UNITED SHIPBUILDING CORPORATION

KRASNOYE SORMOVO SHIPYARD

ART OF SHIPBUILDING

Krasnoye Sormovo Shipyard, incorporated in United Shipbuilding Corporation, is one of the oldest Russia's shipbuilding companies founded in 1849. The Shipyard added a special page to the history of the domestic military and commercial shipbuilding. Throughout its history the Shipyard has built about 2,000 vessels of civil fleet. Over 75 years more than three hundred submarines and rescue vehicles including 25 nuclear ones have been built and modernized by Krasnoye Sormovo Shipyard.

Today Krasnoye Sormovo builds vessels of commercial fleet meeting the requirements of international conventions on reliability and safety. Since 2002, four times Krasnoye Sormovo tankers were included in the list of Significant Ships of the Year by the Royal Institution of Naval Architects.

MNP Group performing shipbuilding project management, Volgo-Caspian Design Bureau and Sormovskoye Mashinostroeniye are also incorporated in USC along with Krasnoye Sormovo Shipyard.

We offer the complete cycle of ships production to the customer: from technical offer to sea trials and service maintenance of the built vessel. Close interaction of designing idea, its successful implementation and competent project management system enable us to effectively develop at the shipbuilding market concentrating on up to 13,500 DWT vessels.

The core competencies of MNP Group are related with shipbuilding project management, starting from forming the portfolio of orders for design and construction, procurements and finishing with arrangement of warranty and post-warranty services for the built ships.

Volgo-Caspian Design Bureau has almost 50 years of experience in designing and today it develops the projects of tankers and dry-cargo vessels taking into account individual demands of the customers and specific requirements of the operation area including enhanced ecological standards.

Due to recent modernization and technical reequipment of the production complex now Krasnoye Sormovo Shipyard is ready to build 12 ships of the commercial fleet a year.

The portfolio of orders of Krasnoye Sormovo Shipyard mainly consists of river-sea-going tankers and dry-cargo vessels of a medium deadweight from 5,000 to 13,500 tons. These performances are imposed by inland navigation of the European part of the Russian Federation where the dimensions of the vessels are limited by flood-gates.

However, it does not limit the capabilities of the Yard itself, which is able to produce complex vessels with a considerably larger deadweight, up to 60,000 DWT for operation in the Caspian Sea.

The result of successful cooperation of specialists in strategic and tactical marketing of MNP Group, designers of Volga-Caspian DB and engineering and production personnel of Krasnoye Sormovo Shipyard was the construction of tankers projects 19614, 19619 and 19900 with exclusive maneuverability, safety and capable to carry an increased range of cargoes. The series of 25 tankers project 19614 became the largest in the history of the present-day Russian shipbuilding being built at one shipyard.

Krasnoye Sormovo Shipyard has also good partnership relations with Russian and foreign design bureaus. The result of the cooperation was the construction of series of tankers projects RST22, RST27 as well as the dredgers with 1,000 m^3 hopper.

We value our today's clients and proud of mutual understanding level reached. We invite new customers for cooperation and we are quite sure that this cooperation will be long-term and mutually beneficial.

With best regards, Nikolay Zharkov
Director General of Krasnoye Sormovo Shipyard

ART OF SHIPBUILDING

OUR CUSTOMERS

Our special achievement is long-term, productive and mutually beneficial relationship with our customers. We built up-to-date vessels for Russian and foreign companies who appreciate short-time construction, high quality, reliability and operating efficiency of the Krasnoye Sormovo vessels. A separate page of Shipyard's activity is a construction of the large-capacity tankers for the Caspian Sea.

Eight tankers project 19619 with deadweight of more than 13,000 tons are operated by the state shipping companies of Azerbaijan and Kazakhstan. These tankers are the largest vessels operated in the Caspian Sea now. Twice – in 2004 and 2008 – the Royal Institution of Naval Architects included tankers project 19619, built for the Azerbaijan State Caspian Sea Shipping Company, in the list of Significant Ships of the Year.

Taking into account marketing solutions of MNP Group specialists, Volgo-Caspian Design Bureau has designed a new tanker project 19900 with deadweight of 7,100 tons especially for the Caspian Sea. Lead tanker project 19900 *Jeyhun* built by Krasnoye Sormovo Shipyard for the State Sea and River Transport Service of Turkmenistan was included in the list of Significant Ships of 2010.

The series of eight tankers project 19614 as well as 10 tankers project RST27 were built by the Shipyard for Russian shipping company V.F. Tanker. The lead tanker of project RST27 *V.F. Tanker-1* was included in the list of Significant Ships of 2012.

In the last ten years Krasnoye Sormovo Shipyard has successfully built dozens of commercial vessels for the shipping companies: Pietra Barbara, Palmali Group, Saturn Shipping, Moorpark Ltd., P.TransCo, Moscow River Shipping Company, Kurgannefteproduct, etc.

In 2014, after almost a 50-year break the Shipyard has got back to the construction of dredgers. Under the contract with FSUE Rosmorport three new-generation dredgers with 1,000 m^3 hopper capacity are being built for the Russian ports. The design has been developed by Damen Shipyard Gorinchem (The Netherlands).

Focus on new projects is the main competitive advantage of Krasnoye Sormovo Shipyard. Due to well-organized and precise work the Shipyard masters the construction of vessels of brand new projects within short timeframes. It strengthens our position in the market.

Dmitry Khritin,
Director General of MNP Group

PROJECT MANAGEMENT

MNP GROUP

The key competence of MNP Group is the project management in a field of shipbuilding. In this the very field the uniform corporate standards of management are created and a great experience of their use is accumulated.

MNP Group forms development strategy, generates engineering solutions, implements strategic and tactic marketing, provides procurement and asset management of shipbuilding business which comprises Krasnoye Sormovo Shipyard and Volgo-Caspian Design Bureau.

MNP Group attracts international and Russian institutes to finance the shipbuilding and modernization of production capacities. Long-term mutually-beneficial cooperation with leading Russian banks allows using the most convenient financial instruments.

MNP Group realizes common approaches to resource and product quality management. General information system and a team of professional managers allow quick response on external and internal changes, maximum effective use of resources, optimizing financial flow and providing exact fulfillment of contract terms. All that enabled to establish a successful business development mechanism oriented to achievement of strategic and tactic targets and increase of investments efficiency.

A well-adjusted processing chain: MNP Group – Volgo-Caspian Design Bureau – Krasnoye Sormovo Shipyard provides for the complete cycle of production of up-to-date ships for different purposes and of various deadweights. Only the most progressive shipyards can be proud of capability to design and build complete vessels according to individual demands of the customer and to the requirements of the chosen classification society.

Vadim Malov,
Executive Officer of MNP Group

FACTS AND FIGURES

KRASNOYE SORMOVO SHIPYARD

1849 Sormovo Shipyard foundation.
1887 Sormovo Shipyard constructed the first sea oil tanker *Minin* of 500 mt displacement for the Caspian Sea.
1903 Sormovo Shipyard constructed the world first diesel-electric oil tanker *Vandal*.
1930 Construction of oil carrier-schooners with load capacity of 7,000 to 13,500 mt.
1930 Start construction of submarines (more than 300 submarines were constructed, modernized and handed over to Navy).
1951 Lead submarine project 613.
1967 Start building river-sea dry-cargo carriers of Sormovsky type (total 120 units).
1976 The first deep submersible rescue vehicle was built by Krasnoye Sormovo (total 25 units).
1984 Lead nuclear-power submarine project 945.
1985 Constructed the first dry-cargo carrier of Volga type (total 45 units).
1999 The first tanker project 19612 of 8,000 DWT was built (total 5 units).
2002 Started a construction of tankers project 19614 of 5,400 DWT (total 25 units).
2003 Start building new generation tankers project 19619 of more than 13,000 DWT for the Caspian Sea (total 14 units).
2004 Lead tanker project 19619 *President Heydar Aliyev* is included in the list of Significant Ships of 2004 of Royal Institution of Naval Architects – RINA.
2005 Building of the construction barge (platform) *Ersai 1* intended for driving in piles and other support structures of offshore units in the Kashagan oilfield (North Caspian). Shipyard specialists performed the unique joint of two pontoons of *Ersai 1* in the Astrakhan Shipyard's water area.
2006 Russian Maritime Register of Shipping (RMRS) certified the lead dry-cargo carrier *Mirzaga Khalilov* of project RSD17 to meet ECO standard; the dry-cargo carrier became the first Russian vessel that got ECO symbol; for RMRS it was the first certification to comply with ECO requirements.
2007 Start construction of series Novaya Armada tankers, project RST22 with a higher ecological class PC ECO Project (total 7 units).
2008 RINA included tanker project 19619 *Zangezur*, built for the Azerbaijan State Caspian Shipping Company in the list of Significant Ships of 2008.
2008 Deep-submergence rescue vehicle AC-28 is returned back to Navy after modernization.
2009 Start building oil tankers for national shipping companies of Kazakhstan and Turkmenistan.
2010 Building of the first tanker project 19900 of 7,100 DWT with strengthened function at sea conditions and increased deadweight (total 6 units).
2010 Lead tanker project 19900 *Jeyhun* is included in the list of Significant Ships of 2010 of RINA.
2011 Start building tankers project RST27 (total 19 units). The lead tanker of project RST27 *V.F. Tanker-1* is included in the list of Significant Ships of the Year by RINA.
2013 Construction of series of 10 barges for P.TransCo.
2014 Start building three new-generation dredgers for sea ports of Ust-Luga, Big Port St. Petersburg and Tuapse under contract with FSUE Rosmorport. The contract has been signed with the active participation and assistance of MNP Group.
2016 Delivery of lead dredger Sommers to FSUE Rosmorport. Start of vessel operation in Port of Makhachkala

I do not know how electromagnetic waves are transmitted but I know how to push people for missing communication.

Mark Vingart,
Director for Finance and Economy
of Krasnoye Sormovo Shipyard

QUALITY STRATEGY

KRASNOYE SORMOVO SHIPYARD

Designing, production, technological and economical capability of Krasnoye Sormovo Shipyard allows building the vessels in accordance with international guidelines and rules with guaranteed reliability and high quality. Krasnoye Sormovo Shipyard has an extensive experience of shipbuilding under the survey of Russian Maritime Register of Shipping, Russian River Register, Lloyd's Register, Germanischer Lloyd, Bureau Veritas.

Krasnoye Sormovo Shipyard implements complex approach to design, building and vessel maintenance quality assurance, including:

- compliance of designing documentation with the rules of classification societies and international conventions;
- technical, economic and technological expertise of the projects;
- computer-aided modeling of organizational and technological diagrams of shipbuilding;
- assessment of production sites, technological processes and employees;
- procurement quality control;
- control and test during production and acceptance of products;
- analysis of ships quality during operation.

Shipbuilding capabilities

maximum length of ship, m (ft) 150 (492)
maximum width for transit
to the Baltic and Black seas, m (ft) 17.5 (57.4)
maximum width for transit
to the Caspian Sea, m (ft) 25 (82)
maximum launching weight, mt 6,000
steel fabrication capacity, mt/year 38,500

Commercial vessels

- tankers – up to 60,000 DWT
- dry-cargo ships – up to 13,000 DWT

Tankers and dry-cargo vessels are equipped with first-rate equipment produced by leading international companies, up-to-date radio-navigation aids, communication means, automation equipment, precision instruments.

Passenger vessels

- river and river-sea going cruise passenger vessels

Technical and auxiliary fleet

- dredgers

Military vessels

- diesel submarines
- deep submersible rescue vehicles

Equipment for Offshore E&P Operations

- modules for drilling & production platforms

We build vessels properly and promptly. The built vessels are reliable and efficient in service. And customers appreciate it.

Michael Pershin,
Director Executive
of Krasnoye Sormovo Shipyard

REEQUIPMENT AND MODERNIZATION

KRASNOYE SORMOVO SHIPYARD

Reequipment and modernization of production capacities ensured Krasnoye Sormovo Shipyard moving to a new level of shipbuilding. The reequipment and modernization program enabled to introduce an automated closed cycle of commercial vessels construction: from metal supply to hull structures forming.

The main point of reequipment and modernization program of Krasnoye Sormovo Shipyard was an introduction of the flat section assembly and welding line produced by IMG (Germany).

The line capacity is 38,500 mt a year. It allows making flat sections up to 18x12 m and up to 60 mt. The total length of the line is 155 m.

In 2007, a horizontal type rolled plate and shape cleaning and priming line was put into operation. The line incorporates a sequence of fully automatic operations. All equipment of the line is provided with a ventilation system and cleaning filters.

Two new generation machines with rotating plasmatron made by ESAB are put into operation at thermal cutting area within the reequipment and modernization program.

Due to interchange of operations of cut-off and removal of details without equipment stop, the level of the equipment use was increased up to 75–85%.

The reequipment has considerably extended Shipyard's capability to build high-tech, environmentally safe vessels meeting the requirements of classification societies and international conventions.

Hull production of Krasnoye Sormovo Shipyard is in line with the leading shipyards. Over recent years a lot of work has been done concerning the introduction of new techniques and improvement of working conditions. The upgrading has considerably extended Shipyard's capacity to build high-tech environmentally safe ships meeting the requirements of classification societies and international conventions.

Alexander Tsepilov,
Technical Director of Krasnoye Sormovo Shipyard

DESIGN OF COMMERCIAL VESSELS

VOLGO-CASPIAN DESIGN BUREAU

The existence of the design bureau allows maximum flexible and qualitative fulfillment of the requirements of the commercial fleet vessels' customer. VCDB specializes on the development of class designs, the workshop design documentation (WDD) for river-going vessels, mixed navigation vessels and sea-going vessels of the following types:

- tankers, dry-cargo vessels and container carriers of river, mixed (river-sea class) and sea navigation;
- liquefied gas carriers (tankers);
- stationary vessels (floating landing stages) and structures;
- support and supply vessels;
- barges, floaters;
- other vessels and floating crafts.

Volgo-Caspian Design Bureau has also a considerable experience in the design of engineering structures intended for the offshore deposits arrangement.

The designing works are carried out in accordance with the rules of Russian Maritime Register of Shipping as well as for the class of international classification societies – Germanischer Lloyd (GL), Lloyd's Register and Det Norske Veritas (DNV).

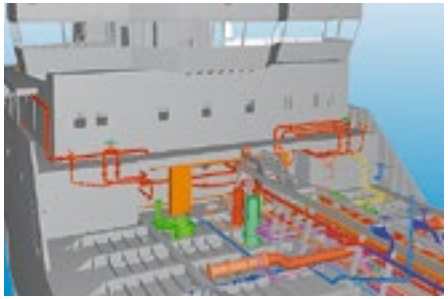
The quality management system of Volgo-Caspian Design Bureau is in compliance with the requirements of ISO 9001-2000.

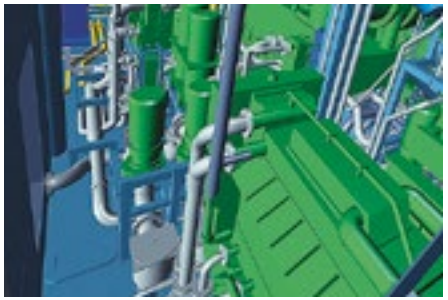
Specialists of Volgo-Caspian Design Bureau use modern computer-aided design systems. The used software is as follows: Nupas-Cadmatic; AutoCAD; Ship Model (ship hull surface design); Poseidon (strength calculations); Project 1, etc.

The Nupas-Cadmatic 3D design system, used by VCDB specialists since 2006, is the generally recognized software in the worldwide shipbuilding. NAPA, specialized system of the automated modeling, is used in early stages of ship designing. It includes software modules package which allows creating the ship hull surface, performance of various calculations on ship theory, hull structures modeling.

Range of services

- preparation of technical proposal;
- front and engineering design;
- development of technical/classification project;
- approval in Regulatory Authorities;
- development workshop documentation, including owner's classification projects;
- development of lofting documentation;
- preparation of turn-over and maintenance documentation;
- technical support while construction;
- elaboration of modernization projects.





Specialists of Volgo-Caspian Design Bureau continue 40-year traditions of Krasnoye Sormovo Shipyard design divisions. Today however ship design is carried out on a new, up-to-date level. Volgo-Caspian Design Bureau has a package of licenses which enables to perform hull and ship systems design as well as to make cutting programs and other design documentation.

Stanislav Pokrovskiy,
Director General of Volgo-Caspian Design Bureau

OIL TANKERS

KRASNOYE SORMOVO SHIPYARD

All history of Sormovo Shipyard is connected with designing and building of tankers. In 1887, the Shipyard built the first sea-going oil tanker Minin of 500 mt displacement ordered by the Nobel Brothers' Partnership oil company. In 1903, Sormovo Shipyard built the first in the world diesel-electric tanker Vandal on order of Nobel Company. This ship became the first motor vessel as well.

Sea-going, mixed (river-sea-going) and river-going vessels, built nowadays, are the vessels of commercial fleet of the 21st century. Latest amendments of international conventions, environmental requirements are taken into account during designing and building of tankers. Improvements in ship construction in accordance with ship operation experience are introduced. At the same time class of the vessels may be changed enlarging the geography and conditions of their operation.

Particular environmental measures addressed include reductions in the amount of NOx present in main and auxiliary engine exhaust, and the use of low-sulphur fuels. A special cargo vapor freeing system, which allows gas discharge direct into shore facilities, is installed on the vessels, obviating release into the atmosphere.

Design improvements made include an automatic high pressure fire extinguishing installation and a membrane type inert gas system, designed to separate pure nitrogen from atmospheric air entering the cargo tanks where it can form explosive mixtures.

For anti-terrorism protection the vessels are also equipped with a security alert system for hidden transmission of messages on ship safety hazard.

Options, essential for the customer and intended to increase the capacity of cargo complex, to optimize the operating cycle and to extend the range of cargoes transferred, can be agreed upon and realized during designing and building of the tankers. All these help to reduce the time of returns on investment.

MNP Group efforts are focused on the extension of business geography as well as on diversification of the product line. Tankers are a special type of the vessels. And each of our new projects is an enhancement of cargo transportation efficiency, reliability and ecological safety.

Andrey Ivanov,
Director Shipbuilding of MNP Group

TANKER, PROJECT 19614

Type
Twin-screw vessel with twelve cargo tanks and two slop-tanks, double sides and double bottom, with engine-room and accommodation superstructure aft.

Purpose
Transportation of bulk crude oil and oil products with specific gravity up to 0.99 mt/m^3, with flash point up to 60°C. It is capable of carrying one type of cargo in a voyage. Viscous cargo heating is provided.

Navigation area
Inland waterways of the Russian Federation (river-sea), as well as non-arctic sea areas according to the class.

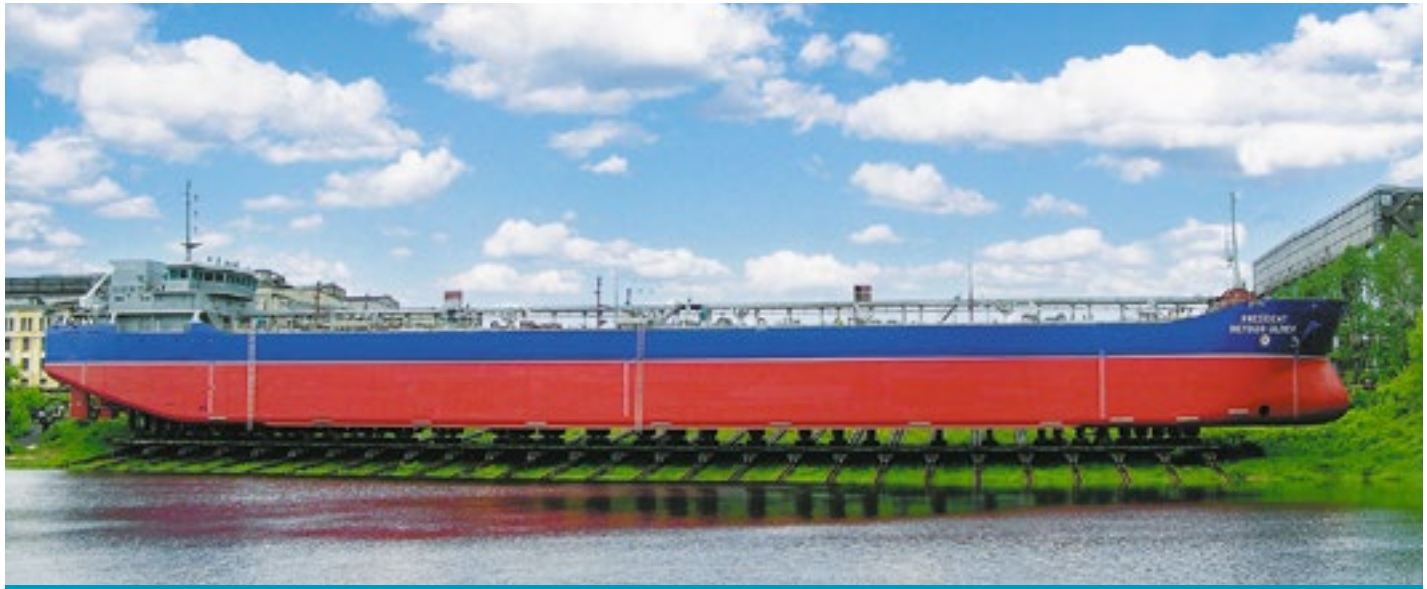
Class
KM⍟Ice1 R2-RSN AUT3 VCS Oil tanker/Chemical tanker type 2 (vegetable oil) (ESP) of the Russian Maritime Register of Shipping.

Design
Engineering Center of Krasnoye Sormovo Shipyard.

Basic specifications (sea/river)

Length, m (ft)	141.0 (462.6)
Width, m (ft)	16.9 (55.4)
Depth, m (ft)	6.1 (20.0)
Above-water height, m (ft)	13.2 (43.3)
Draught, m (ft)	3.73/3.6 (12.3/11.8)
Cargo capacity, mt	5,330/4,930
Deadweight, mt	5,530/5,030
Capacity of cargo tanks, m^3 (ft^3)	6,720 (237,315)
Main engine (diesel) power, kW	2x930
Maximum loaded speed, knots	10
Crew/number of berths	16
Sea endurance, days	15

The lead ship was built in 2002.



TANKER, PROJECT 19619

Type
Twin-screw vessel with twelve cargo tanks and two slop-tanks, double sides and double bottom, with engine-room and accommodation superstructure aft.

Purpose
Transportation of bulk crude oil and oil products with specific gravity up to 0.99 mt/m^3, with flash point up to 60°C. It is capable of carrying several types of cargoes in a voyage. Viscous cargo heating is provided.

Navigation area
Year-round operation in areas with mild cold maritime climate, as well as non-arctic sea areas according to the class.

Class
KM⍟Ice1 [1]R1 AUT1 OMBO LI VCS IGS-NG BWM Oil tanker (ESP) of the Russian Maritime Register of Shipping.

Design
Design Bureau of MNP Group.

Basic specifications

Length, m (ft)	150 (492.0)
Width, m (ft)	17.3 (56.8)
Depth, m (ft)	10.5 (34.4)
Above-water height, m (ft)	15.5 (51.0)
Draught, m (ft)	6.97 (22.9)
Cargo capacity, mt	12,290
Deadweight, mt	12,760
Capacity of cargo tanks, m^3 (ft^3)	14,770 (521,598)
Main engine (diesel) power, kW	2x1,620
Maximum loaded speed, knots	10
Crew/number of berths	14/20
Sea endurance, days	20

The lead ship was built in 2004.

TANKER, PROJECT RST22

Type
Single-deck, with six cargo tanks and two slop tanks, with two rudder propellers, with double bottom, double sides and trunk in cargo tanks area, with a tank and a poop, with open flying bridge, with engine room and accommodation superstructure aft, with enclosed wheelhouse (from board to board).

Purpose
Transportation of crude oil and oil products, including petrol, with no flash point restriction, maintaining cargo temperature of 50°C. It is capable of carrying three types of cargoes in a voyage.

Navigation area
Sea areas, corresponding to restricted navigation area II, inland waterways of the Russian Federation with restrictions.

Class
KM⊛Ice1 R2 AUT1 OMBO Oil tanker CLEAN DESIGN (ESP) of the Russian Maritime Register of Shipping.

Design
Marine Engineering Bureau (Odessa).

Workshop Documentation
Volgo-Caspian Design Bureau.

Basic specifications (sea/river)

Length, m (ft)	139.95 (459.15)
Width, m (ft)	16.60 (54.46)
Depth, m (ft)	6.00 (19.69)
Draught, m (ft)	4.6/3.6 (15.1/11.8)
Cargo capacity, mt	6,609/4,409
Deadweight, mt	7,008/4,611
Capacity of cargo tanks, m^3 (ft^3)	7,833 (276,619)
Capacity of slop tanks, m^3	256 (9,040)
Main engine (diesel) power, kW	2x1,200
Maximum loaded speed, knots	10.5
Crew/number of berths	12/14
Sea endurance, days	20/10

The lead ship was built in 2008.

TANKER, PROJECT 19900

Type
Steel single-deck ship with two full-revolving rudder propellers with fixed pitch propellers in nozzles, bow thruster, with forecastle and poop, raked stem, sledge-shaped aft body with centerline skeg, flat transom, double bottom and double sides for water ballast, twelve cargo tanks in pairs separated by C.L. watertight bulkhead, two aft-located slop tanks, electro-hydraulically driven cargo crane amidship, engine room and superstructure aft-located, enclosed (from side to side) wheelhouse.

Purpose
Transportation of crude oil and oil products with flash point below 60° C and fuel oil with maximum carried cargo density of 0.99 mt/m^3 with heating provided. Three types of cargo can be carried in a voyage.

Navigation area
The tanker is designed for sea navigation (within special areas specified in Rule 1.11, Annex 1 to IC MARPOL) with restrictions in accordance with RMRS class, and in inland waterways of Russia and in river areas with restrictions on draught and above-water height; passage along the Volga-Don Canal and Volga-Baltic waterway is taken into account.

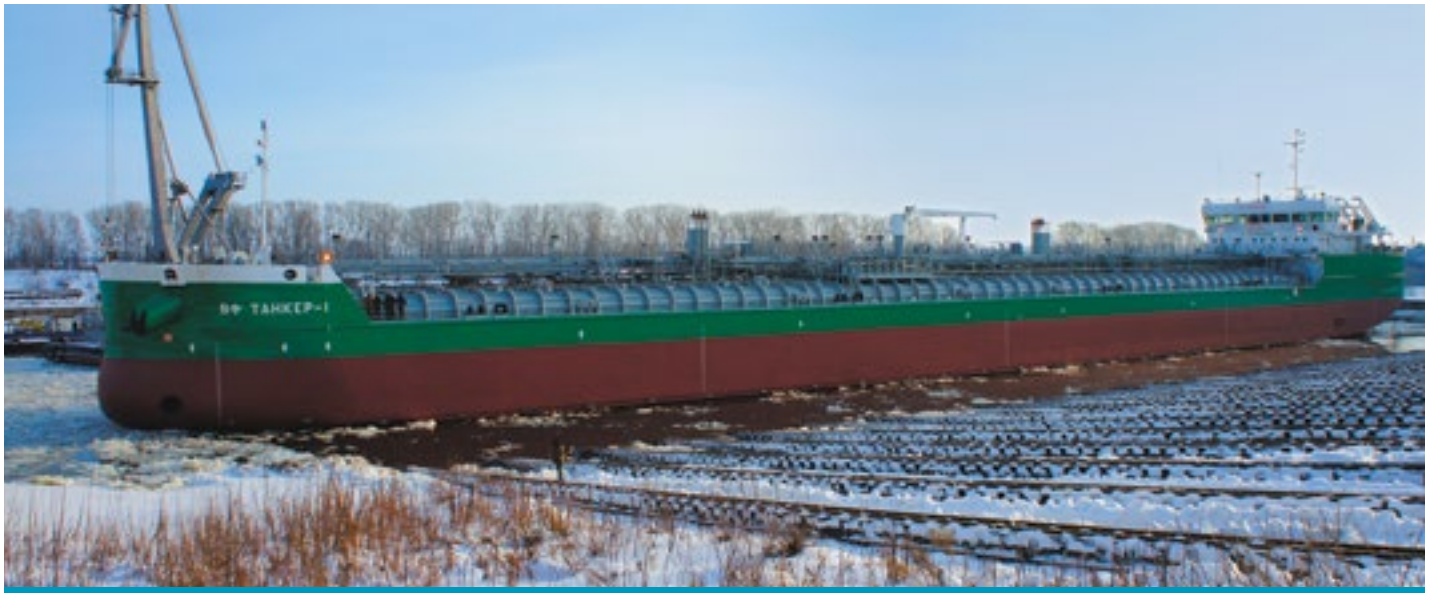
Class
KM⍟ Ice1 [I] R2 AUT1-ICS OMBO LI VCS Oil tanker (ESP) of the Russian Maritime Register of Shipping.

Basic specifications

Maximum length, m (ft)	141.50 (464.3)
Hull width, m (ft)	16.60 (54.5)
Maximum width, m (ft)	16.84 (55.2)
Depth, m (ft)	6.82 (22.4)
Draught loaded, m (ft)	4.60 (15.1)
Deadweight, mt	7,087
Cargo tanks capacity, m^3 (ft^3)	7,974 (281,640)
Slop tanks capacity, m^3 (ft^3)	246 (8,690)
Main engine, kW	2 x 1,200
Speed, knots	10.5
Crew	14
Sea endurance, days	20

The lead ship was built in 2010.

Design
Volgo-Caspian Design Bureau.



TANKER, PROJECT RST27

Type
Steel, single-deck, with twin rudder propellers, with forecastle and poop, with aft engine room and deckhouses, with 6 cargo tanks, with double bottom, double sides and trunk deck in cargo tanks area.

Purpose
Carrying of crude oil and petroleum products, including petrol without restrictions for flash-point, ensuring temperature of carrying cargo up to 60°C. Providing simultaneous carriage two sorts of cargo.

Navigation area
Sea areas conforming to restricted navigation area R2 – with a wave height of the 3% probability 7.0 m, with distance from a shelter place not greater than 100 miles and with permissible distance between shelter places not greater than 200 miles, internal water-ways of Russia with account of limitations.

Class
KM⍟Ice1 R2 AUT1- ICS, VCS, ECO-S OMBO, Oil tanker (ESP) of the Russian Maritime Register of Shipping.

Design
Marine Engineering Bureau.

Workshop documentation
Volgo-Caspian Design Bureau.

Basic specifications (sea/river)

Length overall, m (ft)	140.85 (462)
Length between perpendiculars, m (ft)	137.1 (450)
Breadth scantling, m (ft)	16.7 (54.8)
Breadth overall, m (ft)	16.86 (55.3)
Depth, m (ft)	6.0 (19.7)
Design draft in river, m (ft)	3.6 (11.8)
Draft by SLWL (at sea), m (ft)	4.2 (13.8)
Deadweight in river (draft 3.6 m/11.8 ft), mt	5,378
Deadweight at sea (draft 4.2 m/13.8 ft), mt	6,980
Capacity of cargo tanks (98%), m^3 (ft^3)	7,828 (189,950)
Capacity of slop tanks (98%), m^3	280 (9,890)
Capacity of ballast tanks, m^3	4,650 (164,230)
Maximum continuous power of ME, kW	2x1,200
Ship speed in full load condition at draft 4.20 m/13.8 ft at 100% MCR, not less than, knots	10.0
Crew/number of berths	12/15
Sea endurance, days	20/12

The lead ship was built in 2012.

DRY-CARGO SHIPS

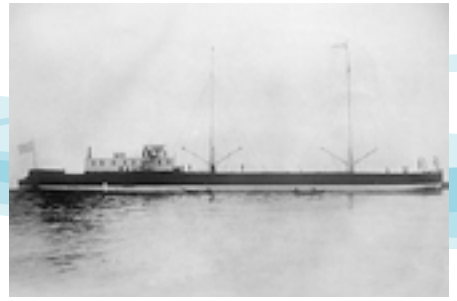
KRASNOYE SORMOVO SHIPYARD

Almost 100 years ago, in 1913, self-propelled dry-cargo motor vessel Danilikha with 2,000 mt cargo capacity was built at Sormovo Shipyard. It was the largest vessel in the Volga. Shallow draft of the vessel allowed delivering cargoes to Moscow and other Russian cities.

Dry-cargo vessels project 1557 of Sormovsky type, 3,400 DWT, the construction of which was started in 1967, became the biggest series of civil ships in the history of the Shipyard. At that time Sormovsky project was acknowledged as the most advanced among the river-sea-going vessels. About 120 vessels of the type were built within 20 years.

Up-to-date universal dry-cargo vessels combine features of universal ship for general cargo carrying, bulker, timber and feeder container carriers. Krasnoye Sormovo Shipyard builds dry-cargo vessels under projects of leading design bureaus. The key advantage of the new generation dry-cargo vessels is a balance of operational and commercial characteristics that ensures the efficiency of mass cargo transportation.

Lead dry-cargo vessel *Mirzaga Khalilov*, 6,300 DWT, project RSD17, built at Krasnoye Sormovo Shipyard as per project of Marine Engineering Bureau (Odessa), was certified by Russian Maritime Register of Shipping for conformance to ECO standard. This dry-cargo vessel is the first Russian vessel in its class with the ECO symbol. And for RMRS, in its turn, it was the first classification of the vessel for the compliance with ECO requirements.



The most advanced technical and construction solutions are realized in dry-cargo river-sea-going vessels built at our shipyard. Special attention is paid to protection of human life and environment. The key advantage of the new generation dry-cargo vessels is a balance of operational and commercial characteristics that ensures the efficiency of mass cargo transportation.

Sergey Smirnov,
Director of Engineering Center of Krasnoye Sormovo Shipyard

DRY-CARGO SHIP, PROJECT RSD17

Type
Single-deck single-screw vessel with foredeck and afterdeck, with wheelhouse and ER aft, with double bottom from forepeak bulkhead to afterpeak bulkhead, with double sides in cargo tanks area, with four holds, bulbous bow and flat stern.

Purpose
Transportation of general and bulk cargo, including TEU and FEU up to 9 feet height, timber, grain, steel, coal as well as large-size and hazardous cargo.

Navigation area
I restricted navigation area.

Class
KM⍟ Ice2 R1 AUT1-C ECO of the Russian Maritime Register of Shipping.

Design
Marine Engineering Bureau.

Workshop Documentation
Volgo-Caspian Design Bureau.

Basic specifications

Maximum length, m (ft)	121.70 (399.28)
Width, m (ft)	16.50 (54.13)
Depth, m (ft)	6.20 (20.34)
Draught at SLWL, m (ft)	5.06 (16.60)
Deadweight in sea at draught 5.06 m (16.60 ft), mt	6,271
Hold capacity, m^3 (ft^3)	9,370 (330,898)
Total container capacity, TEU/FEU	234/114
Container capacity – deck, TEU/FEU	174/84
Main engine: diesel, power, kW	2,450
Crew/number of berths	12/14
Speed (at draught 5.06 m (16.60 ft) and 90% MCR), knots	11.5±0.3
Endurance (by fuel / by provision), days	20/15

The lead ship was built in 2006.

DRY-CARGO SHIP, PROJECT 00101

Type
Twin-screw vessel with three cargo holds, double bottom and double sides, with engine-room and superstructure aft.

Purpose
Transportation of general and bulk cargoes, fertilizers in bulk and in bags, metal in bundles and rolls, bailed timber, bagged fruit and vegetables, 20-ft and 40-ft containers (including refrigerators), as well as dangerous cargoes of class 4, baled cotton, ammonium nitrate in bags or in bulk.

Navigation area
Open and inland seas according to the class restrictions, as well as inland waterways of the European part of the Russian Federation and European countries within the limits of the ship dimensions.

Class
KM⊛Ice2 [1] R1AVT1 of the Russian Maritime Register of Shipping.

Design
CDB Vympel.

Basic specifications (sea/river)

Length, m (ft)	128.2 (420.6)
Width, m (ft)	16.74 (54.9)
Depth, m (ft)	6.1 (20.0)
Above-water height, m (ft)	13.94 (45.7)
Draught, m (ft)	4.2/3.6 (13.8/11.8)
Cargo capacity, mt	4,960/3,720
Deadweight, mt	5,190/3,855
Capacity of holds, m^3 (ft^3)	8,090 (285,696)
Hold size, m (ft)	26.98x12.6 (88.5x41.3)
Gross tonnage, mt	4,960
Container capacity, TEU	267
Main engine power, kW	2x1,140
Loaded speed, knots	11
Crew/number of berths	10/10
Sea endurance, days	20

The lead ship was built in 2003.

DRY CARGO BARGE PROJECT 82

Purpose
Non self-propelled push-towed dry-cargo vessel equipped with one hold and intended for transportation of general, bulk, timber and large-sized cargoes, 8.5-ft height international standard containers and Class 9 dangerous cargoes with no requirements for ventilation and fire-smothering system of the hold.

Navigation area
Inland waterways of the Russian Federation related to class "M" according to the Rules of the Russian River Register, including grade "P" basins with sea navigation mode.

Operation conditions
Design temperature for vessel operation: ambient air temperature from –8°C at 85% humidity to +21°C at 70% humidity; water temperature from +1°C to +19°C.

Technological capabilities of the vessel
The vessel is equipped with a coupling device of ARTICOUPLER KVC3545 type produced by Taisei Engineering Consultant Inc and is intended for being pushed by push tag project 81.
The hold is equipped with sliding hatch covers with hydraulic actuator providing water-tight closing.

The lead ship was built in 2013.

Basic specifications

Maximum length, m (ft)	97.49 (320)
Maximum width, m (ft)	16.5 (54)
Breadth overall, m (ft)	16.8 (55)
Amidships depth, m (ft)	5.34 (17.5)
Air draft, m (ft)	5.5 (18)
Displacement, mt	5,204
Cargo capacity, mt	4,300
Draught loaded, m (ft)	3.6 (11.8)

Class
+ M3,0 (ice 10) of the Russian River Register.

Design
Spetssudoproekt (St. Petersburg).

Workshop documentation
Volgo-Caspian Design Bureau.

TECHNICAL AND AUXILIARY FLEET

KRASNOYE SORMOVO SHIPYARD

TRAILING SUCTION HOPPER DREDGER 1000

Purpose
Dredgers named *Sommers*, *Kronshlot* and *Kadosh* are intended for the performance of maintenance dredging in the basins and access channels to the ports of Ust-Luga, Big Port St. Petersburg and Tuapse.

Technological capabilities of the vessel
The dredger is equipped with a draghead. The hopper is open at the top (without hatch covers) and has coaming and a splash-proof screen lengthwise. A jet water system is provided for the complete soil removal from the hopper. The vessel is equipped with controllable overflow system located at the bottom. The soil is dumped via opening bottom doors. For cargo discharge and pumping ashore from the hopper by means of a self-emptying system with a dredge pump, the vessel is equipped with a bow coupling unit that can be connected to a shore or floating pipeline as well as with a rainbow nozzle with a rainbow distance of at least 60 m. The dredger is fitted with a grab crane. The dredging equipment is controlled from the bridge; the vessel is fitted with a dredging equipment positioning system.

Basic specifications

Maximum length, m (ft)	62.6 (205)
Maximum width, m (ft)	14 (46)
Draft loaded, m (ft)	4.25 (14)
Maximum dredging depth, m (ft)	20 (65.6)
Hopper capacity, m^3 (ft^3)	1,000 (35,320)

Class
KM⊛ Ice1 R1 AUT2 Hopper Dredger.

Design
Damen Shipyard Gorinchem (The Netherlands).

Workshop Documentation
Volgo-Caspian Design Bureau.

The lead ship was laid down on 14.11.2014, launched on 29.01.2016.

CONSTRUCTION BARGE, PROJECT ERSAI 1

Type
The construction barge is a flush deck rectangular pontoon chamfered at the bow and stern. Pontoon hull is divided with two longitudinal and seven transverse watertight bulkheads to form ballast tanks, engine room and void space. Positioning mooring winches are installed in the void space. Fore and aft peaks will be divided in two tanks.

Purpose
The non-propelled construction barge intended for installing piles and other supporting structures for the offshore facilities in the Kashagan oil field in the North part of the Caspian Sea, offshore Kazakhstan. The barge is equipped with a Demag CC 12600 crawler crane, pile-driving equipment, service module and other equipment and structures. During operations the construction barge is grounded on the sea bottom.

Navigation area
Caspian Sea.

Class
KE⊛[1]I of the Russian Maritime Register of Shipping.

Design
CDB Corall.

Basic specifications*

Length overall, m (ft)	140.45 (460.8)
Hull length, m (ft)	139.84 (458.8)
Width overall, m (ft)	42.61 (139.8)
Hull width, m (ft)	42.0 (137.8)
Depth, m (ft)	8.40 (27.6)
Weight (without liquid cargoes), mt	7,300
Light displacement (with stable fluid mass), mt	9,200
Average light draught, m (ft)	1.65 (5.4)
Maximum displacement at towage, mt	18,980
Draught at towage, m (ft)	3.3 (10.8)
Average displacement in operating position, mt	23,193
Maximum displacement in operating position, mt	32,830
Average draught in operating position, m (ft)	4.0 (13.1)
Maximum draught in operating position, m (ft)	5.6 (18.4)

** displacement and draught at specific mass 1.025 mt/m³*

The barge was built in 2006.

REFERENCES

KRASNOYE SORMOVO SHIPYARD

Commercial vessels since 1995

Vessels type	Year of lead ship launching	Totally launched
Dry-cargo ship, project 17310	1995	8
Dry-cargo ship, project 19610	1995	12
Tanker, project 19612	1999	5
Barge, project P156C	2000	4
Barge, project 05074T	2001	7
Tanker, project 19614	2001	25
Dry-cargo ship, project 00101 Rusich	2003	3
Tanker, project 19619	2004	14
Construction barge (platform) Ersai-1	2005	1
Dry-cargo Ship, project RSD17	2006	5
Tanker, project RST22	2008	7
Tanker, project 19900	2010	6
Tanker, project RST27	2012	19
Barge, project 82	2013	10

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