

give a one way drive to the roller, and therefore allows the roller to be driven by the worm wheel in one direction, and allows the roller to be moved by hand by means of a knob on the right hand side of the roller. This knob is for pulling the paper flat against the cover of the paper trough, or for removing a portion of the chart if required. After the paper passes through the rollers it is then allowed to hang between a heater situated under the case of the Recorder. The heater is in the form of two insulating plates with wire wound round them and a brass cover to prevent damage.

The main switch L is controlled from the outside of the case by means of a flush watertight handle. This handle, besides turning "On" and "Off" the current, also operates the gear change. Thus there are three positions to which the handle can be set, i. e. "ON" with low speed gears engaged; "OFF" or "ON" with High speed gears engaged.

The pen arm is fixed to the outer brass ring under brush J; thus the electrical impulse caused by the echo brought to brush J is transmitted to the cam and the stylus. The stylus is a wire bent down at the ends, one end passes over the paper, and the other passes over the ramps (or insulating blocks). The ramps M are for lifting the stylus on and off the paper. The ramp on the left lifts the stylus while passing over the roller, and lowers it on the paper at the beginning of its traverse across the chart. The ramp on the right again raises the stylus while passing the roller at the top of the trough, and lowers it ready for its next revolution. Attached to this ramp is a rubber wiper which cleanses the stylus every revolution.

The chart and the scale are illuminated by a lamp at the side of the Recorder and controlled by a switch.

The heater for drying the chart is hinged, so that by bringing the heater close to the paper, drying can be made quicker.

ECHO SOUNDING DEVICES

**exhibited by the Marconi Sounding Device Company
and by the Société de Condensation et d'Applications Mécaniques
(S.C.A.M.) during the IVth International Hydrographic Conference,
Monaco, 1937.**

The MARCONI SOUNDING DEVICE Co, Ltd., Marconi Offices, Electra House, Victoria Embankment, London, W.C. 2, exhibited at the premises of the International Hydrographic Bureau, during the IVth International Hydrographic Conference in April 1937, various echo-sounding devices, with the sale and inspection of which its services are entrusted.

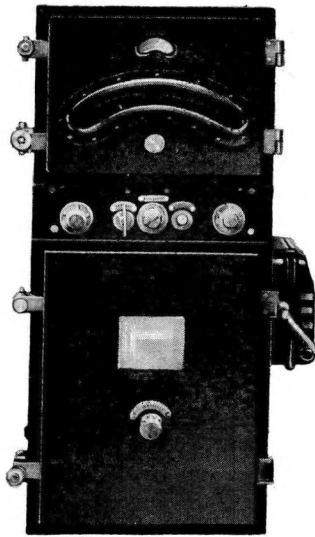
Similar apparatus were exhibited by the SOCIÉTÉ DE CONDENSATION ET D'APPLICATIONS MÉCANIQUES (S.C.A.M.).

The latest patterns include :

The MARCONI ECHOMETER, Type 421, Langevin-Chilowsky system, the description of which is given in *Hydrographic Review*, Vol. VII, N° 2, November 1930, page 105, and Vol. XI, N° 2, November 1934, page 58. This apparatus is graduated up to 160 fathoms. It is the standard big ship equipment worked with a single piezo-electric projector of about one foot in diameter fitted in the bottom of the ship. Soundings are indicated at a rate of 52 soundings per minute, these being shown by means of an oscillographic indicator, which throws a beam of light on the scale. Similar equipment can be supplied with scales of 360 fathoms or 720 fathoms.

The MARCONI ECHOMETER, Type 424. This apparatus is of the Langevin-Florisson type with Echoscope, described in *Hydrographic Review*, Vol. X, N° 2, November 1933, page 170, and Vol. XI, N° 2, November 1934, page 59.

The Echometer, Type 424, is graduated up to 90 fathoms. This equipment is remarkably compact and takes up little space. It is the standard equipment for trawlers and drifters



Marconi Echometer, type 430.

Echomètre Marconi, type 430.

The MARCONI ECHOMETER, Type 429, Langevin-Touly system, with electrolytic recorder, Marti license.

This apparatus is described in *Hydrographic Review*, Vol. XIII, N° 2, November 1936, page 110 *et seq.*

The MARCONI ECHOMETER, Type 430, special pattern for hydrographic survey and shallow water working, Langevin-Chilowsky system. Scale graduated up to 30 fathoms. The figure overleaf shows the external appearance of the apparatus. At the top, in a curved slot, is the open luminous scale graduated in feet. Indication is by oscillographic means.

As in the Echometer, Type 421, soundings are very easily read off the scale owing to the wideness of the graduations. This apparatus is principally intended for harbour surveys either with a portable projector put over the side of a launch or motor boat, or with a projector permanently fitted in the hull of a similar vessel.

The Marconi Company has placed one of these apparatus, Type 430, on view at the permanent Exhibition of Instruments at the International Hydrographic Bureau.

Note : The Marconi Company has also placed on view at the permanent Exhibition of Instruments at the International Hydrographic Bureau a wireless direction finding apparatus known under the name "Marconi Direction Finder, Type 579/354 N".

The plant includes a Direction Finding Aerial, N° 354 N; a Direction Finder and a Receiver, N° 579.

Lack of space compells us to put off to one of the forthcoming numbers of the *Hydrographic Review* the brief outline of this equipment affording the taking of wireless bearings.

H. B.

