and high voltage B+.

(3) Make continuity check of complete circuit.

i. NO PULSE.

(1) Check transmitter operation with Test Set TS-23 APN and reset frequency if necessary. If correct, proceed as follows:

(2) Check voltages, amplitudes and wave shapes in accordance with figure 8-1 for transmitter, and, if trouble is not found, follow alignment, paragraph 7, this section, emphasizing the following checks.

(3) Check UHF output tube V114, by replacement with a satisfactory tube.

CAUTION

Never replace V114 with a new tube until the equipment has been turned off and given ample time to cool. A new cold V114 tube in "hot" (operating) equipment will cause damage to the tube.

(4) Check screen voltages on all i-f and video amplifier tubes in accordance with paragraph 4, this section, with "REC. GAIN" control set at maximum. Follow circuit on figures 8-14, 8-16, 8-19 and make required remedies.

(5) Check d-c voltages on converter V101 and oscillator V102; use series resistor of 100,000 ohms between grid and voltmeter to measure grid voltage on V102.

(6) Check continuity from cathode of detector V109 to grids of video amplifiers V202 and V203.

(7) Check connections from plates of V202 and V203 to radial electrode of indicator tube V205 in accordance with figures 8-14 and 8-16.

(8) Check alignment of i-f amplifiers in accordance with procedure in paragraph 8, this section.

j. PULSE TOO SMALL AT MAXIMUM SENSITIVITY.

(1) Check frequency of transmitter by use of Test Set TS-23 APN, and align receiver to requirements of transmitter frequency by use of Test Set TS-10/APN.

(2) Check tubes V109, detector, and video amplifiers V202 and V203.

(3) Check d-c voltages at tubes V109, V202, V203.

(4) Check video peaking coil L204.

k. PULSE UNSATISFACTORILY FORMED. — Follow instructions in paragraph *j*.

l. PULSE FUZZY.

(1) Follow procedure in *j* above. If not remedied, proceed to (2) below.

(2) Check transmitter UHF output tube V114.

CAUTION

Do not install cold replacement tube in "hot" equipment.

(3) Check in accordance with alignment instructions of section V, paragraph 9, and make required adjustments.

m. PULSE TOO LONG. — See paragraph 3*j* this section.

n. PULSE POSITION OFF ZERO.

(1) Set "ZERO ADJ." control to bring leading edge of pulse to 0 on scale. (See figs. 3-1, 3-2, 3-3 and 3-4.) If this cannot be done, proceed as in (2) below this section.

(2) Check peaking of the primary winding of circle transformer T203.

o. NO NOISE WITH RECEIVER GAIN CONTROL IN MAXIMUM POSITION.

(1) Check all d-c and filament voltages in accordance with figures 8-14, 8-15, 8-16, 8-17 and 8-19 and paragraph 4, this section.

(2) Check receiver tubes and indicator video amplifier tubes. Replace unsatisfactory tubes.

(3) Check effect of varying "REC. GAIN" control on screen voltages of i-f amplifiers V103 and V104. (See paragraph 4, this section.)

p. POWER OUTPUT LOW.—Follow instructions in paragraph 3*i* this section.

q. SPECIFIC RADIO SET SCR-718-B or SCR-718-C CHECKS.

(1) No circle appears with switch in "X10" or "TIMES TEN" position.

(a) Check relay operation by operating scale switch.

(b) Check relay contacts for dirt, sticking, etc.

(c) By means of an oscilloscope trace the 9.8-kilocycle signal through V111, V204 and the associated grid and plate circuits.

(d) Check circle voltage frequency as described in paragraph 7*c*, this section.

(e) Tune transformers T-109A, T202A, and T203A (9.8 kc counterparts of T109, T202 and T203) to resonance.

(2) Comparative circle sizes not correct.

(a) First check "X1" or "TIMES ONE" scale circle as in paragraph 3*d*.

(b) If "X10" or "TIMES TEN" scale circle is too small, proceed as in paragraph 10, this section.

(c) If "X10" or "TIMES TEN" scale circle is too large, detune transformer T-203 until size is correct.

(3) "X10" or "TIMES TEN" zero pulse not adjustable to zero.

(a) Check resistor R155 and capacitor C166 on Radio Set SCR-718-C and R158 and C107 on Radio Set SCR-718-B.

(b) Adjust transformer T202.

(c) Adjust transformer T204.

4. TYPICAL VOLTAGE AND CURRENT MEASUREMENTS.

Note

See figure 8-23 for voltage measurements for Radio Set SCR-718-C.

Voltages and currents are direct current unless stated otherwise. All d-c voltage measurements are made with a 20,000 ohms-per-volt meter.

All heaters except rectifier V110 and V201 and indicator tube V205 are on 6.3-volts alternating current to ground. V110 filament, 5-volt alternating current at high voltage from ground.

V201 filament, 2.5-volt alternating current at high voltage from ground.

V205 filament, 6.3-volt alternating current at high voltage from ground.

a. RESISTANCE MEASUREMENT.

(1) Resistance in ohms of each terminal to ground with power off and with range switch in the times one (X1) position are as follows:

SCHEMATIC SYMBOL	*TYPE*	*FUNCTION*	*TERMINAL (PIN) NUMBER*							
			1	*2*	*3*	*4*	*5*	*6*	*7*	*8*
V101	6J6	Converter	72,000	72,000	0	0	0	0	560	
V102	6J6	Rec. Osc.	55,000	55,000	0	0	27,000	27,000	0	
V103	6AG5	1st i-f amp.		220	0	0	44,000	*800 to 30,000	220	
V104	6AG5	2nd i-f amp.		220	0	0	44,000	*800 to 30,000	220	
V105	6AG5	3rd i-f amp.	0	220	0	0	44,000	120,000	220	
V106	6AG5	4th i-f amp.	0	220	0	0	44,000	120,000	220	
V107	6AG5	5th i-f amp.	0	220	0	0	44,000	120,000	220	
V108	6AG5	6th i-f amp.	0	220	0	0	44,000	120,000	220	
V109	6AG5	Detector		2,200	0	0	44,000	160,000	2,200	
V110	5Y3-CT/G	Rectifier	–	44,000	–	300	–	300	–	44,000
V111	6AG5	Time Osc.	560,000	0	0	0	44,000	150,000	0	
V112	6AG5	Clipper	440,000	0	0	0	44,000	130,000	0	
V113	6L6	Driver	0	0	44,000	56,000	440,000	0	0	470
V114	6J6	UHF Output	12,000	12,000	0	0	180	180	39	
V201	2x2/879	Rectifier	3,000	–	–	30,000	(Cap at 1.1 megohms)			
V202	6AG5	Video amp.	83	120	0	0	50,000	82,000	120	

a. RESISTANCE MEASUREMENT. (Continued)

SCHEMATIC SYMBOL	TYPE	FUNCTION	TERMINAL (PIN) NUMBER							
			1	2	3	4	5	6	7	8
V203	6AG5	Video amp.	82	120	0	0	50,000	82,000	120	
V204	6AG5	Circle amp.	*270 to 5,000	270	0	0	42,000	12,000	270	
V205	3DPI-S2	Indicator	870,000	870,000	*870,000 to 950,000	–	*500,000 to 700,000	0	560,000	560,000
			9	10	11	12	13	14		
V205 (cont.)	3DPI-S2	Indicator	60,000	560,000	560,000	–	–	870,000		
SYMBOL	TYPE	FUNCTION	TERMINAL (PIN) NUMBER							

*Value dependent on setting of rheostats—V103 and V104, Pin 6—Rheostat R201. V204, Pin 1—Rheostats R213 and R242. V205, Pin 3—Rheostat R205. V205, Pin 5—Rheostat R207.

(2) Resistance in ohms of each terminal to ground with power off and with range switch in the times ten (X10) position are as follows:

SCHEMATIC SYMBOL	TYPE	FUNCTION	TERMINAL (PIN) NUMBER							
			1	2	3	4	5	6	7	8
V101	6J6	Converter	54,000	54,000	0	0	0	0	560	
V102	6J6	Rec. Osc.	39,000	39,000	0	0	27,000	27,000	0	
V103	6AG5	1st i-f amp.		220	0	0	44,000	*800 to 20,000	220	
V104	6AG5	2nd i-f amp.		220	0	0	44,000	*800 to 20,000		
V105	6AG5	3rd i-f amp.	0	220	0	0	25,000	100,000	220	
V106	6AG5	4th i-f amp.	0	220	0	0	25,000	100,000	220	
V107	6AG5	5th i-f amp.	0	220	0	0	25,000	100,000	220	
V108	6AG5	6th i-f amp.	0	220	0	0	25,000	100,000	220	
V109	6AG5	Detector	0	2,200	0	0	25,000	140,000	2,200	
V110	5Y3-GT/G	Rect. l. v.	–	25,000	–	300	–	300	–	25,000
V111	6AG5	Time Osc.	560,000	0	0	0	25,000	135,000	0	
V112	6AG5	Clipper	440,000	0	0	0	25,000	120,000	0	
V113	6L6	Driver	0	0	25,000	42,000	440,000	0	0	470
V114	6J6	UHF Output	12,000	12,000	0	0	180	180	39	
V201	2x2/879	Rect. h. v.	3,000	–	–	3,000	(Cap at 1.1 megohms)			
V202	6AG5	Video amp.	82	120	0	0	34,000	68,000	120	
V203	6AG5	Video amp.	82	120	0	0	34,000	68,000	120	
V204	6AG5	Circle amp.	*270 to 5,000	270	0	0	22,000	94,000	270	
V205	3DPI-S2	Indicator	870,000	870,000	*10,000 to 950,000	–	*500,000 to 700,000	–	560,000	560,000
			9	10	11	12	13	14		
V205 (cont.)	3DPI-S2	Indicator	60,000	560,000	560,000	–	–	870,000		
SYMBOL	TYPE	FUNCTION	TERMINAL (PIN) NUMBER							

*Value dependent on setting of rheostats—V103 and V104, Pin 6—Rheostat R201. V204, Pin 1—Rheostats R213 and R242. V205, Pin 3—Rheostat R205. V205, Pin 5—Rheostat R207.

b. VOLTAGE AND CURRENT MEASUREMENT. — See the following table for voltage and current measurements.

SCHEMATIC SYMBOL	TYPE	FUNCTION	VOLTAGES: PLATE PIN	PLATE VOLTS	PLATE WAVE SHAPE	GRID PIN	GRID VOLTS	GRID WAVE SHAPE	CATHODE PIN	CATHODE VOLTS	CATHODE WAVE SHAPE	SCREEN PIN	SCREEN VOLTS	SCREEN WAVE SHAPE	CURRENTS: PLATE PIN	PLATE MA.	GRID PIN	GRID MA.	CATHODE PIN	CATHODE MA.	SCREEN PIN	SCREEN MA.	OTHER READINGS
V101	*6J6	Converter	1-2	83		5-6	0		7	3.3		-	-		1-2	5.9	5-6	0	7	5.9	-	-	
V102	*6J6	Rec. Osc.	1-2	111		5-6	-5		7	0		-	-		1-2	8.2	5-6	0.19	7	8.2	-	-	
V103	▲6AG5	1st i-f amp.	5	280		1	0		2-7	0-1.75		6	0-150		5	0-6	1	0	2-7	0-8	6	0-2	
V104	▲6AG5	2nd i-f amp.	5	280		1	0		2-7	0-1.75		6	0-150		5	0-6	1	0	2-7	0-8	6	0-2	
V105	6AG5	3rd i-f amp.	5	280		1	0		2-7	1.9		6	150		5	6.6	1	0	2-7	8.6	6	2	
V106	6AG5	4th i-f amp.	5	282		1	0		2-7	1.9		6	150		5	6.6	1	0	2-7	8.6	6	2	
V107	6AG5	5th i-f amp.	5	288		1	0		2-7	1.9		6	150		5	6.6	1	0	2-7	8.6	6	2	
V108	6AG5	6th i-f amp.	5	292		1	0		2-7	1.9		6	150		5	6.6	1	0	2-7	8.6	6	2	
V109	6AG5	Detector	5	300		1	0		2-7	(AM)52 0.65		6	215 100		5	6.6	1	0	2-7	8.6	6	2	
V110	5Y3-GT/G	Rectifier	4 6	0 0		-	-		8	+320		-	-		4 6	0 0	-	-	8	120	-	-	Pins 4-6, plate to plate, 350 v a-c
V111	6AG5	Time Osc.	5	300		1	(B)-30 -10 ±50%		2-7	0		6	140		5	1.8	1	.02 ±50%	2-7	2.5	6	7	
V112	6AG5	Clipper	5	300		1	✱ (B)-120 -150		2-7	0		6	185		5	3.9	1	0.15	2-7	5.5	6	1.4	
V113	6L6	Driver	3	300		5	✱ (B)-12 -240		8	(B)-15 8.5		4	270		3	15.0	5	0.5	8	18	4	2.3	
V114	*6J6	UHF Output	1-2	-40		5-6	-0.15		7	0.16		-	-		1.2	3.2	5-6	.8	7	4.0	-	-	
V201	2X2/879	Rectifier	Cap	-1550		-	-		4	0		-	-		Cap	1.5	-	-	4	1.5	-	-	Cathode, pin 4 to ground - 1400 volts a-c
V202 V203	6AG5 6AG5	Video amp. Video amp.	5 5	177		1 1	0		2-7	2.4		6	140		5 5	16.3	1 1	0	2-7	19.8	6	3.5	
V204	6AG5	Circle amp.	5	300		1	0		2-7	2.4		6	180		5	6.6	1	0	2-7	8	6	1.5	
SYMBOL	TYPE	FUNCTION	PIN	VOLTS	WAVE SHAPE	PIN	VOLTS	WAVE SHAPE	PIN	VOLTS	WAVE SHAPE	PIN	VOLTS	WAVE SHAPE	PIN	MA.	PIN	MA.	PIN	MA.	PIN	MA.	

* GRIDS 1-2 TIED TOGETHER FOR D-C. PLATES 1-2 TIED TOGETHER.
▲ VOLTAGE CONTROLLED BY SETTING OF RECEIVER GAIN.
✱ WIDE VARIATION MAY BE EXPECTED.
AM APPLIES TO SCR-718-AM & SCR-718-B ON X1 SCALE.
B APPLIES TO SCR-718-B ON X10 SCALE.

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c. CATHODE RAY TUBE PIN VOLTAGES. — See the following table for typical cathode ray tube pin voltages.

Schematic Symbol	*Type*	*Function*	*Terminals*	*D-C Volts*
V205	3DP1-S2	Indicator	Cathode to ground	-1320
			2nd anode to cathode	1550 (AM-1250)
			1st anode to cathode	460 (290 to 630) AM 350 (200 to 500) depending on setting of R207
			Grid to cathode	-30 (0 to -60) depending on setting of R205

5. MEASURING SENSITIVITY AND CHECKING TUNING OF RADIO SET SCR-718-(*), BY USE OF TEST SET TS-10(*)/APN.

IMPORTANT

The sensitivity of Radio Set SCR-718-A, SCR-718-AM, SCR-718-B or SCR-718-C depends primarily on the type of radio transmitter and receiver and indicator used. Radio Set SCR-718-A (normally including BC-788-A and I-152-A) has a factory test limit of 60 db (measured with TS-10 APN). Radio Set SCR-718-AM (normally including Radio Receiver and Transmitter BC-788-AM and Indicator I-152-AM) has a factory test limit of 70 db. Combination of these and other types will probably result in sets of intermediate sensitivity. For this reason the test limits given in paragraph 5*f* this section are chosen so that a readable signal will be obtainable at the altitudes above the terrain specified. Do not reject a set if its sensitivity is sufficient for the flight conditions for which it will be used.

a. See paragraphs 2*a* and *b*, this section.

b. Check if the input voltage to the radio set is between 113 and 117 volts. (79 and 81 volts when altimeter is connected for 80-volt operation).

c. Disconnect antenna transmission lines from "RECEIVER ANTENNA" and "TRANSMITTER ANTENNA" receptacles.

d. Connect "TRANSMITTER ANTENNA" receptacles to the "D-HIGH" receptacle on the test set using one 8-foot cord CA-102. Connect jumper cord CA-101 between "B-LOW" receptacles and "C-HIGH" receptacle.

e. Connect" RECEIVER ANTENNA" receptacle to attenuator L-101 on the side away from the chain, using the second 8-foot cord CA-102. Connect remaining attenuator L-101 receptacle to the "A-LOW" receptacle on the test set, using attached cord CA-103.

f. The following chart of test limits shows attenuator readings that will give a readable signal at the altitudes specified. (See "Important" of par. 5, sec. V.)

Altitude in feet	*Over water*	*Over land*
20000	50	55
30000	58	62
40000	60	63

If the indicator cannot be observed by the test man (or an assistant) while using the test set, set the attenuator to the proper reading, as determined from the above chart. Set "REC. GAIN" on the altimeter indicator to maximum. Adjust "CIRCLE SIZE" so that the circular trace coincides with the base line of the scale. The delayed signal pulse should appear at approximately 350 feet on the indicator scale; turn the "ZERO ADJ." control until this delayed signal is centered at the 500-foot scale division. This signal pulse should be well shaped, approximately 250 feet wide at the base, and its height should be at least equal to that of the 500-foot scale division ($\frac{1}{4}$ inch). If the signal shows signs of limiting, the equipment is not necessarily defective; increase the attenuator reading by three divisions and use a signal height of 3 16 inch. If the indicator can be observed by the test man (or his assistant) while using the test set, adjust the attenuator until the delayed signal height is $\frac{1}{4}$ inch (if the 3 16-inch height is used, add three divisions to the test limits given in the chart).

g. If the altimeter installation does not pass the above test the only adjustments which may be made on the Radio Receiver and Transmitter BC-788-A are listed below. These adjustments shall be made with the "REC. GAIN" control at above half sensitivity and attenuator L-101 or L-101-A adjusted to a point where the reflection pulse of the altitude indication is approximately $\frac{1}{8}$ inch high:

(1) Receiver connector tuning, marked "C."

(2) Receiver oscillator tuning, marked "R."

(3) Receiver antenna coupling, marked "B."

(4) Transmitter antenna coupling, marked "A."

IMPORTANT

Do not disturb the transmitter oscillator tuning marked "T." The transmitter tuning is to be adjusted using Test Set TS-23/APN, in accordance with paragraph 6, this section.

h. Repeat paragraph *f* above.

i. Remove output Indicator I-101 from test set and attach one to each altimeter antenna. One output indicator should light. Failure to light does not necessarily indicate a faulty antenna system. It may indicate that the operating voltage is below 27.5 volts (normal airplane operating voltage). If the output

indicator lights, the antenna system is in good working order. If the output indicator fails to light, make the following test:

(1) Touch the ends of the antenna.

(2) Increase the primary voltage from 27.5 volts to 30 volts. If any indication is obtained in either test the antenna system is normal.

(3) If indicator still does not light, the antenna being tested or its connecting cable is faulty.

j. Turn altimeter off and remove output Indicator I-101 from antenna.

6. TESTING RADIO SET SCR-718-(*) USING TEST SET TS-23/APN.

a. Locate the test set so that the indicator unit of the altimeter is to the left and the receiver and transmitter is to the right.

b. Attach interconnecting cord CA-102 to the "TO REC. TRANS." socket on the indicator and Cord CA-103 to the "TO INDICATOR" receptacle on the receiver and transmitter.

c. Connect the receiver and transmitter to a 115-volt, 400 to 2400-cycle a-c supply. Turn the equipment on and allow five minutes to warm up.

d. Turn test switch of test unit to "NORMAL B+" position.

e. Adjust voltage of the primary power source until the voltmeter of the test unit reads at the red line (320 volts).

f. Turn test switch of the test unit to "POWER-FREQ" position.

g. Connect jumper cord CA-101 to "DETECTOR INPUT" receptacle.

h. Connect antenna Cord CD-800 to "WAVE-METER INPUT" receptacle on test set and to "TRANSMITTER ANTENNA" receptacle on the altimeter.

i. Loosen screws and open covers for adjustment controls "T" and "A."

j. Adjust controls "T" and "A" on receiver-transmitter panel for maximum reading on voltmeter in test unit. If peak cannot be obtained, the fault may lie in the UHF transmitter circuit.

Note

Peak means a maximum meter reading which can be diminished by turning control "T" in either direction from the setting which produced the maximum reading.

k. Disconnect jumper cord from "DETECTOR INPUT" receptacle.

l. Disconnect antenna Cord CD-800 from "WAVE-METER INPUT" and connect this cord to "DETECTOR INPUT" receptacle.

m. Adjust control "A" on receiver-transmitter for maximum voltmeter reading. If voltmeter reading is below blue line (375 volts), pulser-transmitter circuit may require servicing. For field checks and routine bench checks (not major overhaul) this reading may be as low as 300, if the overall sensitivity reading using Test Set TS-10-(*)/APN is satisfactory. Readings below 150 indicate the need for servicing the pulser-transmitter circuits. Replacing the JAN-6J6, UHF output tube, (V114) will sometimes be sufficient to raise the power output to normal. If a peak is obtained for two different settings of control "A," the antenna loop, (Reference Symbol L-129), may be too tightly coupled to the plate tank inductance, (Reference Symbol L-127). If power output is low, the coupling may be too loose. For details see paragraph 7*g*, this section. The simple circuits of Test Set TS-23/APN do not permit reading *peak* power output, but do indicate something between average and peak power sufficient for the desired test since it has been found that the performance of Radio Set SCR-718-(*) does not depend too greatly on peak power output.

n. If tests *a* through *m* above indicate that the receiver-transmitter is operating properly, the transmitter pulse should be observed as in paragraph 6 *o* through *q*, this section.

o. Turn test switch to "SIGNAL" position.

p. If previous tests have disturbed the connection, antenna Cord CD-800 should be connected to the "TRANSMITTER ANTENNA" receptacle on the receiver-transmitter and to the "DETECTOR INPUT" receptacle on the test set.

q. A pulse should appear on the indicator of the altimeter approximately ¼ inch high and 200 feet wide at the base. A somewhat wider pulse with a slight dip in the right (falling) edge is normal for Radio Set SCR-718-AM, SCR-718-B, and SCR-718-C. If normal pulse does not appear, the video amplifier may require servicing.

r. If tests of paragraph 6*a* through *q*, this section, indicate that the circuits are operating properly, connect Test Set TS-10/APN or TS-10A/APN and adjust controls "R," "C," and "B" in accordance with table 5-1 of the test set handbook, and paragraph 8, this section. If the receiver and transmitter does not perform satisfactorily in the adjustment, the receiver portion of the altimeter may need servicing.

s. After completion of the tests the covers for adjustment controls "T" and "A" and the receiver covers on "B," "C," and "R" should be closed and tightened in place.

7. ALIGNMENT OF TRANSMITTER SECTION OF RADIO RECEIVER AND TRANSMITTER BC-788-(*).

Note

Figures 5-6 and 8-1 show each stage of the transmitter with voltage and wave shapes at the grids, plates and cathodes.

a. TIMING OSCILLATOR (98.356 KILOCYCLES).

(1) Adjust the cathode coil for the crystal-controlled timing oscillator V111 (6AC5) by rotation of the core stud of L123 to a position which produces minimum output voltage from the oscillator. (See figs. 8-15 and 8-16.) This proper setting is attained at a position which occurs between settings of the core producing a maximum output when inserted into L123, and then a maximum output when withdrawn from L123. Since the circle size visible on the indicator tube face is proportional to the timing oscillator output, adjustment of L123 may be made while viewing the indicator.

(2) Following adjustment of L123, align the plate circuit of V111 by careful setting of the adjustment core stud of L109A which is a part of T109. This adjustment located on top of T109 consists of rotating the core stud until the voltage output of the plate circuit of V111 is a maximum as indicated by an increase of circle size appearing on the indicator cathode-ray tube.

b. TIMING OSCILLATOR (98 KILOCYCLES) IN RADIO RECEIVER AND TRANSMITTER BC-788-B, OR SCR-788-C.

(1) In Radio Receiver and Transmitter BC-788-B the added capacity of the relay and the associated leads make the above procedure impracticable. Instead, adjust the core stud of L123 until the "X1" "TIMES ONE" scale circle appears most quickly, when the scale switch is thrown from the "X10", or "TIMES TEN" to the "X1" or "TIMES ONE" position. This should occur with the core stud of L123 nearly all the way out.

(2) Following adjustment of L123, adjust the core stud of T109 as described above for Radio Receiver and Transmitter BC-788-A.

c. TIMING OSCILLATOR (9.8 kilocycles) IN RADIO RECEIVER AND TRANSMITTER BC-788-B OR BC-788-C. — Since the 9.8-kilocycle oscillator is not crystal-controlled, check its frequency as follows:

(1) Set switch to the "X10" or "TIMES TEN" scale.

(2) Insert a short length (six inches) of wire in the receiver antenna receptacle.

(3) Set up and operate a second altimeter (Radio Set SCR-718-A; or SCR-718-AM; or SCR-718-B or SCR-718-C on the "X1" or "TIMES ONE" scale), known to be in good working order, in the vicinity of the equipment to be aligned.

(4) Insert a short length of wire in the transmitter antenna receptacle of the second altimeter. A ring should appear on the indicator of the altimeter being aligned, showing that it is picking up the signals of the second altimeter.

(5) Carefully tune T112 (9.8 kilocycles oscillator grid coil) until an almost stationary pattern of ten pips, excluding the zero pulse, appears around the ring. (A good method of counting the pips is to count two at a time in opposite directions from the starting point).

(6) An equally satisfactory method requires the use of an audio signal generator in the following procedure:

(*a*) Set the frequency of the signal generator to 9.8 kilocycles and connect its output to the grid of V204.

(*b*) With the altimeter on the "X1" or "TIMES ONE" scale adjust the signal generator frequency until an almost stationary pattern of ten loops appears on the indicator. (The signal generator is now set accurately to one-tenth the crystal-controlled timing oscillator frequency.)

(*c*) Switch the altimeter to the "X10" or "TIMES TEN" scale and adjust the bottom core stud of T1 until there is zero beat of the circle.

(*d*) Switch back to the "X1" or "TIMES ONE" scale.

(*e*) Adjust the signal generator if necessary, then recheck the "X10" scale.

d. DRIVER (900 KILOCYCLES). — (Except for Radio Receiver and Transmitter BC-788-B, or SCR-718-C on "X10" or "TIMES TEN" scale disregard the clipper adjustment until the driver adjustment has been made.)

(1) Alignment at the proper operating point is made by adjusting the core stud of L111A, which is a part of T111, for 900 kilocycles. This corresponds to nine cycles in the damped wave train of voltage appearing at C111A. (See "J", fig. 8-1.)

(2) Make observations of the damped wave train by connecting a cathode-ray oscilloscope to C111A (terminal F of T111) through a small capacitor (5 mmf or less) and return the low side of the oscilloscope to ground (make connections directly to the deflecting plate of the oscilloscope.)

(3) The first positive peak of the damped wave train must have an amplitude of 400 to 450 volts, similarly, the second positive peak of the wave train must not exceed 28 percent of the first positive peak.

(4) The latter requirement is necessary in order that a secondary from of UHF oscillation in output tube V114 be suppressed. The second, or false transmission may be detected, if present, by rotating the receiver gain control to maximum sensitivity position and inspecting the trace on the indicator cathode-ray tube for a secondary pulse at approximately 600 feet clockwise from the zero pulse on the scale. See figure 3-6 for a typical secondary pulse. Make the check with the correct antenna load. A correct antenna load may be secured by attaching Test Set TS-10/APN or Test Set TS-23/APN.

(5) Turn the core stud of the driver coil L111A inwards to do away with this secondary pulse. This may lower the driver frequency from 900 kilocycles to 800 kilocycles and will give a somewhat wider pulse but operation will be satisfactory.

e. DRIVER OF RADIO RECEIVER AND TRANSMITTER BC-788-B, OR BC-788-C ON "X10" OR "TIMES TEN" SCALE.

(1) After alignment on the "X1" scale set the switch to "X10" or "TIMES TEN" scale.

(2) Insert short lengths of wire in both antenna receptacles of the transmitter-receiver. (If a secondary pulse appears at approximately 8,000 feet on the indicator, adjust T111 for minimum amplitude of this secondary pulse.)

(3) Since this adjustment will also affect the "X10" or "TIMES TEN" circle size, make a compromise adjustment between minimum secondary pulse height and correct circle size. (See par. 7*f* for adjustment of T110, which also affects the secondary pulse height.)

f. CLIPPER (400 KILOCYCLES APPROXIMATELY).—

Note

The clipper stage is not particularly critical as to final adjustment. Proper adjustment may be made quickly by rotating the core stud of L110A, a part of T110, to a position which is a compromise between maximum power output from UHF oscillator V114 and the position nearest zero of the initial pulse, when the "ZERO ADJUSTMENT" described in section V, paragraph 10 is set at the center of its working range.

(1) Make the clipper adjustment by observing simultaneously the zero pulse position on the indicator and the power output of the transmitter section of Radio Receiver and Transmitter BC-788-A or BC-788-AM as measured by Test Set TS-23 APN connected to antenna connector J104.

(2) In Radio Receiver and Transmitter BC-788-B, or BC-788-C on the "X10" or "TIMES TEN" scale adjust T110 for minimum secondary pulse height. (This adjustment usually occurs with the core stud practically all the way out.)

g. UHF OUTPUT (440 MEGACYCLES).

(1) Adjust UHF oscillator V114 to the correct operating frequency by means of plate tank inductance L127 marked "T" and peaking antenna coupling C161 adjustment marked "A" for maximum output.

Note

Adjustments "T" and "A" are screwdriver adjustments and may be reached from the front panel of the unit. (See fig. 1-3.) An auxiliary adjustment is provided for the position of antenna loop L129 (see figs. 6-2 and 6-3). This is preset during test by the manufacturer and should not normally require adjustment under service use. The adjustment is of the screwdriver type reached from the top of the chassis and it provides means of loosening or tightening the coupling of antenna loop L129 to plate tank inductance L127. In order to observe the power output in Radio Receiver and Transmitter BC-788-B or BC-788-C, relay K101 must be closed manually with the scale switch in "TIMES TEN" or "X10" position, since with Test Set TS-23 APN in the circuit the scale switch cannot close the relay.

(2) For maximum transmitter output Test Set TS-23 APN should be used to examine the shape of the pulse. It will be noted that as the physical spacing between loop L129 and tank L127 is decreased, the power output will increase up to a certain point. Beyond this point, the observed pulse shape may acquire two or more distinct peaks, the effect being dependent largely on the setting of adjustment C161 (antenna coupling capacitor). (See fig. 8-12.) If the coupling is loose, that is, if L129 is spaced too far from L127, the loading on the oscillator is insufficient and the secondary form of oscillation (see fig. 5-2B) may appear at 600 feet on the indicator face. If antenna loop L129 is properly positioned, varying of antenna coupling C161 should not introduce additional peaks. Examples of pulse shapes for various adjustments are shown in figure 5-2A. Adjustments made individually on L129, L127 and C161 may cause slight maladjustments on each of the others, hence if realignment of one takes place, it is recommended that the others be rechecked for possible shifts.

(3) All adjusting devices such as sliders, cores, adjustable capacitors and potentiometers should move through their normal range without requiring

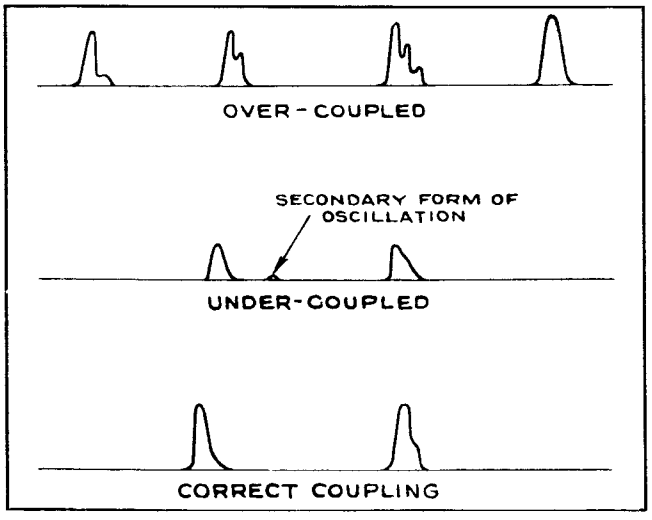


Figure 5-2A. Wave Shapes (Transmitter Pulse)

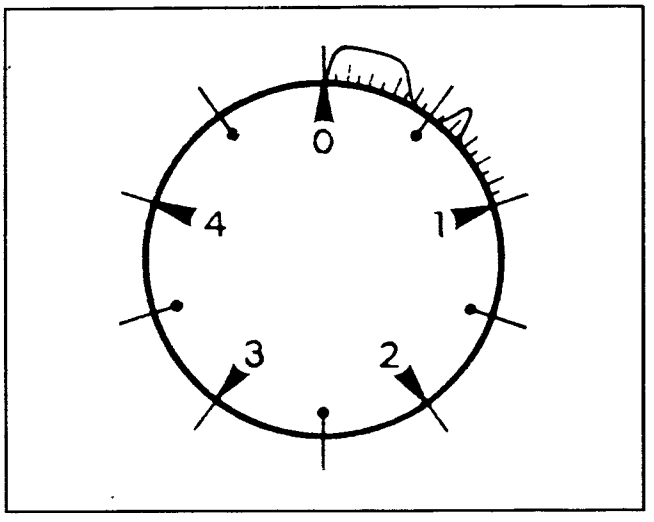


Figure 5-2B. Indicator (Showing Secondary Pulse)

excessive effort to turn screws, etc. In the event that undue pressure is required, investigate cause for binding before attempting to force. Friction devices are provided on controls requiring them. These should be adjusted in case controls are removed and replaced. The transmitter UHF output should operate at 440 megacycles, however, the adjustments provided take care of varying the frequency over ± 5 megacycles. It is important that the transmitter and receiver UHF circuits of Radio Receiver and Transmitter BC-788-A or BC-788-AM or BC-788-B, both operate at frequencies which are close to each other (within 0.5 megacycles). The transmitter UHF circuits should be adjusted for correct frequency, power output and pulse shape by the use of Test Set TS-23/APN. The final adjustment of the receiver UHF circuit can then be made by using Test Set TS-10/APN.

8. ALIGNMENT OF RECEIVER SECTION OF RADIO RECEIVER AND TRANSMITTER BC-788-(*).

(*See paragraph* 5 *this section*).

a. GENERAL.

(1) The preferable method for alignment of the UHF portion of the receiver section is by the use of Test Set TS-10/APN, which includes a delay line and an attenuator and which permits the transfer of a delayed test lobe from the transmitter section to the receiver section, thus allowing the UHF portion of the receiver to be tuned to the transmitter output. This should be done on the basis of securing the narrowest test pulse, as viewed on Indicator I-152-A or I-152-AM with the receiver gain control set to about one-half of its maximum position and with the test set attenuator adjusted to produce a normal-sized test pulse. An alternate procedure using a UHF signal generator is also indicated in the table, but should be used only if Test Sets TS-10/APN and TS-23/APN are not available.

(2) After the receiver section is aligned to the transmitter section, the overall sensitivity of the equipment can be checked by setting the receiver gain control to a maximum and using Test Set TS-10/APN.

(3) Do not adjust sealed pre-set i-f transformers. If these transformers are defective or misaligned replace them with spare transformers which have been factory adjusted and sealed.

b. PROCEDURE. — The following table outlines the alignment procedure for the receiver.

CAUTION

During alignment, always use the lowest test and/or marker signal to give usable indications. Be sure that no circuits are overloaded during alignment, otherwise incorrect alignment may result. All adjusting devices should move through their normal range without requiring excessive effort to manipulate. If undue pressure is required, investigate cause for binding before attempting to force.

No.	*Circuit*	*Equipment*	*Test Signal*		*Output Point*	*Adjustments*	*Oscilloscope Pattern Reference*	*Gain Control Setting*	*Tubes To Be Removed*	*Associated Procedure and Supplementary Information*
			Freq. MC	*Point of Application*						
1	Receiver Oscillator	Test Set* TS-10/APN	440	Receiver Input Connector	Secondary of T107; connect vacuum-tube voltmeter from pin 1 of V108 to ground◐	L115*† Rec. osc. (Front panel) *‡	440 mc mid-band Maximum output	▲	V114 # V114 #	Remove the 6th i-f amplifier (V108) from its socket when a vacuum tube voltmeter is used. Use shortest possible lead lengths on voltmeter probe. The vacuum tube voltmeter should be a G.R. Type 726-A or equal.
2	Receiver Converter			Receiver Input Connector						

*A vacuum tube voltmeter may be used in conjunction with an UHF signal generator to measure the signal-to-noise ratio of the receiver. Turn off the signal generator modulation when a vacuum tube voltmeter is used.

†When using a signal generator, adjust L115 so that a 440 megacycle signal is on the center of the band-pass, approximately 4 megacycles wide. Check by noting the frequencies at which 70 percent of maximum output is obtained.

Example-Readings at 70 percent maximum output are 436 megacycles and 442 megacycles. Make adjustment to raise megacycle readings on oscillator 1 megacycle to 437 and 443 megacycles at 70 percent response.

‡The four following adjustments preset at factory, should only be disturbed to obtain optimum performance. (See fig. 5-1.)

(1) Converter fine tuning C116 on front panel.

(2) Converter coarse tuning—move shorting bar on L114 with a small screwdriver if C116 does not peak.

(3) Antenna coupling-C119 on front panel.

(4) Antenna loop position adjustment—top of chassis.

Make adjustments in the order listed for maximum output indication and narrowest test lobe when using Test Set TS-10/APN. Make these adjustments in sequence, two separate times, since they are interdependent. (When using a signal generator and a vacuum tube voltmeter, 2 to 3 volts of noise should be indicated at the secondary of T107 at maximum gain control. Turn gain control until 1 volt of noise is indicated. An unmodulated test input signal of 30 microvolts (approx.) should increase the voltmeter reading to 3 volts).

▲Approximately ½ maximum when tuning receiver using Test Set TS-10/APN, or maximum when using signal generator.

◐Only when using UHF signal generator method.

#Remove V114 only when using UHF signal generator method.

9. ALIGNMENT OF INDICATOR I-152-(*) ON "X1" OR "TIMES ONE" SCALE.

a. PRELIMINARY ADJUSTMENT OF CIRCLE FORMING CIRCUITS.

(1) Before making any adjustment to the circle forming transformer, rotate the "BRIL." control R205 clockwise until a pattern appears on the face of the cathode-ray indicator V205.

(2) Rotate the "FOCUS" control R207 either clockwise or counterclockwise until the focus of the pattern on the tube face is at its sharpest.

(3) Adjust both "HORIZ." and "VERT. CENT." controls R222 and R225 alternately until the pattern, usually an ellipse, is approximately symmetrical with respect to the calibrated scale. (See fig. 5-3.)

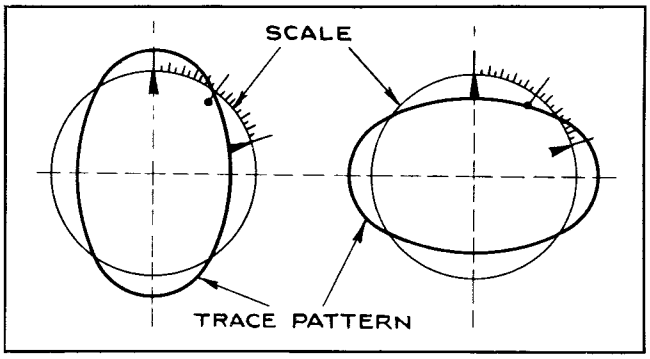


Figure 5-3. Indicator I-152-A — Circle Shape

(4) Adjust the core stud which tunes the primary of T203. (With the chassis placed on a horizontal surface, this core stud is visible on the top of T203.) Rotate the screwdriver adjustment for maximum size pattern (ellipse or circle) as seen on the face of indicator tube V205.

(5) Tune the secondary core adjustment of T203, which is located on the underside of the chassis, until the two axes of the pattern are vertical and horizontal (see figs. 6-6, 6-7, and 6-11).

(6) Adjust the shape control R227 so that the horizontal and vertical axes are equal. The pattern following these operations should now approach a circle.

b. ADJUSTMENT OF CIRCLE SIZE. — Rotate "CIRCLE SIZE" control R214 to increase or decrease the size of the circle so that its size corresponds to the reference circle appearing on the calibrated scale. See figure 5-4 for suggested size.

c. FINAL ADJUSTMENTS OF CIRCLE FORMING CIRCUITS.

(1) Repeat adjustments on the primary and secondary of T203 and of the shape control R227 until a circle trace with the minimum amount of distortion results.

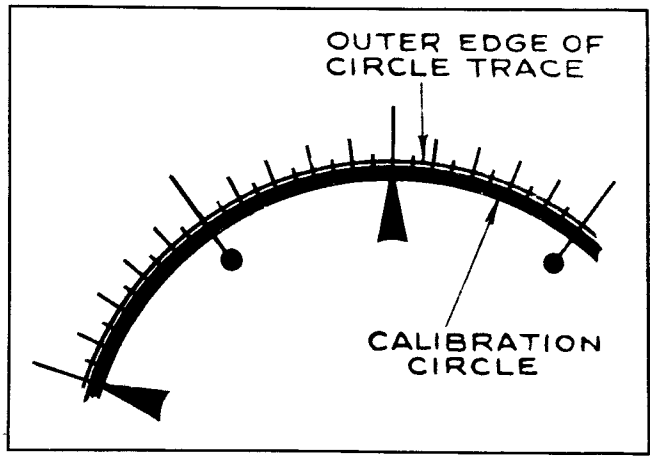


Figure 5-4. Indicator I-152-A — Circle Size

(2) Repeat horizontal and vertical centering operations until the circle traced is concentric with the scale.

Note

A slight retouching of "BRIL." control (R205) and "FOCUS" control (R207) may be found desirable to secure satisfactory brilliance and focusing. The best operating position for "BRIL." control R205 occurs when a slight glow or a halo effect appears adjacent to and concentric with the circle being traced on the indicator tube face and when the trace is sufficiently fine for good readability.

d. ZERO ADJUSTMENT (REFERENCE PULSE).

(1) Adjust "REC. GAIN" control R201 until a pulse appears on the circle being traced. (To secure a pulse it may be necessary to insert a two-or three-inch piece of wire in each of the antenna sockets on the receiver and transmitter unit.) This pulse should be of average height, approximately $\frac{1}{4}$ inch, as used in actual service.

(2) Rotate the "ZERO ADJ." knob (part of T202), located on the front panel of the indicator, to check the range over which the reference pulse may be moved. The normal altitude range over which the pulse may be moved is approximately ± 200 feet, as measured on either side of zero on the scale, before excessive size changes occur in the circle trace itself. (See fig. 5-5.)

(3) Should excessive size in the circle trace occur at one end or the other of the zero adjustment, readjust the primary circle core adjustment, top of core stud of T203, until this effect is a minimum when covering a range of ± 200 feet with the zero adjustment of R202. Detuning of the primary of T203 to a slight extent is permissible since no effect on performance results.

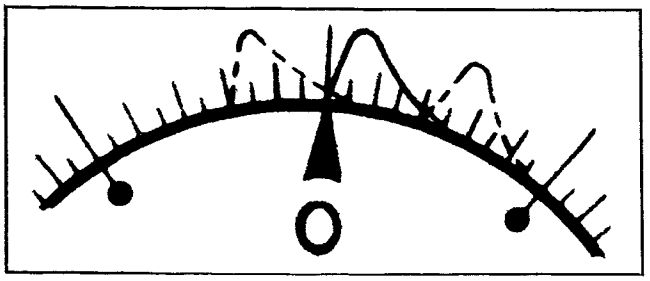


Figure 5-5. Indicator I-152-A — Reference Pulse Adjustment

(4) After making the tests outlined above, finally turn the "ZERO ADJ." control so that the leading edge of the reference pulse coincides with the zero calibration mark on the indicator scale. The operator may reset the zero as required if the zero setting shifts slightly in service.

(5) An additional setting of the reference pulse for bench adjustment is necessary in order to allow for residual delay, referred to in section II, paragraph 2, *d* (4). The pulse should be set to read to the left of zero a distance equivalent to the number of feet as given by calculation of the residual delay. It is invariably less than 50 feet on Radio Set SCR-718-A or SCR-718-AM.

10. ALIGNMENT OF INDICATOR I-152-B OR I-152-C ON "X10" OR "TIMES TEN" SCALE

a. After alignment on the "X1", or "TIMES ONE" scale, adjust the "X1", or "TIMES ONE" circle size properly.

b. Switch to the "X10", or "TIMES TEN" scale. (Be sure the frequency of the 9.8 kilocycles timing oscillator is correct: (see sec. V, par. 7*c*).

c. Adjust the top core stud of T205 (the 9.8 kilocycles circle output transformer) for maximum circle amplitude.

d. Adjust the bottom core stud and the shape control (R237) for best circle shape as described in paragraph 9*c*, this section.

e. Adjust the top core stud again for proper zero pulse position, while checking the "X10" or "TIMES TEN" "ZERO ADJ." control for proper range (± 1500 feet). See paragraph 9*b*, this section for adjustment of circle size.

11. MAINTENANCE CHECKS FOR INDICATOR I-152-(*).

a. VOLTAGE CHECKS. — The tube voltages are tabulated in section V, paragraph 4.

b. INDICATOR MAINTENANCE. — Maintenance of the indicator involves taking checks of:

(1) Brilliance.

(2) Focus.

(3) Correct trace shape and position.

(4) Correct pulse size, shape and location.

(5) Correct dial calibration.

c. REPLACEMENT OF INDICATOR CATHODE-RAY TUBE. — With power "OFF" proceed as follows:

(1) Remove rubber visor from escutcheon casting.

(2) Loosen the four round head screws holding the escutcheon casting on the front panel of the indicator and remove casting.

(3) Carefully disconnect the clip attached to the radial electrode in the indicator tube face.

(4) Push the tube from its socket end, through the opening in the center of the socket, and while holding the face of the tube to prevent it from falling out, carefully remove the tube.

(5) Push the new tube into the socket so that keyway and pins engage.

(6) Replace the center face clip taking care to avoid stretching the coil in the lead to which the clip is attached. If this lead is too short, loosen the two screws in the metal clamps on the top at the socket end of the tube.

(7) Turn on the equipment and check to ascertain that the new tube has corrected the defective operation. If this check indicates that the original tube was not defective, insert the original tube into the socket and restore the indicator to its original condition.

(8) If the original tube is defective and the new tube gives proper operation, leave the new tube in the socket.

(9) Separate the two parts of the escutcheon casting by removing four flat head screws, then remove the transparent crystal.

(10) Hold the escutcheon casting less retainer ring and crystal in place over face of indicator tube. Loosen the two screws in the metal clamps on the top socket end of the tube if it is necessary to move the socket toward or away from the front panel. Adjust the position of the tube socket at the tube face for a good fit to the rubber gasket. Also, rotate the socket slightly as may be required to place the zero mark at the top of the scale.

(11) See that the radial electrode lead does not short circuit to the escutcheon and front panel. Tighten the two screws in the metal brackets around the indicator tube socket and shield. Fasten the escutcheon casting to the front panel with four round head screws.

(12) Replace the crystal and clamp plate taking care to center the crystal with respect to the scale on the face of indicator. Replace visor.

12. NOTES ON REPLACING VACUUM TUBES.

a. TYPE JAN-6AG5 TUBE.—Some of the spare JAN-6AG5 tubes may prove noisy when tapped in the equipment. Check replacement tubes for this condition, and if it is noisy, mark such tubes "Do not use in Radio Set SCR-718-A or SCR-718-AM."

b. TYPE JAN-6J6 TUBE.—Some of the spare JAN-6J6 tubes may have weak power output after a few hours of operation in the UHF output circuit. Check this by operating the equipment for five hours if possible. If the output, as checked by Test Set TS-23/APN (or overall performance, as checked by Test Set TS-10/APN) has not dropped appreciably by that time, the replacement tube may be considered satisfactory.

c. TYPE JAN-2X2 TUBE.—Some JAN-2X2 tubes made by the National Union Company will become gassy (indicated by a bluish glow) after several minutes of operation. Do not use these tubes as they will shortly cause the high-voltage power transformer to fail. National Union JAN-2X2 tubes made in Canada (indicated by a maple leaf marking) have been found free of this trouble.

13. NOTES ON IMPROVING SENSITIVITY.

The following changes were made in Radio Set SCR-718-AM to improve sensitivity, and can be incorporated into Radio Set SCR-718-A if desired.

a. In Radio Receiver and Transmitter BC-788-A change R112 and R113 (receiver oscillator plate dropping resistor) from 1200 ohms each to 6800 ohms each.

b. In Indicator I-152-A change R219 (radial deflecting electrode leak) from 120,000 ohms to 470,000 ohms. Change R210 (video line termination) from 75 ohms to 82 ohms. Change R217 and R218 (video plate load) from 15,000 ohms each to 18,000 ohms each. Change R204 (high voltage bleeder) from 100,000 ohms to 250,000 ohms.

14. NOTES ON REPLACING CAPACITORS.

Wax-dipping of capacitors C-102A through C-108A is no longer necessary; the primary cause of breakdown of these capacitors is poor quality of the ceramic material, not moisture absorption. The quality was significantly improved starting with approximately serial number 500 of Radio Set SCR-718-C on Order Number 98-DAY-44. When reporting failures of these capacitors be sure to give not only the model and serial number of the equipment but also the manufacturer and the order number, for example 8985-WF-43, 12238-WF-43, or 98-DAY-44.

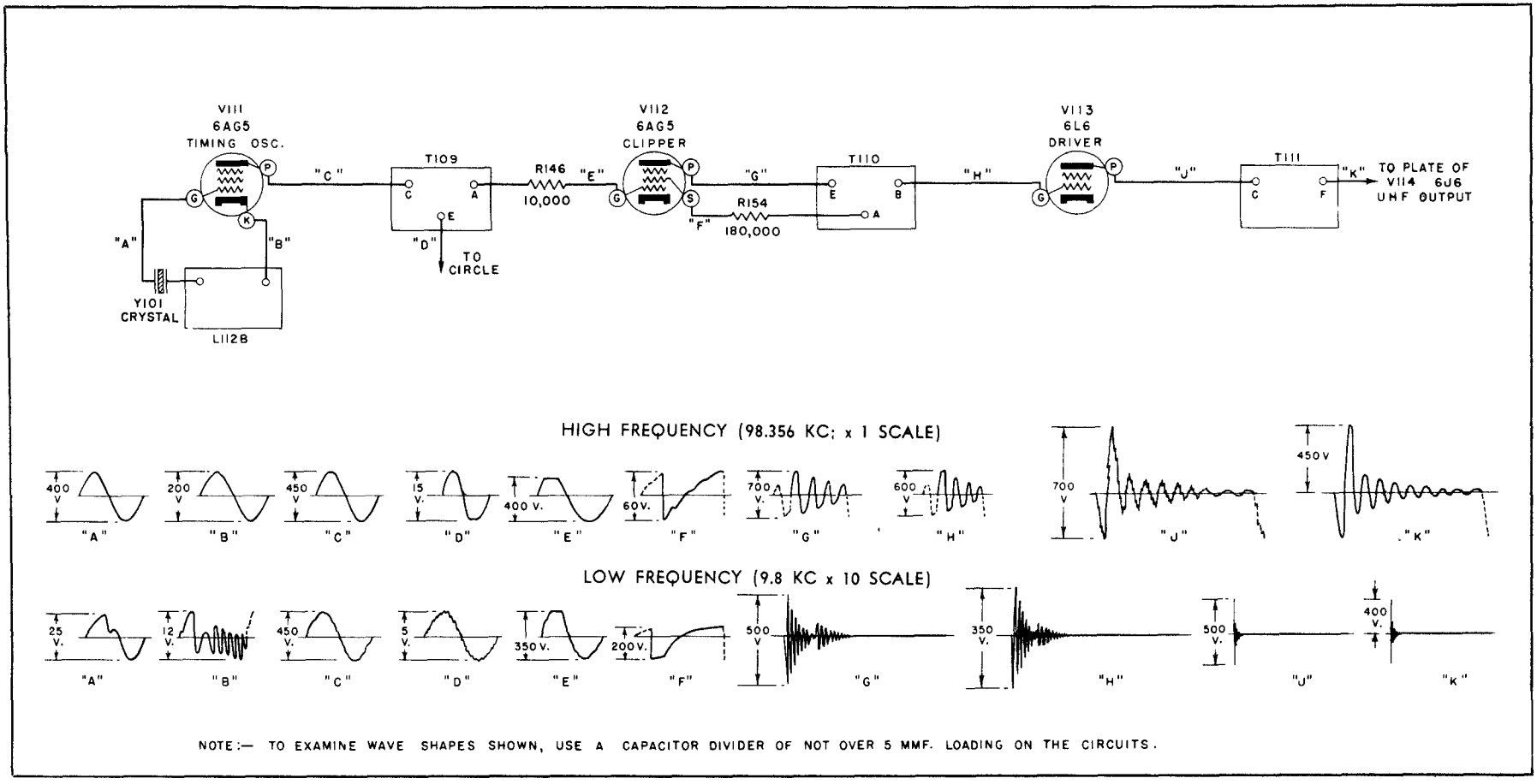


Figure 5-6. Radio Receiver and Transmitter BC-788-C — Wave Forms

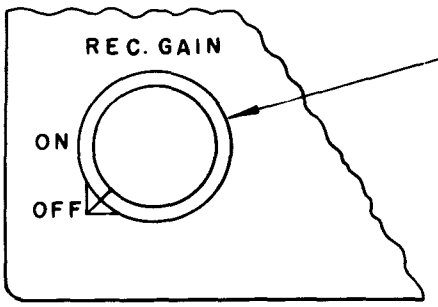
SECTION VI
SUPPLEMENTARY DATA

Note

Paragraphs through 7 following apply specifically to Radio Set SCR-718-C.

1. TO START

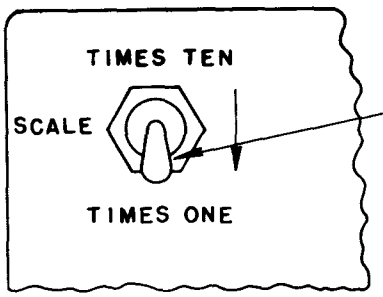
a.



TURN REC. GAIN KNOB CLOCKWISE ABOUT ONE-HALF TURN. ALLOW A MINUTE OR SO FOR THE SET TO WARM-UP.

Power Switch.

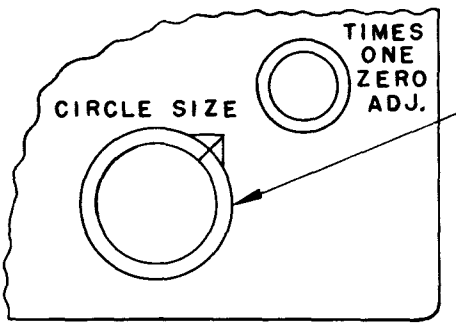
b.



SCALE SWITCH IN TIMES ONE POSITION.

Scale Switch.

c.

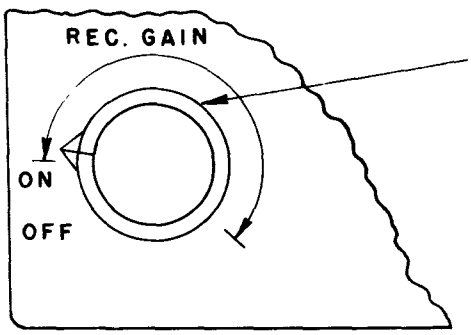


AFTER WARM-UP A GREEN CIRCLE TRACE APPEARS ON THE INDICATOR FACE.

ADJUST SIZE OF CIRCLE UNTIL IT IS JUST VISIBLE ON OUTER EDGE OF CALIBRATED BLACK CIRCLE.

Circle Size Control.

d.

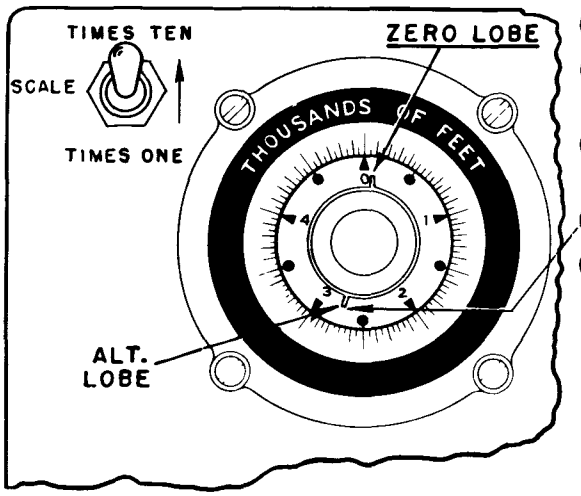


ADJUST LOBE HEIGHT. REC. GAIN VARIED WITH ALTITUDE CHANGE TO MAINTAIN ALTITUDE LOBE HEIGHT APPROXIMATELY 3/16 INCH.

Receiver Gain Control.

2. READING SCR-718-C ALTIMETER

a. SCALE SWITCH IN TIMES TEN POSITION



(1) LOBES ARE NARROW.

(2) CIRCLE TRACE SMALLER DIAMETER THAN CALIBRATED BLACK CIRCLE.

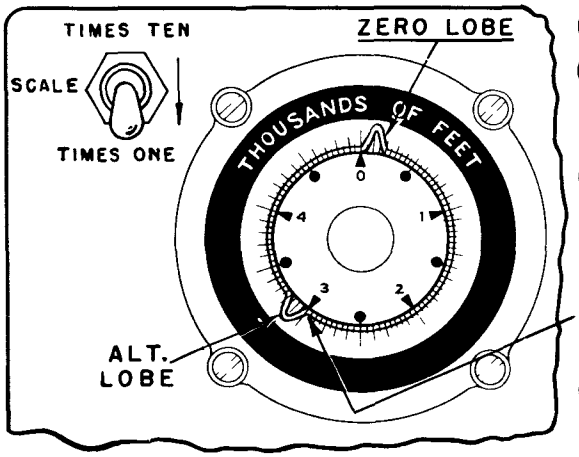
(3) INDICATING LOBE TRAVELS AROUND CIRCLE ONCE FOR 50,000 FEET.

(4) READ ALTITUDE LOBE LIKE A POINTER.

(5) EACH NUMBERED DIVISION IS 10,000 FEET.

Reading Indicator Times Ten Scale

b. SCALE SWITCH IN TIMES ONE POSITION



(1) LOBES ARE WIDE.

(2) CIRCLE TRACE FALLS UNDER CALIBRATED BLACK CIRCLE WITH LOBES EXTENDING OUTSIDE.

(3) INDICATING LOBE TRAVELS AROUND CIRCLE ONCE FOR EACH 5000 FEET, REPEATS FOR EACH ADDITIONAL 5000 FEET.

(4) READ ALTITUDE HERE—LOW ALT. EDGE OF LOBE.

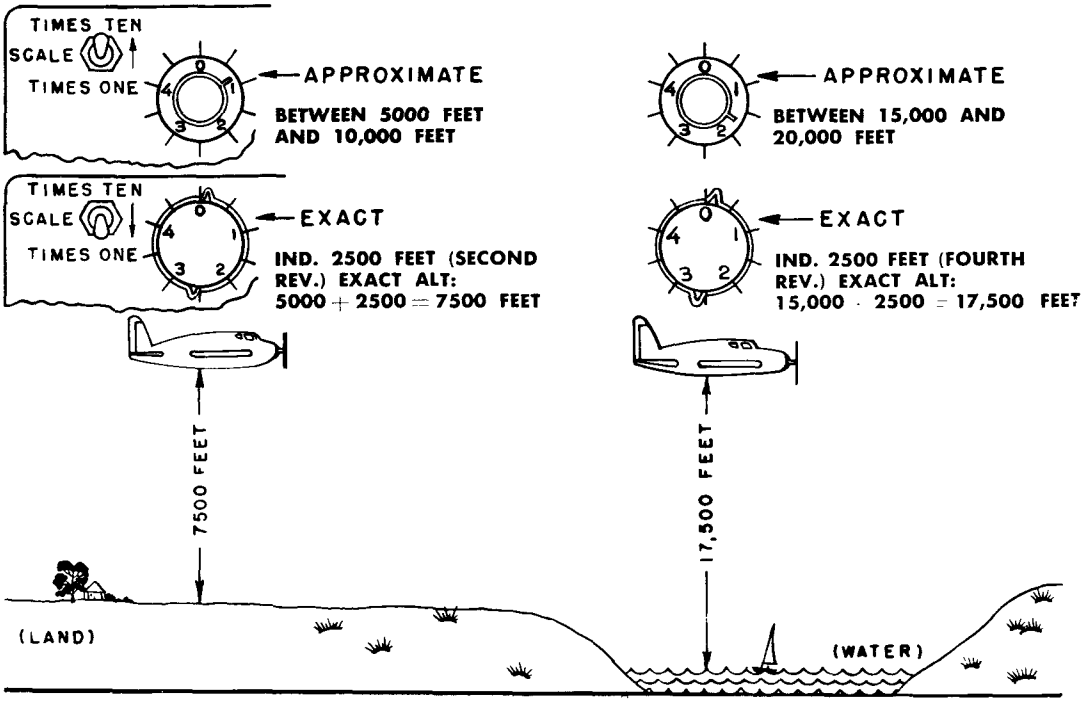
(5) EACH NUMBERED DIVISION IS 1000 FEET.

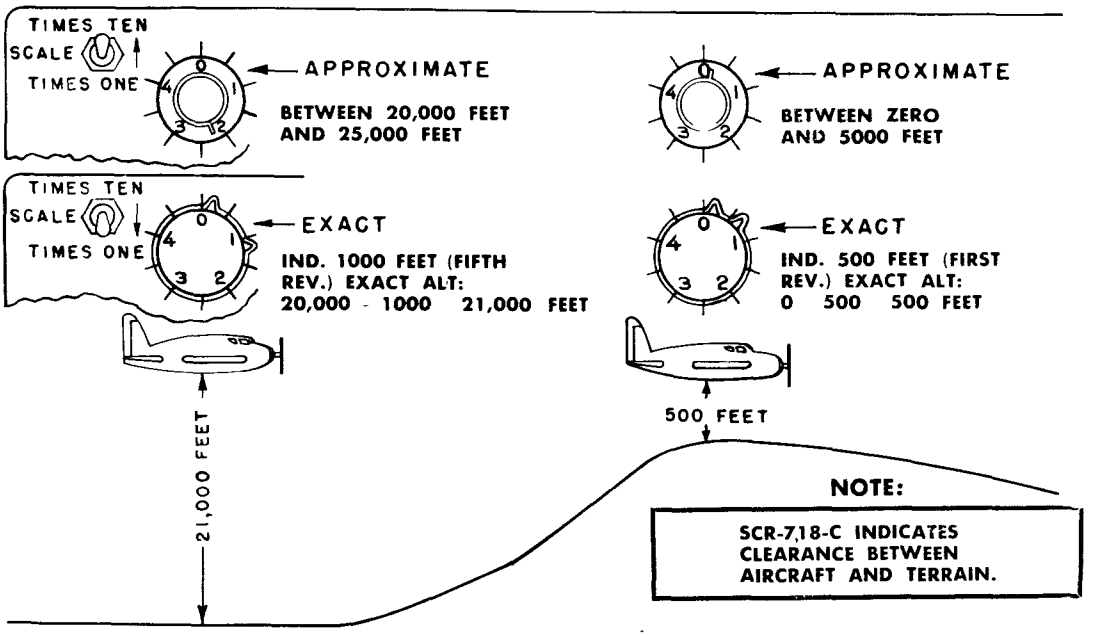
Reading Indicator Times One Scale

TO OBTAIN READING

1. READ TIMES TEN SCALE TO LOWEST INDICATED MULTIPLE OF 5000 FEET (LIKE HOUR HAND ON CLOCK).
2. READ LOW ALT. EDGE OF LOBE IN TIMES ONE POSITION.
3. EXACT ALTITUDE IS THE SUM OF THESE READINGS.

c. METHOD OF READING IN FLIGHT

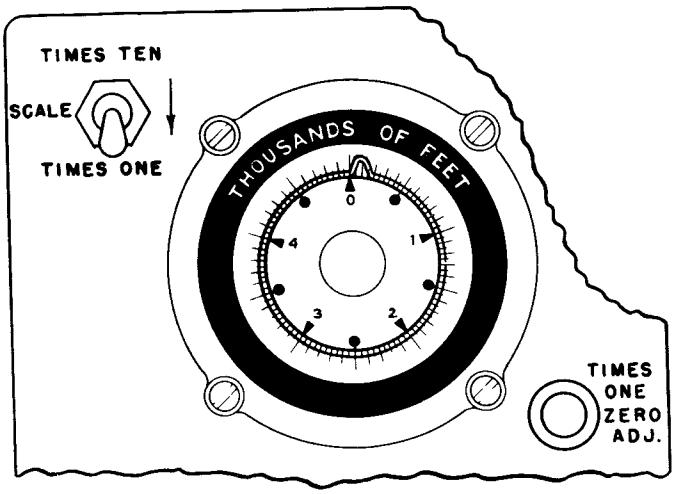




Altitude Indications in Flight

3. ZERO ADJUSTMENT

a. TIMES ONE SCALE ZERO ADJUSTMENT IN ORDER OF ACCURACY



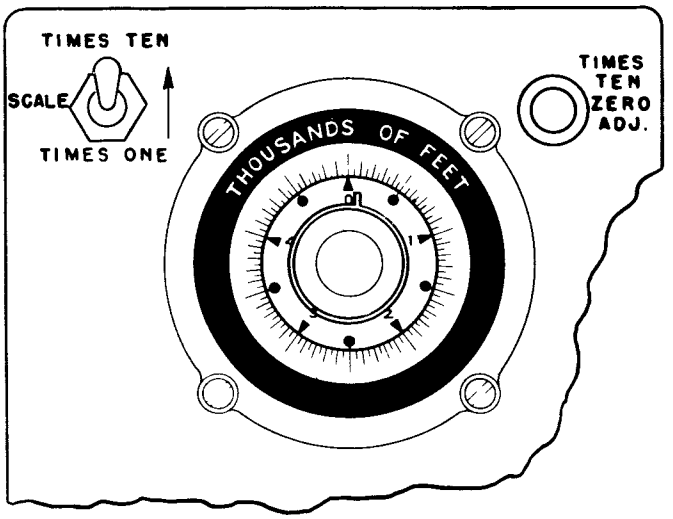
(1) SET LOBE TO ZERO AS IN SECTION II, PARAGRAPH 12a (4).

(2) SET LOBE TO ZERO ON GROUND WITH TIMES ONE ZERO ADJUST.

(3) SET LOBE TO ZERO IN FLIGHT WITH TIMES ONE ZERO ADJUST IF NECESSARY.

Times One Zero Adjustment

b. TIMES TEN SCALE ZERO ADJUSTMENT



SET REFERENCE LOBE TO ZERO WITH TIMES TEN ZERO ADJ. BENCH, ON GROUND, OR IN THE AIR.

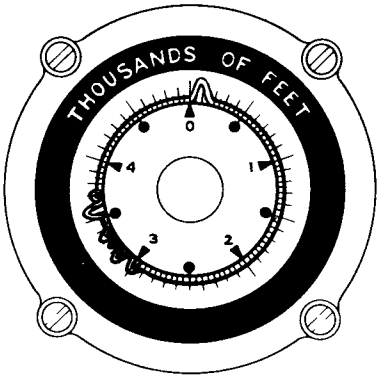
Times Ten Zero Adjustment

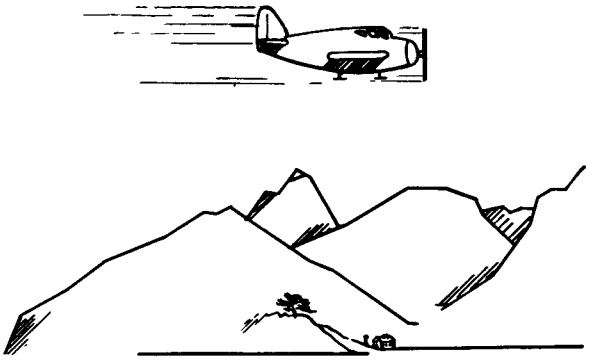
—NOTE—

WITH THE ZERO LOBE ACCURATELY SET AS IN (1) OR (2) ABOVE, THE LOBE MAY CORRECTLY BE AS MUCH AS 50 FEET TO LEFT OF ZERO DURING FLIGHT.

4. PRECAUTIONS

a. ROUGH TERRAIN





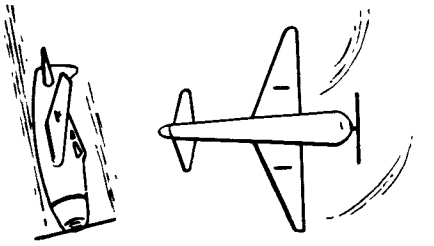
Indications over Rough Terrain

OVER HILLY OR MOUNTAINOUS TERRAIN SEVERAL ALTITUDE LOBES WILL APPEAR DUE TO NUMEROUS REFLECTIONS.

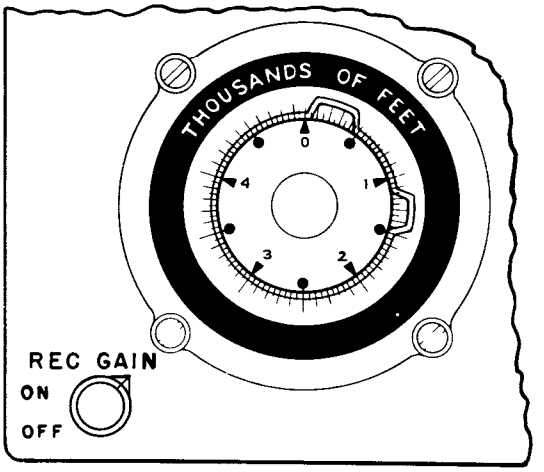
READ LOWEST ALTITUDE LOBE.

b. EXTREME DIVES, CLIMBS, BANKS, ETC.

(1) READINGS GENERALLY HIGH.
(2) ALT. LOBE MAY DISAPPEAR.



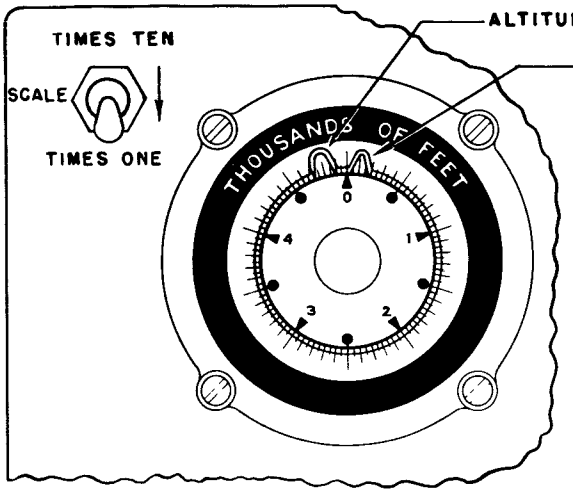
c. REC. GAIN TOO HIGH



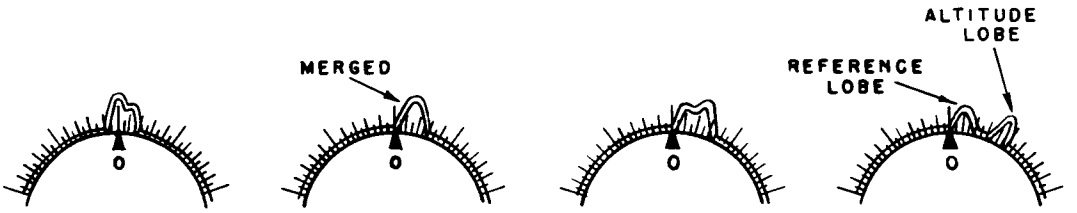
(1) LOBE BECOMES VERY BROAD.
(2) ADJUST "REC. GAIN" AS REQUIRED FOR ALT. LOBE APPROX. 3/16 INCH HIGH.

Indications with High Receiver Gain

d. LOBES NORMALLY MERGE IN TIMES ONE POSITION



THE ALTITUDE LOBE AND REFERENCE LOBE WILL MERGE AT 5000, 10,000, 15,000, 20,000, ETC.



Merging of Lobes

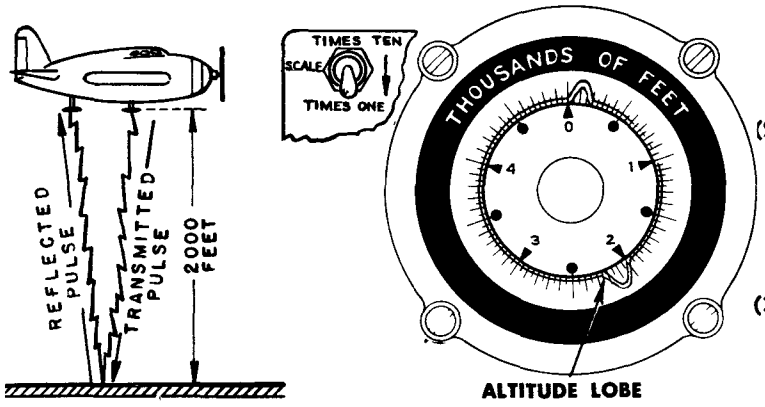
e. READINGS AT LOW ALTITUDE

THE SCR-718-C IS NOT AN INSTRUMENT LANDING DEVICE.

5. OVERALL FUNCTION OF SCR-718-C

a. THE SCR-718-C RADIO ALTIMETER PRODUCES AN ACCURATE MEANS OF DETERMINING THE HEIGHT OF THE AIRCRAFT ABOVE THE TERRAIN. THE INDICATED ALTITUDE IS INDEPENDENT OF VARIABLES SUCH AS TEMPERATURE, BAROMETRIC PRESSURE, SPEED, MECHANICAL LAG, ETC.

b. BASICALLY A SHORT DURATION PULSE OF RADIO FREQUENCY IS TRANSMITTED AND THEN REFLECTED FROM THE TERRAIN TO THE RECEIVER ANTENNA. THE RECEIVED PULSE IS AMPLIFIED AND APPEARS ON THE INDICATOR AS AN ALTITUDE LOBE.

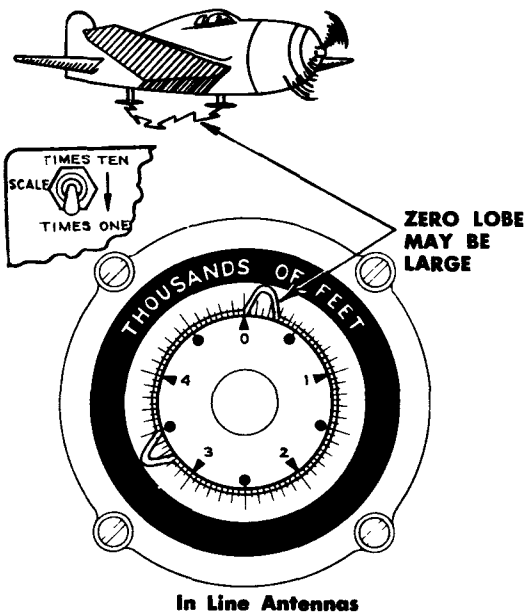


Signal Path and Indication

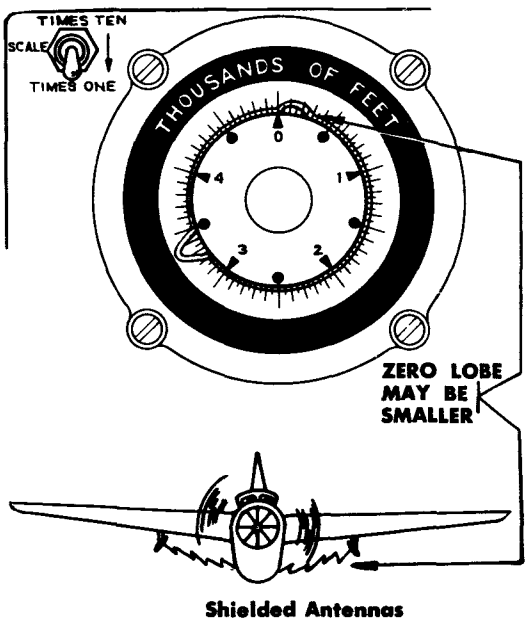
(1) SPEED OF SIGNAL TRAVEL IS APPROXIMATELY 1000 FEET PER MICRO-SECOND. (ONE MICRO-SECOND EQUALS ONE MILLIONTH OF A SECOND).

(2) TOTAL DISTANCE TRAVELLED IS TWICE THE ALTITUDE. THE SIGNAL WILL TRAVEL 2000 FEET DOWN AND 2000 FEET BACK IN FOUR MICRO-SECONDS.

(3) THE ZERO OR REFERENCE LOBE IS CAUSED BY THE PULSE THAT FEEDS THROUGH WITHIN THE EQUIPMENT AND DIRECT FROM ONE ANTENNA TO THE OTHER.



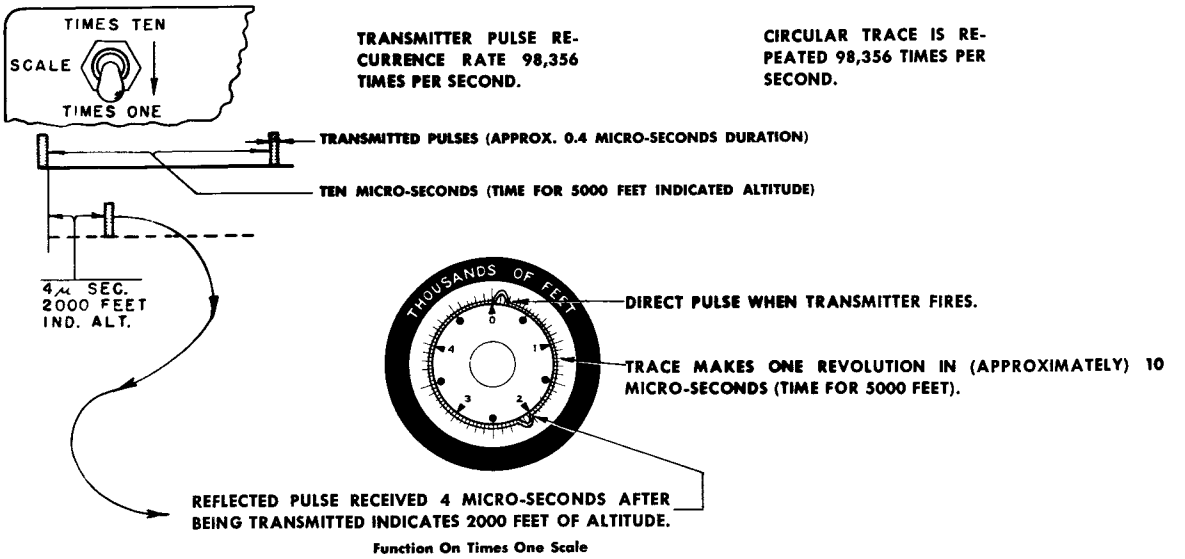
In Line Antennas



Shielded Antennas

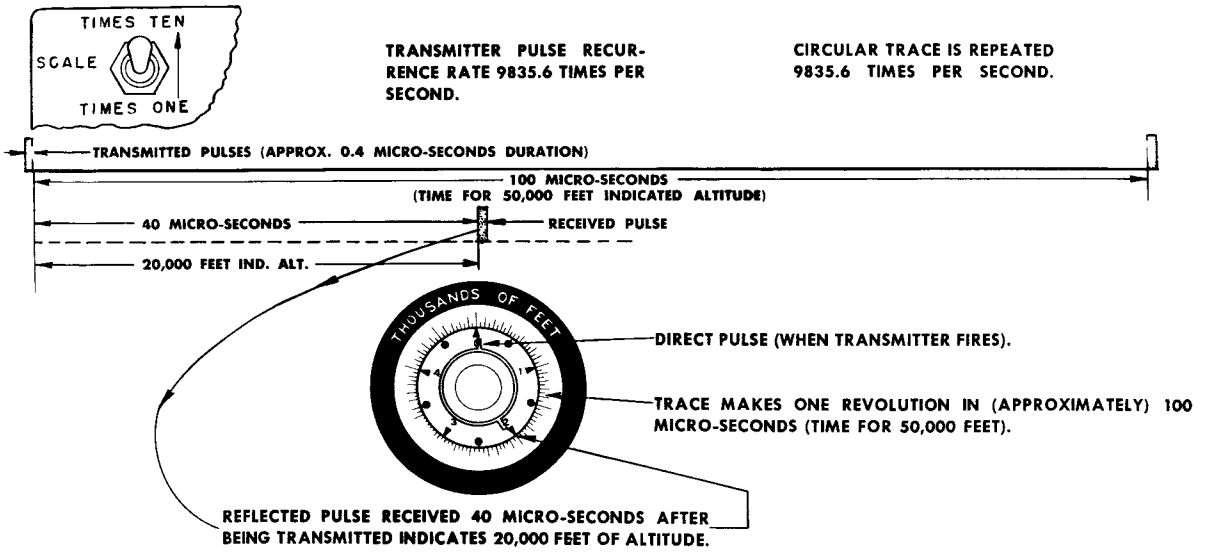
THE SIZE OF THE LOBE WILL VARY DEPENDING ON THE POSITION OF THE GAIN CONTROL AND ELECTRICAL SHIELDING OF THE ANTENNA INSTALLATION.

c. FUNCTION ON TIMES ONE SCALE



Function On Times One Scale

d. FUNCTION ON TIMES TEN SCALE



e. SUMMARY

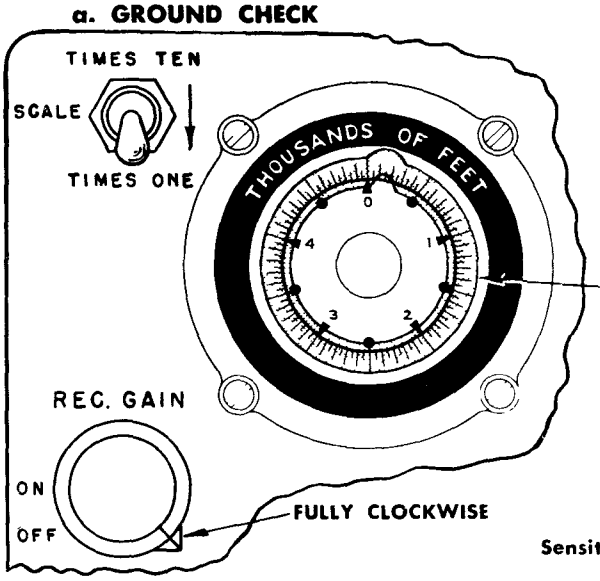
(1) ESSENTIALLY THE TRACE STARTS AT THE SAME TIME TRANSMITTER FIRES (ZERO ADJ.).
(2). WHEN A PULSE IS RECEIVED IT APPEARS AS A LOBE ON THE INDICATOR CIRCLE TRACE.
(3) EXACTLY WHERE THE LOBE APPEARS ON CIRCLE TRACE IS THE PULSE TRAVEL TIME CONVERTED TO FEET OF ALTITUDE.

6. INDICATION OF MALFUNCTION

!!WARNING!!
MAKE CERTAIN THE ALTIMETER IS TURNED OFF BEFORE DISCONNECTING ANY UNIT OR CABLE OF RADIO SET SCR-718-C, AND BEFORE REMOVING THE FUSE.

WHEN ANY INDICATION OF MALFUNCTION IS DETECTED NECESSITATING WORK INSIDE THE UNITS, HAVE A QUALIFIED TECHNICIAN CHECK THE EQUIPMENT AS SOON AS PRACTICABLE. DO YOUR PART BY ACCURATELY REPORTING YOUR OBSERVATIONS.

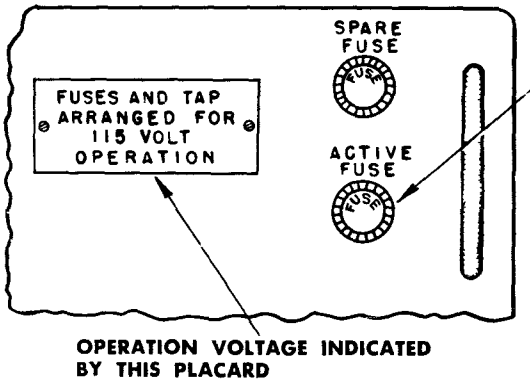
a. GROUND CHECK



WHEN SCALE SWITCH IS IN TIMES ONE POSITION AND REC. GAIN CONTROL IS TURNED FULLY CLOCKWISE, **THE CIRCLE TRACE SHOULD BE A MINIMUM OF 1/8 INCH WIDE.** IF NOT, THE SENSITIVITY MAY BE LOW

Sensitivity Check

b. NO CIRCLE TRACE



(1) CHECK CONTROLS. SEE STARTING PROCEDURE Section III, Paragraph 1.

(2) REPLACE ACTIVE FUSE IN TRANSMITTER RECEIVER UNIT (BC-788-C) WITH:

1.5 AMP-250 VOLT LITTEL FUSE NO. 1041 FOR 115 VOLT OPERATION.

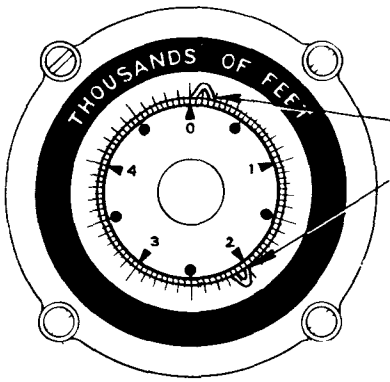
2 AMP-250 VOLT LITTEL FUSE NO. 1042 FOR 80 VOLT OPERATION.

(3) IF FUSE BLOWS, MAKE NO FURTHER ATTEMPT TO USE THE EQUIPMENT.

(4) CHECK PLUGS FOR PROPER INSERTION AND SECURITY.

Fuse Location and Voltage Placard

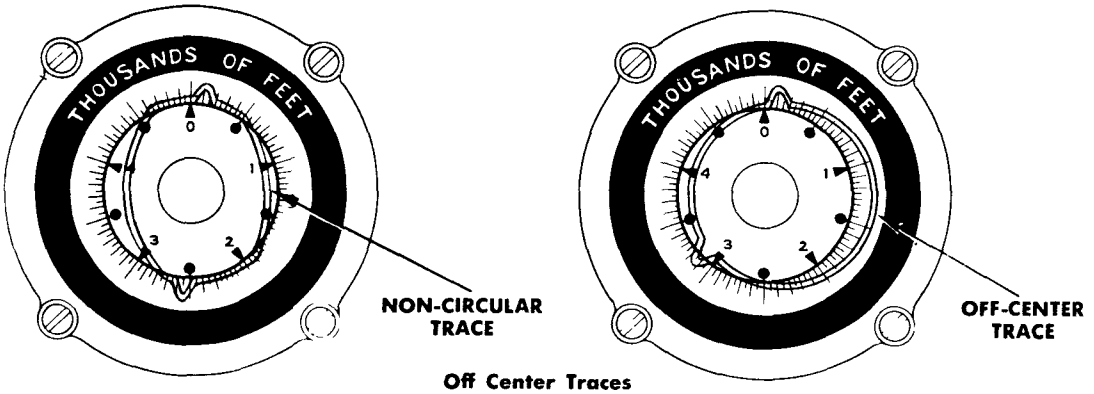
c. TRANSMITTER MIS-FIRING



LOBE IS ABSENT OR APPEARS FILLED IN BY CIRCLE TRACE. THE TRANSMITTER TUBES AND KEYING TUBES SHOULD BE CHECKED BY A TECHNICIAN.

Indications When Transmitter Mis-fires

d. NON-CIRCULAR OR OFF-CENTER TRACE



Off Center Traces

READINGS WILL NOT BE ACCURATE; REQUIRES INTERNAL ADJUSTMENT OF CIRCLE TRANSFORMERS OR CENTERING CONTROLS.

e. DIM, BLURRED OR FUZZY TRACE

(1) CHECK RECEIVER GAIN CONTROL SETTING. IT MAY BE TOO HIGH.

(a) WIDE FUZZY TRACE AT HIGH ALTITUDE IS NORMAL. THE REC. GAIN CONTROL IS ADVANCED FOR CORRECT ALTITUDE LOBE HEIGHT; THIS INCREASED RECEIVER GAIN ALSO INCREASES THE NOISE LEVEL.

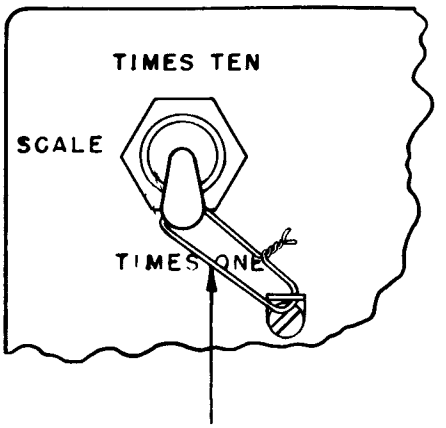
(2) THE INTERNAL FOCUS OR BRILLIANCY CONTROLS MAY BE SET INCORRECTLY, OR THE INDICATOR TUBE MAY BE DEFECTIVE.

f. FUZZY ALTITUDE LOBE

IF THE LOBE IS FUZZY, THE TRANSMITTER TUBES MAY BE WEAK OR THE RECEIVER DETUNED. HAVE THE EQUIPMENT CHECKED BY A TECHNICIAN.

7. IMPORTANT REFERENCES

a. THE INDICATORS AND TRANSMITTER-RECEIVER UNITS FOR SCR-718-A, SCR-718-AM, SCR-718-B AND SCR-718-C ARE INTERCHANGEABLE.



SAFETIED WHEN USED WITH PREVIOUS TRANSMITTER-RECEIVER MODELS.

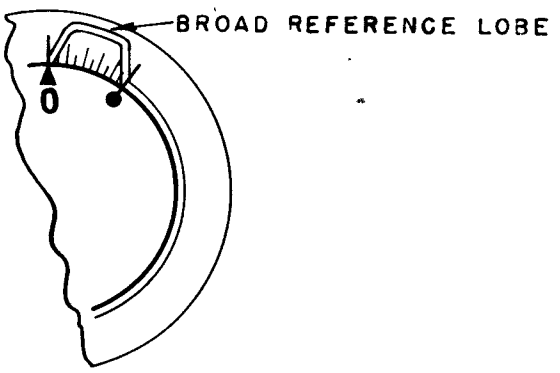
(1) IF INDICATOR I-152-C IS USED, THE SCALE SWITCH MUST BE IN TIMES ONE POSITION.

(2) WHEN A SUBSTITUTION IS MADE ONLY THE 0-5000 FOOT SCALE IS AVAILABLE.

Safetying Scale Switch

b. THE TRANSMISSION LINE FROM RECEIVING AND TRANSMITTING ANTENNAS SHOULD NOT BE RUN PARALLEL TO EACH EACH OTHER. IF TAPED OR LACED TOGETHER, COUPLING BETWEEN THE TRANSMISSION LINES MAY CAUSE A BROAD REFERENCE LOBE. REFER TO SECTION II, PARAGRAPH 9b.

SCALE SW. IN TIMES ONE POSITION.



Broad Reference Lobe

8. TUBE COMPLEMENT.

a. The following table lists the tube complement.

Symbol	Type JAN	Type VT	Function
	Receiver		
V101	JAN-6J6	—	Converter
V102	JAN-6J6	—	Oscillator
V103	JAN-6AG5	—	1st i-f amplifier
V104	JAN-6AG5	—	2nd i-f amplifier
V105	JAN-6AG5	—	3rd i-f amplifier
V106	JAN-6AG5	—	4th i-f amplifier
V107	JAN-6AG5	—	5th i-f amplifier
V108	JAN-6AG5	—	6th i-f amplifier
V109	JAN-6AG5	—	Detector
	TRANSMITTER		
V110	JAN-5Y3GR/G	VT-197-A	Rectifier
V111	JAN-6AG5	—	Oscillator
V112	JAN-6AG5	—	Clipper
V113	JAN-6L6	VT-115	Driver
V114	JAN-6J6	—	UHF output
	INDICATOR I-152-A		
V201	JAN-2X2/879	—	Rectifier
V202	JAN-6AG5	—	Video amplifier
V203	JAN-6AG5	—	Video amplifier
V204	JAN-6AG5	—	Circle amplifier
V205	JAN-3DP1	—	Cathode ray indicator

9. TUBE JAN-3DP1.

a. TENTATIVE CHARACTERISTICS AND RATINGS. — See the following table for characteristics and ratings of tube JAN-3DP1.

Heater Voltage (A-C or D-C) ..... 6.3 volts

Heater Current ..... 0.6 ampere

Focusing Method ..... Electrostatic

Deflection Method ..... Electrostatic

Electrodes DJ1 and DJ2 are nearest to screen and designated as "upper."

DJ1 is on the same side of tube as pin No. 5.

Electrodes DJ3 and DJ4 are nearest to base and designated as "lower."

DJ3 is on same side of tube as pin No 2.

Radial-Deflection Electrode DJ5 is aligned with tube axis.

Phosphor ..... No. 1

Flourescent Color ..... Green

Persistence ..... Medium

Direct Interelectrode Capacitances (Approx.):

Grid to All other Electrodes ..... 8 mmf

Cathode to all other electrodes ..... 7 mmf

Deflecting electrode DJ1 to deflecting Electrode DJ2 ..... 2 mmf

Deflecting electrode DJ3 to deflecting Electrode DJ4 ..... 2 mmf

Deflecting electrode DJ1 to all other electrodes ..... 9 mmf

Deflecting electrode DJ3 to all other electrodes ..... 7 mmf

Deflecting electrode DJ1 to all other electrodes except deflecting electrode DJ2 ..... 7 mmf

Deflecting electrode DJ2 to all other electrodes except deflecting electrode DJ1 ..... 7 mmf

Deflecting electrode DJ3 to all other electrodes except deflecting electrode DJ4 ..... 5 mmf

Deflecting electrode DJ4 to all other electrodes except deflecting electrode DJ3 ..... 6 mmf

Radial deflection electrode DJ5 to anode No. 2 ..... 2 mmf

Overall Length ..... $10\frac{7}{16}'' \pm\frac{5}{16}''$

Greatest Diameter of Bulb ..... $3'' \pm\frac{1}{16}''$

Minimum Useful Screen Diameter ..... $2\frac{3}{4}''$

Base ..... Diheptal 12-Pin

RMA Basing Designation 14C

b. MAXIMUM RATINGS AND TYPICAL OPERATING CONDITIONS. — See the following table for typical operating conditions, the maximum ratings being absolute values.

Anode No. 2 (High-Voltage Electrode) Voltage ..... 2200 max. volts

Anode No. 1 (Focusing Electrode) Voltage ..... 1100 max. volts

Grid (Control Electrode) Voltage ..... Never positive

Peak Voltage between Anode No. 2 and Deflecting Electrode ..... 550 max. volts

D-C Heater-Cathode Potential* ..... 125 max. volts

Grid-Circuit Resistance ..... 1.5 max. megohms

Impedance of Any Deflecting Electrode Circuit at Heater-Supply Frequency ..... 1.0 max. megohm

Typical Operation:

Anode No. 2 voltage†	1500	2000 volts
Anode No. 1 voltage for focus at 75% of Grid Voltage for cut-off‡	430	575 volts

*Watt heater negative. Cathode should be connected to the aid-tap or to one side of the heater transformer winding.
†Brilliance and definition decrease with decreasing anode No. 2 voltage. In general, anode No. 2 voltage should not be less than 1500 volts.
‡Individual tubes may require between +20% and —35% of these values with grid voltage between zero and cut-off.

Grid voltage for visual cut-off*	−45	−60 volts
Values subject to variation of	±50	±50 per cent
Deflection sensitivity:		
Electrodes DJ1 and DJ2	0.153	0.115 mm/volt D-C
Electrodes DJ3 and DJ4	0.207	0.115 mm/volt D-C
Radial-Deflection electrode DJ5	2.63	1.97▲
Reflection Factor:		
Electrodes DJ1 and DJ2	166	221 volts D-C/in.
Values subject to variation of	±20	±20 per cent
Electrodes DJ3 and DJ4	123	164 volts D-C/in
Radial-Deflection Electrode DJ5	245	327◐
Ratio of DJ1-DJ2 to DJ3-DJ4 Factor	1.35	1.35
Values subject to variation of	±15.5	±15.5 per cent

*With heater negative. Cathode should be connected to the aid-tap or to one side of the heater transformer winding.

†Brilliance and definition decrease with decreasing anode No. 2 voltage. In general, anode No. 2 voltage should not be less than 1500 volts.

‡Individual tubes may require between +20% and −35% of these values with grid voltage between zero and cut-off.

Visual extinction of stationary focused spot.

▲Mm/volt for unit circle diameter in mm. Since deflection sensitivity is inversely proportional to circle diameter, sensitivity for any desired circle diameter is unit value/D (in mm).

◐Volts D-C/inch for unit circle diameter in inches. Since deflection factor is directly proportional to circle diameter, deflection factor for any desired circle diameter is unit value x D (in inches).

c. SPOT POSITION. — The undeflected focused spot will fall within a 15-mm square centered at the geometric center of the tube face and having one side parallel with the trace produced by DJ1 and DJ2.

Suitable test conditions are: anode No. 2 voltage, 2000 volts; anode No. 1 voltage, adjusted for focus; deflecting electrode resistors, 1 megohm each, connected to anode No. 2; the tube shielded from all extraneous fields. To avoid damage to the tube, make the test with grid voltage near cut-off.

d. BASING AND DEFLECTING ELECTRODE ALIGNMENT.—The angle between the trace produced by DJ1 and DJ2 and its intersection with the plane through the tube axis and pin No. 5 will not exceed 10°.

The angle between the trace produced by DJ1 and DJ2 and the trace procured by DJ3 and DJ4 will be 90° ±4°.

With DJ1 (pin 11) positive with respect to DJ2 (pin 10), the spot will be deflected toward pin 5; likewise, with DJ3 (pin 7) positive with respect to DJ4 (pin 8), the spot will be deflected toward pin 2.

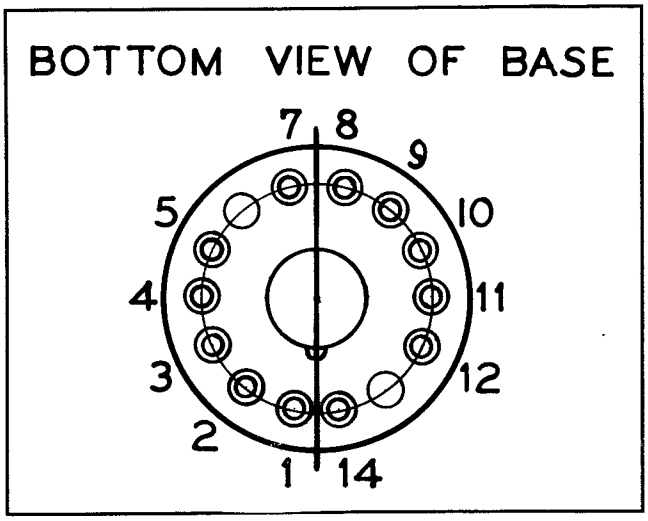
e. ANODE No. 2 CURRENT VS. GRID VOLTAGE CHARACTERISTICS.—see the following table for Anode No. 2 current versus grid voltage characteristics.

Anode No. 2 voltage.....2000 volts

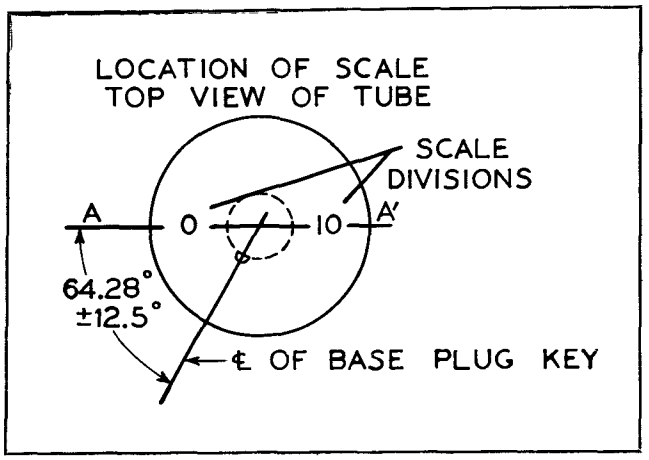
Anode No. 1 voltage.....adjusted for focus

Anode No. 2 Current, microamperes	Grid Voltage
1200	0
765	−10
345	−20
225	−30
83	−40
14	−50
0	−60

f. TUBE SOCKET DIAGRAM. — The following diagram and notes are tube-socket data for tube JAN-3P1.



Pin No.	*Elements*
1	Heater
2	Cathode
3	Grid No. 1
4	Internal Conn. Do Not Use
5	Anode No. 1
7	Deflecting Electrode DJ3
8	Def. Electrode DJ4
9	Anode No. 2 and Grid No. 2
10	Deflecting Electrode DJ2
11	Def. Electrode DJ1
12	No Connection
14	Heater



Trace produced by deflecting electrodes DJ1 and DJ2 is along A-A'.

Scale may be eccentric with respect to the tube axis by $\frac{3}{64}$" max.

The line through the zero and the center of the scale may vary from the line A-A' by 2.5 (measured about the tube axis).

10. MODIFICATIONS.

a. USE OF TABLE OF MODIFICATIONS.

(1) To facilitate circuit reference, a number has been assigned to each changed part. These change numbers appear in the table of modifications and on the new schematic and wiring diagrams. These numbers are not modification symbols. A modification usually includes several separate changes.

(2) These modifications should be made on unmodified equipments in the field if parts are available. Modification kits will not be supplied. After completing the modifications, stamp the modification symbol on the equipment panel as described in the footnote in paragraph 4, section I.

b. TABLE OF MODIFICATIONS.

(1) Modification prior to M_1 (not covered by a modification symbol, see figure 6-17).

(a) The value of R160 and R161 was changed from 56,000 ohms each to 18,000 ohms each to improve operation of relay K101 at low primary power supply voltages.

(b) Resistor R164, 22,000 ohms, was added to the screen grid circuit of tube JAN-6L6 (V113), to prevent overdriving VHF transmitter oscillator.

(c) Resistor R242, 39 ohms, was added to low-frequency (X10) zero adjustment transformers circuit to improve stability of circle size at extremes of ambient temperatures.

(d) Certain linen-base phenolic terminal boards were changed to paper-base phenolic to improve moisture resistance.

(e) Cable lacing card was treated with fungacide to prevent deterioration caused by moisture and fungus growth.

(f) A hole and a movable cover were added on top of the indicator dust cover to provide access to resistor R240, circle size ratio control.

(2) The following table lists modification M_1 to Radio Receiver and Transmitter BC-788-C.

Change Number	*Location or Function*	*Original Symbol & Value*	*Final Symbol & Value*	*Original Mfgr. No.*	*Final Mfgr. No.*	*Time of Change*	
						Order No.	*Ser. No.*
1	Oscillator Screen Dropping Resistor	R145 100,000 ohms ±10%, ½ watt	R145 120,000 ohms ±10%, ½ watt	K-99080-86	K-82283-87	98-DAY-44	2001-4420 RCA Victor Division
2	Clipper Grid Resistor	R146 10,000 ohms ±10%, ¼ watt	R146 1500 ohms ±10%, ¼ watt	K-99125-74	K-99125-64	98-DAY-44	4421-8020 Stewart Warner Corp.
3	Clipper Driver Grid Bias Resistor	R163 270,000 ohms ±10%, ¼ watt	R163 220,000 ohms ±10%, ¼ watt	K-99125-91	K-99125-90	98-DAY-44	
4	Oscillator Cathode Resistor	None	R165 27,000 ohms ±10%, ½ watt	———	K-82283-79	98-DAY-44	

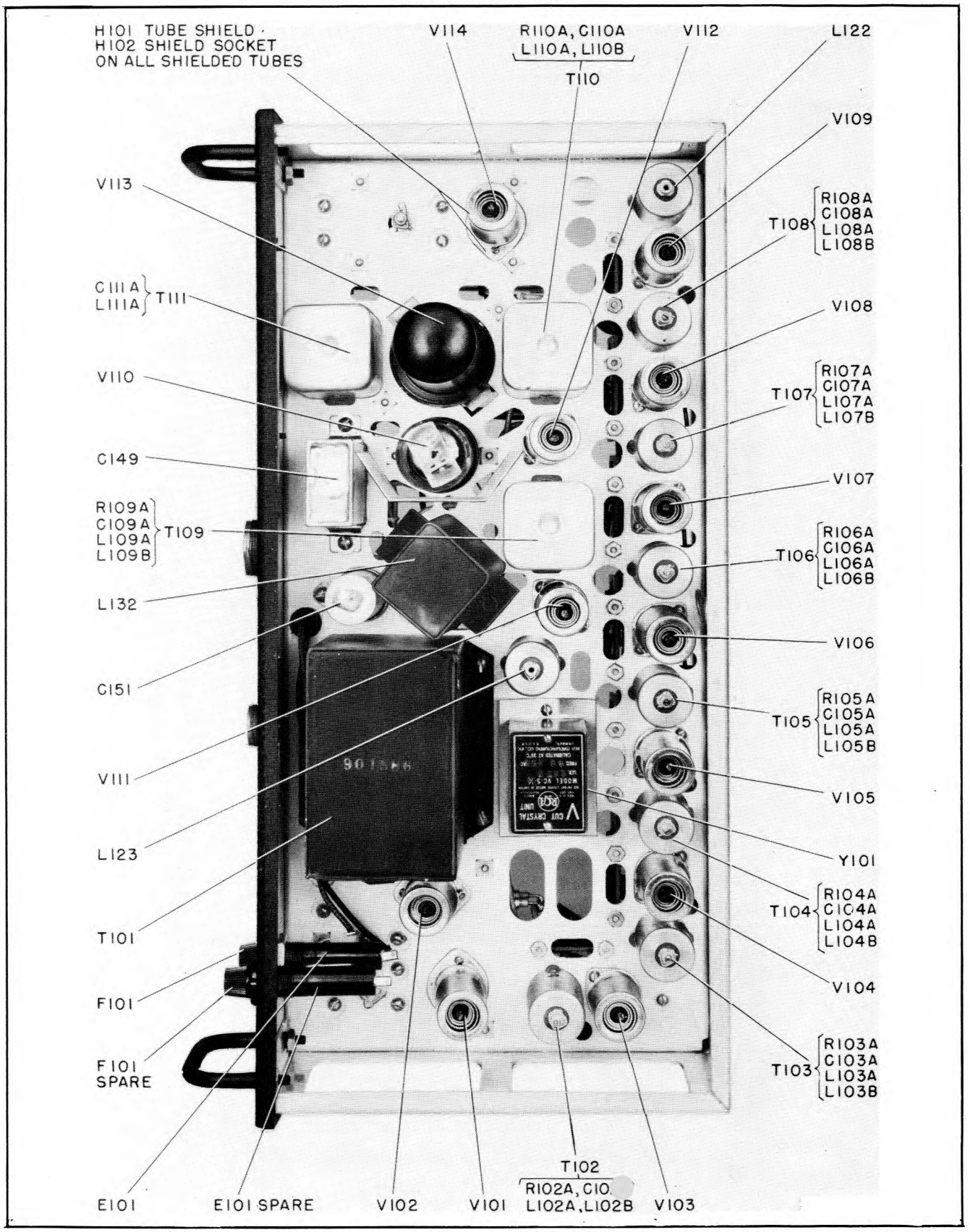
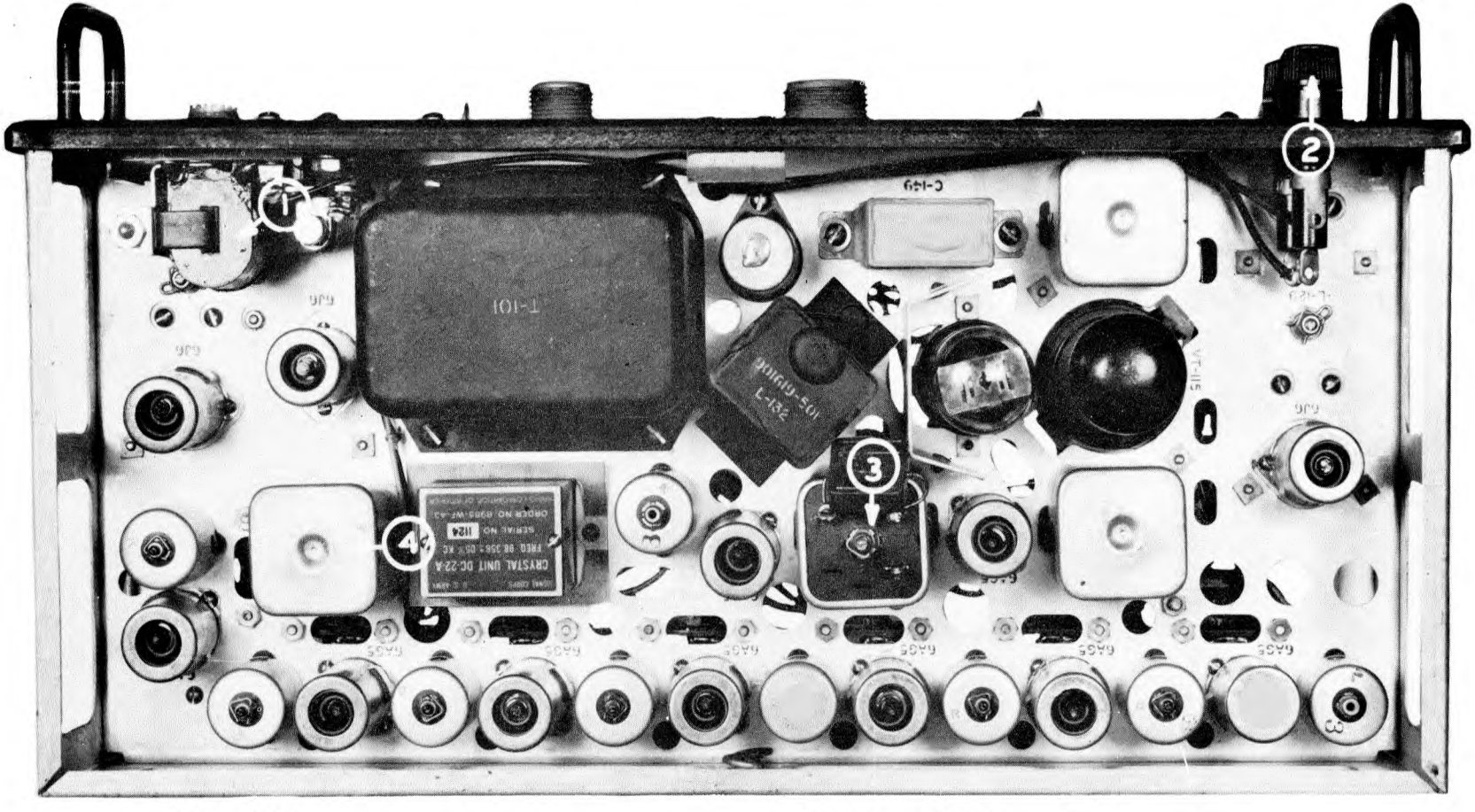


Figure 6-1. Radio Receiver and Transmitter BC-788-A or BC-788-AM — Chassis Top View



1. Relay K101.
2. Fuse posts moved to this side in Radio Receiver and Transmitter BC-788-B.
3. Transformer T-109A.
4. Transformer T-132-A.

Figure 6-2. Radio Receiver and Transmitter BC-788-B — Chassis Top View

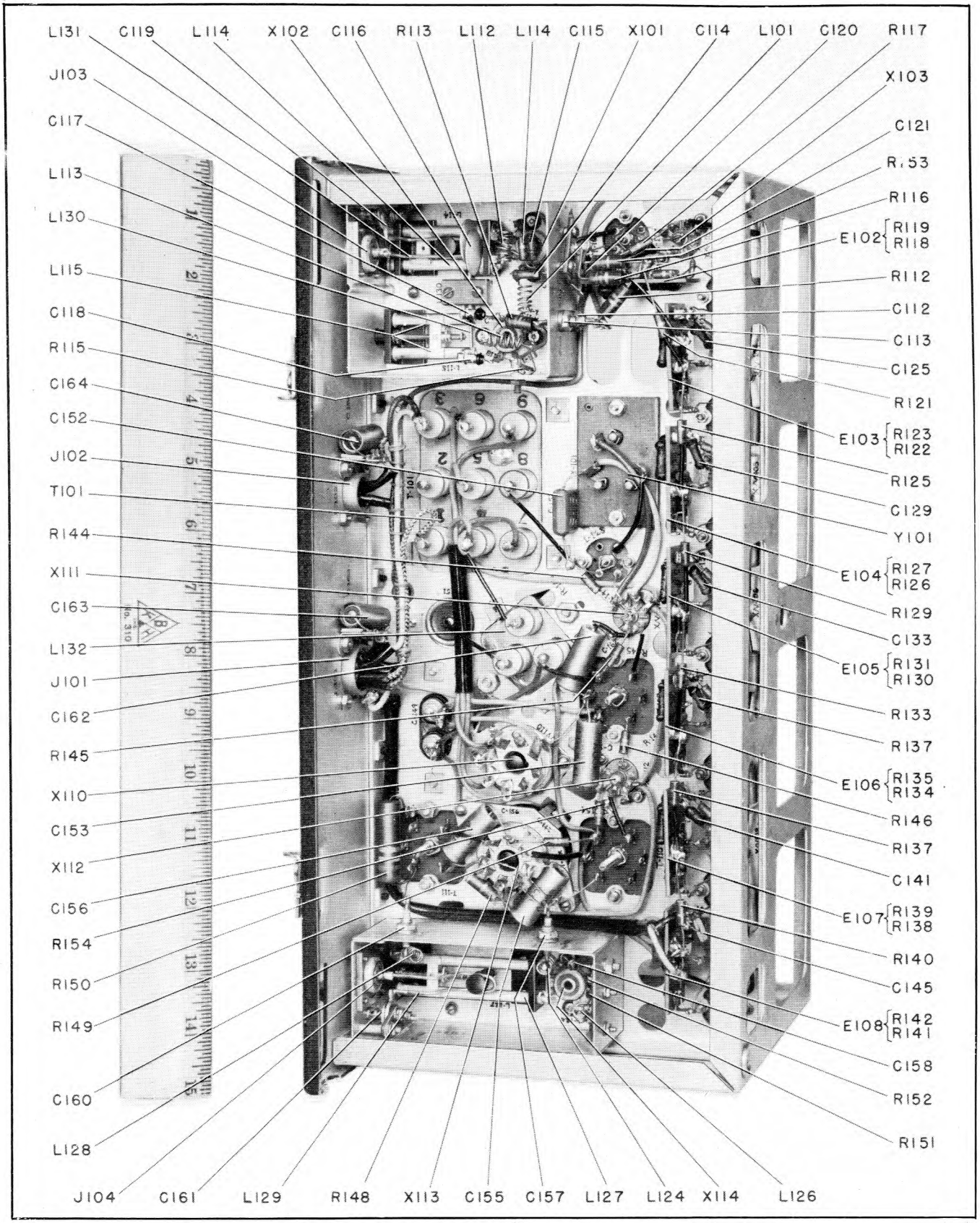


Figure 6-3. Radio Receiver and Transmitter BC-788-A or BC-788-AM — Chassis Bottom View, Rear Oblique

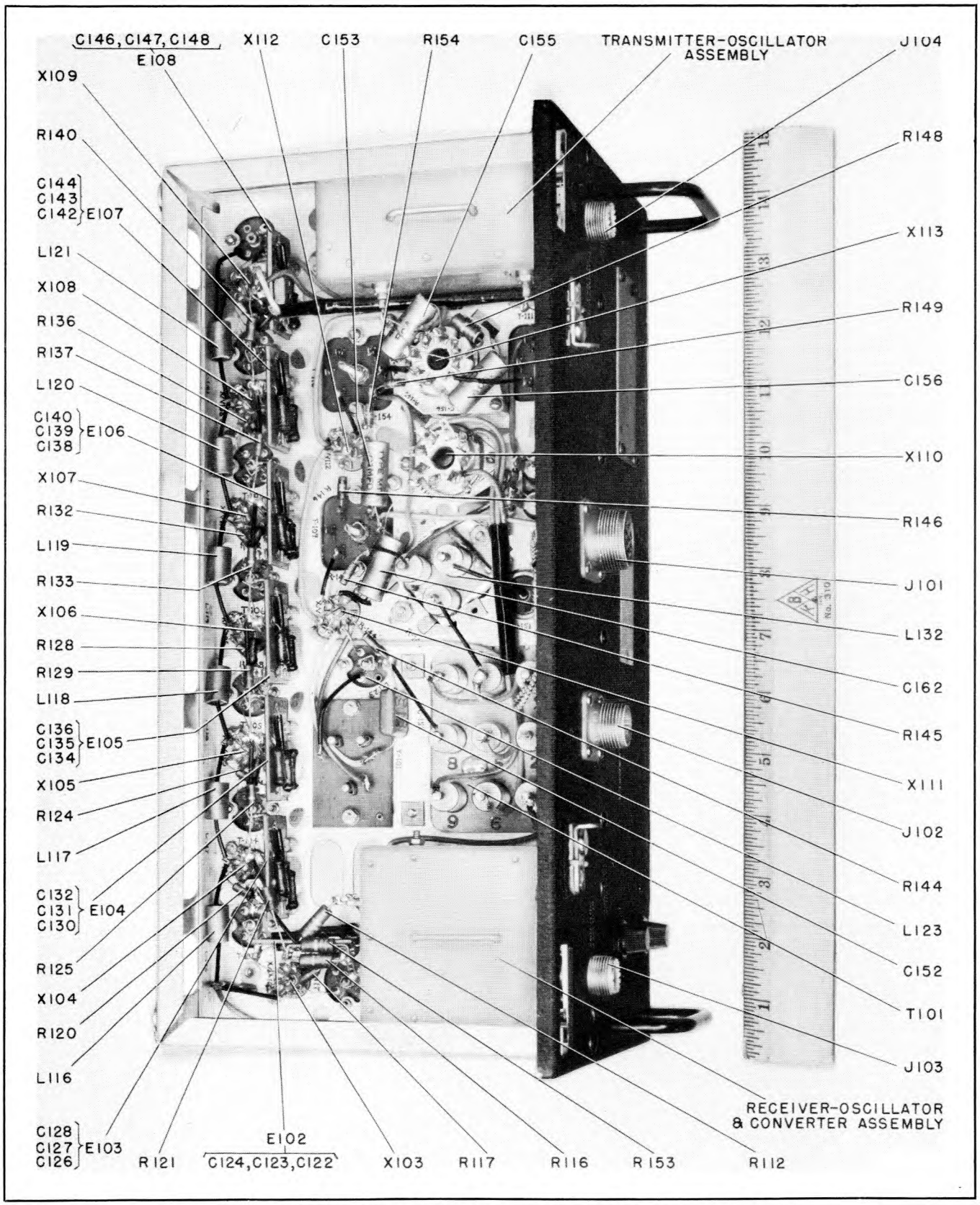


Figure 6-4. Radio Receiver and Transmitter BC-788-A or BC-788-AM — Chassis Bottom View, Front Oblique

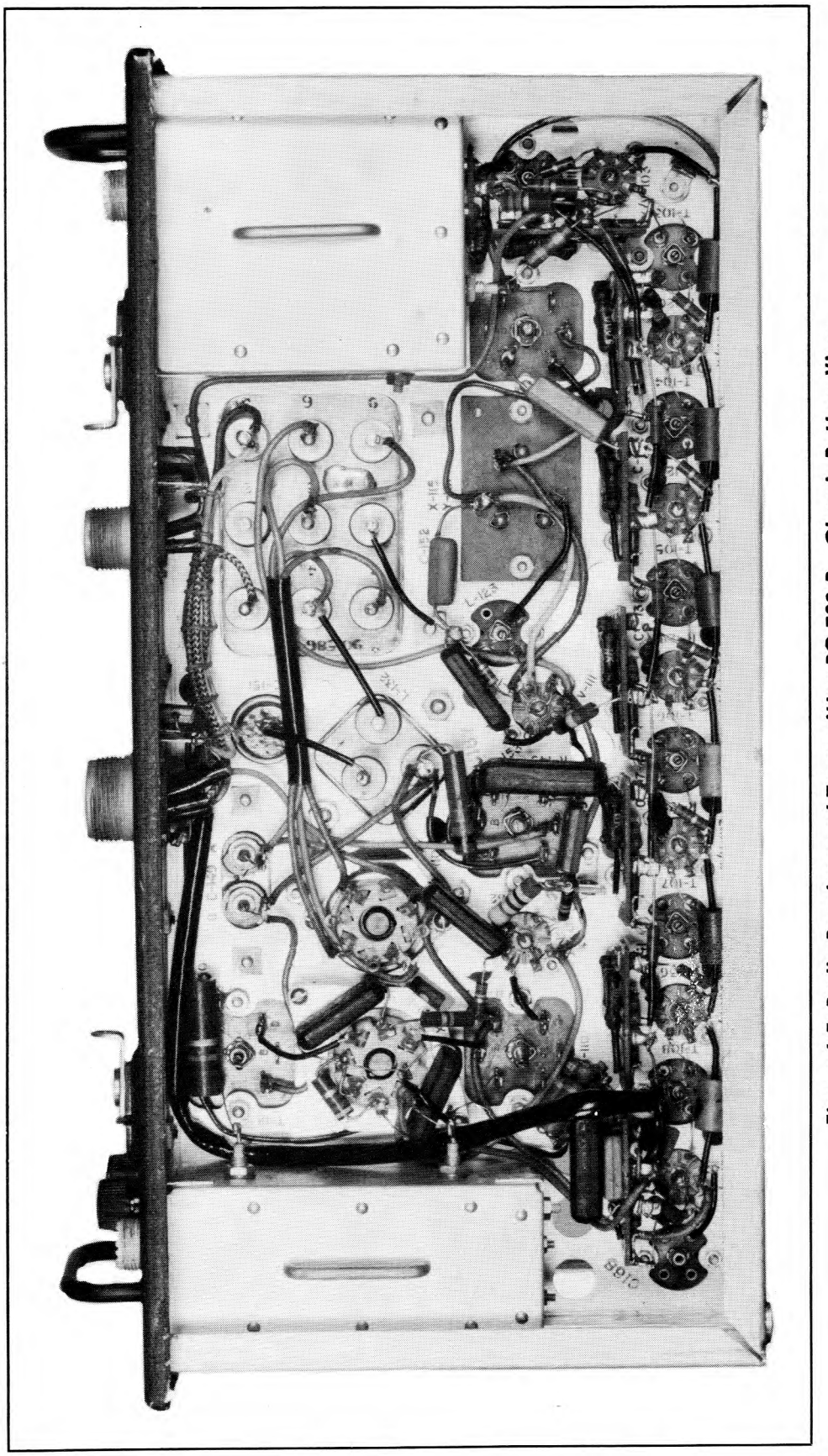


Figure 6-5. Radio Receiver and Transmitter BC-788-B—Chassis Bottom View

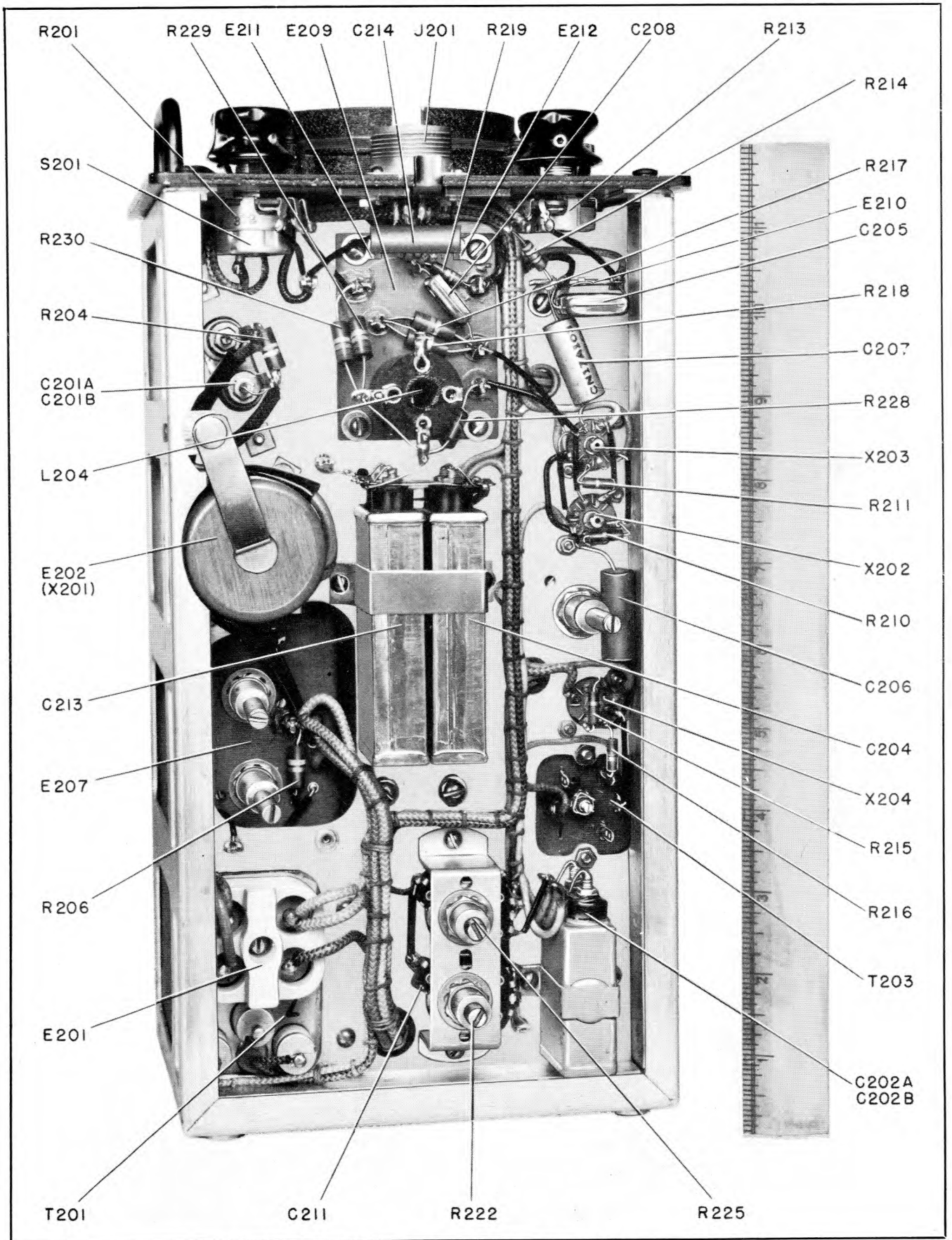
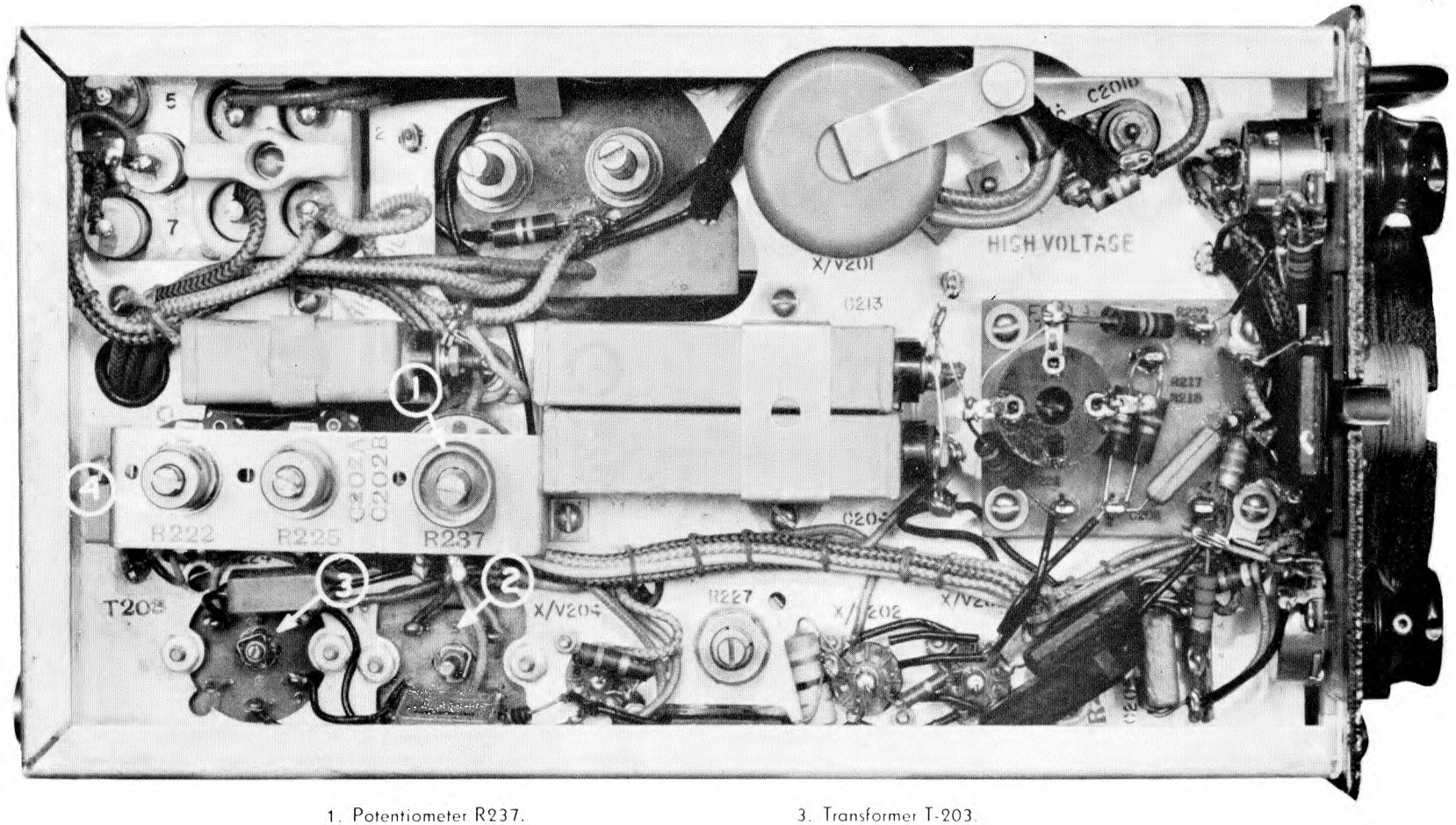


Figure 6-6. Indicator I-152-A or I-152-AM — Chassis Bottom View



1. Potentiometer R237.
2. Transformer T205.
3. Transformer T-203.
4. Potentiometer R222.

Figure 6-7. Indicator I-152-B — Chassis Bottom View

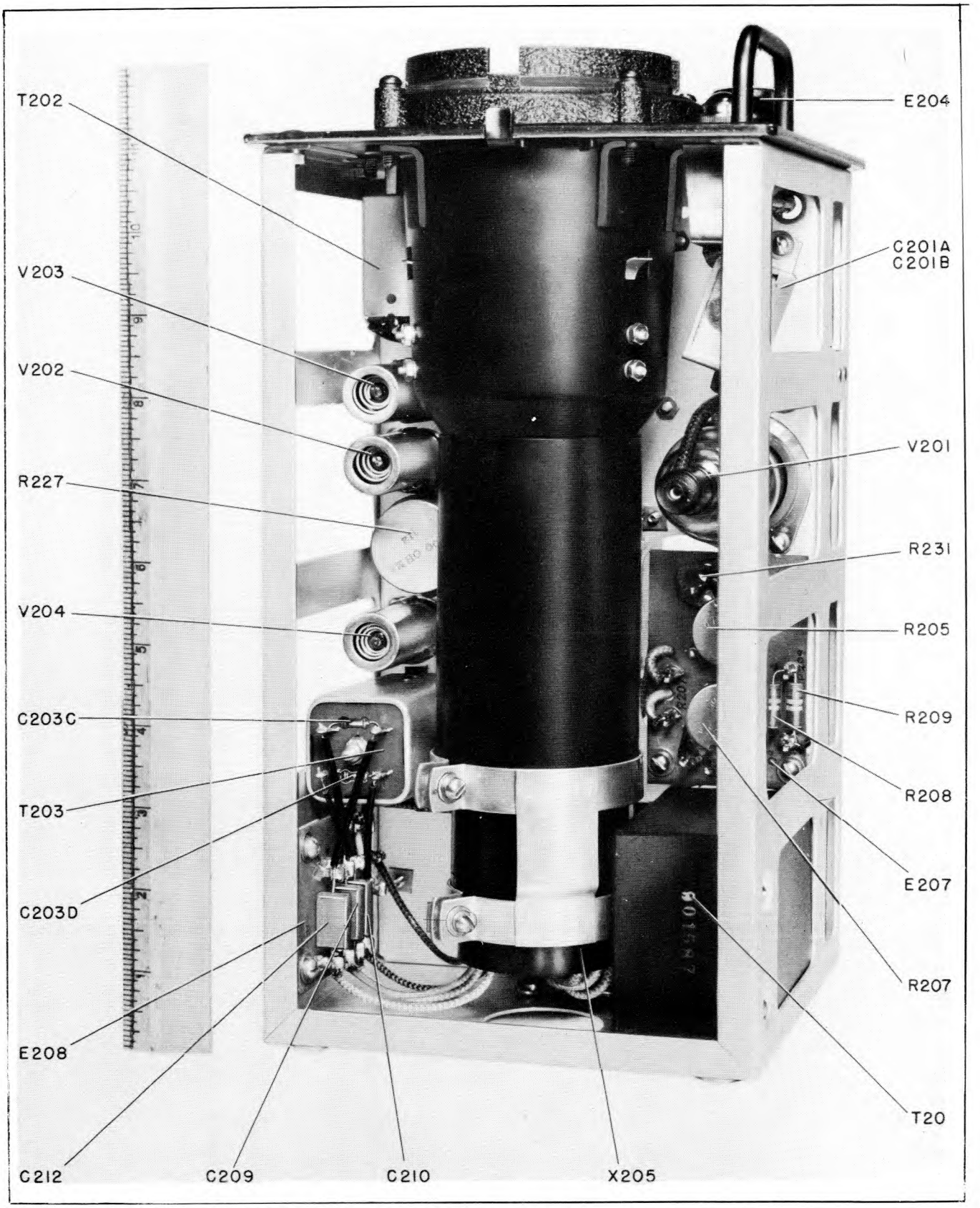


Figure 6-8. Indicator I-152-A or I-152-AM — Chassis Top View (Left Oblique)

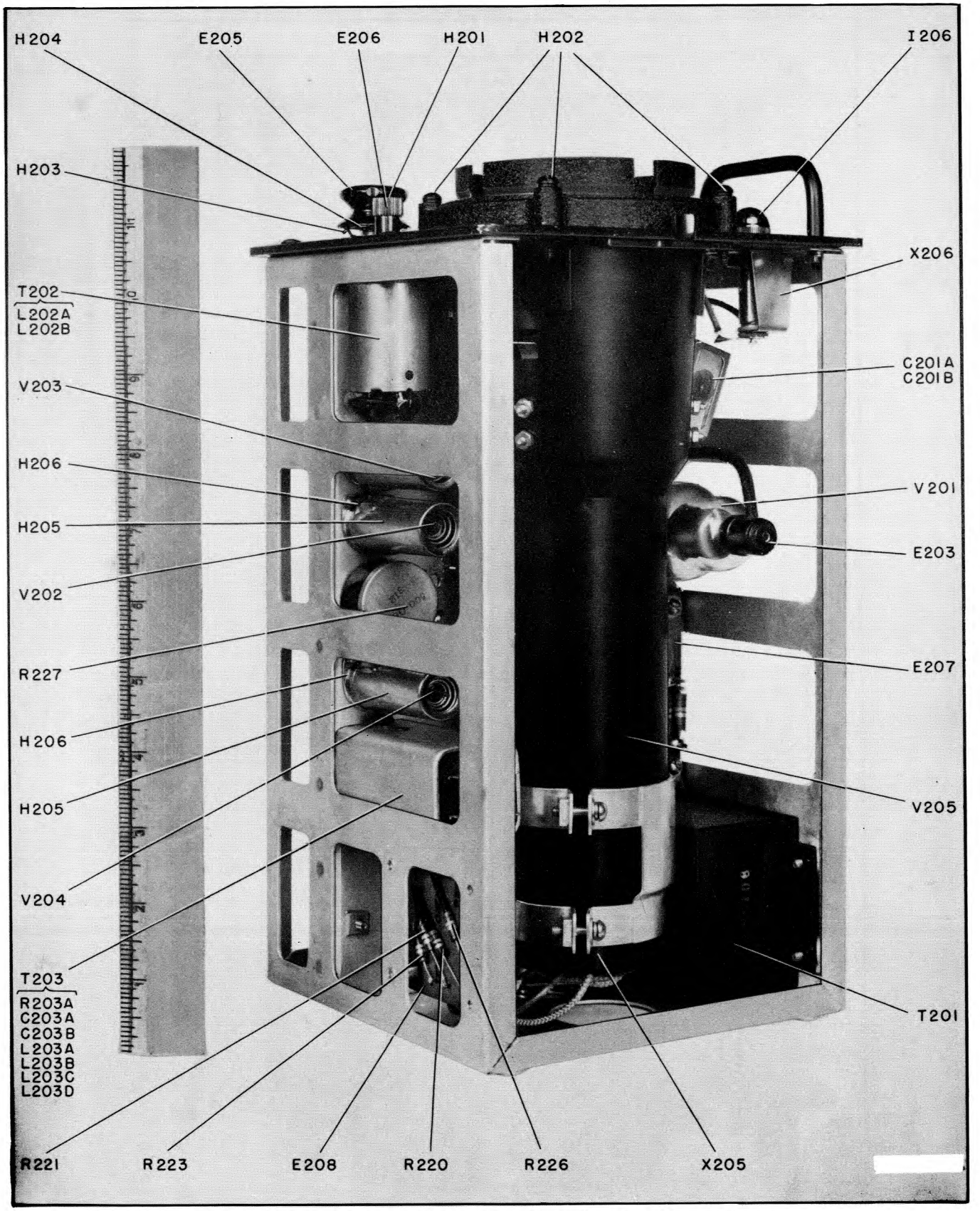
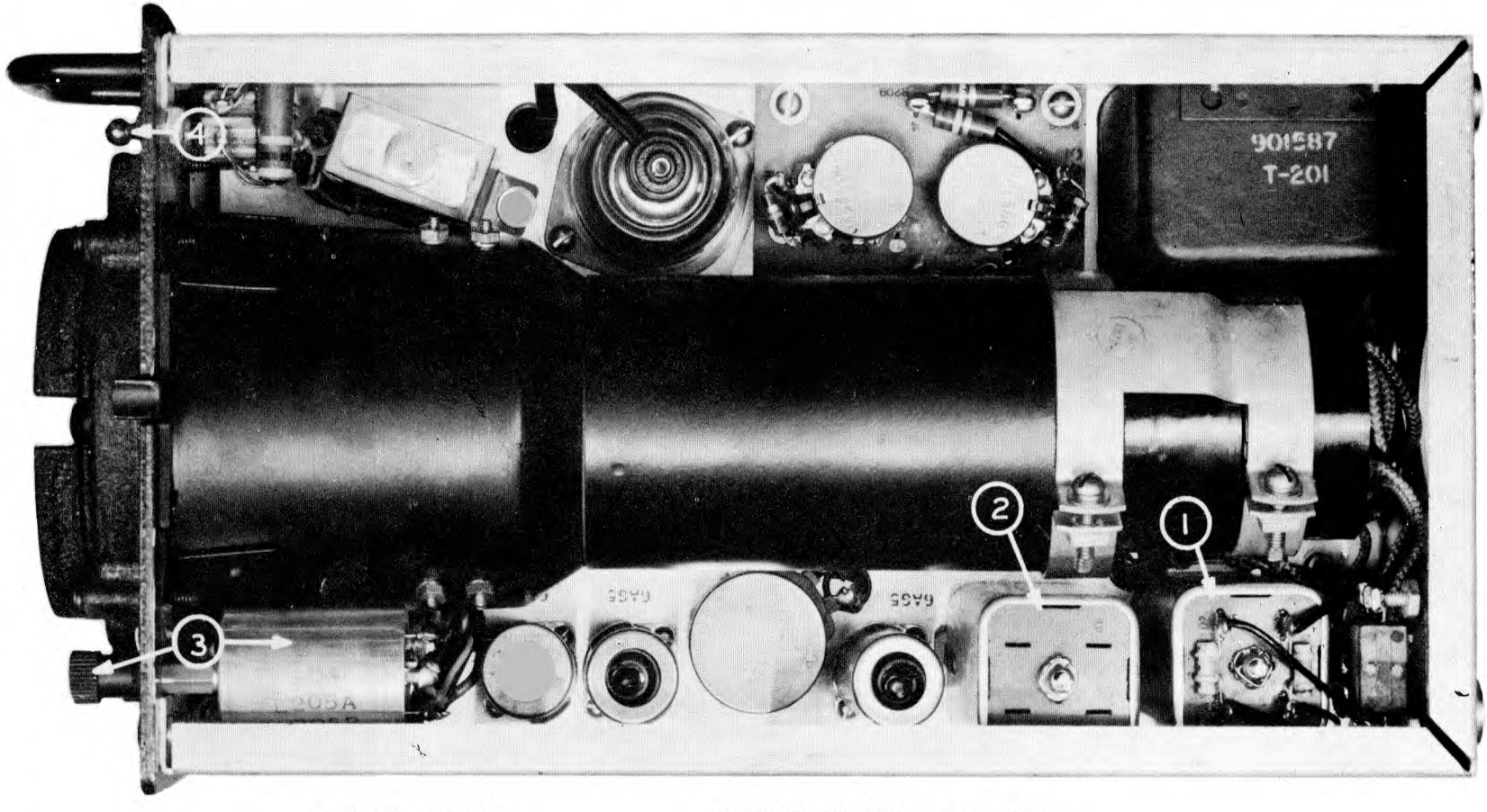


Figure 6-9. Indicator I-152-A or I-152-AM — Chassis Top View (Right Oblique)



1. Transformer T-203.
2. Transformer T-205.
3. "TIMES TEN" "Zero Adj."—T204.
4. Scale Switch S-202.

Figure 6-10. Indicator I-152-B — Chassis Top View

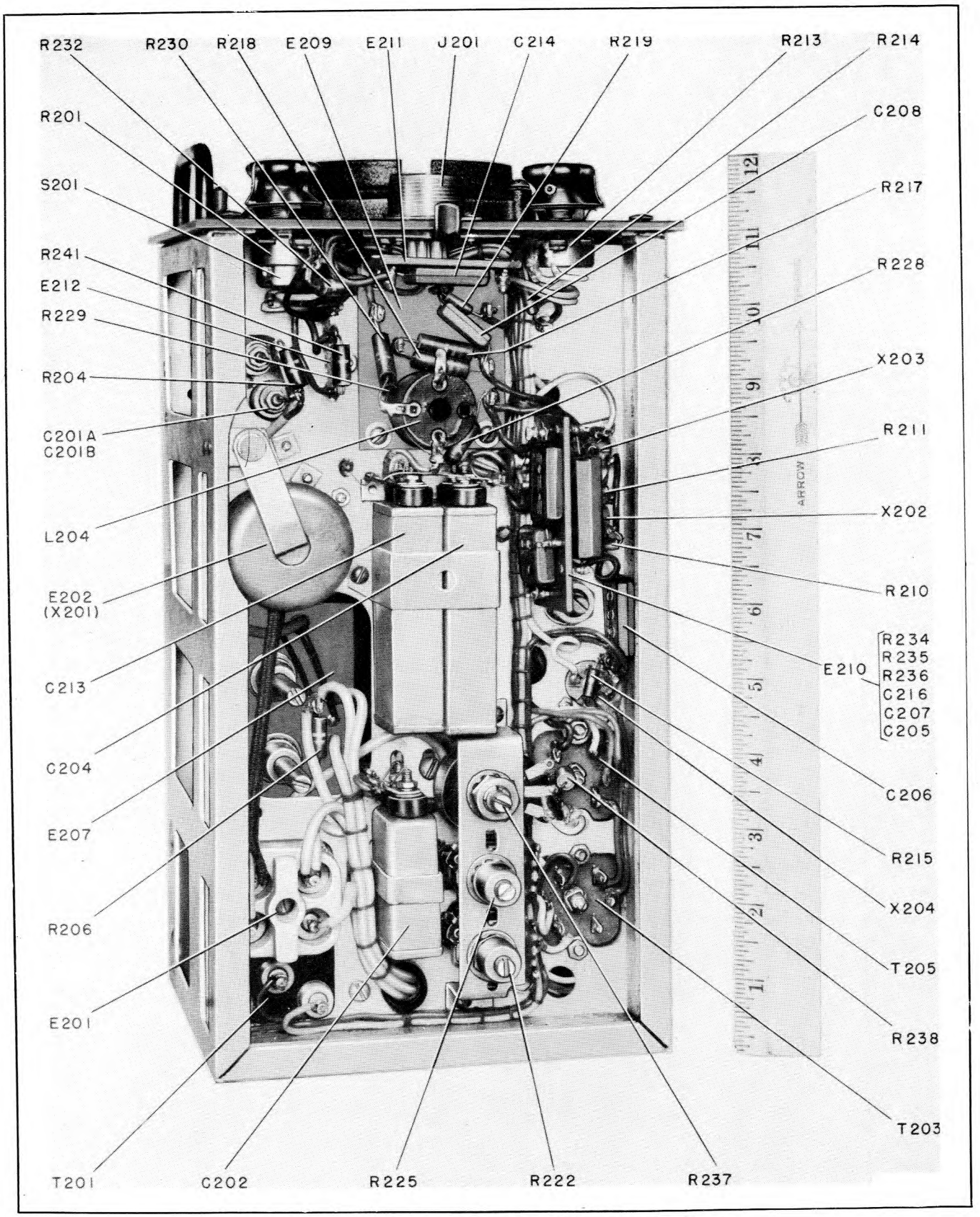


Figure 6-11. Indicator I-152-C — Chassis Bottom View

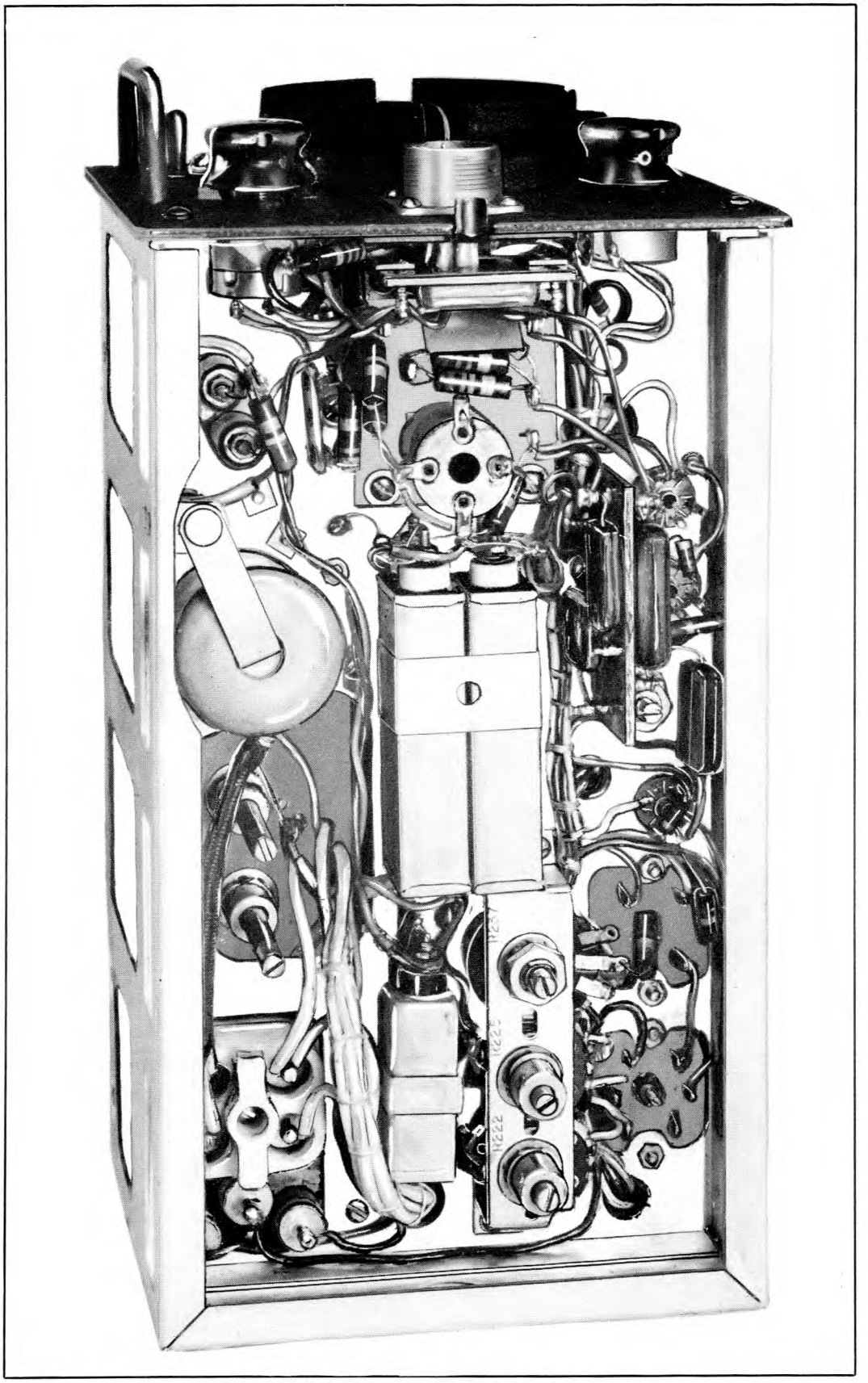


Figure 6-11A. Indicator I-152-C—Chassis Bottom View, Modifications

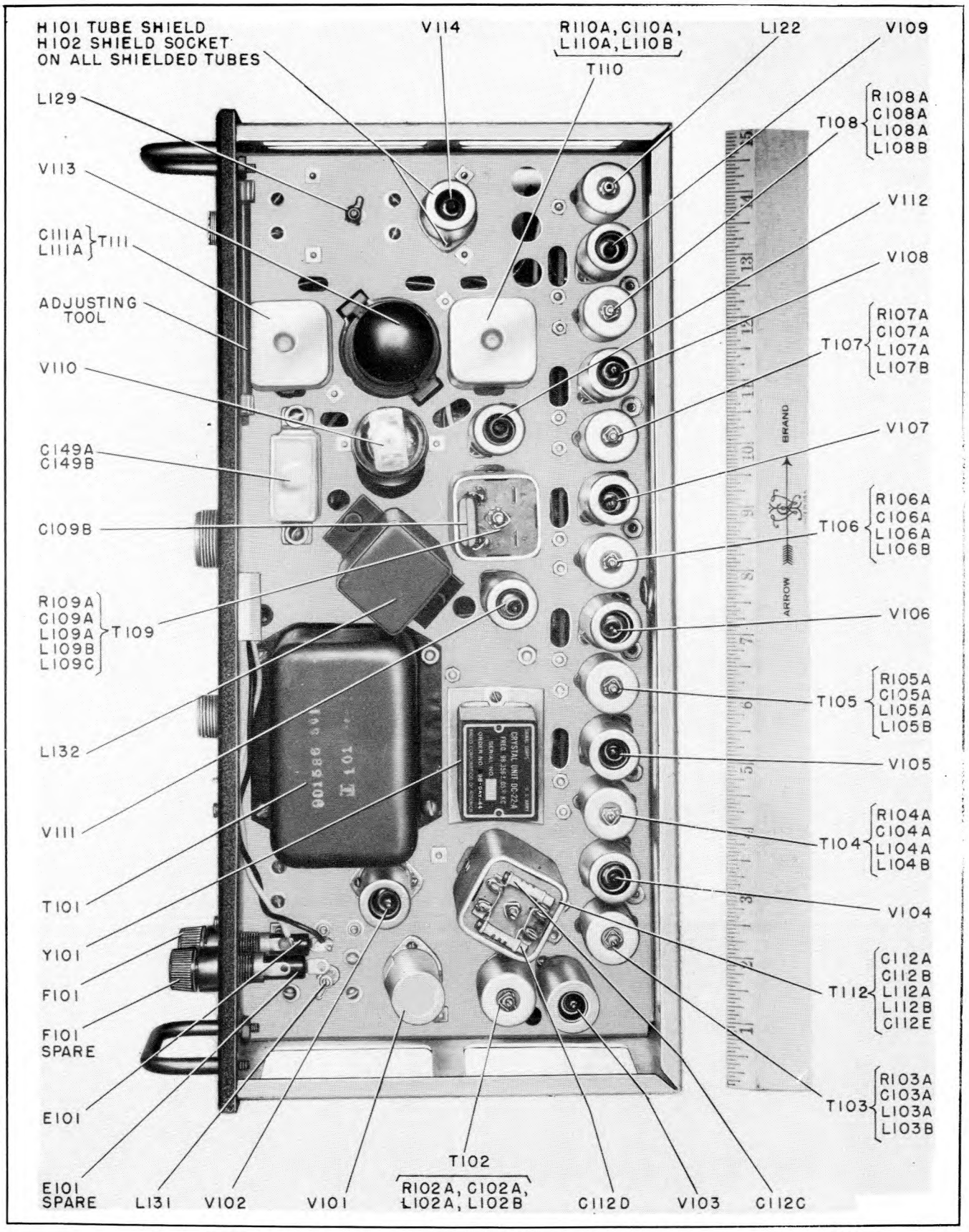


Figure 6-12. Radio Receiver and Transmitter BC-788-C — Chassis Top View

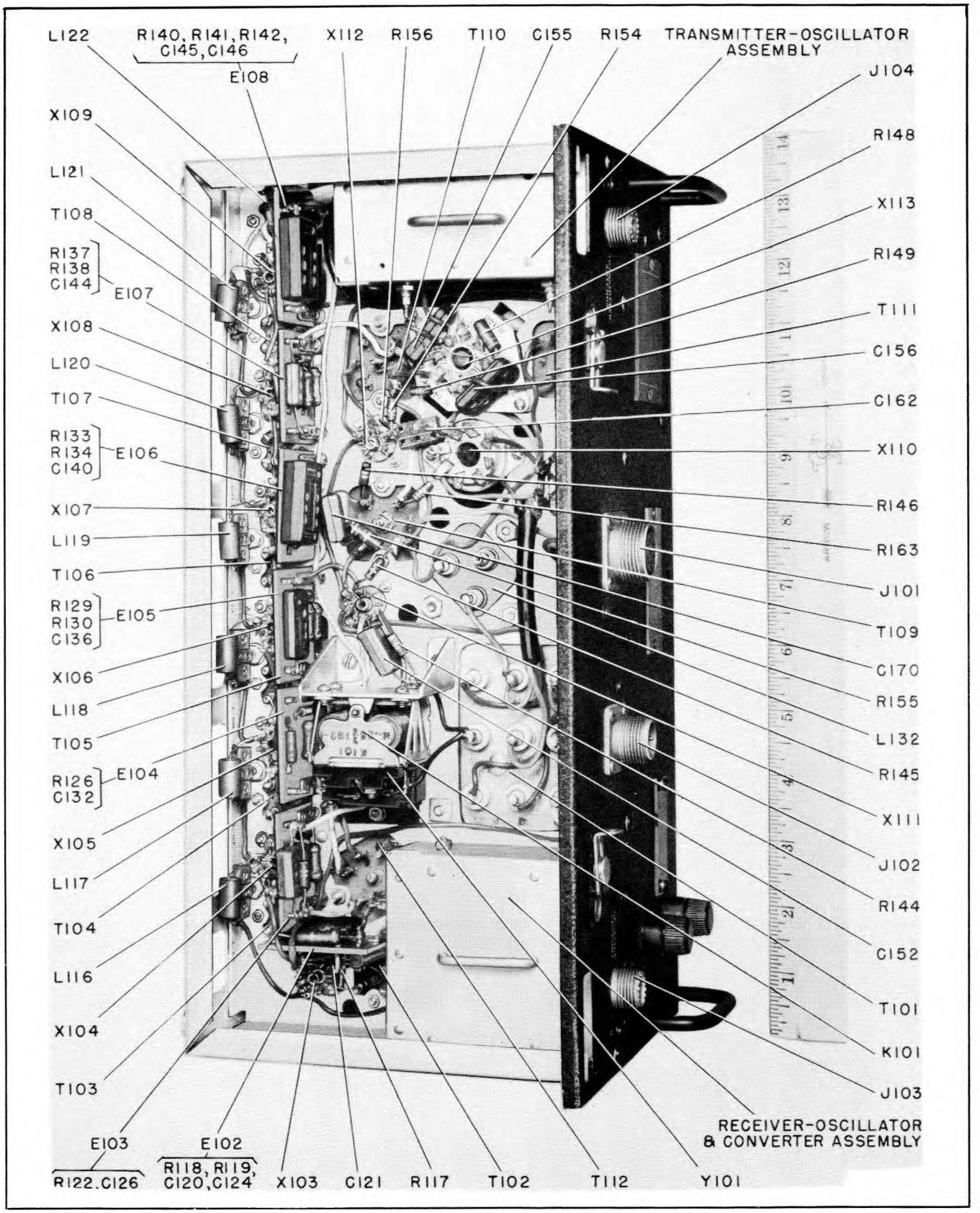


Figure 6-13. Radio Receiver and Transmitter BC-788-C— Chassis Bottom View (Front Oblique)

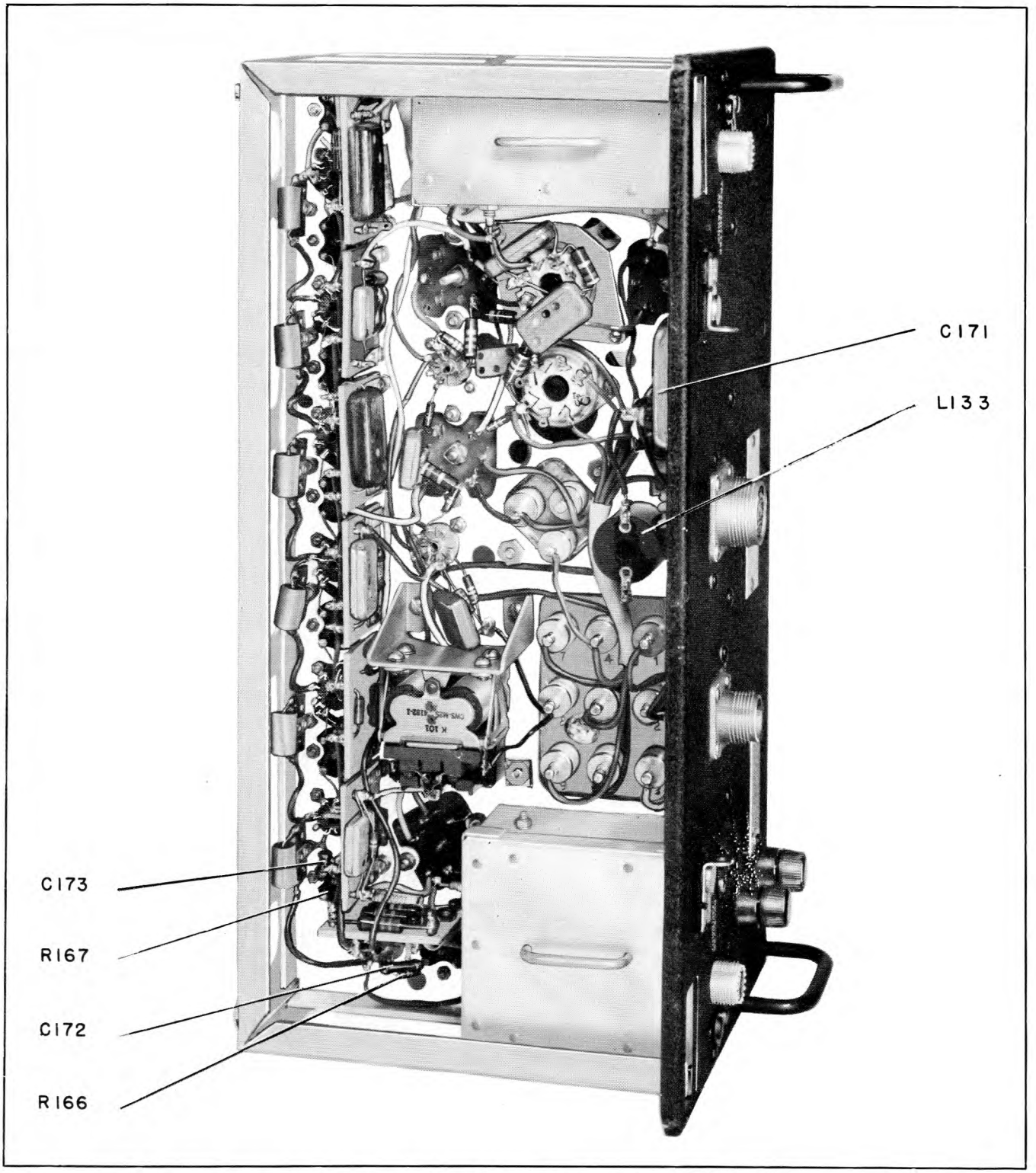


Figure 6-13A. Radio Receiver and Transmitter BC-788-C— Chassis Bottom View (Front Oblique) Modifications

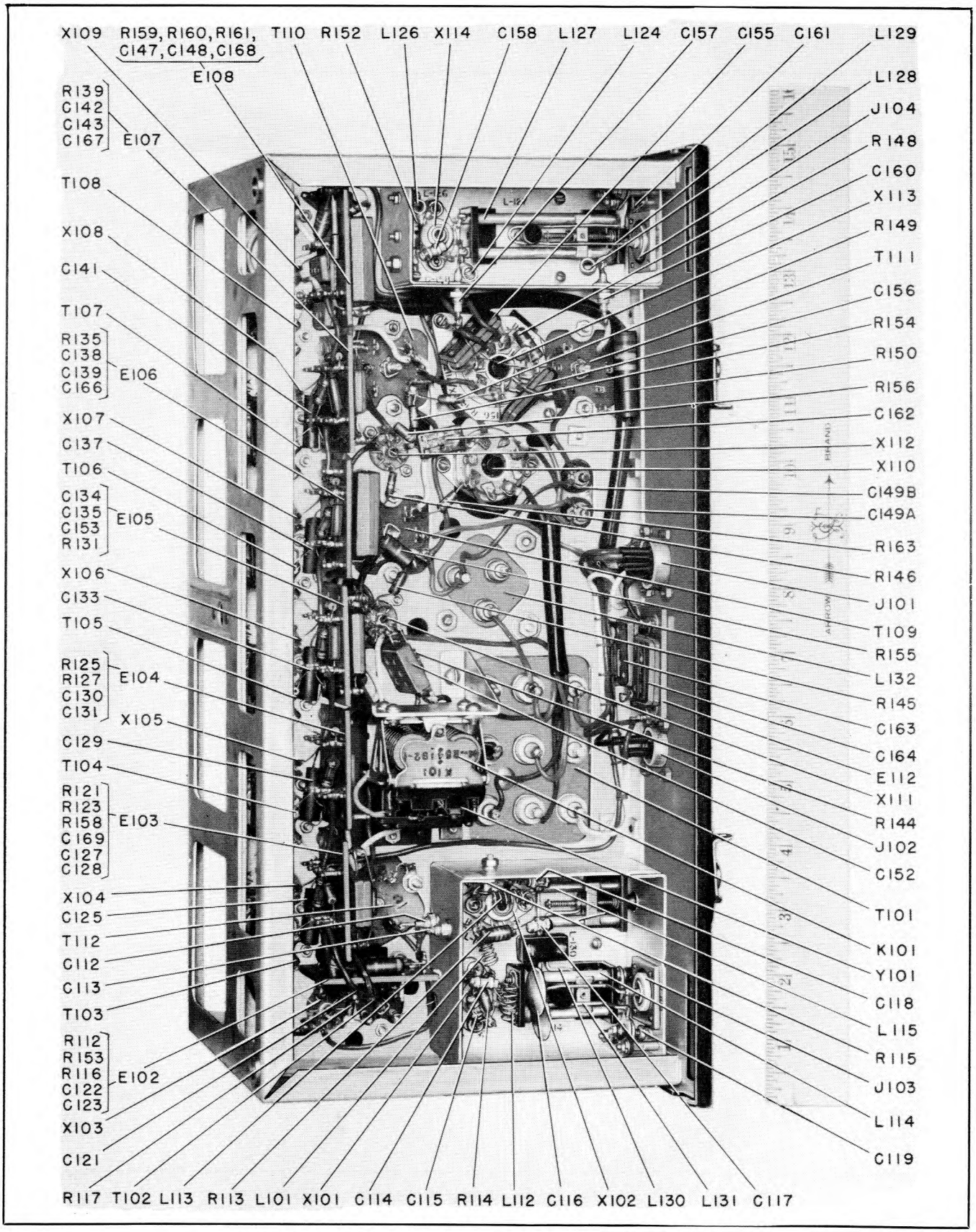


Figure 6-14. Radio Receiver and Transmitter BC-788-C — Chassis Bottom View (Rear Oblique)

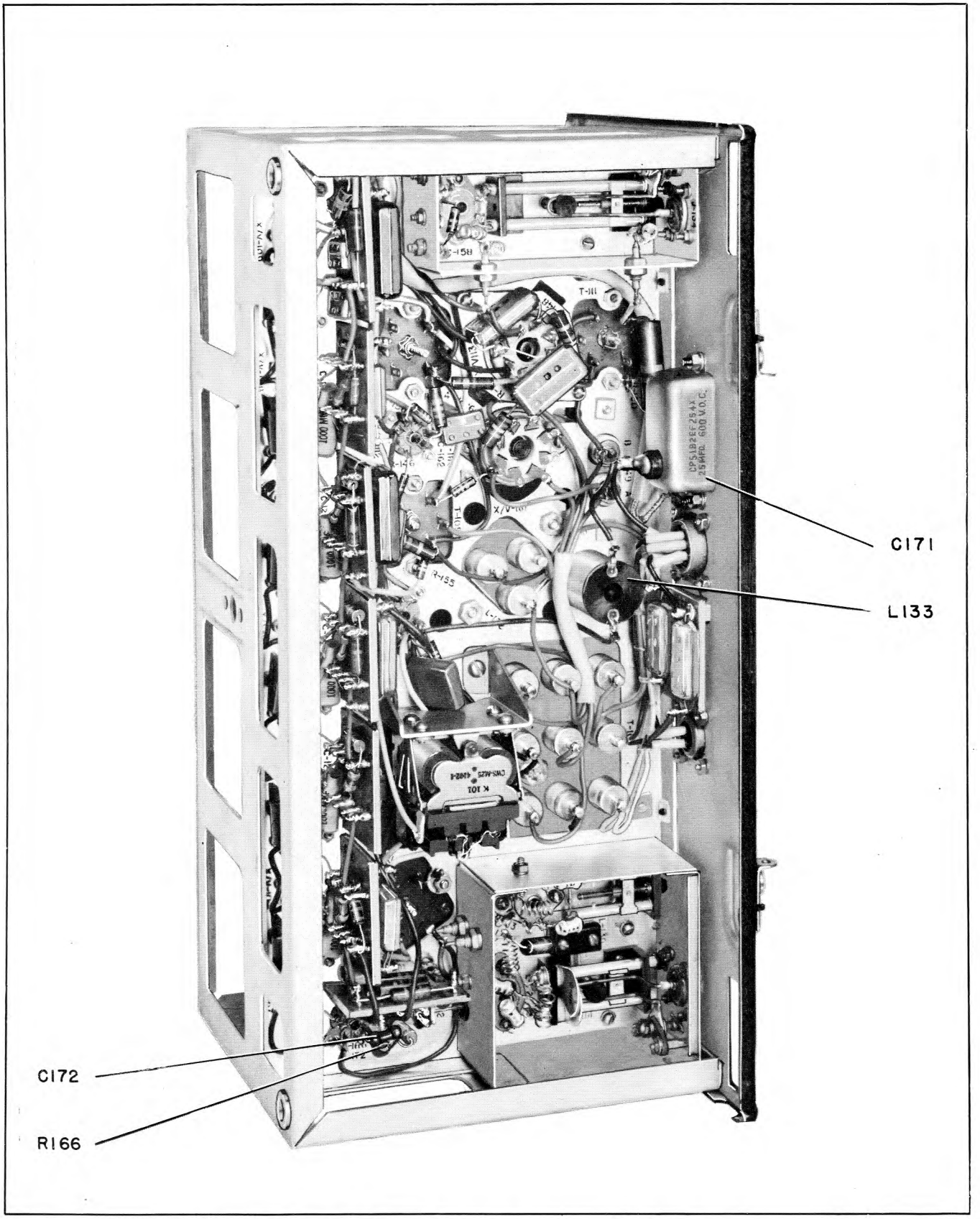


*Figure 6-14A. Radio Receiver and Transmitter BC-788-C—
Chassis Bottom View (Rear Oblique) Modifications*

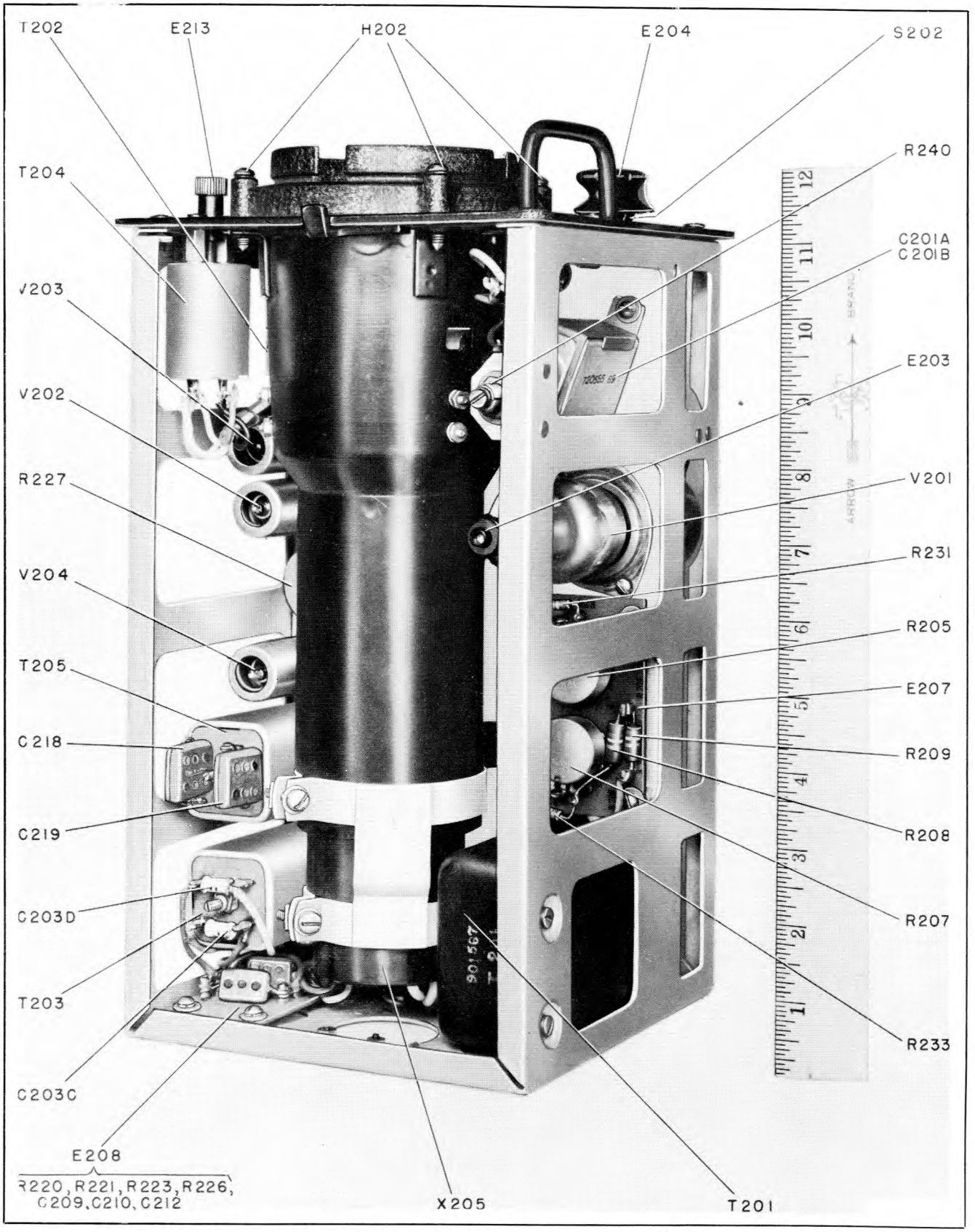


Figure 6-15. Indicator I-152-C — Chassis Top View (Right Oblique)

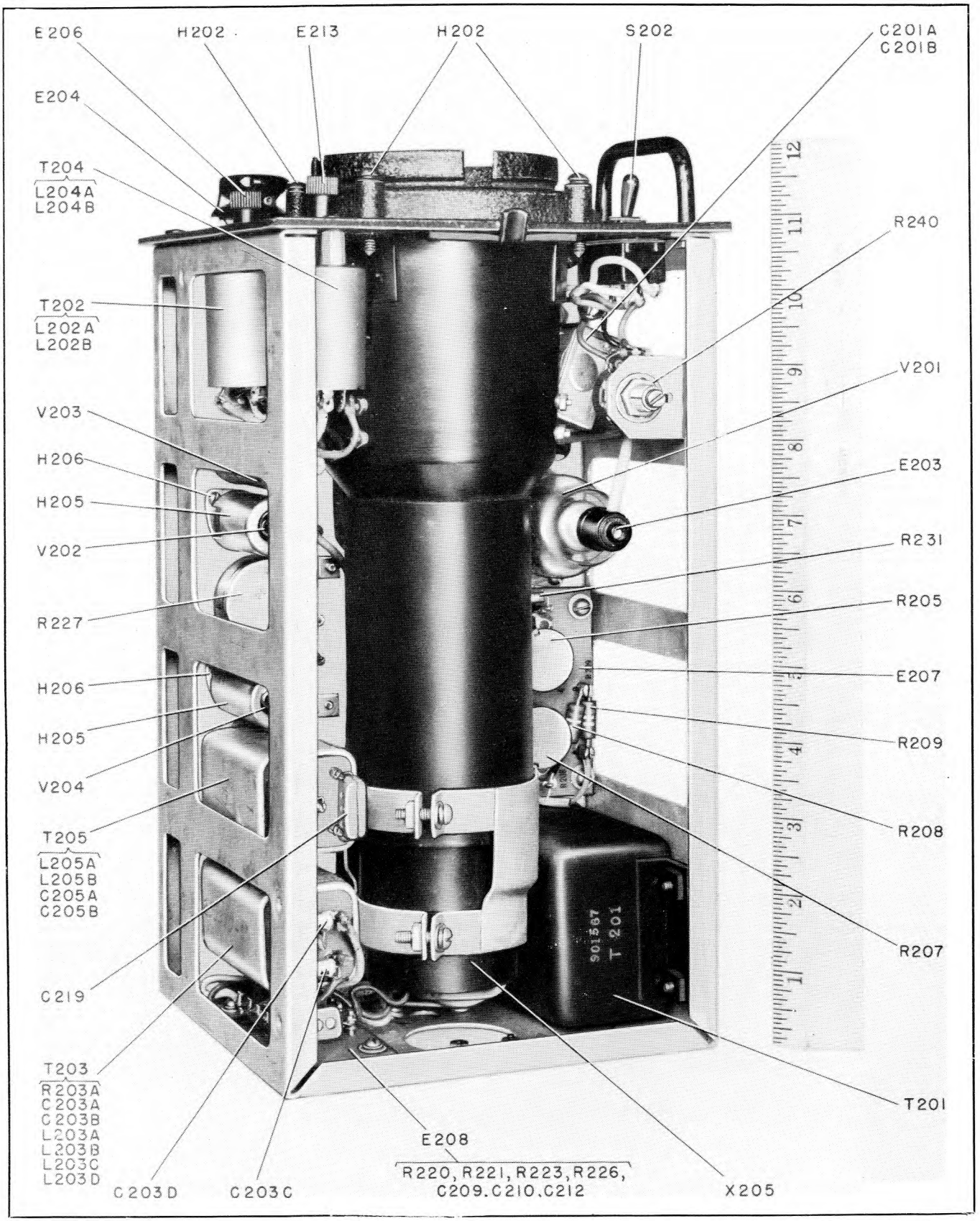


Figure 6-16. Indicator I-152-C — Chassis Top View (Left Oblique)

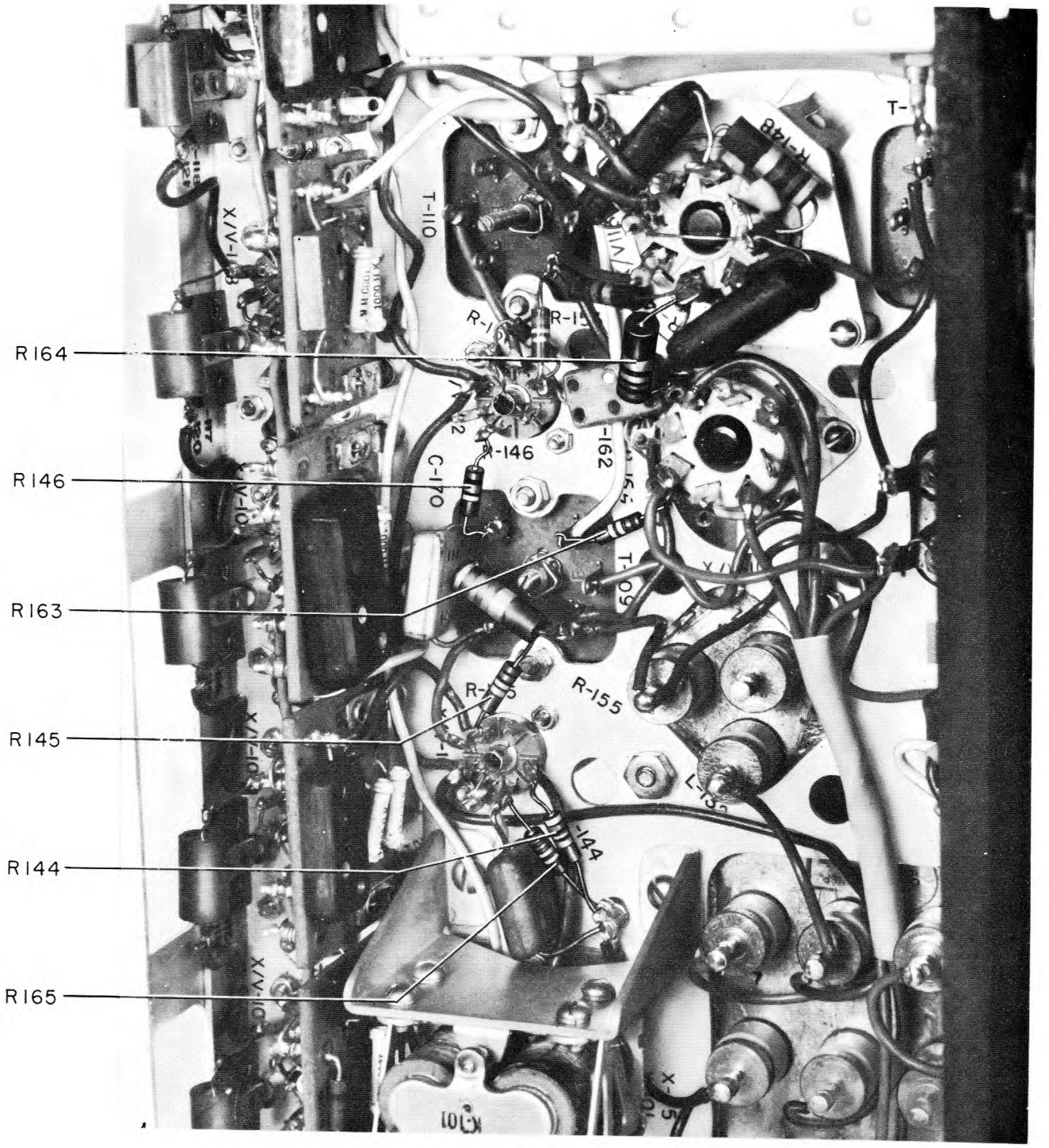


Figure 6-17. Radio Receiver and Transmitter BC-788-C—Chassis Modification M_1

SECTION VII
TABLE OF REPLACEABLE PARTS

1. CONTENT AND ARRANGEMENT OF TABLE.

a. Listings in the Table of Replaceable Parts do not constitute a complete breakdown of the equipment but consist of all electrical parts and such operative mechanical parts, with the exception of structural and minor parts such as standard bolts, screws, nuts, etc., that are subject to loss or failure.

b. Parts are grouped by major assemblies. Under each major assembly they are listed (1) alphabetically according to type and (2) numerically under each type.

2. ORDERING SPARE PARTS.

a. GENERAL.—Each Service using the Table of Replaceable Parts has established certain depots and service groups for the storage and issue of spare parts. The regulations of each Service should be studied to determine the method of requisitioning spare parts and the sources from which they may be obtained. Information in the table pertaining to manufacturers' or contractors' names, types, models, or drawing numbers is not to be interpreted as authorization to field agencies to attempt to purchase identical or comparable spare parts directly from wholesale or retail stores except under emergency conditions as covered by the existing regulations of the Service concerned.

b. U. S. ARMY PERSONNEL.—The Table of Replaceable Parts is for information *only* and is not to be construed as a list of allowances of maintenance parts or components. Organizations using this equipment will consult applicable AAF Technical Orders of the 00-30 and 00-30A series. Higher maintenance and supply echelons will consult applicable Combat Supply Tables XIIA, XIIB, and XIII.

3. EXPLANATION OF SYMBOLS USED.

a. REFERENCE SYMBOLS (COLUMN ONE).—To identify parts of an equipment referred to in the text, in illustrations, and in the Table of Replaceable Parts, a reference symbol is assigned to each part making up a major assembly of an equipment. Each symbol consists of an alphabetical portion and a numerical portion, separated by a hyphen. (Example C-101.) The alphabetical portion denotes the type of part, classified in accordance with the following list:

Alphabetical Portion of Reference Symbol	*Type of Part*
A	Structural parts, panels, frames, castings, etc.
B	Motors and prime movers
C	Capacitors of all types
D	Dynamotors
E	Miscellaneous electrical parts, insulators, knobs, brushes, etc.
F	Fuses
G	Generators, exciters, etc.
H	Hardware, screws, bolts, studs, pins, snap-slides. tools, etc.
I	Indicating devices (except meters and thermometers) pilot lamps, etc.
J	Jacks and receptacles (stationary)
K	Contactors, relays, circuit breakers, etc.
L	Inductors, radio-frequency, and audio-frequency
M	Meters of all types, gauges, thermometers, etc.
N	Nameplates, dials, charts, etc.
O	Mechanical parts, bearings, shafts, couplings, gears ferrules, flexible shafts, housings, etc.
P	Plugs
Q	Diaphragms (microphone, telephone, projector etc.)
R	Resistors, fixed and variable (potentiometers, etc.)
S	Switches, interlocks, thermostats
T	Transformers, radio-frequency, audio-frequency anc power
U	Hydraulic parts
V	Vacuum and gaseous discharge tubes
W	Wires, interconnecting cables, without plugs
X	Sockets
Y	Mechanical oscillators, crystals, magnetostrictior tubes, etc.
Z	Impedances, such as traps (wave) etc.
BT	Batteries
CR	Rectifiers (electrochemical, copper-oxide, selenium crystal, etc., except vacuum or gaseous tubes).
HR	Heaters
HS	Handset (telephone and microphone combination)
HT	Head telephones
HX	Heat exchangers
LS	Loud speakers
MG	Motor generators (single unit)
MI	Microphone (hand or chest type)
TY	Surge eliminators (special discharge resistors)
VR	Voltage regulators (except vacuum or gaseous tubes)

The numerical portion of the reference symbol is assigned as follows: Each part in each of the classifications of parts within a major assembly is assigned a

number running consecutively for 99 numbers—from 101 to 199 for the first major assembly listed in the table, from 201 to 299 for the second major assembly, etc. If parts in one or more classifications of parts within a major assembly exceed 99, however, the next hundred series, e.g. 301 to 399, is assigned to that major assembly even though only part of the numbers in that series are used. The next major assembly listed then begins with the next series, e.g. 401 to 499. The block of numbers assigned to each major assembly is shown in paragraph 5, this section.

Only one reference symbol is assigned to a part, but suffix letters are sometimes added to distinguish between multiple electrical or mechanical characteristics of a part. Example: C-101A, C-101B, and C-101C identify each part of a triple capacitor C-101; K-101A identifies the coil and K-101B the contacts of a relay K-101.

b. CROSS-HATCH SYMBOL (COLUMN TWO). —Cross-hatch symbols (#) appearing in column two indicate that corresponding parts are not included in any concurrently procured spare parts group.

4. ABBREVIATIONS.

Abbreviations used in the Table of Replaceable Parts are as follows:

Abbreviation	*Definition*
AC	alternating current
AF	audio frequency
AM	amplitude modulation
amp	amperes
approx	approximately
AWG	American Wire Gauge
AVC	Automatic volume control
AWS	American War Standard
C	Centigrade
Coef	coefficient
cps	cycles per second
CW	continuous wave
db	decibel (s)
DC	direct current
dia	diameter
dimen	dimension (s)
DPDT	double pole double throw
DPST	double pole single throw
F	Fahrenheit
ft	foot, feet
FM	frequency modulation
hy	henry (s)
"	inch (es)
ID	inner diameter
IF	intermediate frequency
JAN	joint Army Navy
kc	kilocycle (s)
lg	long
ma	milliampere (s)
max	maximum
mc	megacycle (s)
meg	megohm
min	minimum
mf	microfarad (s)
mmf	micromicrofarad (s)
u sec	microsecond (s)
mh	millihenry
mtd	mounted
mtg	mounting
mts	mounts
OD	outer diameter
%	percent
±	plus or minus
PD	pitch diameter
pri	primary
RF	radio frequency
RMA	Radio Manufacturers' Association
rpm	revolutions per minute
sec	secondary
SPDT	single pole double throw
SPST	single pole single throw
thd	thread (s)
thk	thick
uh	microhenry
UHF	ultra-high-frequency
v	volt (s)
vdcw	DC working volts
VF	video frequency
VHF	very-high frequency
w	watt (s)
wd	wide
ww	wire wound

5. INDEX OF MAJOR ASSEMBLIES.

Major Assembly	*Numerical Series of Reference Symbols*	*Page*
Radio Receiver and Transmitter BC-788-AM	101-199	7-3—7-12
Indicator I-152-A	201-299	7-12—7-16
Antenna AT-4/ARN-1	301-399	7-16
Miscellaneous Parts	401-499	7-16—7-19
Radio Receiver and Transmitter BC-788-C	101-199	7-19—7-35
Indicator I-152-C	201-299	7-35—7-43
Antenna AT-4/ARN-1	301-399	7-44
Miscellaneous Parts	401-499	7-44

6. DECIMAL EQUIVALENTS OF WIRE SIZES OF AWG AND SWG (BRITISH).

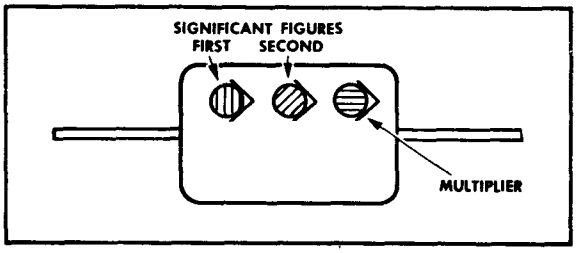
Size AWG	*Diameter (inches)*	*Size SWG*	*Diameter (inches)*
0000	.46000	0000	.4000
000	.40964	000	.3720

6. DECIMAL EQUIVALENTS OF WIRE SIZES OF AWG AND SWG (BRITISH) (Continued).

Size AWG	*Diameter (inches)*	*Size SWG*	*Diameter (inches)*
00	.36480	00	.3480
0	.32486	0	.3240
1	.28930	1	.3000
2	.25763	2	.2760
3	.22942	3	.2520
4	.20431	4	.2320
5	.18194	5	.2120
6	.18202	6	.1920
7	.14428	7	.1760
8	.12849	8	.1600
9	.11442	9	.1440
10	.10190	10	.1280
11	.09074	11	.1160
12	.08081	12	.1040
13	.07196	13	.0920
14	.06408	14	.0800
15	.05707	15	.0720
16	.05082	16	.0640
17	.04526	17	.0560
18	.04030	18	.0480
19	.03589	19	.0400
20	.03196	20	.0360
21	.02846	21	.0320
22	.02535	22	.0280
23	.02257	23	.0240
24	.02010	24	.0220
25	.01790	25	.0200
26	.01594	26	.0180
27	.01420	27	.0164
28	.01264	28	.0148
29	.01126	29	.0136
30	.01003	30	.0124
31	.008928	31	.0116
32	.007950	32	.0108
33	.007080	33	.0100
34	.006305	34	.0092
35	.005615	35	.0084
36	.005000	36	.0076
37	.004453	37	.0068
38	.003965	38	.0060
39	.003531	39	.0052
40	.003145	40	.0048

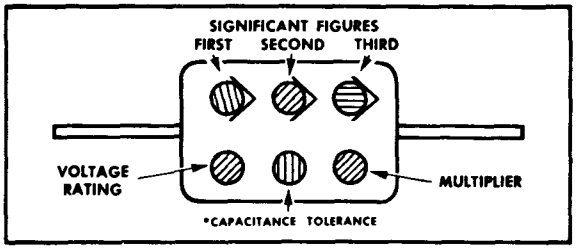
CAPACITOR COLOR CODES

RMA 3-DOT COLOR CODE FOR MICA-DIELECTRIC CAPACITORS

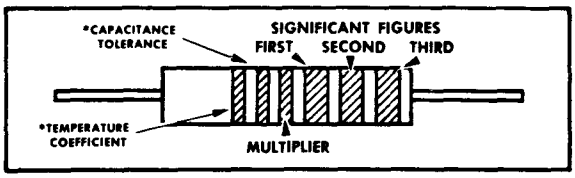


Capacitors marked with this code have a voltage rating of 500 volts.

RMA 6-DOT COLOR CODE FOR MICA-DIELECTRIC CAPACITORS



RMA COLOR CODE FOR TUBULAR CERAMIC-DIELECTRIC CAPACITORS



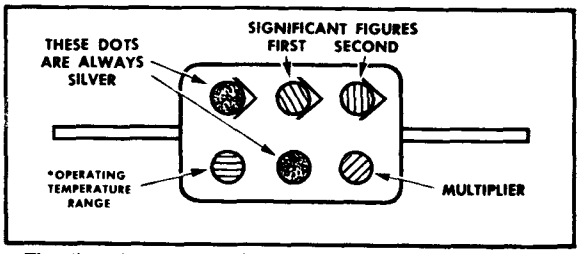
Capacitors marked with this code have a voltage rating of 500 volts.

RMA Radio Manufacturers Association JAN Joint Army Navy

Note These color codes give all capacitances in micromicrofarads

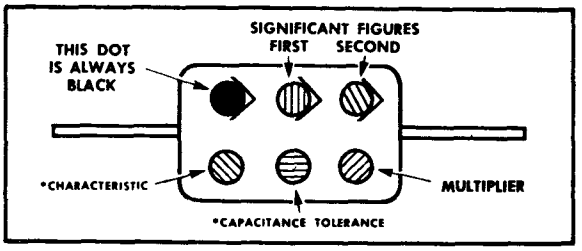
*Items marked with an asterisk are of interest primarily to depot and higher echelon repair personnel

JAN 6-DOT COLOR CODE FOR PAPER-DIELECTRIC CAPACITORS



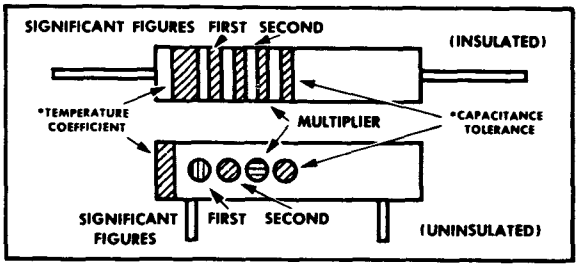
The silver dots serve to identify this marking. For working voltages see JAN type designation code

JAN 6-DOT COLOR CODE FOR MICA-DIELECTRIC CAPACITORS



The black dot serves to identify this code. For working voltages see JAN type designation code.

JAN COLOR CODE FOR FIXED CERAMIC-DIELECTRIC CAPACITORS

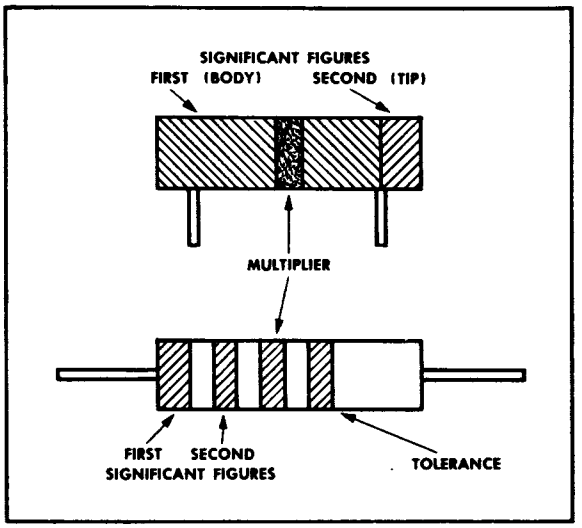


Capacitors marked with this code have a voltage rating of 500 volts. Either the band or dot code may be used.

COLOR	SIGNIFICANT FIGURE	MULTIPLIER			RMA VOLTAGE RATING
		RMA MICA-AND CERAMIC-DIELECTRIC	JAN MICA-AND PAPER-DIELECTRIC	JAN CERAMIC-DIELECTRIC	
BLACK	0	1	1	1	
BROWN	1	10	10	10	100
RED	2	100	100	100	200
ORANGE	3	1,000	1,000	1,000	300
YELLOW	4	10,000			400
GREEN	5	100,000			500
BLUE	6	1,000,000			600
VIOLET	7	10,000,000			700
GRAY	8	100,000,000		0.01	800
WHITE	9	1,000,000,000		0.1	900
GOLD		0.1	0.1		1,000
SILVER		0.01	0.01		2,000
NO COLOR					500

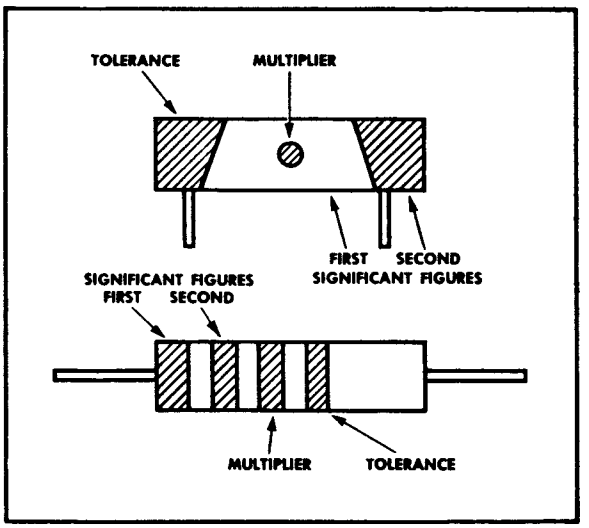
RESISTOR COLOR CODES

RMA COLOR CODE FOR FIXED COMPOSITION RESISTORS



Insulated fixed composition resistors with axial leads are designated by a natural tan background color. Non-insulated fixed composition resistors with axial leads are designated by a black background color.

JAN COLOR CODE FOR FIXED COMPOSITION RESISTORS



Resistors with axial leads are insulated. Resistors with radial leads are uninsulated.

COLOR	SIGNIFICANT FIGURE	MULTIPLIER	TOLERANCE (PERCENT)
BLACK	0	1	
BROWN	1	10	
RED	2	100	
ORANGE	3	1,000	
YELLOW	4	10,000	
GREEN	5	100,000	
BLUE	6	1,000,000	
VIOLET	7	10,000,000*	
GRAY	8	100,000,000*	
WHITE	9	1,000,000,000*	
GOLD		0.1*	5
SILVER		0.01*	10
NO COLOR			20

Example: A 50,000-ohm resistor with a standard tolerance of 20 percent (no color) would be indicated by a green ring (5), a black ring (0), and an orange ring (000)

RMA: Radio Manufacturers Association
JAN: Joint Army-Navy

JOINT ARMY-NAVY TYPE DESIGNATION CODES FOR ELECTRICAL COMPONENTS

INTRODUCTION: Fixed and variable resistors and fixed capacitors manufactured under JAN specifications may be labeled with a *type designation code* instead of a color code or actual electrical value. For resistors and capacitors marked with the JAN type designation code, electrical values and other data can be determined by consulting the following information.

RESISTORS

FIXED, COMPOSITION

COMPONENT: RC signifies *fixed, composition resistor.*

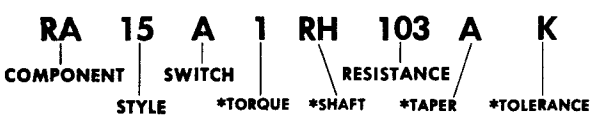
STYLE: A two-digit symbol indicates power rating and physical size.

Resistor style	Wattage
RC10, RC15, RC16	¼ WATT
RC20, RC21, RC25	½ WATT
RC30, RC31, RC35, RC38	1 WATT
RC40, RC41, RC45	2 WATTS
RC65	4 WATTS
RC75, RC76	5 WATTS

RESISTANCE: A three-digit symbol indicates the resistance value in ohms. The first two digits give the first two figures of the resistance value; the third digit gives the number of zeros which follow the first two figures.

RESISTORS

VARIABLE, WIRE-WOUND



COMPONENT: RA signifies *variable, wire-wound resistor.*

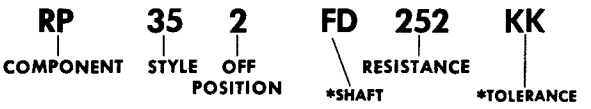
STYLE: A two-digit symbol indicates power rating and physical size and shape.

SWITCH: Symbol A indicates no switch. Symbol B indicates a switch turned ON at start of clockwise rotation.

RESISTANCE: A three-digit symbol indicates the resistance value in ohms. The first two digits give the first two figures of the resistance value; the final digit gives the number of zeros which follow the first two figures. The letter *R* may be substituted to represent a decimal point; but when *R* is used, the last digit of the group becomes significant.

RHEOSTATS

WIRE-WOUND, POWER-TYPE



COMPONENT: RP signifies all *rheostats.*

STYLE: Same as for variable, wire-wound resistors.

OFF POSITION:

Numeral	OFF position
1	None.
2	At end of counterclockwise rotation.
3	At end of clockwise rotation.

RESISTANCE: Same as for variable, wire-wound resistors.

*Items starred are of interest primarily to depot and higher echelon repair personnel.

CAPACITORS

FIXED MICA-DIELECTRIC

CM	20	B	511	K
COMPONENT	CASE	*CHARACTERISTIC	CAPACITANCE	*TOLERANCE

COMPONENT: CM signifies *fixed, mica-dielectric capacitor.*

CASE: A two-digit symbol identifies a physical case size and shape.

CAPACITANCE: A three-digit symbol indicates the capacitance value in micromicrofarads. The first two digits give the first two figures of the capacitance value; the final digit gives the number of zeros which follow the first two figures. When more than two significant figures are required, additional digits may be used, the last digit always indicating the number of zeros.

D-C WORKING VOLTAGE FOR CAPACITANCE RANGE

Case	Capacitance range	Vdcw
CM20	5-510 mmf	500
CM25	5-1,000 mmf	500
CM30	470-3,300 mmf	500
CM35	470-6,200 mmf	500
	6,800-10,000 mmf	500
CM40	3,300-8,200 mmf	500
	9,100-10,000 mmf	300

NOTE: Working voltages for capacitors above CM40 are stamped on the case.

The d-c working voltage of a capacitor can be determined from the above table when the case size and value of capacitance are known.

CAPACITORS

FIXED, MOLDED, PAPER-DIELECTRIC†

CN	36	A	302
COMPONENT	CASE	*CHARACTERISTIC	CAPACITANCE

COMPONENT: CN signifies *fixed, molded, paper-dielectric capacitor.*

CASE: Same as for fixed, mica-dielectric capacitors.

CAPACITANCE: A three-digit symbol indicates the capacitance value in micromicrofarads. The first two digits give the first two figures of the capacitance value; the third digit gives the number of zeros which follow the first two figures.

D-C WORKING VOLTAGE FOR CAPACITANCE RANGE

Case	Capacitance	Vdcw
CN35	3,000 mmf	800
	6,000 mmf	600
	10,000 mmf	400
CN36	3,000 mmf	400
	6,000 mmf	400
	10,000 mmf	300
CN40	3,000 mmf	400
	6,000 mmf	300
	10,000 mmf	300
CN41	3,000 mmf	600
	6,000 mmf	600
	10,000 mmf	400

The d-c working voltage of a capacitor can be determined from the above table when the case size and value of capacitance are known.

CAPACITORS

FIXED, CERAMIC-DIELECTRIC

CC	20	AH	100	G
COMPONENT	CASE	*CHARACTERISTIC	CAPACITANCE	*TOLERANCE

COMPONENT: CC signifies *fixed, ceramic-dielectric capacitor.*

CASE: Same as for fixed, mica-dielectric capacitors.

CAPACITANCE: Same as for fixed, molded, paper-dielectric capacitors.

NOTE: All fixed, ceramic-dielectric capacitors have a working voltage of 500 volts, d-c.

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*Items starred are of interest primarily to depot and higher echelon repair personnel.

†This is not a JAN specification. These capacitors are covered by AWS C75/221.

TABLE OF PARTS

NOTE: Parts indicated by a # sign in column 2 are not available as spare parts and are listed for reference purposes only.

MODEL: RADIO SET SCR-718-AM **MAJOR ASSEMBLY: RADIO RECEIVER AND TRANSMITTER BC-788-AM**

Reference Symbol	*Army Stock No. Navy Stock No. British Ref. No.*	*Name of Part and Description*	*Function*	*Mfr. and Desig. or Standard Type*		*Cont. or Govt. Dwg. or Spec. No.*
C101		DOES NOT EXIST				
C102A	3DK9003E5-1	CAPACITOR: fixed, ceramic, 3.5 ±0.1 mmfd, 500 v d-c working. In T102	1st i-f coupling	MU	Type No. 10PN00	K-98047-2
C103A	3DK9003E5-1	CAPACITOR: same as C102A. In T103	2nd i-f coupling			
C104A	3DK9003E5-1	CAPACITOR: same as C102A. In T104	3rd i-f coupling			
C105A	3DK9003E5-1	CAPACITOR: same as C102A. In T105	4th i-f coupling			
C106A	3DK9003E5-1	CAPACITOR: same as C102A. In T106	5th i-f coupling			
C107A	3DK9003E5-1	CAPACITOR: same as C102A. In T107	6th i-f coupling			
C108A	3DK9003E5-1	CAPACITOR: same as C102A. In T108	Detector coupling			
C109A	3D9470-1	CAPACITOR: fixed, mica, moulded, 470 mmfd, ±10%, 500 v d-c working. In T109	Crystal oscillator plate tuning	RCA	P-722001-589 AWS CM20B471K	P-722001-589
C109B	3D9470-1	CAPACITOR: same as C109A. In T109	Clipper grid coupling			
C110A	3D9470-1	CAPACITOR: same as C109A. In T110	Driver coupling			
C111A	3DKA2-700-1	CAPACITOR: fixed, mica, moulded, 2700 mmfd, ±10%, 500 v d-c working. In T111	Driver output coupling	RCA	P-722017-569 AMS-CM30B272K	P-722017-569
C112	3DK9055-4	CAPACITOR: fixed, ceramic, 55 mmfd, ±10%, 500 v d-c working	UHF rec. heater entrance bushing	CL ER MU		K-251125-501
C113	3DK9055-4	CAPACITOR: same as C112	UHF rec. +B entrance bushing			
C114	3DK9082-6	CAPACITOR: fixed, ceramic, 82 mmfd, ±10%, 500 v d-c working	Converter heater by-pass	ER		K-90581-331
C115	3DK9082-6	CAPACITOR: same as C114	Cathode by-pass			
C116	3DK9082-6	CAPACITOR: part of L114. No separate spares	Converter grid tuning			
C117	3DK9015-25	CAPACITOR: fixed, ceramic, 15 mmfd, ±5%, 500 v d-c working	Rec. osc. plate blocking	CL ER		K-90575-213
C118	3DK9015-25	CAPACITOR: same as C117	Rec. osc. grid blocking			
C119		CAPACITOR: variable, 1.2 to 7 mmfd metal plates. Includes C119A and C119B	Antenna loop tuning	RCA		
C119A	3DK9007V-4	CAPACITOR: plate, part of C119	Fixed section	RCA	K-252629-501	K-252629-501
C119B	3DK9007V-4/C1	CAPACITOR: plate, part of C119	Movable section	RCA	K-258196-501	K-258196-501
C120	3DKA1-108	CAPACITOR: fixed, ceramic, 1000 mmfd ±20%, 300 v d-c working	Converter +B by-pass	MU	Type 20K1200	K-97653-1

TABLE OF PARTS—Continued

NOTE: Parts indicated by a # sign in column 2 are not available as spare parts and are listed for reference purposes only.

MODEL: RADIO SET SCR-718-AM **MAJOR ASSEMBLY: RADIO RECEIVER AND TRANSMITTER BC-788-AM**

Reference Symbol	*Army Stock No. Navy Stock No. British Ref. No.*	*Name of Part and Description*	*Function*	*Mfr. and Desig. or Standard Type*	*Cont. or Govt. Dwg. or Spec. No.*
C121	3DKA1-108	CAPACITOR: same as C120	1st i-f cathode by-pass		
C122	3DKA1-108	CAPACITOR: same as C120	1st i-f screen by-pass		
C123	3DKA1-108	CAPACITOR: same as C120	1st i-f plate by-pass		
C124	3DKA1-108	CAPACITOR: same as C120	+B by-pass 1st to 2nd i-f		
C125	3DKA1-108	CAPACITOR: same as C120	2nd i-f cathode by-pass		
C126	3DKA1-108	CAPACITOR: same as C120	2nd i-f screen by-pass		
C127	3DKA1-108	CAPACITOR: same as C120	2nd i-f plate by-pass		
C128	3DKA1-108	CAPACITOR: same as C120	+B by-pass 2nd to 3rd i-f		
C129	3DKA1-108	CAPACITOR: same as C120	3rd i-f cathode by-pass		
C130	3DKA1-108	CAPACITOR: same as C120	3rd i-f plate by-pass		
C131	3DKA-108	CAPACITOR: same as C120	3rd i-f plate by-pass		
C132	3DKA-108	CAPACITOR: same as C120	+B by-pass 3rd to 4th i-f		
C133	3DKA-108	CAPACITOR: same as C120	4th i-f cathode by-pass		
C134	3DKA-108	CAPACITOR: same as C120	4th i-f screen by-pass		
C135	3DKA-108	CAPACITOR: same as C120	4th i-f plate by-pass		
C136	3DKA-108	CAPACITOR: same as C120	+B by-pass 4th to 5th i-f		
C137	3DKA-108	CAPACITOR: same as C120	5th i-f cathode by-pass		
C138	3DKA-108	CAPACITOR: same as C120	5th i-f screen by-pass		
C139	3DKA-108	CAPACITOR: same as C120	5th i-f plate by-pass		
C140	3DKA-108	CAPACITOR: same as C120	+B by-pass 5th to 6th i-f		
C141	3DKA-108	CAPACITOR: same as C120	6th i-f cathode by-pass		
C142	3DKA-108	CAPACITOR: same as C120	6th i-f screen by-pass		
C143	3DKA-108	CAPACITOR: same as C120	6th i-f plate by-pass		
C144	3DKA-108	CAPACITOR: same as C120	+B by-pass 6th i-f to detector		

C145	3D9270-2	CAPACITOR: fixed, mica, moulded, 270 mmfd ±10%, 500 v d-c working	Detector cathode filter	RCA	P-722001-583 AWS-CM20B271K	P-722001-583
C146	3D9270-2	CAPACITOR: same as C145	Detector cathode filter			
C147	3DKA-108	CAPACITOR: same as C120	Detector screen by-pass			
C148	3DKA-108	CAPACITOR: same as C120	Detector plate by-pass			
C149	3DKA875	CAPACITOR: fixed, dual, oil-filled, .875-.875 mfd ±15%, 400 v d-c working. In metal can	1st h-v rectifier filter	RCA	P-72076-503	P-72076-503
C150		DOES NOT EXIST				
C151	3DKA250-44	CAPACITOR: fixed, oil-filled, 0.25 mfd ±10%, 150 v d-c working	+B filter	RCA	P-72077-502	P-72077-502
C152	3DA1.500-1	CAPACITOR; fixed, mica, moulded, 1500 mmfd ±10%, 500 v d-c working	Crystal oscillator tuning	RCA	P-722021-563 AWS-CM30D152K	P-722021-563
C153	3DKA10-179	CAPACITOR: fixed, oil-impregnated tubular 0.01 mfd +60%, -20%, 400 v d-c working	Crystal oscillator clipper	MM	Type MT	K-97670-5
C154		DOES NOT EXIST				
C155	3DKA10-179	CAPACITOR: same as C153	Driver cathode			
C156	3DKA10-179	CAPACITOR: same as C153	Driver screen			
C157	3DK9055-4	CAPACITOR: same as C112	UHF transformer heater entrance bushing			
C158	3DK9082-6	CAPACITOR: same as C114	UHF heater by-pass			
C159		DOES NOT EXIST				
C160	3DK9055-4	CAPACITOR: same as C112	UHF transformer plate entrance bushing			
C161		CAPACITOR: includes C161A, C161B. Same as C119	Antenna loop tuning	RCA		
C161A	3DK9007V-4	CAPACITOR: part of C161. Same as C119A	Fixed section	RCA		
C161B	3DK9007V-4/C1	CAPACITOR: part of C161. Same as C119B	Movable section	RCA		
C162	3DKA10-179	CAPACITOR: same as C153	Clipper screen			
C163	3DKA10-179	CAPACITOR: same as C153	A. C. line filter			
C164	3DKA10-179	CAPACITOR: same as C153	A. C. line filter			
E101	3Z3285-2	FUSE HOLDER: cylinder insulated	For fuse F101	LF	Type 1075A	K-99088-2
E102	2ZK9465-1	TERMINAL BOARD: 1¾ x 1 x 1/16 bakelite with terminals	Mounting for 2 resistors and 3 capacitors	RCA	M-253473-501	M-253473-501
E103	2ZK9465-1	TERMINAL BOARD: 1¾ x 1 x 1/16 bakelite with terminals	Mounting for 2 resistors and 3 capacitors	RCA	M-253473-502	M-253473-502
E104	2ZK9464-3	TERMINAL BOARD: 1¾ x 1 x 1/16 bakelite with terminals	Mounting for 2 resistors and 3 capacitors	RCA	M-253473-503	M-253473-503

TABLE OF PARTS—Continued

NOTE: Parts indicated by a # sign in column 2 are not available as spare parts and are listed for reference purposes only.

MODEL: RADIO SET SCR-718-AM **MAJOR ASSEMBLY: RADIO RECEIVER AND TRANSMITTER BC-788-AM**

Reference Symbol	*Army Stock No. Navy Stock No. British Ref. No.*	*Name of Part and Description*	*Function*	*Mfr. and Desig. or Standard Type*	*Cont. or Govt. Dwg. or Spec. No.*
E105	2ZK9464-3	TERMINAL BOARD: 1¾ x 1 x 1/16 bakelite with terminals	Mounting for 2 resistors and 3 capacitors	RCA M-253473-504	M-253473-504
E106	2ZK9464-3	TERMINAL BOARD: 1¾ x 1 x 1/16 bakelite with terminals	Mounting for 2 resistors and 3 capacitors	RCA M-253473-505	M-253473-505
E107	2ZK9464-3	TERMINAL BOARD: 1¾ x 1 x 1/16 bakelite with terminals	Mounting for 2 resistors and 3 capacitors	RCA M-253473-506	M-253473-506
E108	2ZK9465-1	TERMINAL BOARD: 1¾ x 1 x 1/16 bakelite with terminals	Mounting for 2 resistors and 3 capacitors	RCA M-253473-507	M-253473-507
E109	2ZK9461-1	TERMINAL BOARD: ¾ x ⅜ x 1/16 bakelite with terminals	Mounting for filament choke lead terminals	RCA K-252637-1	K-252637-1
E110	2ZK9461-2	TERMINAL BOARD: 1 x ⅜ x 1/16 laminated phenolic with terminal riveted on	Mounting for resistor and coil leads	RCA K-252542-501	K-252542-501
E111	2ZK9461-2	TERMINAL BOARD: same as E110	Mounting for resistor and transformer leads		
E112	2ZK9462-30	TERMINAL BOARD: ¾ x ⅜ x 1/16 bakelite with two terminals, one grounded	Mounting for line filter capacitor	RCA K-252637-2	K-252637-2
E113	2ZK9462-30	TERMINAL BOARD: same as E112	Mounting for line filter capacitor		
F101	3Z2601 5-1	FUSE: 1.5 amperes, 250 v	Overload protection	LF Type 3AG, Cat. No. 1041	K-850339-20
F102	3Z1927	FUSE: 2 amperes, 250 v	Overload protection	LF Type 3AG, Cat. No. 1042	K-850339-5
H101	2ZK11102.4	TUBE SHIELD: metal can	For tube	CN	K-252607-1
H102	2ZK11102.5	SHIELD HOLDER: base for shield, metal	For tube shield	CN	K-252607-2
J101	2ZK3096-31	SOCKET: connector, panel mounting, 7-pin female	Socket to indicator	AP AN3102-16S-1S	M-253475-5
J102	2ZK3096-32	SOCKET: connector, panel mounting, 2-pin male	Power supply socket	AP AN3102-12S-3P SO-155	M-253475-3
J103	2Z8799-239	SOCKET: connector, panel mounting, 1-pin female	Receiver antenna socket	RCA K-252490-1 SO-239	K-252490-1

J104	2Z8799-239	SOCKET: same as J103	Transmitter antenna socket			
L101		CHOKE COIL: 0.032 dia. bus, 6 turns, open wound	Converter heater choke	RCA	K-251997-3	K-251997-3
L102A		COIL: PS-36, 0.010 bare dia., 70 turns/inch, 13¼ turns wound on bakelized tube	Part of T102, primary 1st i-f	RCA	M-253466-5	M-253466-5
L102B		COIL: PS-36, 0.010 bare dia., 70 turns/inch, 12¼ turns wound on bakelized tube	Part of T102, secondary 1st i-f	RCA	M-253466-4	M-253466-4
L103A		COIL: PS-36, 0.010 bare dia., 70 turns/inch, 19¼ turns wound on bakelized tube	Part of T103, primary 2nd i-f	RCA	M-253466-3	M-253466-3
L103B		COIL: same as L102B	Part of T103, secondary 2nd i-f			
L104A		COIL: same as L103A	Part of T104, primary 3rd i-f			
L104B		COIL: same as L102B	Part of T104, secondary 3rd i-f			
L105A		COIL: same as L103A	Part of T105, primary 4th i-f			
L105B		COIL: same as L102B	Part of T105, secondary 4th i-f			
L106A		COIL: same as L103A	Part of T106, primary 5th i-f			
L106B		COIL: same as L102B	Part of T106, secondary 5th i-f			
L107A		COIL: same as L103A	Part of T107 primary 6th i-f			
L107B		COIL: same as L102B	Part of T107 secondary 6th i-f			
L108A		COIL: same as L103A	Part of T108 primary 7th i-f			
L108B		COIL: same as L102B	Part of T108 secondary 7th i-f			
L109A		COIL: #36 SGE, 0.005 bare dia. wire, 4 sections, 190 turns/section. Tap 175 turns from start of last section, wound on bakelized tube. In T109.	Oscillator plate	RCA	M-253429-11	M-253429-11
L110A		COIL: #36 SGE, 0.005 bare dia. wire, 4 sections, 190 turns/section, wound on bakelized tube. In T110	Clipper plate	RCA	M-253429-10	M-253429-10
L111A		COIL: #36 SGE, 0.005 bare dia. wire, 3 sections, 47 turns/section, tap between second and third section, wound on bakelized tube. In T111	Driver plate	RCA	M-253429-14	M-253429-14
L111B		DOES NOT EXIST				
L112	3CK370-7	COIL: 0.032 dia. bus, 6 turns, open wound, center tap	Converter grid			K-252173-2
L113		COIL: same as L101	Oscillator cathode			
L114	3CK2514	PIPES: two copper tubes, 0.183 +000, −002 O.D. 2⅝ Lg. x 0.562 ±.002 apart, adjustable brass shorting bar and two adjustable brass plates. Includes C116	Converter grid tuning	RCA	M-253488-501	M-253488-501

TABLE OF PARTS—Continued

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MODEL: RADIO SET SCR-718-AM **MAJOR ASSEMBLY: RADIO RECEIVER AND TRANSMITTER BC-788-AM**

Reference Symbol	*Army Stock No. Navy Stock No. British Ref. No.*	*Name of Part and Description*	*Function*	*Mfr. and Desig. or Standard Type*		*Cont. or Govt. Dwg. or Spec. No.*
L115	3CK4056-3	PIPES: two copper tubes, 0.183 +001, −000 O.D. x 0.562 ±002 apart, adjustable brass shorting bar	Oscillator tuning	RCA	M-253487-501	M-253487-501
L116	3CK316-26	COIL: #18 AWG, single formex enamel wire, 0.0403 bare dia. 16 turns, 1⅛" leads, in bakelized tube	Heater choke	RCA	K-252409-501	K-252409-501
L117	3CK316-26	COIL: same as L116	Heater choke			
L118	3CK316-26	COIL: same as L116	Heater choke			
L119	3CK316-26	COIL: same as L116	Heater choke			
L120	3CK316-26	COIL: same as L116	Heater choke			
L121	3CK316-26	COIL: same as L116	Heater choke			
L122	3CK316-27	COIL: PS-36, 0.010 bare dia. wire, 60 turns/inch, 29 turns wound on bakelized tube in metal can	Detector cathode (line filter)	RCA	P-255257-508	P-255257-508
L123	3CK4058	COIL: #36 SGE, 0.005 bare dia., 150-¼ turns first section, 400-¼ turns second section, tap between sections. Bakelized tubes in metal can.	Crystal oscillator	RCA	P-255257-509	P-255257-509
L124		COIL: same as L101	UHF output heater choke	RCA		
L125		DOES NOT EXIST				
L126		COIL: same as L101	UHF output cathode choke	RCA		
L127	2ZK2964	PIPES: two copper tubes, 0.183 +001 −000 O.D. x 1⅜ long x 0.562 ±002 apart, adjustable brass shorting bar	UHF output plate tuning	RCA	M-253487-502	M-253487-502
L128		COIL: same as L101	UHF output plate choke	RCA		
L129	3CK1084G	LOOP: formed loop, 1/16 dia. brass rod	Antenna coupling	RCA	K-252699-1	K-252699-1
L130	3CK1084G-1	LOOP: formed loop, 1/16 dia. brass rod	Coupling oscillator to converter	RCA	K-252622-1	K-252622-1
L131	3CK1084G-2	LOOP: formed loop, 0.0641 dia. copper	Antenna coupling	RCA	K-252407-1	K-252407-1
L132	3CK560-7	COIL: choke, in metal can. Three terminals, laminated iron core. Coil No. 1 — 1240 turns 0.0063 dia. enameled wire, 62 turns per layer, d-c resistance 74.2 ohms at 25° C. Coil No. 2 — same as Coil No. 1 Hi-pot test — 1600 v terminal No. 1 to ground Impedance — at 3 v, 60 cycles, .14 amp. d-c		RCA	K-901619-501	K-901619-501
R101		DOES NOT EXIST				
R102A	3ZK6150-43	RESISTOR: 1500 ohms, ±5%, 1/10 watt, insulated	Converter plate loading in T102	SR	Type SI-¼	K-252621-163

[illegible]	150 43	RESISTOR: same as R102A	First i-f plate loading in T103			
R104A	3ZK6150-43	RESISTOR: same as R102A	Second i-f plate loading in T104			
R105A	3ZK6150-43	RESISTOR: same as R102A	Third i-f plate loading in T105			
R106A	3ZK6150-43	RESISTOR: same as R102A	Fourth i-f plate loading in T106			
R107A	3ZK6150-43	RESISTOR: same as R102A	Fifth i-f plate loading in T107			
R108A	3ZK6150-43	RESISTOR: same as R102A	Sixth i-f plate loading in T108			
R109A	3ZK6801-61	RESISTOR: 1 megohm, ±10%, ½ watt, composition insulated	Clipper grid leak in T109	AB	Type EB	K-82283-98
R110A	3Z6610-57	RESISTOR: 10,000 ohms, ±10%, ½ watt, composition insulated	Driver grid in T110	AB	Type EB	K-82283-74
R110B	3Z6747-6	RESISTOR: 470,000 ohms ±10%, ½ watt, composition insulated	Driver grid in T110	AB	Type EB	K-82283-94
R111A		DOES NOT EXIST				
R112	3ZK6612-22	RESISTOR: 6,800 ohms, ±10%, 1 watt, composition insulated	Oscillator feed	AB	Type GB	K-90496-72
R113	3ZK6612-22	RESISTOR: same as R112	Rec. osc. plate dropping in r-f			
R114	3Z6056-2	RESISTOR: 560 ohms ±10%, ½ watt, composition insulated	Converter cathode in r-f	AB	Type EB	K-82283-59
	3Z6627-7	RESISTOR: 27,000 ohms, ±10%, ½ watt, composition insulated	Rec. osc. grid leak in r-f	AB	Type EB	K-82283-79
R116	3ZK6668-14	RESISTOR: 68,000 ohms, ±10%, 1 watt, composition insulated	Converter plate dropping	AB	Type EB	K-90496-84
R117	3Z6022-9	RESISTOR: 220 ohms, ±10%, ½ watt, composition insulated	First i-f cathode	AB		K-82283-54
R118	3Z6100-75	RESISTOR: 1000 ohms, ±10%, ½ watt, composition insulated	First i-f screen	AB	Type EB	K-82283-13
R119	3Z6100-75	RESISTOR: same as R118	First i-f plate dropping			
R120	3Z6022-9	RESISTOR: same as R117	Second i-f cathode			
R121	3ZK6015-24	RESISTOR: 150 ohms, ±20%, ½ watt, composition insulated	+B plate filter, first and second i-f	AB	Type EB	K-82283-8
R122	3Z6100-75	RESISTOR: same as R118	Second i-f screen			
R123	3Z6100-75	RESISTOR: same as R118	Second i-f plate dropping			
R124	3Z6022-9	RESISTOR: same as R117	Third i-f cathode			
R125	3ZK6015-24	RESISTOR: same as R121	+B plate filter, second and third i-f			
R126	3Z6682-4	RESISTOR: 82,000 ohms, ±10%, ½ watt, composition insulated	Third i-f screen dropping	AB	Type EB	K-82283-85
R127	3Z6100-75	RESISTOR: same as R118	Third i-f plate dropping			
R128	3Z6022-9	RESISTOR: same as R117	Fourth i-f cathode			
R129	3ZK6015-24	RESISTOR: same as R121	+B plate filter, third and fourth i-f			

TABLE OF PARTS—Continued

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MODEL: RADIO SET SCR-718-AM **MAJOR ASSEMBLY: RADIO RECEIVER AND TRANSMITTER BC-788-AM**

Reference Symbol	*Army Stock No. Navy Stock No. British Ref. No.*	*Name of Part and Description*	*Function*	*Mfr. and Desig. or Standard Type*		*Cont. or Govt. Dwg. or Spec. No.*
R130	3Z6682-4	RESISTOR: same as R126	Fourth i-f screen dropping			
R131	3Z6100-75	RESISTOR: same as R118	Fifth i-f plate dropping			
R132	3Z6022-9	RESISTOR: same as R117	Fifth i-f cathode			
R133	3ZK6015-24	RESISTOR: same as R121	+B plate filter first and second i-f			
R134	3Z6682-4	RESISTOR: same as R126	Fifth i-f screen dropping			
R135	3Z6100-75	RESISTOR: same as R118	Fifth i-f plate dropping			
R136	3Z6022-9	RESISTOR: same as R117	Sixth i-f cathode			
R137	3ZK6015-24	RESISTOR: same as R121	+B plate filter, fifth and sixth i-f			
R138	3Z6682-4	RESISTOR: same as R126	Sixth i-f screen dropping			
R139	3Z6100-75	RESISTOR: same as R118	Sixth i-f plate dropping			
R140	3ZK6015-24	RESISTOR: same as R121	+B plate filter sixth to detector			
R141	3ZF4043	RESISTOR: 120,000 ohms, ±10%, 1 watt, composition insulated	Detector screen dropping	AB	Type GB	K-90496-87
R142	3Z6100-75	RESISTOR: same as R118	Detector plate dropping			
R143		DOES NOT EXIST				
R144	3Z6747-6	RESISTOR: same as R110B	Oscillator grid leak			
R145	3Z6722-5	RESISTOR: 220,000 ohms, ±10%, ½ watt, composition insulated	Oscillator screen dropping	AB	Type EB	K-82283-90
R146	3Z6610-57	RESISTOR: same as R110A	Clipper grid			
R147		DOES NOT EXIST				
R148	3ZK6047-12	RESISTOR: 470 ohms, ±10%, 1 watt, composition insulated	Driver cathode	AB	Type GB	K-90496-58
R149	3Z6622-2	RESISTOR: 22,000 ohms, ±10%, ½ watt, composition insulated	Driver screen	SR	Type SCI	K-251413-78
R150	3ZK6612-23	RESISTOR: 12,000 ohms, ±10%, 2 watts, composition insulated	Driver output damping	SR		K-251930-75
R151	3ZK6018-4	RESISTOR: 180 ohms, ±10%, ½ watt, composition insulated	Transmitting UHF grid leak	AB	Type EB	K-82283-53

R152	3ZF4011	RESISTOR: 39 ohms, ±10%, ½ watt, composition insulated	Transmitter UHF cathode	AB	Type EB	K-82283-45
R153	3ZK6668-14	RESISTOR: same as R116	Converter plate dropping			
R154	3Z6682-4	RESISTOR: same as R126	Clipper screen dropping			
T101	2ZK9704-1	TRANSFORMER: metal can, 9 terminals, laminated iron core. Primary 172-½ turns, 0.0285 enameled wire, tap 120 turns, 115/80 v, 400 cycles. Secondary — Plate — 1040 turns, 0.010 enameled wire, tap 520 turns, 680/340 v. Fil. #1 — 10-½ turns, 0.0641 enameled wire, 6.3 v. Fil. #2 — 8 turns, 0.0403 enameled wire, 5 v.	Power transformer	RCA	K-901586-501	K-901586-501
T102	2ZK10007	TRANSFORMER: metal can, contains R102A, C102A, L102A and L102B	1st i-f transformer	RCA	P-255257-501	P-255257-501
T103	2ZK10007	TRANSFORMER: metal cam, contains R103A, C103A, L103A and L103B	2nd i-f transformer	RCA	P-255257-502	P-255257-502
T104	2ZK10007	TRANSFORMER: metal cam, contains R104A, C014A, L104A and L104B	3rd i-f transformer	RCA	P-255257-503	P-255257-503
T105	2ZK10007	TRANSFORMER: metal can, contains R105A, C105A, L105A and L105B	4th i-f transformer	RCA	P-255257-504	P-255257-504
T106	2ZK10007	TRANSFORMER: metal can, contains R106A, C106A, L106A and L106B	5th i-f transformer	RCA	P-255257-505	P-255257-505
T107	2ZK10007	TRANSFORMER: metal can, contains R107A, C107A, L107A and L107B	6th i-f transformer	RCA	P-255257-506	P-255257-506
T108	2ZK10007	TRANSFORMER: metal can, contains R108A, C108A, L108A and L108B	7th i-f transformer	RCA	P-255257-507	P-255257-507
T109	3CK370-10	TRANSFORMER: metal can, contains R109A, C109A, C109B and L109A	Oscillator plate coil	RCA	P-255257-511	P-255257-511
T110	3CK370-8	TRANSFORMER: metal can, contains R110A, R110B, C110A and L110A	Clipper plate coil	RCA	P-255257-50	P-255257-510
T111	3CK370-9	TRANSFORMER: metal can, contains R111A, C111A, L111A and L111B	Driver output coil	RCA	P-255257-512	P-255257-512
V101		TUBE: 6J6	Converter	RCA		
V102		TUBE: same as V101	Oscillator	RCA		
V103		TUBE: 6AG5	1st i-f	RCA		
V104		TUBE: same as V103	2nd i-f	RCA		
V105		TUBE: same as V103	3rd i-f	RCA		
V106		TUBE: same as V103	4th i-f	RCA		
V107		TUBE: same as V103	5th i-f	RCA		
V108		TUBE: same as V103	6th i-f	RCA		
V109		TUBE: same as V103	Detector	RCA		
V110		TUBE: 5Y3GT/G	Rectifier	RCA		

TABLE OF PARTS—Continued

NOTE: Parts indicated by a # sign in column 2 are not available as spare parts and are listed for reference purposes only.

MODEL: RADIO SET SCR-718-AM **MAJOR ASSEMBLY: RADIO RECEIVER AND TRANSMITTER BC-788-AM**

Reference Symbol	*Army Stock No. Navy Stock No. British Ref. No.*	*Name of Part and Description*	*Function*	*Mfr. and Desig. or Standard Type*		*Cont. or Govt. Dwg. or Spec. No.*
V111		TUBE: same as V103	Crystal oscillator	RCA		
V112		TUBE: same as V103	Clipper	RCA		
V113		TUBE: 6L6	Driver	RCA		
V114		TUBE: same as V101	UHF oscillator	RCA		
W101		SHIELD: braided shielding PS105, closed braid 0.005 dia. strands, 4 ends, 2 pigtails	Shield	RCA	K-252329-511	K-252329-511
X101	2ZK8663-2	SOCKET: ceramic, miniature, 7 pin	For 6J6 tube	EJ		K-875440-2
X102	2ZK8663-2	SOCKET: same as X101	For 6J6 tube			
X103	2ZK8668-9	SOCKET: 7 pin, miniature, moulded, mica, filled bakelite	For 6AG5 tube	CN		K-252618-1
X104	2ZK8668-9	SOCKET: same as X103	For 6AG5 tube			
X105	2ZK8668-9	SOCKET: same as X103	For 6AG5 tube			
X106	2ZK8668-9	SOCKET: same as X103	For 6AG5 tube			
X107	2ZK8668-9	SOCKET: same as X103	For 6AG5 tube			
X108	2ZK8668-9	SOCKET: same as X103	For 6AG5 tube			
X109	2ZK8668-9	SOCKET: same as X103	For 6AG5 tube			
X110	2ZK8666-14	SOCKET: 8 pin, octal ceramic, metal mounting plate	For 5Y3GT/G tube	UC		K-871415-1
X111	2ZK8668-9	SOCKET: same as X103	For 6AG5 tube			
X112	2ZK8668-9	SOCKET: same as X103	For 6AG5 tube			
X113	2ZK8666-15	SOCKET: 8 pin, octal ceramic, metal locking spring	For 6L6 tube			K-871415-5
X114	2ZK8663-2	SOCKET: same as X101	For 6J5 tube			
X115	1ZK8761-15	SOCKET: Laminated phenolic $2\frac{1}{32}$ x $1\frac{3}{8}$ x $\frac{1}{8}$, 3 pin, Exp. 7034	For Y101 crystal	CN	Exp. 7034	K-871261-1
Y101	2Z3501-22A98	CRYSTAL: 98.356 kilocycles — 3 pin — DC-22A	Crystal	RCA	K-252531-501 DC-22A	K-252531-501
			INDICATOR I-152-A			
C201	3DKA50-68	CAPACITOR: includes C201A and C201B		RCA	P-720555-69	P-720555-69
C201A		CAPACITOR: oil filled, 0.05 mfd, ±10%, 2000 v d-c working. Part of C201	High voltage filter			
C201B		CAPACITOR: same as C201A. Part of C201	High voltage filter			
C202	3DKA500-106	CAPACITOR: includes C202A and C202B		RCA	P-92275-509	P-92275-509
C202A		CAPACITOR: oil filled, 0.5 mfd, ±10%, 400 v d-c working. Part of C202	+B by-pass			
C202B		CAPACITOR: same as C202A. Part of C202	Video cathode by-pass			

C203		DOES NOT EXIST				
C203A	3DK9180-3	CAPACITOR: fixed, silver mica, 180 mmfd, ±5%, 500 v d-c working	Primary circle transf. tuning	ER		K-97656-2
C203B	3DK9180-4	CAPACITOR: fixed, silver mica, 180 mmfd, ±5%, 500 v d-c working	Secondary circle transf. tuning	ER		K-97656-1
C203C	3D9015-9	CAPACITOR: fixed, ceramic, 15 mmf, ±5%, 500 v d-c working	Secondary circle transf. compensating	CL ER		K-90581-213
C203D	3D9015-9	CAPACITOR: same as C203C	Primary circle transf. compensating			
C204	3DKB1A75	CAPACITOR: oil filled, 1.75 mfd, ±15%, 400 v d-c working	+B by-pass	RCA	P-72076-504	P-72076-504
C205	3DKA2.200-2	CAPACITOR: fixed, mica, 2200 mmfd, ±5%, 500 v d-c working	Zero adj. tuning	RCA	P-722022-517 AWS-CM30D222J	P-722022-517
C206	3DKA10-179	CAPACITOR: same as C153	Circle amplifier screen by-pass			
C207	3DKA10-179	CAPACITOR: same as C153	Video amplifier screen by-pass			
C208	3D9470-1	CAPACITOR: same as C109A	Video coupling			
C209	3D9470-1	CAPACITOR: same as C109A	Deflecting plate coupling			
C210	3D9470-1	CAPACITOR: same as C109A	Deflecting plate coupling			
C211	3DKA10-179	CAPACITOR: same as C153	Second anode by-pass			
C212	3D9470-1	CAPACITOR: same as C109A	Deflecting plate coupling			
C213	3DKB1A75	CAPACITOR: same as C204	+B by-pass			
C214	3DKA10-179	CAPACITOR: same as C153	A-C line filter			
C215	3DKA10-179	CAPACITOR: same as C153				
E201	3GK1250-19.1	INSULATOR: ceramic, terminal insulator	For power transformer			K-251967-1
E202	3GK999-2	INSULATOR: moulded, bakelite, filled bakelite	For high voltage rectifier tube			K-252631-1
E203	2ZK1613-1	GRID CAP: moulded insulation with metal clip and 5¾" lead	Plate connection, high voltage rectifier tube	AL	Types #91SL WHB18	K-866336-5
E204	2ZK5856-17	KNOB: moulded, phenolic compound with 8-32 x 3/16 set screw	For R201	RCA	K-252649-501	K-252649-501
E205	2ZK5856-17	KNOB: same as E204	For R213			
E206	2ZK5733.2	KNOB: knurled metal	For zero adj. control	RCA	K-252612-1	K-252612-1
E207	2ZK9405.12	TERMINAL BOARD: bakelite, 3 1/16 x 2 1/16 x 3/32, 5 terminals	For high voltage bleeder circuits	CN		K-251133-1
E208	2ZK9411.1	TERMINAL BOARD: bakelite 2 x 2 3/8 x 1/16, 11 terminals	For video circuits	CN		K-251871-1
E209	2ZK9406.9	TERMINAL BOARD: bakelite, 2 x 2½ x 3/32, 6 terminals	For circle output circuits	CN		K-251966-1
E210	2ZK9403.15	TERMINAL BOARD: bakelite, 1½ x 3/8 x 1/16, 3 terminals, one grounded	Terminal mounting for capacitor and resistor	RCA	K-252637-3	K-252637-3

TABLE OF PARTS—Continued

NOTE: Parts indicated by a # sign in column 2 are not available as spare parts and are listed for reference purposes only.

MODEL: RADIO SET SCR-718-AM **MAJOR ASSEMBLY: INDICATOR I-152-A**

Reference Symbol	*Army Stock No. Navy Stock No. British Ref. No.*	*Name of Part and Description*	*Function*	*Mfr. and Desig. or Standard Type*		*Cont. or Govt. Dwg. or Spec. No.*
E211	2ZK9402.16	TERMINAL BOARD- bakelite, 1 1/16 x 3/8 x 1/16, 1 terminal	Terminal mounting for capacitor C214			K-252637-4
E212	2ZK9402.16	TERMINAL BOARD: same as E211	Terminal mounting for capacitor C214			
H201	6LK3106-246	NUT: special #6-32, slotted	For E206	RCA	K-252611-1	K-252611-1
H202	6LK6832-16.9	SCREW: special #8-32, pointed end, round slotted head	For escutcheon	RCA	K-99791-2	K-99791-2
H203	2ZK8876.6	SPRING: tension spring, phosphor bronze	For E204 and E205	RCA	K-251887-1	K-251887-1
H204	6LK50010N3	WASHER: drawn brass	For E204 and E205	RCA	K-251886-1	K-251886-1
H205	2ZK11102.4	TUBE SHIELD: same as H101	Shield for tube			
H206	1ZK11102.5	SHIELD HOLDER: same as H102	For H205			
H207	6ZK4049-1	GASKET: rubber, 3 1/8 O.D. x 2 11/16 I.D. x 1/16 TH.	For N201	RCA	K-99801-1	K-99801-1
H208	6ZK4051-3	GASKET: neoprene tubing, 3/16 O.D. x 1/16 I.D. x 8 9/16 Lg.	For V205	RCA	K-866789-1	K-866789-1
I206	aZ5927	LAMP: 6-8 volt, 0.25 amp., bayonet	Pilot light	WL	Type Mazda 44	K-61114-15
J201	2ZK3096-35	SOCKET: connector, panel mounting, 7-pin male	To rec. transmitter	AP	AN3102-16S-1P	M-253475-4
L201		DOES NOT EXIST				
L202		DOES NOT EXIST				
L202A		COIL: #36 SGE, 0.005 bare dia. wire, 70 turns, wound on bakelized tube. Part of T202	Primary zero adj. transformer	RCA	K-252598-501	K-252598-501
L202B		COIL: #36 SGE, 0.005 bare dia. wire, 2 sections, 152 turns/section, wound on bakelized tube. Part of T202.	Secondary zero adj. transformer	RCA	K-252598-501	K-252598-501
L203		DOES NOT EXIST				
L203A		COIL: #36 SGE, 0.005 bare dia. wire, 2 sections, 285 turns/section, wound on bakelized tube. Part of T203	Primary circle transformer	RCA	M-253429-501	M-253429-501
L203B		COIL: same as L203A	Secondary circle transformer			
L203C		COIL: same as L203A	Primary circle transformer			
L203D		COIL: same as L203A	Secondary circle transformer			
L204	2ZK10007-1	COIL: #36 SGE, 0.005 bare dia. wire, 3 sections, 85-1/2 turns/section, wound on tube in fiber shell	Video peaking	RCA	P-255257-515	P-255257-515
N201	2ZK3351	DIAL CRYSTAL: assembly, lucite disc, metal cap, shield wires	Transparent dial cover	RCA	M-253731-501	M-253731-501
N202		DECALCOMANIA: on paper, Di-Noc type	Dial marking	DN		K-29880-1

N203	2ZA950-387	VISOR: moulded rubber, $3\frac{23}{32}$ O.D. x $2\frac{3}{4}$ Lg.	Hood	PR		M-253040-1
R201	2ZK7296-100M.3	POTENTIOMETER: 100,000 ohms, ±10%, with SPST switch	Receiver gain control	CT	Type GC-45	M-422506-7
R202		DOES NOT EXIST				
R203A	3ZK6039-8	RESISTOR: 390 ohms, ±5%, ½ watt, composition insulated	Shape compensator	AB	Type EB	K-82283-149
R204	2ZF4041	RESISTOR: 150,000 ohms, ±10%, 1 watt, composition insulated	High voltage bleeder	AB	Type GB	K-90496-88
R205	2ZK7296-250M.3	POTENTIOMETER: 250,000 ohms, ±20%	Brilliance control	CT	Type GC-45	M-422506-4
R206	3ZF4044	RESISTOR: same as R204	High voltage bleeder			
R207	2ZK7296-250M.3	POTENTIOMETER: same as R205	Focus control			
R208	3ZK6722-14	RESISTOR: 220,000 ohms, ±20%, 1 watt, composition insulated	High voltage bleeder	AB	Type GB	K-90496-90
R209	3ZK6722-14	RESISTOR: same as R208				
R210	3ZK6007E5-4	RESISTOR: 82 ohms, ±5%, ½ watt, composition insulated	Video line termination	AB	Type EB	K-82283-133
R211	3ZF4008	RESISTOR: 120 ohms, ±10%, ½ watt, composition insulated	Cathode video amplifier	AB	Type EB	K-82283-51
R212		DOES NOT EXIST				
R212						
R213	2ZK7296-2M.4	POTENTIOMETER: 2000 ohms, ±10%	Circle size control	CT	Type GC-45	M-422506-8
R214	3ZK6039-9	RESISTOR: 270 ohms, ±10%, ½ watt, composition insulated	Circle size limiting	SR	Type SC1	K-251413-55
R215	3ZK6027-9	RESISTOR: 270 ohms, ±10%, ½ watt, composition insulated	Cathode circle amplifier	SR	Type SC1	K-251413-55
R216	3Z6682-4	RESISTOR: same as R126	Circle amplifier screen			
R217	3ZK6615-67	RESISTOR: 18,000 ohms, ±10%, 1 watt, composition insulated	Video plate load	AB	Type GB	K-90496-77
R218	3ZK6615-67	RESISTOR: same as R217				
R219	3Z6712-3	RESISTOR: 470,000 ohms, ±10%, ½ watt, composition insulated	Radial deflecting electrode leak	AB	Type EB	K-82283-94
R220	3Z6722-5	RESISTOR: same as R145	Deflecting plate leak			
R221	3Z6722-5	RESISTOR: same as R145				
R222	3ZK7296-250M.4	POTENTIOMETER: 250,000 ohms, ±20%	Horizontal centering control	CT	Type GC-47	M-422506-6
R223	3Z6722-5	RESISTOR: same as R145				
R224	3Z6682-4	RESISTOR: same as R126	Centering limiter			
R225	3ZK7294-250M.4	RESISTOR: same as R222	Vertical centering control			
R226	3Z6722-5	RESISTOR: same as R145	Deflecting plate leak			
R227	2Z7287.5	POTENTIOMETER: 500 ohms, ±10%, 2 watts, wire wound	Shape control	CT	Type GC-252	M-253398-32
R228	3ZF4049	RESISTOR: 47,000 ohms, ±10%, 1 watt, composition insulated	Video screen dropping	AB	Type GB	K-90496-82
R229	3ZK6656-15	RESISTOR: 56,000 ohms, ±10%, 1 watt, composition insulated	Receiver gain control limiting	AB	Type GB	K-90496-83
R230	3ZK6656-15	RESISTOR: same as R229				
R231	3Z6682-4	RESISTOR: same as R126	Brilliance control shunt	AB		
R232	3ZK4049	RESISTOR: same as R228				

TABLE OF PARTS—Continued

NOTE: Parts indicated by a # sign in column 2 are not available as spare parts and are listed for reference purposes only.

MODEL: RADIO SET SCR-718-AM — MAJOR ASSEMBLY: INDICATOR I-152-AM

Reference Symbol	*Army Stock No. Navy Stock No. British Ref. No.*	*Name of Part and Description*	*Function*	*Mfr. and Desig. or Standard Type*	*Cont. or Govt. Dwg. or Spec. No.*
R233	3Z6747-6	RESISTOR: same as R110B			
R234		RESISTOR: 2,200 ohms ±10%, ½ watt, composition, insulated			
S201		SWITCH: SPST — part of R201	Power switch		
T201	2ZK9704-2	TRANSFORMER: metal can, 7 terminals, laminated iron core: Primary — 530 turns, 0.010 enameled wire, 115 volts, 400 cycle Secondary — Plate — 6630 turns, 0.0028 enameled wire, 1400 volts Fil. #1 — 13 turns, 0.032 enameled wire, 2.5 volts Fil. #2 — 33 turns, 0.0253 enameled wire, 6.3 volts Fil. #3 — 33 turns, 0.0179 enameled wire, 6.3 volts	High voltage power transformer	RCA K-901587-501	K-901587-501
T202	2ZK10007-2	COIL: metal can, contains L202A and L202B	Zero adj. transformr	RCA P-255257-513	P-255257-513
T203	2ZK10007-3	COIL: metal can, contains L203A, L203B, L203C, L203D, C203A, C203B and R203A	Circle transformer	RCA P-255257-514	P-255257-514
V201		TUBE: 2X2/879	High voltage rectifier	RCA	
V202		TUBE: 6AG5	Video amplifier	RCA	
V203		TUBE: same as V202	Video amplifier		
V204		TUBE: same as V202	Circle amplifier		
V205		TUBE: 3DP1	Cathode-ray indicator	RCA	
X201	2ZK6659-8.1	SOCKET: 4-pin moulded mica filled bakelite	For V201	AP	K-252406-1
X202	2ZK8668-9	SOCKET: same as X103	For V202		
X203	2ZK8668-9	SOCKET: same as X103	For V203		
X204	2ZK8668-9	SOCKET: same as X103	For V204		
X205	2ZK8694	SOCKET: moulded bakelite, 14-pin, No. 9952	For V205	RCA M-426865-501	M-426865-501
X206	2ZK5988-22	SOCKET: assembly, lamp socket, bracket and ruby jewel, No. 40 ruby	For I206	DM	K-866127-5
A301	2AK203-4	ANTENNA: T-shaped, metal, 6⅝ high with cable receptacle, *AT-4/ARN-1	Antenna	RCA P-255327-501	P-255327-501
A302	2AK203-4	ANTENNA: same as A301	Antenna		

MODEL: RADIO SET SCR-718-AM — MAJOR ASSEMBLY: MISCELLANEOUS PARTS

A401		DOES NOT EXIST			
A402	2ZK2636-3	CABLE CLAMP: AN3057-8	For P401	AP	M-253375-4

A403	2ZK2636-4	CABLE CLAMP: AN3057-4	For P402	AP		M-255074-23
A404	2ZK2636-3	CABLE CLAMP: same as E401	For P403			
P401	2ZK3096-33	CONNECTOR: 7-pin straight cable connector AN3106-16S-1P	Indicator to rec.-trans.	AP		M-253476-3
P402	2Z7226-175	CONNECTOR: 2-pin straight cable connector AN3106-12S-3S, PL-175	Power input	AP		M-253476-4
P403	2ZK3096-34	CONNECTOR: 7-pin elbow cable connector — female AN3108-16S-1S	Power input	AP		M-253474-7
P404	2Z7226-259	PLUG: single pin cable connector — male, PL-259	Transmission line	AP		K-252868-1
P405	2ZK299-359A	ADAPTER: single pin elbow cable connector — male, CSX49192	Transmission line	SL		K-252666-1
P406	2Z7226-259	PLUG: same as P404	Transmission line			
P407	2ZK299-359A	ADAPTER: same as P405	Transmission line			
P408	2Z7226-259	PLUG: same as P404	Transmission line			
P409	2ZK299-359A	ADAPTER: same as P405	Transmission line			
P410	2Z7226-259	PLUG: same as P404	Transmission line			
P411	2ZK299-359A	ADAPTER: same as P405	Transmission line			
		TOOL: Allen wrench, for #8 set screw	For control knob set screw	RCA	K-828505-12	K8288505-12
		TOOL: insulated handle with metal screw driver tip	Trimmer adj. tool	RCA	M-86183-503	M-86183-503
		CAPACITORS				
C109C		4700 mfd ±5%, mica	Low frequency plate tuning		Tube Type D CM35A472J	
C165		.01 mfd ±5%, mica	Low frequency grid tuning		ELMENCO	
C166		.001 mf ±10%, ceramic	Grid leak		Muter 20K1200	
C167		.1 mfd, paper, 400 v d-c	Low freuqency phase shifting		Micamold Type 345	
C168		.1 mfd, paper, 400 v d-c	Det. cathode blocking		Micamold Type 345	
		RELAYS				
K101		Relay BK-35	Timing oscillator control		Kurman #310C42A	
		RESISTORS				
R109A		1 meg. ±10%, ½ watt	Clipper grid bias			
R112		6,800 ohms ±10%, ½ watt	Local oscillator plate dropping			
R113		6,800 ohms ±10%, ½ watt	Local oscillator plate dropping			
R145		100,000 ohms ±10%, ½ watt	Timing oscillator screen dropping			
R155		47,000 ohms ±10%, ½ watt	Osc. grid leak			
R156		40,000 ohms ±10%, 1 watt	Current limiting for relay coil			

TABLE OF PARTS—Continued

NOTE: Parts indicated by a # sign in column 2 are not available as spare parts and are listed for reference purposes only.

MODEL: RADIO SET SCR-718-AM **MAJOR ASSEMBLY: MISCELLANEOUS PARTS**

Reference Symbol	*Army Stock No. Navy Stock No. British Ref. No.*	*Name of Part and Description*	*Function*	*Mfr. and Desig. or Standard Type*	*Cont. or Govt. Dwg. or Spec. No.*
R157		Same as R156	Current limiting for relay coil		
R158		1,000 ohms ±10%, 1 watt	Low frequency phase shifting		
R159		2,200 ohms ±10%, ½ watt	Detector bias		
		TRANSFORMERS			
T109A		Metal can contains C109A, L109A, L109B, L109C	High and low frequency plate transformer	Sickles	
T132A		Metal can contains C166, L132A, R155	Low frequency grid transformer	Sickles	
		MISCELLANEOUS			
		2 snap buttons to replace removed fuse holders			
		1 rubber grommet for relay leads			
		CAPACITORS			
C215		.1 mfd. ±10%, paper, 400 v	Grid blocking	Micamold Type 345	
C216		.03 mfd. ±10%, paper, 400 v	Tuning L205B	Tobe Type DP or Cornell-Dubilier 415-11030	
C217		2000 mfd ±5%, mica	T205 tuning	Tobe Type D CM35A202J	
C218		Same as C217	T205 tuning	Tobe Type D CM35A202J	
		RESISTORS			
R204		Two 300,000 ohms ±10%, ½ watt in parallel	High voltage bleeder		
R210		82 ohm ±5%, ½ watt	Video line termination		
R219		470,000 ±10%, ½ watt	Radial deflecting electrode leak		
R234		2200 ohm ±10%, ½ watt	Detector bias res.		
R235		40,000 ohms ±10%, 1 watt	Current limiting for relay coil	Allen-Bradley Type EB-1	

R236		Same as R235	Current limiting for relay coil		
R237		500 ohm, 2 watt wirewound potentiometer	Low frequency shape control		
		TRANSFORMERS			
T204		Metal can, contains L205A and L205B	Low freq. zero adjust	Sickles	
T205		Metal can, contains L206A and L206B	Low freq. Circle forming	Sickles	
		MISCELLANEOUS			
		Potentiometer bracket			
		Potentiometer lock			
		Switch, DPDT		H & H #20905	
		Switch plate			
		Insulating paper between C211 and centering control			

RADIO SET SCR-718-C

RADIO RECEIVER-TRANSMITTER BC-788-C
MOUNTING BASE ★MT-14/ARN-1

101-199 series	2C5395-788-C	RADIO RECEIVER-TRANSMITTER, BC-788-C: complete with tubes (V101-V114 incl.) and crystal unit (Y101), housed in aluminum case, approx. overall dim. 15" x 7" x 6"		RCA	K-252633-502
	3Z1927	FUSES: (2): (see F102), and		LF 1042	K-850399-5
	2Z3763-14	SHOCK MOUNT, ★MT-14/ARN-1 (see page 32 of this table)		RCA	T-256002-501
C101		DOES NOT EXIST			
C102		DOES NOT EXIST			
C102A	3D9003E44	CAPACITOR: fixed, ceramic, 3.44 ±0.2 mmfd, 500 v d-c working, radial leads, overall dim. 0.460" x ⅛" dia. (max.). In T102	1st i-f coupling	MU	
C103		DOES NOT EXIST			
C103A		CAPACITOR: same as C102A. In T103	2nd i-f coupling		
C104		DOES NOT EXIST			
C104A		CAPACITOR: same as C102A. In T104	3rd i-f coupling		
C105		DOES NOT EXIST			
C105A		CAPACITOR: same as C102A. In T105	4th i-f coupling		
C106		DOES NOT EXIST			
C106A		CAPACITOR: same as C102A. In T106	5th i-f coupling		
C107		DOES NOT EXIST			
C107A		CAPACITOR: same as C102A. In T107	6th i-f coupling		
C108		DOES NOT EXIST			
C108A		CAPACITOR: same as 102A. In T108	Detector coupling		
C109		DOES NOT EXIST			
C109A	3K2047121	CAPACITOR: molded fixed, mica, 470 mmfd ±10%, 500 v d-c working, axial leads, overall dim. $51/64$" x $15/32$" x $7/32$" (max.). In T109	Crystal osc. plate tuning	AWS Type CM 20 P471K AV, NO, SL, TD, EM, CD, SA, FWS, MM	P-722001-589

TABLE OF PARTS—Continued

NOTE: Parts indicated by a # sign in column 2 are not available as spare parts and are listed for reference purposes only.

MODEL: RADIO SET SCR-718-AM

MAJOR ASSEMBLY: RADIO RECEIVER-TRANSMITTER BC-788C
MOUNTING BASE ★MT-14/ARN-1

Reference Symbol	*Army Stock No. Navy Stock No. British Ref. No.*	*Name of Part and Description*	*Function*	*Mfr. and Desig. or Standard Type*	*Cont. or Govt. Dwg. or Spec. No.*
C109B	3K3539232	CAPACITOR: molded fixed, mica, 3900 mmfd ±5%, 500 v d-c working axial leads, overall dim. 25/32" x 25/32" x 9/32" (max.). In T109	Clipper grid coupling	AV Type 1464 MM Type PW CD Type 1RS SL Type MWSDW	P-720538-46
C110		DOES NOT EXIST			
C110A	3K3033241 AWS Type CM30D332K	CAPACITOR: molded, fixed, mica, 3300 mmfd ±10%, 500 v d-c working, axial leads, overall dim. 53/64" x 53/64" x 9/32" (max.). In T110	Driver coupling	AWS Type CM30D332K EM, SA	P-722021-571
C111		DOES NOT EXIST			
C111A	3K3027221 AWS Type CM30B272K	CAPACITOR: molded, fixed, mica, 2700 mmfd ±10%, 500 v d-c working, axial leads, overall dim. 53/64" x 53/64" x 9/32" (max.). In T111	Driver output coupling	AWS Type CM30B272K EM, NO, MM, CD	P-722017-569
C112	3DK9055-4	CAPACITOR ASSEMBLY: including: ceramic capacitor, 55 mmfd ±10%, 500 v d-c working, was impreg., 0.050" dia. tinned copper wire terminal, and brass bushing overall dia. approx. 1 1/32" x 5/16". In rec. osc. and conv. assembly	UHF rec. heater entrance bushing	Special CL, ER	K-251125-501
C112A	3K3027242 AWS Type CM30D272J	CAPACITOR: molded, fixed, mica, 2700 mmfd ±5%, 500 v d-c working, axial leads, overall dia. 53/64" x 53/64" x 9/32" (max.). In T112	Timing osc. 1-f grid	AWS Type CM30D272J	P-722022-519
C112B	3K3027242 AWS Type CM30D272J	CAPACITOR: same as C112A. In T112	Timing osc. 1-f grid	EM, SA	
C112C	3D9360-3	CAPACITOR: fixed, ceramic, 360 mmfd ±5%, 500 v d-c working temp. coeff. —0.00075 mmfd/mmfd/°C ±15%, radial leads, overall dim. 1.10" x 0.250" dia. over leads (max.). In T112	Timing osc. 1-f grid	CL, ER	K-90581-246
C112D	3D9360-3	CAPACITOR: same as C112C	Timing osc. 1-f grid		
C112E	3D9360-3	CAPACITOR: same as C112C	Timing osc. 1-f grid		
C113	3DK9055-4	CAPACITOR: same as C112. In rec. osc. and conv. assembly	UHF rec. +B entrance bushing		
C114	3DK9082-7	CAPACITOR: fixed, ceramic, 82 mmfd ±10%, 500 v d-c working, temp. coeff. —0.00075 mmfd./mmfd/°C. ±15%, radial leads, overall dim. 0.460" x 0.250" dia. over leads (max.). In rec. osc. and conv. assembly	Converter heater by-pass	ER, CL	K-90581-331
C115	3DK9082-7	CAPACITOR: same as C114. In rec. osc. and conv. assembly	Cathode by-pass		
C116	#	CAPACITOR: adjustable, comprised of two formed 0.032" thick 3/4" dia. brass plates. Built into converter assembly L114	Converter grid tuning	RCA	K-252492-1
C117	3DK9015-25.1	CAPACITOR: fixed, ceramic, 15 mmfd ±5%, 500 v d-c working, temp. coeff. o, radial leads, overall dim. 0.460" x 0.250" dia. over leads (max.). In rec. osc. and conv. assembly	Rec. osc. plate blocking	ER, CL	K-90575-213

C118	3DK9015-25.1	CAPACITOR: same as C117. In rec. osc. and conv. assembly	Rec. osc. grid blocking		
C119		CAPACITOR: variable, 1.2 to 7 mmfd. comprised of C119A and C119B. In rec. osc. and conv. assembly	Antenna loop tuning		
C119A	3DK9007V-4/C2	PLATE ASSEMBLY: formed 0.0508" thick ½" dia. brass plate, complete with 1/16" thick laminated phenolic support and necessary hardware. Part of C129	Fixed section	RCA	K-252629-501
C119B	3DK9007V-4/C1	PLATE ASSEMBLY: formed brass rod ½" dia. x 0.038" thick, extruded 1/16" x 0.098" dia. and #6-32 x ⅜" thread, polystyrene lacquer immersed to ⅛" dim. Part of C119	Movable section	RCA	K-258196-501
C120	3DKA1-108	CAPACITOR: fixed, ceramic, 1000 mmfd ±20%, 300 v d-c working, radial leads, overall dim. 1 1/16" x 9/32" dia. over leads (max.). Part of E102	Converter +B by-pass	MU, ER Type 20K1200	K-97653-1
C121	3DKA1-108	CAPACITOR: same as C120	1st i-f cathode by-pass		
C122	3DKA1-108	CAPACITOR: same as C120, part of E102	1st i-f screen by-pass		
C123	3DKA1-108	CAPACITOR: same as C120, part of E102	1st i-f plate by-pass		
C124	3DKA1-108	CAPACITOR: same as C120, part of E102	+B by-pass 1st to 2nd i-f		
C125	3DKA1-108	CAPACITOR: same as C120	2nd i-f cathode by-pass		
C126	3DKA1-108	CAPACITOR: same as C120, part of E103	2nd i-f screen by-pass		
C127	3DKA1-108	CAPACITOR: same as C120, part of E103	2nd i-f plate by-pass		
C128	3DKA1-108	CAPACITOR: same as C120, part of E103	+B by-pass and to 3rd i-f		
C129	3DKA1-108	CAPACITOR: same as C120	3rd i-f cathode by-pass		
C130	3DKA1-108	CAPACITOR: same as C120, part of E104	3rd i-f plate by-pass		
C131	3DKA1-108	CAPACITOR: same as C120, part of E104	3rd i-f plate by-pass		
C132	3DKA1-108	CAPACITOR: same as C120, part of E104	+B by-pass 3rd to 4th i-f		
C133	3DKA1-108	CAPACITOR: same as C120	4th i-f cathode by-pass		
C134	3DKA1-108	CAPACITOR: same as C120, part of E105	4th i-f screen by-pass		
C135	3DKA1-108	CAPACITOR: same as C120, part of E105	4th i-f plate by-pass		
C136	3DKA1-108	CAPACITOR: same as C120, part of E105	+B by-pass 4th to 5th i-f		
C137	3DKA1-108	CAPACITOR: same as C120	5th i-f cathode by-pass		
C138	3DKA1-108	CAPACITOR: same as C120, part of E106	5th i-f screen by-pass		
C139	3DKA1-108	CAPACITOR: same as C120, part of E106	5th i-f plate by-pass		
C140	3DKA1-108	CAPACITOR: same as C120, part of E106	+B by-pass 5th to 6th i-f		
C141	3DKA1-108	CAPACITOR: same as C120	6th i-f cathode by-pass		
C142	3DKA1-108	CAPACITOR: same as C120, part of E107	6th i-f screen by-pass		
C143	3DKA1-108	CAPACITOR: same as C120, part of E107	6th i-f plate by-pass		

TABLE OF PARTS—Continued

NOTE: Parts indicated by a # sign in column 2 are not available as spare parts and are listed for reference purposes only.

MODEL: RADIO SET SCR-718-C

MAJOR ASSEMBLY: RADIO RECEIVER-TRANSMITTER BC-788-C
MOUNTING BASE *MT-14/ARN-1

Reference Symbol	*Army Stock No. Navy Stock No. British Ref. No.*	*Name of Part and Description*	*Function*	*Mfr. and Desig. or Standard Type*	*Cont. or Govt. Dwg. or Spec. No.*
C144	3DKA1-108	CAPACITOR: same as C120, part of E107	+B by-pass 6th i-f to detector		
C145	3K2027121	CAPACITOR: molded, fixed, mica, 270 mmfd ±10%, 500 v d-c working, axial leads, overall dim. 51/64" x 15/32" x 7/32" (max.), part of E108	Detector cathode filter	AWS Type CM 20B271K MM, AV, SL, EM, SA, NO, TD, CD, FWS	P-722001-583
C146	3K2027121	CAPACITOR: same as C145, part of E108	Detector cathode filter	AWS Type CM 20B271K	
C147	3DKA1-108	CAPACITOR: same as C120, part of E108	Detector screen by-pass		
C148	3DKA1-108	CAPACITOR: same as C120, part of E108	Detector plate by-pass		
C149	3DKA875	CAPACITOR: dual, fixed, oil-filled, enclosed in metal can, two standard fork terminals, bracket mounting, overall dim. 4" x 2¼" x ¾" over terminals and brackets, comprised of C149A and C149B		RCA	P-72076-503
C149A		CAPACITOR: 875,000 mmfd ±15%, 400 v d-c working. Part of C149	1st h-v rectifier filter		
C149B		CAPACITOR: same as C149A. Part of C149	1st h-v rectifier filter		
C150		DOES NOT EXIST			
C151		DOES NOT EXIST			
C152	3K3015241	CAPACITOR: molded, fixed, mica, 1500 mmfd ±10%, 500 v d-c working, axial leads, overall dim. 53/64" x 53/64" x 9/32" (max.)	Crystal oscillator tuning	EM, SA AWS Type CM30D152K	P-722021-563
C153	3DKA10-179	CAPACITOR: fixed, oil-impregnated, 10,000 mmfd +60%, −20%, 400 v d-c working, axial leads, overall dim. 1 5/32" x 5/8" x ¼", part of E105	Crystal oscillator clipper	MM Type MT	K-97670-5
C154		DOES NOT EXIST			
C155	3DKA10-179	CAPACITOR: same as C153	Driver cathode		
C156	3DKA10-179	CAPACITOR: same as C153	Driver screen		
C157	3DK9055-4	CAPACITOR: same as C112. In transm. osc. assembly	UHF transformer heater entrance bushing		
C158	3DK9082-7	CAPACITOR: same as C114. In transm. osc. assembly	UHF heater by-pass		
C159		DOES NOT EXIST			
C160	3DK9055-4	CAPACITOR: same as C112. In transm. osc. assembly	UHF transformer plate entrance bushing		

C161		CAPACITOR: same as C119, comprised of C161A and C161B. In transm. osc. assembly	Antenna loop tuning		
C161A	3DK9007V-4/C2	PLATE ASSEMBLY: same as C119A. Part of C161	Fixed section		
C161B	3DK9007V-4/C1	PLATE ASSEMBLY: same as C119B. Part of C161	Movable section		
C162	3K2010121	CAPACITOR: molded, fixed, mica, 100 mmfd ±10%, 500 v d-c working, axial leads, overall dim. 51/64" x 15/32" x 7/32" (max.)	Clipper screen	AWS Type CM20B101K AV, TD, SL, CD, EM, FWS, SA, MM, NO	P-722001-573
C163	3DKA10-179	CAPACITOR: same as C153, part of E112	A. C. line filter		
C164	3DKA10-179	CAPACITOR: same as C153, part of E112	A. C. line filter		
C165		DOES NOT EXIST			
C166	3DA100-294	CAPACITOR: molded, fixed, paper, wax impregnated, 100,000 mmfd ±20%, 300 v d-c working, axial leads, overall dim. 1 7/16" x 3/4" x 3/8", part of E106	Circle line l-f phasing	MM	K-99985-1
C167	3K2047121	CAPACITOR: same as C109A, part of E107	Clipper-driver grid filter	AWS Type CM20B471K	
C168	3DA100-294	CAPACITOR: same as C166, part of E108	Video line coupling		
C169	3K3010221	CAPACITOR: molded, fixed, mica, 1000 mmfd ±10%, 500 v d-c working, axial leads, overall dim. 53/64" x 53/64" x 9/32" (max.), part of E103	Timing osc. l-f grid coupling	AWS Type CM30B102K EM, CD, NO, MM	P-722017-559
C170	3K3010221	CAPACITOR: same as C169	Clipper grid coupling		
C171		CAPACITOR: fixed, paper-dielectric, .25 mfds +40% —15%, 600 v d-c working, hermetically sealed in metallic case, approx. overall dim. 2 1/2" x 1 1/2", with mounting lugs and 1 terminal	R-F filter capacitor	JAN Type CP51B2EF254X AV, CSP	K-981038-1
C172	3DKA1-108	CAPACITOR: same as C120	1st i-f grid capacitor		
C173	3DKA1-108	CAPACITOR: same as C120	2nd i-f grid capacitor		
E101	3Z3285-2	FUSE HOLDER: cylinder insulated, overall dim. 2 13/32" x 1 1/16" dia.	For fuse F101	BUS Type HKM	K-99088-2
E102	3Z12531-3.45	TERMINAL BOARD ASSEMBLY: 1 7/8" x 1 9/16" x 3/32" thick laminated phenolic board carrying 10 terminals, includes C120, 122, 123, 124, R112, 116, 118, 119 and 153 also two #6-32 mounting studs with spacers (treated for tropical use)	Wiring parts assembly	RCA	T-256387-501
E103	3Z12531-3.46	TERMINAL BOARD ASSEMBLY: 1 7/8" x 1 9/16" x 3/32" thick laminated phenolic board carrying 10 terminals, includes C126, 127, 128, 169, R121, 122, 123 and 158 also two #6-32 mounting studs with spacers (treated for tropical use)	Wiring parts assembly	RCA	T-256387-502
E104	3Z12531-3.47	TERMINAL BOARD ASSEMBLY: 1 7/8" x 1 9/16" x 3/32" thick laminated phenolic board carrying 8 terminals, includes C130, 131, 132, R125, 126 and 127 also two #6-32 mounting studs with spacers (treated for tropical use)	Wiring parts assembly	RCA	T-256387-503
E105	3Z12531-3.48	TERMINAL BOARD ASSEMBLY: 1 7/8" x 1 9/16" x 3/32" thick laminated phenolic board carrying 10 terminals, includes C134, 135, 136, 153, R129, 130 and 131 also two #6-32 mounting studs with spacers (treated for tropical use)	Wiring parts assembly	RCA	T-256387-504

TABLE OF PARTS—Continued

NOTE: Parts indicated by a # sign in column 2 are not available as spare parts and are listed for reference purposes only.

MODEL: RADIO SET SCR-718-C

MAJOR ASSEMBLY: RADIO RECEIVER-TRANSMITTER BC-788-C
MOUNTING BASE *MT-14/ARN-1

Reference Symbol	*Army Stock No. Navy Stock No. British Ref. No.*	*Name of Part and Description*	*Function*	*Mfr. and Desig. or Standard Type*	*Cont. or Govt. Dwg. or Spec. No.*
E106	3Z12531-3.49	TERMINAL BOARD ASSEMBLY: 1⅞" x 1 9/16" x 3/32" thick laminated phenolic board carrying 10 terminals, includes C138, 139, 140, 166, R133, 134 and 135 also two #6-32 mounting studs with spacers (treated for tropical use)	Wiring parts assembly	RCA	T-256387-505
E107	3Z12531-3.50	TERMINAL BOARD ASSEMBLY: 1⅞" x 1 9/16" x 3/32" thick laminated phenolic board carrying 10 terminals, includes C142, 143, 144, 167, R137, 138 and 139 also two #6-32 mounting studs with spacers (treated for tropical use)	Wiring parts assembly	RCA	T-256387-506
E108	3Z12531-3.51	TERMINAL BOARD ASSEMBLY: 2⅜" x 1 9/16" x 3/32" thick laminated phenolic board carrying 11 terminals, includes C145, 146, 147, 148, 168, R140, 141, 142, 159, 160 and 161 also two #6-32 mounting studs with spacers (treated for tropical use)	Wiring parts assembly	RCA	T-256387-507
E109		DOES NOT EXIST			
E110	2ZK9461-2	TERMINAL BOARD ASSEMBLY: 1" x ⅜" x 1/16" thick laminated phenolic board carrying one terminal. In transm. osc. assembly. Treated for tropical use.	Mounting for resistor and coil leads	RCA	K252542-501
E111		DOES NOT EXIST			
E112	2Z9404.177	TERMINAL BOARD ASSEMBLY: 1¾" x 1½" x 3/32" thick laminated phenolic board carrying four terminals and capacitors C163 and C164, treated for tropical use	Mounting complete with capacitors	RCA	K-258346-501
E113	2Z9402.251	TERMINAL BOARD ASSEMBLY: formed ⅞" x ⅝" x 1/16" thick laminated phenolic board carrying two terminals, complete with spacer, stud, and L116, treated for tropical use	Mounting complete with choke coil	RCA	K-258962-501
E114	2Z9402.251	TERMINAL BOARD ASSEMBLY: same as E113, includes L117	Mounting complete with choke coil		
E115	2Z9402.251	TERMINAL BOARD ASSEMBLY: same as E113, includes L118	Mounting complete with choke coil		
E116	2Z9402.251	TERMINAL BOARD ASSEMBLY: same as E113, includes L119	Mounting complete with choke coil		
E117	2Z9402.251	TERMINAL BOARD ASSEMBLY: same as E113, includes L120	Mounting complete with choke coil		
E118	2Z9402.251	TERMINAL BOARD ASSEMBLY: same as E113, includes L121	Mounting complete with choke coil		
F101	3Z2601.5	FUSE: cartridge, glass body, 1.5 amperes, 250 v, type 3AG, overall dim. 1¼" x ¼" dia.	Overload protection	LF Type 1041 BUS Type 3AG1-1/2	K-850339-20
F102	3Z1927	FUSE: cartridge, glass body, 2 amperes, 250v, type 3AG, overall dim. 1¼" x ¼" dia., Signal Corps. Symbol FU-27	Overload protection	LF Type 1042 BUS Type 3AG2	K-850339-5

H101	2ZK11102.4	TUBE SHIELD: metal can, 0.010" thick c. r. steel approx. overall dim. 1¾" x 0.810" I.D.	For tube	CN	K-252607-1
J101	2ZK3096-31	RECEPTACLE: panel mounting, 7-pin, female, approx. overall dim. 1 5/32" x 1 9/32" square	Receptacle to indicator	AP Type AN3102-16S-1S	M-253475-5
J102	2Z8799-155	RECEPTACLE: panel mounting, 2-pin, male, approx. overall dim. 1 5/32" x 1 3/32" square, Army type SO-155	Power Supply receptacle	AP Type AN3102-12S-3P	M-253475-3
J103	2ZK7409-26	RECEPTACLE: panel mounting, coaxial, female, approx. overall dim. 1 1/16" x 1" square. In rec. osc. and conv. assembly, same as Army Type SO-239 except has cs'tk mounting holes	Receiver antenna receptacle	RCA	K-252490-1
J104	2ZK7409-26	RECEPTACLE: same as J103. In transm. osc. assembly	Transmitter antenna receptacle		
K101	2Z7589-98	RELAY: s.p.s.t. normally open, max. coil resistance 6000 ohms at 25°C., normal current 7 ma, contacts must open when current is reduced to not less than 0.75 ma, overall dim. 1 11/16" x 1 5/32" x 1 31/32" (max.), treated for tropical use	Range switch relay	GM	M-254192-1
L101	#	CHOKE COIL: 0.032 dia. tinned, soft copper wire, 6 turns, r.h. open wound, 3/16" I.D., 3/32" pitch wire traverse 9/16", 1 1/32" leads. In rec. osc. and conv. assembly	Converter heater choke	RCA	K-251997-3
L102		DOES NOT EXIST			
L102A	#	COIL: 12¼ turns 0.010" bare dia. enameled copper magnet wire wound at 70 turns per inch on common coil form with L102B, winding to start ¼" from end of coil form. In T102	1st i-f primary	RCA	M-253466-5
L102B	#	COIL: 12¼ turns 0.010" bare dia. enameled copper magnet wire wound at 70 turns per inch on common coil form with L102A, winding to start 2 3/32" from same end of coil form at L102A. In T102	1st i-f secondary	RCA	M-253466-4
L103		DOES NOT EXIST			
L103A	#	COIL: 18¼ turns 0.010" bare dia. enameled copper magnet wire wound at 70 turns per inch on common coil form with L103B, winding to start ¼" from end of coil form. In T103	2nd i-f primary	RCA	M-253466-3
L103B	#	COIL: same as L102B, on common form with L103A. In T103	2nd i-f secondary		
L104		DOES NOT EXIST			
L104A	#	COIL: same as L103A, on common form with L104B. In T104	3rd i-f primary		
L104B	#	COIL: same as L102B, on common form with L104A. In T104	3rd i-f secondary		
L105		DOES NOT EXIST			
L105A	#	COIL: same as L103A, on common form with L105B. In T105	4th i-f primary		
L105B	#	COIL: same as L102B, on common form with L105A. In T105	4th i-f secondary		
L106		DOES NOT EXIST			
L106A	#	COIL: same as L103A, on common form with L106B. In T106	5th i-f primary		
L106B	#	COIL: same as L102B, on common form with L106A. In T106	5th i-f secondary		
L107		DOES NOT EXIST			
L107A	#	COIL: same as L103A, on common form with L107B. In T107	6th i-f primary		
L107B	#	COIL: same as L102B, on common form with L107A. In T107	6th i-f secondary		

TABLE OF PARTS—Continued

NOTE: Parts indicated by a # sign in column 2 are not available as spare parts and are listed for reference purposes only.

MODEL: RADIO SET SCR-718-C **MAJOR ASSEMBLY: RADIO RECEIVER-TRANSMITTER BC-788-C MOUNTING BASE ★MT-14/ARN-1**

Reference Symbol	*Army Stock No. Navy Stock No. British Ref. No.*	*Name of Part and Description*	*Function*	*Mfr. and Desig. or Standard Type*	*Cont. or Govt. Dwg. or Spec. No.*
L108		DOES NOT EXIST			
L108A	#	COIL: same as L103A, on common form with L108B. In T108	7th i-f primary		
L108B	#	COIL: same as L102B, on common form with L108A. In T108	7th i-f secondary		
L109		DOES NOT EXIST			
L109A	#	COIL: 552 turns 0.004″ bare dia. single silk covered enameled copper wire universal wound 2 crosses per turn , wire traverse ⅛″ on common coil form with L109B and L109C, winding to start 1⅛″ from end of coil form or 1/16″ from L109B. In T109	Timing osc. plate h-f	RCA	M-254198-5 (not replaceable, potted in T109 P-255634-510)
L109B	#	COIL: 200 turns 0.004″ bare dia. single silk covered enameled copper wire universal wound 6 crosses per turn, wire traverse 1/16″, on common coil form with L109A and L109C, winding to start 1″ from same end of coil form as L109A or 1/16″ from L109C. In T109	Circle line coupling	RCA	M-254198-6 (not replaceable, potted in T109 P-255634-510)
L109C	#	COIL: 2075 turns 0.004″ bare dia. single silk covered enameled copper wire universal wound 1 cross per turn, wire traverse ⅜″, on common coil form with L109A and L109B, winding to start 9/16″ from same end of coil form as L109A and L109B. In T109	Timing osc. plate l-f	RCA	M-254198-5 (not replaceable, potted in T109 P-255634-510)
L110		DOES NOT EXIST			
L110A	#	COIL: continuously wound in five sections, tap between 3rd and 4th section, each section 170 turns 0.005″ bare dia. single silk covered enameled copper wire universal wound 3 crosses per turn, wire traverse ⅛″ with 1/16″ between sections, winding to start 15/16″ from end of coil form. In T110	Clipper plate	RCA	M-254198-5 (not replaceable, potted in T110 P-255634-509)
L111		DOES NOT EXIST			
L111A	#	COIL: continuously wound in three sections, tap between 2nd and 3rd section, each section 47 turns 0.005″ bare dia. single glass covered enameled magnet wire universal wound 6 crosses per turn, wire traverse 1/16″ with 1/32″ between sections, winding to start 7/16″ from end of coil form. In T111	Driver plate	RCA	M-253429-14 (not replaceable, potted in T111 P-255257-512)
L112	3CK370-7	CHOKE COIL: 0.032″ dia. tinned soft copper wire, 6 turns, r.h. open wound, 3/16″ I.D., 3/32″ pitch, wire traverse 9/16″, 1 1/32″ leads, center tapped. In rec. osc. and conv. assembly	Converter grid	RCA	K-252173-2
L112A	#	COIL: 400 turns 0.004″ bare dia. single silk covered enameled copper wire universal wound 3 crosses per turn, wire traverse ⅛″, on common coil form with L112B and L112C, winding to start ½″ from same end of coil form as L112B or 1/16″ from L112B. In T112	Timing osc. h-f cathode	RCA	M-254198-15 (not replaceable, potted in T112 P-255634-511)

L112B	#	COIL: 170 turns 0.004″ bare dia. single silk covered enameled copper wire universal wound 3 crosses per turn, wire traverse 1/8″, on common coil form with L112A and L112C, winding to start 7/16″ from end of coil form. In T112	Timing osc. h-f grid	RCA	M-254198-14 (not replaceable, potted in T112 P-255634-511)
L112C	#	COIL: continuously wound in five sections, each section 440 turns 0.004″ bare dia. single silk covered enameled copper wire universal wound 3 crosses per turn, wire traverse 1/8″ with 1/16″ between sections, winding to start 1 1/16″ from same end of coil form as L112A and L112B or 1/16″ from L112A. In T112	Timing osc. l-f grid	RCA	M-254198-16 (not replaceable, potted in T112 P-255634-511)
L113	#	COIL: same as L101. In rec. osc. and conv. assembly	Osc. cathode		
L114	#3CK2514	CONVERTER ASSEMBLY: fabricated, comprised of two brass rods 0.183″ O.D., 0.120″ I.D., 1 63/64″ and 2 3/64″ long resp., spaced apart on 0.562″ centers, complete with brackets, links, shorting contact, terminals, black phenolic compound knob. C116, and necessary hardware. Approx. overall dim. 2 3/8″ x 1 5/16″ x 9/16″. In rec. osc. and converter assembly	Converter grid tuning	RCA	M-254330-501
L115	#3CK4056-3	CONDUCTOR ASSEMBLY: fabricated, comprised of two 0.032″ thick brass rods 3/16″ O.D., 1 37/64″ long, spaced apart on 0.562″ centers, complete with bracket, shorting contact, black phenolic compound knob and necessary hardware. Approx. overall dim. 1 61/64″ x 1 5/16″ x 9/16″. In rec. osc. and conv. assembly	Osc. tuning	RCA	M-253487-505
L116	3CK316-26	CHOKE COIL: 0.0253″ bare dia. #22 AWG single formex enameled wire, 16 turns, close wound, 0.306″ O.D., wire traverse 15/32″, 1 1/8″ (min.) leads, enclosed in bakelite tube 5/8″ x 0.312″ I.D. x 3/8″ O.D. with washers in each end tight against coil, part of E113, treated for tropical use	Heater choke	RCA	K-252409-501
L117	3CK316-26	COIL: same as L116, part of E114	Heater choke		
L118	3CK316-26	COIL: same as L116, part of E115	Heater choke		
L119	3CK316-26	COIL: same as L116, part of E116	Heater choke		
L120	3CK316-26	COIL: same as L116, part of E116	Heater choke		
L121	3CK316-26	COIL: same as L116, part of E116	Heater choke		
L122	3C370-58	TRANSFORMER ASSEMBLY: complete with coil (29 turns 0.010″ bore dia. enameled copper magnet wire wound at 60 turns per inch, winding to start 3/8″ from end of coil form) and four terminals enclosed in 0.016″ thick aluminum can. Approx. overall dim. of can 1.510″ x 0.875″ O.D., potted for tropical use	Detector cathode (line filter)	RCA	P-255634-508
L123		DOES NOT EXIST			
L124	#	COIL: same as L101. In transm. osc. assembly	UHF output heater choke		
L125		DOES NOT EXIST			
L126	#	COIL: same as L101. In transm. osc. assembly	UHF output cathode choke		
L127	#2ZK2964	CONDUCTOR ASSEMBLY: fabricated, comprised of two 0.032″ thick brass rods 3/16″ O.D. 2 53/64″ long, spaced apart on 0.562″ centers, with shorting bar stop pins complete with bracket, shorting contact, terminal, black phenolic compound knob and necessary hardware. Approx. overall dia. 3 13/64″ x 1 5/16″ x 9/16″. In transm. osc. assembly	UHF output plate tuning	RCA	M-253487-506

TABLE OF PARTS—Continued

NOTE: Parts indicated by a # sign in column 2 are not available as spare parts and are listed for reference purposes only.

MODEL: RADIO SET SCR-718-C

MAJOR ASSEMBLY: RADIO RECEIVER-TRANSMITTER BC-788-C
MOUNTING BASE ★MT-14/ARN-1

Reference Symbol	*Army Stock No. Navy Stock No. British Ref. No.*	*Name of Part and Description*	*Function*	*Mfr. and Desig. or Standard Type*	*Cont. or Govt. Dwg. or Spec. No.*
L128	#	COIL: same as L101. In transm. osc. assembly	UHF output plate choke		
L129	3CK1084G	LOOP: formed 0.0641″ dia. tinned copper wire, "U" shaped, 3/16″ apart x 1 13/16″. In transm. osc. assembly	Antenna coupling	RCA	K-252699-1
L130	3CK1084G-1	LOOP: formed 1/16″ dia. brass rod ends silver soldered together, outside dim. at one end 1 3/16″ x 5/8″ and 5/8″ x 5/8″ at other end, inside dim. 1/16″ in center section, overall length 2 1/8″. In rec. osc. and conv. assembly	Coupling osc. to converter	RCA	K-252622-1
L131	3CK1084G-2	LOOP: formed 0.0641″ dia. tinned copper wire, "U" shaped, 1 3/64″ apart x 1 1 1/32″. In rec. osc. and conv. assembly	Antenna coupling	RCA	K-252407-1
L132	3CK560-7	TRANSFORMER: impedance 275 ohms (min.) at 3 v 60 cycles, 14 amp. d-c from term. 1 to 2 and 2 to 3, resistance 75 ohms ±10% term. 1 to 2 and 2 to 3, hi-pot 1600 v term. 1 to ground, two windings, three terminals COIL #1: 1240 turns 0.0063″ dia. enameled copper wire wound 62 turns per layer over kraft paper tube, wire traverse 0.469″, insulation between layers 1 turn 0.0015″ kraft paper, over coil 2 turns 0.005″ kraft paper and 0.001″ acetate, coil build 0.217″, d-c resistance 74.2 ohms at 25°C. COIL #2: same as Coil #1 Stack laminations 9/16″, 0.003″ air gap. In metal can, approx. overall dim. 3 3/8″ x 1 1 3/32″ square	B+ filter choke	RCA	K-901619-501
L133		COIL: continuously wound in 3 sections over black molded phenolic bobbin, 200 turns per section 0.005″ bare dia. single glass covered enameled copper wire; universal wound 3 crosses per turn, enclosed in aluminum can, 2 terminals, approx. overall diam. 1.062″ x 1.000″ O.D., potted for tropical use	R-F filter choke	RCA	P-255257-528
R101		DOES NOT EXIST			
R102		DOES NOT EXIST			
R102A	3RC10AE152J	RESISTOR: 1500 ohms ±5%, 1/10 watt, composition, insulated, pigtail leads, overall dim. 1 9/64″ x 0.107″ dia. In T102	Converter plate loading	SR Type SI-¼	K-252621-163
R103		DOES NOT EXIST			
R103A	3RC10AE152J	RESISTOR: same as R102A. In T103	First i-f plate loading		
R104		DOES NOT EXIST			
R104A	3RC10AE152J	RESISTOR: same as R102A. In T104	Second i-f plate loading		

R105		DOES NOT EXIST			
R105A	3RC10AE152J	RESISTOR: same as R102A. In T105	Third i-f plate loading		
R106		DOES NOT EXIST			
R106A	3RC10AE152J	RESISTOR: same as R102A. In T106	Fourth i-f plate loading		
R107		DOES NOT EXIST			
R107A	3RC10AE152J	RESISTOR: same as R102A. In T107	Fifth i-f plate loading		
R108		DOES NOT EXIST			
R108A	3RC10AE152J	RESISTOR: same as R102A. In T108	Sixth i-f plate loading		
R109		DOES NOT EXIST			
R109A	3RC10AE224K 3RC20AE224K 3RC20BE224K	RESISTOR: 220,000 ohms ±10%, ¼ watt, composition, insulated, pigtail leads, overall dim. ⅜" x 3/16" dia. In T109	Clipper grid leak	AB Type EB IRC Type BTS SR Type SI-½ ST Type MB-⅓	
R110		DOES NOT EXIST			
R110A	3RC10AE152K 3RC20AE152K 3RC20BE152K	RESISTOR: 1500 ohms ±10%, ¼ watt, composition, insulated, pigtail leads, overall dim. ⅜" x 3/16" dia. In T110	Driver grid	AB Type EB IRC Type BTS SR Type SI-½ ST Type MB-⅓	
R110B		RESISTOR: same as R109A. In T110	Driver grid		
R111		DOES NOT EXIST			
R112	3RC30BE682K 3RC31AE682K 3RC31AE682K	RESISTOR: 6800 ohms ±10%, 1 watt, composition, insulated, pigtail leads, overall dim. 29/32" x 5/16" dia. (max.). Part of E102	Oscillator feed	AB Type GB	K-99081-72
R113		RESISTOR: same as R112. In rec. osc. and conv. assembly	Rec. osc. plate dropping in r-f		
R114	3RC20BE561K 3RC20BE561K 3RC20AE561K 3RC10AE561K	RESISTOR: 560 ohms ±10%, ¼ watt, composition, insulated, pigtail leads, overall dim. ⅜" x 3/16" dia. In rec. osc. and conv. assembly	Converter cathode in r-f	AB Type EB IRC Type BTS SR Type SI-½ ST Type MB-⅓	K-99125-59
R115	3RC20BE273K	RESISTOR: 27,000 ohms ±10%, ½ watt, composition, insulated, pigtail leads, overall dim. ⅜" x 9/64" dia. In rec. osc. and conv. assembly	Rec. osc. grid leak in r-f	AB Type EB	K-82283-79
R116	3RC30BE683K 3RC31AE683K 3RC31AE683K	RESISTOR: 68,000 ohms ±10%, 1 watt, composition, insulated, pigtail leads, overall dim. 29/32" x 5/16" dia. (max.). Part of E102	Converter plate dropping	AB Type EB SR Type SCI-1 ST Type MB-1	K-99081-84
R117	3RC20BE221K 3RC20AE221K 3RC10AE221K	RESISTOR: 220 ohms ±10%, ¼ watt, composition, insulated, pigtail leads, overall dim. ⅜" x 3/16" dia.	First i-f cathode	AB Type EB SR Type SI-½ ST Type MB-⅓	K-99125-54
R118	3RC20BE102M 3RC20BE102M 3RC20AE102M 3RC20AE102M	RESISTOR: 1000 ohms ±20%, ¼ watt, composition, insulated, pigtail leads, overall dim. ⅜" x 3/16" dia. Part of E102	First i-f screen	AB Type EB IRC Type BTS SR Type SI-½ ST Type MB-⅓	K-99125-13
R119		RESISTOR: same as R118, part of E102	First i-f plate dropping		
R120		RESISTOR: same as R117	Second i-f cathode		

TABLE OF PARTS—Continued

NOTE: Parts indicated by a # sign in column 2 are not available as spare parts and are listed for reference purposes only.

MODEL: RADIO SET SCR-718-C **MAJOR ASSEMBLY: RADIO RECEIVER-TRANSMITTER BC-788-C MOUNTING BASE ★MT-14/ARN-1**

Reference Symbol	*Army Stock No. Navy Stock No. British Ref. No.*	*Name of Part and Description*	*Function*	*Mfr. and Desig. or Standard Type*	*Cont. or Govt. Dwg. or Spec. No.*
R121	3RC20BE151M 3RC21AE151M 3RC20AE151M	RESISTOR: 150 ohms ±20%, ½ watt, composition, insulated, pigtail leads, overall dim. $^{21}/_{32}$" x $^{7}/_{32}$" dia. (max.). Part of E103	+B plate filter first and second i-f	AB Type EB SR Type SCI-½ ST Type MB-½	K-99080-8
R122		RESISTOR: same as R118, part of E103	Second i-f screen		
R123		RESISTOR: same as R118, part of E103	Second i-f plate dropping		
R124		RESISTOR: same as R117	Third i-f cathode		
R125		RESISTOR: same as R121, part of F104	+B plate filter, second and third i-f		
R126	3RC20BE823K 2RC21BE823K 2RC21AE823K 3RC20AE823K	RESISTOR: 82,000 ohms ±10%, ½ watt, composition, insulated, pigtail leads, overall dim. $^{31}/_{32}$" x $^{7}/_{32}$" dia. (max.). Part of E104	Third i-f screen dropping	AB Type EB IRC Type BT-½ SR Type SCI-½ ST Type MB-½	K-99080-85
R127		RESISTOR: same as R118, part of E104	Third i-f plate dropping		
R128		RESISTOR: same as R117	Fourth i-f cathode		
R129		RESISTOR: same as R121, part of E105	+B plate filter, third and fourth i-f		
R130		RESISTOR: same as R126, part of E105	Fourth i-f screen dropping		
R131		RESISTOR: same as R118, part of E105	Fifth i-f plate dropping		
R132		RESISTOR: same as R117	Fifth i-f cathode		
R133		RESISTOR: same as R121, part of E106	+B plate filter, 4th and 5th i-f		
R134		RESISTOR: same as R126, part of E106	Fifth i-f screen dropping		
R135		RESISTOR: same as R118, part of E106	Fifth i-f plate dropping		
R136		RESISTOR: same as R117	Sixth i-f cathode		
R137		RESISTOR: same as R121, part of E107	+B plate filter, fifth and sixth i-f		
R138		RESISTOR: same as R126, part of E107	Sixth i-f screen dropping		
R139		RESISTOR: same as R118, part of E107	Sixth i-f plate dropping		
R140		RESISTOR: same as R121, part of E108	+B plate filter, sixth to detector		

R141	3RC30BE124K 3RC31AE124K 3RC31AE124K	RESISTOR: 120,000 ohms ±10%, 1 watt, composition, insulated, pigtail leads, overall dim. 29/32" x 5/16" dia. (max.). Part of E108	Detector screen dropping	AB Type GB SR Type SCI-1 ST Type MB-1	K-99081-87
R142		RESISTOR: same as R118, part of E108	Detector plate dropping		
R143		DOES NOT EXIST			
R144	3RC20BE474K 3RC20BE474K 3RC20AE474K 3RC10AE474K	RESISTOR: 470,000 ohms ±10%, ¼ watt, composition, insulated, pigtail leads, overall dim. 3/8" x 3/16" dia.	Oscillator grid leak	AB Type EB IRC Type BTS SR Type SI-½ ST Type MB-⅓	K-99125-94
R145	3RC20BE124K	RESISTOR: 120,000 ohms ±10%, ½" watt, composition, insulated, pigtail leads, overall dim. 31/32" x 7/32" dia. (max.)	Oscillator screen dropping	AB Type EB IRC Type BT-½ SR Type SCI-½ ST Type MB-½	K-82283-87
R146		RESISTOR: same as R110A	Clipper grid		
R147		DOES NOT EXIST			
R148	3RC30BE471K 3RC31AE471K 3RC31AE471K	RESISTOR: 470 ohms ±10%, 1 watt, composition, insulated, pigtail leads, overall dim. 29/32" x 5/16" dia. (max.)	Driver cathode	AB Type GB SR Type SCI-1 ST Type MB-1	K-99081-58
R149	3RC21AE223K 3RC20BE223K 3RC21BE223K 3RC20AE223K	RESISTOR: 22,000 ohms ±10%, ½ watt, composition, insulated, pigtail leads, overall dim. 31/32" x 7/32" dia. (max.)	Driver screen	SR Type SCI-½ AB Type EB IRC Type BT-½ ST Type MB-½	K-99080-78
R150	3RC40AE123K	RESISTOR: 12,000 ohms ±10%, 2 watts, composition, insulated, pigtail leads, overall dim. 1⅜" x ⅜" dia.	Driver output damping	SR	K-251930-75
R151	3RC20BE181K 3RC20AE181K 3RC10BF181K	RESISTOR: 180 ohms ±10%, ¼ watt, composition, insulated, pigtail leads, overall dim. ⅜" x 3/16" dia. In transm. osc. assembly	Transmitting UHF grid leak	AB Type EB SR Type SI-½ ST Type MB-⅓	K-99125-53
R152	3RC20BE390K 3RC20AE390K 3RC10BF390K	RESISTOR: 39 ohms ±10%, ¼ watt, composition, insulated, pigtail leads, overall dim. ⅜" x 3/16" dia. In transm. osc. assembly	Transmitting UHF cathode	AB Type EB SR Type SI-½ ST Type MB-⅓	K-99125-45
R153		RESISTOR: same as R116, part of E101	Converter plate dropping		
R154	3RC20BE184K 3RC21BE184K 3RC21AE184K 3RC20AE184K	RESISTOR: 180,000 ohms ±10%, ½ watt, composition, insulated, pigtail leads, overall dim. 31/32" x 7/32" dia. (max.)	Clipper screen dropping	AB Type EB IRC Type BT-½ SR Type SCI-½ ST Type MB-½	K-99080-89
R155		RESISTOR: same as R148	Circle line 1-f phasing		
R156	3RC20BE394K 3RC20BE394K 3RC20AE394K 3RC10AE394K	RESISTOR: 390,000 ohms ±10%, ¼ watt, composition, insulated, pigtail leads, overall dim. ⅜" x 3/16" dia.	Clipper screen	AB Type EB IRC Type BTS SR Type SI-½ ST Type MB-⅓	K-99125-93
R157		DOES NOT EXIST			
R158	3RC20BE563K 3RC20BE563K 3RC20AE563K 3RC10AE563K	RESISTOR: 56,000 ohms ±10%, ¼ watt, composition, insulated, pigtail leads, overall dim. ⅜" x 3/16" dia. Part of E103	Timing osc. 1-f grid leak	AB Type EB IRC Type BTS SR Type SI-½ ST Type MB-⅓	K-99125-83

TABLE OF PARTS—Continued

NOTE: Parts indicated by a # sign in column 2 are not available as spare parts and are listed for reference purposes only.

MODEL: RADIO SET SCR-718-C — **MAJOR ASSEMBLY: RADIO RECEIVER-TRANSMITTER BC-788-C** — **MOUNTING BASE ★MT-14/ARN-1**

Reference Symbol	*Army Stock No. Navy Stock No. British Ref. No.*	*Name of Part and Description*	*Function*	*Mfr. and Desig. or Standard Type*	*Cont. or Govt. Dwg. or Spec. No.*
R159	3RC20BE222K 3RC21BE222K 3RC21AE222K 3RC20AE222K	RESISTOR: 2200 ohms ±10%, ½ watt, composition, insulated, pigtail leads, overall dim. $31/32$" x $7/32$" dia. (max.), part of E108	Detector cathode	AB Type EB IRC Type BT-½ SR Type SCI-½ ST Type MB-½	K-99080-66
R160		RESISTOR: same as R217, part of E108	Relay feed		
R161		RESISTOR: same as R217, part of E108	Relay feed		
R162		DOES NOT EXIST			
R163		RESISTOR: same as R109A	Clipper-driver grid bias		
R164		RESISTOR: same as R208	Driver screen bleeder		
R165		RESISTOR: same as R115	Oscillator cathode		
R166		RESISTOR: same as R109A	1st l-f grid resistor		
R167		RESISTOR: same as R109A	2nd l-f grid resistor		
T101	2ZK9704-1	TRANSFORMER: power, 9 terminals	Power transformer	RCA	K-901586-501

Winding	Primary	Plate	Fil. #1	Fil. #2
No Load Voltage	115/80 v 400 cycles	684 ± 21	7 ±0.2	5.3 ±0.155
Full Load	115/80 v 400 cycles	670	6.3	5
Rated Current	1.1/1.6	0.125 d-c	5.2	2
Hi-pot Volts	2000	2000	2000	2000

Max. core loss 7 watts, 115 v, 400 cycles. Induced voltage test at term. #1 and #3 460 v, 1600 cycles. Midtaps within ±15 of neutral. Polarity additive with terms. #3 and #7, #3 and #6, and #3 and #4 connected.

Primary: 172-½ turns 0.0285" dia. enameled copper wire wound 29 turns per layer over fuller-board tube, tap at 118 turns, wire traverse 0.943", insulation between layers 1 turn 0.005" kraft paper, over coil 2 turns 0.005" kraft and 0.001" acetate, coil build 0.255", d-c resistance 1 ohm at 25° C.

Plate: 1020-½ turns 0.010" dia. enameled copper wire wound 87 turns per layer over false spool, tap at 510-½ turns, wire traverse 1.03", insulation between layers 2 turns 0.0001" kraft paper, over coil 2 turns 0.005" kraft and 0.001" acetate, coil build 0.184", d-c resistance 63.6 at 25° C.

		Fil. #1: 10-½ turns 0.0641" dia. enameled copper wire single layer wound over plate wire traverse 0.741", insulation over coil 2 turns 0.005" kraft and 0.001" acetate, coil build 0.081" Fil. #2: 8 turns 0.0403" dia. enameled copper wire single layer wound over Fil. #1, wire traverse 0.358", insulation over coil 2 turns 0.005" kraft and 0.001" acetate, coil build 0.055" Stack laminations alternatively 1⅜". In metal can, approx. overall dim. 3 1⅜₂ x 3⅜" x 3⅜₂"			
T102	2Z9636.42	TRANSFORMER: comprised of C102A, L102A, L102B and R102A in common shield can assembly with adjustable core and stud assemblies at top and bottom and four terminals. Approx. overall dim. of can 0.016" thick aluminum 1.510" x 0.875" O.D., treated for tropical use	1st i-f transformer	RCA	P-255634-514
T103	2Z9636.40	TRANSFORMER: comprised of C103A, L103A, L103B and R103A in common shield can assembly with adjustable core and stud assemblies at top and bottom and four terminals. Approx. overall dim. of can 0.016" thick aluminum 1.510" x 0.875" O.D., treated for tropical use	2nd i-f transformer	RCA	P-255634-515
T104	2Z9636.41	TRANSFORMER: comprised of C104A, L104A, L104B and R104A in common shield can assembly with adjustable core and stud assemblies at top and bottom and four terminals. Approx. overall dim. of can 0.016" thick aluminum 1.510" x 0.875" O.D., treated for tropical use	3rd i-f transformer	RCA	P-255634-516
T105	2Z9636.39	TRANSFORMER: comprised of C105A, L105A, L105B and R105A in common shield can assembly with adjustable core and stud assemblies at top and bottom and four terminals. Approx. overall dim. of can 0.016" thick aluminum 1.510" x 0.875" O.D., treated for tropical use	4th i-f transformer	RCA	P-255634-517
T106	2Z9636.38	TRANSFORMER: comprised of C106A, L106A, L106B and R106A in common shield can assembly with adjustable core and stud assemblies at top and bottom and four terminals. Approx. overall dim. of can 0.016" thick aluminum 1.510" x 0.875" O.D., treated for tropical use	5th i-f transformer	RCA	P-255634-518
T107	2Z9636.38	TRANSFORMER: comprised of C107A, L107A, L107B and R107A in common shield can assembly with adjustable core and stud assemblies at top and bottom and four terminals. Approx. overall dim. of can 0.016" thick aluminum 1.510" x 0.875" O.D., treated for tropical use	6th i-f transformer	RCA	P-255634-519
T108	2Z9614-110	TRANSFORMER: comprised of C108A, L108A, L108B and R108A in common shield can assembly with adjustable core and stud assemblies at top and bottom and four terminals. Approx. overall dim. of can 0.016" thick aluminum 1.510" x 0.875" O.D., treated for tropical use	7th i-f transformer	RCA	P-255634-520
T109	3C370-57	TRANSFORMER: comprised of C109A, C109B, L109A, L109B, L109C and R109A in common shield can assembly with adjustable core and stud assemblies at top and bottom and ten terminals. Approx. overall dim. of can 0.020" thick aluminum 2.148" x 1.375" square, potted for tropical use	Osc. plate coil	RCA	P-255634-510

TABLE OF PARTS—Continued

NOTE: Parts indicated by a # sign in column 2 are not available as spare parts and are listed for reference purposes only.

MODEL: RADIO SET SCR-718-C

MAJOR ASSEMBLY: RADIO RECEIVER-TRANSMITTER BC-788-C
MOUNTING BASE *MT-14/ARN-1

Reference Symbol	*Army Stock No. Navy Stock No. British Ref. No.*	*Name of Part and Description*	*Function*	*Mfr. and Desig. or Standard Type*	*Cont. or Govt. Dwg. or Spec. No.*
T110	3C370-55	TRANSFORMER: comprised of C110A, L110A, R110A and R110B in common shield can assembly with adjustable core and stud assembly at bottom and six terminals. Approx. overall dim. of can 0.020" thick aluminum 2.148" x 1.375" square	Clipper plate coil	RCA	P-255634-509
T111	3CK370-9	TRANSFORMER: comprised of C111A and L111A in common shield can assembly with adjustable core and stud assembly at bottom and six terminals. Approx. overall dim. of can 0.020" thick aluminum 2.148" and 1.375" square, potted for tropical use	Driver output coil	RCA	P-255257-512
T112	3C370-56	TRANSFORMER: comprised of C112A, C112B, C112C, C112D, C112E, L112A, L112B and L112C in common shield can assembly with adjustable core and stud assemblies at top and bottom and terminals. Approx. overall dim. of can thick aluminum 2.690" x 1.375" square, potted for tropical use	Timing osc. grid	RCA	P-255364-511
V101		VACUUM TUBE: twin-triode, miniature type, glass, miniature button 7-pin base; heater current 0.45 amp. at 6.3 v a-c or d-c	Converter	RCA Type JAN-6J5	
V102		VACUUM TUBE: same as V101	Oscillator		
V103		VACUUM TUBE: r-f amplifier pentode, miniature type, glass, miniature button 7-pin base; heater current 0.3 amp. at 6.3 v a-c or d-c	1st i-f	RCA Type JAN-6AG5	
V104		VACUUM TUBE: same as V103	2nd i-f		
V105		VACUUM TUBE: same as V103	3rd i-f		
V106		VACUUM TUBE: same as V103	4th i-f		
V107		VACUUM TUBE: same as V103	5th i-f		
V108		VACUUM TUBE: same as V103	6th i-f		
V109		VACUUM TUBE: same as V103	Detector		
V110		VACUUM TUBE: full-wave, high-vacuum rectifier, glass, intermediate shell octal 5-pin base; filament current 2 amp. at 5 v a-c	Rectifier	RCA Type JAN-5Y3GT/G	
V111		VACUUM TUBE: same as V103	Crystal osc.		
V112		VACUUM TUBE: same as V103	Clipper		
V113		VACUUM TUBE: beam power amplifier, actual, small wafer octal 7-pin base; heater current 0.9 amp. at 6.3 v a-c or d-c	Driver	RCA Type JAN-6L6	
V114		VACUUM TUBE: same as V101	UHF osc.		
W101	#	SHIELDED WIRE: 0.005" tinned soft copper wire shielded (4 ends) synthetic resin insulated wire, total length 12½"	R-f shield	RCA	K-252329-511

X101	2ZK8663-2	SOCKET: miniature type, 7-prong, ceramic steatite base, approx. 1 1/16" dim. including contacts, two mounting holes spaced apart on 7/8" centers. In rec. osc. and conv. assembly	For V101	EJ	K-875440-2
X102	2ZK8663-2	SOCKET: same as X101. In rec. osc. and conv. assembly	For V102	CN 9849	
X103	2Z8677.57	SOCKET: miniature type, 7-prong, mica-filled phenolic base, approx. 1 9/32" dim. including contacts, two mounting holes spaced apart on 7/8" centers	For V103		K-99118-1
X104		SOCKET: same as X103	For V104		
X105		SOCKET: same as X103	For V105		
X106		SOCKET: same as X103	For V106		
X107		SOCKET: same as X103	For V107		
X108		SOCKET: same as X103	For V108		
X109		SOCKET: same as X103	For V109		
X110	2ZK8666-14	SOCKET: octal, 8-prong, ceramic steatite base, approx. 1 3/16" dim. including contacts, two mounting holes spaced apart on 1 1/2" centers	For V110	UC	K-871415-5
X111	2Z8677.57	SOCKET: same as X103	For V111		
X112	2Z8677.57	SOCKET: same as X103	For V112		
X113	2ZK8666-15	SOCKET: octal, 8-prong, ceramic steatite base, approx. 51/64" dim. including contacts, overall dia. 1 1/4", supplied with cadmium plated steel locking spring	For V113	UC	K-871415-5
X114	2ZK8663-2	SOCKET: same as X101. In transm. osc. assembly	For V114		
X115	2ZK8761-15	SOCKET: 3 holes and terminals for 0.156" dia. pins, luminated phenolic base 2 7/32" x 1 3/8" x 1/8" thick	For Y101	CN Type Exp. 7034	K-871261-3
Y101	2X111-98.356	CRYSTAL UNIT: V-cut quartz, ground to 98.356 kilocycles ±0.05%, 3-pin, complete with holder assembly, approx. overall dim. 3 1/2" x 1 19/32" x 1 3/16"	Timing osc. h-f crystal	RCA	K-252531-501
	2C2789	TRANSMITTER OSC. ASSEMBLY: fabricated, includes C157, C158, C160, C161, E110, J104, L124, L126, L127, L128, L129, R151, R152, X114, misc. parts and hardware housed in 0.032" thick aluminum case, approx. overall dim. 4 11/64" x 1 3/4" x 1 13/16"	Transm. osc.	RCA	T-256215-503
	2C721	RECEIVER OSC. AND CONV. ASSEMBLY: fabricated, includes C112, C113, C114, C115, C117, C118, C119, J103, L101, L112, L113, L114, L115, L130, L131, R113, R114, R115, X101, X102, misc. parts and hardware housed in 0.032" thick aluminum case, approx. overall dim. 3 3/8" x 3 3/32" x 1 3/4", treated for tropical use	Receiver osc. and conv.	RCA	T-256216-504
	2Z6763-14	SHOCK MOUNTING ASSEMBLY: ★MT-14/ARN-1: fabricated frame with two tapered pins at rear, two locking studs at front, and four 6 lb. mounting feet	Shock mount for receiver-transmitter	RCA	T-256002-501

MAJOR ASSEMBLY: INDICATOR I-152-C
MOUNTING FT-455-A

201-299 series	2C5390-152-C	INDICATOR, I-252-C: complete with tubes (V201 to V205, inclusive), housed in aluminum case, approx. overall dim. 11 3/16 x 6 5/32 x 6 1/8", treated for tropical use		RCA	K-252546-502

TABLE OF PARTS—Continued

NOTE: Parts indicated by a # sign in column 2 are not available as spare parts and are listed for reference purposes only.

MODEL: RADIO SET SCR-718-C

MAJOR ASSEMBLY: INDICATOR I-152-C
MOUNTING FT-455-A

Reference Symbol	*Army Stock No. Navy Stock No. British Ref. No.*	*Name of Part and Description*	*Function*	*Mfr. and Desig. or Standard Type*	*Cont. or Govt. Dwg. or Spec. No.*
	2ZA950-387	VISOR, M387 (N203);		PR	M-253040-1
	2Z6721-455A	SHOCK MOUNTING, FT-455-A (see page 15 of this list)		RCA	T-256212-501
C201	3DKA50-68	CAPACITOR: dual, fixed, paper, oil-filled, enclosed in metal can, two standard fork type terminals, overall dim. $3\frac{9}{64}$" x $11\frac{1}{32}$" over terminals, comprised of C201A and C201B		RCA	P-720555-69
C201A		CAPACITOR: 50,000 mmfd ±10%, 2000 v d-c working. In C201	High voltage filter		
C201B		CAPACITOR: same as C201A. In C201	High voltage filter		
C202	3DKA500-106	CAPACITOR: dual, fixed, paper, oil-filled, enclosed in metal can, two terminals, overall dim. of can $1\frac{7}{8}$" x $1\frac{21}{64}$" x $\frac{45}{64}$" comprised of C202A and C202B		RCA	
C202A		CAPACITOR: 500,000 mmfd ±10%, 400 v d-c working. In C202	+B by-pass		
C202B		CAPACITOR: same as C202A. In C202	Video cathode by-pass		
C203		DOES NOT EXIST			
C203A	3K2018132	CAPACITOR: fixed, silver mica, 180 mmfd ±5%, 500 v d-c working, temp. coeff. +0.005%, axial leads, overall dim. $\frac{51}{64}$" x $1\frac{5}{32}$" x $\frac{7}{32}$" (max.). In T203	H-f circle transf. pri. tuning	ER	K-97656-2
C203B	3K2018132	CAPACITOR: fixed, silver mica, 180 mmfd ±5%, 500 v d-c working, temp. coeff. +0.0025%, axial leads, overall dim. $\frac{51}{64}$" x $1\frac{5}{32}$" x $\frac{7}{32}$" (max.). In T203	H-f circle trans. sec. tuning	ER	K-97656-1
C203C	3D9033-11	CAPACITOR: fixed, ceramic, 33 mmfd ±5%, 500 v d-c working, temp. coeff. 0.00033 mmfd/mmfd/°C., radial leads, oveerall dim. 0.460" x 0.250" dia. over leads (max.).	H-f circle transf. sec. compensator	CL, ER	K-90579-221
C203D	3D9033-11	CAPACITOR: same as C203C.	H-f circle transf. pri. compensator		
C204	3DKB1A75	CAPACITOR: fixed, paper, oil-filled, 1.75 mfd ±15%, 400 v d-c working, enclosed in metal can, two terminals, overall dim. of can $3\frac{3}{32}$" x $1\frac{3}{8}$" x $\frac{3}{4}$"	+B by-pass	RCA	P-72076-504
C205	3K3022242	CAPACITOR: molded, fixed, mica, 2200 mmfd ±5%, 500 v d-c working, axial leads, overall dim. $\frac{53}{64}$" x $\frac{53}{64}$" x $\frac{9}{32}$" (max.), part of E210	H-f zero adj. tuning	AWS Type CM 30D222J EM, SA	P-722022-517
C205A	3D9270-5	CAPACITOR: fixed, ceramic, 270 mmfd ±10%, 500 v d-c working, temp. coeff. 0.00075 mmfd/mmfd/°C., radial leads, overall dim. 1.10" x 0.250" dia. over leads (max.). In T205	L-f circle transf. pri. compensator	CL, ER	K-90581-343
C205B	3D9270-5	CAPACITOR: same as C205A. In T205	L-f circle transf. sec. compensator		

C206	3DKA10-179	CAPACITOR: same as C153	Circle amplifier screen by-pass		
C207	3DKA10-179	CAPACITOR: same as C153, part of E210	Video amplifier screen by-pass		
C208	3K2047121	CAPACITOR: same as C109A, part of E209	Video coupling	AWS Type CM20B471K	
C209	3K2047121	CAPACITOR: same as C109A, part of E203	Deflecting plate coupling	AWS Type CM20B471K	
C210	3K2047121	CAPACITOR: same as C109A, part of E208	Deflecting plate coupling	AWS Type CM20B471K	
C211	3DKA10-179	CAPACITOR: same as C153	Second anode by-pass		
C212	3K2047121	CAPACITOR: same as C109A, part of E208	Deflecting plate coupling	AWS Type CM20B471K	
C213	3DKB1A75	CAPACITOR: same as C204	+B by-pass		
C214	3DKA10-179	CAPACITOR: same as C153, part of E211	A-C line filter		
C215		DOES NOT EXIST			
C216	3DA100-294	CAPACITOR: same as C166, part of E210	Video grid coupling		
C217	3DA30-34	CAPACITOR: molded, fixed, mica, 30,000 mmfd ±10%, 600 v d-c working, overall dim. $1\frac{13}{16}$" x $1\frac{13}{32}$" x $\frac{9}{16}$", treated for tropical use	L-f zero adj. tuning	RCA Model NF	K-36331-16
C218	3K3027242	CAPACITOR: same as C112A	L-f circle transf. pri. tuning	AWS Type CM30D272J	
C219	3K3027242	CAPACITOR: same as C112A	L-f circle transf. sec. tuning	AWS Type CM30D272J	
E201	3GK1250-19.1	INSULATOR: formed ceramic steatite terminal insulator, approx. overall dim. $1\frac{9}{16}$" x $1\frac{3}{8}$" x $1\frac{1}{4}$"	For power transf.		K-251967-1
E202	3GK999-2	INSULATOR: formed, mica filled bakelite approx. overall dim. $1\frac{1}{16}$" x $1\frac{1}{16}$" dia.	For high voltage rectifier tube		K-252631-1
E203	2Z2736-14	PLATE CONNECTOR: black molded insulation, beryllium copper contact, complete with $5\frac{3}{8}$" long lead	Plate connection, high voltage rectifier tube	AL	K-258886-2
E204	2ZK5856.17	KNOB ASSEMBLY: black molded phenolic compound, complete with two #8-32 x $\frac{3}{16}$ steel set screws, overall dim. $\frac{5}{8}$" x 1" dia.	For R201	RCA	K-252649-501
E205	2ZK5856.17	KNOB: same as E204	For R213		
E206	2ZK5733.2	KNOB: formed brass, tapped #6-32 x $\frac{3}{16}$" one end, 0.265" I.D., overall dim. $\frac{7}{8}$" x $\frac{7}{16}$" dia. over knurl	For zero adj. control	RCA	K-252612-1
E207	2Z9405-36	TERMINAL BOARD ASSEMBLY: $3\frac{1}{16}$" x $2\frac{1}{16}$" x $\frac{3}{32}$" thick laminated phenolic board carrying five terminals, complete with R205, R206, R207, R208, R209, R231, R233 and necessary wiring, treated for tropical use	For high voltage bleeder circuits	RCA	M-253041-501
E208	3Z12531-3.44	TERMINAL BOARD ASSEMBLY: $3\frac{1}{8}$" x $1\frac{9}{16}$" x $\frac{3}{32}$" thick laminated phenolic board carrying ten terminals, complete with C209, C210, C212, R220, R221, R223 and R226, treated for tropical use	For video circuits	RCA	K-252776-501

TABLE OF PARTS—Continued

NOTE: Parts indicated by a # sign in column 2 are not available as spare parts and are listed for reference purposes only.

MODEL: RADIO SET SCR-718-C

MAJOR ASSEMBLY: INDICATOR I-152-C
MOUNTING FT-455-A

Reference Symbol	*Army Stock No. Navy Stock No. British Ref. No.*	*Name of Part and Description*	*Function*	*Mfr. and Desig. or Standard Type*	*Cont. or Govt. Dwg. or Spec. No.*
E209	2Z9406.47	TERMINAL BOARD ASSEMBLY: 2½" x 2" x 3/32" thick laminated phenolic board carrying six terminals, complete with C208, L204, R217, R218, R219, R228, R229, R230 and necessary wiring, treated for tropical use	For circle output circuits	RCA	M-253499-501
E210	3Z12531-3.52	TERMINAL BOARD ASSEMBLY: 2⅝" x 1 9/16" x 3/32" thick laminated phenolic board carrying nine terminals, complete with studs, eyelets, spacers, C205, C207, C216, R234, R235, R236 and necessary wiring, treated for tropical use	Terminal mounting complete with capacitor and resistor	RCA	K-258977-501
E211	2Z9402.252	TERMINAL BOARD ASSEMBLY: formed, 1⅞" x 1 7/32" x 3/32" thick laminated phenolic board carrying two terminals, complete with brackets, eyelets, and C214, treated for tropical use	Terminal mounting complete with capacitor C214	RCA	K-258973-501
E212		TERMINAL BOARD ASSEMBLY: 1⅛" x ⅜" x 3/32" thick laminated phenolic board carrying two terminals, treated for tropical use	Terminal board	CN	K-259126-1
E213	2ZK5733.2	KNOB: same as E206			
E214		SPRING CONTACT: formed 0.0159" thick extra hard phos. bronze ¼" wide; 2 mtg. holes in flat surface for #4-40 R.H. mach. screws, part of indicator panel assembly RCA Dwg. M-254214-501	Contact for pilot lamp I201	RCA	K-259041-1 Fin. #182
H201	6LK3106-246	NUT: slotted, stainless steel, #6-32, special, #6-32 x 3/16" tap, overall dim. ⅝" x ¼" dia.	For E206 and E213	RCA	K-252611-1
H202	6LK6832-16.9	SCREW: special steel, #8-32 x 2 7/64", pointed end, round slotted head, overall dim. 1 9/64" x 0.298" dia.	For escutcheon	RCA	K-99791-2
H203	2ZK8876.6	SPRING WASHER: special, formed 0.012" thick phosphor bronze, 1 7/64" x 1 5/16" dia. including prongs	For E204 and E205	RCA	K-251887-1
H204	6LK50010N3	WASHER: 1" O.D. x 0.0159" thick brass, extruded 5/64" x 0.625" O.D., 0.5932" I.D.	For E204 and E205	RCA	K-251886-1
H205	2ZK11102.4	TUBE SHIELD: same as H101	Shield for tube		
H206		DOES NOT EXIST			
H207	6ZK4049-1	GASKET: rubber, 3⅛" O.D. x 2¾" I.D. x 1/16" thick	For N201	RCA	K-99801-1
H208	6ZK4051-3	TUBE GASKET: neoprene tubing, 3/16" O.D. x 1/16" I.D. x 8 9/16" long	For V205	RCA	K-866789-1
I201		LAMP: 0.19 amp., 3 v, screw type 3/16"-32 thread, silver plated brass base, overall dim. ¾" x 0.380" dia. over knurl	Pilot light	GEM Mazda Type 319-R	K-259040-1
J201	2ZK3096-35	RECEPTACLE: panel mounting, 7-contact, male, overall dim. 1 3/32" x 1 3/32" square	To rec. transm.	AP Type AN3102-16S-1P	M-253475-4

L201		DOES NOT EXIST			
L202		DOES NOT EXIST			
L202A		COIL: single section wound on common form with L202B, 70 turns 0.005" bare dia. single glass covered enameled magnet wire, universal wound 3 crosses per turn, wire traverse 1/8", winding to finish 9/32" from end of coil form. In T202	H-f zero adj. pr.	RCA	K-252598-3 (not replaceable, potted in T202 P-255257-513)
L202B		COIL: continuously wound in two sections on common coil form with L202A, each section 152 turns 0.005" bare dia. single glass covered enameled magnet wire, universal wound 3 crosses per turn, wire traverse 1/8" each section with 1/16" between sections, winding to finish 1/16" from start of L202A. In T202	H-f zero adj. sec.	RCA	K-252598-4 (not replaceable, potted in T202 P-255257-513)
L203		DOES NOT EXIST			
L203A		COIL: continuously wound in two sections on common coil form with L203B, L203C and L203D, each section 285 turns 0.005" bare dia. single glass covered enameled magnet wire, universal wound 3 crosses per turn, wire traverse 1/8" each section with 3/64" between sections, winding to start 3/64" from finish of L203C. In T203	H-f circle transf. pri.	RCA	M-253429-6 (not replaceable, potted in T203 P-255634-512)
L203B		COIL: same as L203A, wound on common coil form with L203A, L203C, and L203D, winding to start 3/64" from finish of L203D. In T203	H-f circle transf. sec.	RCA	M-253429-4 (not replaceable, potted in T203 P-255634-512)
L203C		COIL: same as L203A, wound on common coil form with L203A, L203B and L203D, winding to start 1/8" from finish of L203B. In T203	H-f circle transf. pri.	RCA	M-253429-5 (not replaceable, potted in T203 P-255634-512)
L203D		COIL: same as L203A, wound on common coil form with L203A, L203B and L203C, winding to start 17/32" from end of coil form	H-f circle transf. sec.	RCA	M-253429-3 (not replaceable, potted in T203 P-255634-512)
L204	3C370-26	TRANSFORMER: continuously wound in three sections, each section 121½ turns 0.005" bare dia. single glass covered enameled magnet wire, universal wound 3 crosses per turn, wire traverse 1/8" each section with 1/16" between sections, enclosed in metal can complete with three terminals, approx. overall dim. 1.062" x 1.000" O.D.; potted for tropical use	Video peaking	RCA	P-255257-515
L204A		COIL: 100 turns 0.004" bare dia. single silk covered enameled copper wire universal wound 3/3 crosses per turn, wire traverse 1/2", wound over L204B. In T204	L-f zero adj. pri.	RCA	K-252598-8 (not replaceable, potted in T204 P-255634-513)
L204B		COIL: 850 turns 0.004" bare dia. single silk covered enameled copper wire universal wound 3/3 crosses per turn, wire traverse 1/2", wound over coil form. In T204	L-f zero adj. sec.	RCA	K-252598-7 (not replaceable, potted in T204 P-255634-513)

TABLE OF PARTS—Continued

NOTE: Parts indicated by a # sign in column 2 are not available as spare parts and are listed for reference purposes only.

MODEL: RADIO SET SCR-718-C

MAJOR ASSEMBLY: INDICATOR I-152-C
MOUNTING FT-455-A

Reference Symbol	*Army Stock No. Navy Stock No. British Ref. No.*	*Name of Part and Description*	*Function*	*Mfr. and Desig. or Standard Type*	*Cont. or Govt. Dwg. or Spec. No.*
L205		DOES NOT EXIST			
L205A		COIL: 3260 turns #34 h. formex wire, ¾" pie, ⅖ crosses per turn, tap at 1620 turns from start, wound over coil form. In T205	L-f circle transf. pri.	RCA	Part of M-254201-501
L205B		COIL: same as L205A less tap. In T205	L-f circle transf. sec.		
N201	2ZK3351	CRYSTAL ASSEMBLY: lucite crystal, 0.060" thick, 3 1/16" O.D., ½" I.D., complete with formed 0.0159" thick brass shield 1" dia. at base x 9/16" high, and necessary wiring	Transparent dial cover	RCA	M-253731-501
N202	2ZK5390-152A/D1	DECALCOMANIA: on paper, Di-Noc type	Dial marking	DN	K-29880-1
N203	2ZA950-387	VISOR: molded black rubber, 2¾" x 3 21/32" O.D., 3 9/32" I.D., Army Type M-387	Hood	PR	M-253040-1
R201	2ZK7296-100M.3	POTENTIOMETER: composition, 100,000 ohms ±10%, special curve, with SPST switch, 0.250" dia. x ¾" shaft, overall dim. ¾" x 1 5/16" dia., treated for tropical use	Receiver gain control	CT Type GC-45	M-422506-7
R202		DOES NOT EXIST			
R203		DOES NOT EXIST			
R203A	3RC20BE391J	RESISTOR: 390 ohms ±5%, ½ watt, composition, insulated pigtail leads, overall dim. ⅜" x 9/64" dia. In T203	H-f shape compensator	AB Type EB	K-82283-149
R204	3RC31AE154K	RESISTOR: 150,000 ohms ±10%, 1 watt, composition, insulated, pigtail leads, overall dim. ¾" x ¼" dia.	High voltage bleeder	SR Type SCI-1	K-251414-88
R205	2ZK7296-250M-.3	POTENTIOMETER: composition, 250,000 ohms ±20%, linear curve, 0.250" dia. x 2 3/16" shaft, overall dim. ½" x 1 5/16" dia. On E207. Treated for tropical use	Brilliance control	CT Type 45	M-422506-4
R206	3RC31AE154K	RESISTOR: same as R204. On E207	High voltage bleeder		
R207	2ZK7296-250M.3	POTENTIOMETER: same as R205. On E207	Focus control		
R208	3RC30BE224K 3RC31AE224K 3RC31AE224K	RESISTOR: 220,000 ohms ±10%, 1 watt, composition, insulated, pigtail leads, overall dim. 29/32" x 5/16" dia. (max.). On E207	High voltage bleeder	AB Type GB SR Type SCI-1 ST Type MB-1	K-99081-90
R209		RESISTOR: same as R208. On E207	High voltage bleeder		
R210	3RC20BE820J 3RC21AE820J 3RC20AE820J	RESISTOR: 82 ohms ±5%, ½ watt, composition, insulated, pigtail leads, overall dim. 21/32" x 7/32" dia. (max.)	Video line termination	AB Type EB SR Type SCI-½ ST Type MB-½	K-99080-133
R211	3RC20BE121K 3RC20AE121K 3RC10BF121K	RESISTOR: 120 ohms ±10%, ¼ watt, composition, insulated, pigtail leads, overall dim. ⅜" x 3/16" dia. (max.)	Cathode video amplifier	AB Type EB SR Type SI-½ ST Type MB-⅓	K-99125-51

R212		DOES NOT EXIST			
R213	3Z7350-12	POTENTIOMETER: Composition, 5000 ohms ±10%, special curve, 0.250" dia. x ¾" shaft, overall dim. ½" x 1 5/16" dia., treated for tropical use	Circle size control	CT Type 45	M-422506-10
R214	3RC20BE271K 3RC20AE271K 3RC10AE271K	RESISTOR: 270 ohms ±10%, ¼ watt, composition, insulated, pigtail leads, overall dim. ⅜" x 3/16" dia. (max.)	Circle size limiting	AB Type EB SR Type SI-½ ST Type MB-⅓	K-99125-55
R215		RESISTOR: same as R214	Cathode circle amplifier		
R216		RESISTOR: same as R126	Circle amplifier screen		
R217	3RC30BE183K 3RC31AE183K 3RC31AE183K	RESISTOR: 18,000 ohms ±10%, 1 watt composition, insulated, pigtail leads, overall dim. 29/32" x 5/16" dia. (max.), part of E209	Video plate load	AB Type GB SR Type SCI-1 ST Type MB-1	K-99081-77
R218		RESISTOR: same as R217, part of E209	Video plate load		
R219		RESISTOR: same as R144, part of E209	Radial deflecting electrode leak		
R220		RESISTOR: same as R144, part of E208	Deflecting plate leak		
R221		RESISTOR: same as R144, part of E208	Deflecting plate leak		
R222	2ZK7296-250M.4	POTENTIOMETER: composition, 250,000 ohms ±20%, special curve, 0.250" dia. x ⅞" shaft, overall dim. ½" x 1 5/16" dia., treated for tropical use	Horiz. centering control	CT Type 47	M-422506-6
R223		RESISTOR: same as R144, part of E208	Deflecting plate leak		
R224		DOES NOT EXIST			
R225	2ZK7296-250M.4	RESISTOR: same as R222	Vert. centering control		
R226		RESISTOR: same as R144, part of E208	Deflecting plate leak		
R227	2Z7287.5	POTENTIOMETER: nichrome wire, 500 ohms ±10%, 2 watts, linear curve, 0.250" x 1 3/16" shaft, overall dim. ⅝" x 1¼" dia.	H-f shape control	CT Type 252	M-253398-32
R228	3RC30BE473K 3RC31AE473K 3RC31AE473K	RESISTOR: 47,000 ohms ±10%, 1 watt, composition, insulated, pigtail leads, overall dim. 29/32" x 5/16" dia. (max.), part of E209	Video screen dropping	AB Type GB SR Type SCI-1 ST Type MB-1	K-99081-82
R229	3RC30BE563K 3RC31AE563K 3RC31AE563K	RESISTOR: 56,000 ohms ±10%, 1 watt, composition, insulated, pigtail leads, overall dim. 29/32" x 5/16" dia. (max.), part of E209	Rec. gain control limiting	AB Type GB SR Type SCI-1 ST Type MB-1	K-99081-83
R230		RESISTOR: same as R229, part of E209	Rec. gain control limiting		
R231		RESISTOR: same as R126. On E207	Brilliance control shunt	AB	
R232		RESISTOR: same as R228	Rec. gain control shunt		
R233		RESISTOR: same as R144. On E207	Focus control shunt		
R234		RESISTOR: same as R159, part of E210	Video line isolating		
R235		RESISTOR: same as R229, part of E210	Relay current limiter		
R236		RESISTOR: same as R229, part of E210	Relay current limiter		
R237		RESISTOR: same as R227	L-f shape control		

TABLE OF PARTS—Continued

NOTE: Parts indicated by a # sign in column 2 are not available as spare parts and are listed for reference purposes only.

MODEL: RADIO SET SCR-718-C

MAJOR ASSEMBLY: INDICATOR I-152-C
MOUNTING FT-455-A

Reference Symbol	*Army Stock No. Navy Stock No. British Ref. No.*	*Name of Part and Description*	*Function*	*Mfr. and Desig. or Standard Type*	*Cont. or Govt. Dwg. or Spec. No.*
R238	3RC31AE151J	RESISTOR: 150 ohms ±5%, 1 watt, mineral wax impregnated, pigtail leads, overall dim. 19/32" x 1/4" dia.	L-f shape compensator	SR	K-871649-7
R239		DOES NOT EXIST			
R240	2Z7270-37	POTENTIOMETER: composition, 25,000 ohms ±20%, linear curve, 0.250" dia. x 11/16" shaft, overall dim. 1/2" x 15/16" dia., treated for tropical use	H-f circle size control	CT Type 45	M-422506-9
R241		RESISTOR: 47 ohms ±10%, 1 watt, composition, insulated, pigtail leads, overall dim. 29/32" x 5/16" dia. (max.)	Pilot light current limiter	AB Type GB SR Type SCI-1 ST Type MB-1	K-99081-46
R242		RESISTOR: same as R152	Low-frequency zero adjustment compensator		
S201		SWITCH: SPST, part of R201	Power switch	CT	Part of M-422506-7
S202	3Z9858-8.47	SWITCH: toggle, DPDT, rated 3 amp. 25 v d-c and 6 amp. 125 v d-c, overall dim. 1 1/4" x 11/16" x 1 3/32"	Scale switch on indicator	HH Cat. 81027-	M-95559-4
T201	2ZK9704-2	TRANSFORMER:	High voltage power transf.	RCA	K-901587-501

Winding	Pri.	Plate	Fil. #1	Fil. #2	Fil. #3
No Load Voltage	115 v 400 cyc.	1439 ±43	2.82 −0.085	7.16 ±0.215	7.16 ±0.215
Full Load Voltage	115 v 400 cyc.	1400	2.5	6.3	6.3
Rated Current	0.2	0.0015 d-c	1.75	1.2	0.6
Hi-pot Voltage	2500				3500

Polarity additive, max. core loss 2.2 watts at 115 v, 400 cycles, induced voltage 300 v, 800 cycles, 5 windings, 7 terminals

Primary: 530 turns 0.010" dia. enameled copper wire wound 67 turns per layer over tube, wire traverse 0.792", insulation between layers 1 turn 0.0015" kraft paper, over coil 2 turns 0.005" kraft and 0.001" acetate, coil build 0.141", d-c resistance 14 ohms at 25°C.

Plate: 6630½ turns 0.0028" dia. enameled copper wire wound 229 turns per layer over false spool, wire traverse 0.797", insulation between layers 1 turn 0.001" kraft paper, over

		coil 2 turns 0.005″ kraft and 0.001″ acetate, coil build, 0.155″, d-c resistance 3040 ohms at 25°C. Fil. #1: 13 turns 0.032″ dia. enameled copper wire single layer wound over plate, wire traverse 0.47″, insulation over coil 2 turns 0.005″ kraft and 0.001″ acetate, coil build 0.046″ Fil. #2: 33 turns 0.0253″ dia. enameled copper wire wound 17 turns per layer over Fil. #1, wire traverse 0.49″, insulation between layers 1 turn 0.005″ kraft paper over coil 2 turns 0.005″ kraft and 0.001″ acetate, coil build 0.073″ Fil. #3: 33 turns 0.0179″ dia. enameled copper wire wound 17 turns per layer over Fil. #2, wire traverse 0.35″, insulation between layers 1 turn 0.005″ kraft paper, over coil 2 turns 0.005″ kraft and 0.001″ acetate, coil build 0.056″ Laminations stacked $1\frac{5}{32}$″ alternately, enclosed in metal can, overall dim. $3\frac{9}{16}$″ x $2\frac{5}{8}$″ x $2\frac{5}{16}$″			
T202	2ZK10007-2	TRANSFORMER: comprised of L202A and L202B, enclosed in metal can, four terminals, overall dim. of can 0.020″ thick aluminum $1\frac{9}{16}$″ x 1.125″ dia., potted for tropical use	H-f zero adj. transf.	RCA	P-255257-513
T203	2Z9627-62	TRANSFORMER: comprised of C203A, C203B, C203C, C203D, L203A, L203B, L203C, L203D, and R203A, enclosed in metal can, ten terminals, overall dim. of can 0.020″ thick aluminum 2.542″ x 1.375″ square, potted for tropical use	H-f circle transf.	RCA	P-255634-512
T204	3C370-60	TRANSFORMER: comprised of L204A and L204B, enclosed in metal can, four terminals, overall dim. of can 0.020″ thick aluminum $1\frac{9}{16}$″ x 1.125″ dia., potted for tropical use	L-f zero adj. transf.	RCA	P-255634-513
T205	3C370-59	TRANSFORMER: comprised of C205A, C205B, C218, C219, L205A and L205B, enclosed in metal can, ten terminals approx. overall dim. of can 0.020″ thick aluminum $3\frac{1}{2}$″ and $1\frac{3}{8}$″ square, potted for tropical use	L-f circle transf.	RCA	M-254201-501
V201		TUBE: half-wave, high-vacuum rectifier, glass, small 4-pin base, heater current 1.75 amp. at 2.5 v a-c	High voltage rectifier	RCA Type JAN-2X2	
V202		TUBE: same as V103	Video amplifier		
V203		TUBE: same as V103	Video amplifier		
V204		TUBE: same as V103	Circle amplifier		
V205		TUBE: cathode ray, green fluorescence, diheptal 12-pin base, heater current 0.6 amp. at 6.3 v a-c or d-c	Cathode ray indicator	RCA Type JAN-3DP1-S2	
X201	2Z8675.15	SOCKET: 4-pin, molded mica filled bakelite base, approx. overall dim. $1\frac{1}{2}$″ x $1\frac{3}{4}$″ dia.. two mounting holes on 1.875″ centers	For V201	AP	K-252406-1
X202	2Z8677.57	SOCKET: same as X103	For V202		
X203	2Z8677.57	SOCKET: same as X103	For V203		
X204	2Z8677.57	SOCKET: same as X103	For V204		
X205	2Z8682.14	SOCKET: molded bakelite, 14-pin	For V205	RCA	M-42685-501
	2Z6721-445-A	SHOCK MOUNT, FT-445-A: fabricated assembly with two 4 lb. and two 2 lb. feet	Mounting for indicator	RCA	T-256212-501

TABLE OF PARTS—Continued

NOTE: Parts indicated by a # sign in column 2 are not available as spare parts and are listed for reference purposes only.

MODEL: RADIO SET SCR-718-C

MAJOR ASSEMBLY: INDICATOR I-152-C
MOUNTING FT-455-A

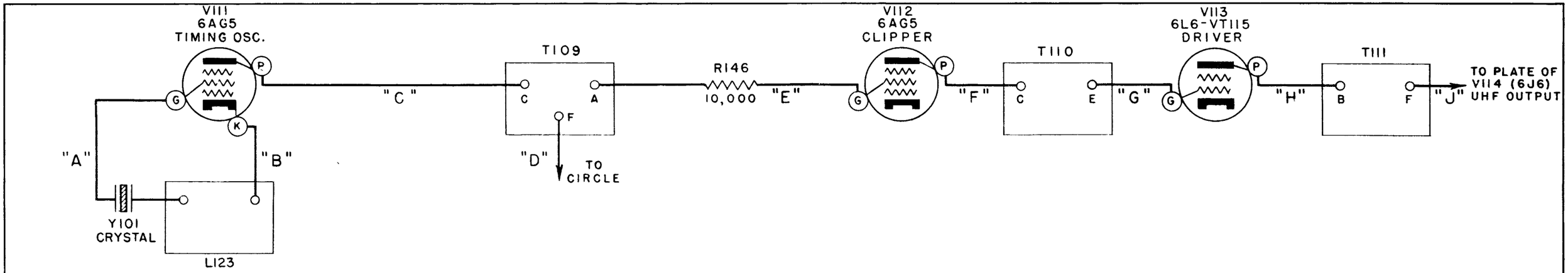
Reference Symbol	*Army Stock No. Navy Stock No. British Ref. No.*	*Name of Part and Description*	*Function*	*Mfr. and Desig. or Standard Type*	*Cont. or Govt. Dwg. or Spec. No.*
	2Z8304.63	TUBE SHIELD ASSEMBLY: fabricated 0.032" thick nickel-iron alloy shield complete with mounting brackets approx. overall dim. 8⅛" x 3½" dia.	For cathode ray tube	RCA	M-253467-502
		MAJOR ASSEMBLY: ANTENNA ★AT-4/ARN-1			
A301	2AK203-4	ANTENNA, ★AT-4/ARN-1: T-shaped, metal, 6⅝ high with cable receptacle	Antenna	RCA	P-255327-501
A302	2AK203-4	ANTENNA: same as A301	Antenna		
		MAJOR ASSEMBLY: MISCELLANEOUS PARTS			
A401		CABLE CLAMP: complete with rubber gasket and fibre washer, for 5/16" max. O.D. cable	For P402	AP Cat. AN-3057-4	M-255073-23
A402	2Z2636-1	CABLE CLAMP: split shell, complete with rubber gasket and fibre friction washer for ⅝" max. O.D. cable	For P401	AP Cat. AN-3057-8	M-253375-4
A403	2Z2636-1	CABLE CLAMP: same as A402	For P403		
P401	2ZK3096-33	CONNECTOR: 7-pin straight cable connector	Indicator to rec.-trans.	AP Cat. AN-3106-16S-1P	M-253476-3
P402	2Z7226-175	CONNECTOR: 2-pin straight cable connector, PL-175	Power input	AP Cat. AN-3106-12S-3S	M-253476-4
P403	2ZK3096-34	CONNECTOR: 7-pin elbow cable connector—female	Power input	AP Cat. AN-3108-16S-1S	M-253474-7
P404		PLUG: single pin cable connector—male Army Type PL-259-A	Transmission line	AP	P-255223-4
P405	2ZK299-359A	ADAPTER: single pin elbow cable connector—male Army Type M-359-A	Transmission line	SL	K-252666-1
P406	2Z7226-259	PLUG: same as P404	Transmission line		
P407	2ZK299-359A	ADAPTER: same as P405	Transmission line		
P408	2Z7226-259	PLUG: same as P404	Transmission line		
P409	2ZK299-359A	ADAPTER: same as P405	Transmission line		
P410	2Z7226-259	PLUG: same as P404	Transmission line		
P411	2ZK299-359A	ADAPTER: same as P405	Transmission line		
	6R57400	TOOL: Allen Wrench, for #8 set screw	For control knob set screw	RCA	K-828505-12 Fin. #010
	6QK353	TOOL: insulated handle with metal screwdriver tip, treated for tropical use	Trimmer adj. tool	RCA	M-86183-503

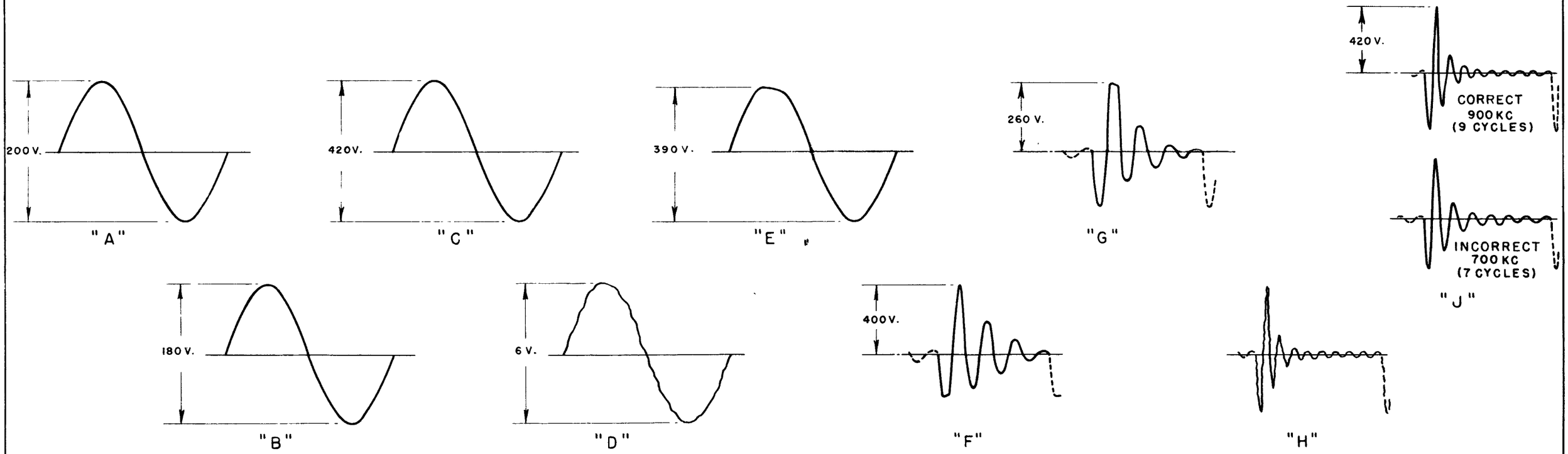
LIST OF MANUFACTURERS

Code	*Name*
AB	Allen Bradley Company
AL	Alden Products Company
AP	American Phenolic Corp.
AV	Aerovox Corporation
BUS	Bussman Mfg. Co.
CD	Cornell Dubilier Electric Corp.
CL	Centralab Div. of Globe Union, Inc.
CM	Clarostat Mfg. Co., Inc.
CN	Cinch Manufacturing Corp.
CT	Chicago Telephone Supply Co.
DM	Drake Mfg. Co.
DN	Di-Noc Mfg. Co.
EJ	E. F. Johnson Co.
EM	Electro-Motive Corp.
ER	Erie Resistor Corp.
GM	G. M. Laboratories, Inc.
HH	Arrow-Hart & Hegeman Elec. Co.
IRC	International Resistance Co.
LF	Littelfuse, Inc.
MM	Micamold Radio Corp.
ML	P. R. Mallory & Co., Inc.
MU	Muter Company
NO	Noma Electric Corp.
PR	Pierce Roberts Rubber Co.
RCA	RCA Victor Division of Radio Corporation of America
SA	Sangamo Electric Co.
SL	Solar Manufacturing Co.
SR	Speer Resistor Corp.
ST	Stackpole Carbon Co.
UC	United Carr Fastener Corp.
TD	Tobe Deutschmann Corp.
WL	Westinghouse Lamp Co. (Mazda)
FWS	F. W. Sickles Co.
GEM	General Electric Mazda Corp.
CSF	Sprague Specialties Co.

SECTION VIII
DRAWINGS

AN 16-40SCR718-3

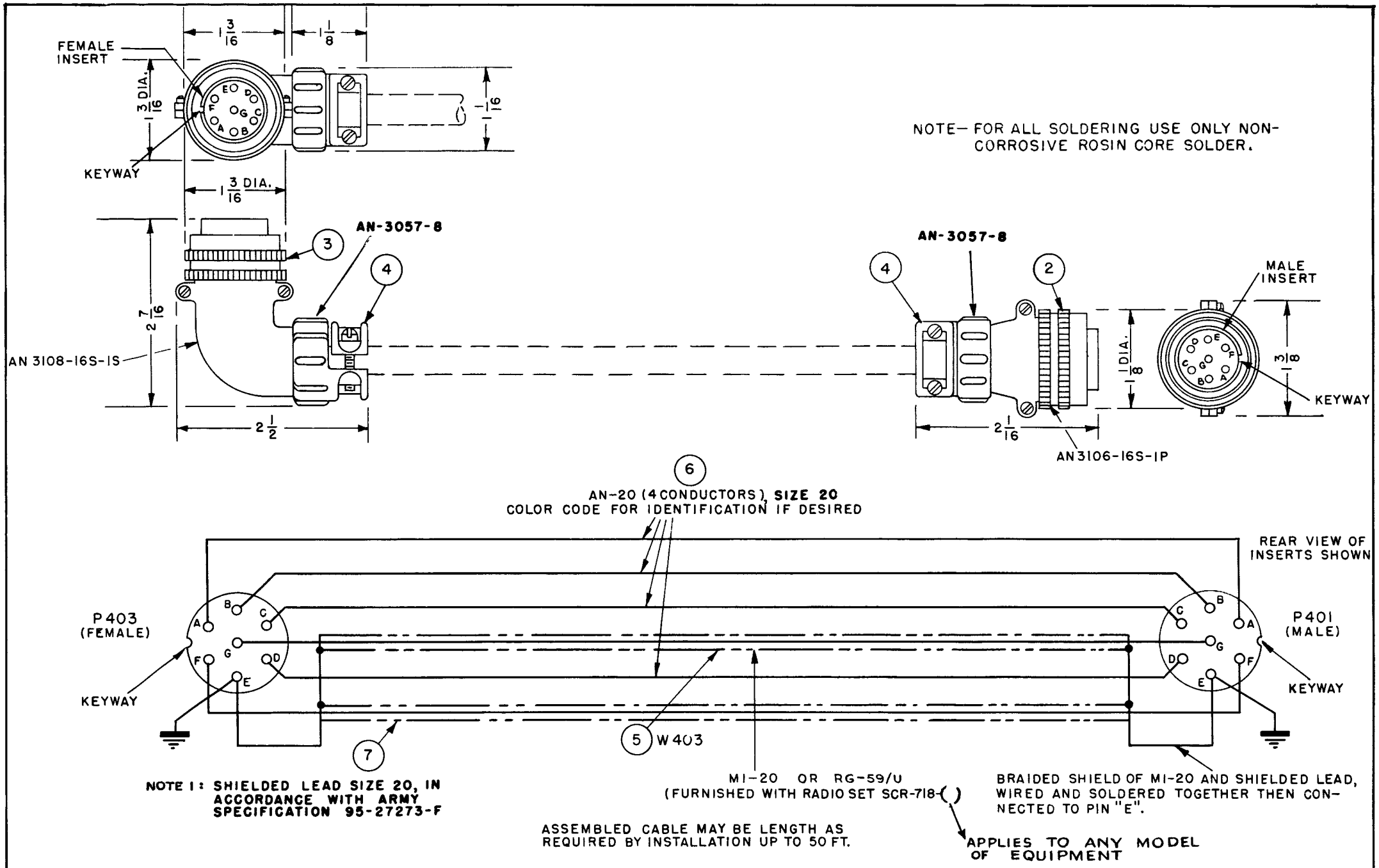




NOTE:- TO EXAMINE WAVE SHAPES SHOWN, USE A CAPACITOR OF NOT OVER 5 MMF. IN SERIES WITH THE HIGH SIDE OF THE OSCILLOSCOPE. GROUND LOW SIDE OF OSCILLOSCOPE TO CHASSIS. TO EXAMINE A,B,C, AND D THE AMPLIFIER IN THE OSCILLOSCOPE MAY BE USED IF IT WILL PASS 100 KILOCYLES. TO EXAMINE F,G,H, AND J CONNECT DIRECTLY TO THE VERTICAL DEFLECTING PLATES OF THE OSCILLOSCOPE.

Figure 8-1. Radio Receiver and Transmitter BC-788-1(*) — Transmitter Wave Forms

AN 16-40SCR718-3

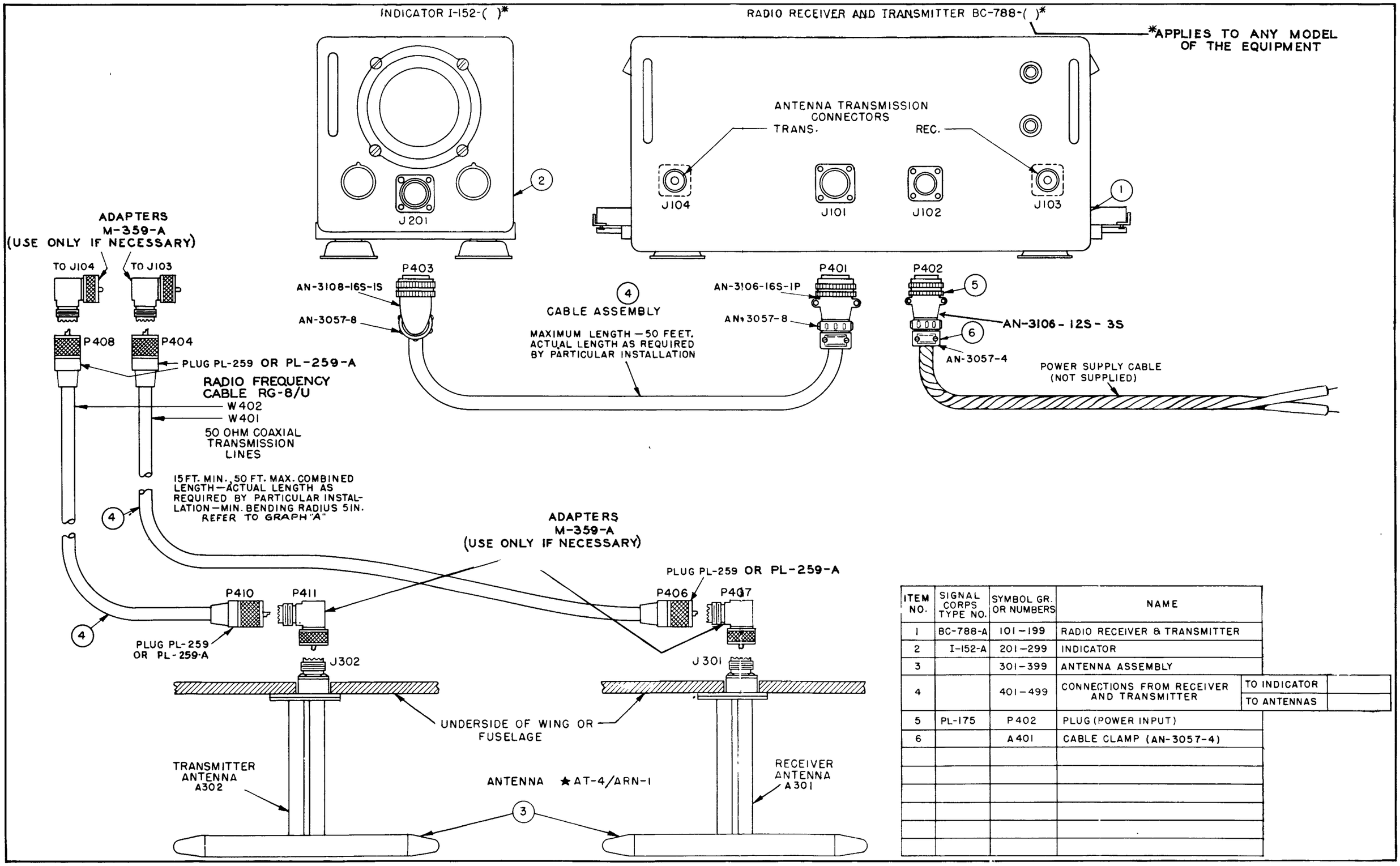


ITEM	SYMBOL	DESCRIPTION	QUANITY
1		RECEIVER & TRANS. TO INDICATOR	X
2	P401	CONNECTOR	1
3	P403	CONNECTOR	1
4	A402,403	CABLE CLAMP	2
5	W403	CABLE MI-20 OR RG/59U	1
6	*	LOW TENSION AIRCRAFT CABLE AN-20	4
7	*	SHIELDED LEAD (SEE NOTE 1)	1

* NOT SUPPLIED

Figure 8-2. Radio Receiver and Transmitter BC-788-(*) —Cable Assembly Diagram

AN 16-40SCR718-3



ITEM NO.	SIGNAL CORPS TYPE NO.	SYMBOL GR. OR NUMBERS	NAME		
1	BC-788-A	101–199	RADIO RECEIVER & TRANSMITTER		
2	I-152-A	201–299	INDICATOR		
3		301–399	ANTENNA ASSEMBLY		
4		401–499	CONNECTIONS FROM RECEIVER AND TRANSMITTER	TO INDICATOR	
				TO ANTENNAS	
5	PL-175	P402	PLUG (POWER INPUT)		
6		A401	CABLE CLAMP (AN-3057-4)		

Figure 8-3. Radio Set SCR-718-(*) — Equipment Cording Diagram

AN 16-40SCR718-3

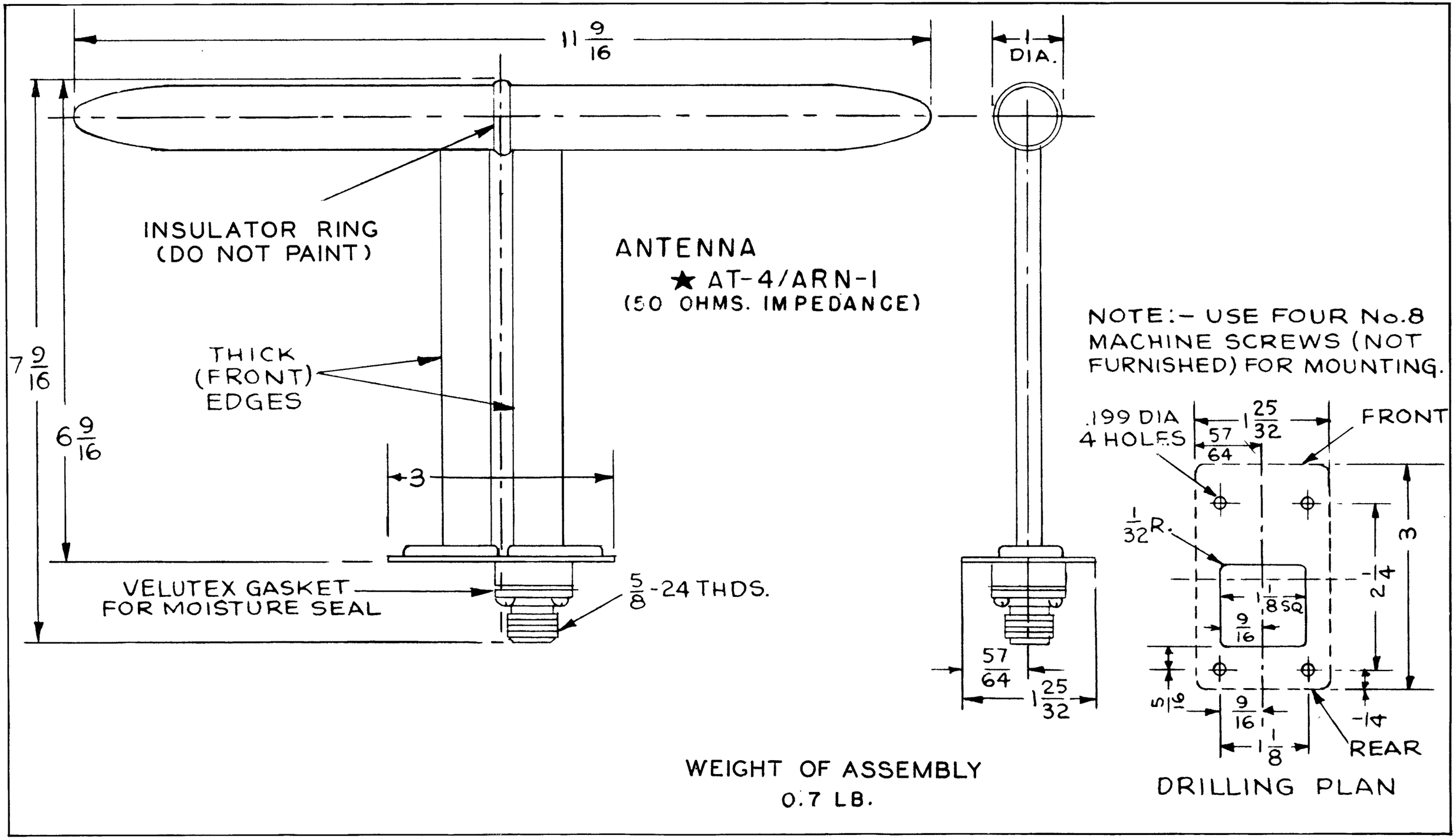


Figure 8-4. Antenna ★AT-4/ARN-1 — Outline Drawing

AN 16-40SCR718-3

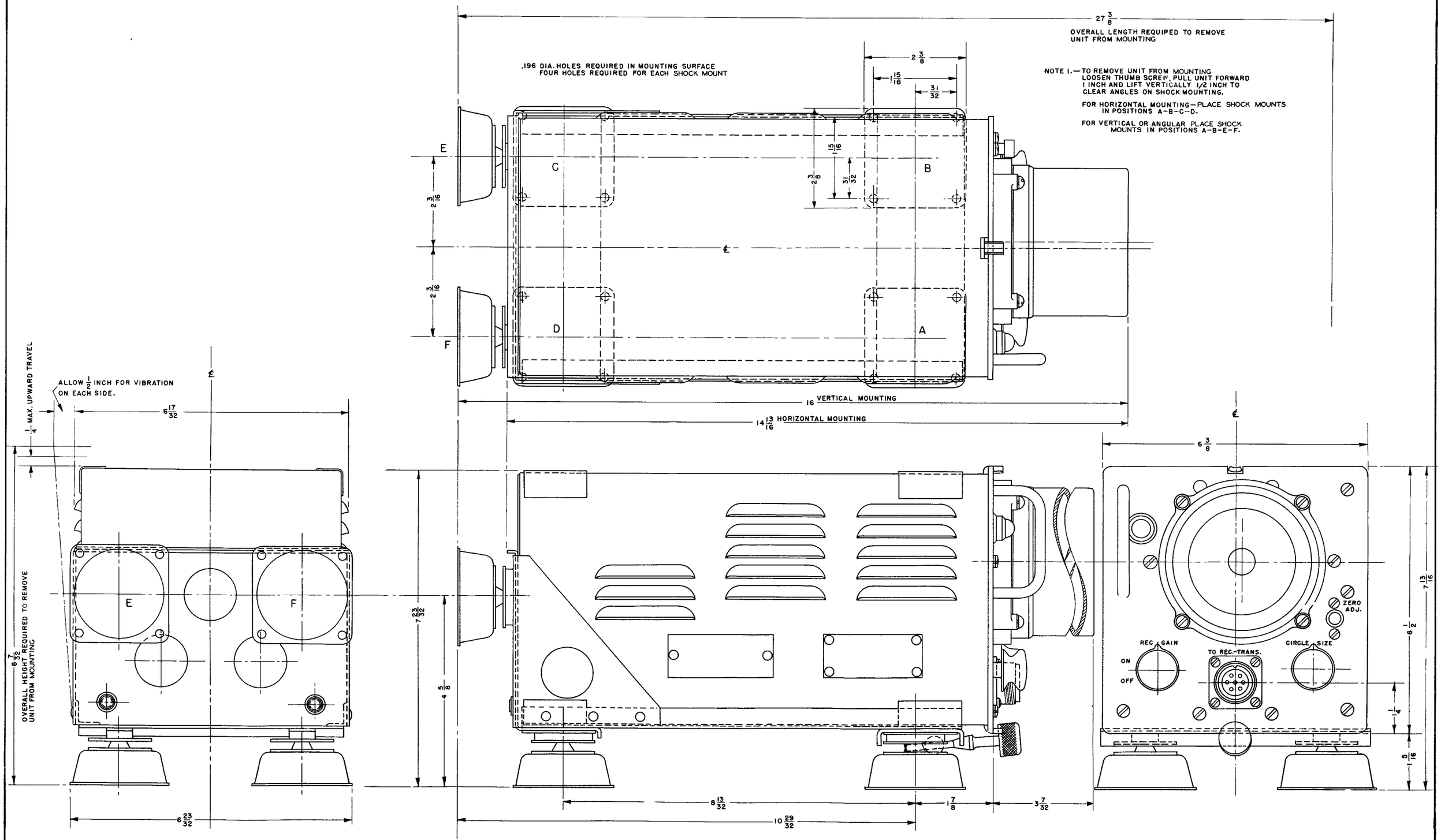


Figure 8-5. Indicator I-152-(*) — Outline Drawing

AN 16-40SCR718-3

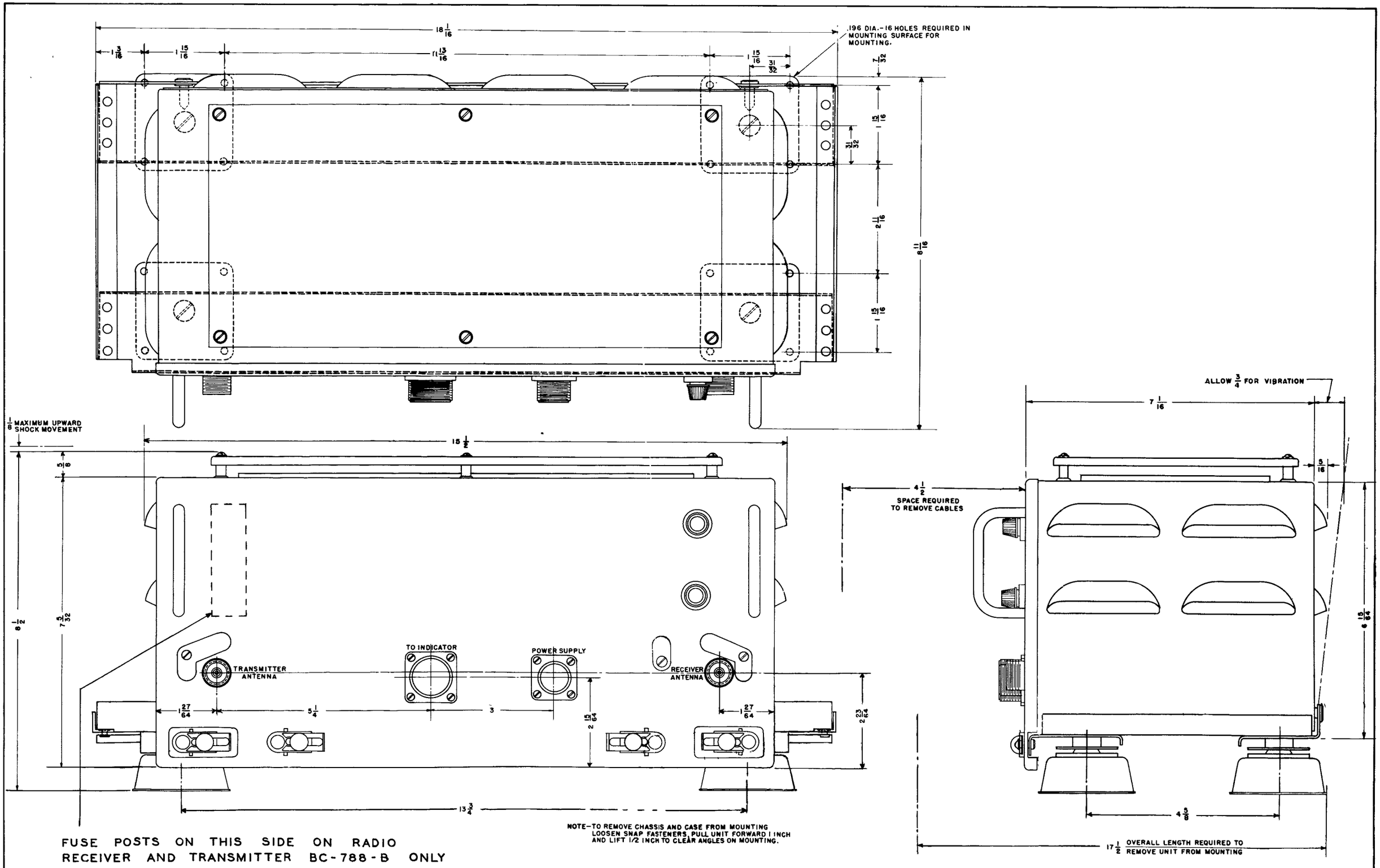
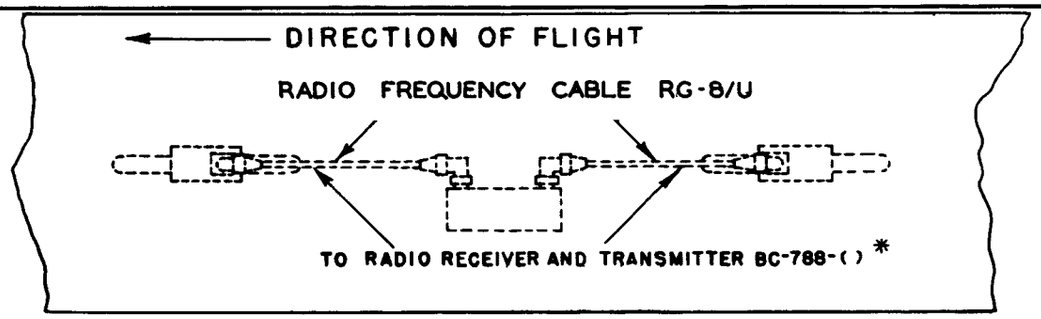


Figure 8-6. Radio Receiver and Transmitter BC-788-(*) — Outline Drawing

AN 16-40SCR718-3



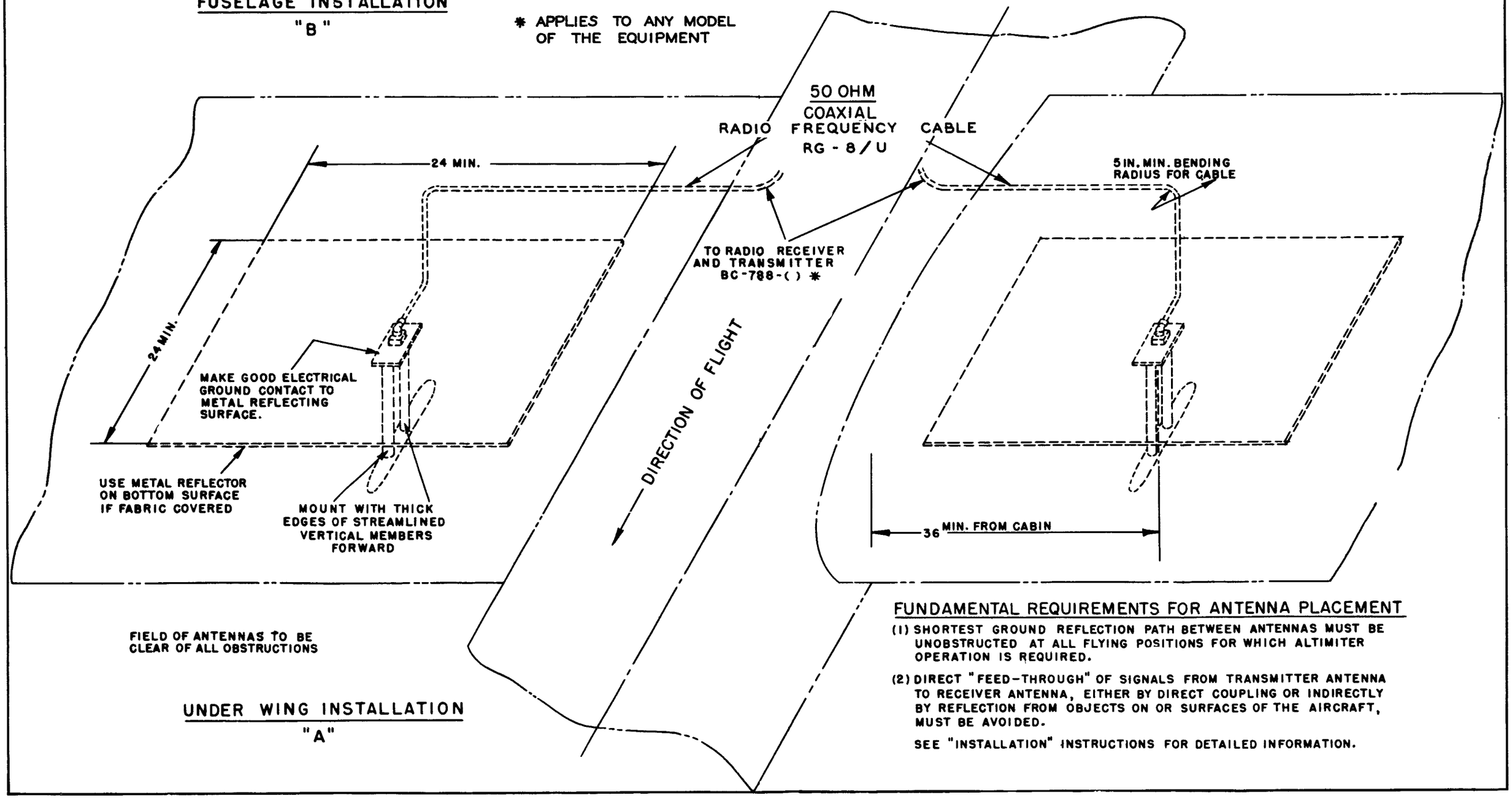
FUSELAGE INSTALLATION
"B"

* APPLIES TO ANY MODEL OF THE EQUIPMENT

NOTE:
FOR UNDER WING MOUNTING — WITH AXES OF TRANSMITTER AND RECEIVER ANTENNAS PARALLEL AS SHOWN IN FIGURE "A", INTERMEDIATE SHIELDING IS REQUIRED AND IS NORMALLY PROVIDED BY METAL FUSELAGE.

THE TWO ANTENNAS WITH AXES IN LINE CAN ALSO BE INSTALLED AS IN FIGURE "B" UNDERNEATH FUSELAGE APPROX. 7 FT. APART, APPROX. PARALLEL TO AXIS OF FUSELAGE. THIS METHOD DOES NOT REQUIRE SHIELDING AND IS RECOMMENDED IN ALL CASES WHEN FUSELAGE IS FABRIC COVERED.

SEE ANTENNA INSTALLATION INSTRUCTIONS



UNDER WING INSTALLATION
"A"

FUNDAMENTAL REQUIREMENTS FOR ANTENNA PLACEMENT

(1) SHORTEST GROUND REFLECTION PATH BETWEEN ANTENNAS MUST BE UNOBSTRUCTED AT ALL FLYING POSITIONS FOR WHICH ALTIMITER OPERATION IS REQUIRED.

(2) DIRECT "FEED-THROUGH" OF SIGNALS FROM TRANSMITTER ANTENNA TO RECEIVER ANTENNA, EITHER BY DIRECT COUPLING OR INDIRECTLY BY REFLECTION FROM OBJECTS ON OR SURFACES OF THE AIRCRAFT, MUST BE AVOIDED.

SEE "INSTALLATION" INSTRUCTIONS FOR DETAILED INFORMATION.

Figure 8-7. Radio Set SCR-718-(*) — Antenna Installation Diagram

AN 16-40SCR718-3

WIRING AND ASSEMBLY INSTRUCTIONS

1. Cut bulk Radio Frequency Cable RG-8/U (Item 2) to lengths required for the particular installation (see equipment diagram, Figure 5-3). Trim both ends of each cable as shown in Figure A. Hot tin dip inner conductor extensions and tin outer conductor braid to within 1/8 inch from Vinylite jacket. Avoid surplus solder and excessive heating of copolene dielectric and Vinylite jacket. Swage tinned braid, if necessary, to 11/32 diameter maximum.

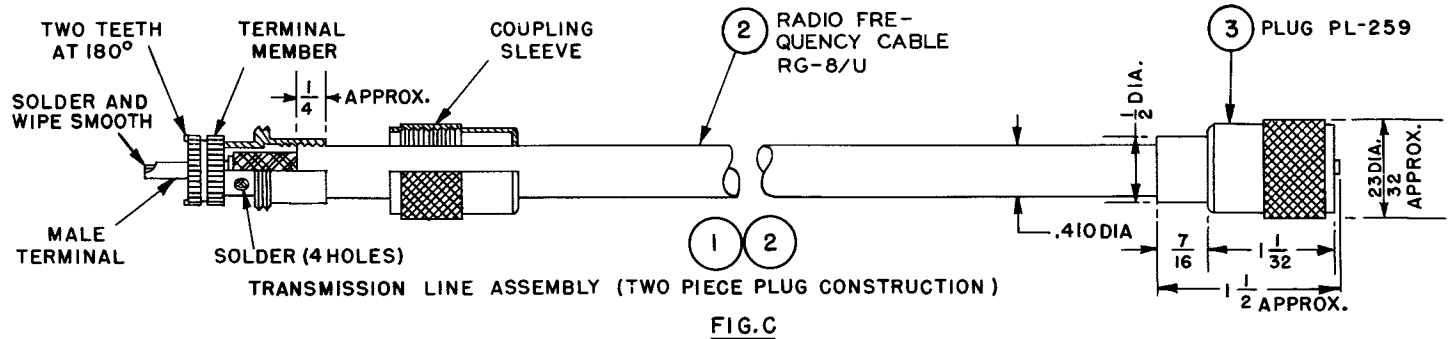
2. Disassemble plugs (Item 3). If plugs are of three-piece construction, PL-259-A slip tapered sleeve and coupling nut over each end of cables in the relation shown at left in Figure B. If plugs are of two-piece construction slip coupling sleeve over cable with knurled portion toward end of cable, as shown at left in Figure C.

3. Feed ends of cable into plug terminal members so that end of inner conductor is approximately flush with tip of hollow terminal and tinned braid extends slightly beyond the four soldering holes in the neck, as shown in Figures B and C. Both types of plugs have internal threads which engage the Vinylite outer jacket of the cable. The type shown in Figure B is slotted to permit expansion for insertion of cable. The type shown in Figure C is not slotted and must be turned so as to thread onto Vinylite jacket. At least ¼ inch of jacket should enter threaded portion of terminal member.

4. Using non-corrosive flux or rosin core solder, carefully solder end of inner conductor to terminal tip and solder braid to neck of terminal member at four holes. Avoid excess solder and remove all solder on outer periphery of hollow pin terminal to prevent mating interference. Snip off conductor extension (if any) flush with tip of terminal.

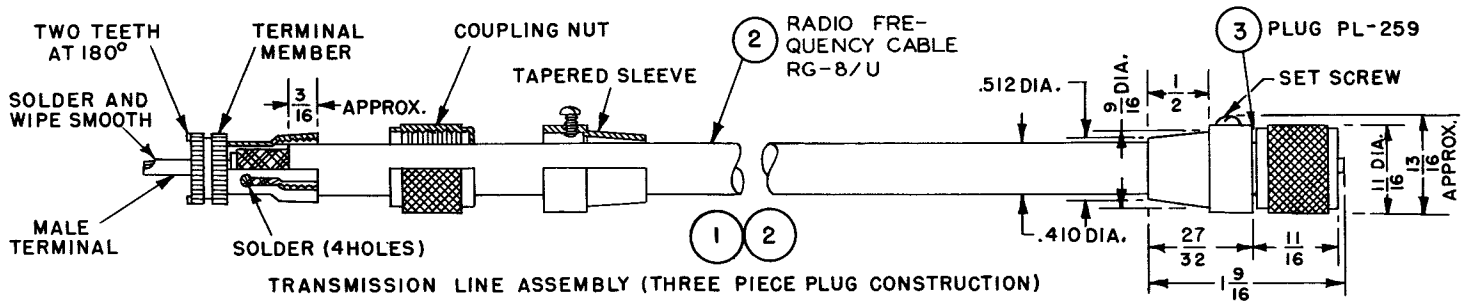
5. Reassemble plugs as shown at right of figures B and C. If plug is of three-piece construction (Figure 8), draw tapered sleeve over slotted member and tighten setscrew firmly against solid metal portion of neck, after adjusting for minimum clearance which will allow coupling nut to turn freely, if plug is of two-piece construction (Figure C), thread knurled coupling sleeve onto terminal member until threads disengage.

6. The elbow adapters (Item 4) may, if absolutely necessary, be interposed between transmission lines and receptacles J103 and J104 of receiver and transmitter and J301 and J302 of antennas, as indicated on Dwg. P-255-3, or transmission lines may be connected to receptacles directly. If adapters are to be used, couple female end of adapter to male plug at each end of transmission lines. Make sure that teeth at front rim of plugs are engaged with notches at rim of adapter before coupling nuts are firmly tightened.



TRANSMISSION LINE ASSEMBLY (TWO PIECE PLUG CONSTRUCTION)

FIG. C



TRANSMISSION LINE ASSEMBLY (THREE PIECE PLUG CONSTRUCTION)

FIG. B

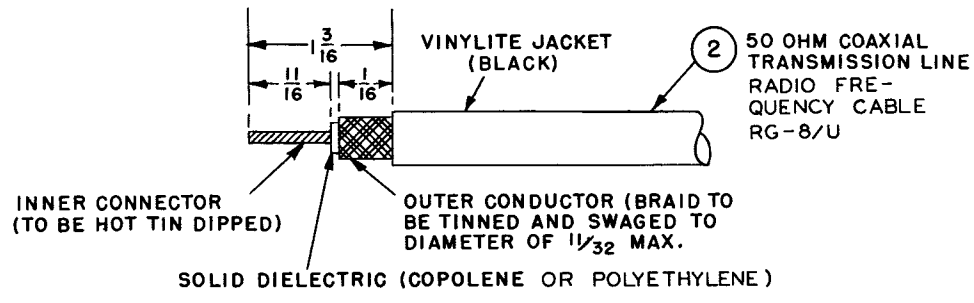


FIG. A

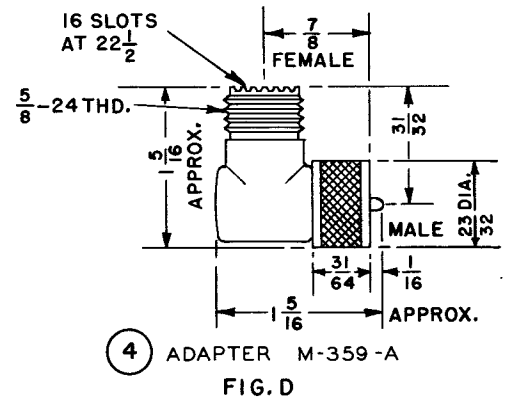


FIG. D

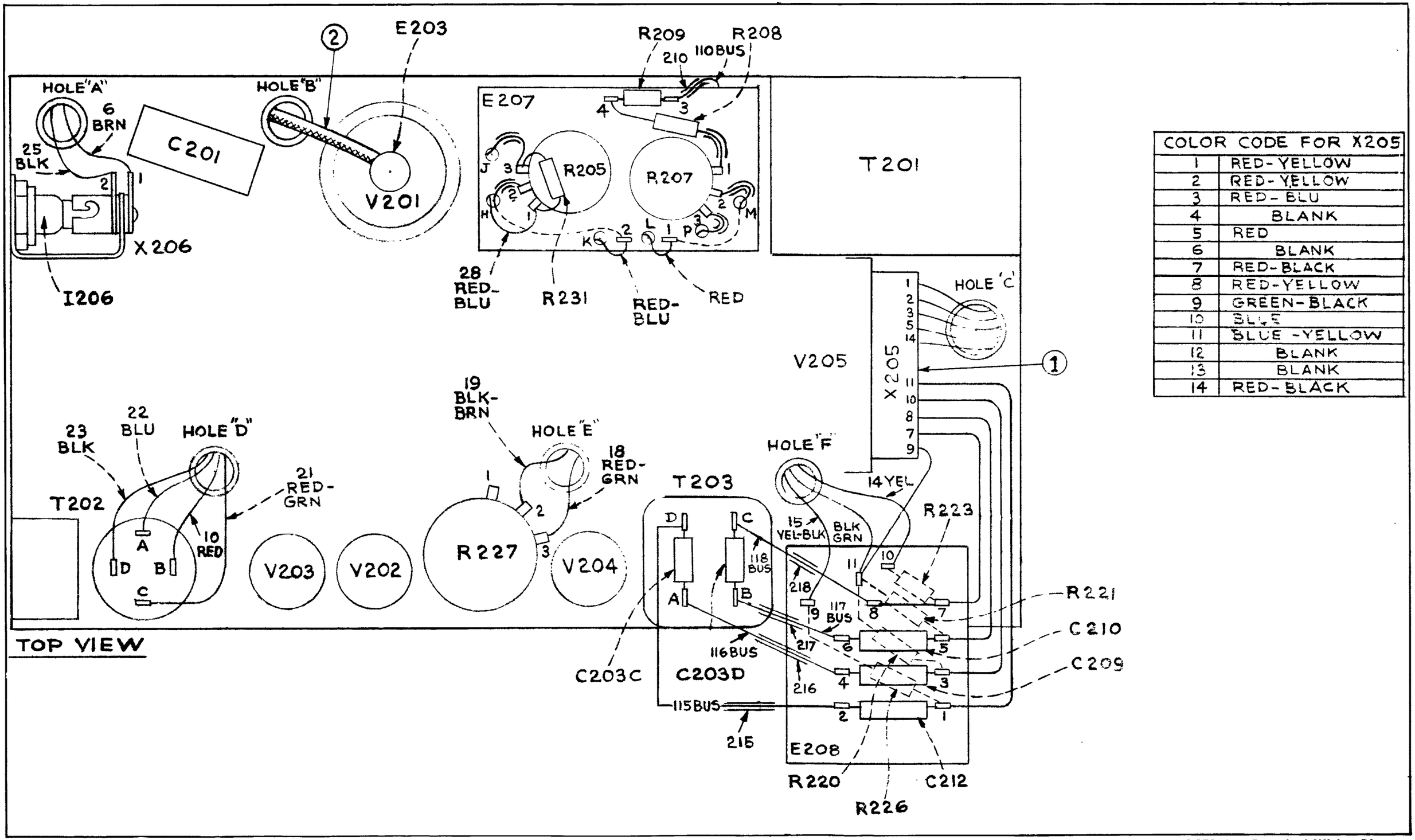
TRANSMISSION LINE MATERIALS AND FITTINGS—FURNISHED IN BULK

Item No.	All Symbol Designations	Description	Signal Corps Nomenclature	Unit Weight (Pounds)	Quan.
1	CA-401, 402	Antenna Transmission Line Assembly			x
2	W-401, 402	50 Ohm Coaxial Transmission Line	RF Cable RG-8 U	0.10 Ft.	*
3	P-404, 406, 408, 410	Plug	Plug PL-259 or Plug PL-259-A	0.06	2
4	P-405, 407, 409, 411	Adapter	M-359-A	0.08	2

* Furnished in continuous lengths (not less than 60 feet +2 −0 or multiples thereof).

Figure 8-8. Radio Set SCR-718-(*) — R-F Cable Assembly Drawing

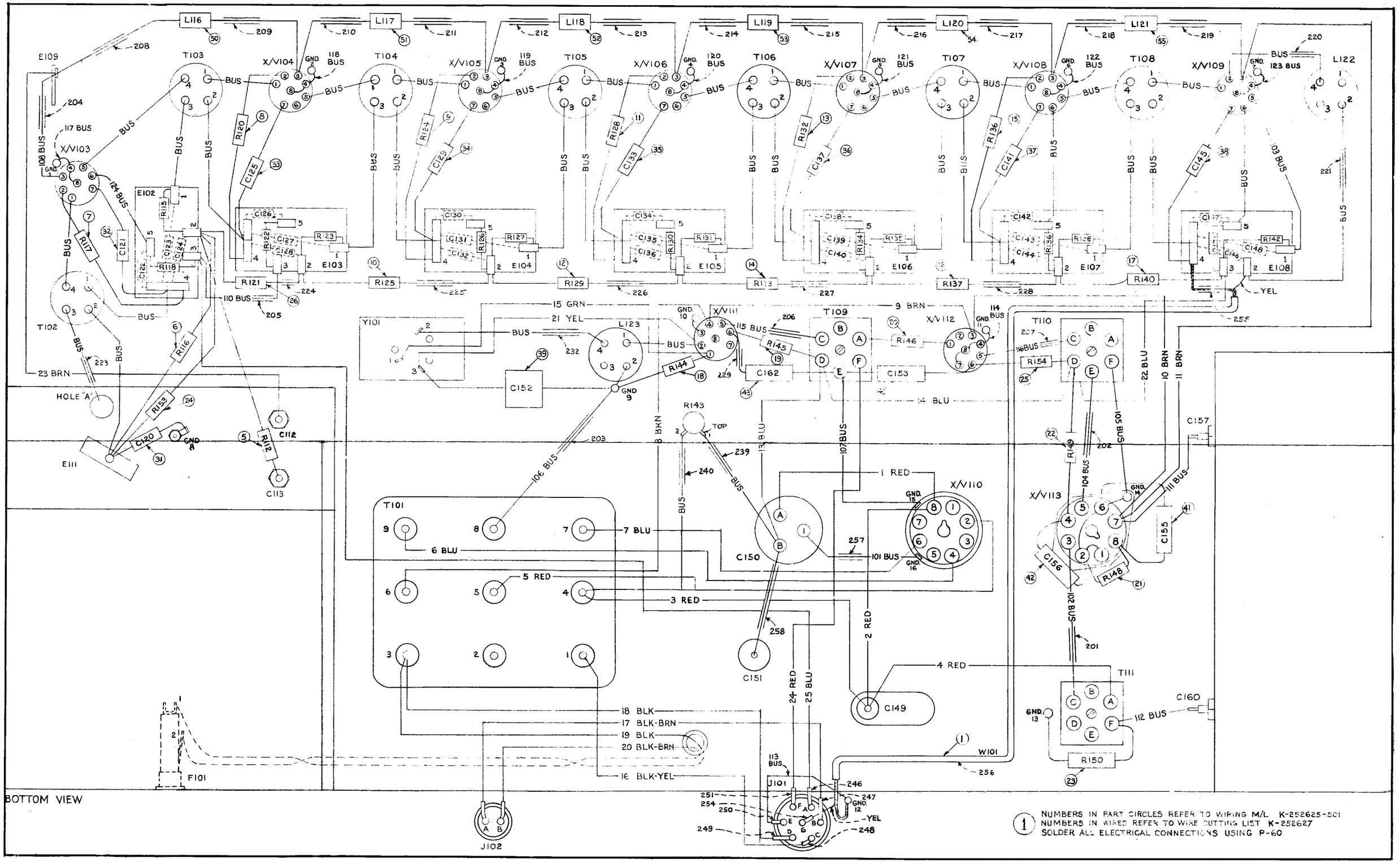
AN 16-40SCR718-3



COLOR CODE FOR X205	
1	RED-YELLOW
2	RED-YELLOW
3	RED-BLU
4	BLANK
5	RED
6	BLANK
7	RED-BLACK
8	RED-YELLOW
9	GREEN-BLACK
10	BLUE
11	BLUE-YELLOW
12	BLANK
13	BLANK
14	RED-BLACK

Figure 8-9. Indicator I-152-A — Practical Wiring Diagram

AN 16-40SCR718-3



(1) NUMBERS IN PART CIRCLES REFER TO WIRING M/L K-252625-501
NUMBERS IN WIRES REFER TO WIRE CUTTING LIST K-252627
SOLDER ALL ELECTRICAL CONNECTIONS USING P-60

Figure 8-19. Radio Receiver and Transmitter BC-788-A — Practical Wiring Diagram

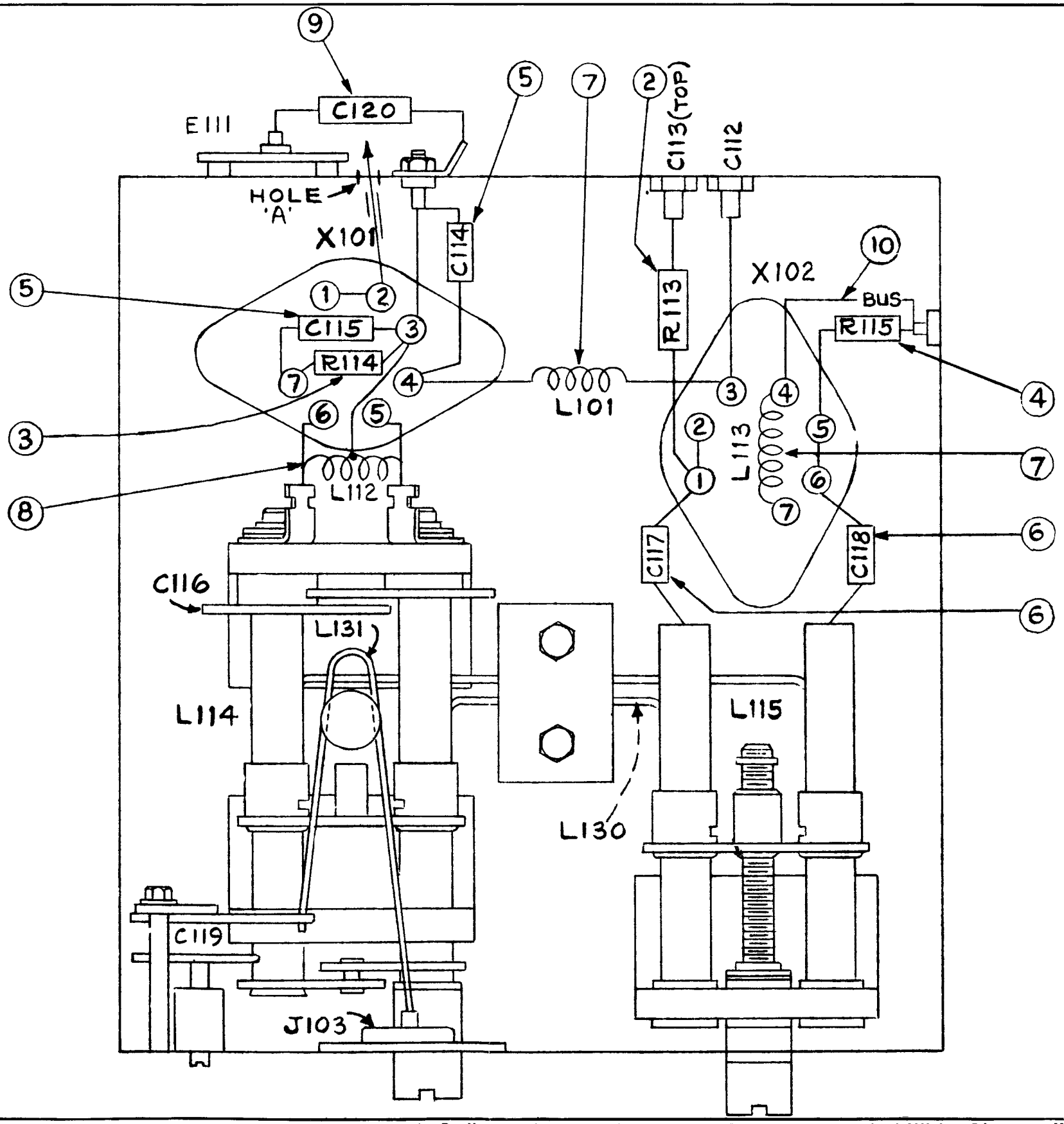


Figure 8-11. Radio Receiver and Transmitter BC-788-A — Practical Wiring Diagram, UHF Receiver Unit

AN 16-40SCR718-3

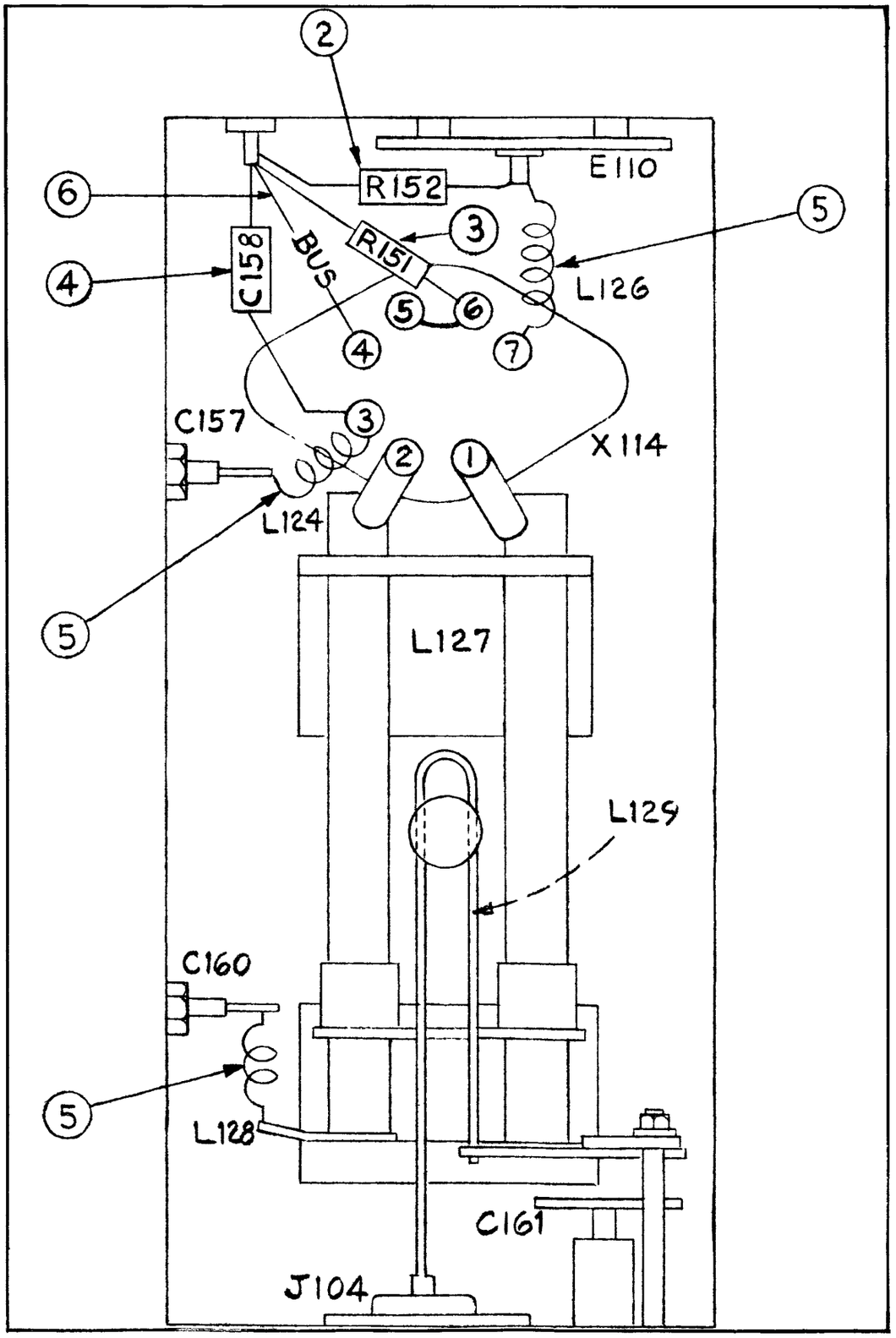
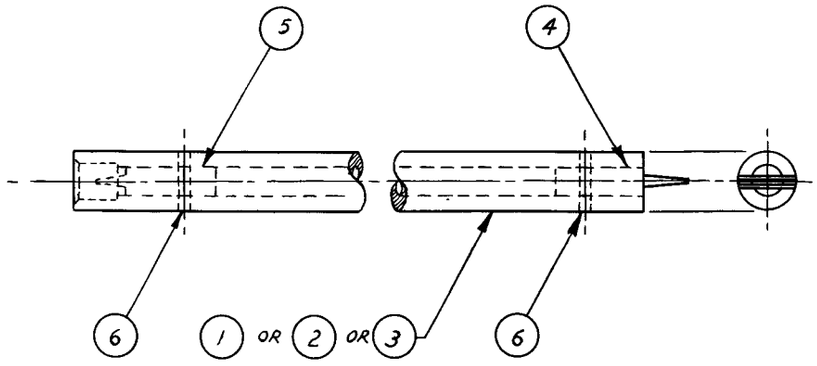


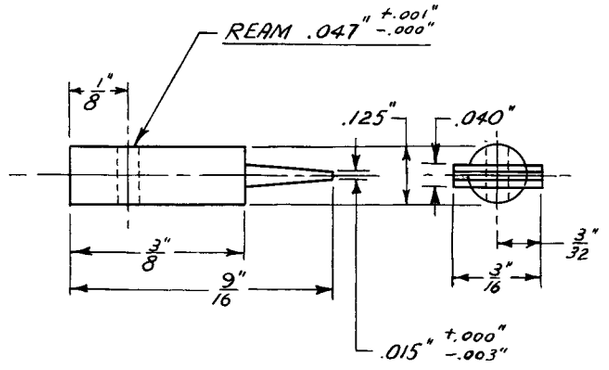
Figure 8-12. Radio Receiver and Transmitter BC-788-A — Practical Wiring Diagram, UHF Transmitter Unit

AN 16-40SCR718-3



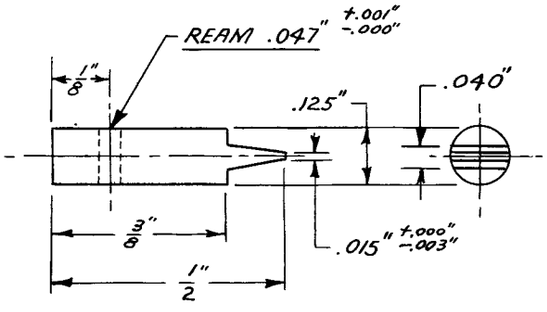
ASSEMBLY

SCALE:- 2"=1"



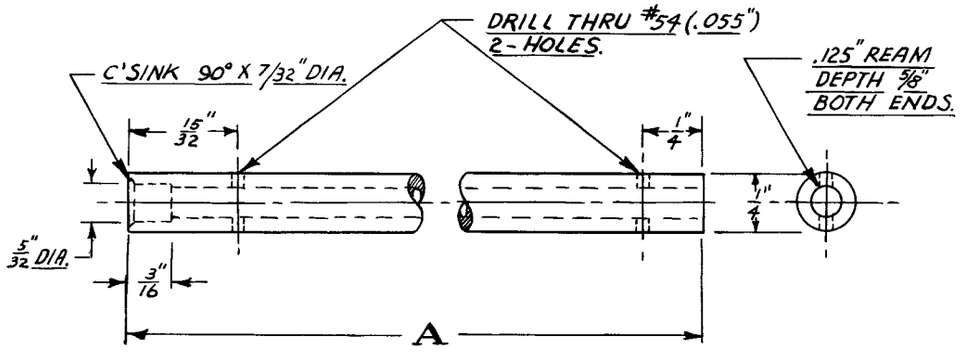
4 SCREW DRIVER POINT
STEEL - S.A.E. SPEC. #1020; OR EQUIVALENT.
1-REQ'D. CASE HARDEN

SCALE:~ 4"=1"



5 SCREW DRIVER POINT
STEEL - S.A.E. SPEC.#1020; OR EQUIVALENT
1-REQ'D. CASE HARDEN

SCALE:~ 4"=1"



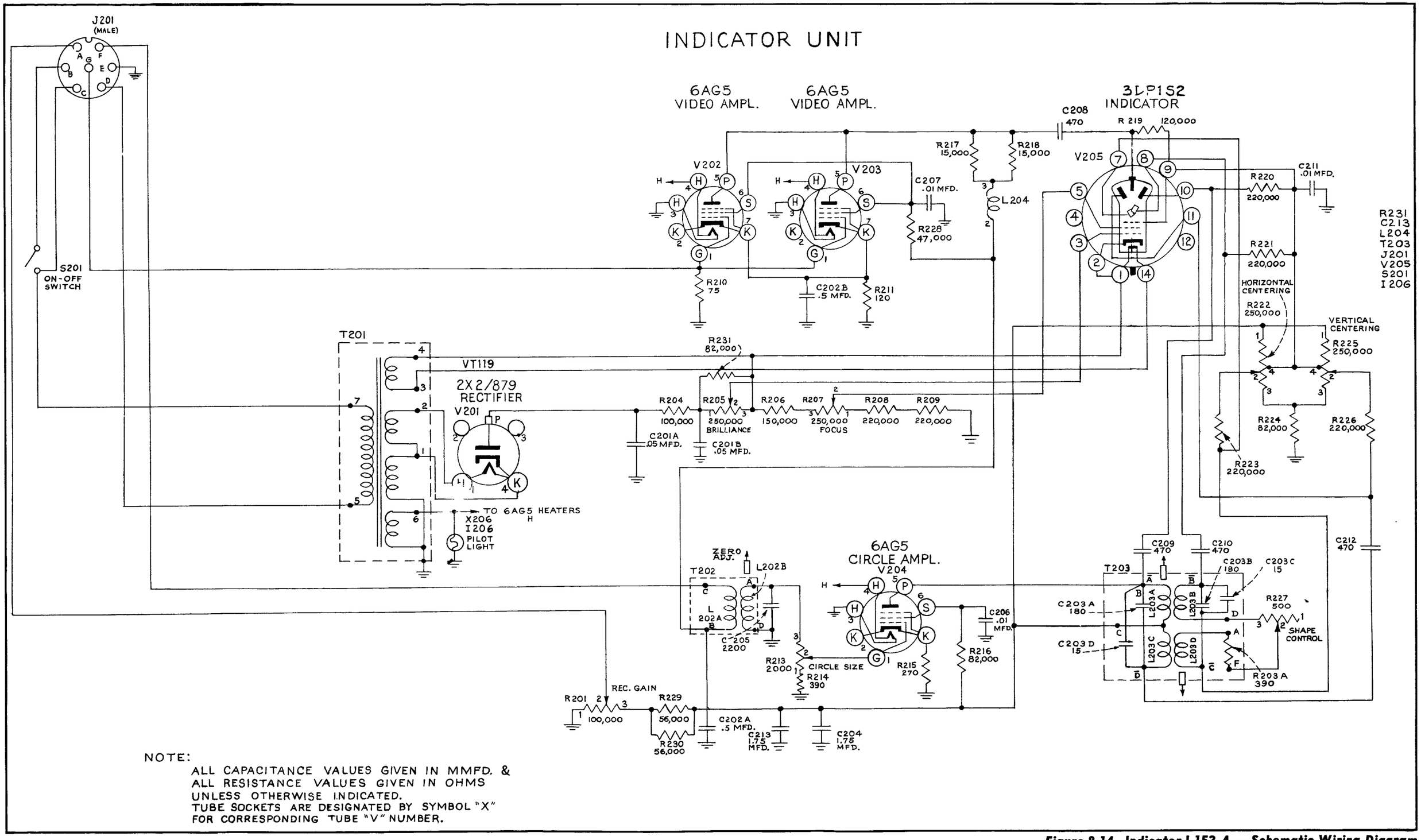
ITEM	A
1	8"
2	6"
3	3½"

3
2
1 HANDLE
GREY BONE FIBER TUBING - 1/4" O.D. X 1/16" WALL
SEE MATERIAL LIST.

SCALE:~ 2"=1"

Figure 8-13. Radio Set SCR-718-(*) — Trimmer Adjusting Tools

AN 16-40SCR718-3



NOTE:

ALL CAPACITANCE VALUES GIVEN IN MMFD. &
ALL RESISTANCE VALUES GIVEN IN OHMS
UNLESS OTHERWISE INDICATED.
TUBE SOCKETS ARE DESIGNATED BY SYMBOL "X"
FOR CORRESPONDING TUBE "V" NUMBER.

Figure 8-14. Indicator I-152-A — Schematic Wiring Diagram

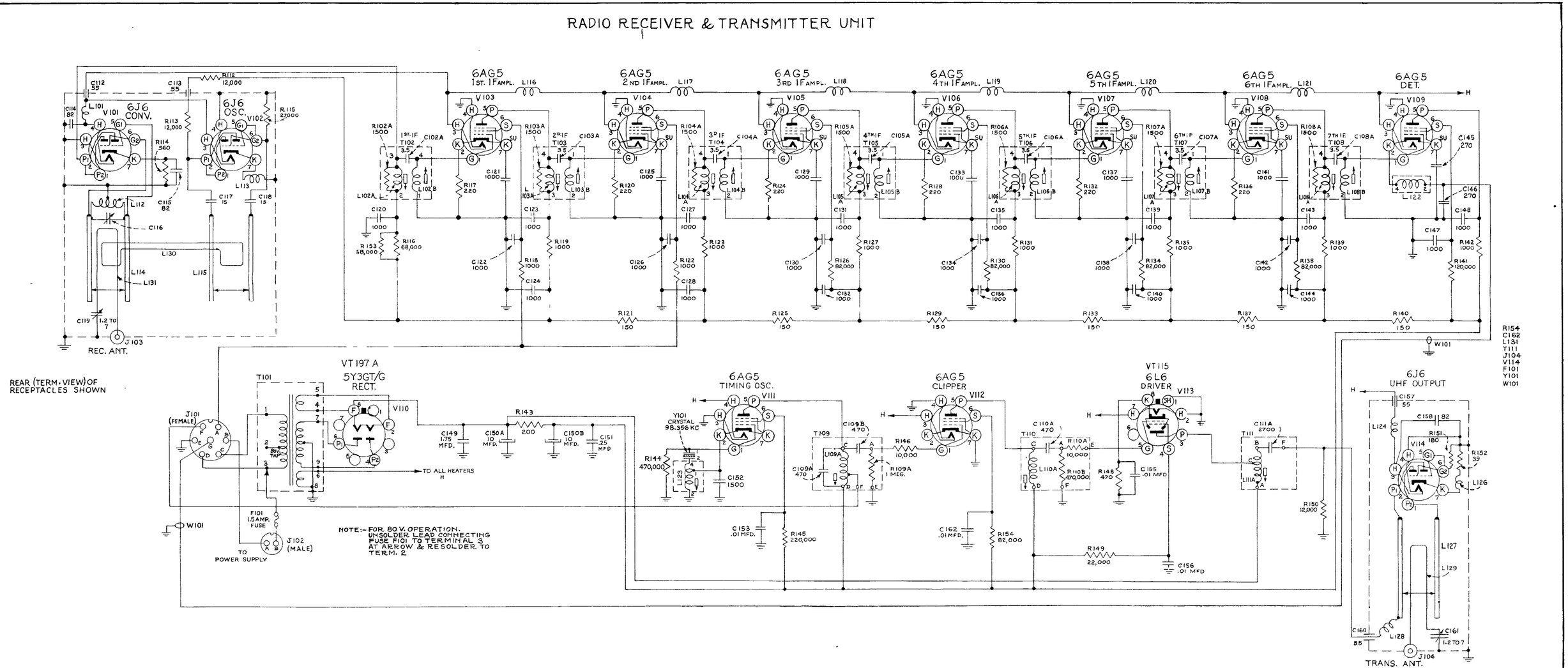


Figure 8-15. Radio Receiver and Transmitter BC-788-A — Schematic Wiring Diagram

AN 16-40SCR718-3

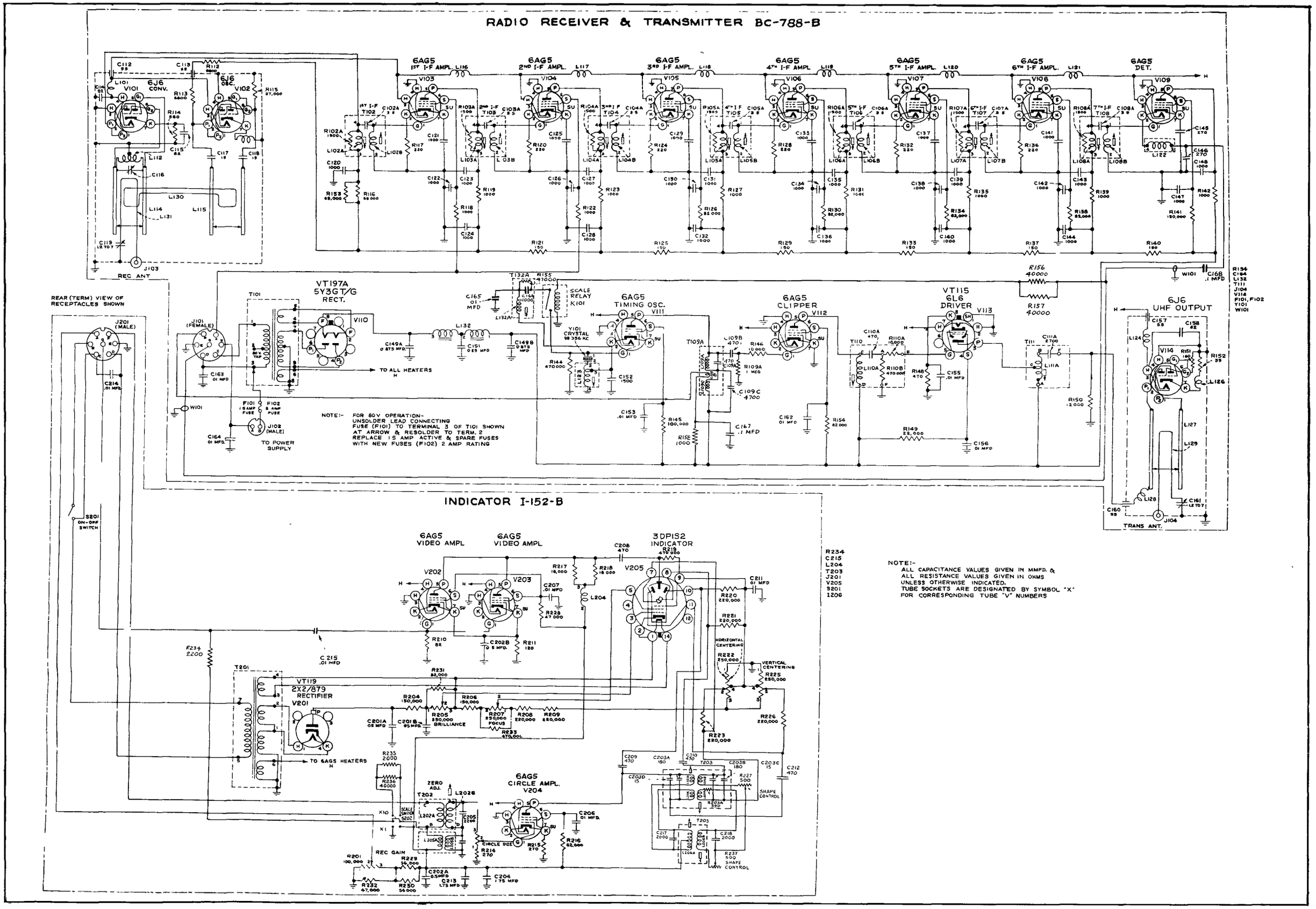


Figure 8-16. Radio Set SCR-718-B — Schematic Wiring Diagram

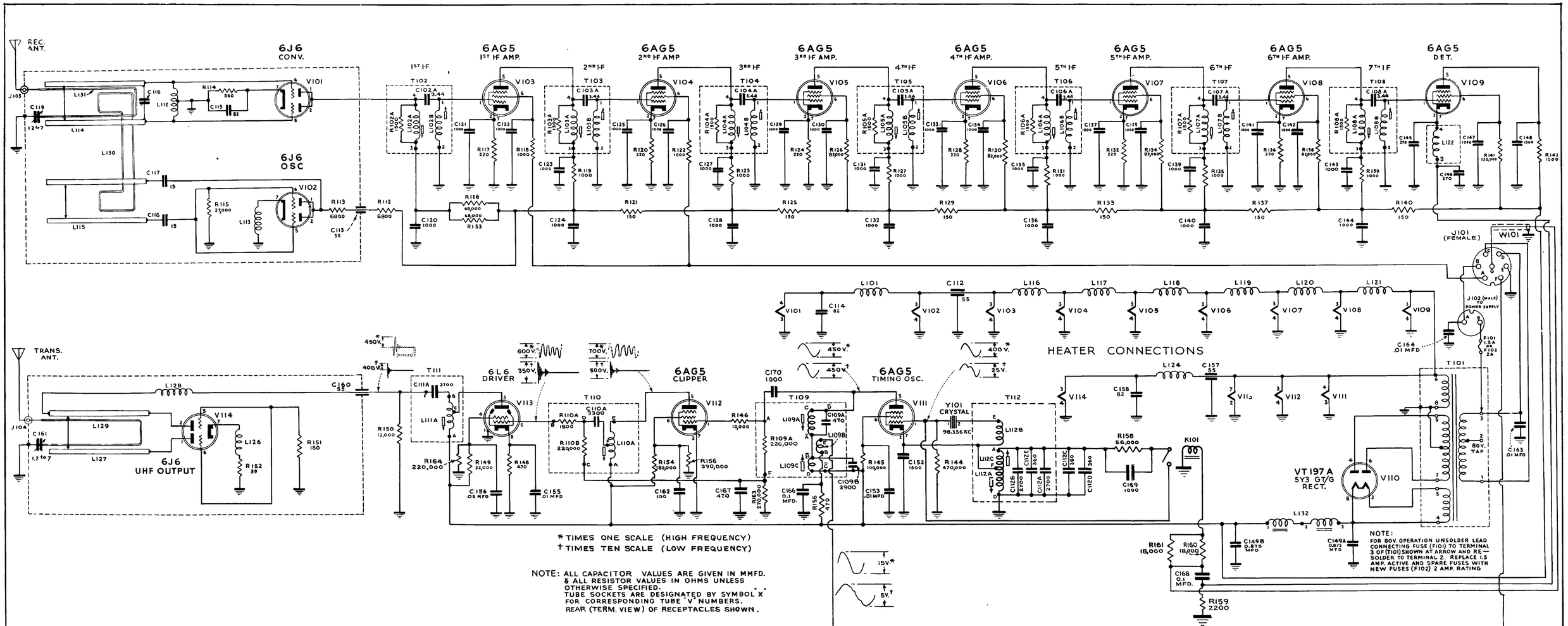


Figure 8-17. Radio Receiver and Transmitter BC-788-C — Schematic Diagram

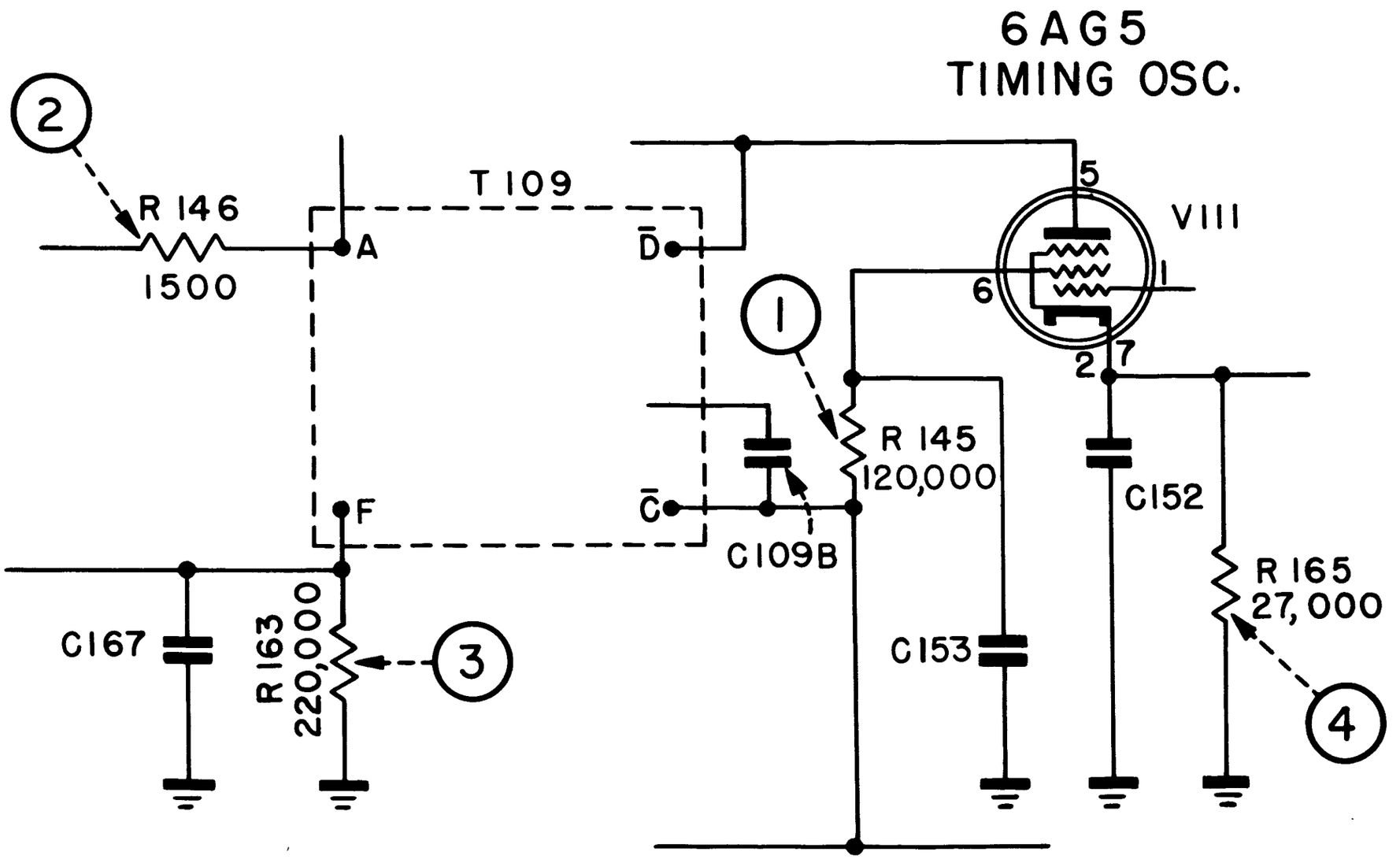


Figure 8-17A. Radio Receiver and Transmitter BC-788-C—Schematic Diagram, Modification M_1

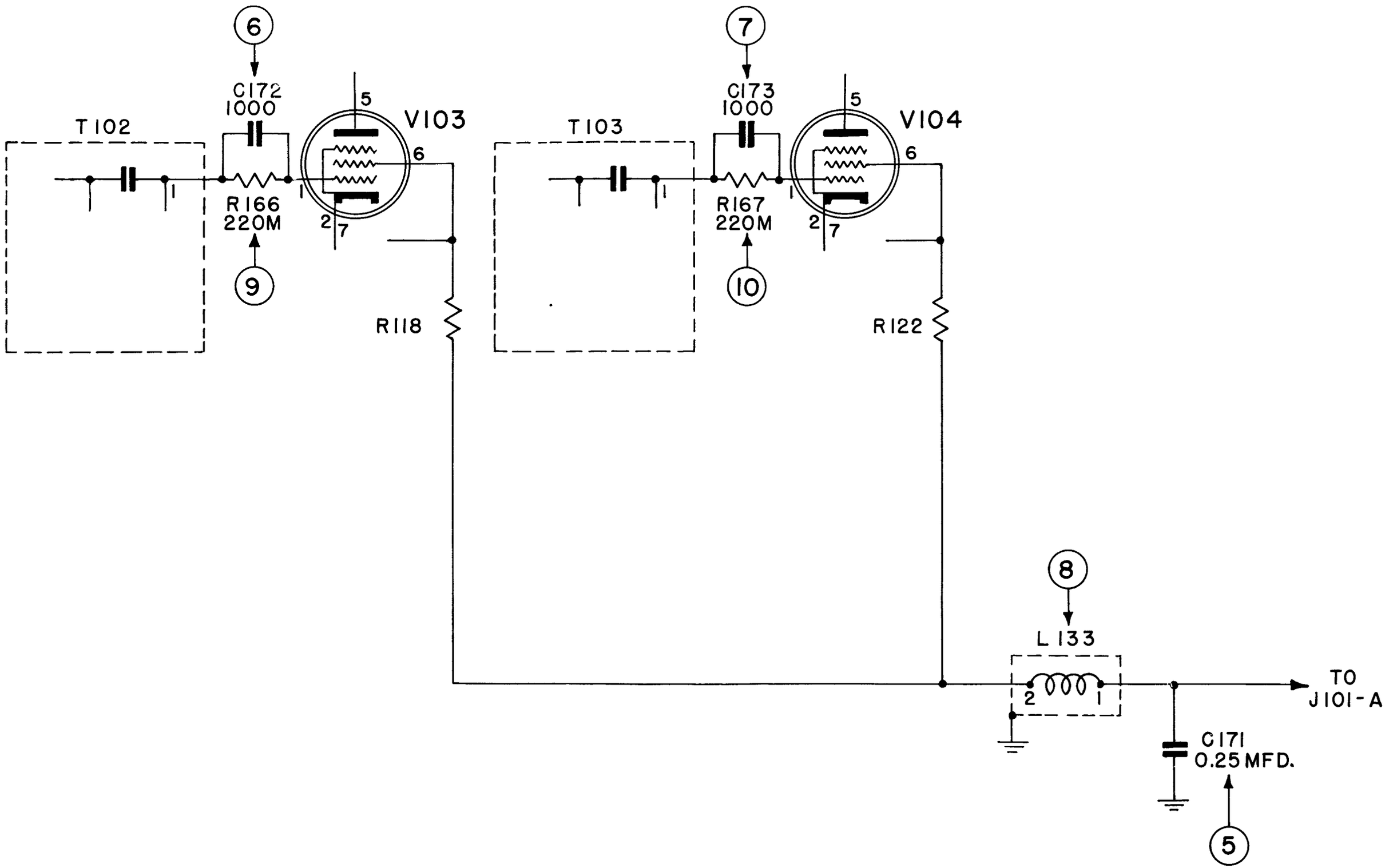
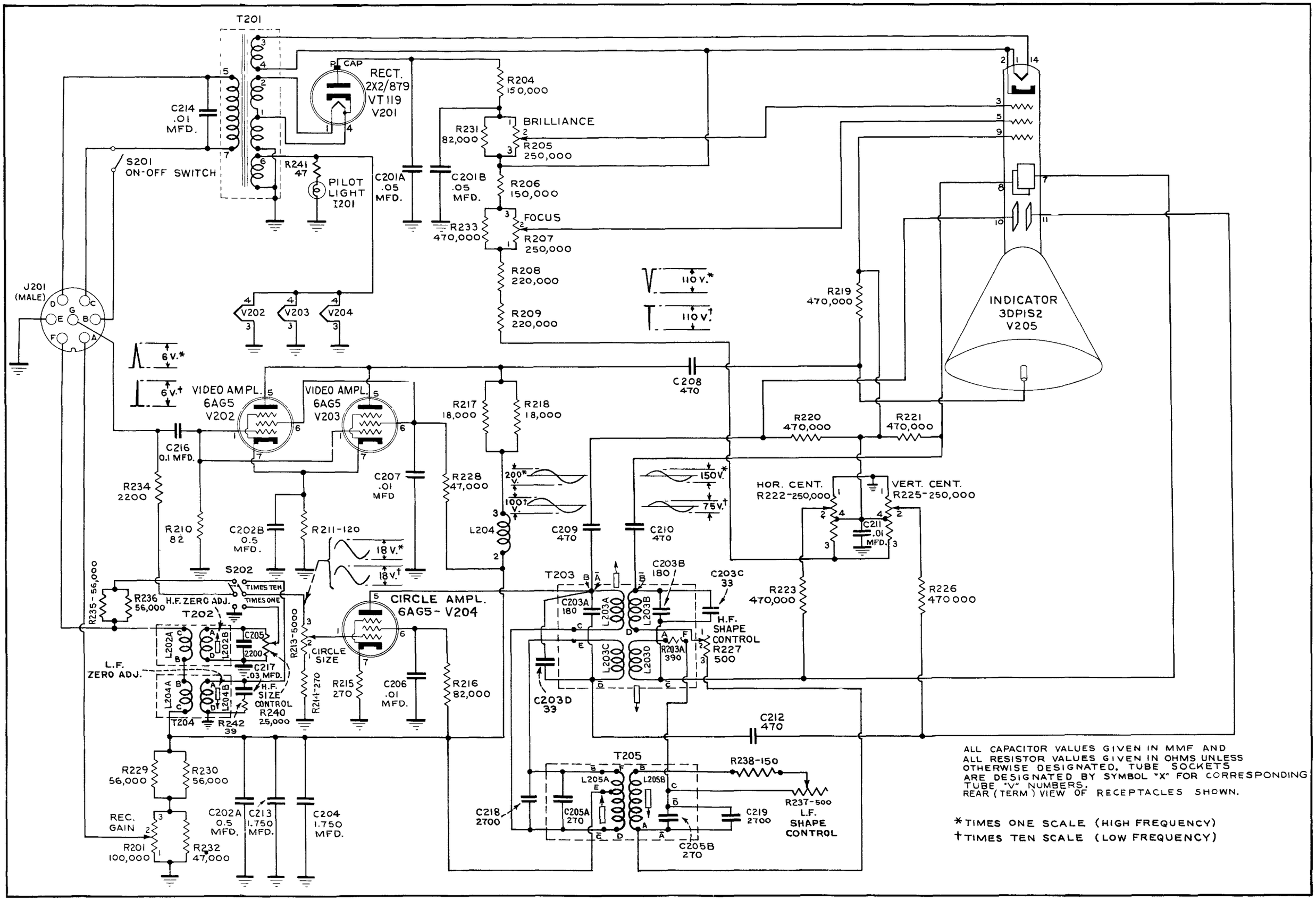


Figure 8-17B. Radio Receiver and Transmitter BC-788-C—Schematic Diagram Modifications

AN 16-40SCR718-3



ALL CAPACITOR VALUES GIVEN IN MMF AND ALL RESISTOR VALUES GIVEN IN OHMS UNLESS OTHERWISE DESIGNATED. TUBE SOCKETS ARE DESIGNATED BY SYMBOL "X" FOR CORRESPONDING TUBE "V" NUMBERS.
REAR (TERM) VIEW OF RECEPTACLES SHOWN.

*TIMES ONE SCALE (HIGH FREQUENCY)
†TIMES TEN SCALE (LOW FREQUENCY)

Figure 8-18. Indicator I-152-C — Schematic Diagram

AN 16-40SCR718-3

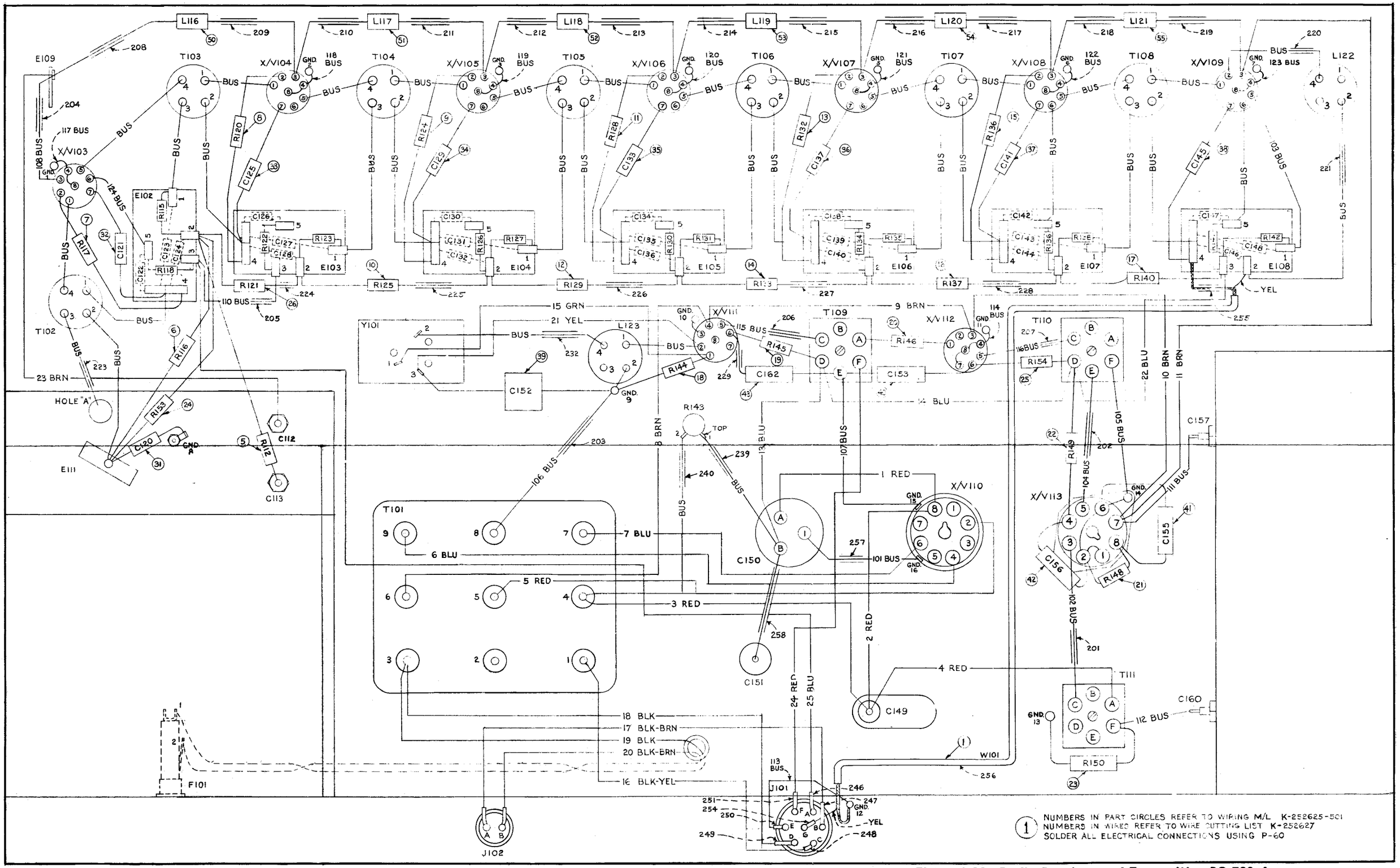
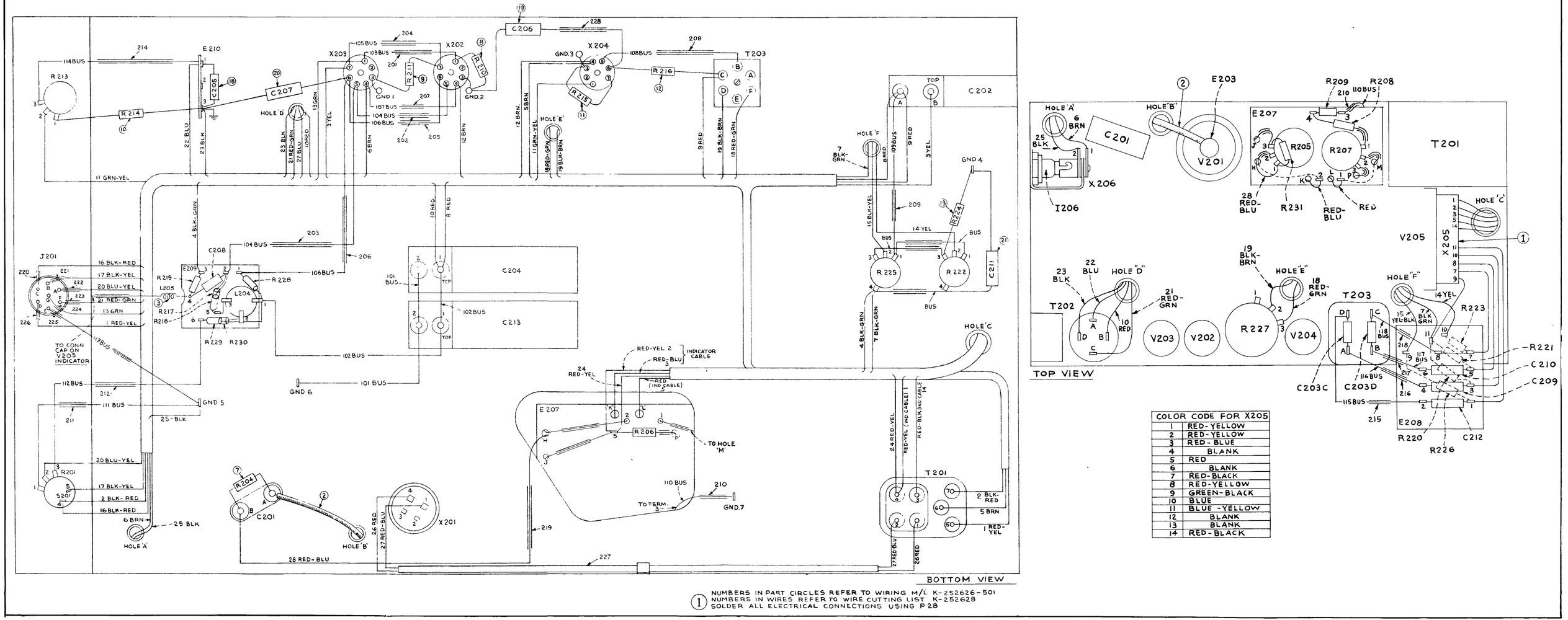


Figure 8-19. Radio Receiver and Transmitter BC-788-A — Practical Wiring Diagram



COLOR CODE FOR X205	
1	RED-YELLOW
2	RED-YELLOW
3	RED-BLUE
4	BLANK
5	RED
6	BLANK
7	RED-BLACK
8	RED-YELLOW
9	GREEN-BLACK
10	BLUE
11	BLUE-YELLOW
12	BLANK
13	BLANK
14	RED-BLACK

(1) NUMBERS IN PART CIRCLES REFER TO WIRING M/L K-252626-501
NUMBERS IN WIRES REFER TO WIRE CUTTING LIST K-252628
SOLDER ALL ELECTRICAL CONNECTIONS USING P 28

Figure 8-20. Indicator I-152-A — Practical Wiring Diagram

AN 16-40SCR718-3

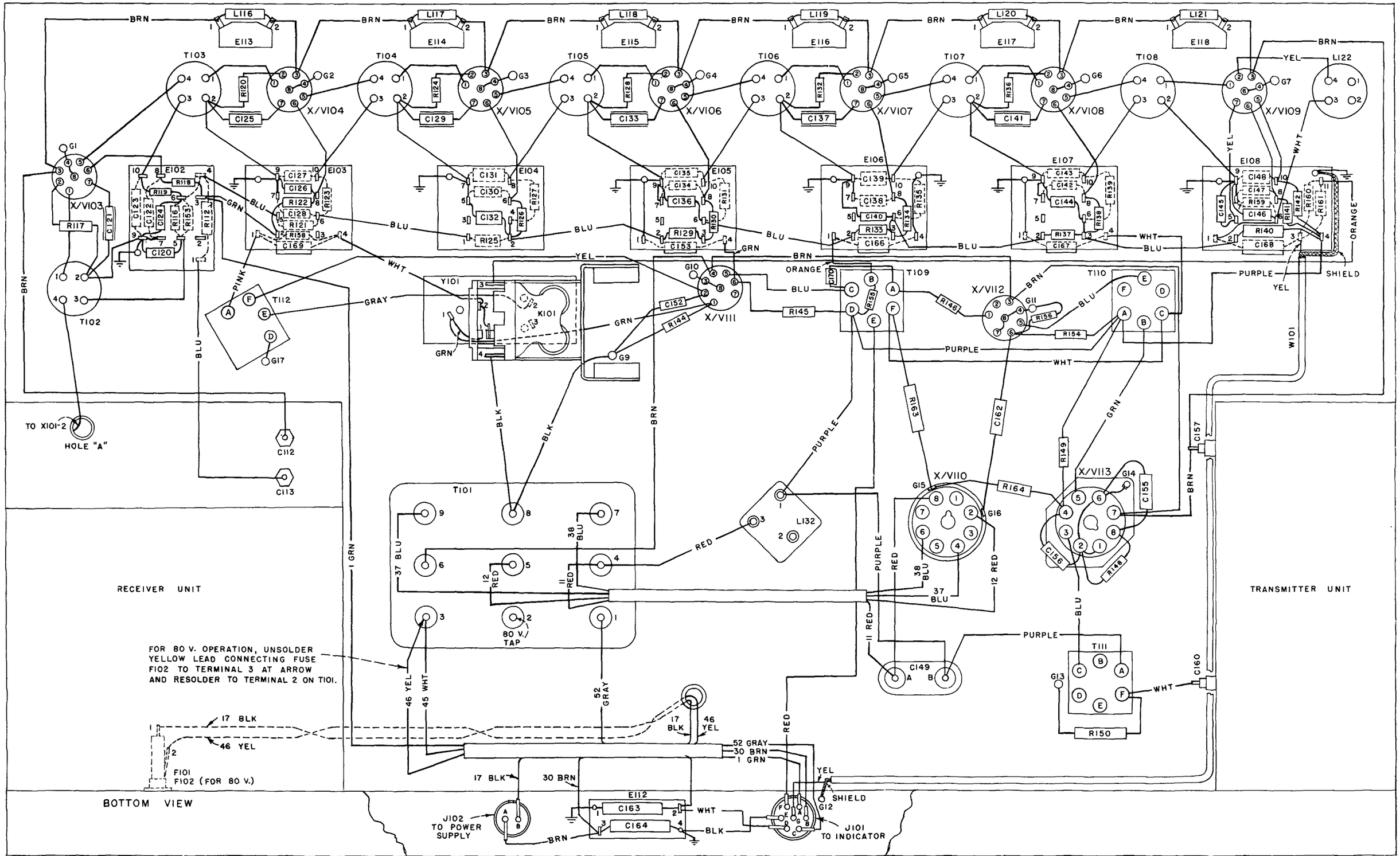


Figure 8-21. Radio Receiver and Transmitter BC-788-C — Practical Wiring Diagram

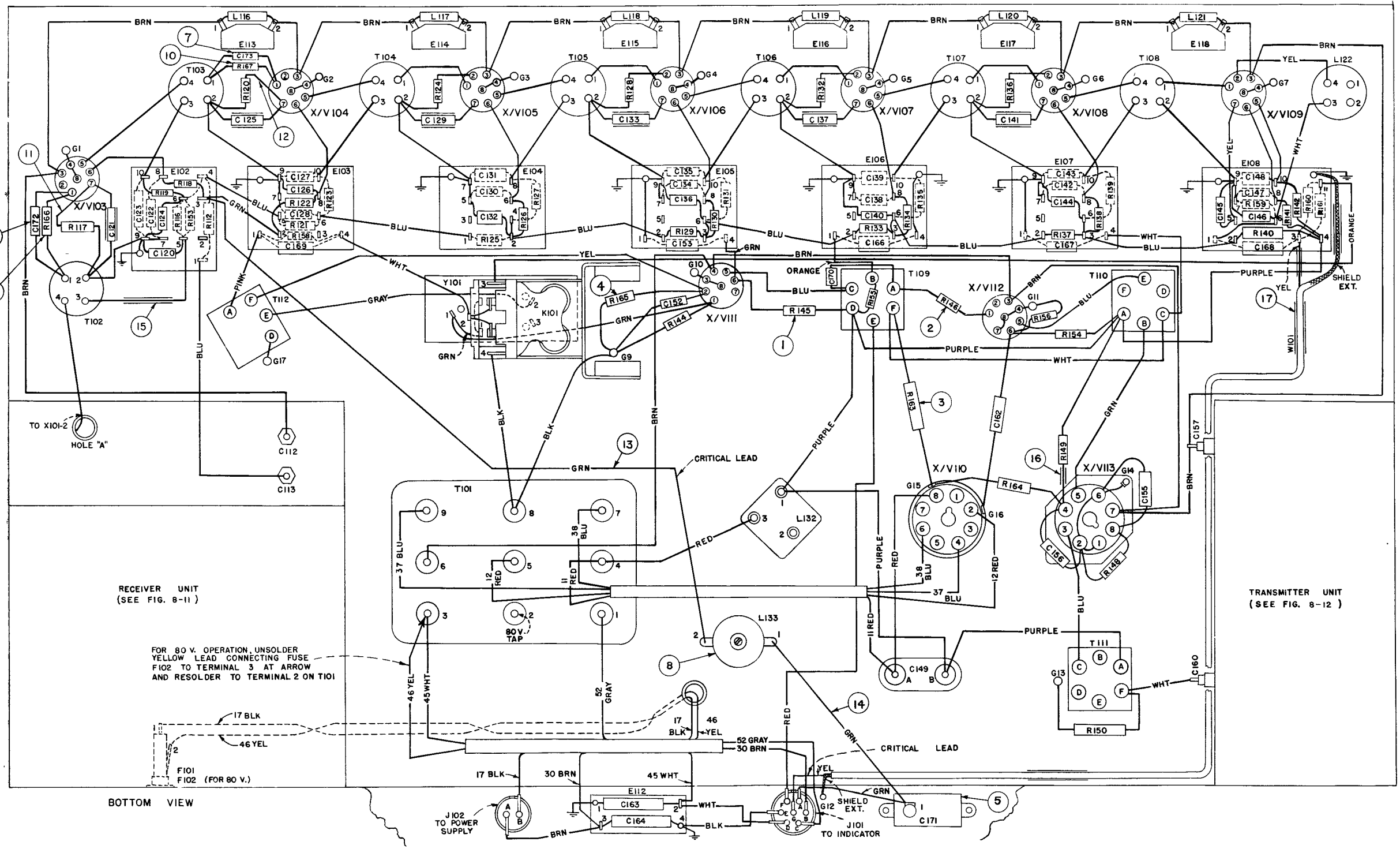


Figure 8-21A. Radio Receiver and Transmitter BC-788-C— Practical Wiring Diagram With Modifications

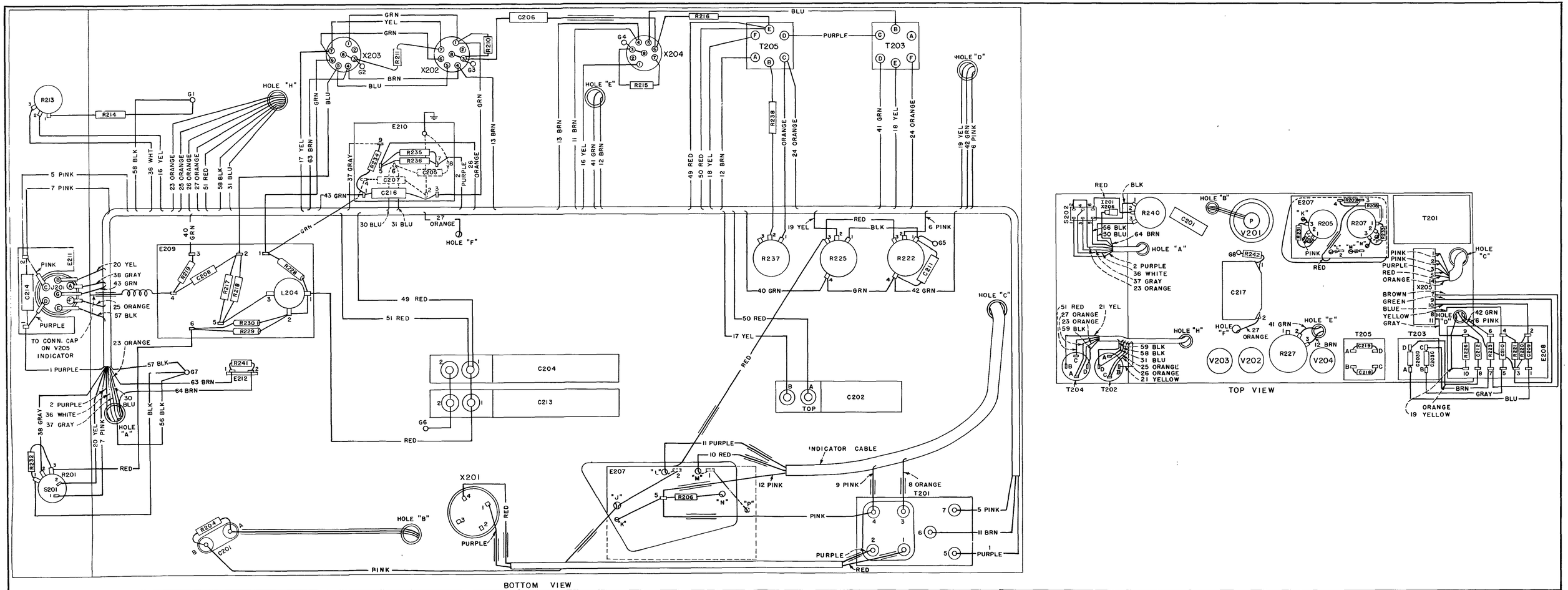


Figure 8-22. Indicator I-152-C — Practical Wiring Diagram

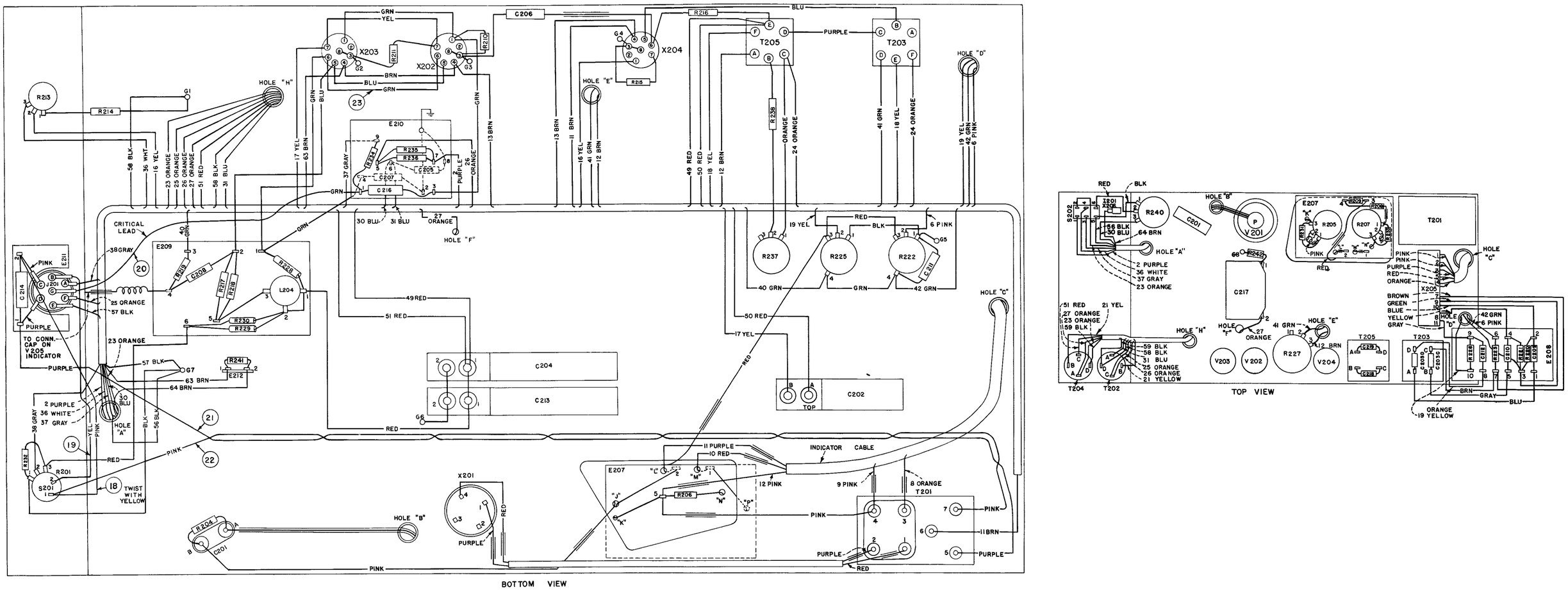
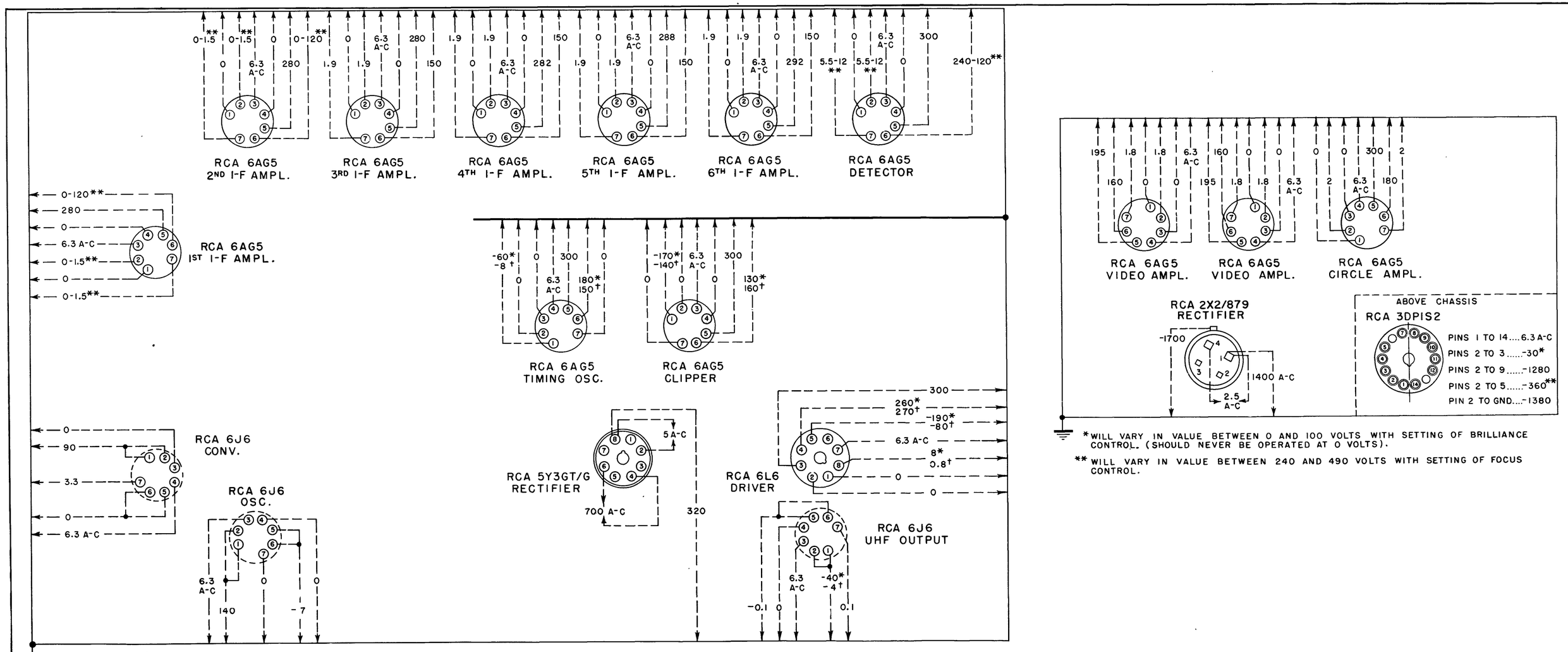


Figure 8-22A. Indicator I-152-C—Practical Wiring Diagram With Modifications



*WILL VARY IN VALUE BETWEEN 0 AND 100 VOLTS WITH SETTING OF BRILLIANCE CONTROL. (SHOULD NEVER BE OPERATED AT 0 VOLTS).

**WILL VARY IN VALUE BETWEEN 240 AND 490 VOLTS WITH SETTING OF FOCUS CONTROL.

*VOLTAGE READING AT HIGH FREQUENCY.
†VOLTAGE READING AT LOW FREQUENCY. WHERE ONLY ONE READING IS GIVEN, THE VALUE IS THE SAME FOR BOTH HIGH AND LOW FREQUENCIES.
**ACTUAL VALUE DEPENDENT ON SETTING OF RECEIVER GAIN CONTROL.

Figure 8-23. Radio Set SCR-718-C — Voltage Measurement

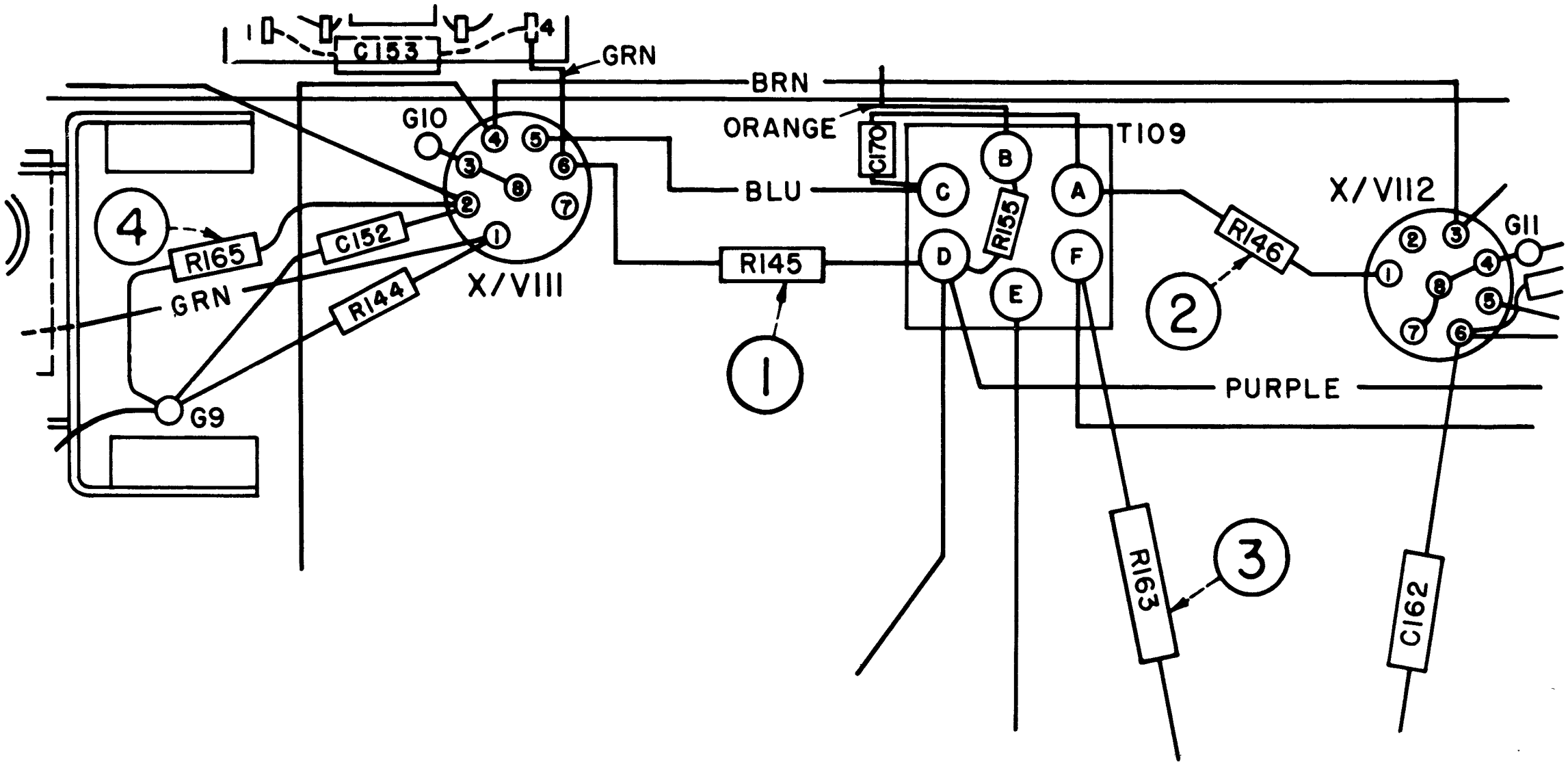


Figure 8-24. Radio Receiver and Transmitter BC-788-C—Practical Wiring Diagram, Modification M_1, Bottom View

SECTION IX
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