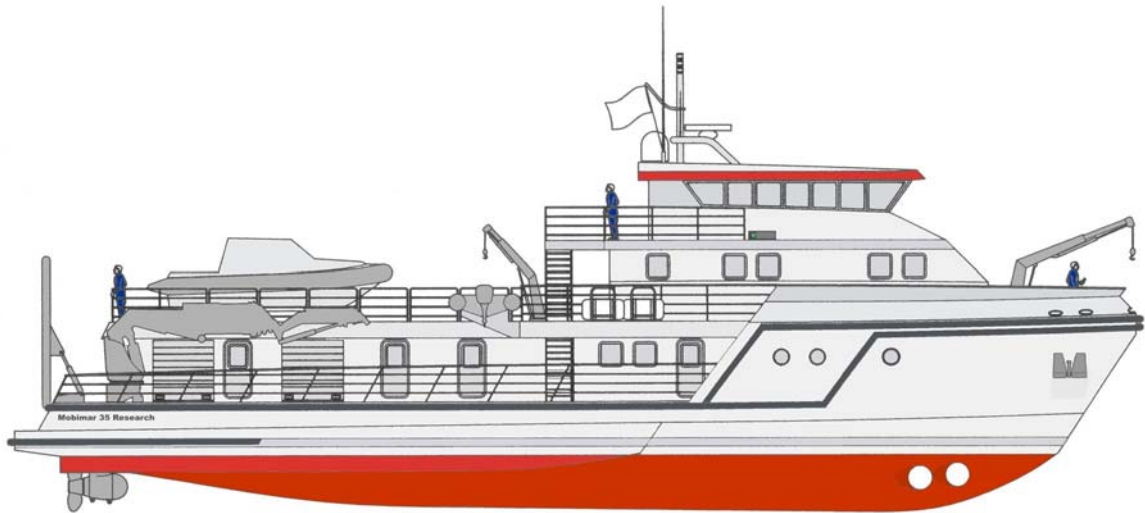


Marine and Submarine Applications

MOBIMAR LTD.	STREET	PANSIONTIE 56	VAT	FI0944501-4
P.O. Box 86	☎:	+358-207 698500	email	sales@mobimar.com
FIN-20101 TURKU	FAX:	+358-207 698501	URL	http://www.mobimar.com



Outline Specification for Shallow Draft, Ice- Strengthened Survey Vessel

1. GENERAL DESCRIPTION

Mobimar 35 offers an exceptionally *wide and stable working platform for the research works*. The vessel hull form is a carefully optimised trimaran. The specific requirements for shallow draft, ice breaking and survey are combined into this hull.

This version is still in a preplanning stage and needs further studies before the project can start based on this specification. The weight, Icebreaking, propulsion etc. needs more engineering work. However, this concept can be quite close to the final version.

The hulls are made of aluminium. This way a lot of weight is saved and draft is suitable for shallow waters. If draft can be increased, the lower part of the hull could be made of steel, and thus improve the ice going properties.

Trimaran hull shape allows the main hull to be made slimmer. The main hull shape will be optimized for ice going and shallow draft. At the same time slimmer hull will have better course keeping features. Therefore the vessel will be easier to steer.

Side hull draft will be only about 600 mm. They have very important affect to stability. Additionally when the vessel goes in ice, the resistance for the 16 m wide trimaran will be less than for a 13 m wide monohull. This feature has been verified by other hull shapes but should be verified also for this hull.

There will be two azimuthing thrusters in the aft and two tunnel thrusters in the bow. With these thrusters the vessel will have good DP-properties for survey sampling. Position keeping is arranged with either with taut wire winch or with GPS system.

The thrusters are electrically driven and the vessel will be diesel-electric. Stern thrusters will be abt. 650 kW each and bow thrusters abt. 150 kW each. Bow thrusters are of fixed pitch type.

Attached General arrangement shows that the working deck will be aft abt. 200m². The wet and dry laboratories are concentrated to port side of aft deck. There will be extremely good access to aft deck from the lab and the deckhouse gives good shelter to the activities on main deck.

The A-frame and the winches are arranged so that they do not prevent working on aft deck by wire lines crossing the work area. This way the lines are above the workers. It may be useful to specify in more detail the required winch forces and lengths.

The deckhouse is arranged so that on main deck level there are cabins and galley, food storage, and mess rooms. Second deck is arranged mainly for cabins. On Bridge deck there is large bridge and area for the survey personnel.

Because of the shallow draft requirement, low-weight materials and constructions are preferred throughout the vessel.

2. OPERATIONAL SUITABILITY

- Well site surveys.
- Pipeline route surveys.
- Shoals and ice scour surveys.
- Pipeline / umbilical inspection surveys.
- Bathymetric surveys.
- Environmental sampling, towing of catch nets, analysing and storing of samples.
- Hydro-geological survey, towing of data acquisition devices and deploying core sampling equipment.
- Maintenance of offshore weather stations and instrumentation.
- Deployment and recovery of oceanographic moorings and instrumentation. To cover surveys in depths less than 1.5m to a minimum 0.4 m ;
- Deployment of a daughter craft for shallow water hydro-geological, oceanographic and environmental purposes, covering from 1.5m water depth to 0.4m.

Secondary role:

- Supporting air divers either from the vessel or from the daughter craft also deployment of AUV's and/or mini ROV's.
- Ice survey, deploying personnel and equipment on to the ice.

3. GENERAL ARRANGEMENT

VESSEL DIMENSIONS ~

Length, Over All abt.	36,5 m
Beam	16,2 m
Draft	2,0m
Working deck area	200 m ²
Speed, service	14,0 kn (open water)
Range	3000 nm

Deadweight	120 tons, 2,0m draft including
Cargo	25 tons
Fuel	48 tons
Fresh and drink water tot	35 tons

Accommodation Crew + technicians totally 16.

Vessel can be designed and manufactured to Ice class 1 B IMO DP1 Class notation, but then the lower part of the hull has to be made of steel and the engine size might need to be increased