



# ICEBREAKING MULTIPURPOSE EMERGENCY AND RESCUE VESSEL

## NB 508 FOR RUSSIAN MINISTRY OF TRANSPORT

**THIS INNOVATIVE ICEBREAKER** for oil spill response and rescue operations represents a completely new type of multipurpose icebreaking vessels. The vessel features a patented oblique design with asymmetric hull and multiple propulsors, which allow the vessel to operate efficiently ahead, astern and obliquely (sideways).

The vessel is intended to perform icebreaking operations in harbors and adjacent water areas, to tow distressed vessels and facilities to protective

places, and to perform sea towing of vessels and floating facilities. The vessel will also be provided with special equipment for oil and petroleum products spill contingency response, fire extinguishing of external fires, environmental monitoring, rendering assistance to vessels and performing salvage and rescue operations.

The vessel has an advanced oil recovery system suitable for operation even in heavy waves. The vertical side of the hull is utilized as a sweep arm,

and when the vessel moves ahead obliquely through oil slick, the oily water will be guided through a hatch in the hull to skimmer tank. The skimmer tank has built in brush collectors, which separate the oil from the water.

The hull form has specially been designed and tested for ice navigation. The vessel can proceed in 1.0 m thick level ice both ahead and astern and in oblique mode she will be able to generate 50 m wide channel in 60 cm level ice. The concept of the vessel is



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based on the AKER ARC 100 design, which has been further developed in co-operation with Aker Arctic Technology Inc. and Arctech Helsinki Shipyard.

The machinery principle is based on diesel-electric machinery, with triple azimuthing type rudder propeller units for steering and propulsion. The electric power plant consists of three main diesel generator sets with a total power of 9,0 MW. The diesel engines will be capable to operate with low sulfur fuel oil.

The vessel will have a helideck for helicopter landing and take-off. Dimensions of the helideck will enable operation with a Ka 32 type helicopter. There will also be one workboat for oil boom handling. A knuckle boom type offshore crane with a capacity of 25 tonnes will be installed on the cargo deck for moving of loads, handling of the workboat and for oil spill response functions.

**ARCTECH HELSINKI SHIPYARD INC.** specializes in arctic shipbuilding technology and building of icebreakers, arctic offshore and other special vessels. Arctech is a joint-venture owned with equal shares by STX Finland Oy and United Shipbuilding Corporation JSC. The company combines the expertise of the two major shipbuilding companies and unites the marine industry clusters of Russia and Finland. The joint venture agreement was signed in December 2010 and Arctech started its operation in April 2011. The shipyard has though a long history. Helsinki Shipyard was established in 1865 and ships have been built in the same location for almost 150 years. Arctech is located nearby the centre of Helsinki and has approximately 400 employees.

**PROJECT NB 508** for Russian Ministry of Transport is executed together with Russian Shipyard Yantar JSC, which is one of the shipyards belonging to United Shipbuilding Corporation, the Russian part owner of Arctech. The blocks of the vessel have been built by Yantar and the hull assembly, outfitting, painting and commissioning will be done by Arctech in Helsinki.

## TECHNICAL SPECIFICATIONS

Length	76,4 m
Length in waterline	72,1 m
Breadth maximum	20,5 m
Draught, at design waterline	6,3 m
Deadweight at design draught, abt.	1150 t
Installed power	9,0 MW
Propulsion power	7,5 MW
Speed	14 knots
Speed at 1.0 m level ice	3,0 knots
Crew	24
Special personnel	12
GT	3800
Cargo deck	380 m <sup>2</sup>
Range	4500 nautical miles
Autonomy	20 days (24 persons)

Classification: RMRS

Class notation:

KM ⚙ Icebreaker6, [1], AUT1-ICS, OMB0, FF3WS, EPP, DYNPOS-1, ECO-S, Oil recovery ship (>60°C), Salvage ship, Tug, HELIDECK