

HYDROGRAPHIC SURVEY LAUNCHES OF THE SPANISH HYDROGRAPHIC INSTITUTE

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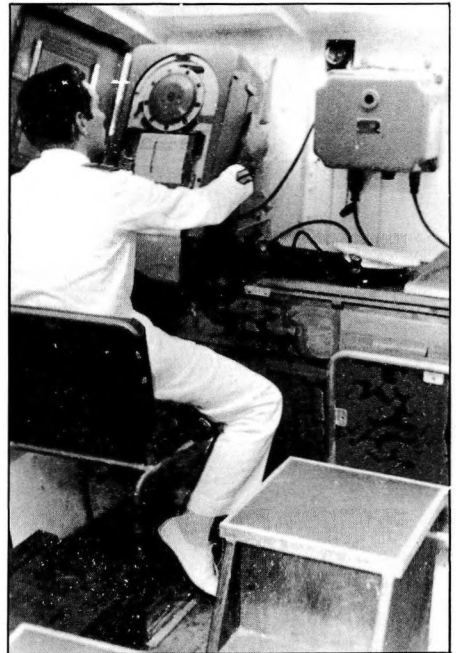
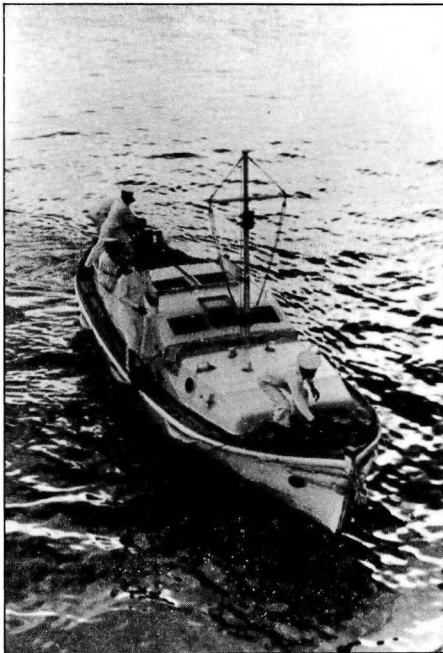
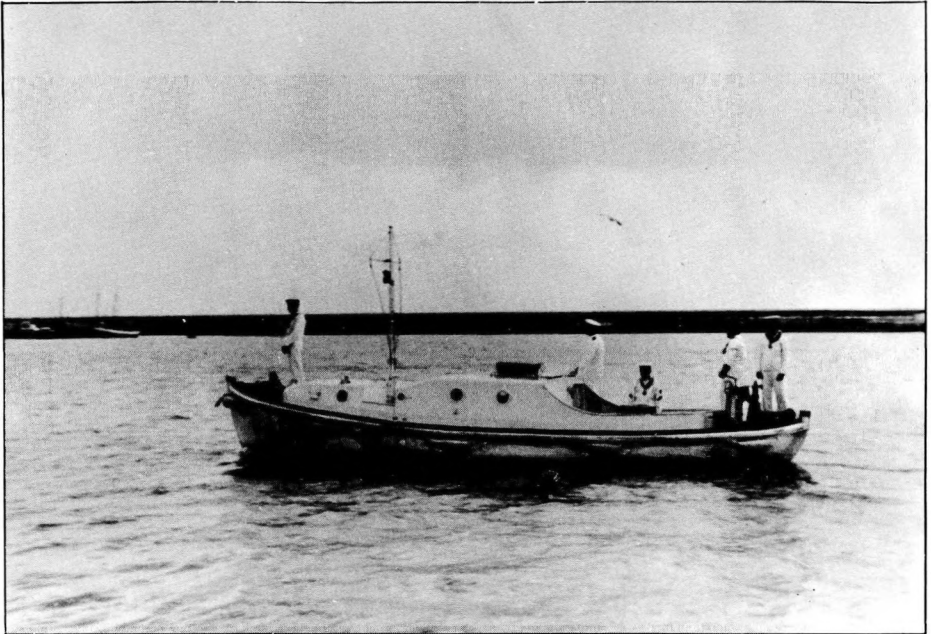
The Hydrographic Institute has just brought into service four hydrographic survey launches to operate in conjunction with its two hydrographic ships *Tofiño* and *Malaspina*.

The design of these launches was studied in great detail, taking into account the sea conditions in which they must operate and the greater results in hydrographic work required of them. The fact that most of the work will be carried out along the coasts of the Sahara was especially taken into consideration, owing to the difficult sea and wind conditions and the heavy surf found along this coast, where the sea is hardly ever calm and there is no haven except Villa Cisneros. Since there is a heavy swell coming from the North Atlantic, the question of a decked vessel was considered with the stern anchor deck of light construction to economize on weight in the upper part of the ship. In the stern deck-house the sounding instrument and the radio telephone were installed in a convenient way to facilitate their operation by the ship's personnel. These instruments are mounted on a table in caissons, the operating personnel being accommodated on fixed seats. The upper part of the fo'c'sle may be opened by means of two sliding panels allowing two observers to carry out measurements of horizontal angles with a sextant.

The launch's rudder is the *Kitchen* model to facilitate manœuvring, the skipper's position being aft. At first, it had been planned to install the helm at the forward end of the stern deck-house, but owing to possible breakdown in the transmission, it was decided to install it aft. The watertight containers of the large capacity accumulator batteries for the sounding instrument, the telephone and lighting are installed in the forward cabin. These batteries may be charged by a dynamo driven by the engine, or by means of an independent source of supply.

For the sounding instruments, it was decided to use the outboard oscillator which is considered more practical than an installation fixed on the hull as it is easier to move.

The hull of these launches is made of oak for the keel, the false keel, the stem, the stern post and the deck beams; in black poplar for the frame; in teak for the outer surface and in Flanders pine for the rest. A collision bulkhead has been installed forward and the launch is provided with air-tanks.



Views of the survey launches of the Spanish Hydrographic Institute

The engine is fitted aft, uncovered, and is of the Barreiros-Diesel type, 40 h.p. and 2 300 revolutions/minute.

The specifications are as follows :

Maximum length	9.66	metres
Length between perpendiculars	9.50	»
Maximum width	2.50	»
Moulded depth	1.20	»
Draft	0.769	»
Displacement	5.352	tons

Fuel consumption and speed trials gave the following results :

Average speed	7.44	knots
Fuel consumption in 2 hours 32 minutes	25	litres
Range	217	miles

A list is given below of the equipment on board :

Hydrographic equipment

- 1 acoustic sounding instrument, type M S 26 F with outboard oscillator
- 1 radio telephone, model 4 B, made by Marconi Española S.A.
- 3 sextants
- 1 drawing table
- 2 stations pointers
- 1 mechanical 100-fathom sounding instrument
- 1 bottom sampling instrument

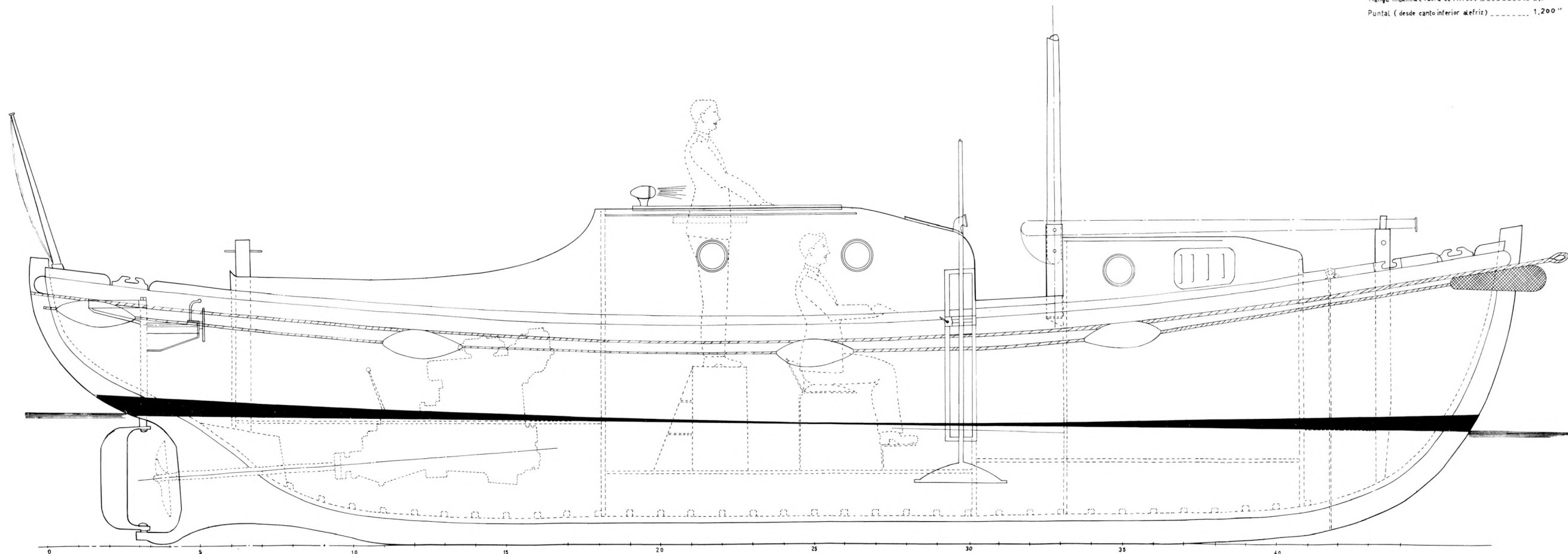
Nautical equipment

- 1 anchor of galvanized iron
- 2 cables, 30 m long and 63 mm in circumference
- 1 hawser, 36 m long and 95 mm in circumference
- 1 bridle of galvanized steel cable 16 mm in circumference for towing
- 50 metres of galvanized chain for mooring
- 1 flagstaff
- 5 oars, 4 metres long, in beech wood (one to be used for steering)
- 2 boat-hooks
- 2 bailing scoops
- 2 buckets
- 2 circular buoys
- 6 life-jackets
- 1 set of side fenders in hemp
- 4 cylindrical fenders in cork, covered in canvas
- 2 electric navigation lights (green and red)
- 1 electric masthead light
- 1 morse lamp
- 1 collapsible mast
- 1 compass
- 5 brass thole pins
- 1 chest for tools and accessories
- 2 fire extinguishers

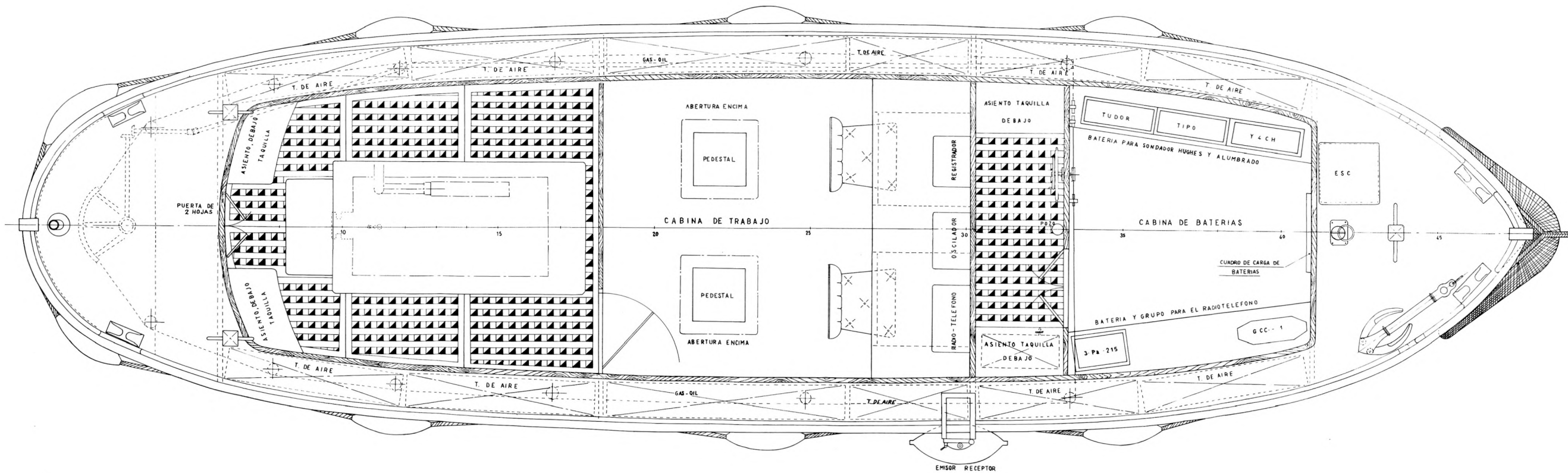
1 siren
1 fog horn
1 pistol for signals
1 floating anchor

CARACTERISTICAS

Estora máxima 9,660 mts
" entre Ppp. (entre cara ext. aleriz) 9,500 "
Manga máxima (fuera de ferros) 2,500 "
Puntal (desde canto inferior aleriz) 1,200 "



EMBARCACIONES DE SONDAS PARA LOS
BUQUES HIDROGRAFOS
TOFINO Y MALASPINAS
Escala 1/10



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