SERVICE BULLETIN

SUBJECT: COBRA 139XLR MODIFICATIONS

PROBLEM A. TR-36/R153 Crystal drift due to overheating. After radio has been on for a period of time, high temperature generated by TR-36 and R-153 overheats the SSB crystals thereby causing excessive transmitter or receiver drift on SSB operation.

PROBLEM B. PCB cracking or breaking due to rough handling.

MODIFICATION PROCEDURE:

1. Remove top and bottom covers from radio.
2. Vicually check location of cracks and or breaks in PC board. Particularly check areas close to PC board mounting screws.
3. Place radio upside down on clean cloth or pad.
4. Examine solder side of board for breaks in copper. With a knife remove green protective coating from copper. Solder a short piece of 22 AWG across break, and allow solder to flood remainder of break.
5. Repair breaks and larger cracks with epoxy glue. If cracks or breaks are in vicinity of PC board mounting screws, install #4 X ¼ inch OD flat washers under heads of mounting screws.

6. Carefully examine, and remember where pins of TR-36 and R-153 are soldered on PC board. You will notice that R-153 is in series with center pin (emitter) of TR-36.
7. Unsolder and remove TR-36 from present location.
8. Mount TR-36 on auxiliary heat sink (747-056-9-002 supplied with this mod. kit) using the existing hardware and insulators (Fit.3). Apply thermal compound (341-002-9-001) on both sides of mica insulator before installation. When installing insulated shoulder washer, make sure that the smaller end seats in transistor hole. When tightening transistor mounting screw be careful not to damage insulated shoulder washer.
9. Remove and discard two Phillips screws that mount present heat sink to chassis.
10. Install auxilliary heat sink over present heat sink using two Tapping Screws 710-040-9-001 supplied.
11. Strip (3/8 inch) and trim ends of three 8 inch wires supplied, and solder them to the transistor pins (gray-base, yellow-collector, green-emitter). Install sleeving over soldered connections at transistor pins.
12. Slip the other ends of leads through slot in PC board and solder emitter and base leads to the area of PC board vacated by corresponding pins of transistor.

13. Solder the collector (yellow) lead to the B+ end of R-153.

    By use of side butters cut top lead of R-153.

NOTE: Should CT2 or CT3 have been accidentally moved or maladjusted, they should be realigned as follows:

CT2	(USB)	7.8025MHz
CT3	(LSB)	7.7975MHz

Secure leads to cable assembly with black tape or equivalent.

14. Remove backing paper from four rubber cushions (502-104-9-001) and paste cushions on solder side of PC board (Fig 2).

CAUTION:

To avoid damaging lead wires or components, locate rubber cushions in areas of board that are clear of lead wires and components.

15. Reinstall bottom cover, and turn radio over to upright or normal position.

16. Paste two meter cushions (520-104-9-001 on top of Xtal filter (Fig.1).

17. Install a piece of masking tape on underside of PC board holder (251-230-9-001) so as to sheathe burrs and sharp edges.

18. Install PC board holder (Longer flange under auxiliary heat sink, shorter flange under chassis) Fig.I

19. Apply adhesive (3M Scotch-grip 4475 or equivalent) to engaging surfaces at both ends of PC board holder, to prevent it from moving, due to any subsequent mishandling of the radio.

20. Reinstall top cover.

A. Parts required for correction of xtal drift mod. 139XLR.

PARTS DESCRIPTION	DYNASCAN NO.	QTY/KIT
Heat Sink	747-056-9-002	1
Bind screw	634-088-9-003	1
Spring Washer	731-049-9-002	1
Tapping screw	710-040-9-001	2
Lead Wire, green	421-122-3-555	1
" " , yellow	421-122-3-444	1
" " , gray	421-122-3-888	1
Vinyl tube sleeve		3
Thermal compound	341-002-9-001	AR
Adhesive - 3M Scotch-grip 4475 or equivalent		
Tie wrap, nylon	763-031-9-001	1

B. Parts required for PC board protection mod. C-139XLR

PARTS DESCRIPTION	DYNASCAN NO.	QTY/KIT
Rubber cushion for PC board	502-104-9-001	4
Holder for PC Board	251-230-9-002	1
Meter cushion	502-104-9-002	2
Tape, masking		AR
Epoxy-Glue		AR

NOTE: 1. This modification should be done on all radios in for in-warranty repair.

2. Apply this modification up to Production number 70029001. Units beyond this number already contain this modification.

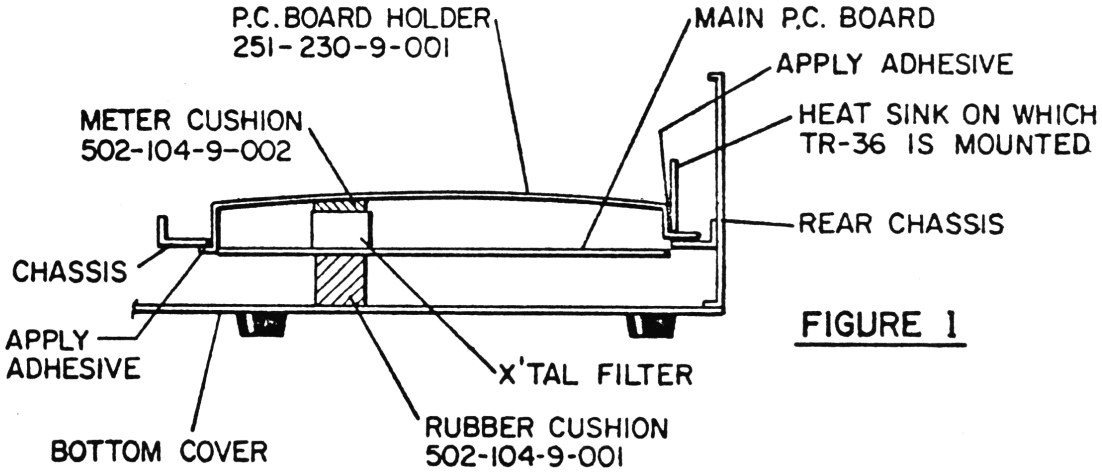

FIGURE 1

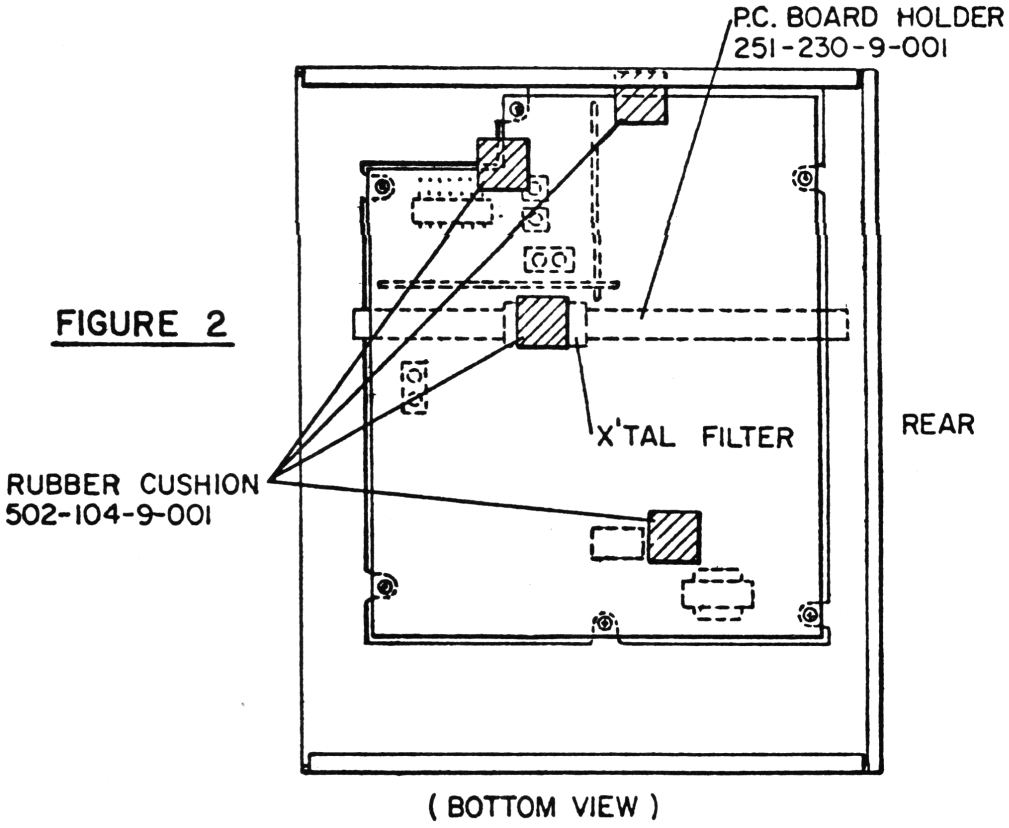

FIGURE 2

(BOTTOM VIEW)

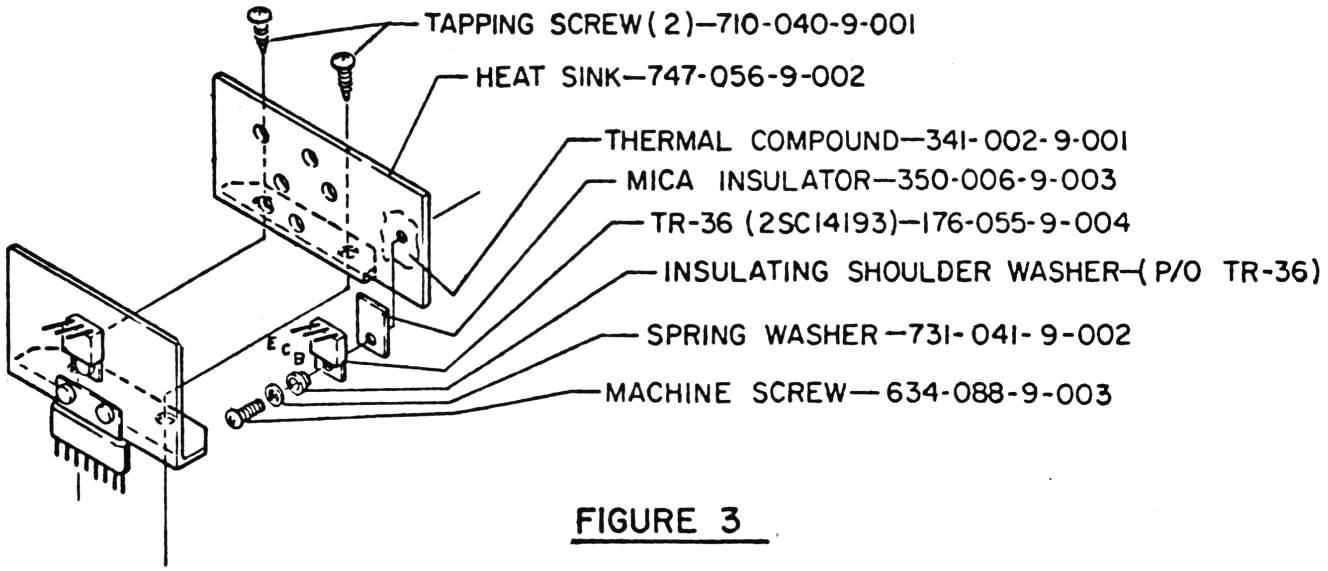

FIGURE 3