

**ELECTRICAL AND MECHANICAL
ENGINEERING REGULATIONS**
(By Command of the Defence Council)

R E S T R I C T E D

TELECOMMUNICATIONS
F 167 Mod Instr No 1
Army Modification Code M 00201

STATION, RADIO, A14

TECHNICAL HANDBOOK - MODIFICATION INSTRUCTION

SUB-TITLE: Module J - C.W. signal-to-noise ratio

Introduction

1. Due to variation in component tolerances, it has been found necessary in production to increase the capacity of C41 (5.6p) in order to maintain the c.w. signal-to-noise ratio specification figure.

Issue 1, 12 Jun 68

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Page 1

Information

2. Where it has been found necessary, in production, to increase this capacity, this has been achieved by adding C159 (5.6p) in parallel with C41 and the following strike off action taken:

Module J (I.F. unit)	Z1/5820-99-108-2865	Mod strike off figure 2
Panel and chassis assy	Z1/5820-99-106-0406	Mod strike off figure 10
Transmitter-receiver A14	Z1/5820-99-106-0365	Mod strike off figure 1

3. No retrospective action is required.

T/61148/1/Tels

END

STATION, RADIO, A14

TECHNICAL HANDBOOK - MODIFICATION INSTRUCTION

Errata

Note: This Page 0, Issue 1, is to be filed immediately in front of Page 1, Issue 1, dated 26 Jun 68.

1. The following amendments must be made to the regulation.
2. Page 2, para 8, line 2

Delete: 'NOT'

EME/8/2877/Tels

STATION, RADIO, A14

TECHNICAL HANDBOOK - MODIFICATION INSTRUCTION

SUB-TITLE: Amplifier r.f. - Use of alternative output transistor, VT1.

Introduction

1. Difficulty has been experienced in obtaining supplies of transistor type 2N1899 (5960-99-108-3516) as used in position VT1 in the r.f. amplifier, and an alternative type, PT4989 has been substituted in later equipments.

Information

2. Due to the different parameters of the new transistor, some circuit changes have been made. This new transistor was introduced in one of two forms viz:

Form A: as an individual item

Form B: as part of Panel, electronic circuit (p.e.c.) Z1/5825-99-198-6067

3. When introduced in form A, some circuit changes were made and strike off action carried out as follows:-

a. Resistor R17, 1k Ω , removed. This resistor when fitted was connected across R4 which is also a 1k Ω resistor. Resistor R17, if required, was fitted during manufacture to account for varying impedances of individual transistors type 2N1899.

b. Capacitor C26, 22OpF, added if not already present. This capacitor is connected between VT1 collector and earth to reduce the effect of the differing capacitance of individual transistors.

c. Strike off action was carried out on:-

Amplifier r.f. (5820-99-106-0403) - strike off figure 2.

Transmitter-receiver A14 (5820-99-106-0365) - strike off figure 2.

4. When introduced in form B some circuit changes were made but no stike off action carried out. This p.e.c. also contains capacitor C26, whose value is determined during manufacture (ie is not necessarily 22OpF), and a protective zener diode ZD1. The circuit changes made when fitting the p.e.c. are as follows:-

a. Resistor R17, 1k Ω removed. See para 3.a.

b. Capacitor C26, 22OpF, if fitted, removed. See para 3.b.

Action

5. When it becomes necessary to replace VT1 in the r.f. amplifier, this is to be carried out by substituting Panel, electronic circuit Z1/5825-99-198-6067 for the existing transistor complete with its heatsink. The old and new type assemblies are not repairable; they should be discarded if faulty.

6. When a p.e.c. is being fitted, examine the equipment to ensure that R17, 1k Ω and/or C26, 220pF, if fitted in the amplifier, are removed. R17 is located with R4 and is connected in parallel with R4. C26, 220pF, is located with C24, C25 and connected between the junction of L5/C8 and earth.
7. It is essential that both sides of the mica disc, fitted between the transistor box assembly and the backplate, should be completely covered with a thin coat of silicon grease (H1/6850-99-942-4829).
8. On completion of para 5 to 7 (when necessary) strike action in accordance with para 3.c. is ~~to~~ to be carried out.

T/61148/D & M/2(Tels)

END

STATION, RADIO, A14

TECHNICAL HANDBOOK - MODIFICATION INSTRUCTION

SUB-TITLE: TRA14 - Module L, improved performance

1. Introduction

To ensure that module L is capable of passing its specification tests for signal/noise ratio and temperature stability, it has been found necessary in production to add a resistor and to reduce the tolerances of R70 and C83. The additional resistor, designated R21, is inserted between the base of VT18 and earth (Pin 61).

2. Details of the new components are as follows:-

R21	Resistor, metal oxide, Electrosil TR4, 68k Ω \pm 5%, 0.25W	Z30/5905-99-953-3564
R70	Resistor, metal oxide, Electrosil TR4, 22k Ω \pm 5%, 0.25W	Z30/5905-99-953-3540
C83	Capacitor, polystyrene, 56pF \pm 2pF, 125V	Z1/5910-99-945-1540

3. On implementation of this change the strike-off action taken was as follows:-

Module L - strike-off figure 1
TRA14 panel and chassis assembly - strike-off figure 12
TRA14 - strike-off figure 5

4. No retrospective action is required.

T/61148/13/Tels

END

STATION, RADIO, A14

TECHNICAL HANDBOOK - MODIFICATION INSTRUCTION

SUB-TITLE: Antenna and support assembly - strengthening of terminations

1. Introduction

The braid antenna, which is crimp-fastened into spade connectors, is liable to fracture at the point of entry into these lugs. This regulation details the fitting of heat-shrink sleeves to strengthen the joint and a method of repairing those already broken or which may have many of the braid strands fractured. The sleeves have been fitted to some antenna in production.

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

3. Estimated time required: 1/4 man-hour.

4. Items affected

Parts kit, antenna, BCC 505 Z1/5820-99-106-0505
Antenna and support assembly Z1/5820-99-106-0536

5. Action required by:-

a. Units and establishments holding the equipment

(1) Examine the assembly, and if heat shrink sleeves are not fitted demand the 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 the stores and carry out 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.

<u>VAOS Section</u>	<u>Part No</u>	<u>Designation</u>	<u>Qty per eqpt</u>
Z1	5970-99-198-9105	Insulation sleeve, electrical	2 in.

b. Stores to be obtained locally

Wire, tinned copper, 46 s.w.g., or similar

Qty
per eqpt
as reqd

SEQUENCE OF OPERATIONS

7. To fit sleeves to unbroken braid (in two positions)

- a. The heat-shrink sleeve is supplied in two parts, ie a separate transparent inner and a yellow outer.
- b. Cut one inch of outer and 3/4 inch of inner per termination.
- c. Split the inner sleeve with one cut along its length.
- d. Ensure the antenna P.V.C. covering is pushed hard against the spade terminal lug, then fit the inner sleeve over it, also close up to the lug.
- e. Pass the outer sleeve over the lug and position it so that it covers the body of the lug and the inner sleeve. (a little of the inner sleeve will protrude beyond the yellow sleeve).
- f. Heat the sleeving by means of a spirit lamp, hot-air blower, or other heat source, rotating the sleeve in the heat. Discontinue heating as soon as the sleeve has shrunk, and leave to harden for at least two hours.

8. To repair broken or fractured connectors

- a. Cut off the lug, put it into a vice, clamping the forked end, and drill out the cotton core, metal braid and crimp, using a No 31 drill.
- b. Cut back the P.V.C. sheathing of the antenna braid by 7/16 inch.
- c. Bind the end of the braid with tinned copper wire, and solder to form a metal end-cap.
- d. Slide the yellow outer sleeve over the antenna braid, insert the braid into the lug and solder firmly. Ensure there are no protrusions which would affect the fitting of the sleeve.
- e. Fit the heat-shrink sleeve as in para 7.c. to f.

9. EMER amendments: Nil.

A TMC 00426
T/61148/8/Tels

END

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STATION, RADIO, A14

TECHNICAL HANDBOOK - MODIFICATION INSTRUCTION

SUB-TITLE: Modules A, D, G, and K - change of type and value of resistors

1. Introduction

In order to reduce the reject rate of module G, changes to the BFO and AFC biasing circuits have been made in production. The changes entail altering the values of various resistors in modules A, D, and K and changing to metal oxide film types with a 5% tolerance. This instruction details the action to be taken, when replacing modules D, G, or K to ensure that correct biasing is obtained.

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

3. Estimated time required: 3 man-hours.

4. Items affected

Transmitter-receiver, panel and chassis Z1/5820-99-106-0406

5. Action required by:-

a. Units and establishments holding the equipment

Nil.

b. Units authorized to carry out field or base repairs

- (1) If the need to replace module D, G, or K arises, check whether the figure 11 has been struck through on the panel and chassis modification record plate.
- (2) If the figure 11 has not been struck through refer to table 1 and check the modification state of the modules listed, and carry out action as detailed.
- (3) If the figure 11 has been struck through, demand a new module as required and complete the repair.
- (4) When action is necessary as detailed in para 5.b.(2), ensure that the relevant figures on the respective modification record labels are struck through with a diagonal line on completion of the modification.

TABLE 1

Module to be replaced	Modification state of modules				Action necessary
	A	D	G	K	
D	1	NA	0	2	Para 6-7, and 10-14
D	2	NA	0	2	Para 10-14
D	1	NA	1	2	Para 6-7, and 12-14
D	1	NA	0	3	Para 6-7, 10-11, and 14
D	2	NA	1	2	Para 12-14
D	2	NA	0	3	Para 10-11, and 14
D	1	NA	1	3	Para 6-7, and 14
D	2	NA	1	3	Para 14
G	1	0	NA	2	Para 6-9, and 12-14
G	2	0	NA	2	Para 8-9, and 12-14
G	1	1	NA	2	Para 6-7, and 12-14
G	1	0	NA	3	Para 6-9, and 14
G	2	1	NA	2	Para 7-9, and 12-14
G	2	0	NA	3	Para 7-9, and 14
G	1	1	NA	3	Para 6-7, and 14
G	2	1	NA	3	Para 14
K	1	0	0	NA	Para 6-11, and 14
K	2	0	0	NA	Para 8-11, and 14
K	1	1	0	NA	Para 6-7, 10-11, and 14
K	1	0	1	NA	Para 6-9, and 14
K	2	1	0	NA	Para 10-11, and 14
K	2	0	1	NA	Para 8-9, and 14
K	1	1	1	NA	Para 6-7, and 14
K	2	1	1	NA	Para 14

Base workshops engaged in repair of modules

When repairing modules D, G, or K check that the module has been modified and if not, modify in accordance with the relevant paragraphs of this instruction.

MODULE A6. Stores, tools and test equipmenta. 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 No</u>	<u>Designation</u>	<u>Qty</u> <u>per eqpt</u>
Z30	5905-99-013-6471	Resistor, fixed, 22k Ω \pm 5%, 0.25W	1

7. Sequence of operations

- a. It is assumed that the equipment is already removed from its case.
- b. Refer to Tels F 162 Part 2, Page 1035, Fig 2518: locate R152 (mounted across RV8); remove and discard.
- c. Refer to Tels F 162 Part 2, Page 1037, Fig 2520, SB3R; locate and remove R153 (5.6k Ω), replacing it with the 22k Ω resistor supplied.
- d. Strike through with a diagonal line, the figure 2 on the modification record plate mounted on the underside of the front panel.

MODULE D8. Stores, tools and test equipmenta. 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 No</u>	<u>Designation</u>	<u>Qty</u> <u>per eqpt</u>
Z 30	5905-99-013-6455	Resistor, fixed, 4.7k Ω \pm 5%, 0.25W	1
Z 30	5905-99-013-6479	Resistor, fixed, 4.7k Ω \pm 5%, 0.25W	1
Z 30	5905-99-013-6477	Resistor, fixed, 39k Ω \pm 5%, 0.25W	1

9. Sequence of operations

- a. It is assumed that the equipment is already removed from its case.
- b. Remove module D in accordance with instructions given in Tels F 164, Page 18, para 26.
- c. Refer to Tels F 162 Part 2, Page 1042, Fig 2525, for location of the resistors.
 - (1) Locate and remove R40 (4.7kΩ), replacing it with the 4.7kΩ resistor supplied.
 - (2) Locate and remove R41 (27kΩ), replacing it with the 47kΩ resistor supplied.
 - (3) Locate and remove R42 (33kΩ), replacing it with the 39kΩ resistor supplied.
- d. Strike through, with a diagonal line, the figure 1 on the modification record label on module D.
- h. Replace module D.

MODULE G

10. Stores, tools and test equipment

a. 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 No</u>	<u>Designation</u>	<u>Qty</u> <u>per eqpt</u>
Z30	5905-99-013-6463	Resistor, fixed, 10kΩ ±5%, 0.25W	1
Z30	5905-99-013-6479	Resistor, fixed, 47kΩ ±5%, 0.25W	1
Z30	5905-99-013-6439	Resistor, fixed, 1kΩ ±5%, 0.25W	1
Z30	5905-99-013-6419	Resistor, fixed, 150Ω ±5%, 0.25W	1
Z30	5905-99-013-6423	Resistor, fixed, 220Ω ±5%, 0.25W	1

11. Sequence of operations

- a. It is assumed that the equipment is already removed from its case
- b. Remove module G in accordance with instructions given in Tels F 164, Page 21, para 28.
- c. Remove the nine cheese-headed screws securing the side-plates on the module and remove the plates.

- d. Remove the securing nut and washer from T21. Remove the three cheese-headed screws securing the component board to the module. Using care withdraw T21 and the component board free from the module as far as the connecting leads will permit, this will give access to components on both sides of the board.
- e. Refer to Tels F 162 Part 2, Page 1045, Fig 2528, for the locations of the resistors.
- f. Locate and replace the following resistors with the $\pm 5\%$ types supplied, R105 ($10k\Omega$), R106 ($4.7k\Omega$), R107 ($1k\Omega$), R108 (150Ω), and R109 (220Ω).
- g. Reassemble the module using care when repositioning component board.
- h. Strike through, with a diagonal line, the figure 1 on the modification record label on module G.
- j. Replace module G.

MODULE K

12. Stores, tools and test equipment

a. 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 No</u>	<u>Designation</u>	<u>Qty</u> <u>per eqpt</u>
Z 30	5905-99-013-6479	Resistor, fixed, $4.7k\Omega \pm 5\%$, 0.25W	1

13. Sequence of operations

- a. It is assumed that the equipment is already removed from its case.
- b. Remove module K in accordance with instructions given in Tels F 164, Page 25, para 30.
- c. Refer to Tels F 162 Part 2, Page 1049, Fig 2532; locate and remove R138 ($27k\Omega$), replacing it with the $4.7k\Omega$ resistor supplied.
- d. Strike through, with a diagonal line, the figure 3 on the modification record label on module K.
- e. Replace module K.

14. General

- a. Carry out a functional check of the equipment.
- b. Replace the set in its case, carrying out drying and sealing instructions as detailed in Tels F 164 para 14 to 18 inclusive.
- c. Record the embodiment of this modification by striking through, with a diagonal line the following:-

Panel and chassis modification record plate - figure 11
Transmitter-receiver modification record plate - figure 3

15. EMER amendments

The following amendments must be made to Tels F 162 Part 2:-

Fig 2503, page 1005, grid ref Q4, R153: under '5.6k' and '22k*'
grid ref Q4, R152: after 'R152' add '**'
grid ref T2, R41: under '27k' add '47k*'
grid ref T3, R42: under '33k' add '39k*'
grid ref Q4, R138: under '27k' add '47k*'
At foot of Figure add: '* Only after embodiment of
Mod Instr No 5.'
'** Removed on embodiment of Mod Instr No 5'

Table 2502, page 1013, line 6, last column: after 'R152' add '**'
line 13, last column: above 'R153' add '*'
At foot of Figure add '** removed on embodiment of
Mod Instr No 5'
'* R153 changed to Z /5905-99-013-6471 Resistor fixed
22kΩ ±5%, 0.25W after embodiment of Mod Instr No 5'

Fig 2518, page 1035, After R152 add '*'
At foot of Figure add '* removed on embodiment of Mod
Instr No 5'

Fig 2519, page 1036, R153: under '5.6k' add '22k*'
R152: after R152 add '**'
At foot of Figure add '* only after embodiment of Mod
Instr No 5'
'** removed on embodiment of Mod Instr No 5'

Fig 2526, page 1043, R41: under '27k' add '47k *'
R42: under '33k' add '39k *'
At foot of Figure add '* only after embodiment of Mod
Instr No 5'

Fig 2533, page 1050, R138: under '27k' add '47k*'
At foot of Figure add '* only after embodiment
of Mod Instr No 5'

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STATION, RADIO, A14

TECHNICAL HANDBOOK - MODIFICATION INSTRUCTION

SUB-TITLE: Amplifier r.f. - RLA type change

1. SUMMARY

A new type of plug-in relay (5945-99-933-4243) has been fitted to later equipments during production. These equipments may be identified by the following strike off-off action:-

Amplifier r.f. figure 4
Transmitter-receiver, A14 - figure 8

2. ACTION

When demanding a replacement relay, the modification state of the equipment must be noted in order that the correct type of relay may be demanded, as the two types are not interchangeable. No retrospective action is required, this regulation is for information only.

ATMC No 00511
T/61148/17 (TELS)

END

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STATION, RADIO, A14

TECHNICAL HANDBOOK - MODIFICATION INSTRUCTION

SUB-TITLE: Amplifier r.f., capacitor C27 - addition

1. Introduction

It has been found that there is a tendency for VT1 on electronic circuit panel (Z1/5825-99-198-6067) (Tels F 167, Mod Instr No 2 refers) to burst into spurious v.h.f. oscillations due to the high cut-off frequency of the transistor. This instruction details the action to be taken to fit a 0.001 μ F capacitor between the emitter and base of VT1 to prevent oscillation.

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

3. Estimated time required: 1/3 man-hour

4. Items affected

Transmitter, receiver A14 Z1/5820-99-106-0365
Amplifier, r.f. Z1/5820-99-106-0403

5. Action required by:-

a. Units and establishments holding the equipment

Nil.

b. Units authorized to carry out field or base repairs

(1) On repair or overhaul of the equipment, if electronic circuit panel (Z1/5820-99-198-6067) has been fitted, demand the stores as detailed in para 6 and carry out this modification.

(2) Ensure that the relevant figures on the respective modification record plates are struck through with a diagonal line on completion of this modification as follows:-

Amplifier r.f. - figure 3
TRA14 - figure 6

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.

<u>VAOS</u> <u>Section</u>	<u>Part No</u>	<u>Designation</u>	<u>Qty</u> <u>per eqpt</u>
Z31	5910-99-223-3640	Capacitor, fixed, ceramic dielectric, 0.001 μ F, 500V	1

7. Sequence of operations

- a. It is assumed that the amplifier r.f. has been removed from its case for repair.
- b. Ref to Tels F 162, Part 2, Page 1008, Fig 2505 and locate plug PLA in the r.f. section of the amplifier.
- c. Remove the two socket-headed screws retaining the PLA mounting plate and remove the plate.
- d. Locate the pins adjacent to PLA, to which are connected the yellow and blue leads from the base and emitter of VT1.
- e. Solder the 0.001 μ F capacitor (provided) between the pins on the side of the screen nearest the front panel (one end to the pin to which C3 and C4 are connected and the other end to the pin to which L3 is connected).
- f. Refit PLA by reversing the procedure as detailed in para c.
- g. Strike off without obliterating, the figure 3 on the amplifier r.f. modification record label, and the figure 6 on the TRA14 modification record label.

8. EMER amendments

Nil.

ATMC No 00527
T/61148/11(Tels)

END

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STATION, RADIO, A14

TECHNICAL HANDBOOK - MODIFICATION INSTRUCTION

SUB-TITLE: Hand generator - fitting higher working voltage capacitor C2

1. Introduction

It has been found that with high winding speed excessive voltage can be applied to capacitor C2, destroying the capacitor and sometimes damaging other components. This instruction details the action required to replace C2 (Z31/5910-99-106-4258) with a capacitor of higher working voltage.

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

3. Estimated time required: 3 man-hours.

4. Items affected

Hand generator, BCC 13 Mk 2 Z1/5820-99-106-4951

5. Action required by:-

a. Units and establishments holding the equipment

Nil.

b. Units authorized to carry out field and base repairs

(1) On failure of C2, demand the modification kit and carry out this modification.

(2) On repair or overhaul, demand the modification kit and carry out this modification.

(3) On completion of this modification strike through with a diagonal line the figure 2 on the modification record plate attached to the hand generator.

6. Stores, tools and equipment

a. Stores to be demanded

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

<u>VAOS</u> <u>Section</u>	<u>Part No</u>	<u>Designation</u>	<u>Qty</u> <u>per eqpt</u>
Z1	5820-99-220-7003	Modification kit	1
		comprising:-	
	5910-99-110-4879	Capacitor, electrolytic, 60µF, 50V w.k.g.	(1)
		Clip, capacitor	(1)
		Spacer	(1)
		Screw, No 8 BA, 3/8 in. C/sk Hd	(1)
		Nut, No 8 BA	(1)
		Sleeving, red, 0.5 mm x 1.3/4 in.	(1)
		Sleeving, black, 0.5 mm x 1.3/4 in.	(1)

b. Stores to be obtained locally

H1	6850-99-220-2421	Grease, silicone compound, MS4	as reqd
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7. Sequence of operations

a. Remove the handle from the side of the generator containing the desiccator by knocking out the tubular split pin and pulling the handle from the drive shaft.

b. Remove the ten socket-head screws securing the side plate and remove side plate, taking care not to damage the sealing gasket.

c. Ease the regulator board clear of the generator and remove the three nuts to release the blue, yellow, and red leads from the generator to MR4, MR5, and MR6.

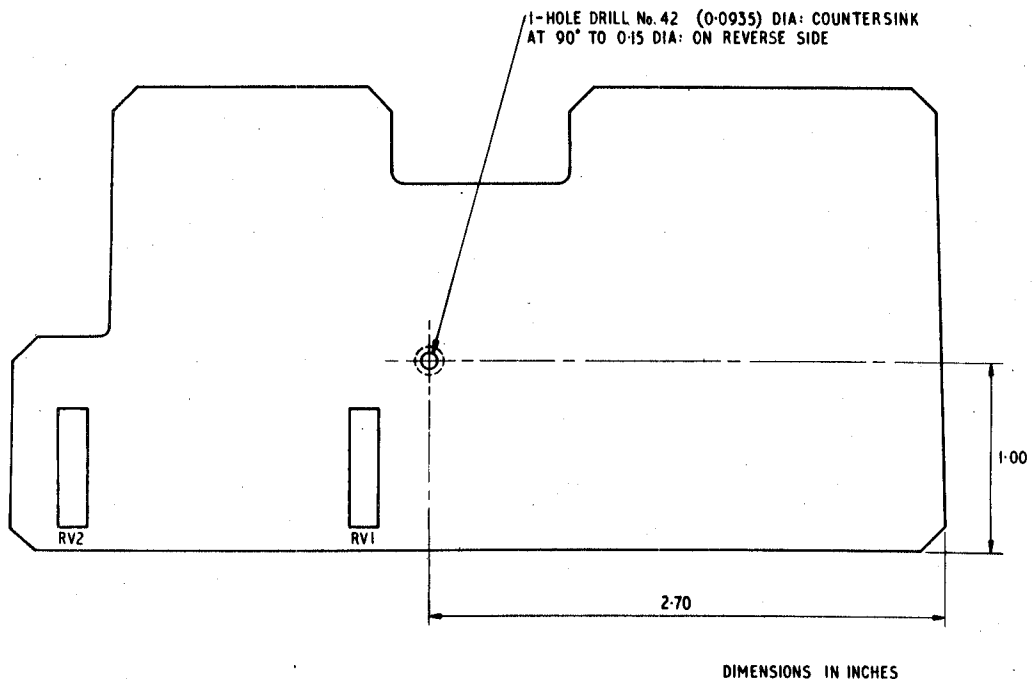
d. Unsolder the connections to the warning lamp and output socket and remove the regulator board.

e. Unsolder the leads from C2 and remove the capacitor from the board.

f. Drill and countersink a hole in the regulator board as detailed in Fig 1.

g. Assemble the capacitor clip and spacer on the regulator board, using the No 8 BA screw and nut provided, ensuring that the spacer is fitted between the clip and the top of the board.

- h. Fit the new capacitor (provided) into the clip and the sleeving (provided) over the leads.
- j. Solder the leads of C2 to the terminals from which the old component was removed (negative lead to R3).
- k. Reconnect the leads removed as detailed in sub-para c. and d. and fit the regulator board back into the case.
- l. Re-assemble the equipment by reversing the procedure detailed in a sub-para a. and b. applying silicone grease to the drive spindle oil seal.
- m. Carry out drying and sealing instructions as detailed in Tels F 164, Para 139 to 142 inclusive.
- n. Record the embodiment of this modification by striking through, without obliterating, the figure 2 on the modification record plate.



61148/3

Fig 1 - Drilling details

8. EMER amendments

Tels F 162, Part 2, Page 1057, Fig 2540, component C2

Delete: '56'
Insert: '60'

ATMC No 00512
T/61148/11 (TELS)

END

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STATION, RADIO, A14

TECHNICAL HANDBOOK - MODIFICATION INSTRUCTION

SUB-TITLE: Headset, microphone, SI type, junction box and switch unit - replacement of plunger bush and push-button

1. Introduction

To ensure reliable operation of the micro-switch within the junction box, it is necessary to fit a modified plunger bush and push-button. This instruction details the action required to carry out this modification.

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

3. Estimated time required: 3/4 man-hours.

4. Items affected

Headset, microphone, SI type Y1/5965--99--106-0401
Junction box and switch assembly Y1/5965--99--102-0174

5. Action required by:-

a. Units and establishments holding the equipment

(1) Since the headset does not carry a modification record plate the only means of ascertaining whether or not this modification has been implemented is by the colour of the push-button. If the push-button is black in colour, demand the modification kit in accordance with the instructions given in para 6.

(2) On receipt of the modification kit, 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 modification kit and carry out 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</u> <u>Section</u>	<u>Part No</u>	<u>Designation</u>	<u>Qty</u> <u>per eqpt</u>
Y1	5965-99-193-8051	Kit, modification, electronic equipment Comprising:-	1
Y1	5965-99-220-5968	Plunger bush	{ 1 }
Y1	5965-99-220-5967	Push-button, olive drab	

b. Stores to be obtained locally

<u>VAOS</u> <u>Section</u>	<u>Part No</u>	<u>Designation</u>	<u>Qty</u> <u>per eqpt</u>
H1	8010-99-942-8917	Dulux, red, varnish, anti-tracking, air drying	as reqd

7. Sequence of operations

- a. Remove the four screws securing the terminal box cover, carefully remove the cover and sealing gasket.
- b. Remove the two screws securing the micro-switch.
- c. Unsolder the micro-switch connections and remove the micro-switch from the moulding.
- d. Unscrew the push-button (coloured black) and discard.
- e. Remove the two screws from the plunger cover plate, lift off the plate and carefully remove the gasket
- f. Remove the screw from the plunger bush and discard the plunger bush
- g. Fit the new plunger bush and replace the cover plate and gasket, applying varnish to the threads of the securing screws.
- h. Fit the new push-button, applying varnish to the thread of the plunger bush.

- j. Resolder the micro-switch connections and refit the micro-switch to the moulding.
- k. Replace the terminal box cover and gasket.
- l. Carry out a functional check.

8. EMER amendments

Nil.

ATMC No 00574
T/61148/9 (TELS)

END

STATION, RADIO, A14

TECHNICAL HANDBOOK - MODIFICATION INSTRUCTION

Errata

Note: This Page 0, Issue 1, is to be filed immediately in front of Page 1, Issue 1, dated Dec 70.

1. The following amendment is to be carried out to the regulation:-
2. Page 3, para 7.n.

After: 'figure 9'

Add: 'Note: If Mod Instr No 17 has been embodied strike through figure 14 on the panel and chassis assembly modification record label.'

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STATION, RADIO, A14

TECHNICAL HANDBOOK - MODIFICATION INSTRUCTION

SUB-TITLE: Modulator circuits - component changes

1. Introduction

To eliminate the high reject rates of VT15 in module C during testing, several components in the modulator circuit have been changed or removed. This regulation details the necessary circuit changes to be made.

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

3. Estimated time required: 3 man-hours.

4. Items affected

Transmitter-receiver panel and chassis Z1/5820-99-106-0406
Amplifier radio frequency Z1/5820-99-106-0403

5. Action required by:-

a. Units and establishments holding the equipment

(1) Examine the equipment to determine whether the figure 5 has been struck through on the modification record label attached to the amplifier radio frequency.

(2) If the figure 5 has not been struck through demand the stores detailed in para 6.

(3) 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) If necessary, carry out the modification on equipments received for repair or overhaul.

(2) On completion of the modification ensure that relevant figures on the respective modification record plates are struck through with a diagonal line as follows:-

Module C	-	figure 3
Amplifier r.f.	-	figure 5
TRA14	-	figure 9

(3) If the need to replace module C arises, check whether the figure 3 has been struck through on the replacement module. Carry out this modification to the module if necessary before fitting.

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>
Z1	5820-99-220-7817	Modification kit	1
		Comprising:-	
Z30	5905-99-953-3564	Resistor, fixed, film, 68k Ω \pm 5%	(1)
Z	5905-99-012-8093	Resistor, fixed, carbon, 15k Ω \pm 10%	(1)
Z	5905-99-012-8087	Resistor, fixed, carbon, 10k Ω \pm 10%	(1)
Z	5905-99-012-8099	Resistor, fixed, carbon, 22k Ω \pm 10%	(1)

7. Sequence of operations

- a. It is assumed that the equipment is already removed from its case.
- b. Remove module C in accordance with instructions of Tels F 164, para 25, page 15.
- c. Refer to Tels F 162 Part 2, Fig 2523, page 1040, for location of resistors.
- d. Locate and remove R144 (220k Ω).
- e. Locate and remove R58 (220k Ω), replacing it with the 68k Ω resistor supplied.
- f. Strike through without obliterating, the figure 3 on the modification record plate mounted on module C.
- g. Replace module C.
- h. Refer to Tels F 162 Part 2, Fig 2505, page 1008, and locate R16 on the modulator component board of the amplifier r.f.
- j. Remove R16, replacing it with the 15k Ω resistor supplied.

- k. Carry out the test procedure detailed in Tels F 164, para 124 and 125.
- l. With reference to test detailed in para 125.c., if RV1 does not give sufficient adjustment for the equipment to be set up correctly, repeat the instruction detailed in sub-para j. using either the 10k Ω or 22k Ω resistor supplied until a satisfactory result is obtained.
- m. Replace the equipment into its case, carrying out drying and sealing instructions detailed in Tels F 164, para 14 to 19 inclusive.
- n. Record the embodiment of this modification by striking through without obliterating, the following:-

Amplifier r.f. modification record label - figure 5
TRA14 modification record label - figure 9

8. EMER amendments

Tels F 162 Part 2:-

Page 1004, Fig 2502, Note 2, add: 'or on embodiment of Mod Instr No 10'

Page 1005, Fig 2503, grid ref Z2, R58: delete '220k' insert '68k'

Page 1007, Fig 2504, change note 2 to read: 'R16 - Fit 15k, alternative to be selected on test, 10k or 22k'

Page 1016, Table 2502, penultimate line, delete existing part No and designation, add - 'refer to Mod Instr No 10'

Page 1041, Fig 2524, delete R144, change value of R58 to '68k'

ATMC No 00517
T/61148/30(TELS)

END

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TECHNICAL HANDBOOK - MODIFICATION INSTRUCTION

Errata

Note: This Page 0, Issue 1, must be filed immediately in front of Page 1, Issue 1, dated Mar 71.

1. The following amendments must be made to the regulation.
2. Page 2, Para 6.a. Stores to be demanded

immediately after: 'Wire, DEF 12, type 2, black, 7 in. lg (2)'
and before : 'Sleeve, 2 mm x 3/8 in. Neoprene (2)'

insert: 'b. Stores to be obtained locally'

T/61148/11 (Tels)

Issue 1, Jun 72 (14H)

RESTRICTED

Page 0

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STATION, RADIO, A14

TECHNICAL HANDBOOK - MODIFICATION INSTRUCTION

SUB-TITLE: Hand generator - r.f. interference suppression

1. Introduction

Early models of the hand generator are liable to cause r.f. interference. This instruction details the work required to fit an extra capacitor and two ferrite beads to suppress the interference.

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

3. Estimated time required: 3.1/2 man-hours

4. Items affected:-

Hand Generator, BCC 13 Mk 2 Z1/5820-99-106-4951

5. Action required by:-

a. Units and establishments holding equipment

(1) If the figure 1 has not been struck off the equipment modification record plate, demand stores detailed 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, demand 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 plate attached to the hand generator.

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</u> <u>Section</u>	<u>Part No</u>	<u>Designation</u>	<u>Qty</u> <u>per eqpt</u>
Z1	5820-99-220-7818	Modification kit	1
		Comprising:-	
	5820-99-013-0497	Capacitor, electrolytic, 10 μ F	(1)
	5999-99-223-4889	Shielding bead, electronic	(4)
		Wire, DEF 12, type 2, red, 8 in. lg	(1)
		Wire, DEF 12, type 2, black, 7 in. lg	(2)
		Sleeve, 2 mm x 3/8 in.	(2)
		Neoprene	(2)
		Tag, solder, No 4 BA	(1)

7. Sequence of operations:-

- a. Locate the handle on the side of the generator containing the desiccator.
- b. Knock out the pin holding the handle to the generator shaft and remove the handle.
- c. Unscrew the 10 socket-head screws and remove the side plate.
- d. Identify and withdraw the regulator board.
- e. Unsolder both ends of the red and black leads connecting the regulator board to SKTA. Discard both wires. Note point from which black lead was removed.
- f. Position the 10 μ F electrolytic capacitor provided between RV1 and C2 on the regulator board (positive terminal nearest the edge of the board). Solder the positive of the capacitor to the junction of C2 and C1, and the negative to the pin adjacent to RV1 (see Tels F 162 Part 2 Page 1056).
- g. Solder one end of one of the black wires provided, to the junction of R9 and the emitter of VT3 (see Tels F 162 Part 2 Page 1056).
- h. Refer to Fig 1 and assemble the remaining black wire, the red wire, sleeves and ferrite beads as shown.
- j. Solder ends A and B (Fig 1 refers) of the assembly made in h. to the regulator board, red to R7 and black to the same point from which the lead was removed in e.

- k. Solder the free end of the black wire fitted in g. to the solder tag provided and secure the solder tag as shown in Fig 2.
- l. Solder the free ends of the assembly made in h. to SKTA, red to pins A and C, black to pins B and D.
- m. Reverse a. to d. inclusive.
- n. Strike through without obliterating the figure 1 on the modification record plate attached to the hand generator.

8. EMER amendments

The following amendments are essential.

- a. F 162 Part 2 Page 1056 Fig 2539 (upper diagram). Insert 10 μ F capacitor (circuit reference C3) between RV1 and C2. Insert connections between C3 (+ve) and junction of C2 and C1, and between C3 (-ve) and the pin adjacent to RV1.
- b. F 162 Part 2 Page 1057 Fig 2540. Insert 10 μ F electrolytic capacitor (circuit reference C3) between the junction of R4 and VT3 (-ve lead of capacitor C3) and line connecting ZD1 and C1 (+ve lead of capacitor C3). Insert L1 and L2 (ferrite beads) in output line between R9 and SKTA pins B and D. Insert chassis symbol between R9 and L1. Insert L3 and L4 (ferrite beads) in output line between R7 and SKTA pins A and C.

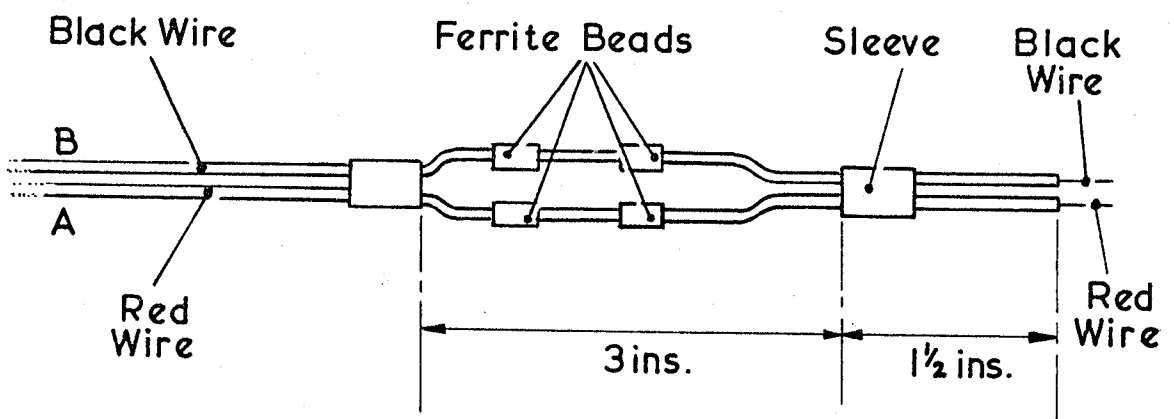


Fig 1 - Ferrite bead and sleeve location

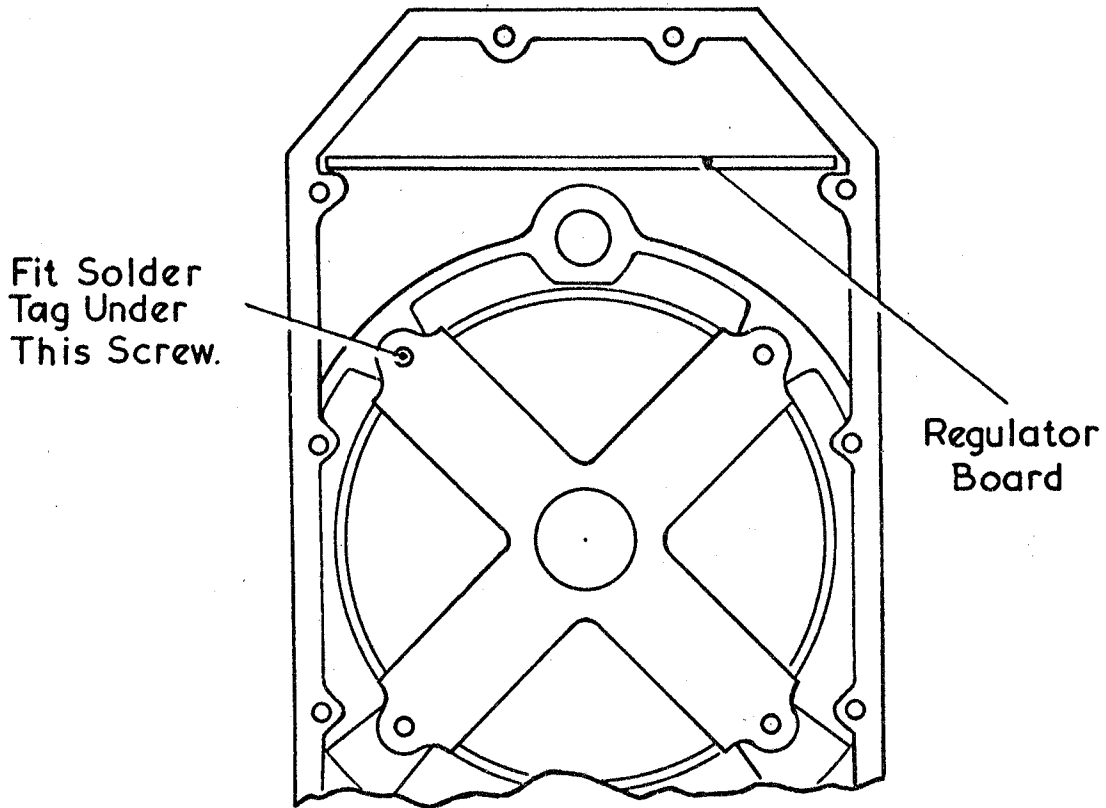


Fig 2 - Location of solder tag

T/61148/11(Tels)
ATMC No 00515

END

STATION RADIO A14

TECHNICAL HANDBOOK - MODIFICATION INSTRUCTION

Errata

Note: This Page 0, Issue 1, is to be filed immediately in front of Page 1, Issue 1, dated Dec 70.

1. The following amendment is to be made to the regulation:-
2. Page 3, after para 7.e.

Insert: 'Note: When modified modules M, J and G are incorporated into an equipment, realignment is required, see Tels F 164, paras 118, 119, 120, 122.'

T/61148/19/Tels

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STATION, RADIO, A14

TECHNICAL HANDBOOK - MODIFICATION INSTRUCTION

SUB-TITLE: Replacement of VT1, VT2, VT25 and VT26

1. Introduction

Due to the spread of transistor type AFZ11 characteristics it has been decided to change to type TIS37 in positions VT1, VT2, VT25 and VT26 on Module M. This change also requires component changes in associated circuitry carried on Modules G and J. This instruction details the action necessary to modify Modules M, G and J.

2. Priority Group C (EMER Mgmt N 097 refers)

3. Estimated time required 1.1/2 man-hours

4. Items affected

Main r.f. assembly, Module M, Z1/5820-99-108-2862
Oscillator and detector unit, Module G, Z1/5820-99-108-2864
I.F. unit, Module J, Z1/5820-99-108-2865

5. Action required by

a. Units authorized to carry out base repairs

(1) On receipt of Modules M, G or J for repairs, demand stores and carry out this modification.

(2) On completion of the modification ensure that the relevant figure on the respective modification record plate is struck through with a diagonal line as follows:-

Module M - figure 2

Module G - figure 2

Module J - figure 3

6. Stores, tools and equipment

a. Stores to be demanded

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

<u>VAOS Section</u>	<u>Part No</u>	<u>Designation</u>	<u>Qty per eqpt</u>
Z1	5820-99-220-8823	Modification kit	1
Comprising:-			
	5961-99-140-1109	Transistor	(4)
	5905-99-013-4234	Resistor, fixed, film, 2.2kΩ ±5%, type RFG2 - 0.25	(1)
	5905-99-013-4246	Resistor, fixed, film, 6.8kΩ ±5%, type RFG2 - 0.25	(1)
	5910-99-108-6742	Capacitor, fixed, ceramic dielectric, 56pF, ±20%, 500V	(1)

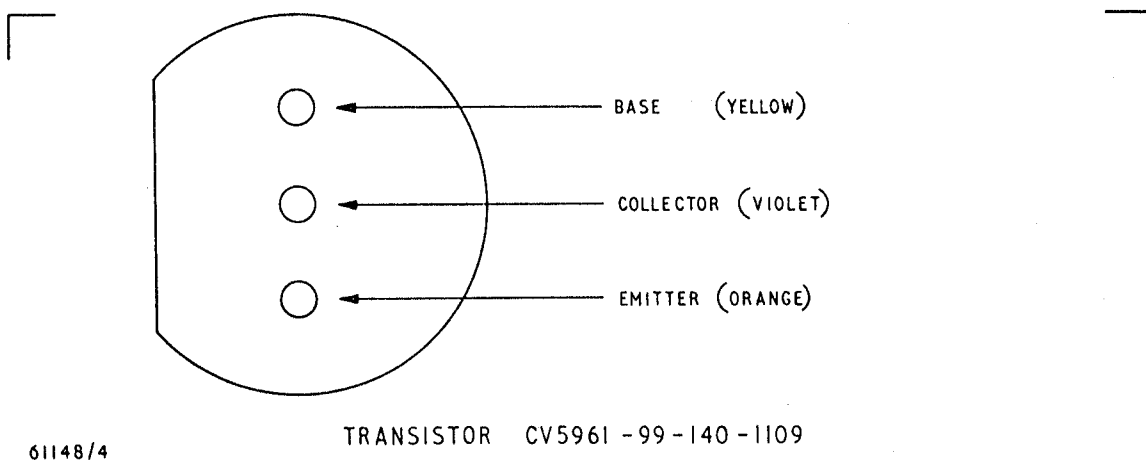
b. Stores to be removed

Items made redundant by this modification are to be disposed of locally.

7. Sequence of operations

Modification of Module M

- a. Refer to EMER Tels F 162 Part 2, Page 1053, Fig 2536 to locate RF1 component board. Remove the two screws securing the component board to the module and lift the board away within the limits of the wiring.
- b. Unsolder the existing AFZ11 transistor (VT1) and remove the coloured sleeves from its leads-out.
- c. Refit coloured sleeves to replacement transistor (TIS37) as shown in Fig 1.



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Fig 1 - Transistor base connections

- d. Fit the new transistor to the component board and solder the connections to the pins from which the original leads were removed.
- e. Solder the 56pF capacitor provided between the base of VT1 and earth.

- f. Refit the component board to the module.
- g. Locate RF2 component board, remove securing screws and lift board away from module within limits of the wiring.
- h. Repeat operations b, c, d, and f for VT2.
- j. Locate the mixer component board and disconnect the two yellow and one black external leads from the board noting the pins from which the wiring is removed.
- k. Remove the four securing screws and lift the board away from the module within the limits of the remaining wiring.
- l. Unsolder VT25 and VT26, noting the pins to which they are connected and remove the coloured sleeves from the lead-outs.
- m. Fit the sleeves to the replacement transistors as shown in Fig 1, and fit the transistors to the board soldering the connections to the pins from which the original leads were removed.
- n. Refit the component board to the module and reconnect the wiring removed in j.
- p. Strike through, without obliterating, the figure 2 on Module M modification record plate.

Modification of Module J

- a. Refer to EMER Tels F 162 Part 2, Page 1047, Fig 2530 to locate R22; remove R22 (470 Ω).
- b. Fit the 2.2k Ω resistor supplied in position vacated by operation a.
- c. Strike through, without obliterating, the figure 3 on Module J modification record plate.

Modification of Module G

- a. Remove the six cheese-headed screws securing the screen to the face of the module, and remove the screen.
- b. Refer to EMER Tels F 162 Part 2, Page 1045, Fig 2528 to locate R104, remove R104 (10k Ω).
- c. Fit the 6.8k Ω resistor supplied in position vacated by operation b.
- d. Refit screen to front face of module.
- e. Strike through, without obliterating, the figure 2 on Module G modification record plate.

8. EMER amendments

The following amendments will be made to EMER Tels F 162 Part 2:-

Page 1004, Fig 2502:-

VT1, VT2, VT25 and VT26, below AFZ11 add - 'or TIS37'.

Insert 56pF capacitor (C32) between VT1 base and earth, with
note:- 'only after modification No 12'.

R22, below 470 add - 'or 2.2k'

R104, below 10k add - 'or 6.8k'.

Page 1046, Fig 2529:-

R104, below 10k add - 'or 6.8k'.

Page 1048, Fig 2531:-

R22, below 470 add - 'or 2.2k'.

Page 1054, Fig 2537:-

VT1, VT2, VT25 and VT26, below AFZ11 add - 'or TIS37'.

Insert 56pF capacitor (C32) between VT1 base and earth, with
note:- 'only after modification No 12'.

T/61148/19/Tels
ATMC No 0522

END

STATION RADIO A14

TECHNICAL HANDBOOK - MODIFICATION INSTRUCTION

Errata

Note: This Page 0, Issue 1, is to be filed immediately in front of Page 1, Issue 1, dated Dec 70.

1. The following amendment is to be made to the regulation:-
2. Page 1, after para 2.d.

Insert: New sub para e. as follows:-

'e. When modified modules M, J and G are incorporated into an equipment, realignment is required, see Tels F 164 paras 118, 119, 120 and 122'.

T/61148/19/Tels

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STATION, RADIO, A14

TECHNICAL HANDBOOK - MODIFICATION INSTRUCTION

SUB-TITLE: Replacement of Modules M, G or J

1. Introduction

Modules M, G or J will be supplied from Ordnance in a modified condition (Tels F 167 Mod Instr No 12 refers). It is essential that an equipment receiving a modified Module M, G or J is also fitted with the other two modules in a modified condition. This instruction details the necessary action when replacing any one of these three modules.

2. Action

a. If the need arises to replace Module M, G or J, examine the modification state of the equipment.

b. If figure 13 on the panel and chassis assembly or figure 7 on TRA14 modification record plate has been struck through, demand replacement module and fit as normal. No other action is required.

c. If figure 13 on the panel and chassis assembly or figure 7 on TRA14 modification record plate has not been struck through, all three modules. Fit the replacement modules as normal and on completion, strike through without obliterating, the figure 13 on the panel and chassis assembly or figure 7 on TRA14 modification record plate.

d. All modules removed in b. and c. above, should be returned through normal ordnance channels for base repair.

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ATMC No 00522

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STATION, RADIO, A14

TECHNICAL HANDBOOK - MODIFICATION INSTRUCTION

SUB-TITLE: Increased rating of fuses FS2 and FS3

1. Introduction

The fuses FS2 and FS3 are liable to failure due to heavy transients. To increase their operating life their rating has been increased from 4A to 7A. This instruction details the replacement of both these fuses on the failure of either or both.

2. Priority Group 'C' (Mgmt N 097 refers)

3. Estimated time required: 1/4 man-hours.

4. Items affected:-

Cabinet, electrical equipment Z1/5820-99-106-0418
Transmitter-receiver, A14 Z1/5820-99-106-0365

5. Action required by:-

a. Units authorized to carry out field or base repairs

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

(2) On completion of this modification, strike through, with a diagonal line, the figure 2 on the modification record label attached to the cabinet, electrical equipment.

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.

<u>VAOS</u> <u>Section</u>	<u>Part No</u>	<u>Designation</u>	<u>Qty</u> <u>per eqpt</u>
Z32	5920-99-999-1395	Fuse link, 7A	2

b. Stores to be obtained locally

(1) White paint of sufficient quantity to alter markings in the battery compartment.

(2) Varnish, clear of sufficient quantity to cover the above mentioned markings.

7. Sequence of operations

a. Remove the battery box cover (rear of the unit) by unscrewing the two knurled headed screws.

b. Change fuses marked FS2 and FS3 from 4A to 7A.

c. Use the white paint to cross out the figure 4 inside the battery compartment.

d. Inscribe a figure 7 next to each of the deleted figures 4.

e. After allowing the white paint to dry, cover the inscriptions with clear varnish.

f. Remove the transmitter-receiver, radio sub-assembly from the box by unscrewing eight socket-headed screws on the front panel.

g. Cross through the figure 2 on modification record plate inside the box with a diagonal line.

h. Replace the transmitter-receiver, radio sub-assembly.

j. Replace battery box cover.

8. EMER amendments

Tels F 162 Part 2

The value of FS2 and FS3 (Fig 2504, 2510, 2512, 2513) are to be changed to 7A.

Page 1011 Table 2502 Delete last item entirely.

Page 1012 Table 2502 line 2 col 3 insert 'FS2 and FS3'.

T/61148/20/Tels
ATMC No 00642

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STATION, RADIO, A14

TECHNICAL HANDBOOK - MODIFICATION INSTRUCTION

SUB-TITLE: Hand generator - change in value of R5

1. Introduction

It has been found necessary to increase the value of series resistor R5 due to the zener diode ZD1 drawing current in excess of its rated value at high temperature operation. This change does not affect the electrical performance of the hand generator. This instruction details the action required to replace R5 on the equipment.

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

3. Estimated time required: 1/2 man-hours.

4. Items affected:-

Station, radio, A14

Hand generator, BCC12 Mk 2 Z1/5820-99-106-4951

5. Action required by:-

a. Units and establishments holding equipment

(1) If the 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) On completion of this modification, strike through, with a diagonal line, the figure 3 on the modification record plate on the hand generator.

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.

<u>VAOS</u> <u>Section</u>	<u>Part No</u>	<u>Designation</u>	<u>Qty</u> <u>per eqpt</u>
Z	5905-99-022-2016	Resistor, fixed, composition, insulated, 1.2k Ω , $\pm 10\%$, 1/4W	1

7. Sequence of operations

- a. Remove the handle from the side of the generator by knocking out the tubular split pin and pulling the handle from the drive shaft.
- b. Remove the ten socket-head screws securing the side plate, taking care not to damage the sealing gasket.
- c. Ease the regulator board clear of the generator.
- d. Replace R5 with the 1.2k Ω resistor (5905-99-022-2016).
- e. Re-assemble the equipment by reversing the procedure detailed in a., b. and c.

8. EMER amendments

Tels F 162, Part 2, Fig 2540

after R5 insert '*'

below figure insert: '*1.2k Ω after embodiment of Mod Instr
No 15'

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STATION, RADIO, A14

TECHNICAL HANDBOOK - MODIFICATION INSTRUCTION

SUB-TITLE: Amplifier r.f. - replacement of RV1

1. Introduction

The variable resistor RV1, currently fitted to the modulator assembly of the RFA, is now no longer manufactured. This instruction details the replacement, on failure, of RV1 by a new type of variable resistor.

2. Priority Group C (Mgmt N 097 refers).
3. Estimated time required 2.1/2 man-hours
4. Items affected

Transmitter-receiver A14 Z1/5820-99-106-0365
Amplifier r.f. Z1/5820-99-106-0403

5. Action required by

Units authorized to carry out field or base repairs

- a. On repair or overhaul of equipment, if necessary, demand stores and carry out this modification.
 - b. Ensure that figure 6 on the amplifier r.f. 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.

<u>VAOS</u> <u>Section</u>	<u>Part No</u>	<u>Designation</u>	<u>Qty</u> <u>per eqpt</u>
Z30	5905-99-112-7531	Resistor, variable, 25k Ω	1

b. Stores to be obtained locally

Wire, tinned copper, 24 s.w.g. 2 in.

7. Sequence of operations

- a. Remove the component board as detailed in Tels F 164 para 54.
- b. Unsolder the red, green and yellow wires of the defective RV1 from their respective terminals.
- c. Remove the two fixing screws and discard RV1.
- d. If the modification has not previously been carried out (ie if RV1 is of the old type), two new fixing holes must be drilled as shown in Fig 1(a).
- e. Solder suitable lengths of 24 s.w.g. wire to the terminal lugs, connecting the red and green terminals together (Fig 1(b)).

Note: The colour coding should not be confused with the old type RV1 which had red and yellow leads connected together.

- f. Attach RV1 to the board using the two screws removed in c.
- g. Re-solder leads as shown in Fig 1(b).
- h. Replace board on modulator assembly and re-assemble in the amplifier.
- j. Strike out, with a diagonal line, figure 6 from the modification record plate of the amplifier r.f.
- k. The modulator section of the amplifier circuit should be checked and aligned as detailed in F 164 para 125.

8. EMER amendments

EMER Tels F 162, Part 2

- a. Page 1007 Fig 2504 RV1: Delete: '20k' Insert: '25k'
- b. Page 1016 Table 2502, line 10
 - (1) Col 1: Delete: 'Z30/5905-99-106-4105'
Insert: 'Z30/5905-99-112-7531'
 - (2) Col 2: Delete: '20k' Insert: '25k'

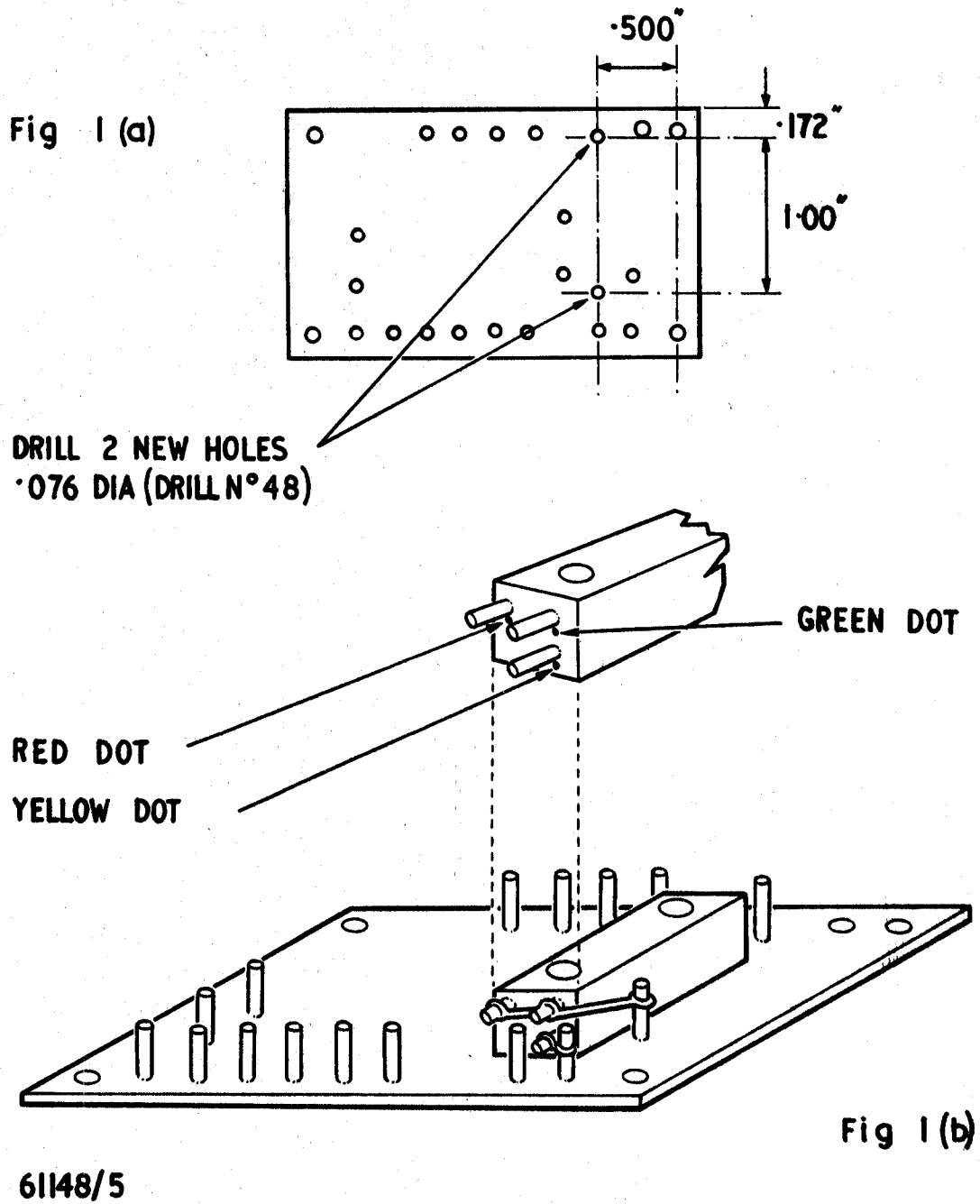


Fig 1 - Drilling and wiring detail

T/61148/32/Tels
ATMC No 00537

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Note: This Issue 2, Pages 1-5, supersedes Issue 1, Pages 1-5, dated Jul 71. Paras marked **■** and Fig 1 have been amended.

STATION, RADIO, A14

TECHNICAL HANDBOOK - MODIFICATION INSTRUCTION

SUB-TITLE: Replacement of self-adhesive modification/identification labels

1. Introduction

a. The self adhesive labels used on the A14 are known to peel off during normal use of the equipment. It has been decided to replace these labels by 22 s.w.g. aluminium plates which combine both the modification record and the identification of the assemblies concerned.

b. Equipments under current production will have these plates permanently fitted to assemblies by hammer drive rivets. For retrospective embodiment of this modification these labels will be permanently fixed to assemblies by Araldite adhesive.

c. The existing mod-record labels contain a maximum of twelve strike off blocks whilst the replacement plates contain twenty four.

d. Since all modification action is recorded on the modification record labels of the respective assemblies (as listed in para 4) the modification record label mounted on the TRA14 case is redundant and is to be removed.

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

3. Estimated time required 0.75 man-hours

4. Items affected

Transmitter-receiver, radio A14 Z1/5820-99-106-0365

Comprising:-

Amplifier, radio frequency Z1/5820-99-106-0403

Transmitter-receiver A14 Z1/5820-99-106-0406

Tuner, radio frequency, remote Z1/5820-99-106-0468

or

Tuner, radio frequency, local Z1/5820-99-106-2104

Aerial tuning unit

• 5. Action required by

a. Units and establishments holding equipment

- (1) If the figures listed at para 5.b. have not been struck off the equipment modification plates, 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, demand stores and carry out this modification.
- (3) Ensure that the relevant figures on the respective modification record plates are struck through with a diagonal line on completion of this modification as follows:-

Transmitter-receiver A14	Z1/5820-99-106-0406	Figure 15
Amplifier, radio frequency	Z1/5820-99-106-0403	Figure 7
Tuner, radio frequency, remote	Z1/5820-99-106-0468	Figure 1
Tuner, radio frequency, local	Z1/5820-99-106-2104	Figure 1
Aerial tuning unit No 15		Figure 1
Aerial tuning unit No 15/1		Figure 1

• 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</u> <u>Section</u>	<u>Part No</u>	<u>Designation</u>	<u>Qty</u> <u>per eqpt</u>
Z1	5820-99-111-8444	Modification kit, electronic equipment	1
Comprising:-			
Z1	9905-99-112-9074	Plate, designation	(1)
Z1	9905-99-112-9075	Plate, designation	(1)
Z1	5820-99-112-8712	Plate, Mod record	(1)
Z1	5820-99-112-8713	Plate, Mod record	(1)
Z1	9905-99-112-9076	Plate, designation	(1)
Z1	5820-99-112-9071	Plate, Mod record	(1)
Z1	5820-99-112-9072	Plate, Mod record	(1)
Z1	5820-99-112-9073	Plate, Mod record	(1)
Z1	5820-99-626-5206	Plate, Mod record	(1)

b. Stores to be obtained locally

HA	8040-99-943-7791	(Araldite adhesive MY753	As reqd
		(Araldite hardener MY951	As reqd

c. Stores to be returned

Items made redundant by the modification are to be disposed of locally.

d. Special tools and test equipment

A letter/number punch set or engraving machine is required.

7. Sequence of operations

a. Withdraw the TRA14 from its carrying harness.

b. Identify the transmitter-receiver panel and chassis assembly. Locate the modification label and designation label. Using a sharp bladed instrument, remove these two labels.

c. Identify replacement modification record plate Z1/5820-99-112-8712. Using a suitable letter/number punch set, or engraving machine, inscribe in the blank space, the serial number identical to that as displayed on the original designation label.

d. Strike through with a diagonal line all modifications appearing on the original modification record label. Record the embodiment of this modification by striking through figure 15. Secure the replacement plate in position (see Fig 1, Plate B) using the Araldite adhesive. Discard old labels.

e. Locate identification labels at SKTB and SKTC. Remove these labels as at b. and discard. Replace with designation plate Z1/9905-99-112-9075 and secure in position (see Fig 1, Plate C) using the Araldite adhesive.

f. Locate identification label at the battery charge sockets. Remove as at b. and discard. Replace with designation plate Z1/9905-99-112-9074 and secure in position (see Fig 1, Plate D) using the Araldite adhesive.

g. Identify the Amplifier, radio frequency. Locate the modification label and designation label. Remove these two labels as at b.

h. Identify replacement modification record plate Z1/5820-99-112-8713. Record serial number and previous modification action as at c. and d. Record the embodiment of this modification by striking through figure 7. Secure the replacement plate in position (see Fig 1, Plate E) using the Araldite adhesive. Discard old labels.

j. Locate identification labels at SKT B and SKT C. Remove as at b. and discard. Replace with designation plate Z1/9905-99-112-9076 and secure in position (see Fig 1, Plate F) using the Araldite adhesive.

k. Identify Aerial tuning unit. Locate the modification label and designation label. Remove these two labels as at b.

l. Identify replacement modification record plate Z1/5820-99-112-9071 for Aerial Tuning Unit No 15/1 or modification record plate Z1/5820-99-626-5206 for Aerial Tuning Unit No 15. Record serial number as at para 7.c. Record the embodiment of this modification by striking through the Figure 1. Secure the appropriate replacement modification plate in position (See Figure 1, Plate G or K) using the Araldite Adhesive. Discard old labels.

m. Identify Tuner radio frequency antenna. Ascertain from identification label whether this assembly is a REMOTE assembly or a LOCAL assembly. If a REMOTE assembly, remove identification label as at b. Identify replacement modification record plate Z1/5820-99-112-9072. Record serial number as at c. Record the embodiment of this modification by striking through figure 1. Secure the plate in position (see Fig 1, Plate H) using the Araldite adhesive. Discard old label.

n. If a LOCAL assembly is employed, action is at para m. but replacement modification record plate is Z1/5820-99-112-9073. Record embodiment of this modification by striking through figure 1. Secure the plate in position (see Fig 1, Plate J) using the Araldite adhesive. Discard old label.

o. Identify TRA14 carrying case. Locate the modification record label. Remove as at b. If the figure 7 has been struck through, strike through the figure 13 on the modification record plates fitted at para b. to d. Similarly if the figure 9 has been struck through, strike through the figure 14 on the modification record plates fitted at para b. to d. No replacement modification record plate is necessary.

8. EMER amendments

Nil.

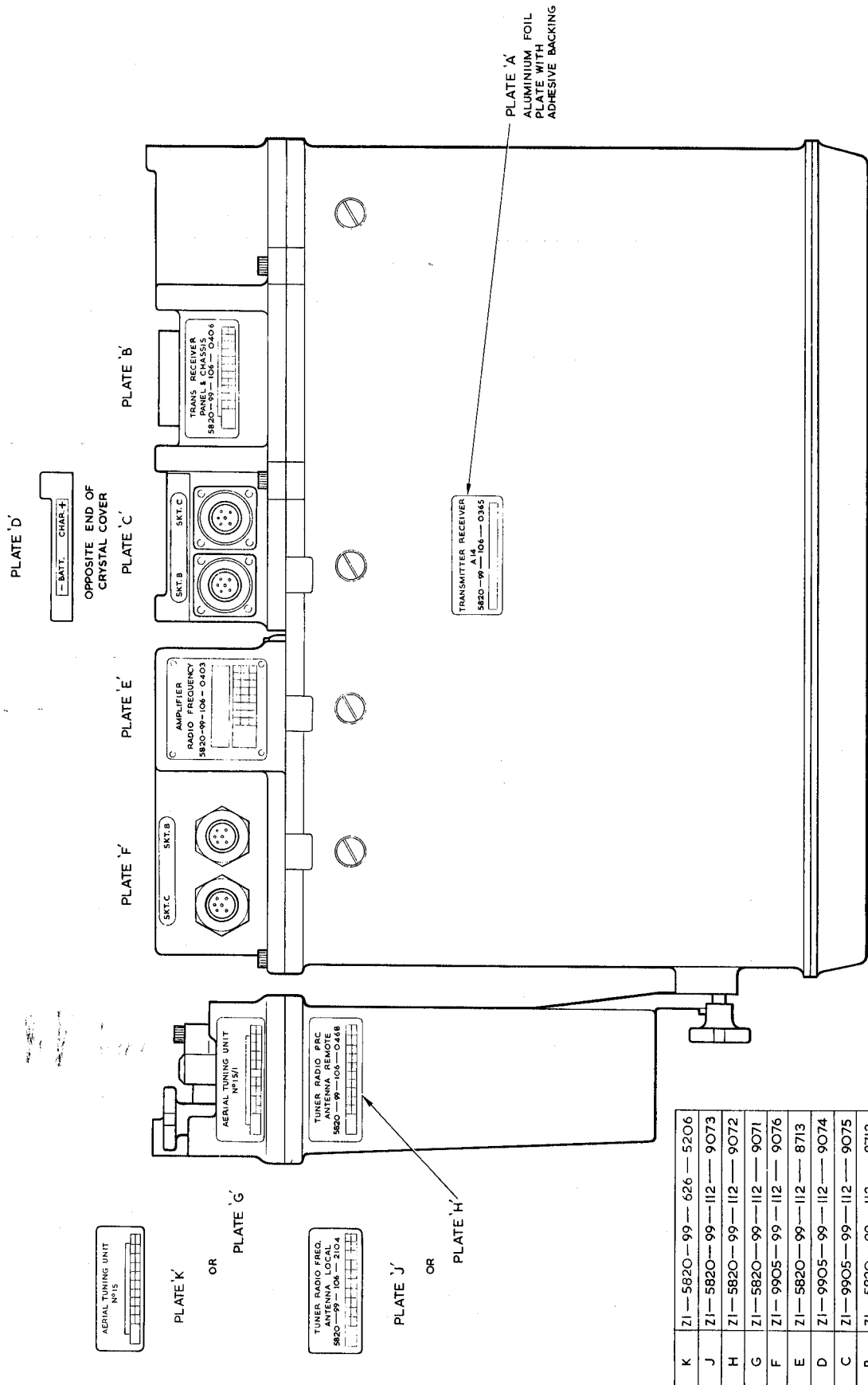


Fig 1 -- Location of modification/identification plates

K	ZI	5820-99	626	5206
J	ZI	5820-99	112	9073
H	ZI	5820-99	112	9072
G	ZI	5820-99	112	9071
F	ZI	9905-99	112	9076
E	ZI	5820-99	112	8713
D	ZI	9905-99	112	9074
C	ZI	9905-99	112	9075
B	ZI	5820-99	112	8712

61148/7

T/61148/20/Tels
ATMC No 00606

Issue 2, Feb 74

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Page 5

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STATION, RADIO, A14

TECHNICAL HANDBOOK - MODIFICATION INSTRUCTION

SUB-TITLE: Aerial tuning unit No 15 and 15/1

1. Introduction

Aerial Tuning Unit No 15 has been redesigned. A simplified and improved version (Aerial Tuning Unit No 15/1) is now in production. When used with Tuner Radio Frequency Antenna No 15 - LOCAL (5820-99-106-2104) it is a direct replacement. When used with Tuner Radio Frequency Antenna No 15 - REMOTE (5820-99-106-0468) alterations to the box are necessary.

2. Priority Group C (Mgmt N 097 refers)

3. Estimated time required 1/2 man-hour

4. Items affected

Tuner Radio Frequency Antenna No 15 - REMOTE (5820-99-106-0468).

5. Action required by

a. Units authorized to carry out field or base repairs

(1) When it is necessary to replace the ATU in a Tuner Radio Frequency Antenna No 15 - REMOTE with a modified ATU No 15/1, carry out this modification.

(2) Ensure that figure 2 on the box assembly modification record label is struck through with a diagonal line on completion of this modification.

6. Stores, tools and equipment

Nil.

7. Sequence of operations

- a. Carry out instructions in F 164 para 127, 128 and 132.
- b. Remove the meter component board (5820-99-108-0916) from the meter.
- c. Reverse the component board assembly so that the component side is facing the rear of the meter. Turn the component board assembly through 180° to ensure that the original polarity is observed and resolder to the meter.
- d. Secure the meter back on to the box.
- e. Insert the new pattern ATU No 15/1 into the box and secure it with four socket-headed screws.
- f. Strike through, with a diagonal line, figure 2 on the modification record label on the box.

Note: Once the modification to the box assembly has been carried out either ATU No 15 or No 15/1 can be inserted.

8. EMER amendments

Tels F 162 Part 2, Fig 2508 against caption 'View on rear of meter' insert: 'Board reversed on embodiment of Mod Instr No 18'.

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STATION, RADIO, A14

TECHNICAL HANDBOOK - MODIFICATION INSTRUCTION

SUB-TITLE: Crystal harness

1. Introduction

To overcome difficulties experienced in extracting crystals, a nylon strip is to be fitted round each crystal before inserting into sockets. This regulation details the work required to carry out this modification.

2. Priority Group B (Mgmt N 097 refers)

3. Estimated time required 1 man-hour

4. Items affected

Transmitter, receiver, radio 5820-99-106-0406.

5. Action required by

a. Units and establishments holding equipment

(1) If figure 17 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 technician responsible for first line 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, demand stores and carry out this modification.

(3) Ensure that figure 17 on the TRA 14 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</u> <u>Section</u>	<u>Part No</u>	<u>Designation</u>	<u>Qty</u> <u>per eqpt</u>
Z1	5890-99-111-8136	Modification kit	1
		Comprising:	
Z1	5340-99-112-9086	Clamp, loop, nylon 2.5 in. lg	(9)
Z1	5340-99-112-9087	Clamp, loop, nylon 4.0 in. lg	(9)

7. Sequence of operations

- a. Remove crystal compartment cover.
- b. Extract all crystals from their sockets.
- c. Fit crystal harness clamp loop round each crystal using:
 - (1) 5340-99-112-9087 for low band crystals.
 - (2) 5340-99-112-9086 for high band crystals.
- d. Refit harnessed crystals into their appropriate sockets.
- e. Replace crystal compartment cover.
- f. Strike through, without obliterating, figure 17 on the modification record plate on the A14.

Note: If all 18 crystals are not fitted the remainder of the crystal harnesses should be retained in unit store for future use.

8. EMER amendments

Nil.

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STATION, RADIO, A14

TECHNICAL HANDBOOK - MODIFICATION INSTRUCTION

SUB-TITLE: Module 'N' - overriding of tab washers

1. Introduction

The addition of a No 0 BA brass washer and a wavy washer on the tuning gang shaft is required to improve the reliability of operation of the unit by preventing overriding of tab washers which cause excessive revolutions of the tuning mechanism. A large number of equipments in service have already been modified but no strike-off has been carried out. It will therefore be necessary to embody strike-off action when these equipments are encountered on repair. This regulation details the work required to carry out the modification and the strike off action required on those equipments which have the modification already embodied.

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

3. Estimated time required: 1/2 man-hour.

4. Items affected:-

Z1/5820-99-106-0365	Station Radio A14
Z1/5820-99-106-0406	TRA 14
Z1/5910-99-108-2863	Condenser Cage Assembly Module 'N'.

5. Action required by:-

a. Units authorized to carry out field or base repairs

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

(2) Ensure that relevant figures on the respective modification record plates are struck through with a diagonal line on completion of this modification as follows:-

TRA 14	Fig 16
Module 'N'	Fig 1

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.

<u>VAOS</u> <u>Section</u>	<u>Part No</u>	<u>Designation</u>	<u>Qty per</u> <u>eqpt</u>
Z2	5310-99-943-6080	Washer, spring tension 1/4 in. BER CP Cd Pl	1
Z2	5310-99-941-8688	Washer, No 0 BA, std, brass, nickel plated	1

7. Sequence of operations

- a. Examine modification record plate on TRA14.
- b. If the figure 16 has not been struck through, remove equipment from case and examine module 'N'.
- c. If the washers quoted in para 6. above have been fitted, strike through with a diagonal line the figure 1 on module 'N' modification record plate and the figure 16 in the TRA14 modification record plate. Replace equipment in its case and seal test as necessary.
- d. If the washers are not fitted, remove the tuning scale.
- e. Disconnect the band-switch flexible coupling shaft at the module 'L' side, and pull the band switch shaft free of the coupling.
- f. Identify module 'C' and unsolder the brown and grey wires from terminals 19 and 13 respectively.
- g. Loosen the tuning-gang flexible coupling shaft at both ends, and push the coupling towards the front panel.
- h. Unscrew the 4 socket-headed screws securing the front panel to the equipment and gently separate the front panel from the equipment.
- j. Fit the No 0 BA washer and the wavy washer on the tuning gang shaft.
- k. Replace the flexible coupling and compress the wavy washer with the coupling. Secure the flexible coupling to the shaft.
- l. Reassemble the equipment by reversing operations d. - h. inclusive. Check the tuning scale calibration as detailed in Tels F 164 para 108.
- m. Check modification by testing for calibration slip.
- n. Strike through with a diagonal line the figure 1 on module 'N' modification record plate and the figure 16 on the TRA14 modification record plate.
- o. Replace equipment in its case and seal test as necessary.

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STATION, RADIO, A14

TECHNICAL HANDBOOK - MODIFICATION INSTRUCTION

SUB-TITLE: Module 'L' - overheating of resistor R143

1. Introduction

Due to accidental short circuit when operating the bandswitch (SWA), R143 (Z1/5905-99-900-1543) overheats. To prevent the subsequent destruction of R143, it is necessary to use alternative pins on SWA2. This instruction details the work necessary to reposition the leads on SWA2.

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

3. Estimated time required: 3/4 man-hours.

4. Items affected:-

Transmitter, receiver, radio	5820-99-106-0406
Module 'L'	5820-99-108-2867

5. Action required by:-

a. Units and establishments holding equipment

(1) If the figure 18 has not been struck off the equipment record plate, 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 relevant figures on the respective modification record plates are struck through with a diagonal line on completion of this modification as follows:-

Transmitter, receiver, radio - figure 18
Module 'L' - figure 2

6. Stores, tools and equipment

a. Stores to be obtained locally

<u>VAOS Section</u>	<u>Part No</u>	<u>Designation</u>	<u>Qty per eqpt</u>
Y3	6145-99-942-4060	Equipment, wire, 7/0076 in. (green)	4 $\frac{1}{4}$ in.
Y3	6145-99-942-4060	Equipment, wire, 7/0076 in. (green)	1 $\frac{3}{4}$ in.

7. Sequence of operations

- a. Remove the equipment from its case.
- b. Locate module 'L' and remove as detailed in EMER Tels F 164, para 31.
- c. Remove the earth tag secured to panel, electronic circuit (Z1/5820-99-106-7312) by a cheesehead screw.
- d. Locate the bandswitch (SWA) and remove the nuts securing the wafers. Slowly ease off SWA1 along with the electrostatic screen (Z1/5820-99-106-6785).
- e. Remove the screen and tilt SWA1 until SWA2 wafer is accessible.
- f. Unsolder the green lead from SWA2 pin 7 and solder it to SWA2 pin 4.
- g. Unsolder the green leads from:
 - (1) SWA2 pin 9 to transformer T10 pin 2.
 - (2) SWA2 pin 8 to pin 8 on terminal board.
- h. Retain the 1/8 in. white sleeves on the green wire removed in g. (2) and discard green wires.
- j. Fit the white sleeves to the 1.3/4 in. length of replacement green wire and solder this wire between SWA2 pin 5 and pin 8 on the terminal board.
- k. Solder the 4.1/4 in. length of replacement green wire between SWA2 pin 6 and transformer T10 pin 2.
- l. Reverse operations b. to e. inclusive.

m. Strike through without obliterating the figure 2 on the modification record label of module 'L' and the figure 18 on the modification record label on the Tx/Rx panel and chassis assembly.

8. EMER amendments

F 162 Part 2, Page 1052, Fig 2535, circuit reference SWA2.

Delete: Contact numbers 7, 8, 9.

Insert: Contact numbers 4, 5, 6.

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ATMC No 00730

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STATION, RADIO, A14

TECHNICAL HANDBOOK - MODIFICATION INSTRUCTION

SUB-TITLE: Improved method of securing coaxial sockets

1. Introduction

Due to the tendency of coaxial sockets to work loose in service it has been found necessary to fit a new terminal lug to give improved locking of the securing nut. This instruction details action required when it is found necessary to replace the terminal lugs on the TRA14 and tuner r.f. antenna (remote and local).

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

3. Estimated time required: 1 man-hour per socket

4. Items affected:-

See Table 1

5. Action required by:-

a. Units authorized to carry out field or base repair

On failure or overhaul of equipment, demand stores and carry out this modification.

6. Stores, tools and equipment

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

<u>VAOS</u> <u>Section</u>	<u>Part No</u>	<u>Designation</u>	<u>Qty</u> <u>per eqpt</u>
Z3	5940-99-955-4152	Terminal, lug	4

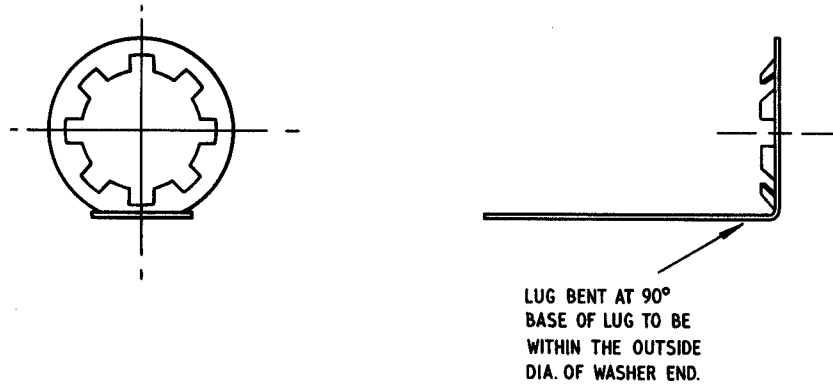


Fig 1 - Tx-Rx panel and chassis assembly and tuner r.f. antenna (remote and local)

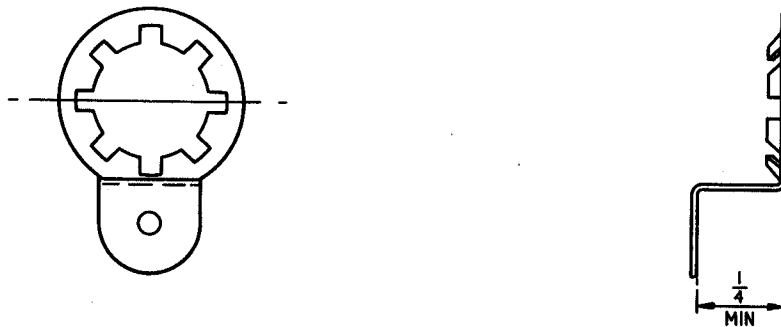


Fig 2 - Amplifier r.f. (dimensions in inches)

T/61148/14/Tels
ATMC No 00848

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STATION, RADIO, A14

TECHNICAL HANDBOOK - MODIFICATION INSTRUCTION

SUB-TITLE: Module 'C' - replacement of VT24 (2N696)

1. Introduction

Due to changes in the basic construction of the 2N696 wafer, it is no longer possible to use in its original state. When 2N696 fails it will be replaced by transistor 2N2410 together with a 5.6pF capacitor and a 15Ω resistor.

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

3. Estimated time required: 1/2 man-hour (pin board version)
1 man-hour (printed circuit version)

4. Items affected:-

Transmitter-Receiver A14

Pin-board module 'C' Z1/5820-99-108-1691

Printed circuit module 'C' Z1/5820-99-112-7525

5. Action required by:-

a. Units authorized to carry out field or base repairs

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

(2) Ensure that the figure 4 on the module modification record plate and the figure 19 on the transmitter-receiver modification record plate are 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	5820-99-117-0057	Modification kit	1
		Comprising:-	
Z42	5961-99-118-1714	2N2410 Transistor	(1)
Z1	5910-99-106-4028	Capacitor, Eric, type 831/NPO, 5.6pF ±10%	(1)
		Resistor, Electrosil, type TR4, 15Ω ±5%, 1/4W	(1)

b. Stores to be returned

Items made redundant by the modification are to be disposed of locally.

7. Sequence of operations

a. Pin-board module 'C'.

- (1) Remove equipment from its case.
- (2) Remove transistor VT24 (CV7495). Retain the colour coded sleeves and discard the transistor.
- (3) Connect the 5.6pF capacitor (5910-99-106-4028) between pins 56 and 58 as shown in Fig 1.a.
- (4) Fit the colour-coded sleeves retained in (2) to the new transistor 2N2410 and solder in position.
- (5) Unsolder the leads from pins 11, 13, 15, 17, 19, 21, 22, 24, 26, 28 and 30 of module 'C'.
- (6) Remove the four screws securing the module, place the set on its side and ease the module to obtain a suitable soldering position on the underside.
- (7) Solder the 15Ω resistor between pins 22 and 30 as shown in Fig 1.b.
- (8) Replace the module and secure.
- (9) Resolder all leads.
- (10) Strike through with a diagonal line the figure 4 on the modification record label of the module and the figure 19 on the modification record label of the transmitter-receiver A14.

b. Printed circuit module 'C'.

- (1) Remove the equipment from its case.
- (2) Unsolder leads from pins 11, 13, 15, 17, 19, 21, 22, 24, 26, 28, 30, 32 and 33 of module 'C'.
- (3) Remove the four screws securing the module, and expose the trackside of the board.
- (4) Remove TR24 (CV7495) together with mounting pad.
- (5) Place the set on its side and ease the module to obtain a suitable drilling position.
- (6) Drill three holes using 1 mm drill as shown in Fig 2.a. and 2.c.

Note: To avoid lifting of the track the drilling should be carried out from the track side of the board concerned.

- (7) Connect the 5.6pF capacitor as shown in Fig 2.b.
- (8) Connect the 15Ω resistor as shown in Fig 2.d.
- (9) Connect the new TR24 2N2410 along with the mounting pad removed in (4).
- (10) Replace the module and secure.
- (11) Re-solder all leads.
- (12) Strike through with a diagonal line the figure 4 on the modification record label on the module and the figure 19 on the modification record label on the transmitter-receiver A14.

8. EMER amendments

F 162 Part 2.

a. Page 1040 Fig 2523

- (1) At foot of page add:-

Note: On embodiment of mod instr No 23 VT24 becomes 2N2410. A new capacitor C110 is connected between base and collector of VT24 and a new resistor R95 is connected between pins 22 and 30.'

b. Page 1041 Fig 2524

- (1) To VT24 add*
- (2) At foot of page add:-

*Note: On embodiment of mod instr No 23 VT24 becomes 2N2410. A new capacitor C110 is connected between base and collector of VT24 and a new resistor R95 is connected between pins 22 and 30.'

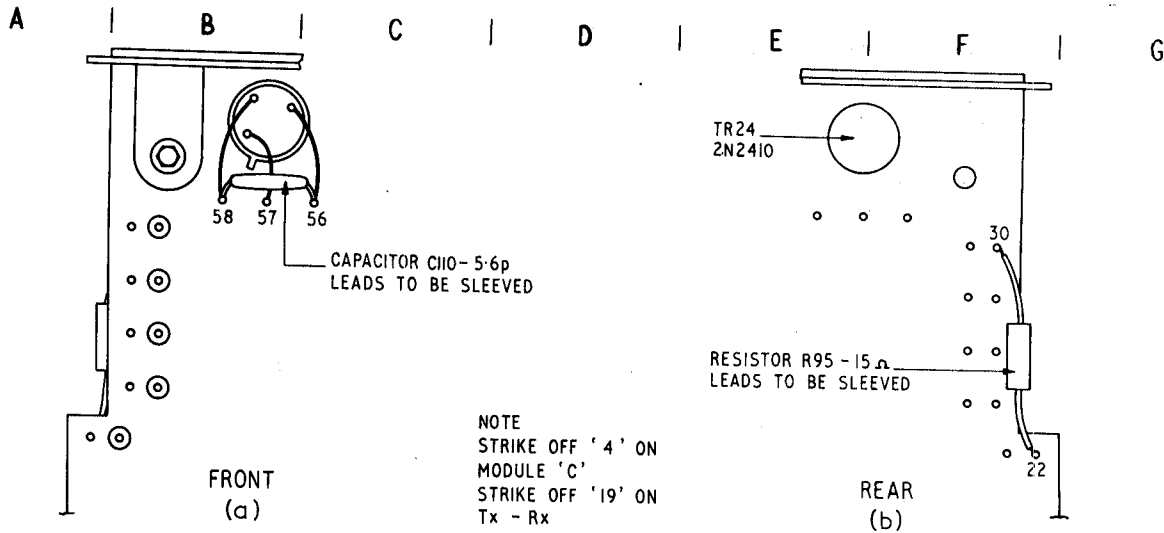


Fig 1 - Audio board assembly (pin-board)

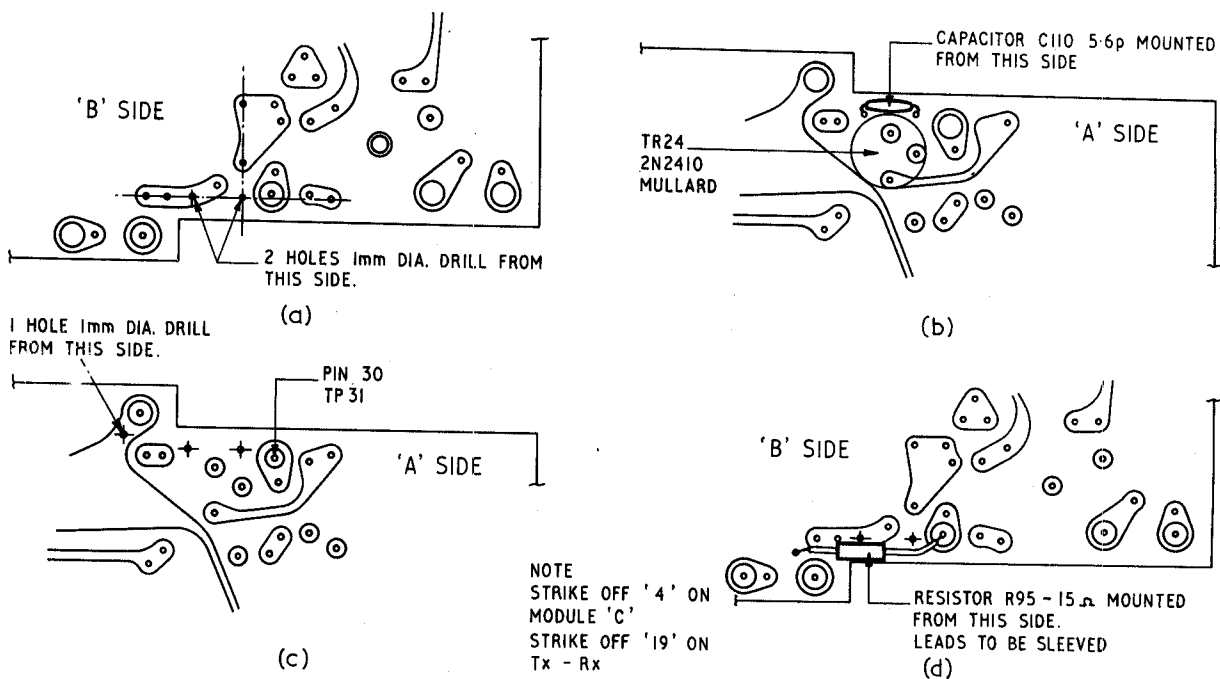


Fig 2 - Audio board assembly (printed circuit)

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STATION, RADIO, A14

TECHNICAL HANDBOOK - MODIFICATION INSTRUCTION

SUB-TITLE: Hand generator - replacement of OC35 transistor

1. Introduction

Due to failures of VT3 a Darlington power transistor MJ 2500 (Z42/5961-99-116-3575) is to replace VT3 (OC35), VT4 (OC84) and R4 (39 Ω).

2. Action

Future production of the hand generator (Z1/5820-99-106-4951) incorporating this modification will be identified by figure 4 on the modification record plate being struck through. No retrospective action is required.

EMER amendments

Issued as Page 1057A of Tels F 162 Part 2.

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STATION, RADIO, A14

TECHNICAL HANDBOOK - MODIFICATION INSTRUCTION

SUB-TITLE: Replacement for CV8345 transistor

1. Introduction

Transistor CV8345 used in positions VT7 and VT15 is no longer available. When CV10440 is used in position VT15 it is a direct replacement. When used in position VT7 it is not a direct replacement. This instruction details the action required when CV8345 is to be replaced by CV10440 in position VT7.

2. Priority Routine (Mgmt N 097 refers)

3. Estimated time required 0.5 hours for pinboard version
0.75 hours for printed circuit version

4. Items affected

Transmitter-receiver, radio	5820-99-106-0406
Module J (P.B. version)	5820-99-108-2865
Module J (P.C. version)	5820-99-112-7528

5. Action required by

a. Units authorized to carry out field or base repairs

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

- (2) Ensure that relevant figures on the respective modification record plates are struck through with a diagonal line on completion of this modification as follows:

Module J modification record label - figure 4
Tx/Rx modification record label - figure 23

6. Stores, tools and equipment

a. Stores to be demanded

Stores are to be demanded through normal Ordnance channels quoting this EMER and earmark No D2035 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 per</u> <u>eqpt</u>
Z1	5820-99-620-7797	Kit modification:- Comprising:	1
		Transistor, CV10440	(1)
	5905-99-013-6439	Resistor 1k Ω \pm 5% type TR4	(1)
	5961-99-142-6374	Transipad, Jermyn type EPX.002	(1)

b. Stores to be returned

Items made redundant by the modification are to be disposed of locally.

7. Sequence of operation

a. To modify pin board module J (5820-99-108-2865)

(1) It is assumed that the equipment is already removed from its case.

(2) Locate module J with reference to Tels F 162 Part 2, Fig 2507.

(3) Locate and remove VT7 (CV8345) R150 (2.2k Ω) (F 162 Part 2 Fig 2530).

(4) Fit CV10440 in position VT7 and 1k Ω resistor in position R150

Note: Transipad is not required.

(5) Carry out the test procedure as detailed in Tels F 164 para 119

(6) Strike through, without obliterating, figure 4 on the modification record label on module J.

(7) Replace the equipment into its case, carrying out drying and sealing instructions detailed in Tels F 164 para 14 to 9 inclusive.

(8) Record the embodiment of this modification by striking through, without obliterating, figure 23 on modification record label on transmitter-receiver (5820-99-106-0406).

b. To Modify printed circuit module J (5820-99-112-7528)

(1) It is assumed that the equipment is already removed from its case.

(2) Locate module J (Tels F 162 Part 2, Fig 2507).

(3) Remove module J as per Tels F 164 para 29.

(4) Locate and remove VT7 (CV8345) and R150 (2.2k Ω).

(5) Mount the transistor CV10440 on the transipad EPX.002.

(6) Fit CV10440 (mounted on transipad) in position VT7 and 1k Ω resistor in position R150.

(7) Refit module J as per Tels F 164 para 29.

(8) Carry out test procedure as detailed in Tels F 164 para 119.

(9) Strike through, without obliterating, figure 4 on the modification record label on Module J.

(10) Replace the equipment into its case, carrying out drying and sealing instructions detailed in Tels F 164 para 119.

(11) Record the embodiment of this modification by striking through, without obliterating, figure 23 on modification record label on transmitter-receiver (5820-99-106-0406).

8. EMER amendments

Completion of this modification necessitates the following alteration to Tels F 162 Part 2:

a. Pages 1041 (VT15), 1041B (TR15), 1047B (TR7, R150) 1048 (VT7, R150) insert '*' against designated component.

b. At foot of pages detailed in a. insert: '*See Mod Instr No 25'

T/61148/25/Tels
ATMC No 01017

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STATION, RADIO, A14

TECHNICAL HANDBOOK - MODIFICATION INSTRUCTION

SUB-TITLE: Module L; replacement of Wima capacitor (C66)

Information

1. New production Wima capacitor type MkS 0.47 μ F cannot be used in position C 66 as it is only available with 6 mm leads. STC capacitor type PMF 0.47 μ F (5910-99-622-6318) was found to be a suitable replacement in this position. Due to the different dimensions of the STC capacitor, it was found necessary to reposition R143.
2. This modification will be incorporated during manufacture only, and no retrospective action will be taken. Equipments fitted with the Wima capacitor in position C 66 will still demand 5910-99-106-6824.
3. This modification will be indicated by the following strike-off action on the relevant modification record label:-

Module L (5820-99-108-2867) - figure 3.

Transmitter/receiver radio A14 (5820-99-106-0406) - figure 22.

T/61148/26/Tels
ATMC No 00985

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STATION, RADIO, A14

TECHNICAL HANDBOOK - MODIFICATION INSTRUCTION

SUB-TITLE: Improved reliability of float charge lead (5995-99-106-0646)

INTRODUCTION

1. A number of instances have occurred of the plugs becoming detached from the float charge battery lead. This regulation details the action to fit a modified crystal cover containing larger sockets and the float charge lead with larger plugs.

2. Priority Group B (Mgmt N 097 refers)
3. Estimated time required 0.5 man-hour
4. Items affected

Float charging lead - 5995-99-106-0646

Cover assembly crystal - 5820-99-108-3394 (part of TRA14)

5. Action required by
 - a. Units and establishments holding equipment
 - (1) If figure 21 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, demand stores and carry out this modification.

(3) Ensure that figure 21 on the TRA14 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	5820-99-620-1023	Modification kit, electronic equipment	1
		Comprising:	
		Modified crystal cover	(1)
		Plug, 4 mm type 4p8 Oxley (red)	(1)
		Plug, 4 mm type 4p8 Oxley (black)	(1)

b. Stores to be returned

Items made redundant by the modification are to be disposed of locally.

7. Sequence of operations

a. Remove and retain the six socket-headed screws securing the crystal cover.

b. Remove crystal cover and discard.

c. Solder the black lead on the modified crystal cover (part of the mod kit) to SKTF and the red lead to SKTE.

d. Fit the modified crystal cover using the six socket-headed screws retained in 7.a.

e. Check for incorporation of Mod Inst No 17, strike off action 15.

f. If this has not been done remove the battery charge sockets E and F identification label and discard.

g. Remove the red and black plugs from the float charge lead (5995-99-106-0646).

h. Connect the new red and black plugs to the float charge lead.

j. On completion of modification amend the float charge cable part number to read '5995-99-622-0078'.

k. Strike through, with a diagonal line, figure 21 on the modification record label of the TRA14.

8. EMER amendments

Nil.

T/61148/11/Tels
ATMC No 00925

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STATION, RADIO, A14

TECHNICAL HANDBOOK - MODIFICATION INSTRUCTION

SUB-TITLE: Toroidal sealing rings

SUMMARY

1. To improve the sealing of the set it is necessary to machine the ridge height on the flange down to 0.04 in. on Cabinet, electrical equipment (5820-99-106-0418) and use standard toroidal sealing rings instead of special gaskets on the front panels.
2. In new production equipment the cabinet has been machined and the gasket (5820-99-108-3371) replaced by Toroidal sealing ring (5330-115-5138); and Rubber seal, special square section (5820-99-108-3359) replaced by Toroidal sealing ring (5330-99-115-5139). This modification is indicated by strike off action figure 1 on the modification record label fitted to the inside of the cabinet (5820-99-106-0418).

Note: The toroidal sealing rings must not be used with unmachined cabinets and the original square section gaskets must not be used with the machined cabinets.

T/61148/37/Tels
ATMC No 00636

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STATION, RADIO, A14

TECHNICAL HANDBOOK - MODIFICATION INSTRUCTION

SUB-TITLE: Braid wearing on Dipole aerial

Introduction

1. The metal braid surrounding the inner cord of the Antenna Element and Spade Assembly Z1/5820-99-106-0518, has a tendency to wear at the junction of the crimped spade terminal. This instruction details the action required to rectify this defect on failure. New production antenna elements will be fitted with two layers of protective sleeving.

2. Priority: Routine (Mgmt N 097 refers)

3. Estimated time required: 0.5 man hour

4. Items affected:

Z1/5820-99-106-0518	Antenna Element and Spade Assembly	part of
Z1/5985-99-106-0549	Antenna Copper Braid Dipole	part of
Z1/5820-99-106-0505	Parts Kit Antenna BCC 505	part of
Z1/5820-99-106-0365	Transmitter Radio A14	

5. Action required by

Units authorized to carry out field or base repairs

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

6. Stores, tools and equipment

Stores to be obtained locally

<u>VAOS Sect</u>	<u>Part No</u>	<u>Designation</u>	<u>Qty per eqpt</u>
Z42	5970-99-194-6261	Insulating shrink sleeve 0.25 in. expanded i.d. Shrinkable to 0.125 in. i.d. 0.025 in. wall thickness	As reqd
Y3	6145-99-910-2378	26 s.w.g. Tinned copper wire	As reqd

7. Sequence of operations

- a. Thread the shrink sleeve over the spade terminal as shown in Fig 1(1).
- b. Loop the 26 s.w.g. wire and place it along the junction of braid and spade terminal as shown in Fig 1(2).
- c. Press down the loop wire to the profile of spade terminal. Begin winding at approximately $3/8$ in. to $1/2$ in. from junction as shown in Fig 1(3).
- d. Push the start end through the loop once the winding is completed and pull the finish end of the wire to clamp the start end as shown in Fig 1(4).
- e. Cut the start and finish ends to about $1/4$ in. and lay back flat along the winding. Solder the windings. Slide the yellow sleeving up to the winding as shown in Fig 1(5).
- f. Slide the shrink sleeve to cover the whole winding and apply heat (hot air) to shrink. The finished spliced end to be as shown in Fig 1(6).

8. EMER amendments

Nil.

MATERIAL REQUIRED:- WIRE TINNED COPPER 26 SWG
HELLERMANN SHRINK SLEEVE S.T.M. 64 1 1/2" LONG.

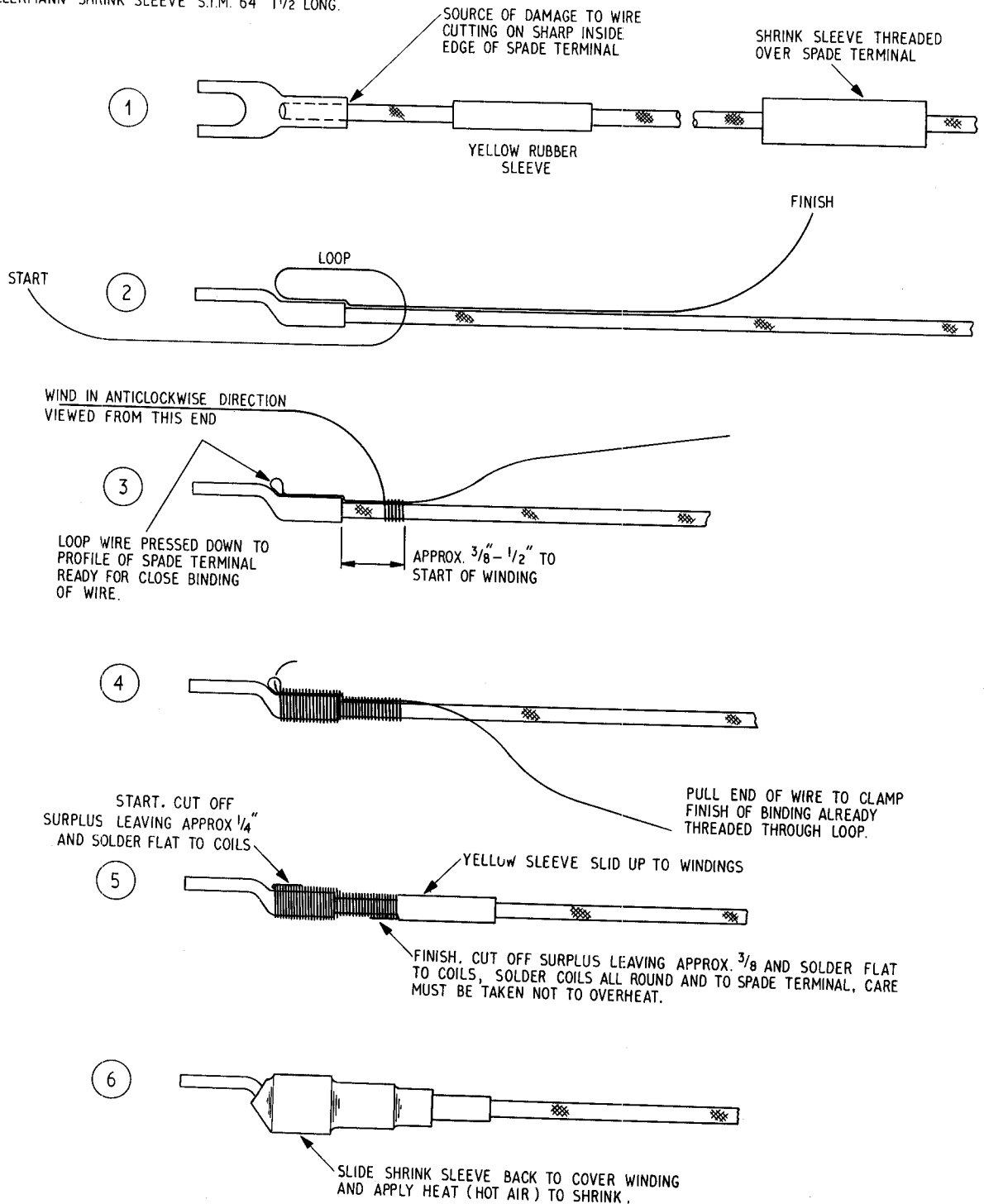


Fig 1 - Fitting of sleeving

T/61148/8
ATMC 01085

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STATION, RADIO, A14

TECHNICAL HANDBOOK - MODIFICATION INSTRUCTION

SUBJECT: Tuner radio frequency antenna - replacement of obsolete indexing mechanism

1. INTRODUCTION

Indexing Mechanism (Z1/5820-99-108-1080) used on ATU No 15 and ATU No 15/1 is no longer available. This instruction concerns future production only. Production of ATU No 15 has ceased. Future production of the ATU No 15/1 will be fitted with the new indexing mechanism Sub-Assembly. Strike off No 3 on the ATU 15/1 will record the embodiment of this modification.

2. APPLICABILITY

Tuner Radio Frequency Antenna - Z9/6130-99-106-0703.

3. REASON FOR MODIFICATION

Code 5 - to conform to changes in pattern of commercial stores.

T/61148/10

ATMC No 01139

END