

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS, UNITED STATES AIR FORCE TECHNICAL ORDER
WASHINGTON 31R2-4-18-502

1 MAY 1956

MODIFICATION OF HAMMARLUND COMMUNICATION RECEIVER
MODEL SP-600-JX-17 TO INCREASE OPERATIONAL EFFICIENCY

By whom work will be accomplished:	Wing/Base maintenance
When work will be accomplished:	Not later than 90 days after receipt of kits; however, there is no penalty action at the expiration of the time limit.
Form entry required:	AFTO 43A
Spares affected?	Yes. See paragraph 3. <u>b</u> .
Rescission date:	1 May 1958

1. PURPOSE.

To increase the operational efficiency of Hammarlund Communication Receiver, Model SP-600-JX-17, by:

a. Addition of an "IF Gain" label and card holder to the front panel to provide operational and maintenance information.

b. Addition of an IF Gain control for thresh-hold adjustment of overall receiver gain to provide necessary balance in receiver gain for use in diversity service.

c. Addition of a series resistor to reduce voltage to dial lamps, thus increasing dial lamp life.

2. MODIFICATION DATA. (Globecom ECP #520-24)

a. Turn off all power to the receiver.

b. Addition of IF Gain label and card-holder to the front panel (see Figure 1).

(1) Remove bottom plates from receiver and tuning unit.

(2) Remove dial lock knob and assembly, retaining the knob, nut and lockwasher for later use with new IF Gain control.

CAUTION

Support the dial lock assembly while removing panel nut and lockwasher to avoid damage to the dial edge.

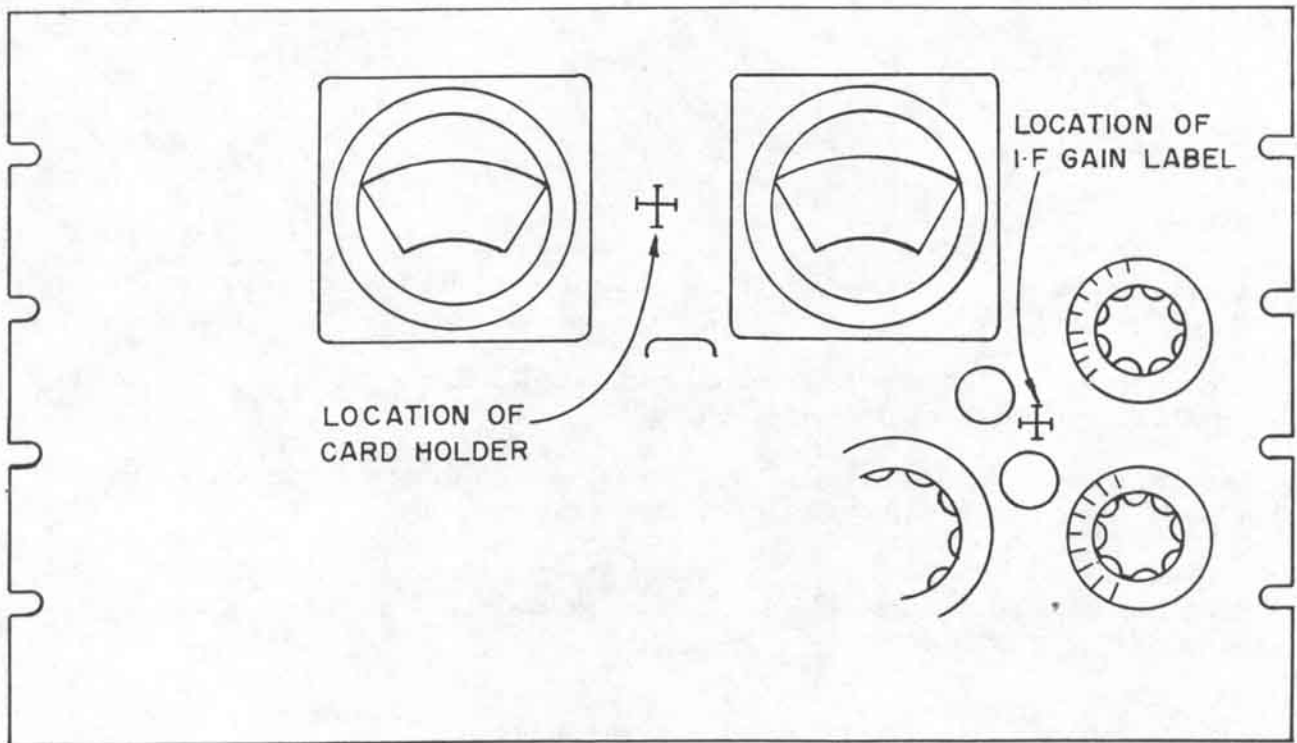


Figure 1. Location of IF Gain Label and Card Holder

- (3) Place the receiver on its back with the front panel up, in horizontal position.
- (4) Clean the panel surfaces between dial escutcheons and around lettering of dial tuning lock, using an approved cleaning solvent such as trichloroethylene.
- (5) Apply a coating of toluol, supplied in capsule form in the kit, to rear surfaces of IF Gain label and card holder.
- (6) Wait about 30 seconds or until surfaces are tacky, then place the IF Gain label centered over the dial tuning lock lettering, and the card holder centered between the dial escutcheons. Apply even pressure to both labels and allow the adhesive material to harden.

c. Installation of IF Gain control.

- (1) With receiver's bottom up; feed free end of the new IF Gain control cable through the grommet in front skirt of chassis and install the IF Gain control on the front panel, using the hole from which tuning lock was removed.
- (2) With the terminals of the new IF Gain control facing upward, toward bottom of receiver, secure the control using the lockwasher and nut previously removed from the tuning lock.
- (3) Install tuning lock knob on the IF Gain control shaft.
- (4) Dress the new cable, along with the receiver cable, towards the side of the tuning unit and then upward and through the slot at the front bottom corner of the tuning unit shield.
- (5) Dress the cable across the inside front of the tuning unit shield and through the slot in the opposite corner of the shield.
- (6) Leave just enough slack in cable inside the tuning unit shield to clear below the screw head in the center of the shield's front.
- (7) Dress cable downward along front corner of tuning unit shield; then around the front of chassis with the receiver cable and then along the side of the chassis until it is opposite to the front of socket for tube V9.
- (8) Replace tuning unit bottom cover.
- (9) Unsolder and remove wire connections between pin 7 and center-shield of socket for tube V9 and the chassis.
- (10) Connect pin 2 and center shield of socket for tube V9 to the rear ground lug of this socket (see Figure 2).
- (11) Connect the center conductor of new cable together with one lead of new 0.01 mfd capacitor to pin 7 of socket for tube V9 (see Figure 2).
- (12) Connect other lead of the new capacitor and cable shield to the front ground lug of the socket for tube V9 (see Figure 2).

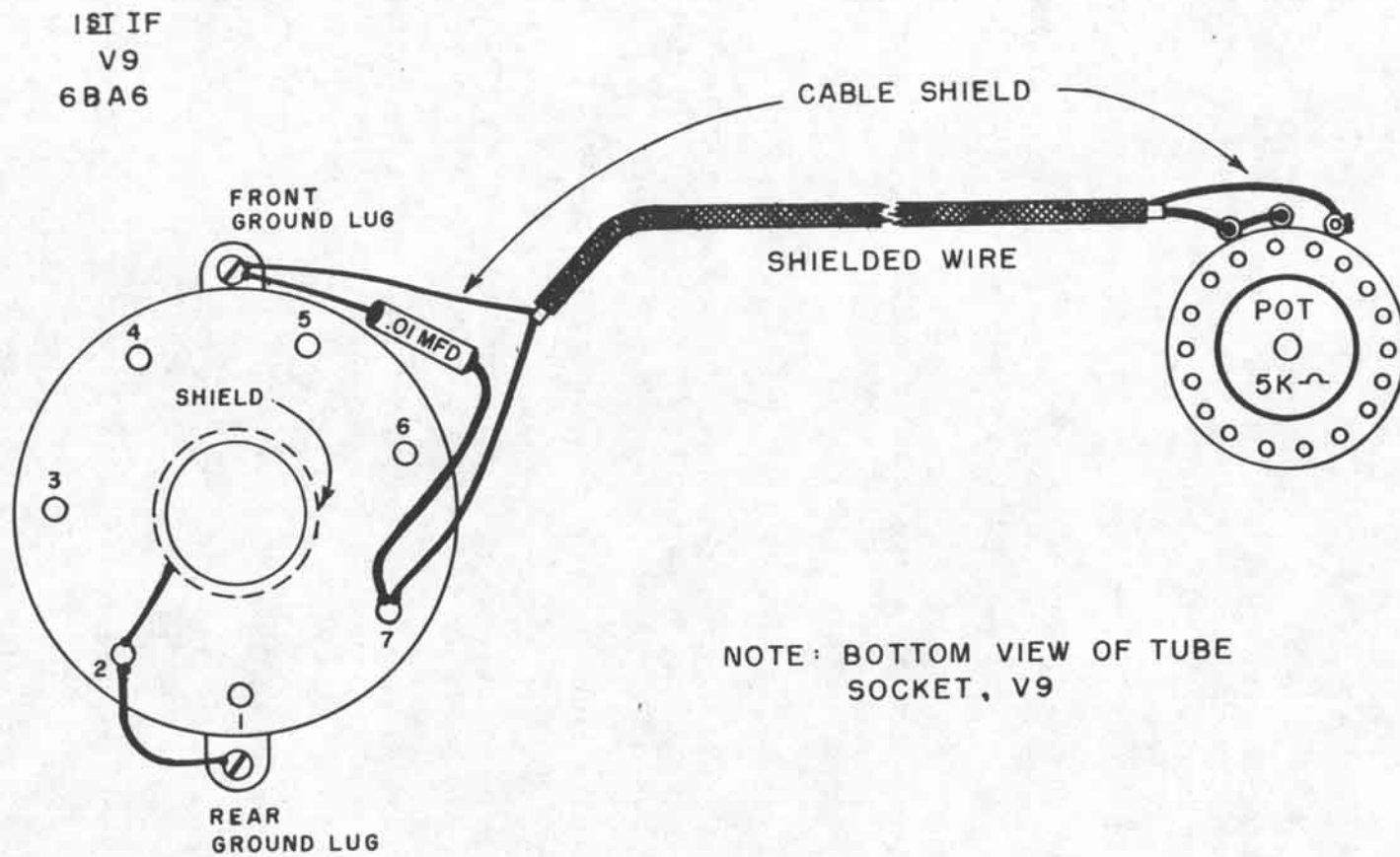


Figure 2. Installation of IF Gain Control

(13) Solder all connections.

(14) Check the modification against Figure 3.

d. Installation of 1.5 ohm resistor in dial lamp circuit.

(1) Connect the new 1.5 ohm resistor, supplied in the kit, between terminals 3 and 5 of Terminal Board E-14.

(2) Disconnect the three (3) leads connected to pin 3 of the socket for tube V7. Using an ohmmeter determine, by means of a continuity check, which of these leads supplies power to the dial lamps.

(3) Cut cable lacing-twine to release this lead sufficiently, in order that it may reach Terminal Board E-14. Connect this lead to terminal 3 of Terminal Board E-14.

(4) Reconnect other two leads together with one end of new black wire, supplied in the kit, to pin 3 of socket for tube V7. Connect other end of the new wire to terminal 5 of Terminal Board E-14.

(5) Solder all connections.

e. Replace all covers and check the overall performance of the receiver.

f. Ink or paint T.O. 31R2-4-18-502 in letters 3/16 inch high on the front panel, adjacent to the name plate of the receiver. When modified equipment is packed or crated clearly mark the exterior of case or crate in similar manner using letters 3/4 inch high.

3. SUPPLY DATA.

a. Parts Required Per Receiver.

The following parts will be furnished as a complete kit for initial installation and will be requisitioned in accordance with T.O. 00-35-15A, Distribution Category B, from Class 16M, AFD 2220, RAFD. Requests will be fulfilled as rapidly as kits become available. The allocation of available kits to requisitioning activities will be in accordance with "Priorities of Programmed Units". Delivery of kits is scheduled to begin about 1 May 1956 and be completed by 1 July 1956. Parts required for maintenance after initial installation will be requisitioned from individual property classes.

<u>QTY</u>	<u>STOCK NO.</u>	<u>PART NO.</u>	<u>NOMENCLATURE</u>	<u>SOURCE</u>
1	1760-31R2-4-18-502	PL-38624	Kit, modification consisting of the following:	AF Stock
1		K-38638-G1	Variable resistor, 5000 ohms, and Cable Ass'y	
1		RU-4C1R5-J	Resistor, 1.5 ohms, 1 watt	
1		CK-63W103-Z	Capacitor, 0.01 mfd	

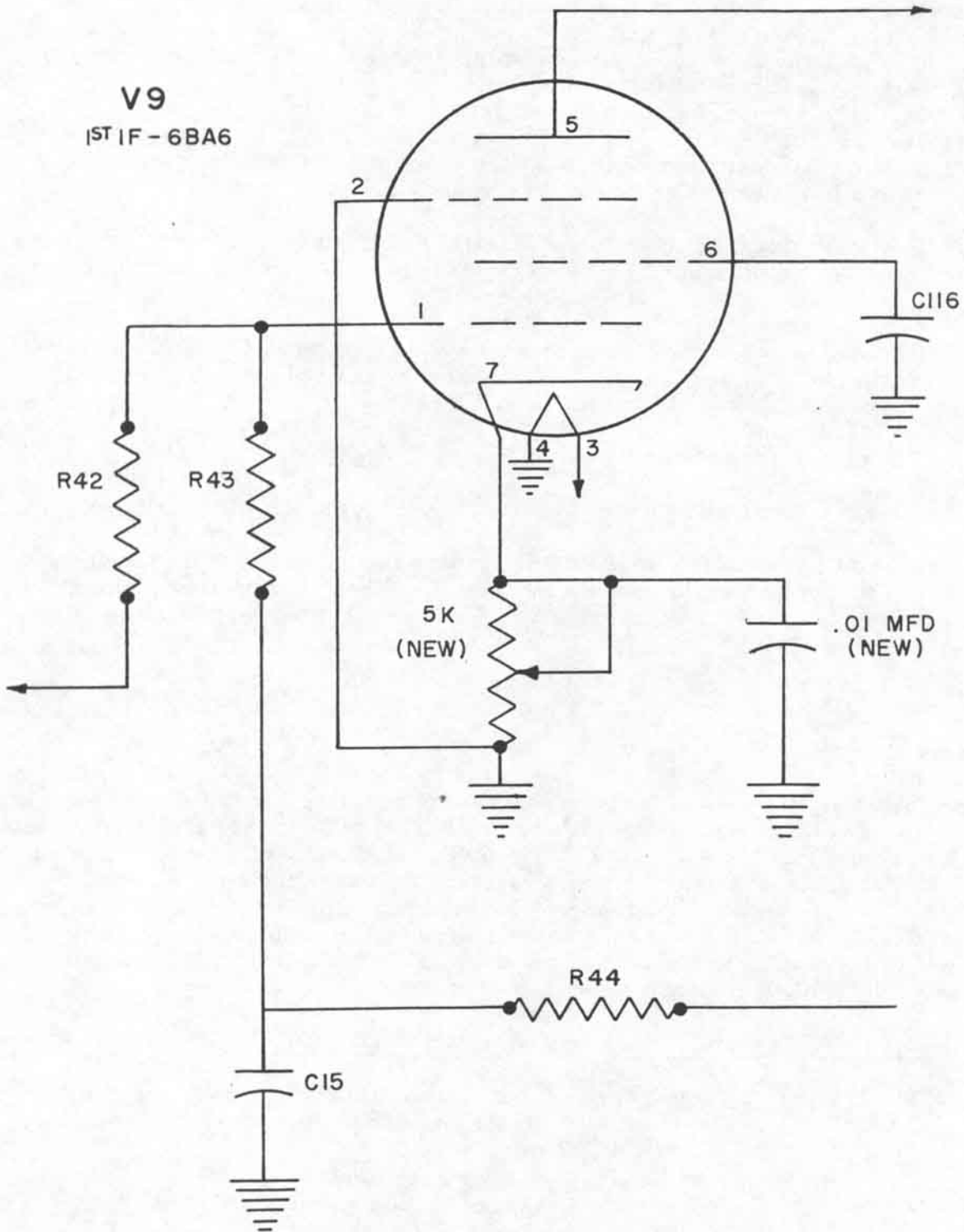


Figure 3. Schematic Diagram of Modification to IF Stage

<u>QTY</u>	<u>STOCK NO.</u>	<u>PART NO.</u>	<u>NOMENCLATURE</u>	<u>SOURCE</u>
6 inch		K-16634-0	Wire, 6 inch long	
1		K-38518-2	Label (IF Gain)	
1		K-38625-1	Card holder	
1		K-38626-1	Toluol, capsule	

b. Action Required on Spares in Stock.

All Hammarlund Communication Receivers Model SP-600-JX-17 (AF Stock No. 1760-048635110) in depot stock shall be modified in accordance with paragraph 2 by depot level maintenance prior to shipment or issue and all Hammarlund Communication Receivers Model SP-600-JX-17 in depot for repair or overhaul shall be modified prior to shipment or return to Depot Stock. Mark packing containers or crates in accordance with instructions in paragraph 2.f. Modification shall be accomplished prior to the rescission date of this Technical Order.

c. Parts Required to Modify Spares in Stock.

Same as parts listed in paragraph 3.a. above.

d. Disposition of Removed Parts.

Not applicable.

e. Size, Weight, and Cost of Parts Kit.

<u>SIZE</u>	<u>WEIGHT</u>	<u>COST</u>
Approx 20 cu inch	Approx 1 lb	\$6.40

4. KIT INSTALLATION TOOLS.

No special tools are required.

5. MAN-HOURS REQUIRED.

Approximately three (3) man-hours are required to perform this modification.

BY ORDER OF THE SECRETARY OF THE AIR FORCE:

NATHAN F. TWINING
CHIEF OF STAFF
UNITED STATES AIR FORCE

EDWIN W. RAWLINGS
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