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S/1 NEWS

For the past couple of years S/1 NEWS has presented numerous modifications for curing various ills associated with the CX7 series transceiver. In all cases these modifications had been installed by one or more individuals with satisfactory results. It should be made clear that just because a modification is presented to cure some problem, one should not make that modification in order to prevent the problem of concern. If you are happy with the AGC action of your CX7, I do not recommend you make modifications to the AGC circuitry as presented in S/1 NEWS. If, however, you are experiencing low audio output, it may be desirable to replace the audio output stage. The point I am trying to make here is making a modification just for the sake of the modification just might cause a different problem! In short, do not collect all the modifications ever presented in S/1 NEWS and tear into your CX7 or ask someone to do it for you .. you might end up worse off for it. If you have a specific problem, scan the back issues of S/1 NEWS and the TROUBLE GUIDE .. someone may have done the homework for you.

Please write if you have received your CX11 - I would like to talk to you about it!

PROBLEM: Weak or distorted audio.

SOLUTION: Dick, KØHHP, recommends the following for those experiencing weak and/or distorted audio: The problem might be caused by improper injection into Q6 on the AGC board. Since FET's can vary widely in their characteristics, it might be desirable to fix the biasing for each unit. To maximize audio gain and minimize distortion perform the following: Remove R18 from the AGC board (this resistor is part of a voltage divider for the gate of Q6) and replace it (temporarily) with a 5K-ohm potentiometer. Listen to a SSB signal and adjust the pot for maximum audio and minimum distortion (these two points will generally coincide). Remove the pot, measure its value, and replace it with the nearest standard value resistor. This will not always cure audio distortion problems, but in many cases it has improved audio quality greatly.

The following subscriptions are due: WA2IMX, K8CJQ, WA3AQW, WA9PZB, WB4FSO, W9GF.

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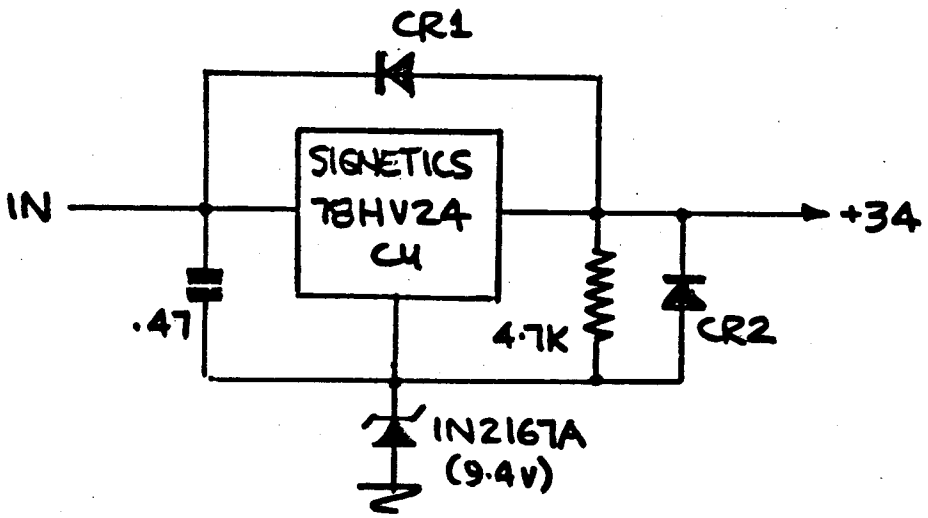
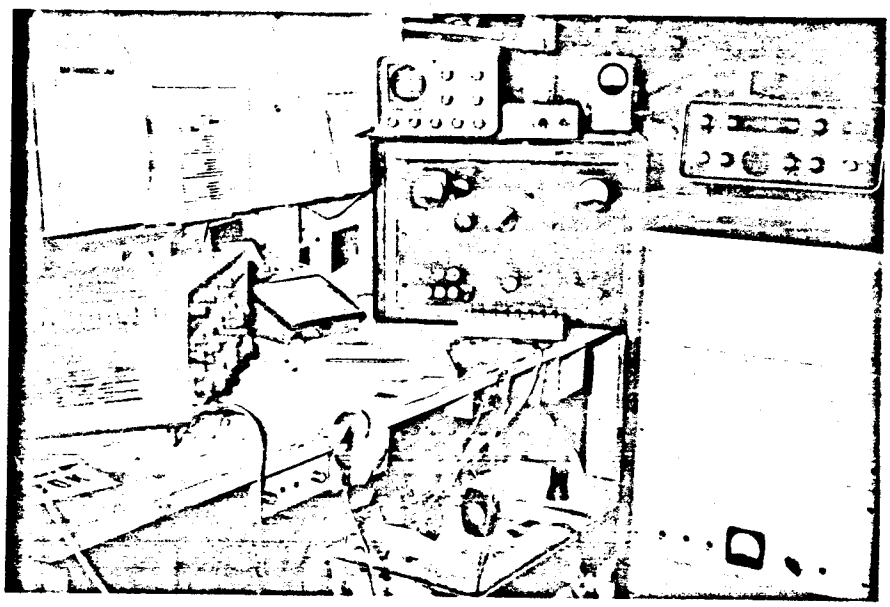
IC Regulator +34 Volts

The following regulator circuit is from W2GRU and will provide the required +34 volts for the CX7 thereby eliminating additional discrete components on the power supply board. According to John, the Signetics 78HV24CU can withstand 60 volts across the input-output, unlike the LM-317, and will not short like the 317 may since it is only rated for 40 volts input-output. Be sure to include the diodes as shown. CR1 prevents any output capacitor discharge from going through the IC if the input falls faster than the output. CR2 prevents any high current discharges through the low current circuitry in case of an output short. Repeated output shorts will not damage this regulator. See schematic below:



W7GVA's layout!...



PROBLEM: Rasping noise in speaker for a couple of seconds when going from receive to transmit in SSB mode. Everything appeared normal in the CW mode. To make the noise appear all that was necessary was to close the PTT switch. After closing it for a couple of seconds, opening and reclosing rapidly did not produce the noise.

TROUBLESHOOTING: An oscilloscope showed an AC signal on the +15 volt line of about 1 Mhz which always accompanied the noise. The noise was present with only wires #44 and 46 connected to the +15 volt pins on the power supply board (these wires feed the RF driver board and Audio board).

SOLUTION: Replace Q9 (40468A) on the audio board which was oscillating.

Our thanks to Ken, W4MMO, for the above information. Ken spent a lot of time troubleshooting this problem before finding the defective Q9. I'm sure his efforts will save someone else a lot of time. Please write S/1 NEWS with any information you have concerning specific CX7 (or CX11) problems...ed.

PUSHBUTTONS: W1OTU has a suggestion for "freshening" the engraved pushbuttons. The product is Lacquer-Stik and is made by Lake Chemical Company, 250 North Washtenaw Ave., Chicago, Ill., 60612. It is a waxy substance in a foil covered stick and is available in various colors. The silver color is very close to the lettering on the pushbuttons. The sticks are sold by National Camera for 65¢ each. (2000 W. Union Avenue, Englewood, Colorado, 80110)

COUNTER PC BOARDS - KØHHP: Dick, KØHHP, has informed me that he no longer will make available the printed circuit board for his counter assembly for the CX7 series. Dick does not have the time to answer all the correspondence concerning problems people have when attempting to construct the counter -- it is a difficult job. The completely wired and tested counter assembly is still available, however, at $200.

2N5183 REPLACEMENT: A replacement for the hard to find 2N5183 is a 2N3904. However, Dick, KØHHP, advises that the use of this replacement in the AGC circuits can result in a slightly modified AGC characteristics.

7447 REPLACEMENT: The 7447 in KØHHP's counter can be replaced (pin for pin replacement) with the 74247 which will add a "tail" to the "6" and "9" which looks nice. Be advised, however, the 74247 is very hard to find.

Replacement Information Concerning LED's for CX7B's (courtesy W1UQ):

Replacements are the Hewlett-Packard 5082 series as follows:

Red, left hand decimal;	5082-7650
Yellow, left hand decimal;	5082-7660
Red, right hand decimal;	5082-7651
Yellow, right hand decimal;	5082-7661

The appropriate LED must be ordered for either left or right decimal points to light. The LED's are available from Wilshire, Schweber, Liberty and Hall-mark electronics distributors. If, for example, the "TX-OFFSET" red decimal doesn't light, you probably have a -7650. Replace with a -7651.

OPERATION WITH CX7 AND BTI LK-2000D LINEAR: If the CX7 has been modified per S/1 NEWS, VOLUME I, Number 7, page 3 to include relay contact protection, the antenna relay in the BTI will not close due to excessive voltage drop across the 47-ohm series resistor (See the above referenced issue of S/1 NEWS). W6HVN removed this resistor leaving in the R/C network and the two RFC's. No relay sticking has occured after 30 hours of operation.

CLASSIFIED:

Info Needed: Anyone made any noise blanker mods so that the receiver will not cutoff in the presence of signals in or near passboard when blanker threshold is set properly? (by W6HVN)

FOR SALE: CX7. Upgraded to 'B' at factory 3 years ago. Now in A-1 operating condition by Dick Cunningham, KØHHP. Will be shipped UPS from Dick's shop on receipt of $895. Send check to KØHHP. Herb Schor, W2EMN/C6A.

WANTED: Unstarted or unfinished KØHHP LED counter boards with circuit diagram; CX7S (speaker) cabinet; CW filter; CX7A cabinet. Cash or swap. Doug Murray, W6HVN, 2811 Telegraph Ave., Oaklnad, CA. 94609. Call 763-6262 days.

WANTED: CW filter for a Signal/One CX7. Contact Jerry King, W4MLA, 4174 N.W. 79th Ave. Apt. 1D, Miami, Fla. 33166

FOR SALE: Johnson 6N2 and VFO with manuals but less power supply. $100 plus UPS charges. Wanted: Unoperative CX7. Bob Sullivan, WØYVA, P. O. Box 6216, Arlington, Va., 22206

Info Needed: Does anyone have modification sheets that were published by the Signal/One company concerning keyer or other reccmmended modifications? I think there are 3 or 4 sheets floating around. If you have these please let me know .. I would like to pass the information along via S/1 NEWS. ed. Drop me a note: POB 6216, Arlington, Va., 22206. Tnx!

Paul, W8CXS, notes an error that is in both the original and Thomas manuals. The error is due to a late production change on the AGC Detector board, A9. See schematic below which notes the error:

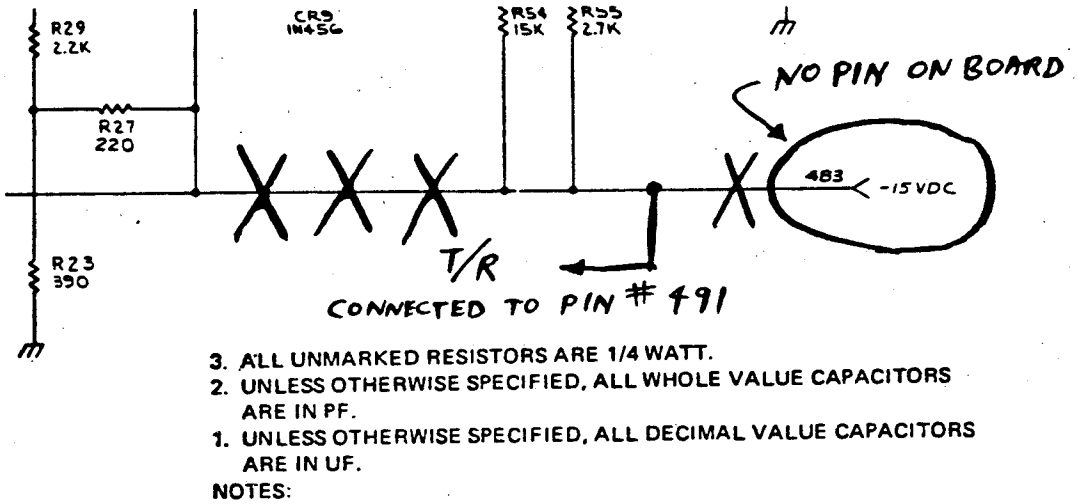


Figure 6-10. AGC Detector Board A9 Schematic Diagram

PROBLEM: No readings on Screen, Plate, Drive meter positions. Low output on transmit.

SOLUTION: (by K3QHY). Replace Q4 on power supply board (CX7B) which is a MPS-L01.

PROBLEM: Frequency drift

SOLUTION: (by K3QHY). Re-dress cable of wires around the SPOT level, CALIBRATE, FSK Shift controls to the top edge of the cabinet panel. Make the cable rigid by using ties or similar.

SOLUTION: (by W9RE). If drift is exhibited by BOTH PTO's, a possible source of the problem is the CALIBRATE potentiometer being dirty or dirty bandswitch contacts. Clean as required.

PROBLEM: Crystal calibrator cannot be zeroed to WWV.

SOLUTION: (by W9RE). Add a small mica capacitor in series with the crystal to bring it back to within range of the installed trimmer.

VIEWING I.F. SIGNALS: (by W6QJV). Connect a 30pf capacitor to terminal 493 on A9 board (AGC Detector) through miniature coax to the HI-IF jack. (Disconnect present connection to HI-IF jack). Use a wide-band scope that will display 8.8 Mhz and you're all set.