Chapter 1

A.R.I.5816

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Introduction

1. This chapter deals with the GEE Mk.3 installation which is a radio navigational aid, to enable an aircraft to find its position in the area served by the Gee ground system. The ground system consists of chains of fixed ground radio transmitters which radiate the position fixing signals.

2. The installation fitted to the aircraft (A.R.I.5816) receives and displays the signals from the ground chain, and provides information which the navigator plotter can interpret on special charts.

3. A location diagram of the major components is provided in fig.1. A connector table is contained at the end of the text and a routing chart will be found at the end of the chapter.

4. Descriptive and servicing details of the A.R.I.5816 are given in A.P. 2557M, Vol.1, which should be read in conjunction with the information contained in this chapter.

◀ *NOTE . . .*
This installation removed by Mod.1631 which introduces A.R.I.18107/13 (Chap.6). Text, illustrations and Routing Chart left in for information only. ▶

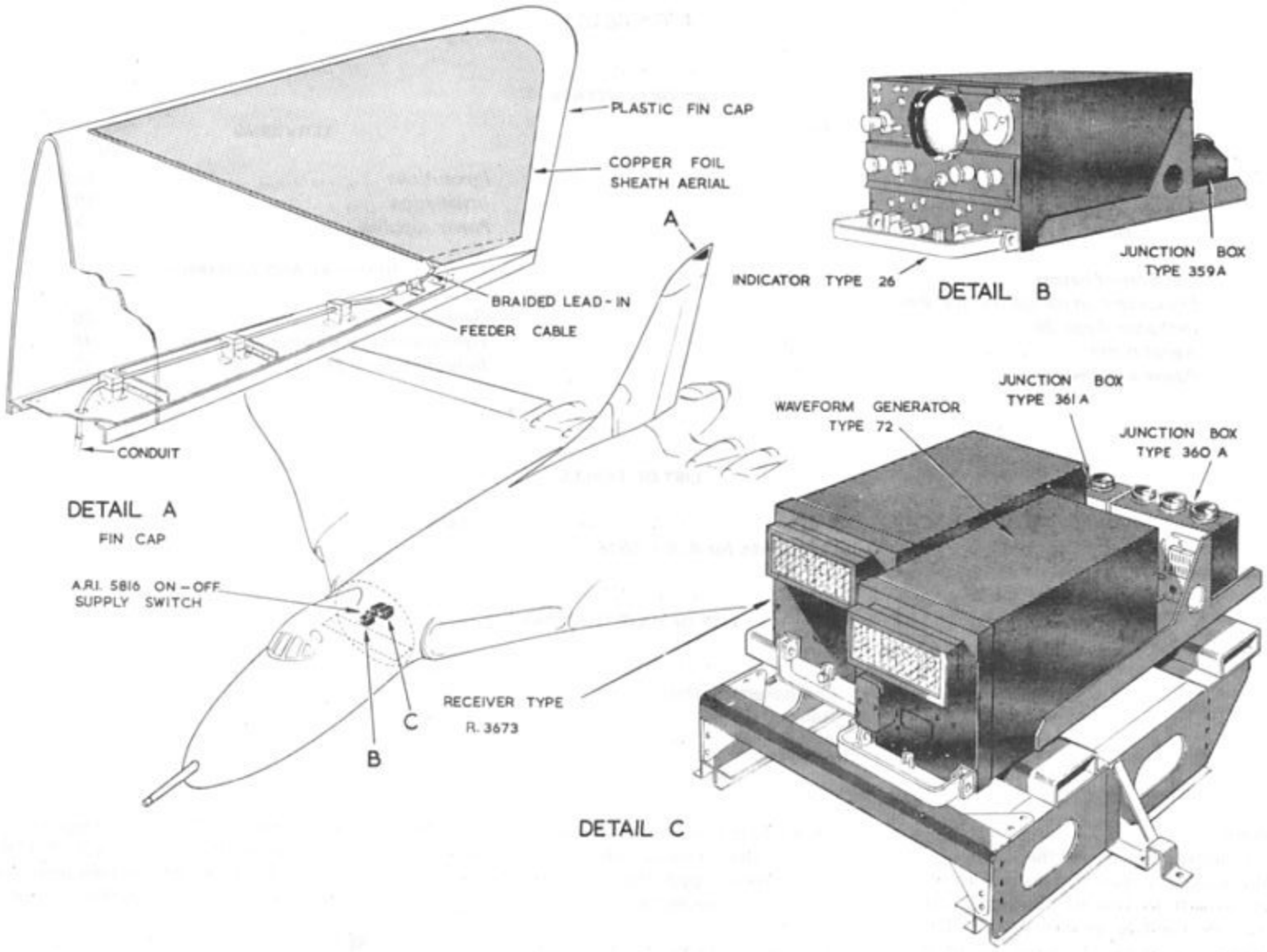

Fig. 1 Component location

DESCRIPTION AND OPERATION

Component details

5. The Gee Mk.3 installation is under the control of the navigator plotter and consists of the following major components:-

Receiver	Type R3673
Waveform generator	Type 72
Indicator C.R.T.	Type 26
Suppressed fin aerial	supplied with fin
Junction box	Type 359A
Junction box	Type 360A
Junction box	Type 361A
On/off switch	Ref.No.5CW5827

All controls used in normal operation of the installation are carried on the indicator unit.

Equipment on navigators' top shelf

6. The receiver unit, Type R3673, and waveform generator, Type 72, are located on the navigators' top shelf. Both units are mounted side by side on standard S.B.A.C. resilient racking.

7. The junction boxes, Type 361A, for the receiver unit and Type 360A, for the waveform generator, are secured to the rear framework of the rack and the units locate into the junction boxes through dowels which project from the unit back plates. A spring-loaded clamp on the front member of each mounting rack holds the unit in position on the rack, and also holds the unit's carrying handle.

8. The connections between the receiver and the waveform generator units and their respective junction boxes are made via Jones - type plugs and sockets. The inter-connections between the junction boxes are carried out through connectors terminating in Mk.4 miniature sockets.

Indicator, Type 26

9. The indicator unit, Type 26, is installed in a single type standard S.B.A.C. mounting rack, with junction box, Type 359A, attached to the rear framework of the rack. The indicator unit is located in the navigator plotter's front panel.

Aerial system

10. The aerial for the A.R.I.5816 is built into the cap at the extreme aft tip of the fin. It consists of a copper foil sheath secured to the inside contour of the preformed insulated fin cap, two copper braid leads being attached to each side of the aerial to form a suitable lead in.

Power supplies

11. The power supplies to the installation are controlled by a double-pole switch labelled GEE, located on the navigators' panel. The 28-volt d.c. supply from fuse 718 in panel 48P, is fed via terminals 2-1 of the Gee switch to the installation. From terminal 1 also, the supply is fed via a suppressor, Type 5CY1002, to a blower motor installed behind the navigators' panel to provide cooling air for the equipment, (Book 2, Sect.6, Chap.7). The 115-volt, 400 c/s. a.c. supply is fed from fuse 233R in panel 28P.

SERVICING

Precautions

12. Servicing personnel in particular are warned that a.c. and d.c. voltages in excess of 100-volt can be dangerous to the extent of causing personal injury, fatal or otherwise. It is essential that the utmost attention be given to servicing instructions where matters of safety are concerned, and that maximum co-operation be maintained between trades mutually concerned in servicing operations.

Installation

13. The setting up, operating and servicing instructions for the A.R.I.5816 and its components are contained in A.P.2557M. The security of all components should be checked regularly. All connectors, plugs, sockets and terminal blocks should be examined for damage and ingress of dirt and moisture.

Power supplies

14. Using a ground supply trolley, check with a suitable test meter that the d.c. input is 28-volts at pins C (pos.) and D (neg.) of the input socket to J.B.360A, and that the a.c. input is 115-volt at pins A and B at the same socket.

REMOVAL AND ASSEMBLY

General

15. Access to the components is straightforward, but the following points should be observed. When it is necessary to remove or replace any components, secure all loose connectors to the adjacent aircraft structure to prevent damage.

Equipment on navigators' top shelf

16. Release the securing screws holding the top half of the navigators' port side panel and lower to the extent of its strain cords. Access is now available to remove the receiver and waveform generator, by releasing the knurled screw on

the front panel of each unit, and then sliding the unit off its mounting tray. On replacing, ensure that the locating dowels on the rear panel are properly engaged.

Indicator, Type 26

17. The indicator unit, which is located on the navigator's front panel, is easily removed by releasing the knurled screw and then sliding the unit off its mounting tray.

TABLE 1

Connectors for A.R.I.5816

A.V.Roe Item No.	Cable form	Connecting between
6/T3411	Uniradio 43	R.P.B. plug 199 to aerial break
7/T3411	Uniradio 43	Aerial break to aerial
2/T4779	Miniature 18J	Indicator (yellow) to waveform generator (yellow)
3/T4779	Miniature 25C	Indicator (red) to receiver (red)
4/T4779	Uniradio 43	Receiver to R.P.B. plug 199
5/T4779	Miniature 4A	Waveform generator to supply plug 436
6/T4779	Miniature 18J	Waveform (blue) to receiver (blue)

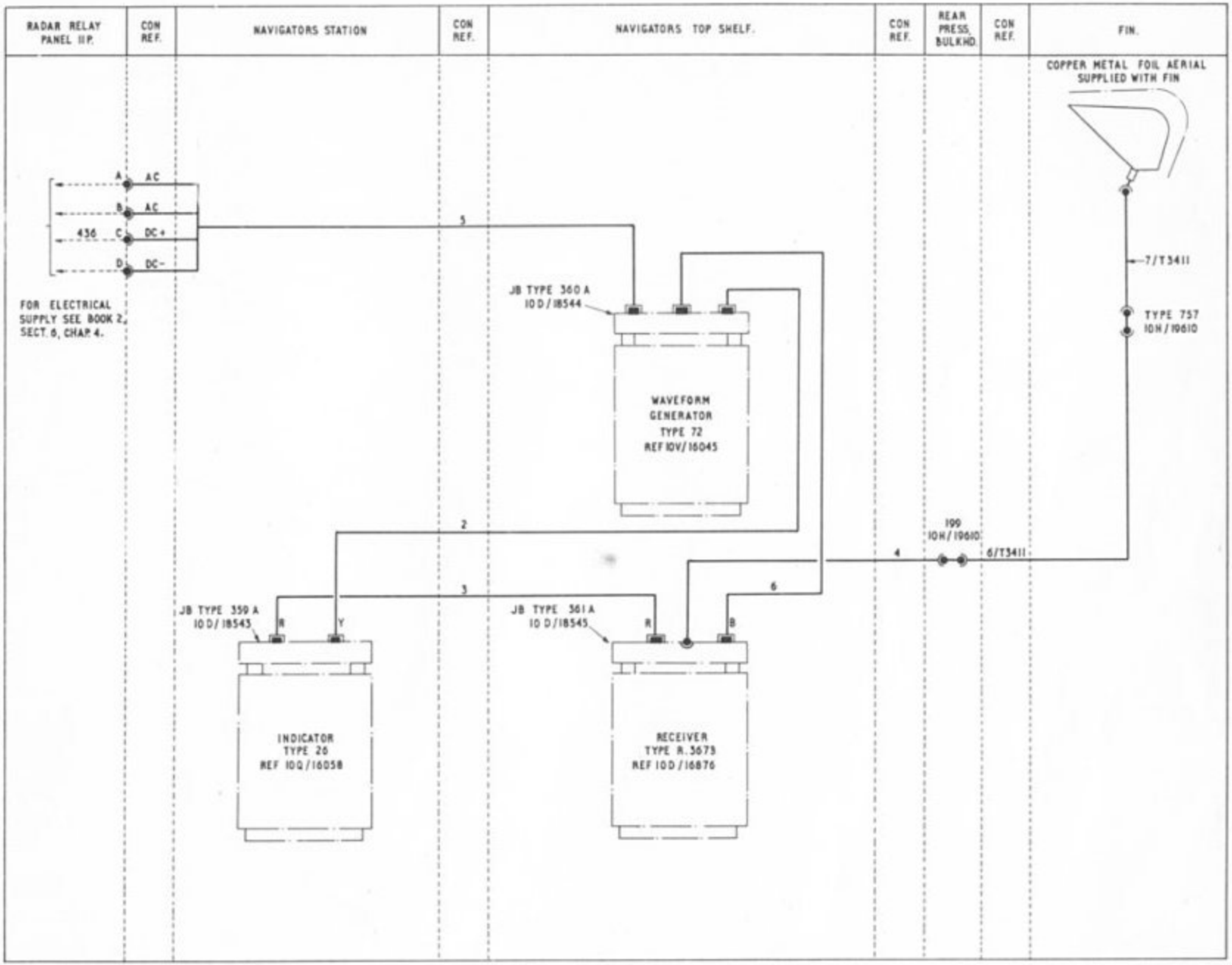

Fig. 2 A.R.I. 5816