

## NEW INSHORE SURVEY CRAFT

### H. M. S. ECHO

---

H.M.S. *Echo* is the first of a class of three inshore survey craft which are intended to replace a number of 72-foot survey motor launches which have been in use for the last 15 years. *Echo* was completed in September 1958, and the remaining two of the class, *Egeria* and *Enterprise*, are expected to be in service in mid-1959.

The vessels are of robust, all-wood construction and have a mine-sweeper-type hull which is intended to achieve a reasonable compromise between the shallow draught required for work in estuaries and the sea-keeping qualities required for work further offshore. The principal dimensions are as follows :

Length overall .....	107 feet
Beam .....	22 feet
Draught .....	6 feet 9 inches
Displacement .....	160 tons
Height of eye from bridge .....	18 feet.

The normal crew consists of 2 officers, 2 petty officers, and 14 junior ratings, although two more officers and two more petty officers can be carried if required. Accommodation, which is all situated in the hull forward, includes an all-electric galley, a bunk for each of the crew and heating by electric elements in the ventilation system, and is adequate for living in all the year round.

Two Paxman 350-H.P. diesel engines give a sea speed of 12 knots and sufficient fuel and water can be carried for about 7 days continuous steaming. Propulsion is through two variable-pitch propellers which, controlled directly from the bridge, combine with twin rudders to give excellent general manoeuvrability and also the ability to maintain very low controlled speeds for search and sweeping operations.

The bridge is comparatively large and unobstructed and extends well abaft the mast to form a platform, free from magnetic interference, for the standard compass and also for visual observations. Also situated on the bridge are the steering wheel, engine throttle and propeller-pitch controls, a plotting table and the combined Asdic, echo sounder and radar control cabin. In the bridge superstructure, and with access to the compass platform by a short ladder, is the chart room and drawing office with a central plotting table size 60 in by 48 in; drawing facilities in general are sufficient to enable a survey to be progressed entirely on board from the plotting sheet to the final fair chart.

*Echo* is particularly well favoured as regards electric power and a considerable amount of electronic surveying equipment is fitted; this includes two echo sounders for depths up to about 400 fathoms, Asdics, a Decca Navigator multi-chain receiver, a gyro-magnetic compass, normal W/T communication equipment and a specially developed radar which, besides having the power and clear discrimination to be expected of a modern outfit, is capable of ranging, on a P.P.I. scan, to within the accuracy required for controlling lines of sounding on scales of 1/25 000 and smaller.



FIG. 1. — H.M.S. *Echo*

There remains in the ship space and ample electric power for fitting further developments in electronic aids.

A full range of the normal mechanical surveying equipment is carried for wire sounding, bottom sampling and clearance sweeping. The latter consists of a modified Oropesa sweep, with the necessary hand winches and davits and also equipment for a wire drag sweep which can be operated either with a consort or with the vessel's own motorboat. Other equipment includes two twenty-mile taut-wire distance-measuring machines fitted so that a line of any length may be measured changing the drums of wire on the machines alternately.

Vessels of this class are too small to carry much floating beacon gear permanently but they are fitted to operate a scaled-down version of the standard floating beacon in use in H.M. Surveying Ships, with a 24-foot bamboo mast; for this purpose, and also to hoist and lower the boats, a

1½-ton derrick is fitted on the centre line amidships with its own electric winch. Dan buoy gear and miscellaneous surveying equipment and stores are stowed in a compartment taking up the whole width of the hull abaft the engine room; a combined davit and hand winch, which has alternative fitting positions on the forecastle, plumbs the centre of the hatch to this store to facilitate the handling of heavy items.

For sounding in depths too shallow for the vessel herself, a 20-foot motor boat, fitted with plotting arrangements and a permanent echo



FIG. 2. — H.M.S. *Echo*

sounder, is stowed on the starboard side; a 14-foot surf dory, for landing men and equipment, complements it on the port side and inflatable life rafts are also carried for life-saving purposes. Other features of interest on the upper deck are an all-electric windlass for working the anchors and a hinged mast which can quickly be struck down to the level of the funnel for passing under bridges.

In general, and subject to the limitations of operating range and height of eye, these vessels are equipped to carry out almost any kind of task normally expected of a full-sized surveying ship; further experience will show whether so much equipment can in practice be properly maintained and made full use of in such small vessels. Experience to date has shown that *Echo* is exceptionally steady and dry in a seaway and can operate efficiently in winds at least up to Force 6. Backed by a base staff of four or five senior technical ratings, and with the advantage of being able to



FIG. 3. — Arrangement of chartroom looking aft

operate from very small ports with consequently reduced « time on passage » from base, it is expected that this unit of three craft will be able to carry out the many routine resurveys which are required along the southeast coast of England, an unstable seabed area of considerable importance to shipping.

# INSHORE SURVEY CRAFT.

(ALL WOOD)

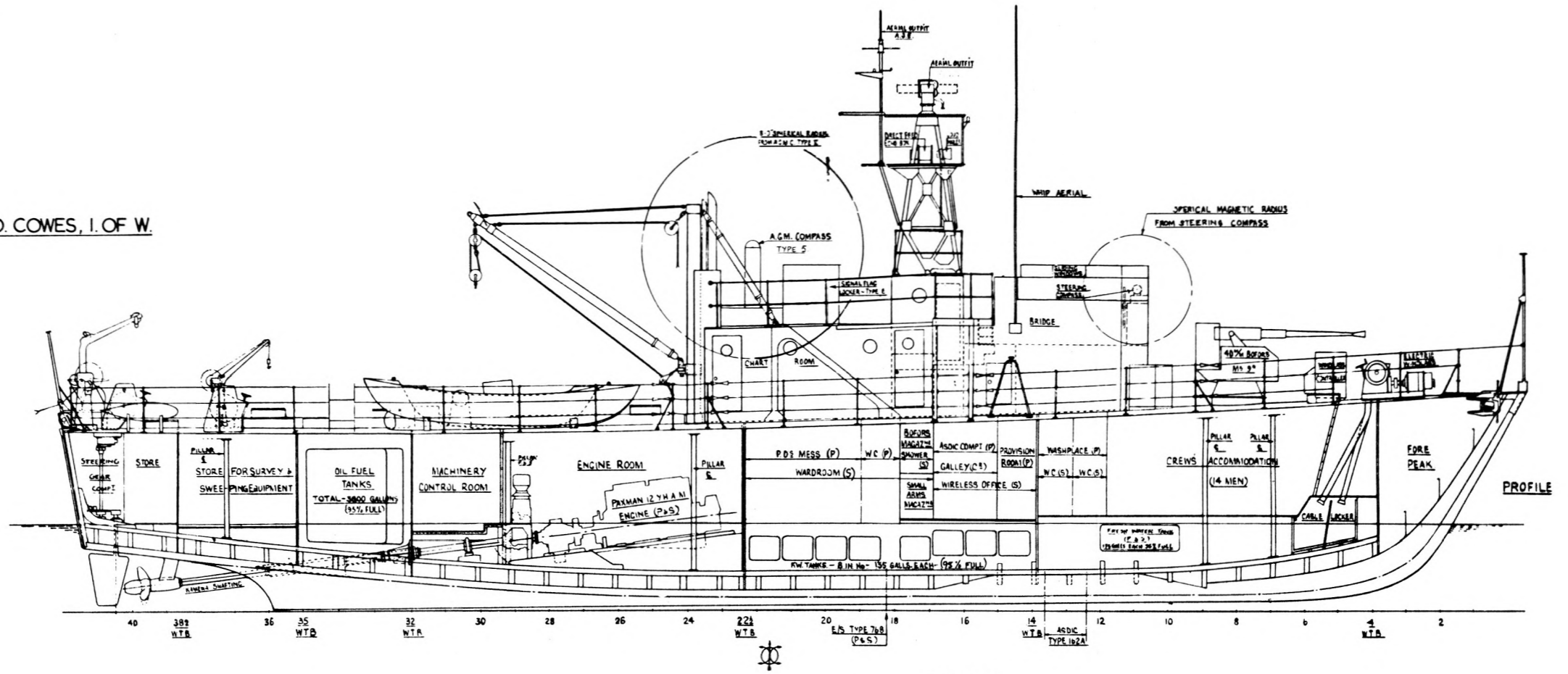
## GENERAL ARRANGEMENT.

SCALE:  $1/8" = 1 \text{ FOOT}$ .

PREPARED BY J. SAMUEL WHITE & CO LTD. COWES, I. OF W.

TO ADMIRALTY INSTRUCTIONS.

H. M. S. ECHO



### PRINCIPAL DIMENSIONS

LENGTH OVERALL	106'-6"
LENGTH ON WATERLINE	100'-0"
BREADTH EX-RUBBERS	21'-3"
DEPTH MOULDED	12'-0"

