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Despite the above, we will be making copies of essential technical information (circuit diagram, parts list, layout) freely available to all via our website from Summer 2004 onwards. This will be done to try and encourage and enable the maintenance of our remaining stock of vintage electronic equipment.

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Large diagrams

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1. Work out the page numbers you want to print. If you want to print the whole document, then within “Bookmarks” (see above), first click on “**Front**”, and note the page number given at the bottom of the Acrobat window – this will give you the page number of the first page to be printed. Similarly click on “**End of A4 printable copy**”, to determine the last page to be printed.
2. Select “File – Print” or click on the printer icon. This will bring up the print dialog box.
3. Select the correct printer if necessary.
4. In the area marked “Print Range” click on the radio button marked “Pages from..”, then enter the first and last page numbers worked out in step 1 into the “from” and “to” boxes.
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Please get in touch with me at archivist@vmarsmanuals.co.uk.

Richard Hankins, VMARS Archivist, Spring 2004

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STATION KIT, RADIO, AMPLIFIER, R.F., NO 7

(Power supply, rotary No 47 and loading coil assembly, aerial)

TECHNICAL HANDBOOK - MODIFICATION INSTRUCTION

Note: This Issue 2, Pages 1-3, supersedes Issue 1 dated Nov 70.

SUB-TITLE: Amplifier, r.f. No 7 - prevention of over-run on aerial and PA tune drive assemblies

1. Introduction

The tuning drives in the amplifier r.f. No 7 may over-run the end stops and jam the mechanism. It was found that a modified stop-arm and increased diameter end stop were needed to overcome this problem. A short length of brass tube fitted over the existing end stop meets the requirement. The equipments modified during manufacture had only one end stop fitted with a brass tube as this was found to give satisfactory results. If the equipment has not been fitted with one or two bushes on both drives then two brass sleeves will be fitted as detailed in this instruction. Future production of this equipment will have the diameter of both end stops increased to obviate the need for sleeving.

2. Priority: Group 'B' (Mgmt N 097 refers)

3. Estimated time required: 2 man-hours

4. Items affected:

Amplifier r.f. No 7 Z1/5820-99-949-2150

5. Action required by:

a. Units authorised to carry out field or base repairs

(1) On repair or overhaul examine the equipment. If one or both end stops on each drive have brass sleeves, or are of the enlarged size, strike off figure 2 on the modification record plate and take no further action. If not, carry out the modification as detailed.

6. Stores, tools and equipment

a. Stores to be demanded

Stores are to be demanded through normal Ordnance channels quoting this EMER as the authority. The stores are to be demanded as a complete kit and NOT as individual items.

<u>VAOS Section</u>	<u>Part No</u>	<u>Designation</u>	<u>Qty per eqpt</u>
Z1	5820-99-193-6836	Modification kit, electronic equipment	2
		Comprising:-	
		Stop arm SD/A 195306	(1)
		Brass tube, 0.125 in. i.d. x 0.16 in. o.d. x 3/16 in.	
		lg	(2)
		Pin SD/A 195313	(1)

b. Stores to be obtained locally

H1	9150-99-910-0511	Grease XG271	As reqd
H1	8010-99-942-8917	Varnish, insulating, anti-tracking, air drying, red	As reqd

7. Sequence of operations

a. Release the ten socket head screws around the periphery of the front panel of the amplifier, r.f. No 7 and the six socket head screws on the side of the case (warning label under reset switch on front panel refers), and remove the unit from its case.

b. Disconnect the two coaxial cables from RLC and their braids from the earth tags on the front panel. It may be necessary to disconnect the lead from PLC (RF IN) to gain access. Unsolder the lead from the 2kV input PLB and remove this lead from the Terry clip on the front panel. Disconnect the coaxial lead and braid from PLF (70Ω OUT).

c. Release and remove the two No 6 BA nuts retaining PLD and disconnect the plug from SKT D.

d. Set AE TUNE control to 35 and PA TUNE to 1.55 and lock the controls.

e. Remove the metal cover, which has the aerial tuning chart attached, from the front panel by releasing the two knurled screws.

f. Remove the four 3/16 in. and six 5/32 in. AF socket head screws and washers from the front panel and carefully lift the front panel clear of the main assembly.

g. Release the socket screw on the aerial tune lock knob and remove the knob, ensuring that the drive is not unlocked during this operation.

- h. Remove the main aerial tuning knob by releasing the screw in the centre of the knob and sliding the knob away from the front panel.
- j. Release and remove the 9/16 in. BSW lock nut and fixing nuts from the drive and the 1/4 in. BSW nut and washer from the aerial tuning lock control. Carefully remove the tuning drive.
- k. Locate the two stop pins on the back of the aerial tuning dial and solder the two brass tubes provided over the two stop pins.
- l. Refer to Tels L 392 Part 2, Fig 2506, grid ref E3 and locate the stop arm pin. Unscrew the pin.
- m. Locate the stop arm (Fig 2506 grid ref E3) and carefully remove the circlip holding the stop arm in position. Release the spring from the stop arm and remove stop arm.
- n. Fit the new stop arm provided and replace the spring and circlip, removed as detailed in sub-para m.
- p. Fit the new stop arm pin (provided), coating the threads of the pin with anti-tracking varnish.
- q. Apply grease XG271 to the stop arm and pin 1, and to the faces of the shafts which pass through the front panel. Refit the tuning drive to the front panel.
- r. Refit the knobs to the aerial tuning drive and drive lock assemblies.
- s. Repeat the detail in sub-para g. to r. for the PA tuning drive, referring to Fig 2506 grid ref C3 for location of stop arm and stop arm pin.
- t. Refit the front panel to the main chassis.
- u. Resolder the wires removed as detailed in sub-para b. and reconnect PLD to SKTD fitting the two No 6 BA retaining nuts and washers.
- v. Release the AE and PA tuning drive locks and check that the drive assemblies function correctly and when wound up to the end stops do not lock.
- w. Replace the equipment in its case and carry out a functional check of the amplifier.
- x. If the functional check is satisfactory, carry out drying and sealing instructions as detailed in Tels L 394.
- y. Strike through without obliterating the figure 2 on the modification record plate on the front panel.

8. EMER amendments

Nil.

END

ATMC No 00450
T/62335/1(Tels)

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STATION KIT, RADIO, AMPLIFIER, R.F., NO 7

(Power supply, rotary No 47 and loading coil assembly, aerial)

TECHNICAL HANDBOOK - MODIFICATION INSTRUCTION

SUB-TITLE: Captive cover on 70Ω plug - replacement

1. Introduction

Difficulties have been experienced on the r.f. amplifier No 7 due to the protective cap (5935-99-102-6419) shorting the 70Ω plug, fixed (5935-99-011-9484) on the front panel. The centre pin of the plug pierces the rubber gasket of the protective cap and short circuits the r.f. output to earth. This instruction details the method of fitting a new captive cover using its securing tag as a spacer to prevent the plug pin piercing the rubber gasket.

2. Priority: Group 'B' (Mgmt N 097 refers).

3. Estimated time required: 1/12 man-hours.

4. Items affected

Amplifier r.f. No 7 Z1/5820-99-949-2150
Protective cap 5935-99-102-6419

5. Action required by:-

a. Units and establishments holding the equipment

(1) If the figure 1 has not been struck off the equipment modification record plate, demand stores in accordance with the instruction in para 6.

(2) On receipt of the stores, request the unit responsible for field repair of the equipment to carry out this modification.

b. Units authorized to carry out field or base repairs

- (1) When requested by units, carry out this modification.
- (2) On repair or overhaul if necessary, demand the stores and carry out this modification.
- (3) On completion of this modification strike through with a diagonal line the figure 1 on the modification record label attached to the amplifier r.f. No 7.

6. Stores, tools and equipment

Stores to be demanded

Stores are to be demanded through normal Ordnance channels quoting this EMER as the authority. The stores are to be demanded as a complete kit and NOT as individual items.

<u>VAOS</u> <u>Section</u>	<u>Part No</u>	<u>Designation</u>	<u>Qty</u> <u>per eqpt</u>
	5820-99-193-4562	Modification kit	1
		Comprising:-	
	5330-99-943-4392	Washer, non metallic	(1)
		Sealing disc	(1)
		Cap	(1)
		Connector	(2)
		Cord, nylon	(1)
		Rivet	(2)
		Tag	(1)

7. Sequence of operations

- a. Remove the cap fitted on the plug with a 'C' spanner and discard.
- b. Thread the securing tag attached to the captive cover, on to the r.f. plug.
- c. Screw down the captive cover on the plug and tighten in position.
- d. On completion of this modification, strike through without obliterating the figure 1 on the modification record label.

8. EMER amendments

Nil.

ATMC No 00414
T/62335/2(TELS)

END

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STATION KIT, RADIO, AMPLIFIER, R.F. NO 7

(Power supply, rotary No 47 and loading coil assembly, aerial)

TECHNICAL HANDBOOK - MODIFICATION INSTRUCTION

SUB-TITLE: Fitting of a captive nut to retain wire antenna mating screw

1. Introduction

The R.F. amplifier No 7 has been issued without a mating screw to allow wire antenna to be connected to the stand-off insulator located on the top of the equipment. This regulation details the action necessary to provide an antenna mating screw and a captive nut in which to store it when not in use.

2. Priority Group B (Mgmt N 097 refers)

3. Estimated time required 1/2 man-hour

4. Items affected

Amplifier r.f. No 7 Z1/5820-99-949-2150

5. Action required by

a. Units and establishments holding equipment

(1) If figure 3 has not been struck off the equipment modification record plate, demand stores in accordance with the instruction in para 6.

(2) On receipt of stores, request the unit responsible for field repair of the equipment to carry out this modification.

b. Units authorized to carry out field or base repairs

(1) When requested by units, carry out this modification.

(2) On repair or overhaul of equipment, if necessary, demand stores and carry out this modification.

(3) Ensure that figure 7 on the amplifier modification record plate is struck through with a diagonal line on completion of this modification.

6. Stores, tools and equipment

a. Stores to be demanded

Stores are to be demanded through normal Ordnance channels quoting this EMER as the authority. The stores are to be demanded as a complete kit and NOT as individual items.

<u>VAOS Section</u>	<u>Part No</u>	<u>Designation</u>	<u>Qty per eqpt</u>
Z1	5820-99-220-7816	Modification kit	1
		Comprising:-	
		Screw, special	(1)
		Washer, special	(1)
		Nut, clinch, nylon 1/4 UNF	(1)

7. Sequence of operations

- a. Unscrew the four socket-headed screws retaining the valve heater supply dropping resistor cover. This cover is fitted at the side of the stand-off insulator on top of the equipment.
- b. Drill a hole in the cover, using a 3/8 in. drill, as shown in Fig 1.
- c. Insert the 1/4 UNF nut supplied into the hole drilled in b. and, taking care not to damage the nylon insert, fit the nut onto the cover.
- d. Refit the resistor cover and store the antenna mating screw and washer in the clinch nut fitted in c.
- e. Strike through, without obliterating, the figure 3 on the overall modification record plate of the amplifier r.f. No 7.

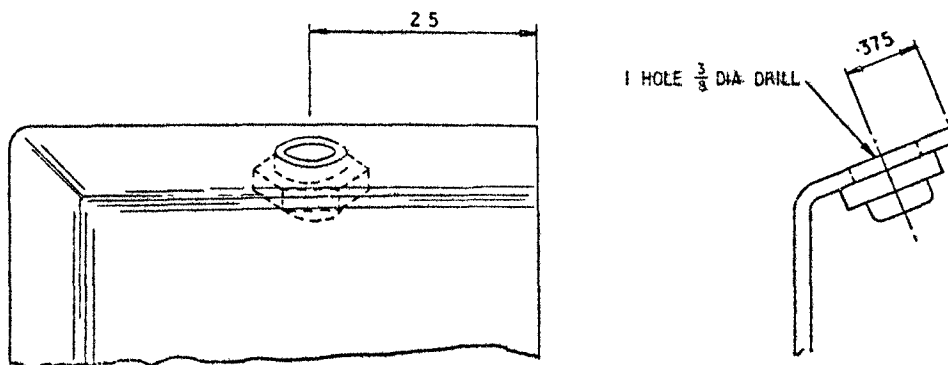


Fig 1 - Location of clinch nut

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STATION KIT, RADIO AMPLIFIER, R.F. No 7

TECHNICAL HANDBOOK - MODIFICATION INSTRUCTION

SUB-TITLE: Modified clamp and coupling

1. Introduction

To ensure reliable operation of the antenna tuning drive mechanism it is necessary to use a modified clamp and coupling. The modification becomes necessary when slipping of the Inductor Drive Shaft in the Coupling Half Shaft occurs and the Clamp cannot be tightened further to prevent the slip. This may lead to the brushes overriding the inductor at the end positions. However overriding of the brushes could also be caused by overriding of the end stops on the Tuning Drive Mechanism - see Mod Instr No 1.

2. Priority Group B (Mgmt N 097 refers)

3. Estimated time required 1 man-hour

4. Items affected

R.F. amplifier No 7 Z1/5820-99-949-2150

5. Action required by

a. Units and establishments holding equipment

(1) If figure 4 has not been struck off the equipment modification record plate demand stores in accordance with the instructions in para 6.

(2) On receipt of stores, request the unit responsible for field repair of the equipment to carry out this modification.

b. Units authorized to carry out field or base repairs.

(1) When requested by units, carry out this modification.

(2) On repair or overhaul of equipment, if necessary demand stores and carry out this modification.

(3) Ensure that figure 4 on the modification record plate is struck through with a diagonal line on completion of this modification.

6. Stores, tools and equipment

a. Stores to be demanded

Stores are to be demanded through normal Ordnance channels quoting this EMER as the authority. The stores are to be demanded as a complete kit and NOT as individual items.

<u>VAOS Section</u>	<u>Part No</u>	<u>Designation</u>	<u>Qty per eqpt.</u>
Z1	5820-99-114-9175	Kit, modification	1
		Comprising:	
		Coupling, half shaft	(1)
		Clamp	(1)

7. Sequence of operations

a. Remove set from case.

b. Carry out instructions as detailed in Tels L 394 para 22 sub-para d., e., f., and g.

c. Slide inductor assembly to the rear until the fibre glass shaft is clear of clamp.

d. Remove the old coupling, half shaft, and clamp.

Note: In some cases it may be necessary to remove four screws holding the antenna matching plate assembly and pull it away from the front panel to facilitate removal of the coupling, half shaft, and clamp.

e. Replace with new items.

f. Reassemble equipment by reversing the previous sequence.

g. Check there is no over-travel of the brushes on the inductor.

h. Strike through figure 4 on the modification record plate of the amplifier.

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STATION, RADIO AMPLIFIER, RF No 7

TECHNICAL HANDBOOK - MODIFICATION INSTRUCTION

Note: This Issue 2, Pages 1-2, supersedes Issue 1, Pages 1-2, dated Oct 72, and Suspension Page 1, Issue 1, dated Jun 73. This instruction has been revised.

SUB-TITLE: PSR47 - RLA contacts welding.

1. Introduction

The contacts RLA1 of relay RLA (5945-99-901-4627) have a tendency to weld together. In order to prevent this welding occurring the following action is to be taken when reconditioning or repairing the equipment.

2. Priority: Routine (Mgmt., N 097 refers)

3. Estimated time required: 0.5 man-hours

4. Items affected:

PSR47 - Z1/5820-99-949-2152

5. Action required by:

Units authorized to carry out field or base repairs

- a. On repair or overhaul of equipment carry out this modification.
- b. Ensure that figure 1 on the PSR47 modification record plate is struck through with a diagonal line on completion of this modification.

6. Stores, tools and equipment

Stores to be demanded

Stores are to be demanded through normal ordnance channels quoting this EMER as the authority.

<u>VAOS</u> <u>Section</u>	<u>Part Number</u>	<u>Designation</u>	<u>Qty</u> <u>per eqpt</u>
Z42	5961-99-037-2000	Diode CV7013	1
		Sleeving PTFE	A/R
		1mm ID	

7. Sequence of operation

- a. Remove the PSR47 from its case.
- b. Locate relay RLH Tels L 792, Part 2, Fig 2509 refers.
- c. Unsolder wire D14 from contact 2 of RLH.
- d. Unsolder wire D11 from contact 3 of RLH. Tels L 392, Part 2, Fig 2519 refers.
- e. Resolder wire D14 to contact 3 of RLH.
- f. Resolder wire D11 to contact 2 of RLH.
- g. Remove cover of RLG secured by two screws.
- h. Remove the solder tag with green-white lead N5 from terminal 2 of RLG by undoing the fixing screw. (Retain fixing screw)
- j. Cut the green-white lead attached to the solder tag from the terminal block, remove the other end from the solder tag, discard the lead and retain the solder tag.
- k. Fit suitable lengths of the insulated sleeving to the diode CV7013.
- l. Solder the cathode of diode CV7013 to the solder tag.
- m. Secure the solder tag to terminal 2 of RLG by means of the screw removed in h.
- n. Solder the anode of the diode to the terminal block ensuring that the diode is suitably routed to avoid short circuit to chassis, etc.
- o. Refit the cover on relay RLG.
- p. Refit the PSR into its case and carry out drying and sealing instructions as per para 3 of Tels L 394.
- q. Strike through figure 1 on the modification record plate.

8. EMER amendments

- a. Fig 2501a, Page 1004.

Circuit ref E6. Add diode MR2 in series with RLG. MR2 cathode to RLG pin 2 and MR2 anode to junction RLG1/3 and RLA1/4. Adjacent MR2 add: '1'. Adjacent contact 2 of RLH1 add: '*'. At foot of page add: '*See Mod Instr No 5, Issue 2'.

- b. Fig 2519, Page 1027.

Circuit ref 05. Adjacent RLH add: '*'. At foot of page add: '*See Mod Instr No 5 Issue 2'.