Para.

Chapter 10

A.R.I.5876

LIST OF CONTENTS

Para.

1

Introduction

DESCRIPTION AND OPERATION

Man carried equipment	• • • •	 	4
Aircraft equipment		 	6
Transmitter receiver		 	7
Aerials		 	9
Power supplies		 	10

SERVICING Precautions 11. General 12

REMOVAL AND INSTALLATION

General 15

LIST OF TABLES

Table

Major items of equipment ... 1 Connectors for A.R.1.5876 ... 2

LIST OF ILLUSTRATIONS

Fig. Location of equipment 1 Assembly of aerials 2

Routeing chart A.R.I.5876 Fig. 3

Introduction

1. This installation is the airborne half of the Search and Rescue and Homing air-sea rescue beacon system, and comprises a sub-miniature transmitter-receiver operating at 243 Mc/s. The installation operates in conjunction with the beacon transmitter and speech units normally carried in the life jacket of aircrew

members (S.R.I.23006).

2. During search operations, the aircraft receiver presents, on a cathoderay tube, directional indication of the survivor's beacon. Once the direction of the beacon has been found, its exact location may be rapidly determined, even in _poor visibility. At close range,

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speech communication between the search aircraft and the survivor can be established.

3. Details of the aircraft installation are shown in fig.1, whilst a full description of the system is contained in the publication listed in Table 1. A brief outline of the equipment, however, is contained in the following paragraphs.

5 -19



DESCRIPTION AND OPERATION

MAN CARRIED EQUIPMENT

4. The beacon consists of a single valve pulse transmitter, which is powered from a battery unit having Kalium LT and Leclanche HT cells. Attached to the beacon is a self-erecting folding strip aerial stowed inside a protective cover. When the cover is removed, the aerial is erected vertically, and the beacon is automatically switched on.

5. Short range two-way R/T. facilities are also provided by means of an additional two-valve speech unit. Battery capacity is sufficient to maintain twenty hours beacon operation, which will be reduced to fifteen hours if one hours R/T operation is used.

AIRCRAFT EQUIPMENT

6. The airborne equipment consists of the items listed in Table 1. Brief details of the various units are described in the following paras.

Transmitter-receiver

7. The T.R. and display unit is

mounted at the master sonics station, at former 9. The $1\frac{1}{4}$ in. cathode ray tube (C.R.T.) in the unit is viewed through a 3 in. diameter lens, thus an effective 2 in. diameter screen is created. The various operating controls are situated on the front panel, and the three aerial connections are made at the top rear of the unit. A limited amount of vertical adjustment is available on the mounting, allowing the operator to angle the screen to a suitable viewing position.

8. The transmitter and receiver, Type 8088, and the power unit, Type 8094, are joined together by four bolts and an 18way connector, to form a single unit. A sealing gasket between the units ensures a moisture-proof joint. Connections are made to the rear of the power unit via a plug and socket identified AUDIO and POWER respectively. Power connections are made to the radio power panel, whilst the mic-tel, and press-to-transmit facilities are connected to the A.R.I.18089 junction box, Type 7684 (Chap.2).

Aerials

9. The homing receiver aerials, Type 8329, are installed one on each side of the fuselage nose. Each assembly is directional in azimuth, and consists of a dipole and one director as shown in fig.2. The aerials are arranged so that the beacon "spikes" are displayed either to the right or the left of the vertical reference trace on the C.R.T. indicator. For transmitting purposes, an aerial, Type 8171, is fitted to the underside of the rear fuselage at former 39.

Power supplies

10. The a.c. and d.c. power supplies for the equipment are taken to the power unit, Type 8094, via a double-pole switch at the radio power panel. The 28-volt d.c. supply is protected by fuse BJ4, whilst the 115 volt, 1600 c/s singlephase a.c. supply from either the No.6 or the No.7 inverter is protected by fuse BL10. For information on the power supply circuits, reference should be made to Book 2, Sect.6, Chap.2B of this publication.

SERVICING

Precautions

11. Prior to any servicing operations, the general precautions outlined in Chapter 1 of this section should be noted.

General

12. Full servicing information, including functional tests and setting-up procedure will be found in the publication listed in

Table 1. Performance testers, which are required for metering and functional purposes are fully described in Part 2 of the same publication.

13. The transmitter-receiver and power unit should be examined periodically for security of attachment, and tightness of the connections. The screen and visor lens should be kept clean at all times. The plug breaks adjacent to the T.R. unit, and those adjacent to the homing receiver aerials, should be checked at regular intervals to ensure security of connection, freedom from corrosion and damage.

14. The aerials should be examined at the appropriate servicing periods for signs of corrosion and damage.



Fig. 2 Assembly of aerials **RESTRICTED**

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REMOVAL AND INSTALLATION

General

15. Prior to removing the T.R/Power unit from the mounting tray at the master sonics station, the visor should be removed and placed in the stowage compartment provided. Removal of the combined unit is then straightforward, after disconnection of the connector assemblies. Details for separating the T.R. unit and the power unit are given in Vol.1, Part 1 of the publication listed in Table 1, and should be strictly observed.

16. Fig.2 shows details of the aerial assemblies. Removal of these items is

straightforward when the attachment bolts and connector assemblies have been disconnected. The homing receiver aerials are disconnected at the plug brackets adjacent to the respective aerials. Care should be taken to retain the packer blocks etc., as these items will be required when re-fitting the aerials.

TABLE 1

Major items of equipment

Equipment	Туре	Reference No.	A.P. Reference	
Transmitter-receiver	8088	10D/19540		
Power unit	8094	10K/18240	A D 2554C and Edg. Wal 1	
Aerial (Rx)	8329	10B/17693		
Aerial (Tx)	8171	10B/17670	A.F.2554C, 214 Edit., Vol.1	
Visor	300	10AT/1557	5	

TABLE 2

Connectors for A.R.I.5876

Item No.	Cable form	Connecting	A.M. Ref. No.
2/T.5681	Miniature 6C (SPEC.DEF.10)	T.R. Unit (POWER) to Radio Supply Panel (SKT.733)	- 63 1 7
3/T.5681	Uniradio 67	Plus break 368 to Transmitter Aerial	-
4/T.5681	Uniradio 67	Plug break 364 to A/E plug break 366 (Stbd.)	-
5/T.5681	Uniradio 67	Plug break 365 A/E plug break 367 (Port)	-
4/T.3762	Uniradio 43	T.R. Unit (GREEN) to plug break 364	10HA/15745
5/T.3762	Uniradio 43	T.R. Unit (RED) to plug break 365	10HA/15746
6/T.3762	Uniradio 43	T.R. Unit (WHITE) to plug break 368	10HA/15747

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