RADIO ROOM 2

MAINTENANCE/RESTORATION LOG

1993 to 1996

Compiled by Jerry Proc

APRIL 6/93

Constructed two 8" speakers for the CM11's in Radio 2.

MAY 15/93

Mounted two speakers. Need to be connected to CM11's.

JULY 2/93

Installed voice powered telephone in Radio 2.

SEPT 17/93

Connected telephone to respective line. Unable to communicate.

OCT 16/93

Cleaned contacts on sound powered handset microphone. Now communications is possible between the Message Centre and Radio 2.

NOV 17/93

Re-designed existing handset for one of the CM11's. (S/N 931117)

FEB 19/94

Re-designed existing handset for one of the CM11's. (S/N 940219)

JUNE 11/94

Commenced restoration of radio 2. Blue paint on walls is Benjamin Moore Exterior Gloss Enamel; Base 110 2A; Colour #724

JUNE 23/94

Restored AID speaker.

JULY 23/94

Refinished PV500 HM S/N 307 with Tremco Rust Paint - Gray. Notice that the RF module in the transmitter is from another PV500 due to its beige colour.

JULY 29/94

* Installed three CAU's in rack. All power up OK but none of them will be connected to the Remote Control system due to damaged cabling behind the rack.

* Installed CM11 S/N 219 (right). Unit does not power up. Needs work. Repainted discoloured and rusted knobs on antenna tuning unit.

AUG 6/94

CM11 S/N 298

* Removed large coax connector and installed feed-through insulator. Requires refinishing.

* PV500 HM S/N 307 - Installed female coax connector.

* CM11 S/N 219 - Replaced missing lamp holder. Installed two crystals. Notice that the man aloft switch does not have a proper key and it is stuck in the safe position. Not able to open lock with two other keys.

AUG 13/94

* Refinished CM11 S/N 298 (left) and added copper pipe transmission line. Still need to repair door frame.

* Installed homebrew 'pill bottle' lens on call out lamp.

AUG 18/94

CSR5A S/N 940818 (assigned S/N; part of CM11 S/N 298)

Symptom: BFO doesn't work

* Found resistor R50 (2.0k 5%) to measure 2.4 kohms. Replaced with composite 2 k resistor. BFO still does not work. Found resistor R49 (100 k 5%) to measure in at 164 kohms. Replaced with another resistor. BFO now works.

* Sprayed band change switch with tuner cleaner.

* Repaired broken wire on crystal socket.

* Re-glued cardboard borders around Vernier and Range windows.

* Replaced intermittent crimp lug on wire connecting to the antenna 'line' screw.

AUG 23/94

CSR5A S/N 445 (part of CM11 S/N 219)

Symptom : No sound

* Found defective connection on audio out phono plug which connects to the snatch plug.

* Found a 50 kohm 10% resistor to measure at 57 kohms. Replaced it, however this resistor cannot be related to anything in the technical manual as Marconi did not document the components on the main component board.

* Found broken ground connection on RF gain control. This fault was placing 175 volts on the cathode of the 1st I.F. stage (V4).

* Found broken wafer on Crystal IN/OUT switch. Hard wired the switch for crystal OUT operation and loosened the shaft coupler. Glued the wafer pieces together with bathtub seal just to keep then together.

* After fixing the previous three faults, the receiver would only produce a hissing sound. Probed around the oscillator compartment with a non-metallic tool and the receiver started to operate. Suspect that I may have cleared a fault condition in one of the contacts on the oscillator wafer switch.

AUG 27/94

CM11 S/N 219

Symptom - CSR5 is dead.

* See missing 250 VDC to receiver. Discovered missing male pin in ZM11 snatch plug which connects to the receiver power unit. Replaced entire ZM11. Still no DC to receiver. Swapped in the receiver power cable from the other CM11. Now the CSR5 works. Found open conductor connecting with connector pin D and repaired the cable. Cable needs test.

* Installed Radio State Board. Not sure if it was mounted in this room but I cannot see any other area in Radio 1 or 4 where it might have been mounted. The board is definitely authentic to Haida.

* For all practical purposes, the restoration is complete as of this date. The transmitters in the CM11's have not been checked out but this was not the intention at this time.

SEPT 3/94

CM11 S/N 219

Symptom - No power or control on transmit.

Notice that the 816 rectifiers in the high voltage power supply glow but the push to talk switch in the handset doesn't trip any relays. Swapped out high voltage supply with CM11 S/N 298. Now get RF power on transmit. Need to repair broken flattop antenna before proceeding further.

CM11 S/N 298

Symptom - Needs transmitter test and receiver check.

* Installed repaired receiver cable (ZM11 to CM11 cabinet). Receiver now works.

* Tested transmitter. See high voltage reading on meter, however unable to get the dummy lamp to light up. Troubleshooting has been deferred to a later date.

SEPT 10/94

* Inscripted the Radio State Board.

SEPT 17/94

* Rebuilt transmission line R-RA27 for CM11 #2. In the Bos'ns cabin, a length of RG213 has been spliced to the RG18/U coax. This RG213 terminates on the insulator box at the top of the mainmast. The starboard inner aft flattop has been connected to R-RA27.

SEPT 24/94

* Drilled a hole through the deck (bottom to top) in the area where the CM11 copper tube transmission line terminates in the ceiling. Unfortunately, the hole is located on the exterior of the bulkhead in the vicinity of stairs to the upper deck. Sealed up hole in deck, and added 5 feet or wire to the end of the copper tube.

DEC 21/94

Constructed 'external replica' E886 transmission line tuner for CM11 #3.

APR 27/96

Completed terminal block wiring of all three CAU's. For CM11#3, the terminal block and metal plate were missing so a near replica was constructed. For CM11#2, only the terminal block was missing.

MAY 6/96

Model XFK Keyer S/N 893

- Tightened up loose locking nuts on C50, C51, C52, C53, C54.
- Replaced three broken C-G 2 pin male plugs on crystal paralleling board.
- Replaced cracked locking nut on band change switch.
- Modified existing home brew cover so it could be screwed down at the rear.
- Added mechanical protection screen over the paralleling jacks.
- Made missing bottom cover.
- Could not easily located missing Hubble twist lock AC receptacle for line cord. Installed fixed line cord.
- Added insulating barrier across rear terminal strip and a 2000ohm 12 watt external resistor across VOLTS and GND.
- Unable to perform alignment due to lack of specific test equipment.

MAY 11/96

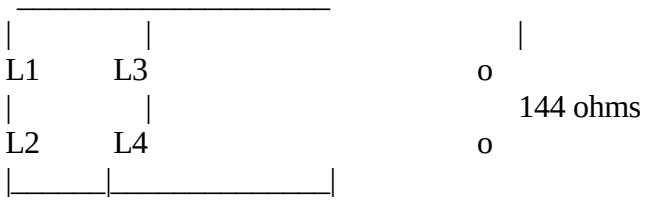
Jim Brewer wired up AC power to PV500 HM, re-installed various missing parts and applied power to the unit. The filament pilot comes on and there is no smoke or sparks. Needs more work in order to get it on the air.

MAY 18/96

Pre-tested XFK keyer in the Message Centre by keying it from the T-D and monitoring the resultant 850 Hz shifted signal with the CSR5 receiver and FSC. In principle, it worked but the copy was mostly garbled. Perhaps the input signal was too weak. After the test, the XFK was re-installed in its normal position in Radio 2. Could not hear the XFK carrier on CM11#2.

MAY 23/96

Built antenna dummy load for the PV500 HM. Used four, 100 watt light bulbs. They are in series/parallel.



Each bulb has a hot resistance of 144 ohms at full load. The above configuration will yield a dummy load of 144 ohms resistance. If 150 watt lamps are substituted (96 ohms hot resistance), the load will have a characteristic resistance of 96 ohms.

MAY 25/96

- Installed ground wire for PV500.

- PV500 HM S/N 307 tested successfully. For the record, someone made a front panel modification by installing an off/on switch and adding two more terminal screws to the connection strip of the control unit. The off/on switch potentially connects to terminals 3 and 4 of the power supply and this allows the transmitter to be keyed continuously for FSK mode (?). Left unconnected at this time.

- Also, the PV500 which is stored in the forward mess area is a hybrid unit. The cabinet nameplate identifies it as an HM but the RF unit and the metering panel is from an HM2 model. There have also been some modifications to the power supply.

JUL 5/96

CM11#2 - Tuned unit. Only tunes in 3.5 to 4 Mhz band. Measured flattop. Length is around 55 feet. Operated unit form Radio 1. Hear lots of intermod on transmitted signal.

JUL 14/96

- Installed base insulators on port and starboard sponsons.
- Installed LC to S0239 connector converter on coax cable which attaches to the starboard aft whip. Connected base insulator to converter box with RG8 coax.

AUG 17/96

XFK Keyer S/N 893

Discovered that the output frequency is 200 khz LESS than the crystal frequency and NOT the opposite way as stated in the manual. Seems that 30 to 40 ma drive is sufficient for the PV500.

Summary of PV500H operations to date:

Added a non-destructive, reversible modification in order to make the XFK keyer operate with the PV500H. At the PV500 end, the interconnecting coax cable plugs into one of the crystal sockets and the braid is grounded to the frame. One of the crystal pins is 'hot'. The 6V6 oscillator tube must be removed as the XFK then becomes the frequency source. When tuning with the XFK, place the XTAL/MO switch in the crystal position. Select the crystal socket where the XFK is plugged into.

Place the multimeter in the #2 position. Using the corresponding VFO, set the counter to correspond to the frequency chart. Fine tune by rotating the VFO for minimum reading on the meter. Next, switch the multimeter to the #4 position and adjust the multiplier control for 5 ma. Follow the manual for the remainder of the tuning procedure. To transmit in frequency shift mode, attach RCU9 to the PV500 via the CSU. Insert a shorting plug into the KEY jack on the RCU to key the PV500. Start the paper tape reader and the transmitted signal should now be 'shifted'.

OCT 27/96

Erected the 28 foot aft whip antennas.