3 cm Marine Radar Equipment Type NR 505

DESIGNED primarily for the small ship where space is at a premium and power is limited, Type NR505 radar is also eminently suitable for use in launches, tugs etc. It can also serve as a standby radar in larger vessels.

Features

Very small equipment, capable of installation in the smallest classes of vessel.

Choice of five ranges by single control.

Power economy effected by automatic return to 'standby' after 2 minutes' viewing.

High-definition 5-inch display, increased to 8 inches diameter by magnifier.

Circuits for protection against sea-clutter and bad-weather interference.

EQUIPMENT

The equipment comprises three compact units:

(a) Display Unit Type 4118A.
(b) Transceiver Unit Type 4119A.
(c) Aerial Unit Type 4120A.

The cylindrical display unit is housed in a removable metal case, and is designed for mounting on a deckhead, bench or bulkhead. Handgrips are fitted, and the whole is mounted on a bracket and tilted to a convenient viewing angle. Bearing measurements are taken from a perspex screen in front of the display, with calibration at 10° intervals, while range is obtained by interpolation between range rings.

The equipment is brought into operation by the action of a 'press-to-view' switch on the front of the display. After a period of 2 minutes the system will automatically return to 'standby'. Should continuous viewing be desirable, an over-ride switch can be incorporated.

The transceiver unit houses all the major electronic equipment, including the power unit. It is contained in a compact cabinet, which can be mounted in any convenient space in the wheelhouse. The five main controls are grouped on a circular plate on the front of the cabinet. The stabilized power unit produces all the voltages required for the complete equipment.

The aerial unit is a 3-foot slotted waveguide array, end-fed via a rotating joint. The aerial is driven from a fractional horsepower motor, by means of a toothed reinforced belt. The entire assembly is mounted on a Fibreglass base and is covered by an easily detachable Fibreglass radome, specially constructed to prevent internal reflection. The aerial may be fitted directly to the deck, or attached to the top plate of a lightweight tripod mast.

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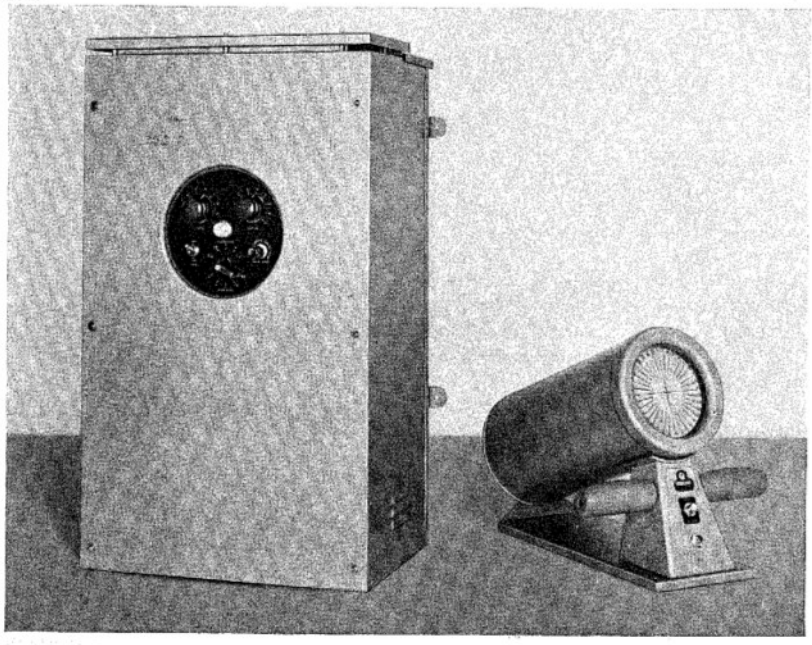

Data Summary

Frequency band: 9345–9475 Mc/s.
Peak output power: 2·5 kW.
Pulse repetition frequency: 2000 pps approx.
Pulse length: 0·15 μs.
Beamwidth: Horizontal 2·6°, vertical 22°, at half-power points.
Sidelobe attenuation: 26 dB down on main lobe.
Scanning rate: 22 r.p.m.
Ranges: 0·6, 1·5, 4, 8, and 14 nautical miles. (Min. range 30 yards).
Range accuracy: ±25 yards on 0·6 n.m range ±2% on other ranges.
Bearing accuracy: To within 2½°.
Discrimination: Targets at same range (any range) which subtend an angle of 3½° at display centre show apart.
Power supplies: 24 V DC, or from 110 or 220 V DC using a rotary transformer. Generators or rectifiers can also be supplied for operation from AC mains.
Power consumption: 8–10A (4A on 'standby').
Dimensions:

Height	Width	Depth	Weight
Display Unit Type 4118A			
14½ in. (36·8 cm)	11¾ in. (29·8 cm)	25½ in. (64·8 cm)	14 lb (6·4 kg)
Transceiver Unit Type 4119A			
26 in. (66 cm)	16 in. (40·6 cm)	10 in. (25·4 cm)	62 lb (28·2 kg)
Aerial Unit Type 4120A (without tripod)			
18¾ in. (47·6 cm)	40¾ in. diameter (103·5 cm)		60 lb (27·3 kg)

Marconi

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