



50 cm-band Terminal Area Radars (50 kW) Types S 264 and S 264/H (Mark II)

THESE radars give completely reliable cover in terminal areas to ranges of 100 miles or more. They combine good horizontal definition with an outstanding m.t.i performance. These factors, together with the advantages of operating in the 50 cm-band to obtain an all-weather performance, result in a radar cover which can be relied upon to give a clear and unambiguous picture to the controller under all conditions.

Type S 264/H differs from S 264 only in the design of the aerial which provides additional high cover with some reduction in maximum range.

Features

Parametric receiver of high sensitivity. Virtual immunity from cloud and rain clutter. No polarizers necessary. Very short minimum range for monitoring I.L.S or P.A.R approaches. Particularly efficient, fully coherent m.t.i system of permanent-echo suppression. High performance with comparatively low-power transmitter. Full remote control facilities provided. Single or dual transmitter versions available. Can be converted to high power retrospectively. P.R.F stagger and p.r.f discrimination (see page 357) can be included. Outstanding reliability in operational performance and functioning of equipment.

Suitable for use in all climatic conditions.

EQUIPMENT

The aerial system is mounted on or near to the Aerial Head building which is generally sited near the centre of the airfield away from local obstructions. The transmitter, receiver and remote control rack are mounted inside the building and are connected by cable to the Distribution Unit in the equipment room of the control tower. The distance between the aerial head and the control tower may be up to 4500 yards (4000 metres) and the line amplifiers and cable are selected accordingly. The Distribution Unit contains all the m.t.i circuits together with Range Marker Generator and video distribution system. This unit may be separated from the displays by up to 200 yards (170 metres) of cable. Either fixed or moving coil PPI displays may be used. These are described on pages 361 to 366.

A parametric receiver of the up-converter type is fitted. This uses semiconductor varactors and a klystron pump to convert the input frequency to 10000 Mc/s. A conventional 3 cm mixer is used to produce the i.f.

Full remote control of the radar equipment and turning gear at the aerial head, may be carried out from the control tower. Change-over of transmitter and receiver can likewise be made in the case of dual transmitter installation.

The transmitter can be changed retrospectively to the high-power type with little difficulty as the standard aerial head building layouts are designed to allow for this. The equipments then become radars S 264A and S 264A/H respectively. No changes are required to the aerial system or the Radar Distribution Unit except the addition of an extra delay cell to the latter.

Data Summary

Frequency range: 582-606 Mc/s. Crystal-controlled operation on any eleven spot frequencies.

Peak power output: 50-60 kW.

Pulse recurrence frequency: 500-800 p.p.s.

Pulse length: 2 or 4 μ s.

Receiver noise factor: Better than 2.5 dB.

System cancellation: Better than 40 dB.

Cancellation ratio: Better than 30 dB at 5 rev/min and 770 p.p.s.

Aerial system: Horizontal beamwidth 2.2° (approx.) measured one way at -3 dB points.

Power supplies: Aerial turning gear 380-440V ($\pm 10\%$) 50 c/s, 3-phase a.c.

Radar equipment 220-240 V ($\pm 6\%$) 50 c/s single-phase a.c.

Power consumption: 82 kVA max. at 90 knots wind speed.

Available displays: SD 3000 series (see page 362), SD 1000 series (see page 365), Type SD 701 (see page 361).

Dimensions:

	Height	Width	Depth
Transmitter	5 ft 4 in. (162 cm)	2 ft 6 in. (76 cm)	2 ft 6 in. (76 cm)
Receiver	7 ft (213 cm)	2 ft 6 in. (76 cm)	2 ft 6 in. (76 cm)
Distribution unit	7 ft 9 in. (236 cm)	1 ft 11½ in. (59 cm)	1 ft 10 in. (56 cm)

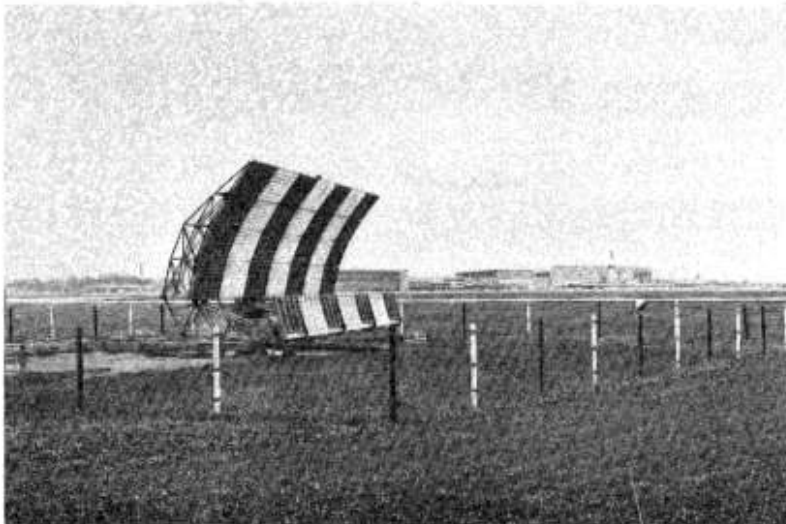
Aerial system

Length of reflector 52 ft 6 in. (16 m)

Height of reflector 12 ft (3.6 m)

Overall height 20 ft (6.1 m)

Weight 8 tons (8200 kg).



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