

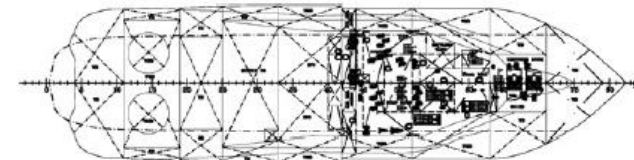
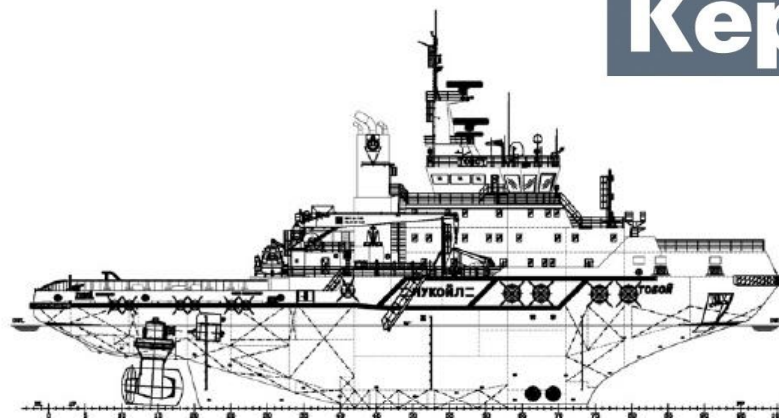


Icebreaking terminal stand-by vessel *ТОВОУ*

Toboy is an icebreaking terminal stand-by vessel owned by Lukoil Kaliningrad and built by Singapore based Keppel. The vessel is operating at the Varandey Arctic oil terminal in the Pechora Sea, along with its larger partner, the icebreaker *Varandey*. The work tasks of the vessels include assisting the tankers arriving at the terminal and taking care of the terminal's transport of supplies and personnel. They also operate in the area in a continuous fire-fighting, oil and chemical control, and rescue and emergency towing readiness.

The ships prepare the loading site for the terminal before the tankers arrive - they break the ice in their path and blow the resulting ice floes and crushed ice away with their thrusters. Ice floes are broken by ships either by the weight of their hulls or by milling with their propellers. During loading, vessels help tankers maintain their position in the midst of drifting masses of ice.





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05.09.2018

The Varandey fixed offshore ice-resistant oil terminal (FOIROT) is located at a 22 km distance from the coastline. It is connected to an onshore tank battery via two subsurface oil pipelines.

Profile

Tank Top

TOBOY

Multi-purpose Ice-Breaking Supply Vessel

Sister vessel to the auxiliary icebreaker vessel, TOBOY has been customised in accordance with the owner's stringent requirements and superior technical specifications.

These two turnkey projects are the first such vessels to be built by an Asian yard - a testament to the growing expertise of Keppel Singmarine in offering high value-added services to its customers.

Classification
Russian Maritime Register of Shipping KM ◉ LU7 [1]
A1 Supply Vessel
Flag: Russian Federation

Principal Dimensions
Length Overall : 81.60 m
Breadth Moulded : 18.50 m
Depth Moulded : 11.20 m
Draft maximum : 9.10 m
Deadweight : 2,168.8 tonnes
GRT : 4,406 tonnes

Performance
Service Speed: 15.0 knots, 2-3 knots in 1.5m level ice with 20cm snow cover
Operation Conditions: +30 to -40 °C
Type of Fuel: Heavy Fuel Oil & Diesel Fuel Oil

Accommodation
24 persons
Deck area : 330 m²
Deck strength : 5 tonnes/m² uniformly distributed load

Tank capacities
Heavy Fuel Oil : 1,400m³
Diesel Fuel Oil : 320m³
Freshwater : 96 m³
Ballast water : 1,751 m³
Dispersant : 21 m³
Foam tank : 40 m³
Recovery Oil : 146m³

Propulsion System
Main Generator Engines: 3 x Wartsila 9L32, 4,320 kW @ 720 rpm
Main Generators: 3 x 4,150kW @ 720rpm, 6,600V/60 Hz
Propulsion Motor: 2 x 5,200kW, 0-700 rpm
Harbour/Auxiliary Generator: 1 x Volvo D34A MT, 790kW, 440V/3ph/60Hz
Emergency Generator: 1 x Volvo D12-Aux, 300kW, 440V/3ph/60Hz

Auxiliary equipment
Bow Thruster: 2 x Brunvoll FU-63-LTC-1,550, 600kW
Propellers: 2 x 5,200kW Steerprop Azimuth Thrusters
Fixed pitch, 4 blades type, diameter 4,000mm

Towing and Anchor Handling Equipment
Hydraulic Towing Winch: 1 x Rolls Royce 55 tonnes at 10m/min with 1,000m of 56mm diameter wire

Deck equipment
Mooring/Anchor Winch: 2 x 10.9 tonnes @ 9m/min
Tugger Winch, 2 x 10 tonnes @ 15m/min
Storage Winch: 1 x 10 tonnes at 15m/min with 1,000m of 56mm diameter
Deck Crane: 1 x TTS Type GP 380 10 tonnes @ 17.5m
Provision Store Crane: 1 x TTS Type GPT 80 1.0 tonne @ 20m

Fire-fighting equipment
Fifi 1 system: 2 x 1,200 m³/hr @ 12 bar, water/foam monitors, curtain type water spray and oil dispersant system
Work boat: 1 x 9.5m Long Boom Handling Boat.

Life-saving equipment
Safety equipment according to SOLAS' regulations & Russian Labour Safety & Sanitary Rules

Radio Equipment
GMDS Area 4
1 x Capsat Fleet 77

Navigation Equipment
1 x Speed Log
1 x Gyro Compass
1 x Autopilot
1 x Voyage Data Recorder
1 x ECDIS
1 x UAIS
1 x Ship Security Alert
1 x Joystick Control System

Keppel Singmarine

(A member of the Keppel Group)

We have vast experience in the construction of a wide range of specialised vessels for a worldwide clientele.

We have the design, engineering and construction capabilities to undertake customised tugs and offshore support vessels, such as Anchor Handling Tug/ Supply (AHTS) vessels and derrick pipelay vessels. The Company also builds Ice-Class vessels and ice-breakers for operation in extreme climatic conditions such as the Sakhalin, Northern Caspian Sea and the Arctic Region.

Operating from four yards in Singapore, Cebu (Philippines) and Nantong (China), and equipped with comprehensive facilities, we provide customers quality work and services, on time and within budget.

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ILS Commissions
Conceptual design
Model tests
Contract documents
Basic design
Full scale ice trials