

ENGINEERING MEMORANDUM

TITLE		E.S. NO.		FILE NO.	
AN/ARC - 49 - V.H.F. RADIO INSTALLATION - EXPEDITOR 1597		12328		111 - 72	
EFFECTIVE		Immediately			
PART NO.		CIRCUIT NO.		COPIES TO	
AN/ARC - 49		V.H.F.		NO.	
USE OF E.S.		JOB NO.		DATA	
SALVAGE		11-1860		INDEXED	
CONVERSION		CUSTOMER'S ORDER NO.		FOOD	
STOP ORDER/RELEASE		CUSTOMER		PLANNING	
NEW DRAWING		RCAF		MAY. CONT.	
REVISED DRAWING		Expeditor		2	
VARIATION		AIRCRAFT REGISTRATION NO.		1	
OBSOLETE NOTICE		1597		3	
USE AS NOTED		DATE		PILOT	
DISPOSITION OF STOCK		11 Jun. 57		4	
ORDER COMPLETELY AFFECTED		D.VOL. CHANGE		NO	
PARTS COMPLETED WITH PROGRESS TOOLING		NO		D.VOL. CONT.	
DATE MADE		DATE		NO	
INTERCHANGEABILITY AFFECTED		11 Jun. 57		NO	
YES		NO		NO	
STRENGTHEN AFFECTED		NO		NO	
YES		NO		NO	
AS NOTED		ORIGINATED BY		CUSTOMER	
CORNA		W. H. ...		W. H. ...	
REWORK		S. A. W. ...		W. H. ...	
USE TO		D. W. ...		W. H. ...	
DEFLECTION		D. W. ...		W. H. ...	
NOT AFFECTED		D. W. ...		W. H. ...	
AFFECTED		D. W. ...		W. H. ...	
CONTRACTING AGENCY		D. W. ...		W. H. ...	
APPROVALS		D. W. ...		W. H. ...	
GIVE FULL PARTICULARS AND EXPLAIN WHERE FEASIBLE		D. W. ...		W. H. ...	

We have been authorized by the RCAF to fit a 48 channel AN/ARC - 49 VHF Transceiver System in Expeditor aircraft No. 1597 at this Plant, in lieu of the existing AN/ARC - 1 equipment.

This installation is for one aircraft only, manufacturing information will be to Engineering sketches, from which necessary engineering drawings will be prepared.

The equipment will be installed in accordance with the following listed instructions and those to be issued on the job by the liaison engineer in charge of the project.

1. Remove existing AN/ARC - 1 transceiver and shockmount.
2. Remove only enough upholstery on roof of cabin to gain access to main radio cable run.
3. Manufacture all cable harnesses necessary for installation in accordance with relevant sketches to be supplied by Engineering.
4. Connectors required are already in contract issue stock and may be requisitioned.
5. Remove co-pilot's speaker and overhead radio panel in cockpit roof in order to gain access to remote control cable run.

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6. Transmitter T-452/ARC-49, Receiver R-608/ARC-49 and Power Junction Box J68A/ARC-3 are to be bench checked with the test cables and Test Sets TS-78/U and TS-178/ARM-1 using the test crystals 5555.55 KC.; 6944.00KC.; 8458.00 KC.; 8727.00 KC.; 8000.00 KC.; and 8100.00 KC. (or nearest supplied frequencies) setting up procedure will be in accordance with USAF ~~70~~ 12R2-2ARC3-3 Section 2.

7. After bench check transmitter and Rec. be fitted with crystals for all required channels. (See para. 9 for list).

8. The following is a list of equipment required.

AN/ARC-49 VHF RADIO INSTALLATION
EXPEDITOR PARTS CHECK LIST

<u>RCAF Ref.</u>	<u>NUMBER</u>	<u>DESCRIPTION</u>	<u>QTY</u>
10EU/43881	T-452/ARC-49	Transmitter	1
10EU/43880	R-608/ARC-49	Receiver	1
10EU/20680	J-68(A)/ ARC-3	Power Junction Box	1
10EA/43899	C-1400/ARC-49	Control	1
10EA/20679	MT-237C/ARC-3	Mounting Base	1
10EA/20677	MT-238C/ARC-3	Mounting Base	1
10EA/20683	MT-236B/ARC-3	Mounting Base	1
10EC/20687	U-14/U	Plug	2
10EC/13322	PL-259	Plug	4
10EC/20688	PL-153-A	Plug	2
10EC/20689	PL-148A	Plug	1
10EC/20692	MX-506/ARM-1	Motor Switch Cap Lock	1
10EC/20693	U-16/U	Plug	2
5E/490	PL-151A	Plug	1
10X/207088	RG-8/U	Co-ax	25 ft.
10X/207090	CR-18J/5555.55)		
10X/206514	CR-18/U:8000.00)		
10X/206089	CF-18U: 8458.00)	Crystals	6
10X/207091	CR-18/U:6944.44)		
10X/207093	CR-18/U:8100.00)		
5CB/	CR-18/U:3727.00)		
	PSM-25	Circuit Breaker	1
	BA W111-72004-001	Cable R101	1
	BA W111-72004-002	Cable R102	1
	BA W111-72004-003	Cable R103	1
	BA W111-72004-004	Cable R104	1
	BA W111-72004-005	Cable R105	1
	BA W111-72004-006	Cable R106	1

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9. Present plans call for crystalizing 47 of the 48 available channels. A list of these requirements are attached. Refer to page.485 for assignment of frequencies & crystals.
10. Install, new receiver, transmitter and power junction box in rear of aircraft between bulkheads #9 & #11; also remote control in cockpit as directed.
11. Inter-connect all equipment per wiring diagram to be issued
12. Replace upholstery.
13. Ground check complete radio system including new V. H. F. Use field strength meter to obtain output indication on channels which tower is unable to reply..
14. A short test flight will be necessary in order to evaluate airborne performance of new equipment. New V. H. F. equipment should have at least a range of 30 nautical miles at 1000 feet true altitude above ground on channel C-10.
15. Install a frequency allocation chart in cockpit for use by the pilot and co-pilot.
16. All labour and material used in connection with this project will be charged to W. O. 11-1860.

BRISTOL AIRCRAFT (WESTERN) LIMITED

CHANNEL	CARRIER FREQUENCY	TRANSMITTER CRYSTAL(KCS.)	RECEIVER CRYSTAL (KCS.)	HARMONIC SELECTOR SWITCH
A-1	118.10	6561.11	8161.54	
A-2	118.30	6572.22	8176.92	
A-3	118.70	6594.44	8207.69	115.00 Mc
A-4	118.90	6605.56	8223.08	
A-5	119.10	6616.67	8238.46	
A-6	119.30	6627.78	8253.85	
A-7	119.50	6638.89	8269.23	
A-8	119.70	6650.00	8284.62	
A-9	119.90	6661.11	8300.00	118.00 Mc
A-10	120.10	6672.22	8315.38	
A-11	120.30	6683.33	8330.77	
A-12	120.39	6688.88	8338.46	
B-1	120.50	6694.44	8346.15	
B-2	120.70	6705.56	8361.54	
B-3	120.90	6716.67	8376.92	119.00 Mc
B-4	121.50	6750.00	8423.08	
B-5	121.70	6761.11	8438.46	
B-6	121.90	6772.22	8453.85	
B-7	122.20	6788.88	8476.92	
B-8	123.90	6883.33	8607.69	
B-9	123.99	6888.88	8000.00	120.00 Mc
B-10	124.10	6894.44	8007.14	
B-11	124.30	6905.56	8021.43	
B-12	124.39	6911.11	8028.57	

BRISTOL AIRCRAFT (GENERAL) LIMITED

CHANNEL	CARRIER FREQUENCY	TRANSMITTER CRYSTAL (KCS.)	RECEIVER CRYSTAL (KCS.)	HARMONIC SELECTOR SWITCH
C-1	124.50	6916.67	8035.71	
C-2	124.70	6927.78	8050.00	
C-3	124.90	6938.89	8064.29	122.00 Mc
C-4	125.10	6950.00	8078.57	
C-5	125.30	6961.11	8092.86	
C-6	125.50	6972.22	8107.14	
C-7	125.59	6977.77	8114.28	
C-8	125.69	6983.33	8121.42	
C-9	125.89	6994.44	8135.71	125. Mc
C-10	126.18	7010.00	8155.71	
C-11	126.50	7027.77	8178.57	
C-12	126.70	7038.89	8192.86	
D-1	132.30	7350.00	8020.00	
D-2	134.10	7450.00	8140.00	
D-3	134.64	8176.00	7480.00	
D-4	135.00 135.90 (T)	----- 7550.00	8200.00 (R) -----	132. Mc
D-5	136.80	7600.00	8320.00	
D-6	137.70	7650.00	8380.00	
D-7	137.88	7660.00	8392.00	
D-8	142.02	7890.00	8126.25	
D-9	142.74	7930.00	8171.25	140. Mc
D-10	143.64	7980.00	8227.50	
D-11				
D-12	149.58	8310.00	8092.94	