

NEW PRODUCTS

MARINE ECHO-SOUNDER

THE latest addition to the Marconi International Marine Company's range of echo-sounders is the Contour, a precision instrument giving a resolution of up to 0.2 in/ft. The new recorder uses a servo-controlled ceramic pen, heated by a 6 V coil, and which writes on heat-sensitive recording paper.

A linearly-increasing voltage (with time) provides a voltage proportional to depth and this is quantized and applied to an integrator which allows only the strong seabed echoes to register and ignores weak echoes from fish, etc. The desired signals are then passed through a d.c. chopper amplifier to a phase-shifting stage. The phase-shifted signal and a local reference signal are then fed to a two-phase motor, in a balanced bridge, which drives the pen.

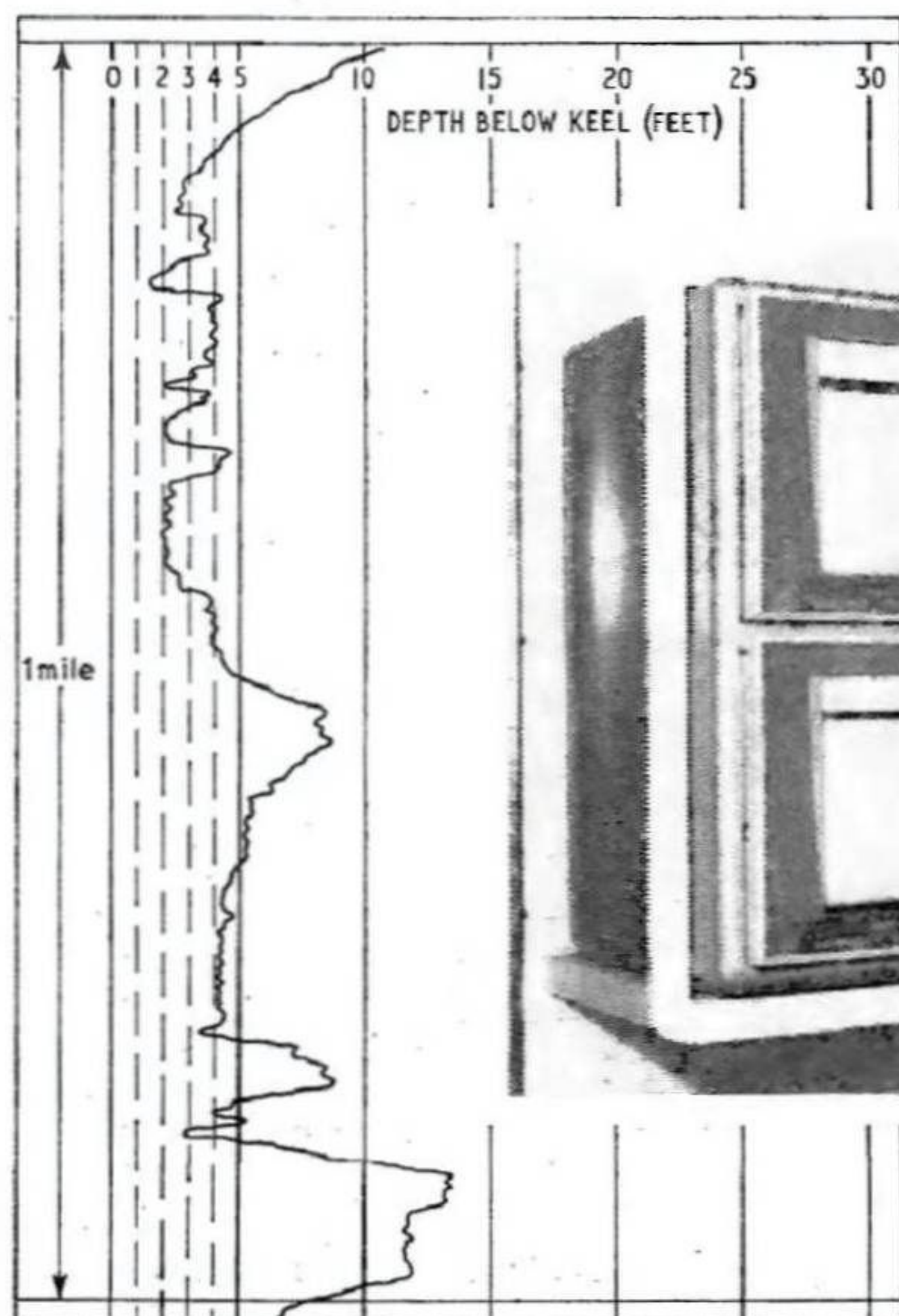
The transmitter provides about 1 kW peak power at about 50 kc/s and pulse duration is 200 μ s, 1 ms or 2 ms, depend-

ing on the range of operation. Soundings can be made at the rate of 40 to 100 per minute. The three depth ranges are 2.5-30 ft, 2.5-30 fathoms and 25-300 fathoms, and the range in use is indicated automatically at the recorder. The recording paper is 7 in wide and maintains a constant speed of 0.5 in/min, giving 24 hours recording time from one roll of paper, which incidentally has an indefinite shelf life.

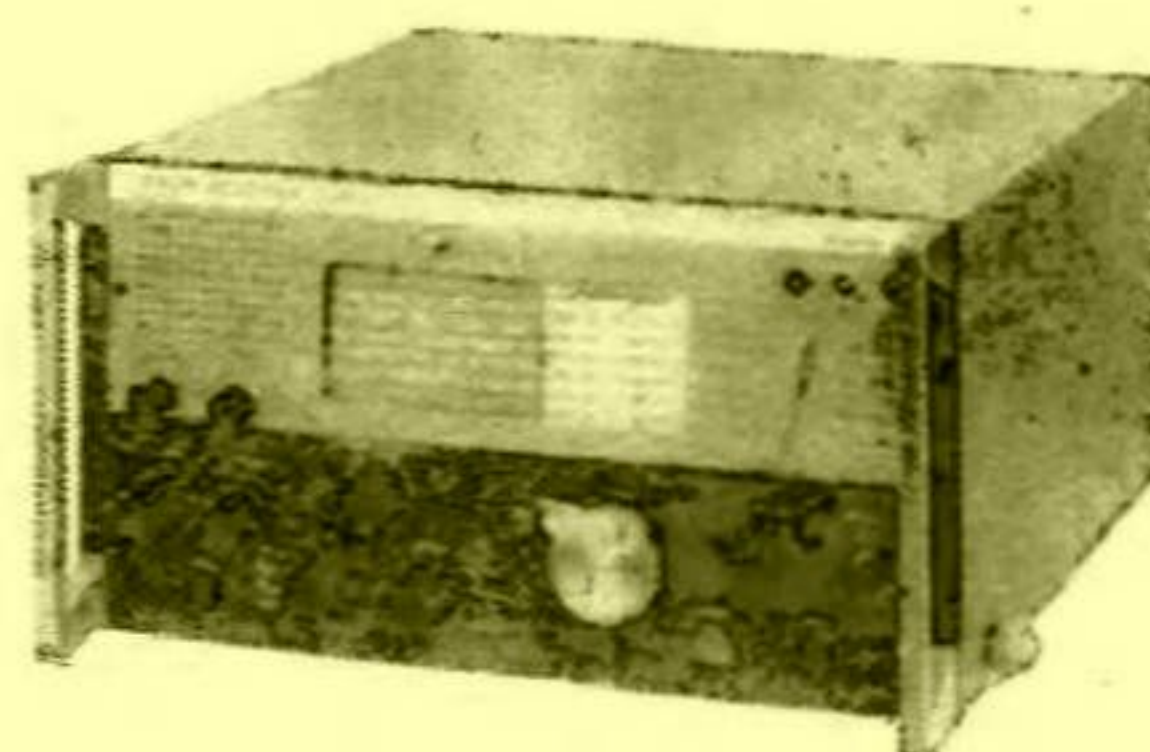
The four MIMCO "Contour" recorders shown in the illustration are installed aboard Shell's *Philine* tanker giving fore, aft and two amidships depth soundings, in order to obtain a clearer picture of hull clearance in very shallow water. The recorders operate simultaneously down to 18 in at 100 soundings/min and a resolution of 0.2 in/ft. A sounding taken on board the *Philine* as she approaches one of her berths is illustrated below.

The address of the Marconi International Marine Co. Ltd. is Elettra House, Westway, Chelmsford, Essex.

WW 301 for further details



equipment systems components



COMMUNICATIONS RECEIVER

DESIGNED for general purpose telephony, telegraphy and facsimile reception in the 13 kc/s to 28 Mc/s range is the R408 communications receiver from Redifon Ltd., of Broomhill Road, London, S.W.18. Transistors are used throughout this set, which has been type approved by the G.P.O. and is suitable for marine use. Fourteen switched ranges are provided to give continuous coverage and an extra position is included on the waveband switch to bring in the pre-tuned 500 kc/s marine distress and calling frequency.

For frequencies below 650 kc/s, the intermediate frequency is 80 kc/s and above this double conversion is employed. While the second i.f. remains constant at 80 kc/s, the first changes as the signal frequency increases; starting at 470 kc/s, then 1.5 Mc/s and finishing at 4.5 Mc/s. The modes of operation include a.m., c.w., s.s.b. (pilot or suppressed carrier) and i.s.b. (switch selection of upper or lower sidebands).

A feature of the R408 is that the a.g.c. system is selectable, with delay times of up to 10 seconds and attack times of up to 5 milliseconds. Minimum times are 1 second and 100 msec respectively. Another feature is continuously variable bandwidth, from 800 c/s to 8 kc/s for a.m. and c.w. working and from 800 c/s to 4 kc/s on s.s.b. For c.w. the bandwidth can be narrowed by means of a crystal filter which reduces it to 160 c/s. Audio, line i.f. and a.g.c. outputs are provided.

The standard R408 will operate from either 100/125 or 200/250 volt a.c. (50/60 c/s) supplies. Also available is a version for 24 volt d.c. operation, and an adaptor to allow this version to be driven from either 110 volts or 220 volts d.c.

WW 302 for further details