

Revealing the possibilities of the Korean sea & the ocean

Tamhae 3

Research Vessel Building Project for 3D/4D Geophysical Exploration

ENVIRONMENT

MAIN DIMENSIONS

Length over all approx. : 92.0 m
 Length B. P. : 83.209 m
 Breadth moulded : 21.0 m
 Depth to main deck : 9.0 m
 Max draught : 7.3 m
 Design draught : 6.5 m

TANK CAPACITIES

Fuel oil (DO): 2,044 m³
 (incl. serv.&set., overflow, drain tanks)
 Fresh water: 636 m³
 Ballast water: 1,711 m³
 Lube oil: 43 m³
 Urea: 67 m³

VESSEL CAPACITIES

Deadweight at max draught: 4,113 tons
 Deadweight at design draught: 2,823 tons
 Gross tonnage: 6,936 tons
 Service speed (at d=6.5): 14.0 knots
 Max speed (at d=5.5): 15.2 knots

SEISMIC RESEARCH VESSEL

DESIGN TYPE SX134 R/V TAMHAE 3

R/V TAMHAE 3 is seismic research vessel, designed by Ulstein Design & Solutions AS and Hanjin Heavy Industries & Construction Co. Ltd. The vessel is designed to meet the general demands of the seismic research & marine geological survey. The vessel is equipped with streamer winches, towing points, gun winches, seismic air source, Ocean bottom nodes, P-cable reseaches and piston corer. The X-BOW® hull line design, combined with a redundant diesel electric propulsion system, ensures the best performance with regard to speed and fuel consumption. The main propulsion system comprises two shaft line propellers of controllable pitch type in nozzles, each shaft line driven by two variable speed electric motors through twin in-single out reduction gears. Three side thrusters are equipped on the stern side & bow side, and DP system II is equipped with three DGPS for positioning.

Geophysical Exploration Equipment

- 3D/4D seismic Navigation system
- Onboard seismic QC/Processing system
- High-resolution 2D/3D(P-cable) seismic system
- Down-bottom seismic Node(OBN) system
- Marine gravity/magnetic system
- Deflector/Ditt load Paravane
- Seismic airgun system
- Lateral/Vertical Streamer Steering system (Nautlius)
- 3D seismic recording and streamer system
- Underwater Acoustic Ranging system

Marine Geological Research Equipment

- Piston corer
- Multi corer
- Shallow multibeam echosounder
- Deep sea multibeam Echosounder
- High precision underwater positioning system(USBL)
- Wideband scientific echosounder
- Singlebeam echosounder
- Acoustic doppler current profiler (ADCP)
- Sub bottom profiler

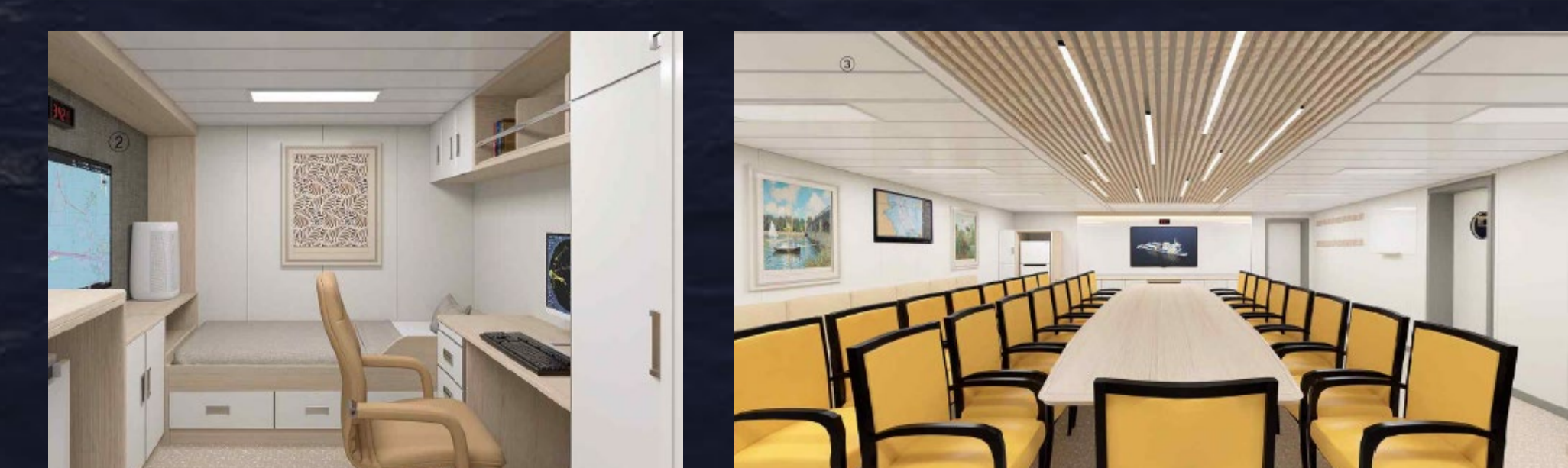
Classification

- Sea State: Level 5 (2.5 ~ 4 m)
- Ice Class: Ice-1B
- Dynamic Position: DP-2

Laboratory



Accommodation



Seismic Dedicated Areas

- Main science lab
- Server Room
- Low temp. sample store, two wet labs
- Bird shack & workshop
- Air-gun control station, Gun workshop
- Compressor & array store
- Scientific, Mech. Store
- Hyd. Power pack room

Capacity for 50 persons

- 4 Captain class room
- 24 one-bed & 11 two-bed cabins
- Galley, cold chamber, dry provision store
- Mess room, day room
- Hospital, conference room
- Wardrobe, gymnasium
- Sauna, laundry, each stores

Technical Data

DECK CRANE - One knuckle boom jib crane with operator cabin SWL 16 t at 12 m, 10 t at 22 m Min working radius: 4.5 m Dynamic factor: 1.4 MDPS, ADPS Radio remote control	WT SLIDING DOORS - Eleven watertight sliding doors	HELICOPTER WINCHING AREA - Size: D-value 16 m, 12.5 t - Compliant with CAP-437 Chapter 10	
SIDE THRUSTER - Two bow tunnel thruster, approx. 1200kw, controllable pitch - One stern tunnel thruster, approx. 880kw, controllable pitch	SANITARY SUPPLY AND DISCHARGE SYSTEM - UV Sterilizer - One FW generator, 20 m ³ /24h - Active carbon filter unit - Vacuum sewage collecting unit - Sewage treatment plant	MACHINERY/PROP. SYSTEM Diesel electric power and propulsion plant 690 V - 60 Hz: - Six main generator engines, each of 1950 kW at 1200 rpm - Six catalyst reactor units for treatment of exhaust gas - Four electric propulsion motors in Parallel configuration each side. Each motor 0-1800 kW - 0-1200 rpm - Two twin input single output reduction gears - Two main controllable pitch propellers in nozzles, each 3600kw, dia. 3800mm - Emergency generator, 240 kW	CLOSED CIRCUIT TELEVISION - CCTV - IP Type FHD CCTV system - Extensive CCTV monitoring system covering seismic areas and in/outside decks
ROLL DAMPING SYSTEM - Two roll reduction tanks	MANEUVERING / POSITIONING Dynamic positioning system KR DP52L, IMO Class II Position reference systems: Three DGPS, HI-PAP 502	OIL PURIFICATION PLANT - Two FO Purifiers, self cleaning - Two LD Purifiers, self cleaning - Bilge-water separator	ELECTRIC EQUIPMENT - Main switchboard 690 V - Switchboard 440 V, 230 V - Emergency switchboard
NAVIGATION / COMMUNICATION - S-band ARPA radar and X-band ARPA radar - ECDIS & CONNING Display - Radio installation according to GMDSS - area A3	INTERNAL COMMUNICATION Integrated part of the LAN, PA system, Radio/TV distribution. The PABX (telephone) unit combines IP, digital, and analogue internal telephones and external lines. - IP Clock - Common battery telephone system - TV satellite antenna - IP-TV in all cabins	FIRE DETECTION SYSTEM - Stand-alone addressable fire detection central	SEISMIC RELATED EQUIPMENT - Three seismic H.P air compressors - One seismic work boat
DECK WINCHES - One windlass combined with mooring winch - Two capstans, pull 7.5 t	LIFESAVING AND RESCUE EQUIPMENT - Six life rafts each for 25 persons, dedicated davit on PS - One rescue boat, single point davit - One seismic work boat, single point davit	FIRE FIGHTING SYSTEMS - Fixed CO ₂ fire-extinguishing system (total flooding) - engine room, seismic air compressor room, switchboard room - Fixed water based local fire-fighting system(local water mist) - Six main generator engines, incinerator, two FO separators - Clean agent fire-extinguishing system(NOVE1201) - server room	SEISMIC WINCHES - 4 off Double streamer winch - 8 off Streamer spooling device - 8 off Towing point - 8 off Streamer lead in block - 1 off Drum winder - 3 off Double gun winch - 1 off Single gun winch - 2 off Wide tow winch - 4 off Deflector handling davit - 1 off Transverse boom - 2 off Source handling boom - 4 off Spread rope winch - 1 off Slipway tool - 2 off Gun array handling system - 1 off Stern gate - 4 off Telescopic leg - 2 off P-cable signal winch - 1 off P-cable winch - 1 off P-cable cross cable winch - 2 off P-cable wide tow winch - 1 off Hydraulic power unit
		OWNER SUPPLY/FUTURE EQUIPMENT - OB/Plonboard seismic data processing system - Geochemical analysis equipment - KISDS - Sea floor drill - AUV & ROV	