INSTALLATION INSTRUCTIONS for RP3A Repeater-Control Modifications to G.E. UHF MVP Mobile Radio*

PARKINSON ELECTRONICS COMPANY
Drawer 8
LEVELLAND TEXAS 79336

1. Remove cover of radio by removing win nut at rear of cabinet and sliding chassis forward. See Fig. 1.

2. Remove Control Panel from front of chassis (by removing 4 Phillip screws, see Fig. 1) thereby exposing System Board and space for mounting new Repeater Control Board. See Fig. 2.

   If present, Channel Guard Board must be removed to make space for Repeater Control Board**. (Remove attached 14-inch audio cable and green wire from radio as well. See Fig. 5 showing replacement wiring.)

   If present, Multi-Channel kit must be removed, including Control-Panel switch.

3. Drill or punch four $\frac{1}{4}$-inch diameter holes in plastic Control Panel as shown in Fig. 3.

4. Mount Repeater Control Board next to existing System Board using 3 screws as shown in Fig. 2.

5. Make cable interconnections as shown in Fig. 4. Recommended order of connections as follows:

   a. connect P6R Molex connector of R-Bd (Repeater Control Board) to J6 on S-Bd (System Board);

   b. disconnect P11 square contact (blue wire) from J11 square pin on S-Bd and reconnect P11 to JJ3 (4-pin nylon connector of R-Bd harness), pin 2 (blue wire);

   c. if using hand mic disconnect P13 square contact from J13 square pin on S-Bd and reconnect P13 (yellow wire) to JJ3, pin 1 (white wire);

   d. if using desk mic option reconnect P13 (yellow wire) to JJ3, pin 4 (white/black wire);

   e. connect P12R square contact (orange/black wire) of R-Bd harness to J12 square pin on S-Bd;

   f. connect P11R square contact (green/black wire) of R-Bd harness to J11 square pin on S-Bd;

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*Radio must have 2PPM oscillator stability (install appropriate ICOM'S) to comply with F.C.C. repeater requirements. Use "B" in 10th digit of G.E. order number.

**If ordering a new MVP for this repeater service, order it without the C.G. Board. Use "S" in 7th digit of G.E. order number.

g. connect P8R-3 square contact (red wire) of R-Bd harness to terminal 3 of J8 Molex connector on S-Bd.

h. connect P10 square contact (orange wire) of Control Panel to JJ3, pin 3 (green wire) of R-Bd harness;

i. unplug P905 Molex connector from J5 on S-Bd and release* contact #1 (red wire, sheilded) from connector housing;

j. engage Molex contact #1 deeply into J5R-1 butt-splice connector (yellow wire) of R-Bd harness; do NOT crimp butt-splice connector;

k. plug P905 back into J5 on S-Bd;

l. unplug P4 Molex connector from J4 on S-Bd and release* contact #2 (violet wire) from connector housing;

m. engage Molex contact #2 deeply into J4R-2 butt-splice connector (blue wire); do NOT crimp butt-splice connector;

n. plug P4 back into J4 on S-Bd.

6. Mount S1R mini-toggle switch at newly-drilled $\frac{1}{4}$" hole on Control Panel, after first applying "REPTR/OFF" switch label provided. Orientate switch so that wired terminals are toward slotted edge of Control Panel (therefore toggle-down = Repeater disabled). See Fig. 4.

7. Cut PCB-foil run on S-Bd where marked "X" on Fig. 4b. Use point of scribe or file to cleanly break this electrical connection in muting circuit.

8. Locate six-conductor gray cable coming from R-Bd. Dress it thru newly-drilled $\frac{1}{4}$" hole on Control Panel side edge. This cable interfaces radio with half-duplex telephone-patch equipment. See Fig. 4. If phone patch not used, this cable may be unplugged from R-Bd at JJ2 header and left off.

9. Locate green wire and shielded-pair cable of R-Bd harness. Dress them through cable passage at bottom-right corner of S-Bd (see Fig. 4) and along existing cable bundle toward bottom-rear of radio chassis (See Fig. 5a.).

10. Unplug J902 Molex connector from P902A on Transmitter Exciter and release* contact #4 (white/green wire) from connector housing and insulate contact with electrician's tape or shrink-fit tubing. See Fig. 5.

11. Identify the three conductors with Molex contacts on end of sheilded-pair cable. Engage these contacts into slots (red into #9, black into #4, clear into #7) of J902 connector, as shown in Fig. 5b.

12. Plug J902 back into P902A on Transmitter Exciter, being careful to mate connector onto correct pins (it will also mate shifted right or left!).

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*Release Molex contact from connector housing by depressing catch spring thru appropriate "window" of housing and drawing contact out by its wire.

13. Engage contact on end of long green wire to FL 210-1 capacitor terminal as shown in Fig. 5b.

14. Spot tie cable and green wire to existing cable bundle.

15. Program encode/decode frequency for desired Channel-Guard tone by setting 5 levers of SW-1 DIP switch on TSW-32 module. See diagram of Fig. 4a and programming table on parts-list page.

16. Replace Control Panel onto front of radio chassis after first dressing connector harnesses, cables and butt-splice connectors into compatible spaces above R-Bd and S-Bd.

17. Replace 4 Phillips screws to hold control panel in place.

18. Cut notch in rear wall of radio chassis to allow passage of duplexer-to-receiver coax cable. Notch can be cut with chassis nibbler or sheet-metal punch and should be approximately 3/8 inch deep and $\frac{1}{4}$-inch wide and located above J3 Transmitter output connector, as shown in Fig. 6. Drilling, sawing, or filing of notch is NOT recommended since metal particles may end up in radio circuits! Also cut corresponding notch in radio cover. See Fig. 1.

19. Loosen bracket at top-right of Receiver Assembly by removing "A" screws and loosening "B" screws, as shown in Fig. 6.

20. Remove W4 Antenna-Relay-to-Receiver cable between J2 and J1.

21. Install Duplexer-to-Receiver cable: connect right-angle phono-type r-f plug at Receiver J1 and dress cable under bracket (of step 19) and thru rear wall of chassis at notch cut earlier (in step 18), as shown in Fig. 6.

22. Replace screws "A" and tighten screws "B" to re-secure bracket.

23. Spot tie new cable to bracket near screws "A".

24. Perform standard alignment procedure according to MVP Service Manual before making the following adjustments to R-Bd trimmers.

    For proper repeater operation adjust audio level on IF detector Bd: Connect a AC Volt Meter across Vol. Adj (P903-1) and Gnd. Inject a carrier modulated with ± 3KHZ deviation of 1000HZ Tone. Peak the IF detector coil L603 then adjust audio level R608 for 1V rms (2.82 Vp-p).

25. Temporarily set R50 repeat-audio trimmer to maximum (fully C.W. see Fig. 2.) thru newly drilled $\frac{1}{4}$" hole (of step 3) at Control-Panel top edge. Inject a ± 5KHZ - deviation carrier to RX so that repeater audio "limits out" in the TX exciter. With repeater brought up, monitor TX-carrier deviation and adjust R104 on TX exciter board for ± 5KHZ.

26. Temporarily disable repeater at Control-Panel switch. With TX keyed at mic, adjust R40 CG trimmer thru existing CG-Mod-Adj slot (at top edge of Control Panel, See Fig. 2) for 0.75 KHZ deviation, as in service manual (full C.W. = maximum). Both local mode and repeat-mode transmission is CG-adjusted by this setting.

R 29 trimmer on TSU-32 encode/decode card of R-Bd may also be adjusted, with Control Panel removed, for additional range of CG Modulation, if needed. See Fig. 2.

27. Reduce deviation of carrier into RX to ± 3.75 KHZ (of 1000-HZ and CG tone). Re-enable repeater at Control Panel and adjust R50 for TX-carrier deviation of 3.75 KHZ from repeater activity.

28. Adjust R44 thru newly-drilled $\frac{1}{4}$" hole (of step 3) at Control Panel bottom edge, for preferred drop-out timer duration. Full C.C.W. = $2\frac{1}{2}$ seconds, full C.W. = 5 seconds. See Fig. 2.

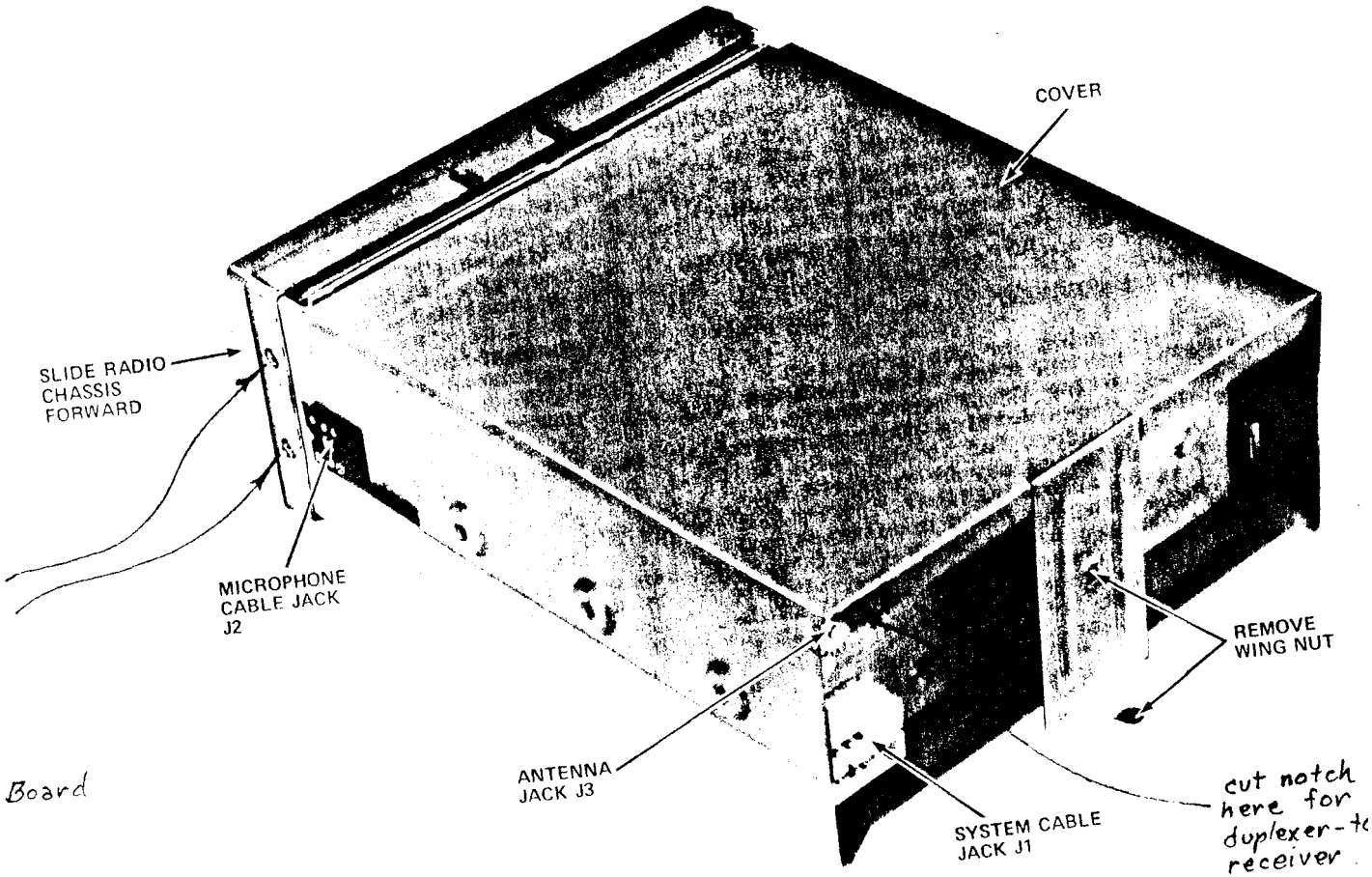
To extend adjustment range of drop-out-timer duration, see Mod # 2 on "Modifications" page.

29. Replace cover of radio and secure wing nut. See Fig. 1.

The Repeater-Control modified G.E. MVP Mobile Radio is now ready to be cabled to duplexer for repeater operation.

lified from G.E. manual

DISASSEMBLY



remove 2 screws, each side, and work Control Panel forward and off of chassis to expose System Board and space for mounting Repeater Board

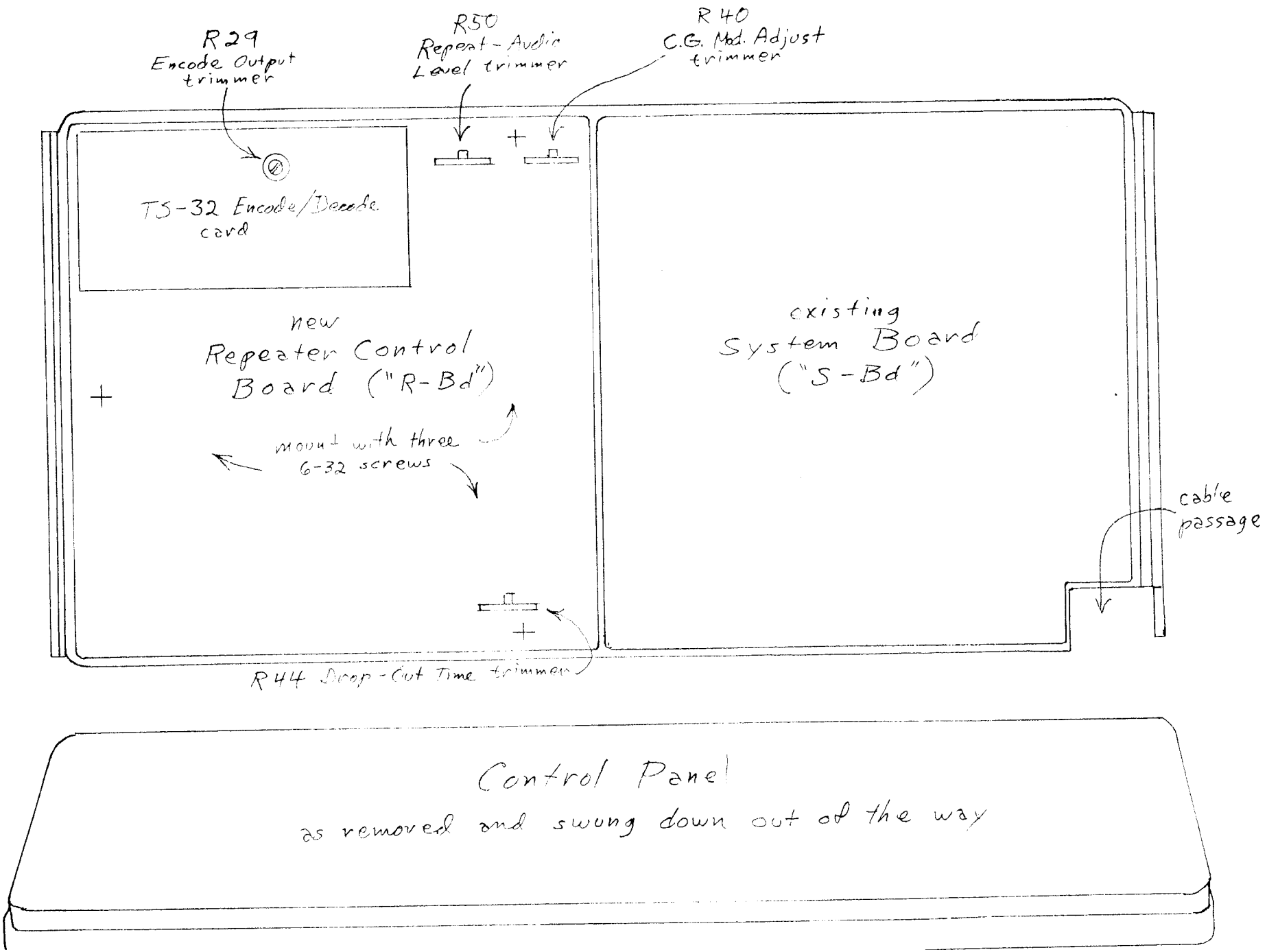
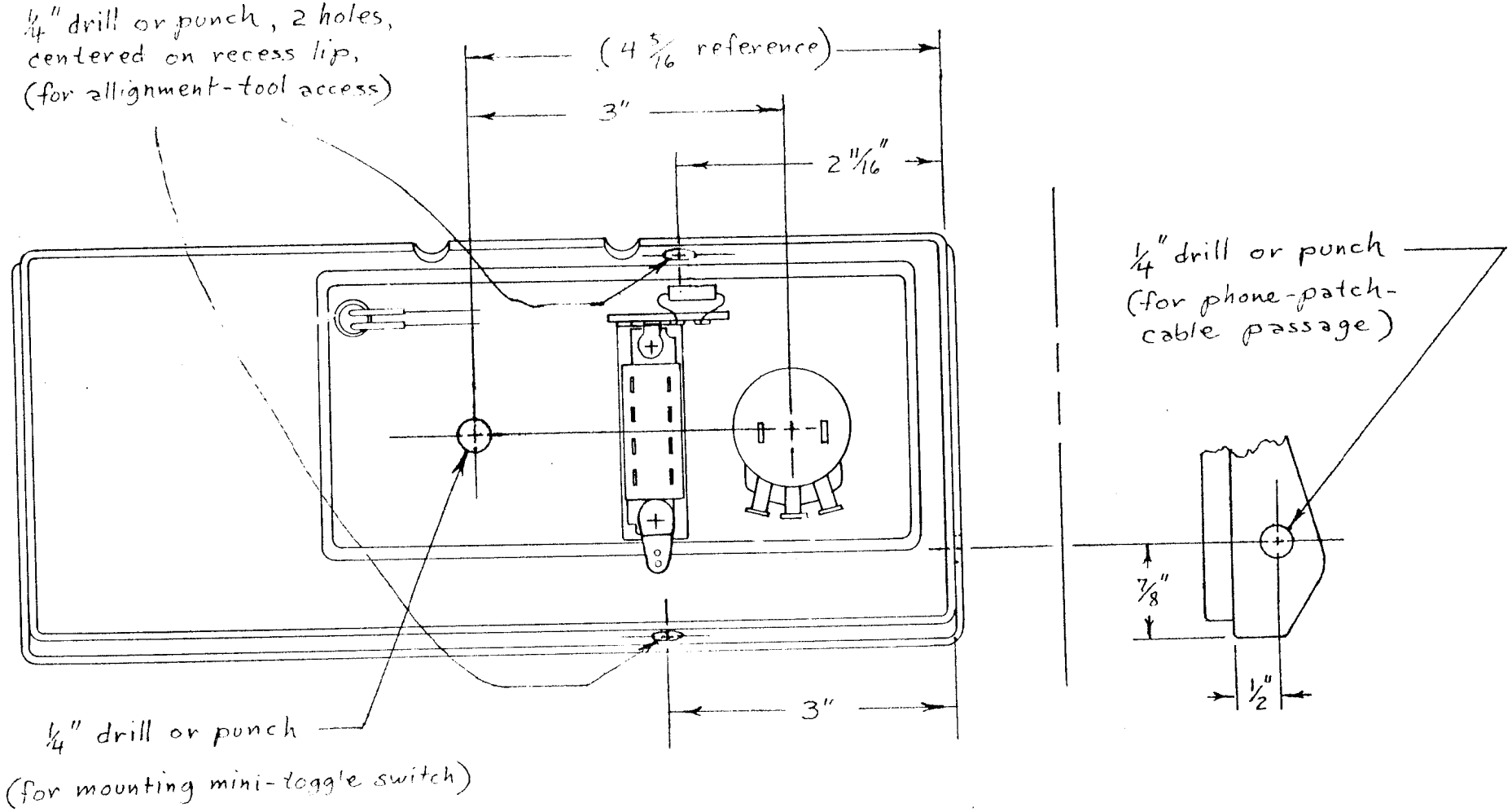


Figure 2 — Mounting of Repeater Control Board and location of trimmers

modified from G.E. LBI 30148



REAR VIEW

END VIEW, BROKEN

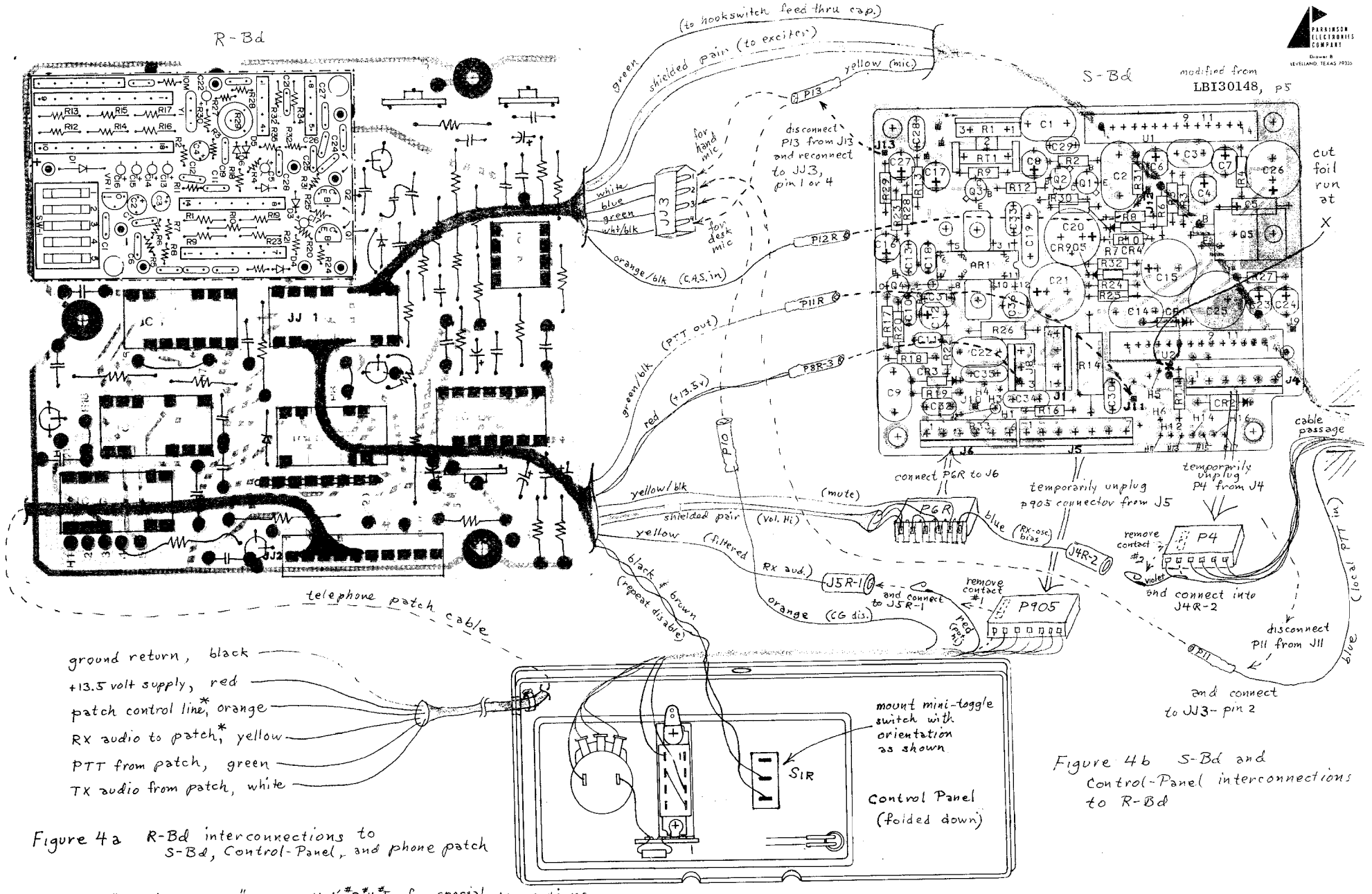


Figure 4a R-Bd interconnections to S-Bd, Control-Panel, and phone patch

Figure 4b S-Bd and Control-Panel interconnections to R-Bd

* See "Modifications..." pages, Mods #3, #4, #5 for special connections

Modified from G.E. manual LBI 30163, p2 + LBI 30165, p1

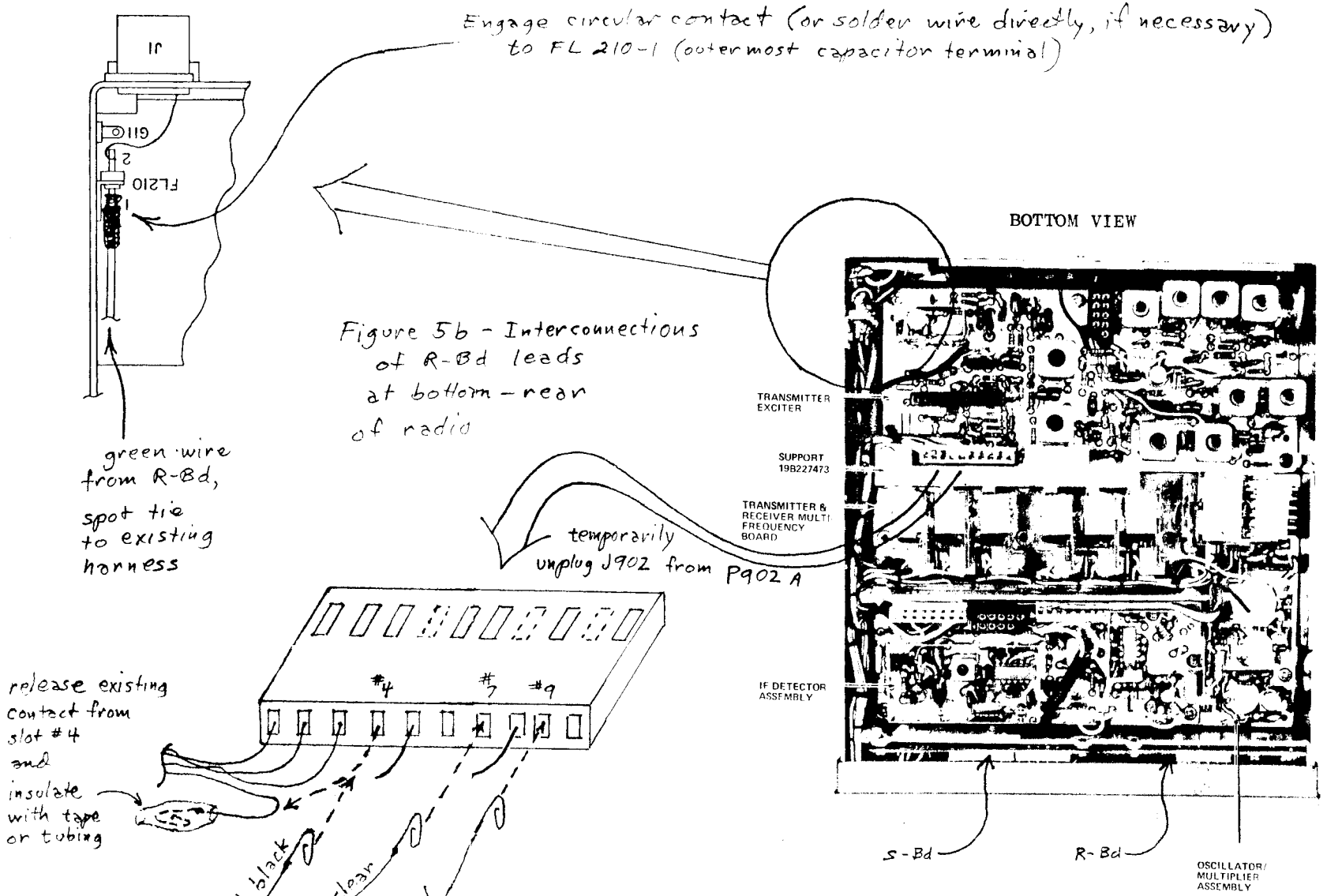
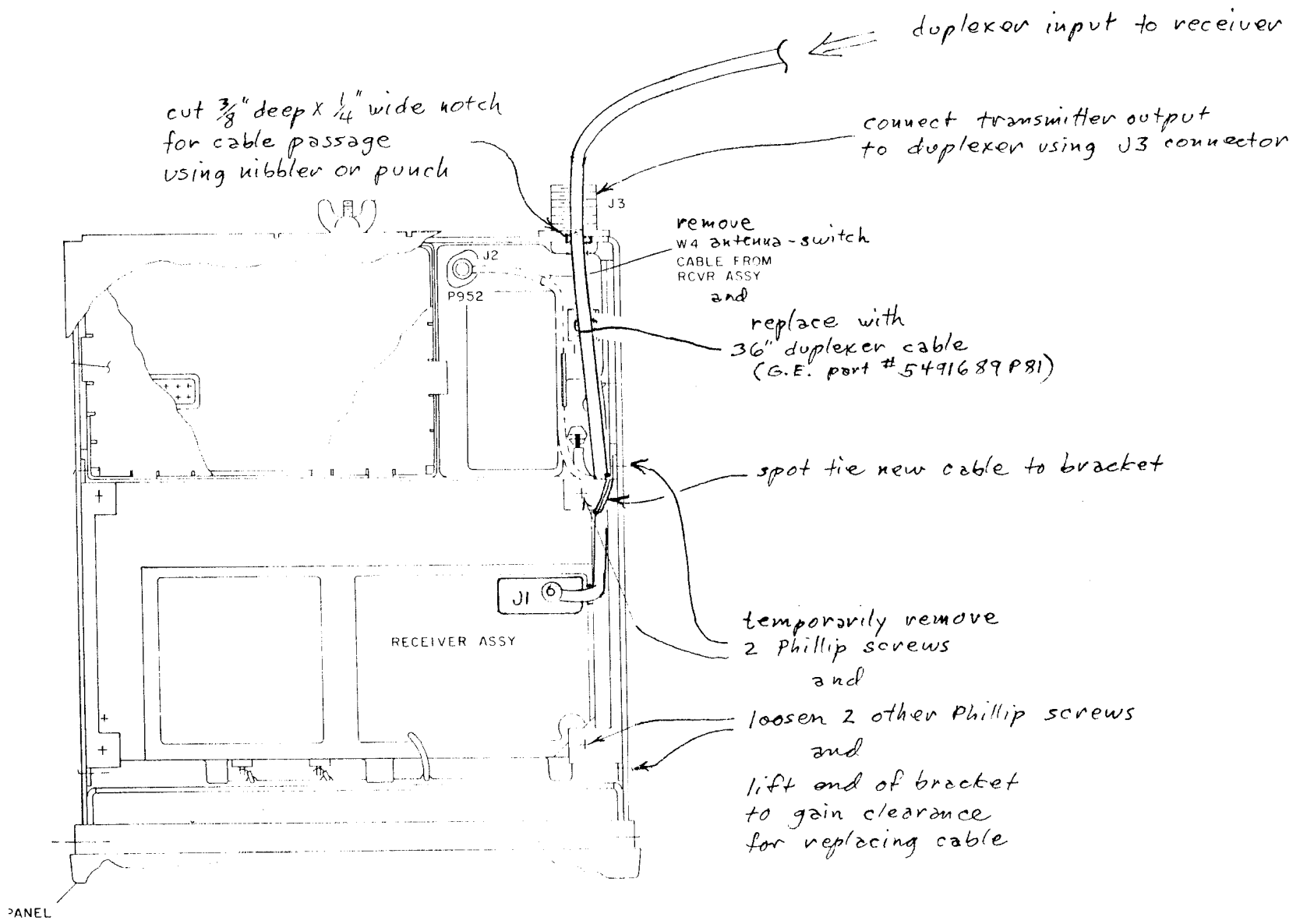


Figure 5b - Interconnections of R-Bd leads at bottom-rear of radio

Figure 5a - Typical Custom MVP Module Layout



TOP VIEW

Figure 6 — Installation of duplexer-to-receiver cable

Modified from G.E. manual LBI-30163 pg 7

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