



## 11m High-speed Hydrographic survey vessel



Photo: Sissel Kanstad, Kartverket



Photo: Swede Ship



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[www.swedeship.se](http://www.swedeship.se)

Tel. +46 (0)304-67 95 00 • Mail: [ssm@swedeship.se](mailto:ssm@swedeship.se)

# Hydrographic survey vessel, offering efficient and qualitative sounding data collection, in combination with high transit speed capability



Just as 2013 drew to a close the first delivery out of three vessels contracted from Swede Ship Marine by Kartverket, also known as the Norwegian Mapping Authority was done. Intended for operation in the demanding seas alongside the Norwegian coast, as well as the waters around Svalbard, the hull scantlings includes ice-strengthened reinforcements applied to the bow and around the waterline. The hull is fitted with a flush-mounted multi-beam echo sounder and a sound velocity instrument, both located amidships. Through CFD analysis, the hull shape has been optimized to reduce water flow disturbances and air bubbles passing below the echo sounder. In subsequent trials sounding data was recorded as "high quality" even when the vessel was operating at just over 16 knots. The increased quality of the collected data reduces the amount of time and resources typically required for post processing of the raw data from the soundings, which, combined a service speed of 25 knots (relatively high for a survey vessel), could grant owners a competitive advantage in this field.

The survey equipment is a shallow water system containing a Kongsberg EM2040 high-resolution multi beam echo sounder, designed for operation in water depths up to 600 meters and capable of 40,000 soundings per second (comprising a high ping frequency of up to 50Hz, at 800 beams per ping). Swede Ship Marine accredits the dualhead solution with covering a width of 10 times that of the survey depth, resulting in a superior coverage of field of more traditional survey crafts.

The installation of two water jets enables the vessel to operate in shallow waters, including

waters close to shore and quaysides. The gearboxes are enhanced by a trolling function, removing the need to engage the deflectors on the waterjets when the vessel is operating in slow speeds, thereby limiting flow disturbances that could compromise and subsequent data quality. The waterjets are also bolstered by interceptors with active list and trim functions, for reduced motions during survey operations and a smoother ride when the vessel is in high speed transit.

Given that the vessel crew will typically remain aboard the vessel on a daily basis 12 hours a day all year around, great care has also been taken to make the wheelhouse as comfortable as possible. Work spaces have been arranged on an ergonomic basis, with the wheelhouse flexible mounted to the hull to decrease noise levels and noise- and heat-generating equipment placed below deck level in a separate compartment.

## TECHNICAL PARTICULARS

Length, oa.....11,15 m  
 Length, bp.....9,8 m  
 Breadth, moulded.....3,4 m  
 Depth, moulded.....1,4 m  
 Displacement.....12,4 tonnes  
 Design, draught.....0,8 m  
 Design, deadweight.....1,8 tonnes  
 Service speed.....25 knots  
 Max speed.....28 knots  
 Range (nautical miles).....300  
 Important regulations complied with...NBS

Main engine(s) x 2  
 Make.....Iveco  
 Model.....N67 ENT M45  
 Output of each engine.....258 kW

Gearbox(es) x 2  
 Make.....ZF  
 Model.....280-1

Waterjets(s) x 2  
 Make.....Ultrajet  
 Model.....340HT

Additional features.....Humphree  
 Interceptors 500

Generator  
 Make.....Cummins Onan 4.0 MDKBH  
 Number.....1  
 Output.....4kW/2,400rpm

Deck machinery  
 1 x Engbo maxi 32 anchor winch  
 1x Slippurinn C-6000-i computerised jiggling reel

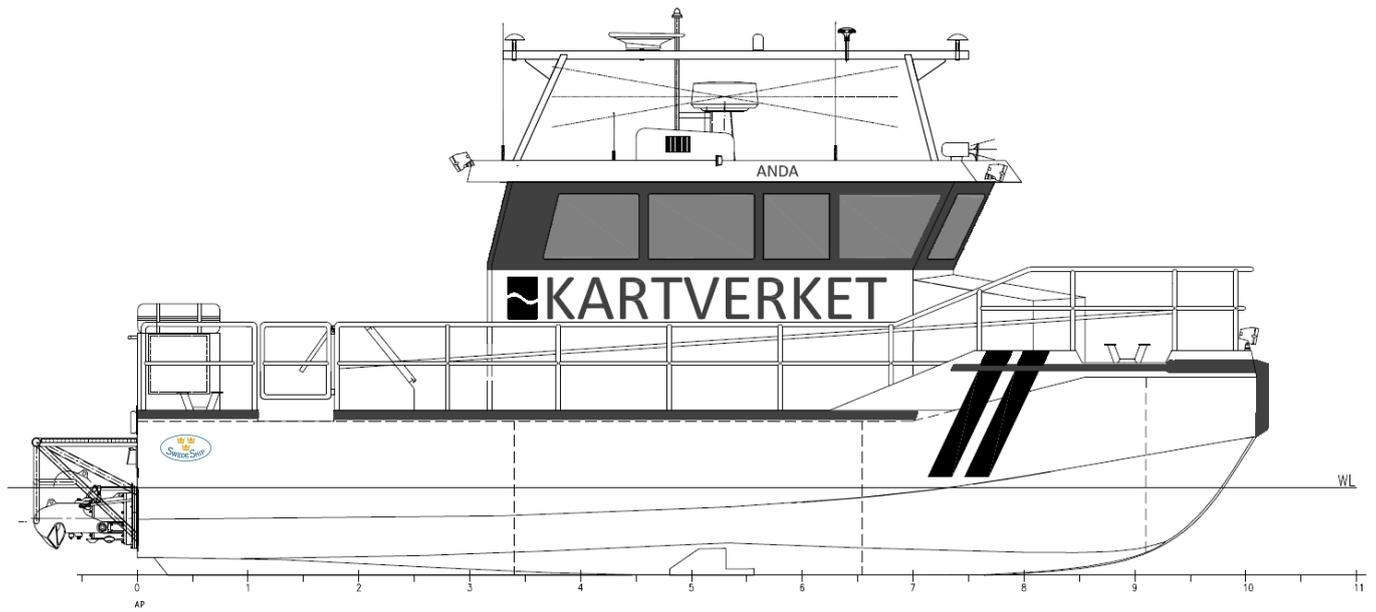
Bridge electronics  
 Radar.....Furuno GD 1920 C  
 Autopilot.....Furuno Navipilot 711  
 GMDSS.....Entel HT 644  
 Other communications.....Vingtor VOC-200  
 GPS.....Furuno SC-30  
 Engine monitoring/.....FPT  
 Fire detection system

Complement  
 Crew.....3

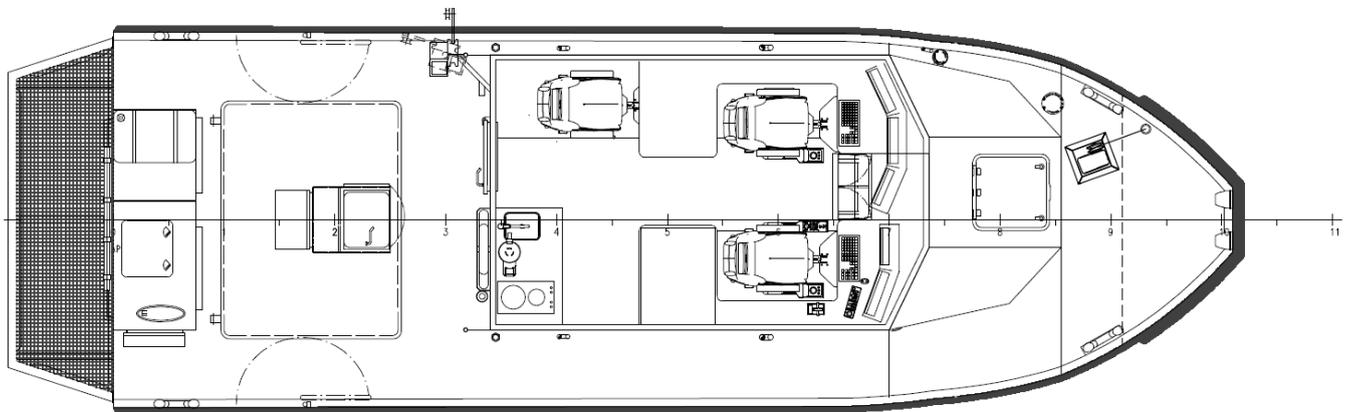
Other significant or special items of equipment.

EM2040 Dual-head Multi-beam echo Sounder  
 Kongsberg Maritime  
 Seapath 330+ motion sensor (with MRU5+)  
 Kongsberg Seatex  
 Seafloor Information system software  
 Kongsberg Maritime  
 SAIV CTD SD204 sound velocity profile  
 Valeport miniSVS sound velocity at transducer  
 5 x high bright bonded 19" displays  
 Hatteland

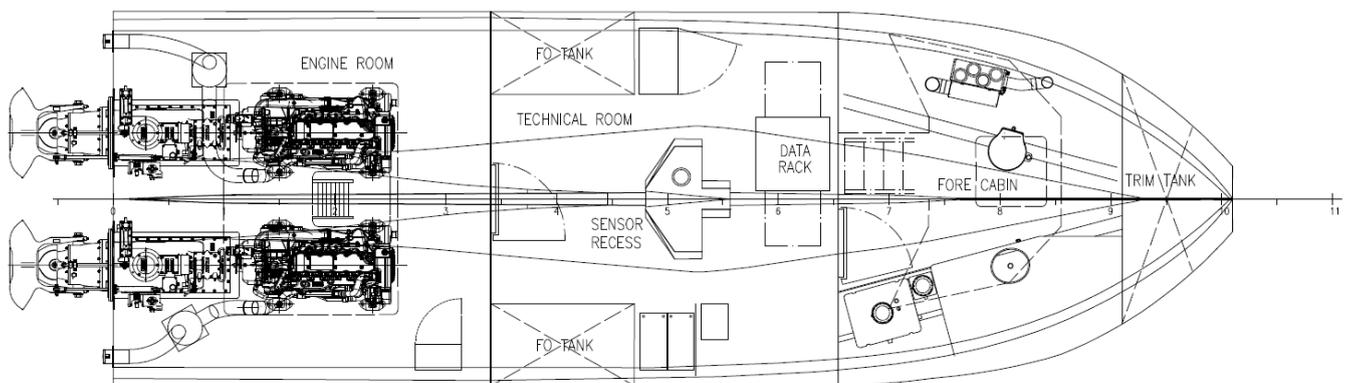




SIDE VIEW



TOP VIEW



TOP VIEW  
(BELOW DECK)

