

Chapter 7

A.R.I. 5771

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Introduction

1. The basic principle of the Loran installation is similar to that of Gee; the main difference lies in the method of operation in conjunction with the ground stations. The purpose of the equipment is to provide the navigator with a long

range navigational system, which will enable him to fix the aircraft's position from information displayed on the indicator unit.

2. The installation consists of a combined receiver-indicator operating in

conjunction with a trailing wire-aerial. Details of the installation are illustrated in fig.1; the major items of equipment and connector assemblies being listed in Table 1 and 2 respectively. The equipment is fully described in the publications listed in Table 1.

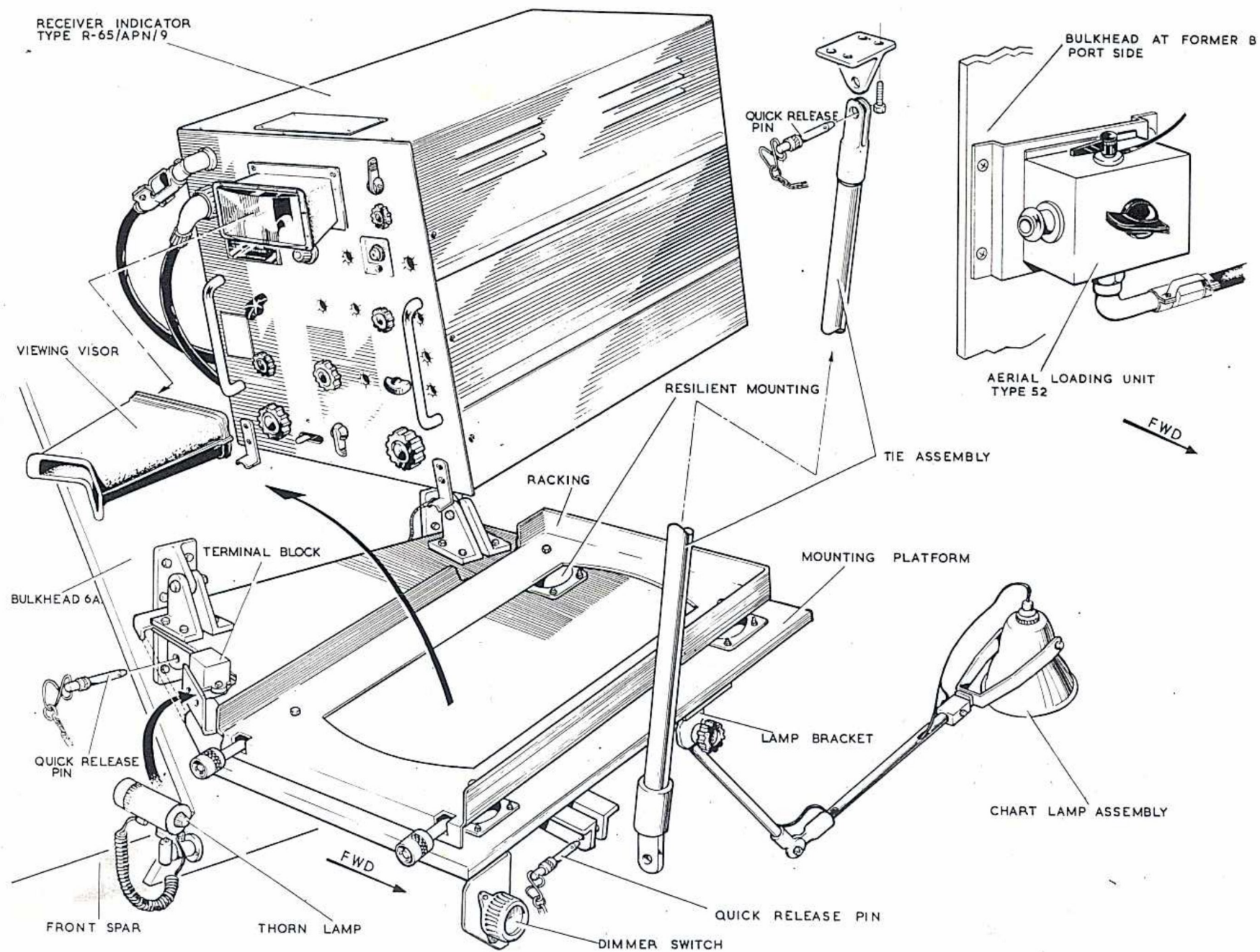


Fig. 1 A.R.I. 5771 installation details

◀ Aerial loading unit re-positioned ▶

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TABLE 2

Connectors for A.R.I.5771

Item No.	Cable from	Connecting
2/T.5664	Uniradio 67, with outer sheath and braiding stripped over complete length	Trailing aerial to aerial plug break.
3/T.5664	Uninyvin 16. 1 off	Aerial plugbreak "Loran" to aerial loading unit
4/T.5664	Uniradio 67	Aerial loading unit to receiver
5/T.5664	Uninyvinmet shh 20 - 2 off (Cables twisted together; approx. 6 twists per foot length)	Receiver to radio power panel, (Plug PL.731)

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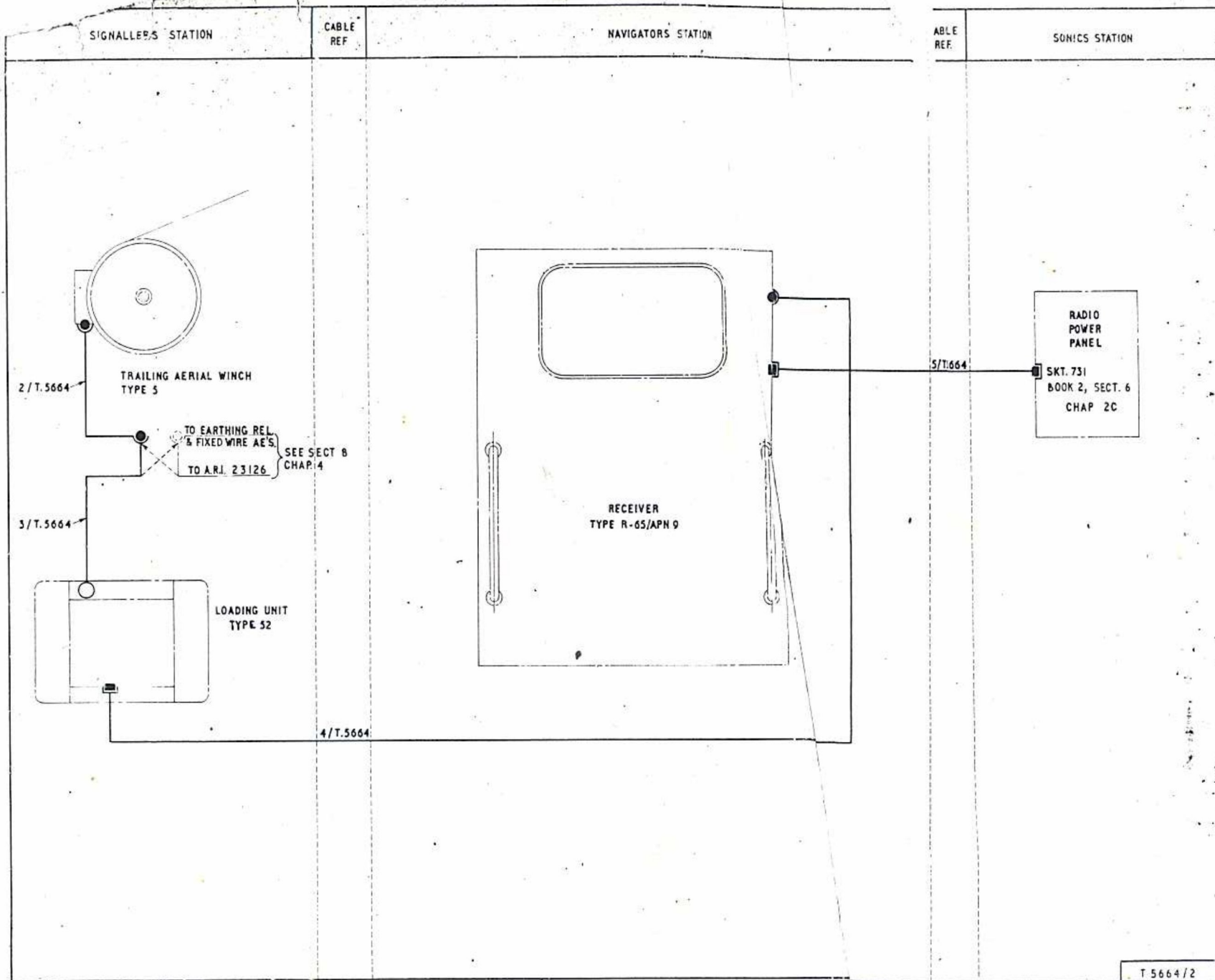


Fig.3 A.R.I. 5771
 <Cross ref. at aerial changed>
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DESCRIPTION AND OPERATION

RECEIVER-INDICATOR

3. This unit is mounted on a hinged platform at former 6, (Port), angled forward to face the routine attack navigator. The platform may be folded to lie flat against bulkhead 6A when the receiver indicator is removed, thereby giving improved access to the armament control panels.

4. The received pulse signals are displayed on a cathode ray tube; the display being magnified by a lens fitted to the front of the indicator. A rubber visor may be fitted over the lens to shield unwanted light, or fitted in a stowage on the underside of the navigator's table leg console.

5. The receiver section operates on any one of four preset frequency channels. All operational controls, including the channel selection switch, are located on the front panel of the unit, whilst two plugs accommodate the aerial and power supply connections. Power supply to the

unit is controlled by the "RECEIVER-GAIN" switch, and indication of "on" is provided by a pilot lamp. The supply is taken through a 2-amp fuse; a spare fuse being located in a clip beneath the lens holder.

TRAILING AERIAL

6. The trailing aerial is wound on a winch which is operated by an aerial winch, Type 5, at the signaller's station. When required for use, the aerial is lowered through a fairing on the port side of the fuselage. A series of lead weights attached to the aerial allows the wire to fall and unwind freely. The aerial fairing assembly is detailed in fig.2. A spare aerial reel is stowed on the floor at the signaller's station, just aft of bulkhead B.

Aerial change-over

7. By means of a plugboard at the signaller's station, the Loran receiver

may be connected to the fixed wire aerals, the trailing aerial then being connected to the No.2 H.F. installation. For details of the fixed wire aerals, refer to Sect.8, Chap.3 of this publication.

Aerial loading unit

8. The aerial loading unit is mounted on the forward face of bulkhead B. A switch is provided on the face of the unit for making LONG-SHORT aerial matching selections.

POWER SUPPLIES

9. The equipment operates from a 115-volt, 1600 c/s, single-phase a.c. supply from the No.6 inverter, Type 201B, via a single-pole switch labelled LORAN on the radio power panel. For further details of the supply circuits, reference should be made to Book 2, Sect.6, Chap.2B and 2C of this publication.

SERVICING

Precautions

10. Before any servicing is attempted, the general servicing precautions outlined in Chapter 1 of this section should be noted.

General

11. At the appropriate servicing periods the receiver-indicator should be examined for damage, corrosion, security and correct bonding of the mounting. Connections to the aerial loading unit should be checked for security, and the selector switch for

smooth operation. Full instructions for setting up and operating the receiver-indicator are contained in the publication listed in Table 1.

Trailing aerial

12. This item requires little servicing. Examination should be made periodically for the correct operation of the brake and ratchet assembly on the winch. When dry, the spindle grease trap should be cleaned, and filled with anti-freezing grease.

Further servicing information on the aerial winch is contained in the publication listed in Table 1.

13. To test the insulation between the aerial and the airframe, 8 to 9 feet of the aerial should be run out, and a 500-volt insulation tester connected between the aerial and the aircraft earth. With the aerial socket disconnected at the receiver-indicator, the insulation resistance of the aerial should be in the region of 20 megohms under normally dry conditions.

REMOVAL AND INSTALLATION

Precautions

14. Prior to the removal of any item of equipment, the general instructions outlined in Chapter 1 of this section should be noted.

15. As removal of the equipment is straightforward, detailed instructions are not considered necessary.

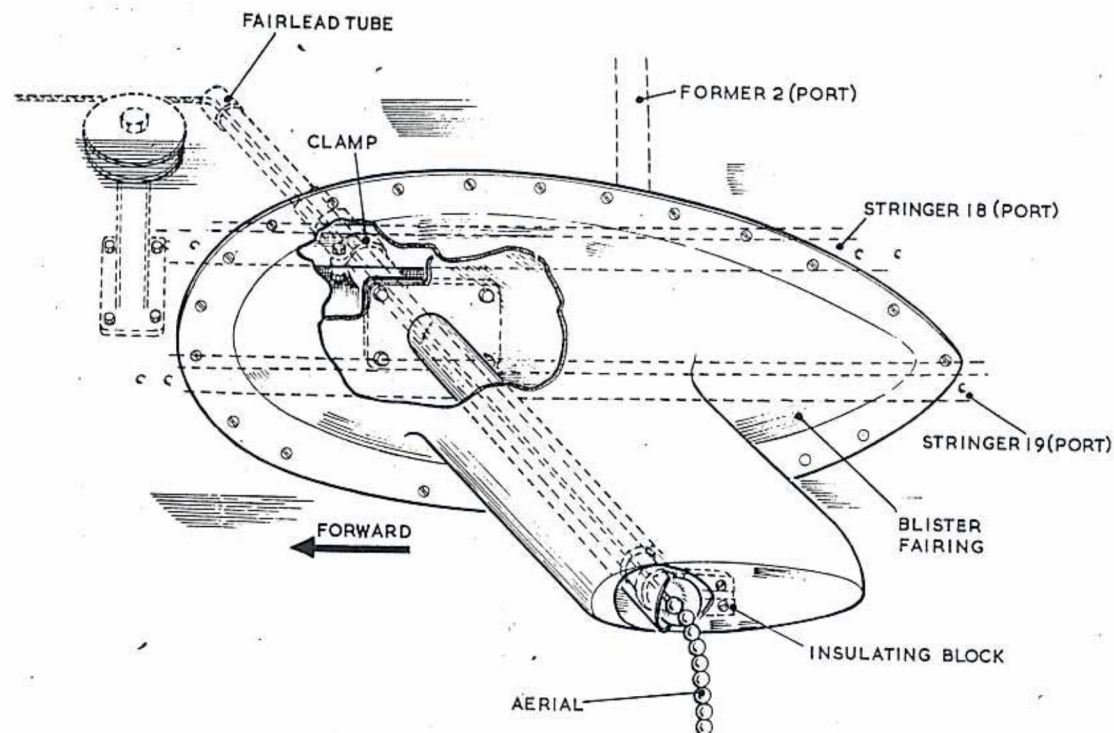


Fig.2 Details of trailing aerial

TABLE 1

Major items of equipment

Item	Type	Ref.No.	A.P.Reference
Receiver	R-65/APN/9	110QB/71	AP.2915.B. Vol.1
Aerial loading unit	52	10BB/6840	
Trailing aerial winch	5	10B/9005	
			AP.1186, Vol.1, Part 4, Sect.6

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