



Underwater Television Equipment *Type BD 814B*

THIS EQUIPMENT, designed to carry out underwater investigations at depths up to 500 ft, is based upon the well-known Marconi Image Orthicon camera which has been used with great success by television stations throughout the world. The welded-steel casing has been designed by Siebe, Gorman & Co. Ltd., world-famous diving and underwater equipment specialists. The equipment was used to great advantage during the research operations in connection with the 'Comet' disaster off the island of Elba.

FEATURES

Revolving lens, submarine-periscope type optical system, giving a hemispherical field of view and adjustable to compensate for movement of the casing. A 'zoom' feature is incorporated.

Remote control of camera focus, of iris diaphragm, of zoom lens and of the periscope lens (azimuth and elevation).

Remote indication of the various control settings.

Flood alarm, giving aural and visual warning of water entering the casing.

Demountable underwater cable connector avoiding the use of a long, permanently attached length of cable.

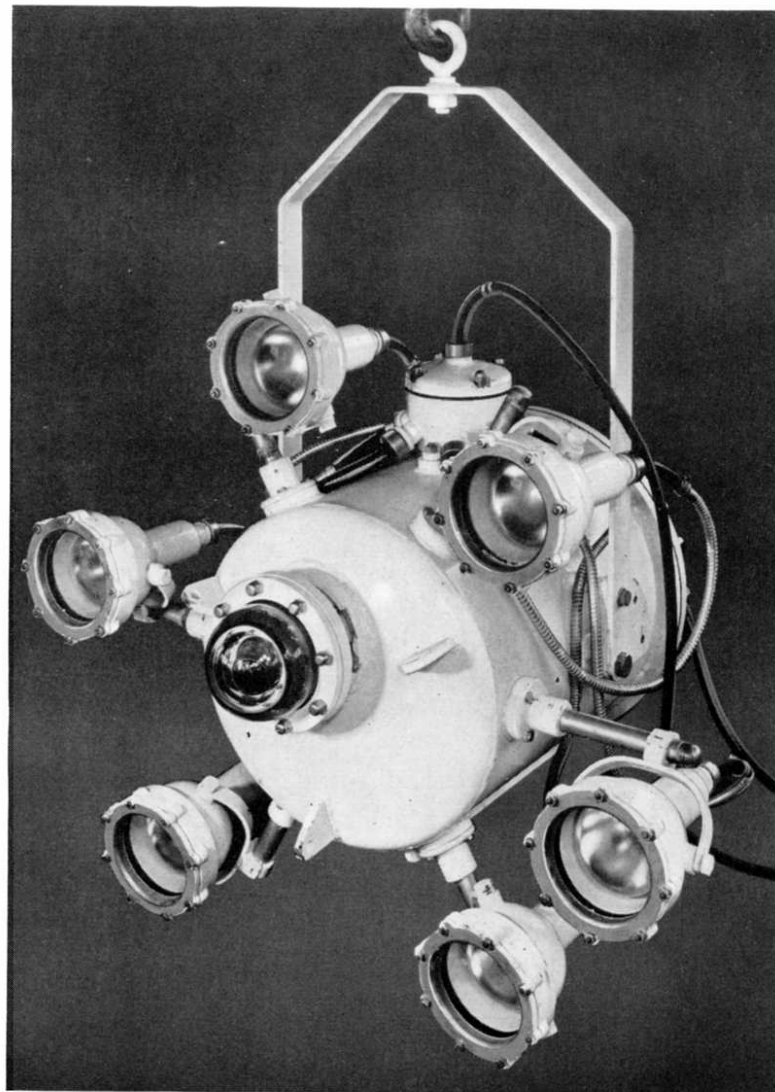
Cable supplied in plug-in lengths of 250 ft.

Multicore connectors for surface units incorporate protection against incorrect assembly.

Up to six monitors may be used in conjunction with a camera, without further equipment.

Underwater lighting is by six 250 W pre-focused lamps which can be switched in groups.

A mobile regulated power supply unit produces all supplies for the electronic equipment.



6596

CONSTRUCTION

Underwater Casing. This consists of a welded steel cylinder with anti-corrosion finish. The camera mounting platform is part of the front

cover plate which is held in position by captive studs and bolts. It incorporates a specially designed sealing system, which becomes progressively tighter with increasing water pressure. A projection-piece from the cover carries the cable connector. At the front of the casing is mounted a specially-designed dome-shaped lens in which is the periscope optical system. This dome is sealed similarly to the top plate. The whole camera unit hangs on a 'U' shaped trunnion arm and can be positioned vertically, horizontally or at 45°.

Optical System. The periscope-type revolving lens is driven by electric motors which are remotely controlled. Both periscope and motors are mounted on a plate between the camera and the front of the casing.

Camera. The camera is a standard Marconi Image Orthicon with one side removed and replaced by a side panel bearing the remote control mechanism for focus and also parts of the periscope controlling system. No view-finder is used.

Camera Control Equipment. The standard equipment which is located at the control position

consists of the following units:

1. *A Camera Control Chassis Type BD 626*, carrying all the normal camera controls, mounted with a Picture and Waveform Monitor Type BD 627 (see page 83) in a mobile case.
2. *A Remote Control Unit* containing periscope controlling equipment, together with focusing and lighting controls, mounted in a mobile case similar to that used for the camera controlling equipment.
3. *A Mobile Regulated Power Supply Unit Type BD 629* (see page 99) producing supplies for control mechanism and camera
4. *A Synchronising Generator Type BD 638* (see page 85) which provides the television timing waveform.

Lighting. The six lamps are mounted radially round the casing on stubs which fit into lugs bolted on to the cylinder. They can be moved on the stubs, giving a certain degree of directivity if required. Supply leads to the lamps come from a junction box on the side of the casing.

DATA SUMMARY

Operational depth: 500 ft (tested to 1000 ft).

Range of vision: Dependent on clarity of water and intensity of natural and artificial lighting. Lighting may be varied to achieve optimum viewing conditions in any particular location.

Field of vision: Solid hemisphere.

Television standards: 625 lines, 50 fields, 2 to 1 interlaced, or 525 lines, 60 fields, 2 to 1 interlaced.

Mains input power:

Television equipment approx. 2 kVA.

Lighting equipment approx. 2 kVA.

Mains input voltage: 117 V 60 c/s or 230 V 50 c/s single phase.

Optical system: Zoom lens, focal length 1.4–2.8 in. which can be remotely controlled to point in any direction within a hemisphere. The axis of this hemisphere can be pointed vertically downwards, horizontally or at 45°.

Casing lens: Spherical, optically corrected.

Dimensions of casing:

	Overall	Diameter, including
Diameter	Length	cable entry
2 ft 8 in.	1 ft 10 in.	2 ft 2 in.
(81.3 cm)	(53.3 cm)	(66 cm)

Weight of camera and casing:

650 lb (295 kg) in air (including lights).

290 lb (132 kg) in water (including lights).

Marconi

MARCONI'S WIRELESS TELEGRAPH COMPANY LIMITED

Head Office: Marconi House, Chelmsford

Telephone: Chelmsford 3221. Telegraphic Address: Expanse, Chelmsford

www.tvcameramuseum.org