HIGH SEAS AND OVERSEAS RADIO
LD-T2 TRANSMITTER
J41611A (4.0-23 MHZ) AND J41611AA (4.5-28 MHZ)
TROUBLE LOCATION

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1. GENERAL

1.01 This section provides the procedures for locating troubles in the transmitter. The trouble indicated by a blown fuse lead directly to the faulty circuit. The chart containing functional troubles lists common troubles, their probable causes, and abbreviated remedies.

1.02 The following sections may be used for test, repair, adjustment, and operation of the transmitters:

403-330-300	Operation
403-330-501	Tests and Adjustments
403-330-502	Alignment
403-330-701	Servo System Adjustments
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403-330-703	Mechanical Adjustment
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2. TROUBLE LOCATION

CHART 1

BLOWN FUSE TROUBLE LOCATION

FUSE NO.	DESCRIPTION	CIRCUIT
F2	1A 250V Non 1	Air switch & FIL relay
F3	2A 250V Frn 2	550V RECT PRI
F5	2A 250V Non 2	Indicating lamps, LP2, LP7, LP8, LP9, LP10, & LP12
F6	2A 250V Non 2	Meter lights & crystal heater transfer
F7	6A 250V Non 6	Volt REG input
F8	10A 250V Non 10	Interlock circuit & grounding contactors
F9	10A 250V Non 10	Servo tuning motors
F10	15A 250V Non 15	Regular power to T3
F11	15A 250V Non 15	Regular power to T2
F12	5A 250V Frn 5	Blower
F13	30A 250V Non 30	Main 230V
F16	2A 250V Frn 2	550V RECT PRI
F18	2A 250V Frn 2	48V RECT & range solenoids
F19	3A 250V Non 3	—150V RECT
F20	3A 250V Non 3	+150V RECT ac input to gate switches
F21	5A 250V Non 5	+300V RECT ac input to gate switches
F22	10A 250V Non 10	Servo switching motors
F24	15A 250V Non 15	Regular power to T3
F25	5A 250V Frn 5	Blower
F26	30A 250V Non 30	Main 230V
F27	1/2A 250V Frn 1/2	Alarm transformer
F29	2A 250V Non 2	Servo AMPL & MON tube heaters
F30	2A 250V Non 2	MOD & HF AMPL 1, 2, & 3 tube heaters
F31	1A 250V Non 1	Bias, 550V OUT INDR FIL PRI
F32	1A 250V Non 1	
F33	3A 250V Non 3	Bias (PRI) HF AMPL 4, 5, 6 FIL PRI
F34	3A 250V Non 3	
F36	15A 250V Non 15	Regular power to T2
F37	5A 250V Frn 5	Blower
F38	30A 250V Non 30	Main 230V
F39	1/2A 250V Frn 1/2	Alarm transformer
F40	15A 250V Non 15	Test power to T3*
F41	15A 250V Non 15	Test power to T3*
F42	15A 250V Non 15	Test power to T2*
F43	15A 250V Non 15	Test power to T2*

* Fuses F40, F41, F42, and F43 are not located on the main fuse panel but are located on the under side of the transformer cover assembly in the lower part of bay 4. To reach these fuses, grasp the cover assembly by the handles, pull backward, then lift.

CHART 2

FUNCTIONAL TROUBLE LOCATION

The following chart provides a list of common troubles, their probable cause, and the corrective action or checks that can be performed to locate the source of the trouble.

TROUBLE	PROBABLE CAUSE	REMEDY
No filament voltage on power amplifier	Cabinet door or meter cover ajar	Check door and meter housing switches for closures and alignment.
	Insufficient air	Check blower motor operation. Check belt for slippage. Check for clogged air filter. Check for open door. Adjust air pressure switch.
	Blown fuse	Check fuses F2 and F8.
HV switch ON, RESET operated, but no high voltage	FILAMENT INTERLOCK switch in wrong position	Change switch position.
	Transmitter in STANDBY	Push one of the FREQUENCY buttons.
	AC SUPPLY switch not ON	Set to ON position.
	HF AMP 5 TUNING switch in TUNE or center position	Set to ON.
	Air pressure switch inoperative.	Check blower motor and fuses F12, F25, and F37. Check air pressure switch.
	Cabinet door open	Close all doors.
High voltage will not remain ON. Circuit breaker operates.	Faulty power supply	Check HV transformer and filter chokes for grounds.
Transmitter gain varies, noise in output	HF GAIN potentiometer	Replace defective potentiometer.
	Defective vacuum tube	Isolate and replace defective tube.
No reduction in output when test tone is removed	Transmitter is tuned to crystal frequency.	Retune harmonic generator and HF MOD through HF AMP 6.
Incorrect voltage at output of regulated power supplies	Improper adjustment	Adjust output voltage.
	Defective regulator tube	Replace tube.
Distortion in transmitter output	Low emission vacuum tube	Measure distortion at output of HF3 through HF6. Replace defective tube.

CHART 2 (Cont)

TROUBLE	PROBABLE CAUSE	REMEDY
	Improper filament voltage at RF AMPL 6	Readjust filament voltage.
	Monitor input level too high	Adjust monitor input for test tone output of −10 dBm.
	Defective vacuum tube in monitor.	Replace defective tube.
	Transmitter incorrectly tuned	Check tuning against tuning charts and setup card for the frequency in use.
	Defective load resistor	Replace resistor.
	Open capacitor in bias rectifier output	Replace capacitor.
	Defective antenna load	Check output using dummy load. Repair defective antenna or feed-line.
Servo hunts excessively	25-Hz oscillator	Adjust feedback and output controls.
	300V supply	Adjust to 300V.
	Servo power relay	Clean contacts of S2 relay.
Servo tunes to frequency other than one selected	One or more contacts of switch D2 (row 1)	Continuity check between FREQUENCY switch K1 and corresponding position on D2 (through K3).
	Dirty or defective contacts	Clean contacts on D2 switch.
Servo does not stop at selected frequency. D2 stops at random position with no light except on STDBY.	All eleven contacts of D2 grounded	Make continuity check between K1 and D2 (through K3) to verify ground. Remove ground.
	K6 operating coil grounded	Replace coil.
	Selector relay for previous frequency does not open when new frequency is selected. Open circuit in lead to operate coil of hold relay S7.	Check applicable relay S9 through S18 for sticking armature or ground in coil circuit Check continuity of lead to S7 for open circuit.

CHART 2 (Cont)

TROUBLE	PROBABLE CAUSE	REMEDY
No frequency indicator lights when frequency is selected. System functions as on STDBY (audible alarm disabled, HV removed).	Selector relay corresponding to frequency position fails to energize.	Check selector relay for open coil or maladjusted contacts.
D2 stops at a random position.	Ground between delay relay S8 and start relay S6.	Make continuity check and remove ground.
D2 steps continuously, no indicator lights	Ground between magnet side of delay relay S8 and switch S2.	Check and remove ground.
Servo motor remains at maximum or minimum tune position.	Servo amplifier	Test appropriate servo amplifier tubes (V2 through V16) and replace defective tube.
	Servo relay	Test for open or short circuit in operating coil of appropriate relay S19 through S28.
More than one frequency lamp lights when frequency is selected. Audible alarm disabled and HV off.	More than one frequency selector has ground in operating coil circuit. Verify trouble by selecting another frequency; symptoms are then same as selector dropout failure.	Make continuity check and remove ground. Check associated TUNING ADJUST potentiometers for burnout. Check fuse F303 in −150V supply. Replace parts as required.
Carrier alarm does not operate.	LF modulators unbalanced	Reduce carrier leak by rebalancing LF modulators.
No increase in output when HF GAIN control is advanced.	Load control rectifier.	Defective tube. Load control rectifier bias incorrect. Replace tube or adjust bias.
Erratic indication on HIGH VOLTAGE meter	Faulty protector block	Replace carbon protector block PRI.
LOAD CONTROL switch IN, but no fluctuation on MOD METER switch on I_S V3 or I_S V4	Load control rectifier tube (V3 in HF amplifier 6 unit) or circuit failure.	Replace or repair defective component.
Repeated operation of the overload relay as indicated by the extinguishing of the OVERLOAD RF AMPS 4-5 indicating lamps	Excessive RF drive	Decrease drive.
	Excessive screen current in HF amplifier 4 or 5	Check tubes and components.

CHART 2 (Cont)

TROUBLE	PROBABLE CAUSE	REMEDY
	Failure of 2000-volt supply while 4000-volt supply is intact (causing excessive screen current in HF amplifier 5)	Check high-voltage power supply.
Transmitter does not operate on selected frequency after depressing appropriate push-button.	More than one control wire on bank 1 ungrounded causing the selector to stop at the first ungrounded contact it reaches.	Isolate trouble by continuity check.
	All 11 control wires grounded or a grounded operate winding on start relay S6.	Isolate trouble by continuity check.
	Frequency selecting relays S9 through S18 fail to de-energize.	Isolate trouble by continuity check.
	Open-circuited solenoid in hold relay S7	Isolate trouble by continuity check.
Several FREQUENCY indicating lamps illuminated at one time	More than one frequency selecting relay (S9-S18) operated at same time	Isolate trouble by continuity check.
Low output voltage from ac line voltage regulator	ADJ VOLTS control mis-adjusted	Adjust ADJ VOLTS control.
	Defective tubes	Check V1, V2, V3.
	Regulator overloaded	Check for shorted filament trans-former.
	Voltage drop of RV1 low	Check thermistor RV1.
No output from ac line voltage regulator	Blown fuse	Replace F7.
High output voltage from ac line voltage regulator	ADJ VOLTS control mis-adjusted	Readjust ADJ VOLTS control.
	Cap off V1	Replace cap.
	Defective V1	Replace tube.
	Defective capacitor	Replace C2.
	RV1 or RV2 defective	Check RV1 and RV2.
No output voltage from 300-volt rectifier	Blown fuse	Replace F21 in fuse panel or F1 in power supply.

CHART 2 (Cont)

TROUBLE	PROBABLE CAUSE	REMEDY
	Door switch open	Close door switch.
	Defective tube	Replace V1 or V2.
	C1 to C4 shorted	Replace defective part.
	C10 shorted	Replace defective part.
Low output voltage from 300-volt rectifier	+300V RECT ADJ control misadjusted	Adjust +300V RECT ADJ control.
	V1 or V2 defective	Replace V1 or V2.
	V3 to V9 defective	Replace V3 through V9, as required.
High output voltage from 300-volt rectifier	+300V RECT ADJ control misadjusted	Adjust +300V RECT ADJ control.
	V7 to V10 defective	Replace defective tube.
Erratic 300-volt output	C5 to C10 defective	Replace defective part.
No output voltage from 150-volt rectifier	Blown fuse	Check F19 (−150V supply), F20 (+150V supply).
	Defective tubes	Check V1 and V2.
	Shorted capacitors	Check C1 to C8.
Low output from 150-volt rectifier	+150V RECT ADJUST control misadjusted	Adjust +150V RECT ADJUST.
	Defective tubes	Check tubes.
	Shorted capacitors	Check C9 and C13.
	Open resistor	Check R12.
	Open capacitor	Check C11.
High output from 150-volt rectifier	+150V RECT ADJUST misadjusted	Adjust +150V RECT ADJUST control.
	Defective tubes	Check tubes.
	Shorted capacitors	Check C10, C12, and C13B.

CHART 2 (Cont)

TROUBLE	PROBABLE CAUSE	REMEDY
High ripple content on 300-volt output	Defective tube	Replace V5.
Fuses F20 and F31 blown	Shorting bar not being lifted because of inoperative door switch	Repair door switch.
Erratic indication on HF AMP 5 CATHODE meter	Faulty protection block	Replace carbon protector block PR1.
Erratic indication on HF AMP 6 CATHODE meter	Faulty protection block	Replace carbon protector block PR2.