



# NEVA LEADER 1: self-propelled dry cargo vessel

Shipbuilder: ..... **Nevsky Shipbuilding-Shiprepair Plant**  
 Vessel's name: ..... **Neva Leader 1**  
 Hull No: ..... **401**  
 Owner/operator: ..... **North-Western Shipping Company, JSC**  
 Country: ..... **Russian Federation**  
 Designer: ..... **Marine Engineering Bureau**  
 Country: ..... **Ukraine**  
 Model test establishment used: ..... **Krylov Shipbuilding Research Institute**  
 Flag: ..... **Russia**  
 IMO number: ..... **9598816**  
 Total number of sister ships already completed (excluding ship presented): ..... **1**  
 Total number of sister ships still on order: ..... **10**

**NEVA Leader 1** is the first in a series of 12 vessels of the latest Volga-Don Max type dry cargo vessel that was delivered at the end of 2012 from Nevsky Shipbuilding & Shiprepair plant. The vessel was designed at the Marine Engineering Bureau under the RSD49 project.

The "Volga-Don Max" type vessels have the maximum possible dimensions to navigate the Volga-Don Canal. Vessels in this series will transport general cargo, bulk, timber, grain and large-sized cargoes, dangerous goods of 1.4S, 2, 3, 4, 5, 6.1, 8, 9 classes of IMDG Code and cargoes of category B of BC Code. Sailing regions are the Mediterranean, Caspian, Black, Baltic, White and North Seas, including voyages around Europe and to the Irish Sea in winter.

*Neva Leader 1's* main feature is that it has a large middle hold of 52m in length setting it apart from all other "Volga-Don Max" type projects designed by MEB. This hold allows the vessel to transport large-sized cargoes in direct voyages from Europe to the Caspian Sea. The vessel was designed for Russian Maritime Register of Shipping class notation of KM Ice2 R2 AUT1-C.

RSD49 project vessels' are the biggest ones among the dry cargo vessels that satisfy Volga-Don Canal dimensions. With a draught of 3.6m in the Volga-Don Canal the deadweight is limited to around 4520tonnes, maximum deadweight in the sea with draught of 4.60m is of 7,150tonnes. There overall length is 139.95m, overall breadth is 16.70m, breadth without side fenders is 16.50m and depth is 6.00m.

In total the vessel's cargo capacity is 10,920m<sup>3</sup>. All holds are box-shaped, smooth-wall, convenient for carrying out the freight works and placing a cargo without shifting. The cargo hold sizes are of 26.0x12.7x8.4 (hold No. 1), 52.00x12.7x8.4m (hold Nos. 2), 27.3x12.7x8.4 (hold No. 3). Cargo holds are equipped with sectional hatch covers of Folding type of Cargotech with possibility of 100% opening.


Two medium-speed diesels (main engine) of 1200 kW each use heavy fuel oil with viscosity of IFO380. Heavy fuel stores are placed in deep-tanks in area of the ER fore bulkhead, separated from outside water by a double bottom and double sides. The vessel has an operational speed of 11.5knots. Movement and manoeuvrability of the vessel is provided by two fixed-pitch propellers in nozzles with diameter of 2.5m, two hanging balanced rudders and single bow thruster with capacity of 200kWt.

Modern computing design methods were used for the vessel's hydrodynamics that allowed naval architects to find an optimum combination of propulsion and rudder system elements and hull forms. The refined combination provides high running qualities of the vessel. It also provides a propulsion coefficient above 0.6 during sailing at full draught and maximum speed.

Towing and self-running test of vessel model were carried out to check project decisions and definitions of running qualities in big test pool at CRI named for academic A.N. Krylov. Tests carried out fully confirmed earlier received CFD simulation results.

Crew consists of 10 persons (12 places). Sanitary cabin and pilot cabin are foreseen on vessel. Designed vessel hull's life term is of 24 years. The double bottom is designed for distributed load intensity of 12tonnes per square meter, and also allows to use 16tonnes bucket grab.

## TECHNICAL PARTICULARS

Length oa: ..... 139.95m  
 Length bp: ..... 135.74m  
 Breadth moulded: ..... 16.5m  
 Depth moulded  
 To main deck: ..... 6.00m  
 Width of double skin  
 Side: ..... 1.9m  
 Bottom: ..... 9.8m  
 Draught  
 Design: ..... 4.7m (at sea), 3.6m (in river)  
 Block co-efficient: ..... 0.902  
 Speed, service: ..... 11.5knots  
 Cargo capacity  
 Bale: ..... 10,921m<sup>3</sup>  
 Diesel oil: ..... 75m<sup>3</sup>  
 Water ballast: ..... 3,959m<sup>3</sup>  
 Daily fuel consumption  
 Main engine only: ..... 8.0tonnes/day  
 Auxiliaries: ..... 0.5tonnes/day  
 Classification society and notations: ..... KM  Ice2 R2 AUT1-C  
 Main engine  
 Design: ..... Wärtsilä  
 Model: ..... 6L20  
 Manufacturer: ..... Wärtsilä

Number: ..... 2  
 Type of fuel: ..... HFO  
 Output of each engine: ..... 1,200kW x 1,000rpm  
 Gearboxes  
 Make: ..... Wärtsilä  
 Model: ..... WAF 863  
 Number: ..... 2  
 Output speed: ..... 247.6rpm  
 Propellers  
 Number: ..... 2  
 Fixed/controllable pitch: ..... Fixed  
 Diameter: ..... 2.6m  
 Speed: ..... 247.6rpm  
 Special adaptations: ..... Ice class  
 Diesel-driven alternators  
 Number: ..... 2  
 Engine make/type: ..... MAN D 2876 LE 301  
 Type of fuel: ..... MDO  
 Output/speed of each set: ..... 345kW x 1,500rpm  
 Alternator make/type: ..... Mecc Alte ECO 40-2s/4  
 Output/speed of each set: ..... 292kW x 1,500rpm  
 Boilers  
 Number: ..... 1  
 Type: ..... UNEX CHB-750  
 Make: ..... Aalborg  
 Output, each boiler: ..... 750kg/h  
 Mooring equipment  
 Number: ..... 3 x anchor-mooring winch  
 Type: ..... Electro-hydraulic  
 Hatch covers  
 Design/manufacturer: ..... Cargotec  
 Type: ..... Multi-folding  
 Ballast control system  
 Make: ..... BESI Marine systems  
 Type: ..... Hydraulic system  
 Water ballast treatment system  
 Make: ..... Alfa Laval  
 Complement  
 Officers: ..... 3  
 Crew: ..... 7  
 Bow thruster  
 Make: ..... Schottel  
 Number: ..... 1  
 Output: ..... 200kW  
 Fire detection system  
 Make: ..... MRS Electronics  
 Type: ..... IICM-A addressable type  
 Fire extinguishing systems  
 Cargo holds: ..... Danfoss/CO<sub>2</sub>  
 Engine room: ..... Danfoss/CO<sub>2</sub>  
 Radars  
 Number: ..... 2  
 Make: ..... JRC  
 Model: ..... JMA-5312-6A RPA  
 Launch/float-out date: ..... 14 December 2012/ 20 May 2012  
 Delivery date: ..... 26 November 2012



