

## THE FRENCH OCEANOGRAPHIC VESSEL "PRESIDENT THEODORE TISSIER".

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The Act for the improvement of the National Resources of France has enabled the oceanographic research vessel *Président Théodore Tissier* to be constructed for work under the Fisheries Department.

The *Président Théodore Tissier* was built by the Chantiers de la Seine Maritime, Worms & Cie, and was launched on 23rd September 1933.

The general lines of this ship are those of a trawler, but as the standard arrangement of this type restricts the possible size of compartments, it was necessary to modify the design to enable a large scientific party to be embarked and to provide flats for laboratories and technical experiment rooms.

Instead of falling back on a system of superstructures which would have adversely affected the stability of the ship, or at any rate greatly increased the rolling, a general raising of the freeboard from stem to stern makes it possible for the living quarters and experimental workrooms to be considerably enlarged without reducing the stability of the vessel. Consequently the main deck has been raised one strake, and there is a very extensive middle deck above the waterline which enables the gear to be installed which is required for the special object for which the Department's research ship is intended.

The following are the main characteristics of the vessel :

Length between perpendiculars.....	50.6 m.	(166.0 ft.)
Beam.....	8.82 m.	( 28.9 ")
Depth from main deck.....	7.0 m.	( 23.0 ")
Height between decks.....	2.40 m.	( 7.9 ")
Depth from superstructure deck.....	9.30 m.	( 30.5 ")
Draft (aft).....	4.96 m.	( 16.3 ")
Displacement at full load.....	1,240 tons.	
Designed speed on trials.....	11 knots.	
Power.....	800 h. p.	

The propelling machinery consists of a 7-cylinder M. A. N. marine Diesel engine, directly reversible (type G. 7), developing 800 h. p. at 190 r. p. m.

The deckhouse, with a large laboratory, is amidships; other laboratories will be fitted up between decks.

The windlass and trawl-winch are electrically driven.

The starboard side is kept for the working gear of the trawl, while the port side is reserved entirely for oceanographic work.

The ship is provided with cold storage for preserving fish and with refrigerating gear enabling the many compartments of the ship to be kept cool.

A stowage of 250 tons of oil fuel enables the ship to carry out a 100-day cruise, in theory, without refuelling.

The technical and scientific plant of the Fisheries Department research vessel has been studied with the greatest care in order to enable the ship to compete with the numerous investigations which will be the object of her future cruises.

### *Special navigational gear.*

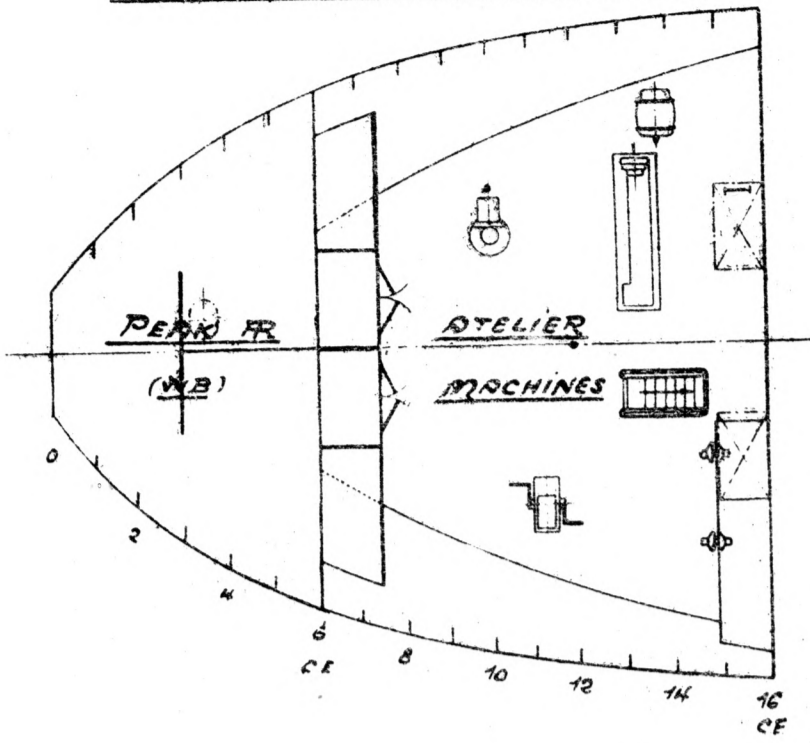
The special navigational appliances include a SPERRY gyro-compass, a wireless direction-finder, a BAULE course-recorder and a BAULE log, besides a direct-reading stroboscopic radio compass of the HARDY-LEPAUTE type.

To enable the ship to work with an accurate position even in foggy weather, she will carry on board a radio beacon buoy automatically emitting signals which can be recorded and whose bearing can be found by means of direction-finders; when the buoy is moored on a shoal under examination, this device will enable work to go on continuously from a hydrographic point of view — even, be it noted, in circumstances which are most unfavourable on account of bad visibility.

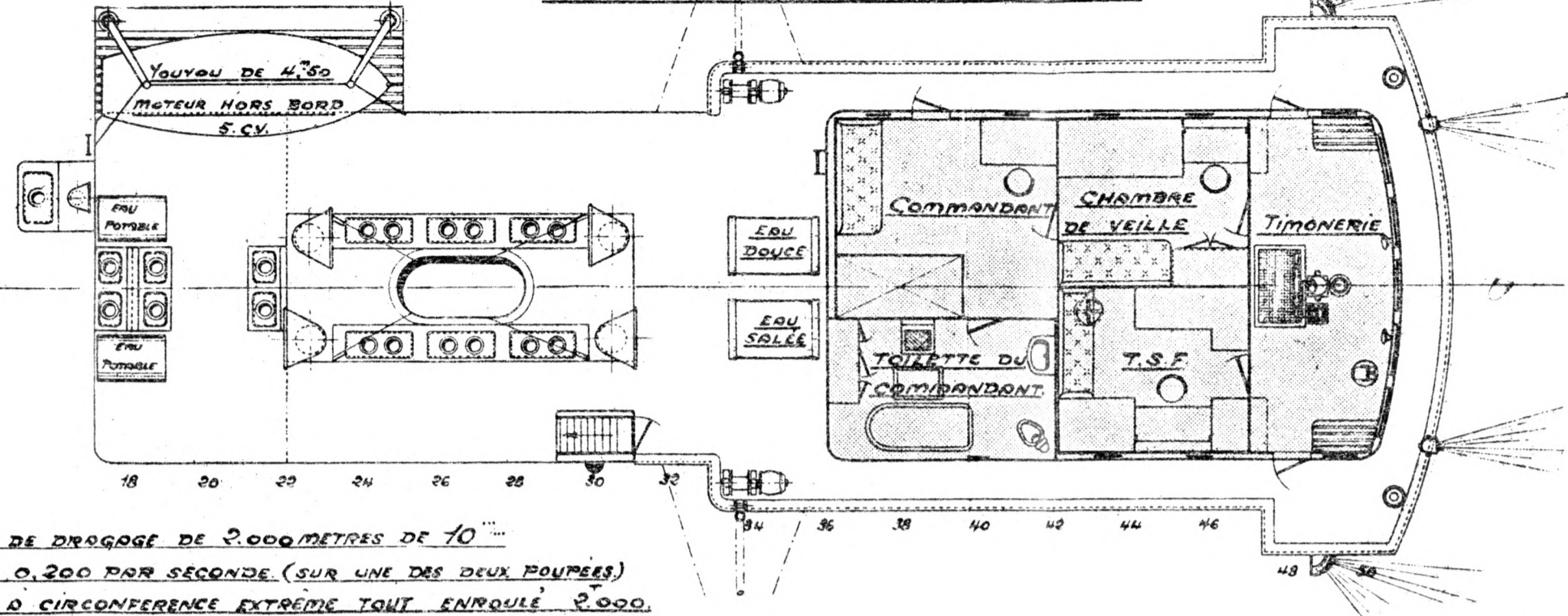


# Océanographic Vessel "PRÉSIDENT THÉODORE TISSIER" NAVIRE OCÉANOGRAPHIQUE

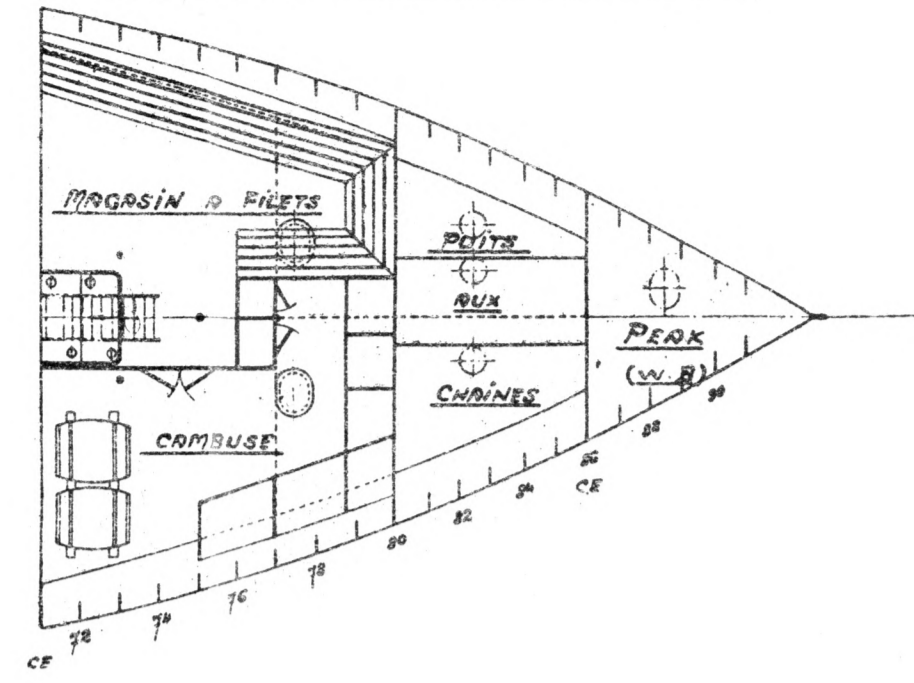
## PLATEFORME ARRIÈRE



## POSSERELLE DE NAVIGATION



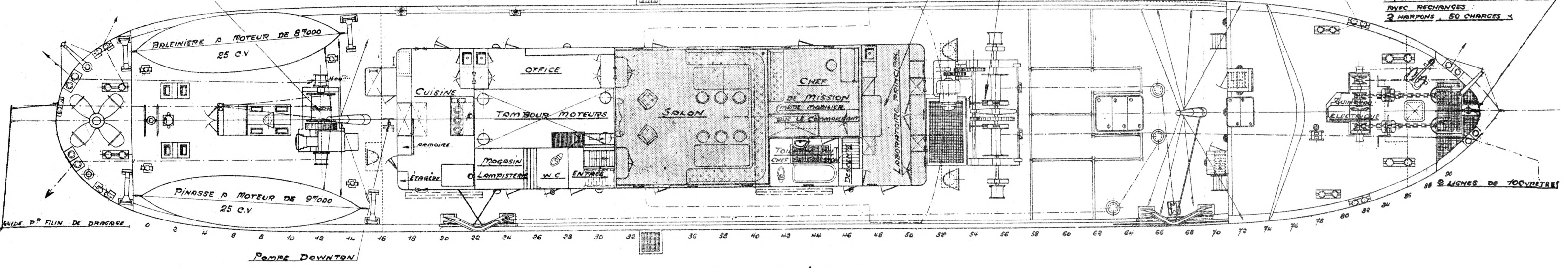
## PLATEFORME INFÉRIEURE



TREUIL A TAMBOUR POUR FILIN DE DRAGAGE DE 2.000 METRES DE 10"  
EFFORT SUR LES POUPEES 5" A 0.200 PAR SECONDE (SUR UNE DES DEUX POUPEES)  
EFFORT MAXIMUM SUR LE FILIN A CIRCONFERENCE EXTREME TANT ENROULE QU'EN  
MOTEUR ELECTRIQUE, PUISSANCE PREVUE 20 C.V. ENVIRON.

TREUIL DE PECHÉ A 3 TAMBOURS CHACUN DE 2.000 METRES  
DE FUNES DE 18"  
PUISSANCE 3.500 Kg. A 0.25 SECONDE A LA CIRCONFERENCE  
EXTREME D'ENROULEMENT.  
MOTEUR A VITESSE VARIABLE DE 1 A 2,5. PUISSANCE PREVUE 40 CV.

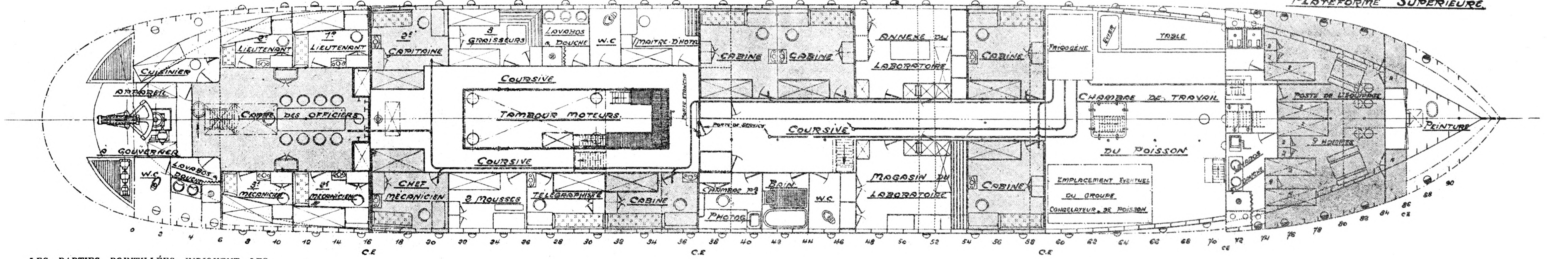
## PONT SUPERIEUR



## PONT TEGUE

CANON LANCE HARPON Type 26"  
AVEC RECHANGES  
2 HARPONS - 50 CHARGES X

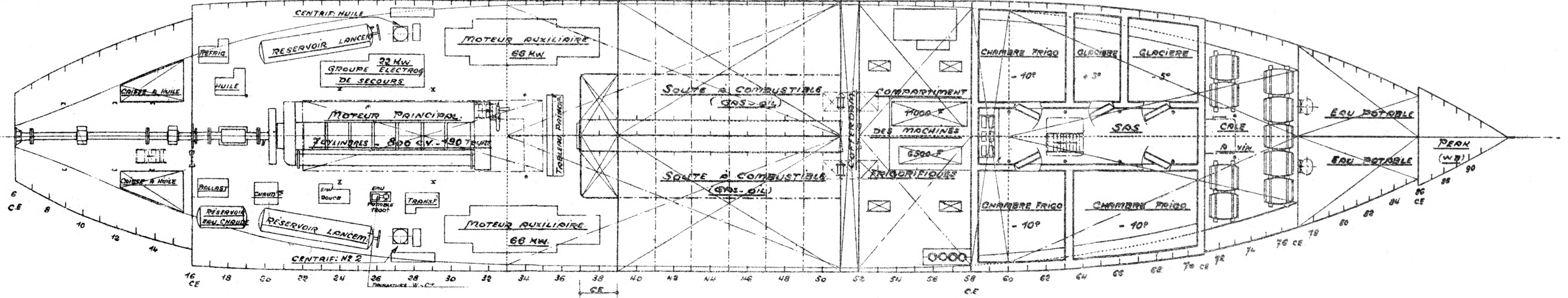
## PONT INFÉRIEUR



## PLATEFORME SUPERIEURE

LES PARTIES POINTILLÉES INDIQUENT LES  
LOCAUX DESSERVIS PAR L'AIR RÉFRIGÉRÉ

## COUPE HORIZONTALE





*Hydrographic gear.*

The preparation of fishery charts and the methodical investigation of certain submarine regions frequented by trawlers, such as the edges of the continental shelf, necessitate an outfit particularly adapted to hydrographic research; the two main methods of detection from the sounding point of view, viz. sonic (MARTI method) and ultra-sonic (LANGEVIN-FLORISSON method), have been combined in such a way that the collection of apparatus will constitute a veritable sounding station where it will be possible to make use of the two techniques simultaneously, thus permitting constant comparison of the information obtained.

The U. S. sounder will be added to the two types of the MARTI system — hammer-blow sounding for small depths, rifle shot sounding for greater depths. Two recorders in conjunction will make continuous records of the depths indicated by the various processes; further, a TOULY optical device, in the chart-house, will enable the U. S. sounder to be used at all times for the immediate needs of navigation. The fitting up of this sounding station has been arranged by MM. MARTI & FLORISSON, specially for the Department's ship, the work being carried out by the RADIO-MARITIME Company. Aft the bridge, also, are two sounding machines (LUCAS & BARTH), with electrical winches, enabling bottom samples to be taken down to a depth of 2,000 metres.

Directly allied with the hydrographic work is the study of subsurface currents. The installation for this type of work includes three IDRAC current meters with photographic recorders, two EKMAN current meters taking records by balls, and two other appliances of a new type, recently completed by Mr. HAENTJENS, a shipowner. This collection of current recorders will enable the condition of the water movements to be discovered either over an extensive area on the bottom or in a smaller area but at various depths.

*Oceanographic gear.*

The oceanographic gear is similar to that used in foreign research ships where the various appliances have already proved their worth; the type of reversing water bottles adopted is the double NANSEN bottle with FRANZ-SCHMIDT type double thermometer; rapid observations on the surface or at small depths, without previous water sampling, can be made with small BERGEN-NAUTIK fishing thermometers.

Temperatures can be taken even when under way by means of a new apparatus, the CHAUVEAU thermo-electric sounder.

The water samples obtained will in practice be analysed on board, in an anteroom of the laboratory, either by the KNUDSEN method of comparison with normal water from the Copenhagen laboratory or by physical methods using two refractometers of different patterns.

Plankton will be examined by collecting samples with nets of various kinds, either HENSEN or Johs. SCHMIDT type. Bottom samples can be obtained with G. G. J. PETERSEN type samplers, with a 1 sq. metre opening. Among other appliances on board may be mentioned the HARDY plankton indicator, the LUMBY surface sampler, the CARRUTHERS drift indicator, and Dr. SUND's oceanographical slide-rule.

Further, the oceanographic vessel *Président Théodore Tissier* is supplied with improved fishing gear which enables her to collect samples of the ichthyological fauna and to make technical experiments, while cruising, on the refrigeration of the various species.

The boats comprise an 8-metre (26.2 ft.) whaler with a 25 h.p. engine, a 9-metre (29.5 ft.) pinnace with a 25 h.p. engine near the stern sheets, and on the deckhouse, near the funnel, a 4.6 m. (15.1 ft.) dinghy with a 5 h.p. outboard motor.

The attached plans, showing the lay-out of this new oceanographic vessel, have been kindly communicated to us by the OFFICE SCIENTIFIQUE ET TECHNIQUE DES PÊCHES MARITIMES, Paris.

