Performance in wind: Normal operation in windspeeds up to 60 knots; (111 k.p.h).
6 r.p.m at 80 knots (148 k.p.h). Will withstand 120 knots (222 k.p.h) without damage or permanent deflection.

Ice loading: 2lb/ft² in 70 knots (130 k.p.h).

Full details are given in Marconi Radar Data Sheets A4 (S) Band A5 (L) Band A6 (back-to-back)

Transportable/Static Heightfinder Aerial

The basic S600 transportable/static heightfinder aerial is the Type S1017 which has a 4·27×1·3m (14×4·25ft) double-curvature reflector and operates in the 5·5cm (C) Band. A horn feed is used to permit frequency diversity operation.

The aerial is normally supplied as a self-contained aerial vehicle which can be lifted by helicopter, carried in transport aircraft or towed by a light vehicle such as a landrover. It can also be supplied in static form for mounting on a gantry, tripod or building roof.

Lightweight construction permits exceptional mechanical agility giving a height data rate of some 17 random heights per minute increasing to 22 by programmed control of azimuth and elevation drive motors. Reflector elevation angles from −5 to +55° are obtainable at velocities of up to 45°/sec. Azication is achieved by a thyristor controlled 4·5 h.p d.c motor and precision servo system. A velodyne mode is available for continuous rotation, up to 18 r.p.m, for emergency volumetric scanning with a 'look back' interrupt facility for spot heights. Accurate data take off is assured by the use of a 'built-in' Vertical Reference Unit.

A standard tripod mount is used which folds readily for transportation. A standard set of running gear, consisting of road wheels and suspension, can be rapidly attached to the aerial assembly. The reflector and horn feed folds down to the horizontal position for transportation.

This aerial is used with the 1MW 5·5cm (C) Band Transmitter/Receiver Type S2013 described on page 260.

Features

Fully transportable.

Simple 'nodding' mode or computer controlled for automatic operation with Height Extraction for up to 22 heights per minute.

Excellent sidelobe performance.

Data summary

Reflector size: 4·27m×1·3m (14×4·25 ft).

Horizontal beamwidth: 3·0°.

Vertical beamwidth: 0·9°.

Sidelobe levels: 25dB down on main beam.

The 5·5cm (C) Band heightfinder aerial

Polarization: Circular.

Operating temperature: −30 to +50°C.

Storage temperature: −40 to +65°C.

Operational wind speed: Gusting to 70 knots without tethering.

Survival wind speed: Gusting to 120 knots with tethering.

Ice coating: 6·3mm (0·25 in.) maximum.

Maximum ground bearing pressure (deployed): 196·6kg per cm² (2800lb/ft²).

All fixings and materials are adequately protected against environmental corrosion and the aerial equipment will operate in all climatic conditions.

Full details are given in Marconi Radar Data Sheet A3.