Check for a problem in the EMI filter or the wiring.

CASE 4
+5 V, +15 V are bad; -15 V is high.

Check for a problem with CR12, L2, the EMI filter, or the wiring.

CASE 5
Only the -15 V is bad.

Check for a problem with CR16, CR1, L3, the EMI filter, or the wiring.

CASE 6
The voltages are too high.

(1) Check the reference voltage at pin 2 of U1, which should be +2.5 Vdc.

(2) If the voltage at pin 2 is incorrect, check for +5 Vdc at pin 16. If the voltage at pin 16 is good, check for a problem in reference divider R15 and R16.

(3) If the voltage at pin 2 is correct, check the voltage at pin 1, which should also be +2.5 Vdc. If not, check voltage divider R4, R5, R6, R57. If the voltage at pin 1 is lower than it should be, this will cause the output voltages of the Multivoltage Supply Assy to be high.

CASE 7
The output voltages are too low.

Check for a current limit condition by measuring the voltage at the junction of R39, R40, and R44. If the voltage is +1.2 Vdc, the current limit condition is in effect. Troubleshoot this condition the same way as in the note after step 5 of Case 1.

6-20. INTERCONNECT PWB ASSY, A1A15. In all probability, the Interconnect PWB Assy by itself will never be sent back for repair. This is because the Interconnect PWB Assy is not identified in any of the on-equipment troubleshooting procedures as the cause of an equipment malfunction. The Interconnect PWB Assy contains very few electronic components: two LEDs (one indicating the presence of +5 Vdc, the other indicating the presence of +13.6 Vdc) and a filter for the Multivoltage Supply Assy, which consists of an inductor and a capacitor. However, since the Interconnect PWB Assy is a junction point for all the other boards in the 100 Watt Transceiver, it contains, in addition to its many printed-circuit traces, 13 cables (P1-P13) and 9 jacks (J1-J9). An open wire in a ribbon cable or a faulty connector contact might generate a fault code during an automatic BIT routine which points to another board, when in reality the problem is on the Interconnect PWB Assy. Therefore, when replacing the board indicated by the BIT procedure fails to correct the equipment fault, the entire transceiver may be sent back to the depot for repair. In this case, the Interconnect PWB Assy may be considered a prime suspect.

Troubleshooting the Interconnect PWB Assy is limited to the following actions:

- Checking the power supply voltages at test points TP1-TP5
- Checking the output of the capacitor and inductor to the Multivoltage Supply Assy
- Standard signal-tracing techniques and continuity checks for the board's lands, cables, and connectors

CAUTION

When checking connectors, do not insert meter probes larger than 0.025 inch in diameter. The use of larger probes may cause damage to the contacts, resulting in intermittent equipment problems.

6-21. AUDIO INTERFACE PWB ASSY, A1A16.

a. Preliminary Procedure. Remove the good Audio Interface PWB Assy from the test-bed 100 Watt Transceiver, and in its place connect the faulty Audio Interface PWB Assy. It is not necessary to mount the board to the transceiver chassis.

b. Checkout and Troubleshooting Procedures.

(1) Check the PATCH circuitry as follows:

4-WIRE, 2-WIRE PATCH IN

(a) Connect an audio signal generator to the PATCH IN (4W) terminals (1 and 2) on TB1 at the rear of the transceiver.

(b) Set the signal generator for a 1 KHz tone at -20 dBm.

(c) On the transceiver front panel, select the AUDIO meter and the PATCH audio source.

(d) Set the PATCH selector switch (S1) on the Audio Interface PWB Assy to the "4" position.

(e) If the PATCH IN circuitry is working properly, you should be able to adjust the PATCH XMIT potentiometer on the transceiver front panel for 0 dBm on the meter.

(f) Set the PATCH selector switch (S1) on the Audio Interface PWB Assy to the "2" position.

(g) Repeat step e with the signal generator connected to he "2W" PATCH terminals on TB1.

4-WIRE, 2-WIRE PATCH OUT

(h) Connect an RF signal generator to the antenna jack (J1) at the rear of the transceiver.

(i) Set the signal generator for a carrier frequency of 15 MHz at approximately -20 dBm. Select a modulating frequency of 1 KHz at 50% modulation.

(j) Select PATCH on the transceiver's front panel meter, and select PATCH as the audio source. Select AME mode at 15 MHz.

(k) If the PATCH circuitry is working properly, you should be able to adjust the PATCH RCV potentiometer on the transceiver front panel for 0 dBm.

(l) Connect an oscilloscope to the PATCH OUT terminals (3 and 4) on TB1 at the rear of the transceiver.

(m) Set the PATCH selector switch (S1) on the Audio Interface PWB Assy to the "4" position.

(n) Note that the signal on the oscilloscope varies as you adjust the PATCH RCV potentiometer. The signal should be approximately 2 V pk-pk when the meter reading is 0 dBm.

(o) Set the PATCH selector switch (S1) on the Audio Interface PWB Assy to the "2" position.

(p) Connect the oscilloscope to the "2W" PATCH terminals on TB1 (2 and 3). The signal should be about the same level as in step n.

(2) Check the LINE circuitry as follows:

4-WIRE, 2-WIRE LINE OUT

(a) Connect an RF signal generator to the antenna jack (J1) at the rear of the transceiver.

(b) Set the signal generator for a carrier frequency of 15 MHz at approximately -20 dBm. Select a modulating frequency of 1 KHz at 50% modulation.

(c) Set the transceiver to 15 MHz AME.

(d) Connect an oscilloscope to the LINE OUT terminals on TB1 (7 and 8) at the rear of the transceiver.

(e) Select LINE on the transceiver's meter, with any audio source.

(f) Set the LINE selector switch (S2) on the Audio Interface PWB Assy to the "4" position.

(g) Adjust the LINE potentiometer on the transceiver's front panel for +10 dBm. Note that the audio signal on the oscilloscope varies in size as you adjust the potentiometer. The signal on the

oscilloscope should be approximately 7 V pk-pk when the meter indicates +10 dBm.

(h) Connect the oscilloscope to pins 13 and 12 of the REMOTE connector J9 at the rear of the transceiver. You should get the same signal as before. This checks the continuity of the J2 connector output on the Audio Interface PWB Assy.

(i) Connect the oscilloscope to the "2W" LINE terminals on TB1 (6 and 7) at the rear of the transceiver, and select the "2" position for switch S2 on the Audio Interface PWB Assy. The signal on the oscilloscope should be the same as in step g.

4-WIRE, 2-WIRE LINE IN

(j) Connect an audio signal generator to the LINE IN terminals on TB1 at the rear of the transceiver.

(k) Set the signal generator for a 1 KHz signal at -10 dBm.

(l) Select 10 MHz USB on the transceiver.

(m) Select LINE on the transceiver's meter.

(n) Set the LINE selector switch (S2) on the Audio Interface PWB Assy to the "4" position.

(o) Key the transceiver, and check that the signal strength of the signal generator (-10 dBm) matches the indication on the meter.

(p) Increase the output level of the signal generator to 0 dBm. Note a corresponding increase in the signal strength indicated on the meter.

NOTE

Steps q-t check the continuity of the J2 connector output on the Audio Interface PWB Assy.

(q) Connect the signal generator output to pins 24 and 25 of the REMOTE connector J9 at the rear of the transceiver.

(r) Repeat steps o and p. The results should be the same.

(s) Connect the signal generator to pins 13 and 24 of the REMOTE connector J9. Set he LINE selector switch (S2) on the Audio Interface PWB Assy to the "2" position.

(t) Repeat steps o and p. The results should be the same.

(u) Connect the signal generator to the "2W" LINE terminals (6 and 7) on TB1 at the rear of the transceiver.

(v) Repeat steps o and p. The results should be the same.

(3) If any of the above checks indicate a problem in the Audio Interface PWB Assy circuitry, use standard signal-tracing techniques to isolate the faulty component, whether it be the hybrid transformers, series resistors or capacitors, or the board itself.

6-22. COUPLER CONNECTOR PWB ASSY, A1A17. This board and its attached ribbon cable provide the connections between the LPA/Coupler Interface PWB Assy and the J5/J8 connectors on the back of the 100 Watt Transceiver. Therefore, this board is a possible suspect whenever there is a high VSWR (fault code 1A1A5-8) or whenever the LPA/Coupler Interface PWB Assy is suspected of being at fault (fault code 1A1A1-1) or whenever there is a break in the communications between the transceiver and the power amplifier and/or antenna coupler.

Troubleshooting this board and its attached cable consists of continuity checks from input to output. There are no electronic components on the board.

CAUTION

When checking connectors, do not insert meter probes larger than 0.025 inch in diameter. The use of larger probes may cause damage to the connector contacts, resulting in intermittent equipment problems.

6-23. AFSK MODULE ASSY, A1A18.

a. Preliminary Procedure.

(1) Remove the good AFSK Module Assy from the test-bed 100 Watt Transceiver, and replace it with the faulty AFSK Module Assy.

(2) Power up the transceiver.

(3) Check for the presence of the following power supply voltages on the board:

Voltage:	Measure at:
+5 Vdc	+ side of C4
+15 Vdc	+ side of C2
-15 Vdc	- side of C6
+2.28 Vdc	Junction of R1, R2
+5 VR	R53 (side away from L3)
-5 Vdc	Anode of CR1
+12 Vdc	+ side of C88
-12 Vdc	- side of C71

(5) If the voltages check good, run the receive-only BIT test.

b. Interpreting the BIT Fault Codes. Use the fault codes listed below as a guide in troubleshooting the AFSK Module Assy. Refer to the section corresponding to the fault code you get. In the event that the BIT test runs without generating a fault code, start at the beginning of the following procedures and work your way through to the end.

BIT Test Description for the AFSK Module Assy

1. Checks for the presence of the module by sending data to it and checking to see whether the MCB loopback bit was sent back in reply.

2. If the module is present (the MCB loopback bit is received by the microprocessor), keys the module and places it in a loopback configuration.

3. Verifies that a mark and a space applied to the keyer are detected as a mark and a space by the converter.

1A1A18-1

This fault code indicates that no AFSK audio was detected by the microprocessor at the output of TTL Converter U6 on the AFSK Keyer/Converter PWB Assy. The problem could be either in the Converter section of the board or the Keyer section. The following procedure first checks the Converter, then checks the Keyer.

CONVERTER SECTION

(1) Select AFSK on the front panel of the transceiver. If the AFSK indicator appears on the display, then the MCB loopback circuitry (U14, U15, U16, U19, and their associated components) is probably good.

(2) Check TP3 with an oscilloscope for the 1.25 MHz clock signal (0-5 V pk-pk square wave).

(a) If the clock signal is incorrect or missing, check pin 15 of U3 for a low (this is the CLOCK ENABLE line).

(b) If pin 15 of U3 is not low, check for a high on either pin 1 or pin 2 of U7C Refer to the chart on the schematic for the high-low combination required for the shift selected by S1 on the AFSK Filter PWB Assy. If neither pin is low, trace the shift select lines back to shift register U16.

(c) If pin 15 of U3 is low, the problem is in the clock oscillator circuit. Check for +5 Vdc on pin 1 of U12A.

(d) If TP3 is good, proceed to step 3.

(3) Inject a 100 mV rms signal at pin 19 of J2. Set the frequency according to the shift

that is selected by S1 on the AFSK Filter PWB Assy:

Shift:	Signal Generator Frequency
850 Hz	000 Hz
170 Hz	1000 Hz
85 Hz	500 Hz

(4) Check TP1 with an oscilloscope. You should see 0-5 V spikes at twice the input frequency.

(a) If TP1 is bad, check for a square wave at the input frequency at pin 7 of U2.

(b) If TP1 is good, proceed to step 5.

(5) Check the signal at TP2. You should see a square wave 12 V above and below ground at twice the input frequency.

(a) If TP2 has no signal, check pin 10 of U5 for a 0-5 V square wave at the same frequency as TP1. If the signal is bad here but good at pin 11 of U5, then either U5 is bad or the required information never got loaded from registers U17 and U18.

(b) Check for a low at pin 21 of U5D (this is the chip select line). If pin 21 is not low, U18 could be bad. If pin 21 is low, try replacing U5 (it's socketed).

(6) If TP2 is good, check pin 7 of U6 with an oscilloscope or a DC voltmeter. You should read +5 Vdc (a mark). If not, work your way back through AR8 and AR2.

(7) If U6 pin 7 is good, check pin 15 of U9 for -4 to -6 Vdc (a mark).

(a) If this voltage is good, select AFSK CREV on the front panel. The voltage should now be +4 to +6 Vdc. If not, check pin 9 of U4 for the CREV signal (should be a low).

(b) Check also U7 pin 5. You should see a low for the normal (not hold) condition.

(c) Check also pin 4 of U7 for a low, indicating that the signal is present. If this pin is high, you're in a mark-hold condition. Trace the signal line back through U21B and AR7.

(8) You can also try shifting the signal generator frequency to see whether a voltage shift occurs at pin 15 of U9, pin 2 of U9, pin 6 of U7, pin 7 of U6, etc.

(9) Look also at the junction of R87 and R88. You should see +2.5 Vdc when you're at the center frequency. If the frequency goes up, the voltage here should go up.

KEYER SECTION

(1) Inject +6 Vdc at pins 8 and 9 of J3.

(2) Key the transceiver with the 2ND, TX KEY buttons on the front panel.

(3) Check pin 3 of U13 for a 0-2.5 V square wave at the selected center frequency plus the space offset. For example, if your center frequency is 2000 Hz and your shift is 850 Hz, then you should see a 2425 Hz signal at pin 3 of U13.

(4) If the signal is not there, check pin 10 of U11 for a low with the transceiver keyed. This is the CONDITIONED KEYLINE. If this pin is low, check pin 13 of U5B for a square wave at twice the space frequency (in our example, 4850 Hz). Pin 17 of U5B should remain high.

(5) If the signal at pin 3 of U13 is good, check pin 4 of U1 for an audio frequency sine wave (in our example, 2425 Hz) at 100 mV rms. If this signal is bad, check the signals at U13, specifically the coding at the AFSK FILTER SELECT lines, pins 10 and 11. Refer to the chart on page 5 of the schematic for the coding.

(6) If the signal at U1 pin 4 is bad, you might try selecting a different frequency shift with S1 on the AFSK Filter PWB Assy. This will determine whether the problem is in one of the shift filters (AR4, AR5, and their associated components).

1A1A18-2

This fault code indicates that the 455 KHz AFSK IF signal was not detected at the output of the IF Filter PWB Assy. The problem is probably in the AFSK Filter PWB Assy or in the filter select circuitry on the AFSK Keyer/Converter PWB Assy.

The first thing to do is determine whether the problem occurs at only one frequency shift or at all of them. Do this by running the BIT test again after changing the position of S1 on the AFSK Filter PWB Assy and then resetting the microprocessor (see the note after step 2 below). This will help you decide whether to perform the following steps for only one filter circuit or for all of them.

(1) Inject a 455 KHz, -32 dBm signal at J1 on the IF Filter PWB Assy.

(2) Select each filter on the AFSK Filter PWB Assy with switch S1.

NOTE

After you select a filter with S1, you must reset the microprocessor to make sure that the microprocessor reads the new selection. You can reset the microprocessor by pushing the reset button on the Transceiver Control PWB Assy with power on or by switching the transceiver off and then on again.

(3) Check for the signal at the output of the IF Filter PWB Assy (J2). There should be about 17 +/-2 dB of signal gain.

(4) Check for -15 Vdc at the input resistor (R1, R6, or R11) on the selected filter line. The unselected lines should have +15 Vdc at their input resistors.

(5) If the voltages are incorrect, disconnect the AFSK Filter PWB Assy from the AFSK Keyer/Converter PWB Assy and check it for shorts. Check also switch S1.

(6) The problem could also be in the filter select circuitry on the Keyer/Converter PWB Assy, specifically AR5, AR6, U20A, and their associated components.

6-24. REMOTE CONTROL INTERFACE PWB ASSY, A1A19

a. Preliminary Procedure.

(1) Remove the good Remote Control Interface PWB Assy from the test-bed 100 Watt Transceiver, and replace it with the faulty Remote Control Interface PWB Assy.

(2) Make sure that the transceiver is connected to a Remote Control Unit and that the connecting cable has all 25 wires.

(3) Power up the transceiver.

(4) Switch on the Remote Control Unit.

(5) Check for the presence of the following power supply voltages on the Remote Control Interface PWB Assy:

Voltage:	Measure at:
+5 Vdc	+ side of C1
+15 Vdc	anode of CR1
-15 Vdc	- side of C18
-5 Vdc	- side of C19
+12 Vdc	U9, pin 14

(6) If the voltages check good, run the receive-only BIT test.

b. Interpreting the BIT Fault Codes. Use the fault codes listed below as a guide in troubleshooting the Remote Control Interface PWB Assy. Refer to the section corresponding to the fault code you get. In the event that the BIT test runs without generating a fault code, try to select remote operation from the transceiver front panel and follow the procedures listed under "RCU OFF, LCU OFF" at the end of this section.

BIT Test Description for the
Remote Control Interface PWB Assy

1. Checks for the presence of the board by detecting the R IDENT signal (which is simply a ground supplied to the Transceiver Control PWB Assy on pin 34 of the connecting cable when the board is installed). This check is actually performed on power up.

2. Reads the code on the Baud Rate Select Switch S1 on the Remote Control Interface PWB Assy.

3. Places the UART U7 in a loopback configuration and verifies that data sent to the UART is sent back.

1A1A19-1

This fault code indicates that the microprocessor did not read the code set up by switch S1 (Baud Rate Select) or that the code read was an invalid one.

In order for this part of the BIT test to pass, several components have to function correctly: U2, U5, U8, U15C, U15D, U3, R4, and S1. The object of the following procedure is to determine which of these components is defective.

(1) Check the code-generating components (S1, R4) as follows:

(a) Set S1 to position 0 (300 baud).

(b) You should see lows on pins 15-18 of U3.

(c) Set S1 to position 5 (9600 baud).

(d) You should see lows on pins 15 and 17 of U3 and highs on pins 16 and 18.

(e) If all these voltages are correct, then switch S1 and R4 are good.

(2) Run the BIT receive-only test at two different baud rates: first 300 and then 9600. Make sure that the baud rate switch on the Audio/Microprocessor PWB Assy in the Remote Control Unit is set to the same position as the baud rate switch (S1) on the Remote Control Interface PWB Assy. Also, you must press the microprocessor reset switch on the Transceiver Control PWB Assy after you change the position of the baud rate select switch. Otherwise, the microprocessor will not be aware that the baud rate was changed.

(3) If the BIT test passes at one baud rate but not the other, then U3 is probably bad. If you get the 1A1A19-1 fault code at both baud rates, try to select remote operation from the transceiver.

(4) If the transceiver successfully selects remote operation, then U3 is almost certainly bad. If the transceiver fails to select remote operation (the message "RCU OFF" is displayed on the transceiver and the message "LCU OFF" is displayed on the Remote Control Unit), U3 is probably good.

(5) Check U8 by seeing whether the signals on the B side are transferred to the corresponding pins on the A side. If so, U8 is good. If not, replace U8.

(6) Check U15C and U15D by verifying that the logic levels are what they should be at the inputs and outputs of the gates.

(7) If all the above checks are good, the problem is either U5 or U2.

1A1A19-2

This fault code indicates that the microprocessor sent data to UART U7 but did not receive data in return.

Since fault code 1A1A19-1 was not declared, all the circuitry up to U7 is probably good. The problem is almost certainly U7 or the clock oscillator circuit. Check for the clock signal at pin 20 of U7. If it's there, replace U7. If it's not, troubleshoot the clock oscillator circuit.

rcu OFF, LCU OFF

If the transceiver cannot establish a communications link with the Remote Control Unit after remote operation has been selected, "rcu OFF" will appear on the transceiver's display, and "LCU OFF" will appear on the Remote Control Unit's display. If the BIT test does not indicate any failures, the problem is most likely in the interface circuitry. Check it as follows:

(1) Try establishing a communications link on each of the other interfaces. Remember that the interface select switches in both the transceiver and the Remote Control

Unit must be set the same. Also, when selecting modem, make sure that you change the baud rate to 300 on both units and that the 2-wire, 4-wire select switches are set the same.

(2) If the failure occurs in only one specific interface, then troubleshoot the circuitry unique to that interface:

Failure in:	Check:
RS-232 only	U14A, U13A, C29
RS-422 only	U10, U11
MS-188 only	U4C, U14B, U13B, U4E, C30
Modem only	U1, U9, VR4, U18, S5, T1, T2, and their associated components

In the case of modem, the signal you are tracing is audio tones; in all other cases, the signal consists of a series of pulses. The Remote Control Unit sends a series of pulses to the Remote Control Interface PWB Assy every 5 seconds in an attempt to receive a response. If the Remote Control Interface PWB Assy does not transmit any pulses in response, the Remote Control Unit will keep polling.

(3) If the RS-232 interface works but none of the others does, then check U11A and its associated components.

(4) If none of the interfaces works, then do the following:

(a) Check Interface Select Switch S2. There should be receive pulses from the Remote Control Unit every 5 seconds on pins 0-3 (each pin corresponds to a different interface). Check to see that these pulses also appear on the common pin. If not, replace the switch.

(b) Check U10. Also check the 422 EN line coming into it at pin 3. This line must be low for the interfaces to work. If this line is not low, the problem could be in U1 or one of its associated components.

(c) If the above components check good, the problem may not be in the interface circuits. Proceed to step 5.

(5) Check the signals in and out of UART chip U7 as follows:

(a) With an oscilloscope, check for a series of pulses every 5 seconds on pin 3. These are the poll commands from the Remote Control Unit.

(b) Connect the other channel of the oscilloscope to pin 14. When there is activity on pin 3, there should be a series of narrow, negative-going pulses on pin 14. The negative transition indicates that a pulse went out to the microprocessor; the positive transition indicates that the microprocessor read it. If there are no pulses on pin 14 with pulses on pin 3, then replace U7.

(c) If these signals are good, check for a series of transmit pulses on pin 19. If the pulses are not there, check pin 15 for a series of pulses. If no pulses are there either, replace U7.

6-25. POWER SUPPLY PROTECTION AND CONTROL PWB ASSY, A2A1.

a. Preliminary Procedure.

(1) Remove the good Power Supply Protection and Control PWB Assy from the test-bed 100 Watt Transceiver, and replace it with the faulty Power Supply Protection and Control PWB Assy.

(2) Power up the transceiver.

(3) Listen for the clicking of the relays: the ON/OFF Relay (AC or DC, depending on the type of input power you have) and the Step-Start Relay.

(4) Check the operation of the fan. The fan should come on at low speed and switch to high speed only when the temperature inside the transceiver rises above 65 C.

(5) Based on the what the relays and the fan do when you apply power, troubleshoot

the Power Supply Protection and Control PWB Assy according to the symptoms in section b below.

b. Troubleshooting Procedures.

CASE 1
No relays are heard.

(1) Check to see whether LED DS1 (AC operation) or LED DS2 (DC operation) is on. If it is, check for a problem in J1 (DC) or J2 (AC). If it is not on, proceed to step 2.

(2) Check for approximately 3 Vdc at L1.

(3) If the voltage at J4 pin 5 is correct, check for a low at pin 1 of AR1. If AR1 pin 1 is not low, there is a problem with either AR1 or one of its surrounding components. Check voltage divider R42, R43, R44 and also the +7.5 V regulator.

(4) If the output of AR1 pin 1 is low, do the following:

DC Operation

(a) Check for a low at the collector of Q1. If Q1's collector is low, check for the presence of the DC input voltage (should be approximately +12 Vdc) at the cathode of CR1. If the voltage is incorrect, trace the circuit back to the input at J1 pin 5. If Q1's collector is not low, proceed to step b.

(b) Check for a low at the collector of Q3. If Q3's collector is low, check the position of the jumper at TB1. Make sure the jumper is set correctly for the input voltage.

(c) If the jumper position is correct, look for a problem in the Overvoltage Protection Circuit (Q2, Q3, and their associated components).

(d) If Q1's collector is not low and Q3's collector is not low, the problem is probably in Q11, Q12, Q1, or one of their associated components.

AC Operation

(a) Check for a low at the collector of Q15. If Q15's collector is low, check the positive side of C6 for approximately +12 Vdc. If the voltage is incorrect, check CR26, CR27, and C6 for a possible fault. If Q15's collector is not low, proceed to step b.

(b) Check the voltages around Q14 and the base of Q15. Q14 should be biased to conduct. If Q14 is not conducting, check for a problem in Q14 itself or one of its associated components. If it is conducting, then Q15 is probably bad.

CASE 2
Only one relay is heard.

In this case, the problem is probably in the Step-Start Relay circuitry. Check it as follows:

(1) Check for a low at the collector of Q4. If Q4's collector is low, check for the positive supply voltage (approximately +28 Vdc) at the anode of CR14. If this voltage is incorrect, check CR14, C4, Q7, and their associated components. If Q4's collector is not low, proceed to step 2.

(2) Check the collector of Q3. If it is low (less than 1.0 Vdc), this indicates an overvoltage condition. Check the incoming line voltage. If Q3's collector is not low, proceed to step 3.

(3) Check the collector of Q5 for +8 to +18 Vdc. If this voltage is correct, the problem is probably Q4 or one of its associated components. If the voltage at Q5's collector is incorrect, proceed to step 4.

(4) Check for +8 to +17 Vdc at the collector of Q7. If this voltage is good, the problem is probably in Q5 or one of its associated components. If the collector of Q7 is at line voltage (+28 Vdc), then look for a problem in Q7 or one of its associated components.

CASE 3
Both relays are heard, but the fan does not run.

Look for a problem in connector J1 (pins 2 and 3) or R38. Check for +12 Vdc at the emitter of Q9. If the voltage is not present, check CR16 and R28.

CASE 4
Both relays are heard, but the fan runs only at low speed.

To confirm that the fan runs only at low speed, ground the control line at J4 pin 5. If the fan will not run at high speed with J4-5 grounded, do the following:

(1) Check the collector of Q8. If it is low, the problem is in Q9, Q10, or one of their associated components.

(2) If the collector of Q8 is high, the problem is AR1 or one of its associated components.

CASE 5
Both relays are heard, but the fan runs only at high speed.

Check the collector of Q8. If it's low, the problem is probably in Q8, AR1, or one of AR1's associated components. If Q8's collector is high, look for a problem in Q9, Q10, or one of their associated components.

CASE 6
The relays and fan operate correctly, but the transceiver does not power up.

Check for a shorted shutdown transistor Q6. The collector of Q6 shouldn't be low unless the Step-Start Relay fails to energize.

6-26. 13.6 V POWER SUPPLY, A2A2.

a. Troubleshooting Procedure.

CASE 1
No output voltage.

(1) Remove the good 13.6 V Power Supply from the test-bed 100 Watt Transceiver, and replace it with the faulty 13.6 V Power Supply. Remove the cover from the power supply.

(2) Power up the transceiver.

(3) Check to see if the input voltage (+28 Vdc nominal) is present at the collector of Q1. If not, troubleshoot the +28 Vdc input line.

(4) If Q1's collector is good, check pin 15 of U1. The voltage here should be about 2 volts less than the input voltage. If this voltage is incorrect, the problem is probably in U1 and its associated circuitry.

(5) If pin 15 of U1 is good, check the signal at pins 11 and 14 with an oscilloscope. You should see a 4 V pk-pk square wave with a 75% duty cycle. If this signal is good, skip to step 8.

NOTE

If you have narrow pulses at pins 11 and 14, check for the current limit condition, which is indicated by +1.2 Vdc at the emitter of Q10. If you are in current limit, disconnect the output to the EMI filter and see whether the output voltage returns to normal. If it does, the EMI filter is probably bad. If it doesn't, there is probably a short somewhere in the power supply.

(6) If the signal at pins 11 and 14 is bad, check the voltage at pin 10. If pin 10 is high, this indicates the shutdown condition, which could be caused by any of the following:

- o Incorrect line voltage
- o A failure in the Undervoltage/ Overvoltage Protection circuits
- o Shutdown switch Q5, which can be triggered by the Under-voltage/Overvoltage Protection, Overtemperature, or Soft Start circuits.

(7) If the voltage at pin 10 is low, check the other voltages on U1 as follows:

(a) Check for +3 to 3.5 Vdc at pin 9, which is the normal voltage if the power supply is not putting out.

(b) If pin 9 is not correct, check pin 2 for +2.5 Vdc.

(c) If pin 2 is not correct, check pin 16 for +5 Vdc.

(d) If the voltage at pin 16 is bad, either U1 or its associated circuitry is bad.

(8) If the signal at pins 11 and 14 of U1 is good, check the collector of Q7 for a signal whose pk-pk amplitude is 3 volts less than the incoming supply voltage. Trace this signal through Q9, Q1, Q2, and Q3.

CASE 2
High output voltage.

(1) Try adjusting the voltage with potentiometer R26. See the alignments section.

(2) If you can't adjust the voltage to +13.6 Vdc with the potentiometer, do the following:

(a) Check Q1, Q2, and Q3 for collector-to-emitter shorts.

(b) Check for a short in Q7 and/or Q9.

(c) Check the voltage divider/reference network at pins 2 and 16 of U1, which consists of R13 and R14. Pin 2 should read +2.5 Vdc, and pin 16 should read +5 Vdc. Also, check the voltage on pin 1, which should be about the same as on pin 2.

NOTE

If pin 1 (which has the feedback voltage) is lower than pin 2, the power supply will try to put out more voltage.

CASE 3
Low output voltage.

(1) Try adjusting the voltage with potentiometer R26. See the alignments section.

(2) If you can't adjust the voltage to +13.6 Vdc, check the voltage divider/reference network at pins 2 and 16 of U1, which consists of R13 and R14. Pin 2 should read +2.5 Vdc, and pin 16 should read +5 Vdc. Also, check the voltage on pin 1, which should be about the same as on pin 2.

NOTE

If pin 1 is higher than pin 2, the power supply will try to cut back--no signal will appear at pins 11 and 14.

APPENDIX A

CHECKS PERFORMED DURING AUTOMATIC BIT ROUTINES FOR THE TRANSCEIVER

1. Turns on all front panel indicators for the duration of the test for inspection by the operator.

2. Checks for major modules present by testing the ability to send data to and receive data from modules.

3. Remote Control Interface PWB Assy (A1A19) - If installed, checks UART loopback and baud rate switch.

4. Multivoltage Supply Assy (A1A14) - Checks +15V and -15V output voltages and compares them with stored limits.

5. Disables speaker and mutes 600-ohm line.

6. Reference/BFO PWB Assy (A1A9) - Verifies the presence of all outputs and verifies frequency lock of BFO at both ends of the frequency range.

7. Synthesizer PWB Assy (A1A10) - Verifies the presence of output and frequency lock at both ends of the tuning range.

8. Low Pass Filter PWB Assy (A1A5) - Activates BIT Oscillator and checks receive RF output with all filters deselected, then checks output with each filter selected in turn. If all filters pass, rechecks with all filters deselected, then selects Band 6, and sets the synthesizer to receive the BIT Oscillator.

9. First Converter PWB Assy (A1A3) - Activates BIT Oscillator signal and verifies the presence of Rx (receive) IF output.

10. Receiver PWB Assy (A1A7) - Activates BIT Oscillator and verifies the presence of IF to filters.

11. IF Filter PWB Assy (A1A2) - Activates BIT Oscillator, then selects each filter, using the Synthesizer to center the BIT signal in each passband, and verifies the presence of 455 KHz IF output. If an AFSK option is installed, these filters are checked in a similar manner.

12. Receiver PWB Assy (A1A7) - Bypasses volume and squelch controls, sets RF gain at maximum, and verifies that there is no line audio in USB. Activates BIT Oscillator and verifies the presence of a line audio level.

13. AGC/TGC PWB Assy (A1A6) - Checks signal strength in USB at maximum RF gain with and without the BIT Oscillator activated. Checks signal strength with the BIT Oscillator activated at minimum RF gain.

14. AFSK - Checks for presence of module; if present, keys module, places it in a loopback configuration, and verifies that a mark and space applied to the keyer are detected as a mark and space by the converter. If receive-only testing has been initiated, the test stops and the current operating status is restored. If receive/transmit testing has been initiated, the following additional steps occur.

NOTE

The transceiver must be connected to a load with a VSWR of 2.0 to 1 maximum in order for this portion of the routine to proceed to completion.

15. Exciter PWB Assy (A1A1) - Applies a 1 KHz test signal to the MIC input, selects USB mode, and keys the transmitter; verifies the presence of 455 KHz IF output from Exciter.

16. Receiver PWB Assy (A1A7) - Verifies the presence of IF to filters.

17. Exciter PWB Assy (A1A1) -

    (a) Verifies the presence of Exciter IF output;

    (b) disables the 1 KHz test signal, selects AME, and verifies the presence of Exciter IF output; and (c) selects CW mode and verifies the presence of Exciter IF output.

18. First Converter PWB Assy (A1A3) - Keys the radio in CW and verifies the presence of Tx (transmit) RF output.

19. 100 Watt PA (A1A4) - Keys the transmitter in CW and verifies the presence of Tx RF output.

20. Low Pass Filter PWB Assy (A1A5) - Keys the transmitter in CW and verifies the presence of the signal at RF IN/OUT.

21. AGC/TGC PWB Assy (A1A6) - Keys the transmitter in CW. Verifies the correct transceiver output power level and verifies that the TGC system has stabilized at a normal control level.

22. Restores the radio to the current operating status.

APPENDIX B

Meter Functions

Function	Parameter	Range/Units
AUDIO	Transmit audio on Exciter PWB Assy	-20 to +10 dB
LINE	Receive audio at output of Receiver PWB Assy	-20 to +10 dBm
	In REMOTE operation and if KEYED, line audio into Exciter PWB Assy will be monitored	
PATCH	If KEYED, transmit audio input to Exciter PWB Assy	-20 to +10 dBm
	If UNKEYED, receive audio output from Exciter PWB Assy	
FWD	If KEYED, forward RF output from Low Pass Filter PWB Assy	0 to 150 Watts
	If UNKEYED, relative receive signal strength (AGC Voltage) from AGC/TGC PWB Assy will be monitored	0 to S9+60 dB
REF	If KEYED, reflected RF power at Low Pass Filter PWB Assy	0 to 150 Watts
	If UNKEYED, relative signal strength	
VSWR	If KEYED, VSWR computed from FWD and REF measurements	1 to 4
	If UNKEYED, relative signal strength	
AFSK (if option installed)	Average received frequency relative to center tuned frequency at AFSK Keyer/Converter PWB Assy	± the mark-to-space shift

APPENDIX C

Performance Specifications

NOTE

The following specifications assume that all normal operating voltages are applied to the circuit board or assembly. No special test fixtures are required to measure the specifications, other than standard test equipment.

Exciter PWB Assy 10085-5400

PARAMETER	TEST CONDITIONS	ADJUSTMENT	TEST POINT	SPECIFICATION
V Audio (meter)	1 KHz at 1 V rms into J10-30	R47	J7-21	1.10 ±0.12 Vdc
Sidetone	Same as above	None	J6-8	0.050 ±0.032 Vdc
V Line	1 KHz at 1 V rms into J9-4	MIC pot on XCVR front panel	J7-21	1.10 ±0.12 Vdc
Line Input	1 KHz at 1 V rms into J10-47	R27	Same as above	Same as above
Audio 2	1 KHz at 1 V rms into J10-34/32	R29	Same as above	+0.075 Vdc
Patch Transmit	1 KHz at 1 V rms into J10-50	PATCH TX pot on XCVR front panel	Same as above	Same as above
Aux Receive	1 KHz at 1 V rms into J6-7	PATCH RX pot on XCVR front panel	J10-49	1.0 ±0.07 Vac
Vox Gain	1 KHz at 1 V rms into J9-4	VOX pot on XCVR front panel	None	Radio keys
Antivox Gain	Same as above	ANTIVOX pot on XCVR front panel	None	Radio unkeys
Clipper	1 KHz at 1 V rms into J10-47	R91	TP3	2 V pk-pk
Balanced Modulator	Same as above; also, 455 KHz at -6 dBm into J1	R110, R117	P1	454 and 456 KHz at approx. -35 dBm; carrier should be null (40 dB down from tones); also, IMD must be -95 dBm or less

Exciter PWB Assy (Continued)
10085-5400

PARAMETER	TEST CONDITIONS	ADJUSTMENT	TEST POINT	SPECIFICATION
40 MHz Transmit IF Output	40 MHz at -6 dBm into J2; 2 tones (454, 456 KHz at -24 dBm) into P2	C99	J3	Peak 40.455 MHz signal at -2 ±3 dBm; IM should be 45 dB down from peak
455 KHz IF Envelope	Same as above, except level of tones is -34 dBm	L7	J5-1	Peak signal at approx. +3.3 Vdc
AME Carrier Reinsertion	40 MHz at -6 dBm into J2; AME mode	R119	J3	-2 dBm
Coupler Tune	Same as above	R148	Same as above	-0.5 dBm
Low Power Indicator	No signal in; radio keyed	R254	J7-31	Logic high: approx. +4.25 Vdc

IF Filter PWB Assy
10085-5300

PARAMETER	TEST CONDITIONS	ADJUSTMENT	TEST POINT	SPECIFICATION
IF Filter Input	455 KHz at -37 dBm into J1	L2	J5	Maximum output (approx. +4 dBm)
IF Gain	456.7 KHz at -37 dBm into J1	R5	J2	-19 dBm, with a low at Q8-C
	455 KHz at -37 dBm into J1	None	Same as above	-18 ±2 dBm, with a low at Q8-C
	453.2 KHz at -37 dBm into J1	None	Same as above	-20 ±2 dBm, with a low at Q8-C

First Converter PWB Assy
10085-5000

PARAMETER	TEST CONDITIONS	ADJUSTMENT	TEST POINT	SPECIFICATION
LPF Nulling	59.3 MHz, 20 dBm signal into J1; JMP1 out; TGC = -6 Vdc AGC = 0 Vdc	L7	J7	Null
	Same as above, except freq. is 40.455 MHz	L8	Same as above	Same as above
	Same as above, except freq. is 44 MHz	L9	Same as above	Same as above
RX Output	Same as above, except freq. is 1.6 MHz at 30 dBm	None	Same as above	7 V pk-pk ±3 V
	14 MHz at 0 dBm into J1; 54.455 MHz at 0 dBm into J5; JMP1 in	L17, L14	J2	40.455 MHz at more than 0 dBm
	Same as above, except AGC = -1.5 Vdc	R17	Same as above	20 ±.5 dB reduction in output
	1.6001 MHz at 0 dBm into J1; 42.0551 MHz at 0 dBm into J5; AGC = 0 Vdc	None	Same as above	40.455 MHz at more than 0 dBm
	29.999 MHz at 0 dBm into J1; 70.454 MHz at 0 dBm into J5; AGC = 0 Vdc	None	Same as above	40.455 MHz at more than 0 dBm
40 MHz IF Trap	40.455 MHz at -30 dBm into J5	L37	Same as above	Null

First Converter PWB Assy (Continued)
10085-5000

PARAMETER	TEST CONDITIONS	ADJUSTMENT	TEST POINT	SPECIFICATION
TX Output	40.455 MHz at -10 dBm into J3; 54.455 MHz at 0 dBm into J5; TGC = -6 Vdc	None	J4	+6 dBm minimum
	Same as above, except TGC = 0 Vdc	None	Same as above	10 ±3 dB reduction in output
	Same as above, except TGC = +6 Vdc	None	Same as above	An additional 10 dB reduction in output
	40.455 MHz at -10 dBm into J3; 42.0551 MHz at 0 dBm into J5; TGC = -6 Vdc	None	Same as above	+6 dBm minimum
	Same as above, except 70.454 MHz at 0 dBm into J5	None	Same as above	+6 dBm minimum

Power Amplifier PWB Assy
10085-8100

PARAMETER	TEST CONDITIONS	ADJUSTMENT	TEST POINT	SPECIFICATION
Bias Current	All pots fully CCW; PA keyed by grounding CR3-K; no input signal	R4	#14 AWG wire between E20 & E21	300 mA
	Same as above	R3	#18 AWG wire between E18 & E19	110 mA
	Same as above	R1	TP3	0.4 Vdc
Gain Slope	30 MHz at -30 dBm into J6; increase signal till output at J7 is 71 Vac (input level should be approx. 12 dBm); change frequency to 1.6 MHz; +13.6 Vdc at E13	R2	J7	71 Vac at 1.6 MHz

Power Amplifier PWB Assy (Continued)
10085-8100

PARAMETER	TEST CONDITIONS	ADJUSTMENT	TEST POINT	SPECIFICATION
Current Limit	Same as above, except increase input level till 24 A is drawn; +13.6 Vdc at E13	R5	P1-3 side of R68	+5.0 Vdc
	Same as above, except reduce input level till output at J7 is 71 Vac	None	TP4	Approx. +4.0 Vdc

Low Pass Filter PWB Assy
10085-4000

PARAMETER	TEST CONDITIONS	ADJUSTMENT	TEST POINT	SPECIFICATION
Tuning Nulls	Frequency (MHz)		J3 (RX) J2 (TX)	Minimum RF output voltage
Band 1	3.501	L14		
	4.019	L15		
	6.533	L13		
Band 2	5.56	L8		
	6.72	L9		
	11.47	L7		
Band 3	8.988	L5		
	10.565	L6		
	17.395	L4		
Band 4	14.479	L2		
	18.278	L3		
	29.972	L1		
Band 5	23.715	L11		
	28.657	L12		
	48.71	L10, C3, C4		
Band 6	36.725	L17		
	40.935	L18		
	69.275	L16, C5, C6		

Low Pass Filter PWB Assy (Continued)
10085-4000

PARAMETER	TEST CONDITIONS	ADJUSTMENT	TEST POINT	SPECIFICATION
Return Loss:		None	Same as above	
Bands 1-4				-16 dB or better
Bands 5-6				-18 dB or better
Insertion Loss:		None	Same as above	
Bands 1-4				-.5 dB
Bands 5-6				-.6 dB
V Refl	15.0 MHz	R18	J6-1	Null
V Fwd	29.9 MHz	R17	J6-2	+8.0 ±0.05 Vdc
BIT Osc.:				
Frequency		C1	J3	2.45760 MHz
Output		R1	J3	-18 dBm

AGC/TGC PWB Assy
10085-5250

PARAMETER	TEST CONDITIONS	ADJUSTMENT	TEST POINT	SPECIFICATION
TGC Differential	TP2 = +8 Vdc TP1 = +8 Vdc	R37	TP9	+180 mV
TGC Clock Frequency	TP2 = +8 Vdc	R119	TP6	32.768 KHz ±800 Hz
AGC Threshold	15.001 MHz at -103 dBm into J1 on XCVR; AGC: medium; XCVR set to 15.000 MHz USB; 1 KHz tone is audible	R167	TP11	0 ±0.1 Vdc

Receiver PWB Assy
10085-5200

PARAMETER	TEST CONDITIONS	ADJUSTMENT	TEST POINT	SPECIFICATION
2nd LO Gain	40 MHz at 0 dBm into J4; 40.455 MHz at -40 dBm into J1; AGC = -6 Vdc	L6	J2	455 KHz at -36 dBm minimum
AGC	Same as above; adjust signal level at J1 for -10 dBm at J2	None	Same as above	-10 dBm
	Same as above, except AGC = -2 Vdc	None	Same as above	-18 to -14 dBm
	Same as above, except AGC = +4 Vdc	None	Same as above	-37.5 to -31.5 dBm
	Same as above, except AGC = +6 Vdc	None	Same as above	-53 to -47 dBm
AM Audio Level	AME mode; AGC off; full RF gain; 455 KHz at -80 dBm into J5	R42, L24	TP1	20 mV pk-pk minimum; should be 35 mV pk-pk
AGC	Same as above initially; then minimum RF gain; increase signal to -20 dBm into J5	R197	Same as above	20 mV pk-pk minimum; should be 35 mV pk-pk
AM Audio Level	Same as above, except 455 KHz at -74 dBm with a 1 KHz tone at 30% modulation; full RF gain	None	JMP2, E4	220 to 350 mV pk-pk
SSB Audio Level	USB mode; 455 KHz at 0 dBm into J7; 454 KHz at -80 dBm into J5	None	Same as above	200 to 380 mV pk-pk
Line Output	Same as above	LINE pot on front panel	P1-9	2.45 V rms (+10 dBm)
Audio 2 Output	Same as above	None	P1-12 or P1-13	1.06 V rms (+2.7 dBm)
Aux Audio Output	Same as above	None	P1-7	53-130 mV rms (-23.3 to -15.5 dBm)

Receiver PWB Assy (Continued)
10085-5200

PARAMETER	TEST CONDITIONS	ADJUSTMENT	TEST POINT	SPECIFICATION
Headphone Output	Same as above; squelch off; full volume	None	J11-2	2.2 V rms (+9 dBm)
Speaker Output	Same as above	None	J11-7	4.5 V rms (+15.3 dBm)
Antivox Output	Same as above	None	P1-10	1.1 V rms ±.1 V (+3.05 dBm)
			P1-4	1.80 ±.05 Vdc
Sidetone Output	1 KHz at .2 V pk-pk into P1-8	R93	JMP2, E4	220-350 mV pk-pk

Crystal Oscillator Assy
10085-0610

PARAMETER	TEST CONDITIONS	ADJUSTMENT	TEST POINT	SPECIFICATION
Output	+15 Vdc at E1 GND at E2 +13.6 Vdc at E3	None	SMB output connector	10.00000 MHz sine wave at 0.6 to 1.0 V pk-pk
Frequency	Same as above	Variable capacitor under screw	Same as above	10.00000 MHz ± offset

REF/BFO PWB Assy
10085-5500

PARAMETER	TEST CONDITIONS	ADJUSTMENT	TEST POINT	SPECIFICATION
40 MHz Reference Output	10 MHz at 1.0 V pk-pk into J2	L14	Case of Q21 with 10x scope probe	Peak reading: greater than 550 mV pk-pk at 40.00000 MHz
	Same as above	L1, L2	J3, J4	Peak reading: 0 ±3 dBm at 40.00000 MHz

REF/BFO PWB Assy (Continued)
10085-5500

PARAMETER	TEST CONDITIONS	ADJUSTMENT	TEST POINT	SPECIFICATION
200 KHz Reference Output	Same as above	None	P2	4.25 ±0.25 V pk-pk, 200 KHz square wave
1 KHz Reference Output	Same as above	None	J5	0.24 ±0.06 V pk-pk, 1 KHz sine wave
BFO Output	Same as above	None	J7	Approx. 0.74 V pk-pk, 455.00 KHz sine wave
VCO	Same as above	C35	TP1	+6.5 Vdc
Carrier Output	Same as above	None	J6	0.5 ±0.3 V pk-pk, 455.00 KHz sine wave
Aux Carrier Output	Same as above	None	J9	40 ±20 mV pk-pk, 455.00 KHz sine wave

Synthesizer PWB Assy
10085-5600

PARAMETER	TEST CONDITIONS	ADJUSTMENT	TEST POINT	SPECIFICATION
Output	200 KHz, TTL level square wave into J1; Synthesizer frequency set to 45.00000 MHz	None	P1	45.00000 MHz at -3 dBm
Reference Sideband Level	Same as above; set analyzer to 45.1 MHz at 2 KHz SCAN/DIV with REF level at -10 dBm	R2	Same as above	Minimum level: should be less than -60 dBm
40.455 MHz Trap	Same as above, except change Synthesizer frequency to 40.455 MHz	L8 on VCO Board	Same as above	Null; level should be less than -14 dBm

Multivoltage Supply Assy
10085-1240

PARAMETER	TEST CONDITIONS	ADJUSTMENT	TEST POINT	SPECIFICATION
-15 Vdc Output	+10.0 to +35 ±2 Vdc input with full load at all outputs: -15 Vdc = 0.5 A +15 Vdc = 1.7 A +5 Vdc = 2.5 A	None	E2	-14.85 to -15.3 Vdc
+15 Vdc Output		R4	E3	+15.0 Vdc
+5 Vdc Output		R61	E6	+5.0 Vdc

Audio Interface PWB Assy
10085-0570

PARAMETER	TEST CONDITIONS	ADJUSTMENT	TEST POINT	SPECIFICATION
Patch Transmit Output	1 KHz, 0 dBm into J1-5	None	J1-10	-10.8 ±1 dBm in 2W position; -11.0 ±1 dBm in 4W position
Line Balance	Same as above	R5	J1-7	Null (should be less than -40 dBm)
Line In Output	1 KHz, 0 dBm into J1-9	None	Same as above	-10.8 ±1 dBm in 2W position; -11.0 ±1 dBm in 4W position
Patch Balance	Same as above	R1	J1-10	Null (should be less than -40 dBm)

ASFK Keyer/Converter PWB Assy
10085-6100

PARAMETER	TEST CONDITIONS	ADJUSTMENT	TEST POINT	SPECIFICATION
Oscillator Frequency	AFSK mode	C22	TP3	1.24890 MHz ±100 Hz
TTL DC Offset	1 KHz at 50 mV rms into J2-19; AFSK shift of 170 Hz	R8	TP1	Equally spaced pulses
Duty Cycle Balance	Same as above, except signal level is 100 mV rms	R21	TP2	Symmetrical 2 KHz signal ±12 Vdc relative to ground
Meter Balance	Same as above	R86	Junction of R87 and R88	+2.5 ±0.05 Vdc
Detector Threshold	Same as above, except signal level is 5 mV rms	R73	AR7-1	Positive transition to +13.6 Vdc

ASFK IF Filter PWB Assy
10085-6200

PARAMETER	TEST CONDITIONS	ADJUSTMENT	TEST POINT	SPECIFICATION
Output	S1 to 850 Hz; S2 to USB; signal into P1: 455.50 KHz/0 dBm 454.50 KHz/0 dBm	None	P2	 -19 dBm -19 dBm
	S1 to 170 Hz; signal into P1: 454.50 KHz/0 dBm 454.90 KHz/0 dBm 455.10 KHz/0 dBm			 -30 dBm -19 dBm -19 dBm
	S1 to 85 Hz; signal into P1: 455.10 KHz/0 dBm 455.05 KHz/0 dBm 454.95 KHz/0 dBm			 -20 dBm -19 dBm -19 dBm

+13.6 V Power Supply
10085-0260

PARAMETER	TEST CONDITIONS	ADJUSTMENT	TEST POINT	SPECIFICATION
Output Voltage	+17 ±1 Vdc to +35.5 ±1 Vdc input at full load (20 A)	R26	+ side of C5	+13.6 ±0.05 Vdc with a max. ripple of 50 mVac
Output Voltage	Same as above, except CW or AFSK mode is selected	R28	Same as above	+12.3 ±0.05 Vdc with a max. ripple of 50 mVac

CHAPTER 7

ILLUSTRATED PARTS BREAKDOWN

Section 1. INTRODUCTION

7-1. PURPOSE. This chapter lists, illustrates, and describes the detail parts for the 100 Watt Transceiver. Its purpose is for the identification, requisitioning, and issuance of parts at the depot level.

7-2. SCOPE. Bulk electrical items, such as terminals, wire, heat shrink tubing, etc., are not listed in this manual. Common hardware items, such as screws, washers, nuts, etc., when used to attach structural components that are not normally removed or disassembled, are also not listed. In general, the parts installed at the time the 100 Watt Transceiver was manufactured are listed and identified in this chapter. When a part (including vendor items), which is different from the original, was installed during the manufacture of later items, series, or blocks, all parts are listed (and "Usable-On" coded). However, when the original part does not have continued application (no spares of the original were procured or such spares are no longer authorized for replacement), only the preferred part is listed. Also, when a part was installed during modification, and the original does not have continued application, only the preferred item is listed. Interchangeable and substitute parts, subsequently authorized by the Government, are not listed in this chapter; such items are identified by information available through the Interchangeable and Substitute (I & S) Data Systems. Refer to T.O. 00-25-184. When a standard size part can be replaced with an oversize or undersize part, the latter parts, showing sizes, are also listed. Repair Parts Kits and Quick Change Units are listed when they are available for replacement.

7-3. CHAPTER ORGANIZATION. This chapter is divided into two sections. Section I, INTRODUCTION, explains the purpose, scope, and organization of the chapter. Section II, MAINTENANCE PARTS LIST, consists of illustrations, in which the detail parts of the 100 Watt Transceiver are identified by numbers (called index numbers), followed by lists which contain parts numbers, descriptions, and other relevant data for the items identified on the illustrations. Section II also contains two other lists: A numerical index, which lists the parts in alphanumerical sequence; and a reference designator index, which lists the electrical parts in alphabetical sequence by their reference designators.

7-4. SOURCE, MAINTENANCE, AND RECOVERABILITY (SMR) CODES. This chapter contains Air Force Peculiar In-Being Source and Repair Codes only. Definitions of these SMR codes, as well as detailed coding criteria and transposition matrices for each coding method, may be obtained from T.O. 00-25-195. Refer to page 7-13.

7.5. FEDERAL SUPPLY CODES FOR MANUFACTURERS (FSCM). The codes used in this chapter are as follows. The first list is in numerical order by FSCM; the second is in alphabetical order by manufacturer name.

FSCM	NAME AND ADDRESS
00000	Ordnance Corps The Defense Logistics Services Center
00141	PIC Design Corporation Division of Wells-Benrus Corporation Benson Road P.O. Box 1004 Middlebury, CT 06762
00159	Acme Electric Corporation Cuba, NY
00213	Nytronics Components Group, Inc. Subsidiary of Nytronics Inc. Orange Street Darlington, SC 29532
00348	Microtran Co., Inc. 145 E. Mineola Avenue P.O. Box 236 Valley Stream, NY 11582
00493	Sargent Art Division of Mead Corporation Hazleton, PA
00752	Eaton Corporation AIL Division Lond Island Plants Commack Road Deer Park, L.I., NY 11729
00758	Neilsen Products Company Lake Elmo, MN
00779	AMP, Inc. 2800 Fulling Mill P.O. Box 3608 Harrisburg, PA 17105
00853	Sangamo Weston, Inc. Sangamo Capacitor Division Subsidiary of Schlumberger LTD Sangamo Road P.O. Box 128 Pickens, SC 29671
01009	Alden Products Company 117 N. Main Street P.O. Box 860 Brockton, MA 02403
01295	Texas Instruments Inc. Semiconductor Group 13500 N. Central Expressway P.O. Box 225012 M/S 49 Dallas, TX 75265
01961	Varian Associates, Inc. Pulse Engineering Subsidiary 7250 Convoy CT P.O. Box 12235 San Diego, CA 92112
02111	Spectrol Electronics Corporation Subsidiary of Carrier Corporation 17070 E. Gale Avenue P.O. Box 1220 City of Industry, CA 91749
02114	Amperex Electronic Corporation Ferroxcube Division 5083 Kings HWY Saugerties, NY 12477
02289	HI-G Company Subsidiary of Nytronics Inc. 101 Locust Street Hartford, CT 06114
02660	Bunker Ramo-Eltra Corporation Amphenol Division 2801 S. 25th Avenue Broadview, IL 60153
02735	RCA Corporation Solid State Division Route 202 Somerville, NJ 08876
02768	Illinois Tool Works, Inc. Fastex Division 195 Algonquin Road Des Plaines, IL 60016
03508	General Electric Company Semi-Conductor Products Department W. Genesee Street Auburn, NY 13021
03888	Pyrofilm Division Division of KDI Electronics Inc. 60 S. Jefferson Road Whippany, NJ 07981
04009	Crouse-Hinds Arrow Hart Inc. Arrow Hart Division 103 Hawthorn Street Hartford, CT 06105
04222	AVX Ceramics Division of AVX Corporation 19th Avenue South P.O. Box 867 Myrtle Beach, SC 29577
04386	Litton Industries, Inc. Litton Systems Inc. Triad-Utrad Division 305 N. Briant Street Huntington, IN 46750
04426	Licon Division of Illinois Tool Works, Inc. 6615 W. Irving Park Road Chicago, IL 60634
04713	Motorola, Inc. Semiconductor Products Sector 5005 E. McDowell Road Phoenix, AZ 85008
05326	General Electric Company Aviation Service Operation/CINTI 333 W. Seymour Avenue Cincinnati, OH 45216
05828	General Instrument Corporation Government Systems Division 600 W. John Street Hicksville, NY 11802
06090	Raychem Corporation 300 Constitution Drive Menlo Park, CA 94025
06383	Panduit Corporation 17301 Ridgeland Tinley Park, IL 60477
06402	E-T-A Circuit Breakers 7400 N. Croname Road Chicago, IL 60648
06540	Mite Corporation Amatom Electronic Hardware Division 446 Blake Street New Haven, CT 06515
06980	Varian Associates, Inc. EIMAC Division 301 Industrial Way San Carlos, CA 94070
07263	Fairchild Camera and Instrument Corporation Semiconductor Division Subsidiary of Schlumberger LTD North American Sales Mail Stop 14-1053 401 Ellis Street P.O. Drawer 7284 Mountain View, CA 94042
07707	USM Corporation Subsidiary of Emhart Industries, Inc. USM Fastener Division 510 River Road Shelton, CT 06484
07858	Arrow Hart Canada LTD Scarborough, Ontario Canada M8Z 2R4
08289	Blinn Delbert Company, Inc The 1678 E. Mission Blvd. P.O. Box 2007 Pomona, CA 91769 5065
08484	Breeze-Eastern Corporation Subsidiary of Transtechnology Corporation 700 Liberty Avenue Union, NJ 07083
08544	United Shoe Machinery Corporation Cincinnati, OH
08779	Signal Transformer Company, Inc. 500 Bayview Avenue Inwood, NY 11696
09023	Cornell-Dubilier Electronics 118 E. Jones Street Fuquay-Varina, NC 27526
09166	Stone City Products, Inc. 1206 7th Street P.O. Box 369 Bedford, IN 47421
09214	General Electric Company Semi-Conductor Products Department Power Components Operation W. Genesee Street Auburn, NY 13021
09353	C and K Components, Inc. 15 Riverdale Avenue Newton, MA 02158
10026	CSI Capacitors A Division of CSI Technologies, Inc. Del Dios Highway P.O. Box 2052 Escondido, CA 92025
10054	Marson Corp 130 Crescent Avenue Chelsea, MA 02150
11195	Magna Division Vermont American Corporation 1001 West Park Road Elizabethtown, KY 42701
11236	CTS of Berne, Inc. 406 Parr Road Berne, IN 46711

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12909 Cardion Electronics
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Long Island Expressway
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12969 Unitrode Corporation
580 Pleasant Street
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13103 Thermalloy Company, Inc.
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P.O. Box 340839
Dallas, TX 75234

13499 Rockwell International Corporation
Collins Telecommunications Products Division
Defense Electronics Operations
855 NE 35th Street
Cedar Rapids, IA 52498

13764 Micro Plastics, Inc.
HWY 178 N.
Flippin, AR 72634

14304 Harris Corporation
RF Communications Division
1680 University Avenue
Rochester, NY 14610

14519 Designatronics, Inc.
55 S. Denton Avenue
New Hyde Park, NY 11040

14655 Cornell-Dubilier Electronics
Division of Federal Pacific Electric Company
Government Contracts Department
150 Ave L
Newark, NJ 07101

14674 Corning Glass Works
Houghton Park
Corning, NY 14830

14933 Defense Electronics Supply Center
Dayton, OH 45401

15542 Mini-Circuits Laboratory
Division of Scientific Components Corporation
2625 E. 14th Street
Brooklyn, NY 11235

15801 Fenwal Electronics
Division of Kidde Walter and Company, Inc.
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Framingham, MA 01701

15912 T and B/Ansley Corporation
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Los Angeles, CA 90031

15969 Dixie Chemical Company
3635 W. Dallas Street
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16546 Centralab, Inc.
A North American Philips Company
4561 Colorado
Los Angeles, CA 90039

16733 Cablewave Systems, Inc.
60 Dodge Avenue
North Haven, CT 06473

16741 Triad Transformer Corporation
Huntington, IN

17117 Electronic Molding Corporation
96 Mill Street
Woonsocket, RI 02895

17856 Siliconix, Inc.
2201 Laurelwood Road
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18212 American Trans-Coil Corporation
124-06 101st Avenue
Richmond Hill, NY 11419

18324 Signetics Corporation
Military Products Division
4130 S. Market Court
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18722 RCA Corporation
Solid State Division
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18796 Murato Erie Technological Products
State College Operations
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18876 Department of Army
U.S. Army Missile Command
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18915 Birtcher Corporation
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19200 U.S. Army Armament Research and Development Command
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19207 U.S. Army Tank Automotive Command
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19396 Illinois Tool Works, Inc.
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19647 Caddock Electronics, Inc.
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25403 Amperex Electronic Corporation
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27264 Molex, Inc.
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32097 PCC Pertec Division
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55322 Samtec, Inc.
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56289 Sprague Electric Company
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56637 RCD Components, Inc.
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56699 Mepco/Electra, Inc.
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57074 Alberox Corporation
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57285 Millen Division
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57771 Stimpson Company, Inc.
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57921 Bourns, Inc.
Precisions/Controls Division
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57922 Bourns, Inc.
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57924 Bourns, Inc.
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58167 Palco Connector, Inc.
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59076	Designatronics, Inc. Stock Drive Products Division 55 S. Denton Avenue New Hyde Park, NY 11040
59730	Thomas and Betts Corporation HWY 218 S. Iowa City, IA 52240
59950	Shielding Technology, Inc. Subsidiary of Chomerics, Inc. 120 Ethel Road W. Piscataway, NJ 08854
59993	International Rectifier Semiconductor Division 233 Kansas Street El Segundo, CA 90245
60705	Cera-Mite Corporation 1327 6th Avenue Grafton, WI 53024
60963	Niagara Straw Company, Inc. 72 Lakeview Avenue Buffalo, NY 14201
61306	Silvered Electronic Mica Company, Inc. RT 6 Willimantic, CT 06226
61429	Fox Electronics Fox Enterprises, Inc. P.O. Box 1078 Cape Coral, FL 33910
61463	Uniroyal, Inc. Oxford Management and Research Center Benson Road Middlebury, CT 06749
61529	Aromat Corporation 250 Sheffield Street Mountainside, NJ 07092
61587	Hughes Electronic Devices Corporation 13321 Grass Valley Avenue P.O. Box 185 Grass Valley, CA 95945
61725	ITT Components Division International Telephone and Telegraph Corporation 3201 S. Standard Street P.O. Box 2197 Santa Ana, CA 92707
61735	Pulse Engineering, Inc. 5004 Lehigh Road College Park, MD 20740
61802	Toshiba Internation Industrial Division 13131 W. Little York Road P.O. Box 40906 Houston, TX 77041
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62703	Varo Semiconductor, Inc. Subsidiary of Varo, Inc. 1000 N. Shiloh Road P.O. Box 40676 Garland, TX 75040
63312	Endicott Research Group, Inc. 2601 Wayne Street P.O. Box 269 Endicott, NY 13760
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70494	Emhart Industries, Inc. Hardware Division 225 Episcopal Road Berlin, CT 06037
70903	Belden Corporation Subsidiary of Cooper Industries, Inc. 2000 S. Batavia Avenue Geneva, IL 60134
70983	Bethlehem Steel Corporation Shipbuilding Department Room 1000 Martin Tower Bethlehem, PA 18016
71041	Incom International, Inc. Boston Gear Division, Inc. 14 Hayward Street Quincy, MA 02171
71279	Midland-Ross Corporation Cambion Division One Alewife Place Cambridge, MA 02140
71400	Bussmann Division of McGraw-Edison Company 114 Old State Road P.O. Box 14460 St. Louis, MO 63178
71450	CTS Corporation 905 N. West Blvd. Elkhart, IN 46514
71468	ITT Cannon Electric Division of International Telephone and Telegraph Corporation 10550 Talbert Avenue P.O. Box 8040 Fountain Valley, CA 92708
71785	TRW, Inc. TRW Cinch Connectors Division 1501 Morse Avenue Elk Grove Village, IL 60007
71895	Delavan Corporation 811 Fourth Street P.O. Box 100 West Des Moines, IA 50265
72136	Electro Motive Corporation Subsidiary of International Electronics Corporation Florence, SC
72619	Dialight Division Amperex Electronic Corporation 203 Harrison Place Brooklyn, NY 11237
72634	Dielectric Products Company, Inc. Jersey City, NJ
72794	Dzus Fastener Company, Inc. 425 Union Blvd. West Islip, NY 11795
72819	Carborundum Company The Electrical Products Division Globar Plant 3425 Hyde Park Blvd. P.O. Box 339 Niagara Falls, NY 14302
72835	Gochenaur Marine Company Philadelphia, PA
72962	Amerace Corporation Esna Division 2330 Vauxhall Road Union, NJ 07083
72982	Murata Erie North America, Inc. Erie Operations 645 W. 11th Street Erie, PA 16512
73138	Beckman Instruments, Inc. Beckman Electronic Technologies Subsidiary of Smith Kline/Beckman Corporation 2500 Harbor Blvd. Fullerton, CA 92634
73734	Federal Screw Products, Inc. 3917 N. Kedzie Avenue Chicago, IL 60618
73899	JFD Electronic Components A Division of Murata Erie North America 112 Mott Street Oceanside, NY 11572
73905	ITT Jennings 970 McLaughlin Avenue San Jose, CA 95116
73988	The Harrington And King Perforating Company, Inc. 5655 Fillmore Street Chicago, IL 60644
74199	Quam Nichols Company 218 E. Marquette Road Chicago, IL 60637
74276	General Instrument Corporation Lamp Division/Worldwide 4433 N. Ravenswood Avenue Chicago, IL 60640
74840	Illinois Capacitor, Inc. 3757 W. Touhy Avenue Lincolnwood, IL 60645
74868	Amphenol RF Operations An Allied Company 33 E. Franklin Street Danbury, CT 06810
74970	Johnson EF Company 299 10th Avenue SW Waseca, MN 56093
75042	TRW, Inc. TRW Electronic Components IRC Fixed Resistors Philadelphia Division 401 N. Broad Street Philadelphia, PA 19108
75263	Keystone Carbon Company 1935 State Street St. Marys, PA 15857

75378 CTS Knights, Inc.
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75915 Tracor Littelfuse, Inc.
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76301 McDonnel Douglas Corporation
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76385 Minor Rubber Company, Inc.
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76490 Moto Meter Gauge and Equipment Division
Electric Auto Lite Company
New York, NY

77264 Phoenix Specialty Manufacturing Company, Inc.
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77342 AMF, Inc.
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77347 Poulsen and Wardon, Inc.
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77609 RCA Corporation
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78488 The Stackpole Corporation
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79061 Vaco Products Company
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79136 Waldes Kohinoor, Inc.
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79963 Zierick Manufacturing Company
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80103 Veeco Instruments, Inc.
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80294 Bourns Instruments, Inc.
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80372 Marine Corps.
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81095 Triad-Utrad Division
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81249 Library Efficiency Corporation
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81349 Mil Spec

81483 International Rectifier
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81564 Artted Company, Inc.
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82389 Switchcraft, Inc.
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83325 SNC Manufacturing Company, Inc.
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83330 Kulka Smith, Inc.
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84830 Lee Spring Company, Inc.
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86797 Rogan Corporation
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86928 Seastrom Manufacturing Company, Inc.
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91836 Kings Electronics Company, Inc.
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92891 Alliance Engineering, Inc.
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92967 Hutchens Industries, Inc.
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94222 Southco, Inc.
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The 1678 E. Mission Blvd.
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Pomona, CA 91769 5065

Bourns, Inc. 32997
Trimpot Division
1200 Columbia Avenue
Riverside, CA 92507

Bourns, Inc. 57921
Precisions/Controls Division
1200 Columbia Avenue
Riverside, CA 92507

Bourns, Inc. 57922
Precisions/Controls Division
1200 Columbia Avenue
Riverside, CA 92507

Bourns, Inc. 57924
Networks Division
12155 Magnolia Avenue
Riverside, CA 92503

Bourns Instruments, Inc. 80294
135 Magnolia Avenue
Riverside, CA 92506

Breeze-Eastern Corporation 08484
Subsidiary of Transtechnology Corporation
700 Liberty Avenue
Union, NJ 07083

Bunker Ramo-Eltra Corporation 02660
Amphenol Division
2801 S. 25th Avenue
Broadview, IL 60153

Bussmann 71400
Division of McGraw-Edison Company
114 Old State Road
P.O. Box 14460
St. Louis, MO 63178

C and K Components, Inc. 09353
15 Riverdale Avenue
Newton, MA 02158

Cablewave Systems, Inc. 16733
60 Dodge Avenue
North Haven, CT 06473

Caddock Electronics, Inc. 19647
1717 Chicago Avenue
Riverside, CA 92507

Carborundum Company 72819
The Electrical Products Division
Globar Plant
3425 Hyde Park Blvd.
P.O. Box 339
Niagara Falls, NY 14302

Cardion Electronics 12909
Division of General Signal Controls, Inc.
A Unit of General Signal Corporation
Long Island Expressway
Woodbury, NY 11797

Centralab, Inc. 16546
A North American Philips Company
4561 Colorado
Los Angeles, CA 90039

Cera-Mite Corporation 60705
1327 6th Avenue
Grafton, WI 53024

Cincinnati Electronics Corporation 80045
Subsidiary of GEC, Inc.
An English Electric Corporation Company
2630 Glendale-Milford Road
Cincinnati, OH 45241

Cornell-Dubilier Electronics 09023
118 E. Jones Street
Fuquay-Varina, NC 27526

Cornell-Dubilier Electronics 14655
Division of Federal Pacific Electric Company
Government Contracts Department
150 Ave L
Newark, NJ 07101

Corning Glass Works 14674
Houghton Park
Corning, NY 14830

Corning Glass Works 24546
550 High Street
Bradford, PA 16701

Crouse-Hinds Arrow Hart Inc. 04009
Arrow Hart Division
103 Hawthorn Street
Hartford, CT 06105

CSI Capacitors 10026
A Division of CSI Technologies, Inc.
Del Dios Highway
P.O. Box 2052
Escondido, CA 92025

CTS Corporation 71450
905 N. West Blvd.
Elkhart, IN 46514

CTS Knights, Inc. 75378
400 Reimann Avenue
Sandwich, IL 60548

CTS of Berne, Inc. 11236
406 Parr Road
Berne, IN 46711

Curt Straub Enterprises 50173
444 W. Ocean Blvd.
Suite 1106
Long Beach, CA 90802

Dataproducts New England, Inc. 96238
Barnes Park North
Wallingford, CT 06492

Defense Electronics Supply Center 14933
Dayton, OH 45401

Delavan Corporation 71895
811 Fourth Street
P.O. Box 100
West Des Moines, IA 50265

Department of Army 18876
U.S. Army Missile Command
Redstone Arsenal, AL 35809

Designatronics, Inc. 14519
55 S. Denton Avenue
New Hyde Park, NY 11040

Designatronics, Inc. 59076
Stock Drive Products Division
55 S. Denton Avenue
New Hyde Park, NY 11040

Dialight Division 72619
Amperex Electronic Corporation
203 Harrison Place
Brooklyn, NY 11237

Dielectric Products Company, Inc. 72634
Jersey City, NJ

Dixie Chemical Company 15969
3635 W. Dallas Street
Houston, TX 77019

Du Pont E I De Nemours and Company, Inc. 22526
Photo Products Department
Berg Electronics Division
Route 83
New Cumberland, PA 17070

Dzus Fastener Company, Inc. 72794
425 Union Blvd.
West Islip, NY 11795

Eaton Corporation 00752
AIL Division Lond Island Plants
Commack Road
Deer Park, L.I., NY 11729

Eaton Corporation 89032
Engineered Fasteners Division
8700 Brookpark Road
P.O. Box 6688
Cleveland, OH 44101

Electro Motive Corporation 72136
Subsidiary of International Electronics Corporation
Florence, SC

Electronic Applications Company 21317
4918 Santa Anita Avenue
El Monte, CA 91734

Electronic Laboratory Supply Company 28482
7208 Germantown Avenue
Philadelphia, PA 19119

Electronic Molding Corporation 17117
96 Mill Street
Woonsocket, RI 02895

Eltra Corporation 54904
Subsidiary of Allied Chemical Company
Medwec Division
105 Skyport Drive
P.O. Box 417
Scottsbluff, NE 69361

Emhart Industries, Inc. 70494
Hardware Division
225 Episcopal Road
Berlin, CT 06037

Endicott Research Group, Inc. 63312
2601 Wayne Street
P.O. Box 269
Endicott, NY 13760

E-T-A Circuit Breakers 06402
7400 N. Croname Road
Chicago, IL 60648

ETC-Molex, Inc. 98410
Subsidiary of Molex, Inc.
5201 Richmond Road
Bedford Heights, OH 44146

Fairchild Camera and Instrument
Corporation 07263
Semiconductor Division
Subsidiary of Schlumberger LTD
North American Sales
Mail Stop 14-1053
401 Ellis Street
P.O. Drawer 7284
Mountain View, CA 94042

Fair-Rite Products Corporation 34899
1 Commercial Row
Wallkill, NY 12589

Federal Screw Products, Inc. 73734
3917 N. Kedzie Avenue
Chicago, IL 60618

Fenwal Electronics 15801
Division of Kidde Walter and
Company, Inc.
63 Fountain Street
Framingham, MA 01701

Fox Electronics 61429
Fox Enterprises, Inc.
P.O. Box 1078
Cape Coral, FL 33910

General Connector Corporation 25330
Subsidiary of the Union Corporation
80 Bridge Street
Newton, MA 02158

General Electric Company 03508
Semi-Conductor Products Department
W. Genesee Street
Auburn, NY 13021

General Electric Company 05326
Aviation Service Operation/CINTI
333 W. Seymour Avenue
Cincinnati, OH 45216

General Electric Company 09214
Semi-Conductor Products Department
Power Components Operation
W. Genesee Street
Auburn, NY 13021

General Electric Company 24446
3135 Easton Turnpike
Fairfield, CT 06431

General Electronics, Inc. 80101
Paterson, NJ

General Instrument Corporation 05828
Government Systems Division
600 W. John Street
Hicksville, NY 11802

General Instrument Corporation 74276
Lamp Division/Worldwide
4433 N. Ravenswood Avenue
Chicago, IL 60640

Gochenaur Marine Company 72835
Philadelphia, PA

Grayhill, Inc. 81073
561 Hillgrove Avenue
P.O. Box 10373
La Grange, IL 60525

Harrington And King Perforating
Company, Inc., The 73988
5655 Fillmore Street
Chicago, IL 60644

Harris Corporation 14304
RF Communications Division
1680 University Avenue
Rochester, NY 14610

Hartwell Corporation 83014
900 S. Richfield Road
Placentia, CA 92670

Hewlett-Packard Company 28480
Corporate HQ
3000 Hanover Street
Palo Alto, CA 94304

Hewlett-Packard Company 50434
Optoelectronics Division
640 Page Hill Road
Palo Alto, CA 94304

Hewlett-Packard Company 98734
Manufacturing Division
Palo Alto, CA

Heyco Molded Products 28520
1750 Blvd.
P.O. Box 160
Kenilworth, NJ 07033

High Energy Corporation 21052
Subsidiary of Inductotherm Corporation
Lower Valley Road
Parkesburg, PA 19365

HI-G Company 02289
Subsidiary of Nytronics Inc.
101 Locust Street
Hartford, CT 06114

Honeywell, Inc. 91929
Micro Switch Division
11 W. Spring Street
Freeport, IL 61032

Hughes Electronic Devices
Corporation 61587
13321 Grass Valley Avenue
P.O. Box 185
Grass Valley, CA 95945

Hutchens Industries, Inc. 92967
215 N. Patterson Avenue
P.O. Box 1427 SSS
Springfield, MO 65805

IDI Electric Canada LTD 51144
33 Fuller Road
Box 159
Ajax, Ontario Canada L1S 2E1

Illinois Capacitor, Inc. 74840
3757 W. Touhy Avenue
Lincolnwood, IL 60645

Illinois Tool Works, Inc. 02768
Fastex Division
195 Algonquin Road
Des Plaines, IL 60016

Illinois Tool Works, Inc. 19396
Paktron Division
900 Follin Lane S.E.
Vienna, VA 22180

Incom International, Inc. 71041
Boston Gear Division, Inc.
14 Hayward Street
Quincy, MA 02171

Intel Corporation 34649
3065 Bowers Avenue
Santa Clara, CA 95051

International Rectifier 59993
Semiconductor Division
233 Kansas Street
El Segundo, CA 90245

International Rectifier 81483
9220 Sunset Blvd.
Los Angeles, CA 90069

Intersil Inc. 32293
Subsidiary of General Electric Company
10710 N. Tantau Avenue
Cupertino, CA 95014

ITT Cannon Electric 71468
Division of International Telephone and
Telegraph Corporation
10550 Talbert Avenue
P.O. Box 8040
Fountain Valley, CA 92708

ITT Components Division 61725
International Telephone and
Telegraph Corporation
3201 S. Standard Street
P.O. Box 2197
Santa Ana, CA 92707

ITT Jennings 73905
970 McLaughlin Avenue
San Jose, CA 95116

ITT Telecom Products Corporation 21340
Network Systems Division
HWY 137 Suncrest Drive
P.O. Box N Carroll Reece Station
Johnson City, TN 37601

JFD Electronic Components 73899
A Division of Murata Erie North America
112 Mott Street
Oceanside, NY 11572

Johnson EF Company 74970
299 10th Avenue SW
Waseca, MN 56093

Keystone Carbon Company 75263
1935 State Street
St. Marys, PA 15857

Kings Electronics Company, Inc. 91836
40 Marbledale Road
Tuckahoe, NY 10707

Kulka Electric Corporation 75382
A North American Philips Corporation
Mt. Vernon, NY

Kulka Smith, Inc. 83330
A North American Philips Company
1913 Atlantic Avenue
Manasquan, NJ 08736

Lapointe Industries, Inc. 94033
Electronic Products Division
155 W. Main Street
Rockville, CT 06066

Lee Spring Company, Inc. 84830
1462 62nd Street
Brooklyn, NY 11219

Leeds and Northrup Company 31922
A Unit of General Signal Corporation
Sumneytown Pike
North Wales, PA 19454

Library Efficiency Corporation 81249
New York, NY

Licon 04426
Division of Illinois Tool Works, Inc.
6615 W. Irving Park Road
Chicago, IL 60634

Litton Industries, Inc. 04386
Litton Systems Inc.
Triad-Utrad Division
305 N. Briant Street
Huntington, IN 46750

Litton Industries, Inc. 26667
Triad Distributor Division
Huntington, IN

Luminescent Systems Inc. 32890
Etna Road
Grafton County
Lebanon, NH 03766

LXD 66670
24500 High Point Road
Cleveland, Ohio 44122

Magna Division 11195
Vermont American Corporation
1001 West Park Road
Elizabethtown, KY 42701

Magnavox Government and Industrial
Electronics Co. 37695
1313 Production Road
Fort Wayne, IN 46808

Magnecraft Electric Company 94696
5575 N. Lynch Avenue
Chicago, IL 60630

Magnum Electric Corporation 52458
6385 Dixie HWY
Erie, MI 48133

Marine Corps. 80372
Navy Annex
Washington, DC 20380

Marson Corp. 10054
130 Crescent Avenue
Chelsea, MA 02150

Masstech Corporation 94464
Subsidiary of Transtechnology
Corporation
Swamp Road
RT 313
P.O. Box 2001
Doylestown, PA 18901

Matsushita Electric Corporation of
America 54473
One Panasonic Way
P.O. Box 1501
Secaucus, NJ 07094

McDonnel Douglas Corporation 76301
McDonnel Aircraft Company
P.O. Box 516
St. Louis, MO 63166

Mepco/Electra, Inc. 19701
A North American Philips Company
P.O. Box 760
Mineral Wells, TX 76067

Mepco/Electra, Inc. 56699
6071 St. Andrews Road
Columbia, CS 29210

Mepco/Electra, Inc. 80031
22 Columbia Road
Morristown, NJ 07960

Metraplex Corporation 52559
Berkshire Industrial Park
Bldg. 3
Bethel, CT 06801

Midland-Ross Corporation 53373
Cambion Division
Barnstead Road
Pittsfield, NH 03263

Midland-Ross Corporation 71279
Cambion Division
One Alewife Place
Cambridge, MA 02140

Micro Plastics, Inc. 13764
HWY 178 N.
Flippin, AR 72634

Microtran Co., Inc. 00348
145 E. Mineola Avenue
P.O. Box 236
Valley Stream, NY 11582

Midwest Components, Inc. 50157
1981 Port City Blvd.
P.O. Box 787
Muskegon, MI 49443

Mil Spec 81349

Mil Spec 96906

Millen Division 57285
Electronic Instrument and Specialty
Corporation
42 Pleasant Street
Stoneham, MA 02180

Mini-Circuits Laboratory 15542
Division of Scientific Components
Corporation
2625 E. 14th Street
Brooklyn, NY 11235

Minnesota Mining and Manfacturing
Company 26066
Industrial Tape Division
3M Center
St Paul, MN 55101

Minnesota Mining and Manufacturing
Company 28124
Industrial Coated Abrasives Division
3M Center
St. Paul, MN 55101

Minnesota Mining and Manufacturing
Company 30142
Energy Systems
3M Center Bldg. 551
St. Paul, MN 55101

Minnesota Mining and Manufacturing
Company 52760
Electro Products Division
341 Factory Road
Addison, IL 60101

Minnesota Mining and Manufacturing
Company 54254
Data Recording Products Division
350 S. Lewis Road
Camarillo, CA 93010

Minor Rubber Company, Inc. 76385
49 Ackerman Street
Bloomfield, NJ 07003

Mite Corporation 06540
Amatom Electronic Hardware Division
446 Blake Street
New Haven, CT 06515

Mite Corporation 26344
466 Blake Street
New Haven, CT 06515

Molex, Inc. 27264
2222 Wellington Court
Lisle, IL 60532

Moto Meter Gauge and Equipment
Division 76490
Electric Auto Lite Company
New York, NY

Motorola, Inc. 04713
Semiconductor Products
Sector 5005
E. McDowell Road
Phoenix, AZ 85008

Murata Erie North America, Inc. 72982
Erie Operations
645 W. 11th Street
Erie, PA 16512

Murato Erie Technological Products 18796
State College Operations
1900 W. College Avenue
State College, PA 16801

National Semiconductor Corporation 12040
Commerce Drive
P.O. Box 443
Danbury, CT 06810

National Semiconductor Corporation 27014
2900 Semiconductor Drive
Santa Clara, CA 95051

NEC America, Inc. 51984
2741 Prosperity Avenue
Fairfax, VA 22031

Neilsen Products Company 00758
Lake Elmo, MN

Nielsen Hardware Corporation 98003
770 Wethersfield Avenue
P.O. Box 568
Hartford, CT 06141

Niagara Straw Company, Inc. 60963
72 Lakeview Avenue
Buffalo, NY 14201

Nytronics Components Group, Inc. 00213
Subsidiary of Nytronics Inc.
Orange Street
Darlington, SC 29532

Ohmite Manufacturing Company 44655
3601 W. Howard Street
Skokie, IL 60076

Ordnance Corps 00000
The Defense Logistics Services Center

Palco Connector, Inc. 58167
75 Center Street
Bristol, CT 06010

Panduit Corporation 06383
17301 Ridgeland
Tinley Park, IL 60477

PCC Pertec Division 32097
Pertec Computer Corporation
9600 Irondale Avenue
Chatsworth, CA 91311

PEM Engineering Company 99256
Los Angeles, CA

Penn Engineering and Manfacturing
Corporation 46384
Old Easton Road
P.O. Box 1000
Danboro, PA 18916

Phoenix Specialty Manufacturing
Company, Inc. 77264
971 Stewart Avenue
Garden City, LI, NY 11530

PIC Design Corporation 00141
Division of Wells-Benrus Corporation
Benson Road
P.O. Box 1004
Middlebury, CT 06762

Plastic Capacitors, Inc. 99120
2623 N. Pulaski Road
Chicago, IL 60639

Plastiglide Manufacturing Corporation 11897
2701 W. El Segundo Blvd.
Hawthorne, CA 90250

Poulsen and Wardon, Inc. 77347
Los Angeles, CA

Power Conversion, Inc. 55002
495 Boulevard
Elmwood Park, NJ 07407

Pulse Engineering, Inc. 61735
5004 Lehigh Road
College Park, MD 20740

Pyrofilm Division 03888
Division of KDI Electronics Inc.
60 S. Jefferson Road
Whippany, NJ 07981

Quam Nichols Company 74199
218 E. Marquette Road
Chicago, IL 60637

R A F Electronic Hardware, Inc. 55566
95 Silvermine Road
Seymour, CT 06483

Raychem Corporation 06090
300 Constitution Drive
Menlo Park, CA 94025

RCA Corporation 02735
Solid State Division
Route 202
Somerville, NJ 08876

RCA Corporation 18722
Solid State Division
Crestwood Road
Mountaintop, PA 18707

RCA Corporation 49671
30 Rockerfeller Plaza
New York, NY 10020

RCA Corporation 77609
RCA Service Company
RTE 38
Cherry Hill, NJ 08358

RCD Components, Inc. 56637
330 Bedford Street
Manchester, NH 03101

Republic Electronics Corporation 93958
176 E. 7th Street
Paterson, NJ 07524

Rockwell International Corporation 13499
Collins Telecommunications Products
Division
Defense Electronics Operations
855 NE 35th Street
Cedar Rapids, IA 52498

Rogan Corporation 86797
3455 Woodhead Drive
Northbrook, IL 60062

Rotron Controls 32284
Division Rotron, Inc.
Woodstock, NY

Rotron, Inc. 82877
Custom Division
7 Hasbrouck Lane
Woodstock, NY 12498

Samtec, Inc. 55322
810 Progress Blvd.
P.O. Box 1147
New Albany, IN 47150

Sanders Associates, Inc. 94117
Daniel Webster HWY South
Nashua, NH 03061

Sangamo Weston, Inc. 00853
Sangamo Capacitor Division
Subsidiary of Schlumberger LTD
Sangamo Road
P.O. Box 128
Pickens, SC 29671

Sargent Art 00493
Division of Mead Corporation
Hazleton, PA

Sealectro Corporation 98291
BICC Electronics
40 Linderman Drive
Trumbull, CT 06611

Seastrom Manufacturing
Company, Inc. 86928
701 Sonora Avenue
Glendale, CA 91201

Shielding Technology, Inc. 59950
Subsidiary of Chomerics, Inc.
120 Ethel Road W.
Piscataway, NJ 08854

Signal Transformer Company, Inc. 08779
500 Bayview Avenue
Inwood, NY 11696

Signetics Corporation 18324
Military Products Division
4130 S. Market Court
Sacramento, CA 95834

Siliconix, Inc. 17856
2201 Laurelwood Road
Santa Clara, CA 95054

Silvered Electronic Mica
Company, Inc. 61306
RT 6
Willimantic, CT 06226

Singer Company 22903
The Link Flight Simulation Division
Advanced Products Operation
1077 E. Arques Avenue
P.O. Box 3484
Sunnyvale, CA 94088

SNC Manufacturing Company, Inc. 83325
101 Waukau Road
Oshkosh, WI 54901

Southco, Inc. 94222
210 N. Brinton Lake Road
Concordville, PA 19331

Spectrol Electronics Corporation 02111
Subsidiary of Carrier Corporation
17070 E. Gale Avenue
P.O. Box 1220
City of Industry, CA 91749

Sprague Electric Company 56289
87 Marshall Street
North Adams, MA 01247

Stackpole Corporation, The 78488
201 Stackpole Street
St. Marys, PA 15857

Stimpson Company, Inc. 57771
900 Sylvan Avenue
Bayport, NY 11705

Stone City Products, Inc. 09166
1206 7th Street
P.O. Box 369
Bedford, IN 47421

Sundstrand Aviation Operations 99167
Unit of Sundstrand Corporation
4747 Harrison Avenue
P.O. Box 7002
Rockford, IL 61125

Switchcraft, Inc. 82389
Subsidiary of Raytheon Company
5555 N. Elstron Avenue
Chicago, IL 60630

T and B/Ansley Corporation 15912
Subsidiary of Thomas and Betts
Corporation
4371 Valley Blvd.
Los Angeles, CA 90031

Tektronix, Inc. 80009
4900 SW Griffith Drive
P.O. Box 500
Beaverton, OR 97077

Texas Instruments Inc. 01295
Semiconductor Group
13500 N. Central Expressway
P.O. Box 225012 M/S 49
Dallas, TX 75265

Texas Instruments, Inc. 96214
Equipment Group
13500 N. Central EXPY
P.O. Box 660246 M/S 3137
Dallas, TX 75266

Thermalloy Company, Inc. 13103
2021 W. Valley View Lane
P.O. Box 340839
Dallas, TX 75234

Thomas and Betts Corporation 59730
HWY 218 S.
Iowa City, IA 52240

Thompson Industries 32848
Division of W M F Container Corporation
2501 E. Magnolia Street
Phoenix, AZ 85036

Toshiba Internation 61802
Industrial Division
13131 W. Little York Road
P.O. Box 40906
Houston, TX 77041

Tracor Littelfuse, Inc. 75915
800 E. Northwest HWY
Des Plaines, IL 60016

Triad Transformer Corporation 16741
Huntington, IN

Triad-Utrad Division 81095
Litton Systems, Inc.
National City, CA

TRW, Inc. 71785
TRW Cinch Connectors Division
1501 Morse Avenue
Elk Grove Village, IL 60007

TRW, Inc. 75042
TRW Electronic Components
IRC Fixed Resistors
Philadelphia Division
401 N. Broad Street
Philadelphia, PA 19108

Union Carbide Corporation 31433
Electronics Division
HWY 276 SE
P.O. Box 5928
Greenville, SC 29606

Uniroyal, Inc. 61463
Oxford Management and Research
Center
Benson Road
Middlebury, CT 06749

United Shoe Machinery Corporation 08544
Cincinnati, OH

Unitrode Corporation 12969
580 Pleasant Street
Watertown, MA 02172

U.S. Army Armament Research and
Development Command 19200
Dover, NJ 07801

U.S. Army Communications and
Electronics 80063
Materiel Readiness Command
Logistics Engineering Directorate
Fort Monmouth, NJ 07703

U.S. Army Tank Automotive
Command 19207
Warren, MI 48090

USM Corporation 07707
Subsidiary of Emhart Industries, Inc.
USM Fastener Division
510 River Road
Shelton, CT 06484

USM Corporation 61957
Subsidiary of Emhart Industries, Inc.
140 Federal Street
Boston, MA 02107

Vaco Products Company 79061
1510 Skokie Blvd.
Northbrook, IL 60062

Varian Associates, Inc. 01961
Pulse Engineering Subsidiary
7250 Convoy CT
P.O. Box 12235
San Diego, CA 92112

Varian Associates, Inc. 06980
EIMAC Division
301 Industrial Way
San Carlos, CA 94070

Varian Associates, Inc. 99313
Microwave Tube Division
611 Hansen Way
Palo Alto, CA 94303

Varo, Inc. 27777
Electron Devices Division
2203 Walnut Street
P.O. Box 401146
Garland, TX 75040

Varo Semiconductor, Inc. 62703
Subsidiary of Varo, Inc.
1000 N. Shiloh Road
P.O. Box 40676
Garland, TX 75040

Veeco Instruments, Inc. 80103
Lambda Electronics Division
515 Broad Hollow Road
Melville, NY 11747

Vitramon, Inc. 95275
Box 544
Bridgeport, CT 06601

Wakefield Engineering Company 90372
P.O. Box 818
Coeur D Alene, ID 83814

Waldes Kohinoor, Inc. 79136
47-16 Austel Place
Long Island City, NY 11101

Waterous Company 79218
300 John E. Carroll Avenue E.
South St. Paul, MN 55075

Westinghouse Electric Corporation 97942
Defense and Electronic Systems Center
Baltimore-Washington Airport
P.O. Box 1897 MS 984
Baltimore, MD 21203

WH Brady Company 95987
727 W. Glendale Avenue
Milwaukee, WI 53209

Zeus Industrial Products, Inc. 32039
Ft. Thompson Street
Raritan, NJ 08869

Zierick Manufacturing Company 79963
Radio Circle
Mt. Kisco, NY 10549

Zierick Manufacturing Company 81814
Radio Circle
Mt. Kisco, NY 10549

JOINT MILITARY SERVICES UNIFORM SMR CODING MATRIX T.O. 00-25-195

SOURCE				MAINTENANCE USE		MAINTENANCE REPAIR		RECOVERABILITY		ERRC CODE	
1st Position		2nd Position		3rd Position		4th Position		5th Position		6th Position	
P	Procurable	A	Stocked	O	Remove/ Replace at Organizational Level	Z	No Repair	Z	Nonreparable Condemn at 3rd Position Level	N	Nonrecoverable XB3 Condemn at Any Level
		B	Insurance								
		C	Deteriorative								
		E	Support Equipment, Stocked								
		F	Support Equipment, Nonstocked			B	No Repair Recondition	O	Reparable Condemn at Organizational	P	Recoverable XF3 Condemn at Field
		G	Sustained Life Support								
K	Component of a Repair Kit	F	Intermediate Kit	F	Remove/ Replace at Intermediate Level	O	Repair at Organizational	F	Reparable Condemn at Intermediate	C	Recoverable XD1 (SCARS) Condemn at Depot
		D	Depot Kit							T	Recoverable XD2 Condemn at Depot
		B	In Both Kits			F	Repair at Intermediate				
M	Manufacture	O	Organization								
		F	Intermediate								
		D	Depot	D	Remove/Replace at Depot Level	D	Limited Repair at O or F Level Overhaul at Depot	D	Reparable Condemn at Depot	S	Nonexpendable Support Equipment, Depot ND2
A	Assemble	O	Organization								
		F	Intermediate								
		D	Depot								
X	Nonprocured	A	Requisition NHA							U	Nonexpendable Support Equipment, Organizational and Intermediate NF2
		B	Reclamation from IM			L	Repair at Depot	A	Special Handling		
		C	Mfg Drawings								

SECTION II. MAINTENANCE PARTS LIST

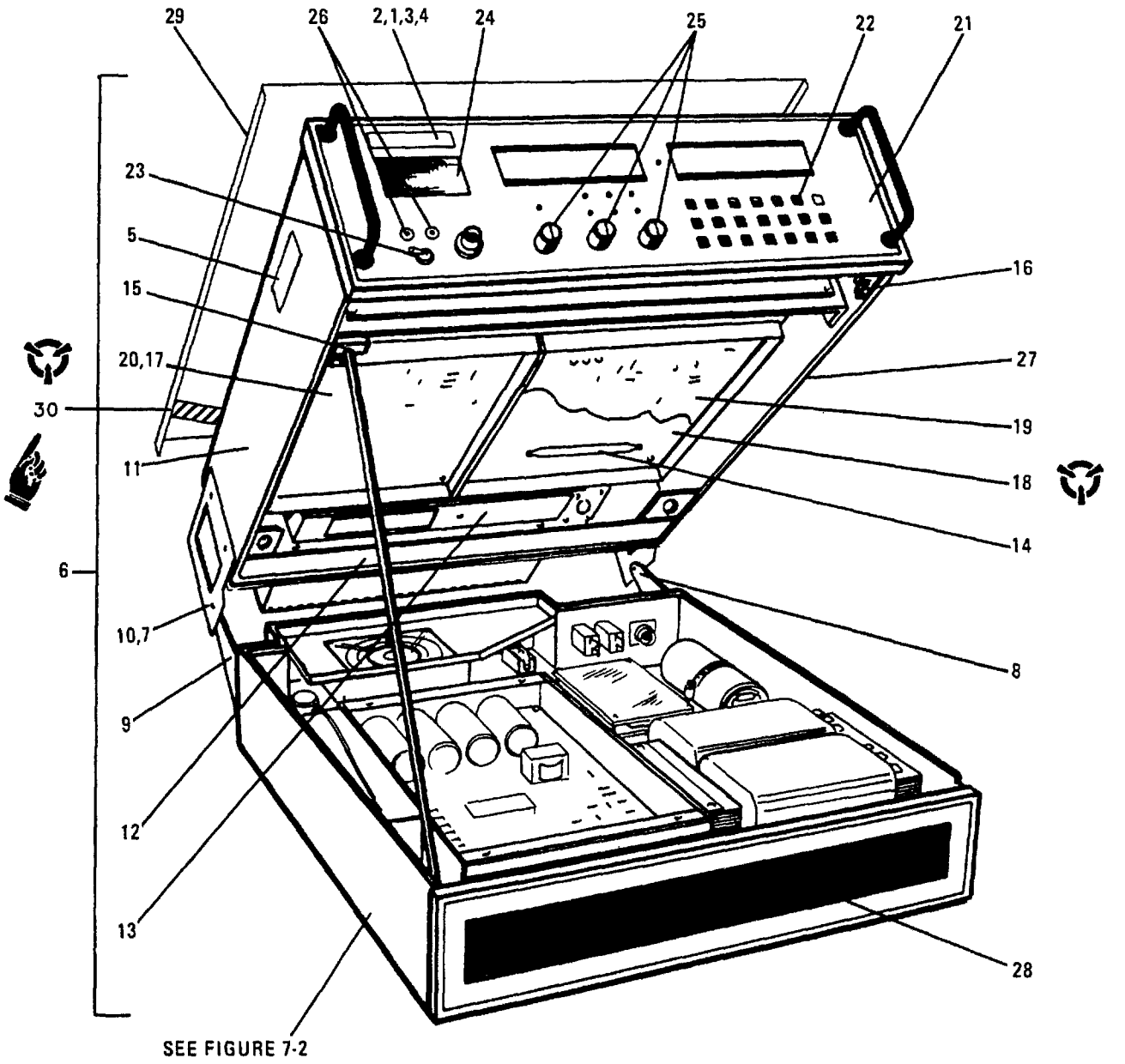

Figure 7-1. 100 Watt Transceiver, RT-1446/URC, Front View

FIGURE & INDEX NUMBER	PART NUMBER	CAGE	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE	SMR CODE
7-1-	10085-0000	14304	RCVR-XMTR, RADIO*	1		PEODD
- 1	841-00	92967	. NUT, CLINCH (AP)	2		PAOZZ
- 2	10085-0008	14304	. PLATE, IDENT	1		XB
- 3	MS15795-803	96906	. WASHER, FLAT (AP)	2		PAOZZ
- 4	MS51957-18	96906	. SCREW, MACHINE (AP)	2		PAOZZ
- 5	10085-0071	14304	. PLATE, IDENT	1		MDO
- 6	10085-0010	14304	. TRANSCEIVER ASSY	1		XB
- 7	MS16633-1025	96906	. RETAINER, RING	2		PAOZZ
- 8	10085-0522	14304	. BRACKET, HINGE	1		XB
- 9	10085-0523	14304	. BRACKET, HINGE	1		XB
-10	10085-0524	14304	. PIN HINGE	2		XB
-11	10085-0100	14304	. CHASSIS, ELEC, EQPT	1		XB
-12	10085-0528	14304	. BRACKET, PANEL	1		XB
-13	10085-0529	14304	. CHASSIS, PA	1		XB
-14	10085-0530	14304	. HANDLE, COVER	10		XB
-15	10085-5143	14304	. BRACKET, MTG	1		XB
-16	10085-5159	14304	. HINGE	2		XB
-17	10085-5174	14304	. COVER, RCVR	1		XB
-18	10085-5175	14304	. COVER, EXCITER	1		XB
-19	10085-5400	14304	. CIRCUIT CARD ASSY, A1A1	1		PAODD
-20	10085-5200	14304	. CIRCUIT CARD ASSY, A1A7	1		PAOLD
-21	10085-2017	14304	. OVERLAY, PANEL	1		XB
-22	10085-2007	14304	. KEYPAD	1		PAOZZ
-23	7401T1ZGE	09353	. SWITCH, TOGGLE	1		PAOZZ
-24	22-SLOTB-BRASS	73988	. SHIELD, SPEAKER	1		XB
-25	MS-67-1-DC-WD	86797	. KNOB	3		PAOZZ
-26	66332-7	00779	. CONTACT ELECTRICAL	2		PAOZZ
-27	10085-5139	14304	. COVER GUIDE	2		PADZZ
-28	10085-0271	14304	. FILTER, AIR	1		PAOZZ
-29	10085-0105	14304	. COVER TOP	1		XB
-30	31-0064040	07700	. SHIELDING GASKET ELECTRONIC	1		PAOZZ

*Installation requires Ancillary Kit 10085-0060. See figure 7-9.

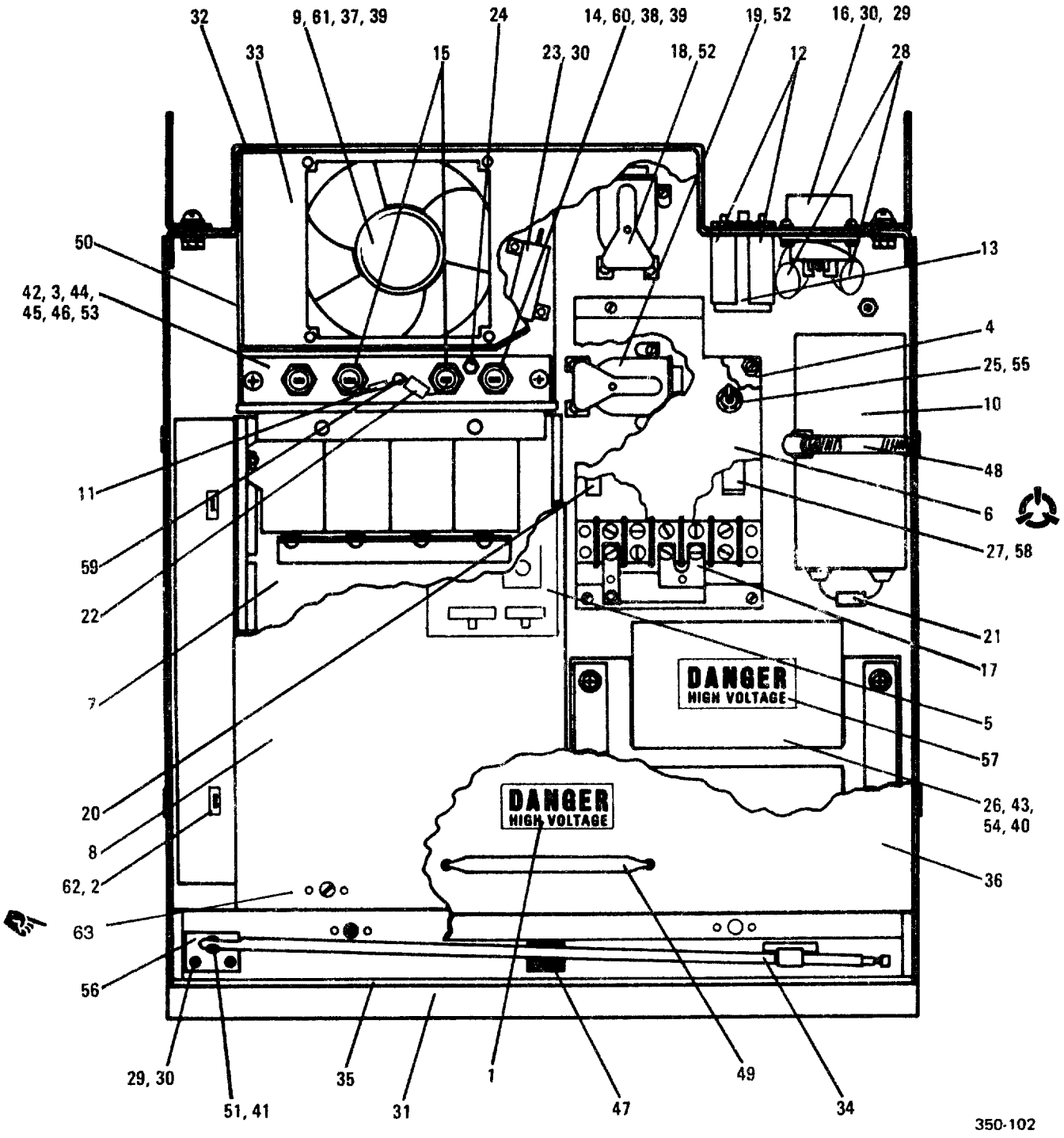

Figure 7-2. 100 Watt Transceiver, RT-1446/URC, Bottom Half

FIGURE & INDEX NUMBER	PART NUMBER	CAGE	DESCRIPTION 1 2 3 4 5 6 7	UNITS PER ASSY	USABLE ON CODE	SMR CODE
7-2	10085-0200	14304	COVER ASSY, A2	1		PAODD
- 1	10085-0079	14304	. LABEL WARNING	1		PAODD
- 2	MS3367-4-9	96906	. STRAP, TIE DOWN	30		PADZZ
- 3	7403-09FR-21	55285	. INSULATOR WASHER	1		PADZZ
- 4	10085-0250	14304	. BRACKET, MTG	1		XB
- 5	10085-5129	14304	. LABEL, TERM BLK	1		MDO
- 6	10085-0290	14304	. CIRCUIT CARD ASSY, A2A1	1		PAODD
- 7	10085-0260	14304	. POWER SUPPLY ASSY, A2A2	1		PAODD
- 8	10085-0263	14304	. COVER	1		XB
- 9	028868	82877	. FAN	1		PAOZZ
-10	3120GH663U050AP	19701	. CAP, FX, ELCTLT	1		PADZZ
-11	CK06BX104K	81349	. CAPACITOR, FXD, CER	1		PADZZ
-12	W58XB1A6A-6	77342	. CIRCUIT BREAKER	2		PAOZZ
-13	41-3-S14-LN2-50	06402	. CIRCUIT BREAKER	1		PAOZZ
-14	70HFR20	81483	. SEMICOND DEVICE, DIO	2		PADZZ
-15	70HF20	81483	. SEMICOND DEVICE, DIO	2		PADZZ
-16	MS3102A20-8P	96906	. CONNECTOR, RCPT, ELEC	1		PADZZ
-17	10085-0204	14304	. CONTACT, ELEC	1		XB
-18	W199SDX-2	94696	. RELAY	1		PADZZ
-19	W199SDX-3	94696	. RELAY	1		PADZZ
-20	389CX-7	94696	. RELAY	1		PADZZ
-21	RCR42G102JS	81349	. RESISTOR, FXD, COMP	1		PADZZ
-22	RCR32T100JS	81349	. RESISTOR, FXD, COMP	1		PADZZ
-23	RER25F1R00R	81349	. RESISTOR, FXD, WW (P/N RER75F1R00R, CAGE 81349)	1		PAOZZ
-24	10085-0254	14304	. RESISTOR, THERMAL	1		PADZZ
-25	82617	07858	. SWITCH	1		PADZZ
-26	10085-0213	14304	. TRANSFORMER, RF	1		PADZZ
-27	241-5-2151	08779	. TRANSFORMER, POWER	1		PADZZ
-28	V275LA40A	09214	. VARISTOR	2		PADZZ
-29	MS15795-803	96906	. WAHER, FLAT (AP)	10		PADZZ
-30	MS51957-16	96906	. SCREW, MACHINE (AP)	8		PADZZ
-31	10085-0270	14304	. PANEL	1		XB
-32	10085-0205	14304	. CHASSIS	1		XB
-33	10085-0262	14034	. BRACKET, MTG	1		XB
-34	10085-0257	14304	. BRACE	1		XB
-35	10085-0264	14304	. FRAME, FILTER	1		XB
-36	10085-0249	14304	. COVER	1		XB
-37	MS51957-38	96906	. SCREW, MACHINE (AP)	4		PAOZZ
-38	MS35338-136	96906	. WASHER, SPLIT (AP)	6		PADZZ
-39	MS15795-805	96906	. WASHER, FLAT (AP)	11		PADZZ
-40	MS15795-808	96906	. WASHER, FLAT (AP)	6		PADZZ
-41	MS15795-807	96906	. WASHER, FLAT (AP)	3		PADZZ
-42	10085-0252	14304	. HEATSING	1		XB
-43	10085-0278	14304	. BRACKET, MTG	2		XB
-44	B25600F002	04713	. INSULATOR	2		XB
-45	B51568F029	04713	. NUT, PLAIN, HEX (AP)	2		PAOZZ
-46	B15547F013	04713	. BUSHING	2		XB
-47	1575	28124	. BUMPER, RUBBER	1		XB
-48	0S200M36	08484	. CLAMP, HOSE	1		XB
-49	10029-0073	14304	. HANDLE	1		PAOZZ
-50	ZX-4464 30DURE0	76385	. GASKET	22		XB

Figure & Index Number	Part Number	FSCM	Description 1 2 3 4 5 6 7	Units Per Assy	Usable On Code	SMR Code
-51	4318	00141	. SCREW, MACHINE (AP)	1		PAOZZ
-52	MS24693-C26	96906	. SCREW, MACHINE (AP)	6		PAOZZ
-53	MS51957-45	96906	. SCREW, MACHINE (AP)	2		PAOZZ
-54	MS51958-72	96906	. SCREW, MACHINE (AP)	4		PAOZZ
-55	20590-174AS	04009	. RING, SWITCH	1		XB
-56	10085-0273	14304	. BRACKET, ANGLE	1		XB
-57	MP-0745	14304	. LABLE	1		XB
-58	H-6768	14304	. NUT, CLINCH (AP)	12		XB
-59	4858-1-0516	71279	. SPACER	1		XB
-60	MS51957	96906	. SCREW, MACHINE (AP)	4		PAOZZ
-61	476042	82877	. PROTECTOR, FAN	1		XB
-62	TC-105A	59730	. BASE	8		XB
-63	F4-30-SS	72794	. SCREW, CAPTIVE	2		PAZZN

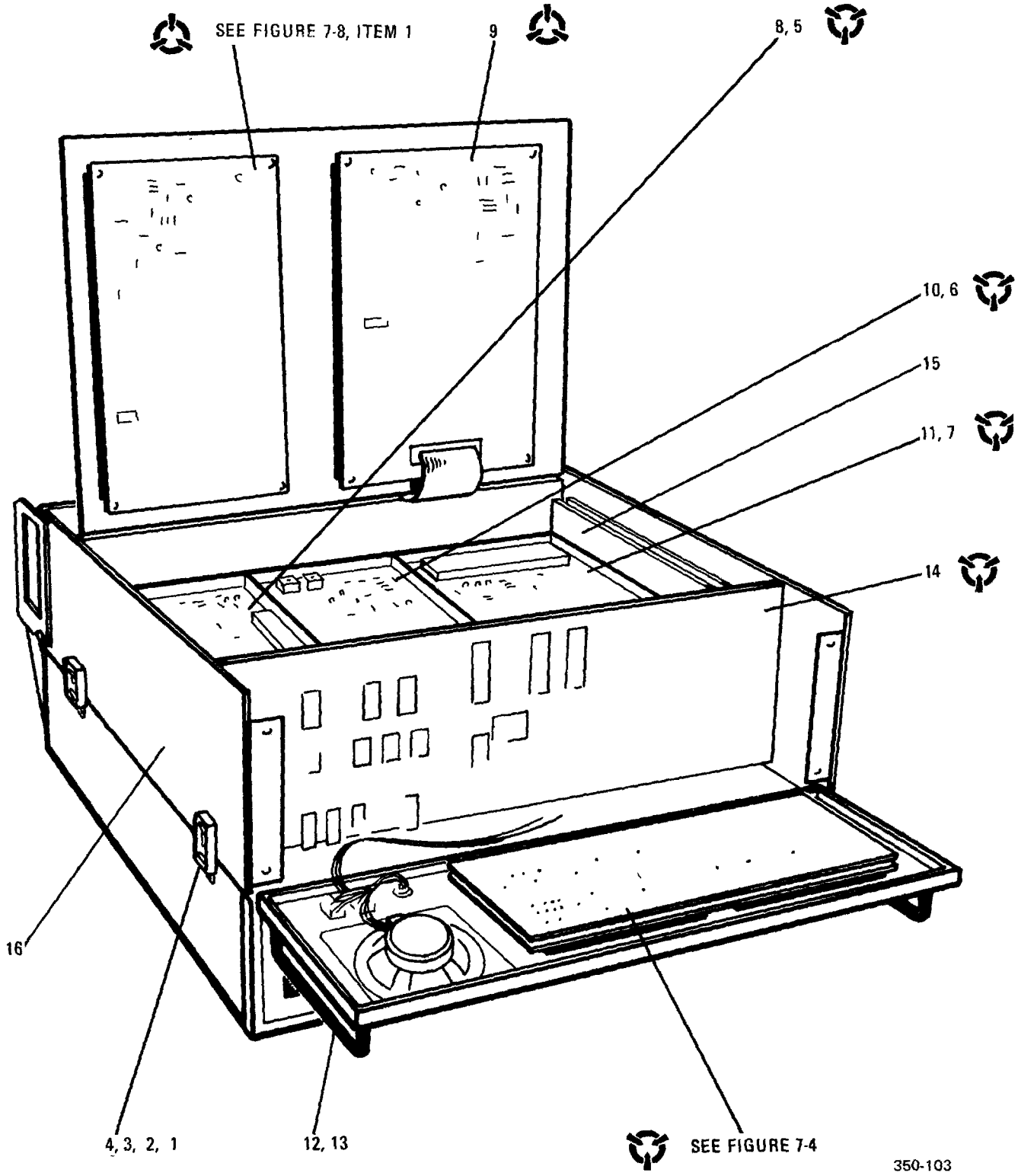

Figure 7-3. 100 Watt Transceiver, RT-1446/URC, Internal Components

Figure & Index Number	Part Number	FSCM	Description 1 2 3 4 5 6 7	Units Per Assy	Usable On Code	SMR Code
7-3 - 1	10085-0535	14304	SPACER,LATCH	4		PAOZZ
- 2	MS35338-134	96906	WASHER,SPLIT (AP)	8		PAOZZ
- 3	MS51957-4	96906	SCREW,MACHINE (AP)	8		PAOZZ
- 4	H408-1	83014	CATCH,CLAMPING	4		PAOZZ
- 5	10085-5171	14304	COVER,CONV	1		XB
- 6	10085-5172	14304	COVER,BF	1		XB
- 7	10085-5173	14304	COVER,SYNTHESIZER	1		XB
- 8	10085-5000	14304	CIRCUIT CARD ASSY,A1A3	1		PAODD
- 9	10085-5250	14304	CIRCUIT CARD ASSY,A1A6	1		PAODD
- 10	10085-5500	14304	CIRCUIT CARD ASSY,A1A9	1		PAODD
- 11	10085-5600	14304	CIRCUIT CARD ASSY,A1A10	1		PAODD
- 12	10350-A-1032-2	06540	HANDLE	2		XB
- 13	MS24693-C272	96906	SCREW,MACHINE (AP)	4		PAOZZ
- 14	10085-9000	14304	CIRCUIT CARD ASSY,A1A12	1		PAODD
- 15	10085-0516	14304	COVER	1		XB
- 16	10085-0500	14304	CHASSIS,ELEC,EQPT	1		XB

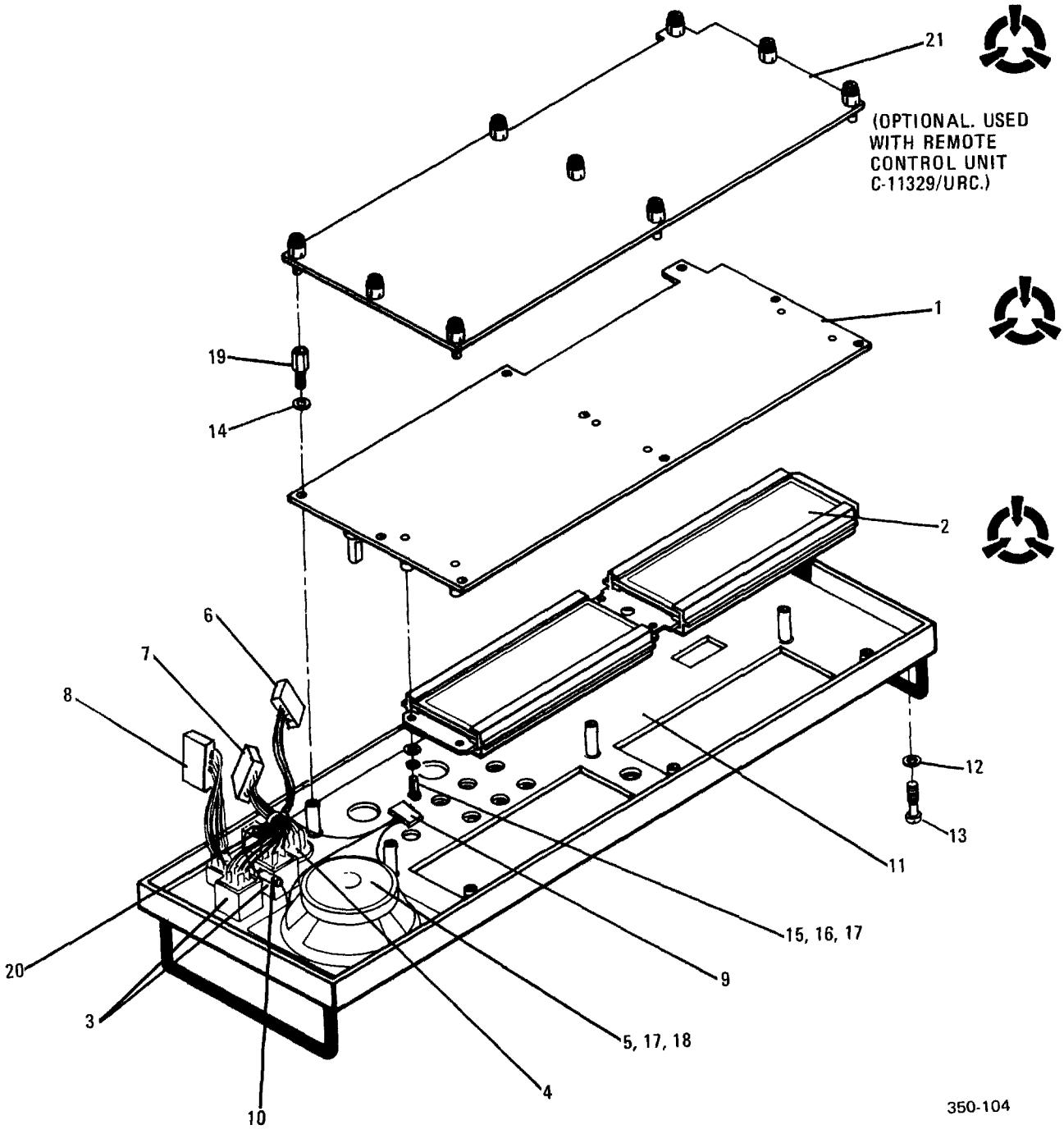

Figure 7-4. 100 Watt Transceiver, *RT-1446/URC*, Front Panel Assy, A1A11

Figure & Index Number	Part Number	FSCM	Description 1 2 3 4 5 6 7	Units Per Assy	Usable On Code	SMR Code
7-4 -	10085-2000	14304	PANEL ASSY,A1A11	1		PAODD
- 1	10085-2100	14304	. CIRCUIT CARD ASSY, A1A11A1	1		PAODD
- 2	10085-2110	14304	. DISPLAY ASSY,A1A11A2	1		PAODD
- 3	113	82389	. CONNECTOR,RCPT,ELEC	2		PADZZ
- 4	GC283	25330	. CONNECTOR,RCPT,ELEC	1		PADZZ
- 5	82-8666	74199	. SPEAKER	1		PAOZZ
- 6	22-01-3057	27264	. CONNECTOR,PLUG,ELEC	1		PADZZ
- 7	22-01-3087	27264	. CONNECTOR,PLUG,ELEC	1		PADZZ
- 8	207376-1	00779	. CONNECTOR,PLUG,ELEC	1		PADZZ
- 9	22-01-3037	27264	. CONNECTOR,PLUG,ELEC	1		PADZZ
- 10	RN55D4751F	81349	. RESISTOR,FXD,FILM	1		PADZZ
- 11	10085-2019	14304	. PANEL	1		XB
- 12	10087-2011	14304	. WASHER,FLAT (AP)	4		PAOZZ
- 13	10087-2012	14304	. SCREW,MACHINE (AP)	4		PAOZZ
- 14	MS35333-70	96906	. WASHER,LOCK (AP)	9		PADZZ
- 15	MS51957-14	96906	. SCREW,MACHINE (AP)	7		PADZZ
- 16	MS35338-135	96906	. WASHER,SPLIT (AP)	7		PADZZ
- 17	MS15795-803	96906	. WASHER,FLAT (AP)	6		PADZZ
- 18	H-6768	14304	. NUT,CLINCH (AP)	4		XB
- 19	9725-SS-0440-7	06540	. POST ELEC MECH	9		PAOZZ
- 20	TC-105A	59730	. BASE	1		XB
- 21	10088-6000	14304	CIRCUIT CARD ASSY,A1A19	1		PAODD

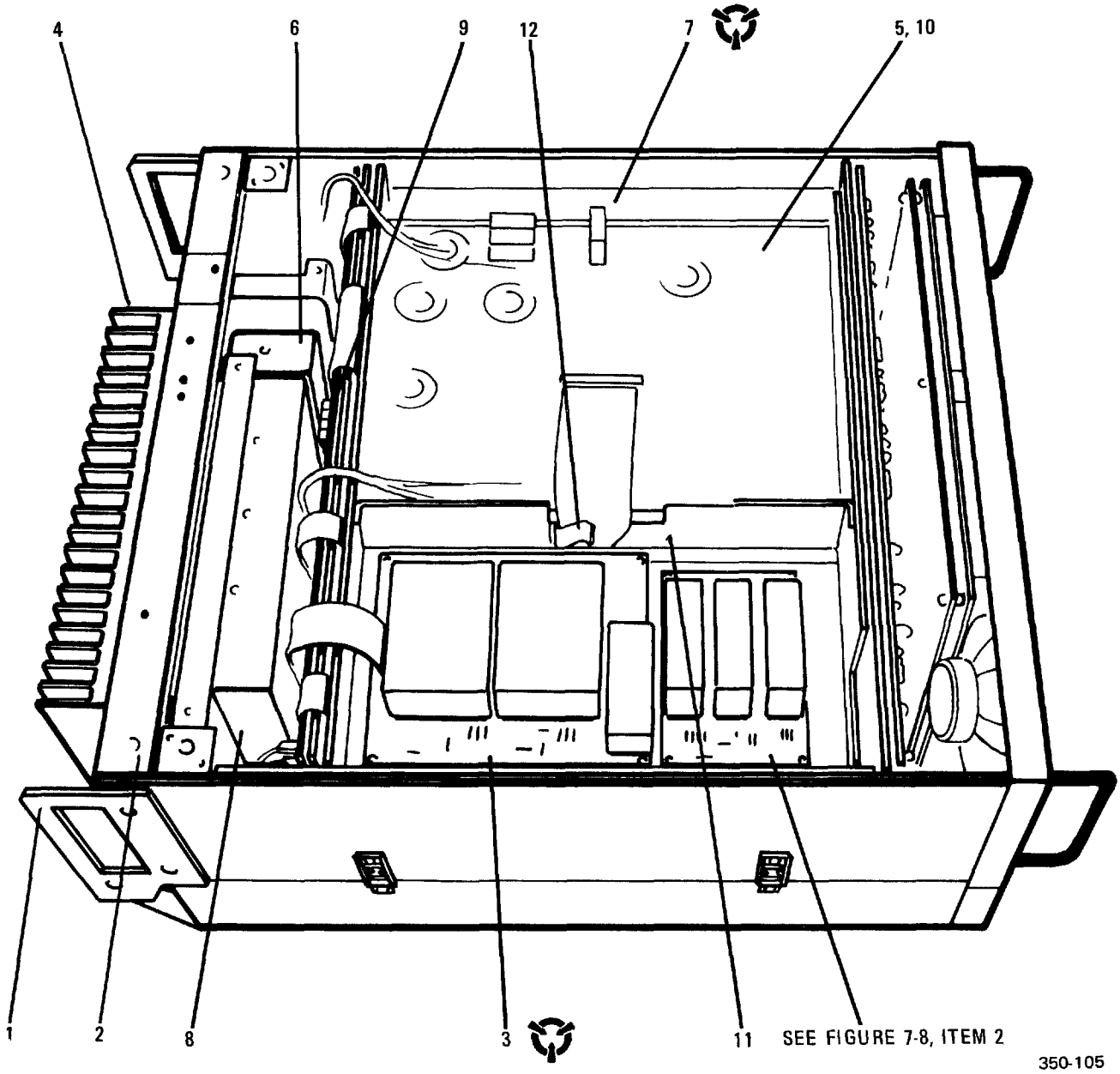

Figure 7-5. 100 Watt Transceiver, RT-1446/URC, Top Side View