



Construction and operation of river-sea ships on Russian waterways

Konstantin SOLDATOV. Russian River Register.
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Operating Conditions of Ships in Russian Federation

Volga River



The background of Rules of every classification society is the experience accumulated during construction and operation of ships based on specific operating conditions.

The total length of federal waterways of Russia is 101 484.8 km, including waterways with guaranteed dimensions of navigable pass - 49 872.6 km, waterways fitted with navigation facilities - 53 044.6 km, waterways with 24/7 navigation - 38 285.3 km.

78 % of the above waterways have no alternative in transportation of cargoes and passengers in the northern territories of Russia.

The major part of goods is carried by the Uniform Deepwater System of European Russia with approximate length of 6.500 km. The System includes Volga-Baltic Waterway, the White Sea – Baltic Sea Canal, waterways of Volga-Kama River System of Dams, Moscow Canal, Volga-Don Canal and the lower part of the river Don.

More than 100 of river ports are in operation in Russia.

Volga-Baltic Canal



Oka River



Neva River



Irtys River



Lake Ladoga



Amur River



Indigirka River





Types of large-scale ships built according to River Register Rules

**Volga-Don type ships,
built over 200 units**



**Moskva type ship, built
over 400 units**



Specific aspects of Russian waterways e. g. shallowness of river tributaries, high water level of lakes, rapids, ice conditions etc. have a bearing upon design and structure of river ships, their principal dimensions, architectural and structural type, as well as motion type. Therefore, the Rules of River Register must be developed taking into account the above.

An average voyage of river ship continues non-stop for many days. During the voyage the ship passes shallow water stretches and deep water reservoirs and lakes where the navigation conditions are similar to those of a sea.

Promotion and maintenance of a high safety level ensured by the Rules of the River Register is the main task of scientists, designers, shipbuilders and experts of the River Register that has been successfully achieved despite of its complexity.

**Moskvich type ship,
built app. 500 units**



**OT type push tug, built
over 200 units**



Hydrofoil craft, built app. 3000 ships



**RT type bush tug, built app. 700
units**



Number of ships under Russian River Register class



Total number of ships classed by RRR – 24 909

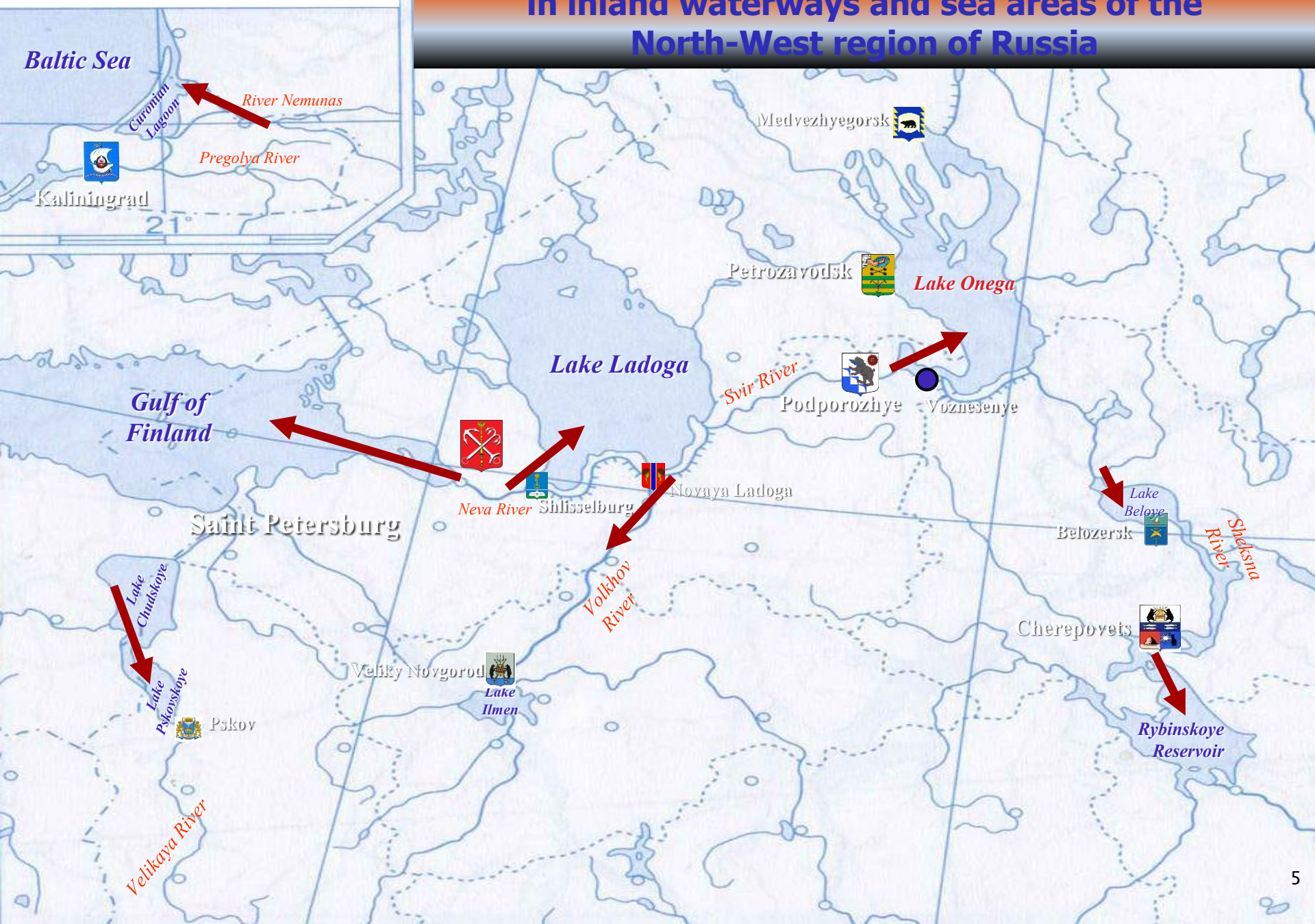
Including combined (river-sea) navigation ships:

M-CH class – 595 ships

M-PP class - 853 ships

O-PP class - 346 ships

Operation of combined (river-sea) navigation ships in inland waterways and sea areas of the North-West region of Russia





Operation of combined (river-sea) navigation ships in northern inland waterways and sea areas of Russia



Navigation areas of combined (river-sea) navigation ships in East Arctic



PROJECT 81 pusher

Main dimensions:	
Length overall, m	25,15
Breadth scantlings, m	10,7
Board height, m	5,15
Displacement (empty), t	299 (draft – 3,2 m)
Endurance, days	7
Crew, members	7+3
Deadweight, t	65,8
Main engine	«Caterpillar» C32
Power, kW	2*746
Diesel generators	C4.4 «Caterpillar»
Power, kW	2*86

Were built 6 pushers



PROJECT 82

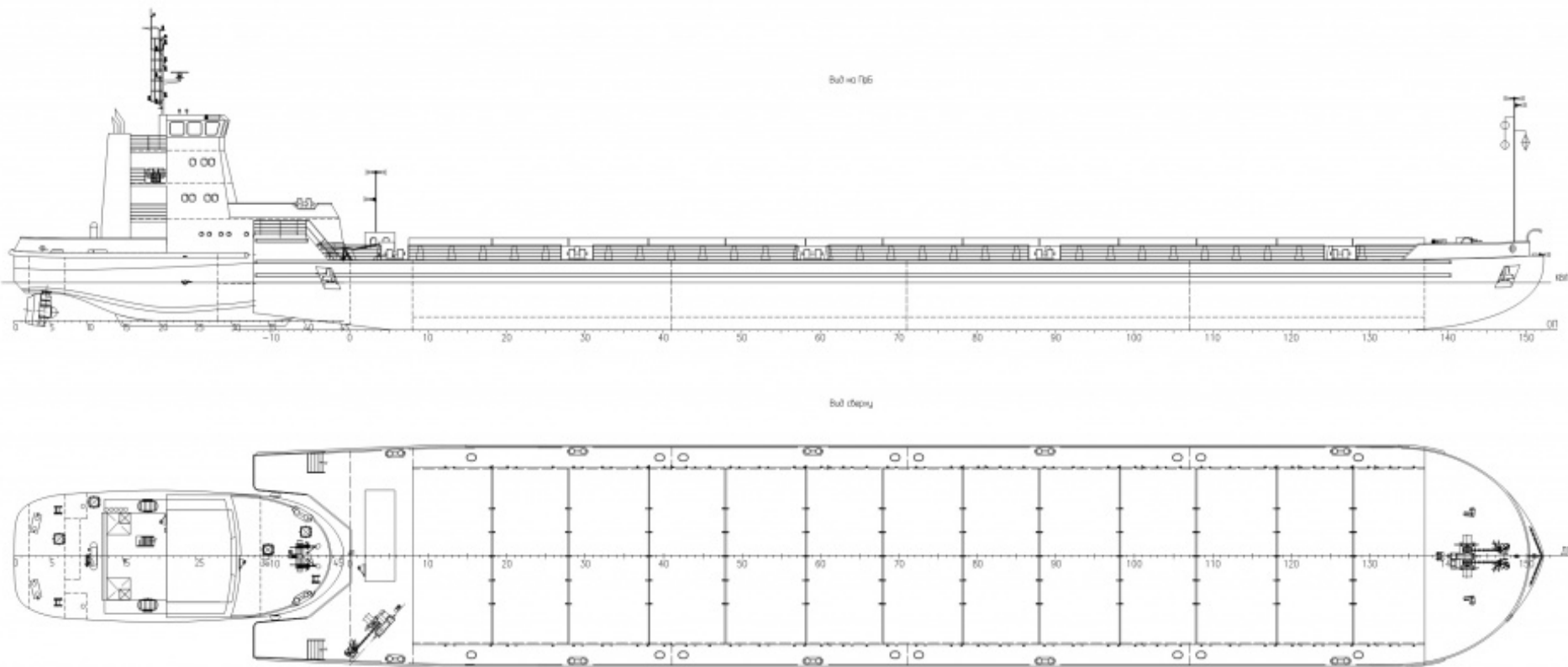
Dry cargo barge

Main dimensions:	
Length overall, m	97,84
Breadth scantlings, m	16,8
Board height, m	5,34
Displacement, t	5280
Endurance, days	3,6
Deadweight, t	4300

Were built 10 barges



Pushed convoy: PROJECT 81 pusher+ PROJECT 82 dry cargo barge











PROJECT RST54

5745 DWT combined dry-cargo open-deck vessel / tanker

#	Name	Value
1.	Main dimensions	
	Length overall, m	140.85
	Length by CWL, m	140.66
	Breadth	16.70
	Depth, m	5.00
	Height from BL to part of non-removable parts (not more than), m	16.10
	L x B x H	140.85 x 16.70 x 5.00 = 11 761
2.	Draught, m (in sea / in river)	3.527 / 3.60
3.	Deadweight in the river at draft 3.60 m, t	5745
4.	Height of cargo bay border, m	2.00
5.	Volume of cargo space up to upper edge of border, m³	2564
6.	Weight of crushed stone on deck (approx), t	4700
7.	Container capacity (TEU / FEU)	120 / 45
8.	Car capacity (requires special removable cassettes)	270-350 (depending on the size)
9.	Cargo and slop tanks capacity (98%), m³	5653
10.	Endurance, days	20
11.	Russian River Register class	✠ M-PR 2,5 (ice30) A
12.	ME power, kW	2 x 1200
13.	Screw and Rudder	2 x Rudderpropellers
14.	Bow thruster, kW	230
15.	Auxiliary diesel-generators + Emergency diesel-generator	3 x 296 kW + 62 kW
16.	Auxiliary steam-boiler, t/h	2 x 2.5
17.	Cargo pumps output, m³/h	2 x 300
18.	Number of manifolds / Sorts of cargo	4 / 1
19.	Cargo heating	Coils
20.	Slop tank pump, m³/h	80
21.	Crew / berth, pers.	12 / 14 + pilot
22.	Speed (at draft 3.60 m and 85% MCR), knots	11.0



PROJECT RST54

5745 DWT combined dry-cargo open-deck vessel / tanker

Purpose - sea and mixed (river-sea) carrying:

in cargo tanks:

- petroleum products with flash-point temperature more than 60°C;

on cargo deck:

- crushed stone;
 - rolled steel;
 - cars (also on removable decks);
 - TEU and FEU containers of international standard;
- and other general and bulk cargoes which can be exposing to wet.

Name	Shipyard, building number	Keel laying date	Launching date	Delivery date
Balt Flot 1	Oka SY, 5401	16.12.13	10.07.14	22.10.14
Balt Flot 2	Oka SY, 5402	24.01.14	26.08.14	27.04.15
Balt Flot 3	Oka SY, 5403	05.03.14	24.10.14	27.04.15
Volga-Flot 10	Oka SY, 5404	10.04.14	16.04.15	27.11.15
Balt Flot 4	Oka SY, 5405	28.05.14	19.11.15	26.04.16
Balt Flot 5	Oka SY, 5406	28.08.14	17.03.16	01.06.16
Balt Flot 6	Oka SY, 5407	28.11.14	21.04.16	11.07.16











PROJECT RST25

6710 DWT product tanker "Alexandr Shemagin" type

#	Name	Value
1.	Main dimensions	
	Length overall, m	139.99
	Length between PP, m	138.24
	Breadth scantlings, m	16.60
	Depth, m	5.50
	L x B x H	139.99 x 16.60 x 5.50 = 12 781
2.	Draught, m (in sea(SWL) / in river)	4.175 / 3.60
3.	Deadweight, t (in sea(T=4.175) / in river(T=3.60) / in river(T=3.40))	6710 / 5229 / 4692
4.	Endurance, days (in sea / in river)	20 / 10
5.	Cargo carrying capacity (including slop tanks), m³	6990
6.	Number of tanks (cargo / slop)	8 (6 / 2)
7.	Ballast tank capacity, m³	4349
8.	Russian maritime Register of Shipping class	KM ★ Ice1 R2-RSN AUT1-ICS VCS ECO BWM OMBO Oil tanker (ESP)
9.	Cargo pumps output, m³/h	6 x 150
10.	ME power and type, kW	2 x 1200 (6L20 "Wartsila")
11.	Screw and Rudder	Rudderpropellers
12.	Bow thruster, kW	230
13.	Auxiliary diesel-generators + Emergency diesel-generator	3 x 292 kW + 1 x 136 kW
14.	Auxiliary steam-boiler, t/h	2 x 2
15.	Crew / berth, pers.	12 / 14
16.	Speed (at SWL draft and 85% MCR), knots	10.5±0.3



PROJECT RST25

6710 DWT product tanker "Alexandr Shemagin" type

Purpose - sea and mixed (river-sea) carrying of crude oil and petroleum products, including gasoline without restrictions for flash-point, with ensuring temperature of carrying cargo up to 50°C. Simultaneous carriage 2 sorts of cargo is provided.

Name	Shipyard, building number	Keel laying date	Launching date	Delivery date
	Verf' brat'ev Nobel'			
Alexandr Shemagin		21.12.10	15.11.11	26.07.12
Pavel Judin		17.05.11	28.08.12	15.11.12
Julij Makarenkov		01.11.11	20.11.12	29.05.13
	Zelenodolsk Shipyard			
Almetevsk	271	22.04.11	13.06.12	15.03.13
Bavly	272	23.06.11	07.09.12	19.06.13
	Shipyard of Astrahan "Lotos"			
Sergey Terskov	25004	06.09.11	24.07.15	07.04.16
Yakov Gunin	25005	06.09.11	26.09.15	12.07.16
Volgotrans - 2501	25006	25.03.16	28.06.19	
Volgotrans - 2502	25007	07.04.16		









PROJECT RST27

7030/5428 DWT product tanker "VF Tanker" type

#	Name	Value
1.	Main dimensions	
	Length overall, m	140.85
	Length between PP, m	137.10
	Breadth scantlings, m	16.70
	Depth, m	6.00
	L x B x H	140.85 x 16.70 x 6.00 = 14 113
2.	Draught, m (in sea / in river)	4.20 / 3.60
3.	Deadweight, t (in sea / river)	7030 / 5428
4.	Endurance, days (in sea / river)	20 / 12
5.	Cargo tanks capacity (including slop tanks), m ³	8274
6.	Number of cargo/slop tanks	8 (6 / 2)
7.	Russian maritime Register of Shipping class	KM ⚙ Ice1 R2 AUT1-ICS OMBO VCS ECO-S Oil tanker (ESP)
8.	ME power and type, kW	2 x 1200, (6L20 "Wartsila")
9.	Screw and Rudder	Rudderpropellers (Shottel SRP1012FP)
10.	Bow thruster, kW	230 (Schottel STT0170FP)
11.	Emergency diesel-generator + Harbour diesel-generator, kW	3 x 292 kW + 136 kW
12.	Auxiliary steam-boiler, t/h	2 x 2.5
13.	Crew / berth, pers.	12 / 14 + pilot
14.	Cargo pumps output, m ³ /h	6 x 200
15.	Number of manifolds / Sorts of cargo	2 manifolds / 2 sorts
16.	Cargo heating	Coils
17.	Tank wash system and cleaning of washing liquid	Slop tank's pump 80 m ³ /h
18.	Speed (at draft 4.20 m and 100% MCR), knots	10.5



PROJECT RST27

7030/5428 DWT product tanker "VF Tanker" type

Purpose - sea and mixed (river-sea) carrying of crude oil and petroleum products, including benzine without restrictions for flash-point, with ensuring temperature of carrying cargo up to 60°C, and vegetable oil. Simultaneous carriage 2 sorts of cargo is provided.

Name	Shipyard, building number	Keel laying date	Launching date	Delivery date
	Krasnoye Sormovo Shipyard			
VF Tanker-1	02001	30.08.11	17.02.12	05.05.12
VF Tanker-2	02002	15.11.11	14.04.12	23.05.12
VF Tanker-3	02003	03.10.11	17.03.12	17.05.12
VF Tanker-4	02004	20.12.11	18.05.12	09.06.12
VF Tanker-5	02005	15.12.11	15.06.12	10.07.12
VF Tanker-6	02006	28.02.12	12.07.12	20.08.12
VF Tanker-7	02007	30.03.12	16.08.12	17.09.12
VF Tanker-8	02008	30.04.12	28.09.12	12.10.12
VF Tanker-9	02009	08.06.12	19.10.12	29.10.12
Constructor Zhivotovsky	02010	31.07.12	23.04.13	15.05.13
Valentin Gruzdev	02011	27.09.12	17.05.13	28.03.14
Dmitry Pokrovsky	02012	31.10.12	28.05.13	28.03.14
Ledi Leyla	02013	02.04.13	08.05.14	24.06.14
Ledi Sevda	02014	15.04.13	12.09.14	30.09.14
Synergy 1	02015	09.06.14	17.04.15	02.06.15
Synergy 2	02016	23.06.14	08.05.15	13.06.15
Victoria	02017	25.12.14	10.09.15	30.09.15
Balt-Flot 11	02018	25.09.15	25.03.16	11.05.16
Balt-Flot 12	02019	20.11.15	11.05.16	07.07.16
Ganja	02020	23.12.15	19.08.16	19.10.16
Professor Aziz Aliyev	02021	15.04.16	17.02.17	20.06.17
Volgotrans - 2701	02023	31.05.16	24.03.17	10.07.17
Volgotrans - 2702	02024	28.07.16	05.05.17	24.07.17

	Oka SY			
VF Tanker-11	02701	20.10.11	27.04.12	17.07.12
VF Tanker-12	02702	27.10.11	01.06.12	17.08.12
VF Tanker-13	02703	23.12.11	28.07.12	25.09.12
VF Tanker-14	02704	20.01.12	23.08.12	02.11.12
VF Tanker-15	02705	20.03.12	04.10.12	04.12.12
VF Tanker-16	02706	23.05.12	22.11.12	29.04.13
VF Tanker-17	02707	20.06.12	08.02.13	29.04.13
VF Tanker-18	02708	03.09.12	26.03.13	31.05.13
VF Tanker-19	02709	18.10.12	25.04.13	28.06.13
VF Tanker-20	02710	30.11.12	28.05.13	29.07.13
VF Tanker-21	02711	11.01.13	10.07.13	02.09.13
VF Tanker-22	02712	11.03.13	15.08.13	07.10.13
Balt-Flot 14	02713	14.12.15	08.06.16	06.06.17
Balt-Flot 15	02714	14.12.15	30.03.17	06.06.17
	Kherson Shipyard			
RN Samara	8001	23.11.11	19.10.12	22.03.13
RN Syzran	8002	22.12.11	17.05.13	12.07.13
RN Saratov	8003	22.03.12	21.06.13	30.08.13
	Damen Shipyards Yichang			
Maaik	559005	24.05.16	20.09.17	24.01.18
Linda	559006	20.06.16	15.11.17	12.03.18





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PROJECT RSD44

5716 / 5698 DWT multipurpose dry-cargo vessel type of "Volgo-Don max" class

#	Name	Value
1.	Main dimension	
	Length overall, m	139.97
	Length by DWL, m	138.90
	Breadth overall, m	16.80
	Breadth, m	16.50
	Depth to the main deck, m	5.00
	Height of cargo holds coaming, m	2.205
	L x B x H	139.99 x 16.80 x 5.00 = 11 757
2.	Draught (in sea / in river), m	3.595 / 3.60
3.	Deadweight (in sea / in river), t	5716 / 5698
4.	Number of holds	2
5.	Holds dimension (l x b x h), m	N1 37.80 x 13.20 x 6.22 N2 49.80 x 13.20 x 6.22
6.	Holds capacity, m³	7086
7.	Container capacity, units	
	TEU	140
	FEU	73
8.	Russian River Register class	✠ M-PR 2,5 (ice 20) A
9.	ME power, kW	2 x 1200
10.	Rudder and propellers complex	2 x Rudderpropellers
11.	Bow thruster, kW	120
12.	Auxiliary engines	
	Diesel-generators, kW	2 x 184
	Emergency diesel-generators, kW	1 x 62
13.	Crew / berth, pers.	9 / 16
14.	Speed, knots	12.0



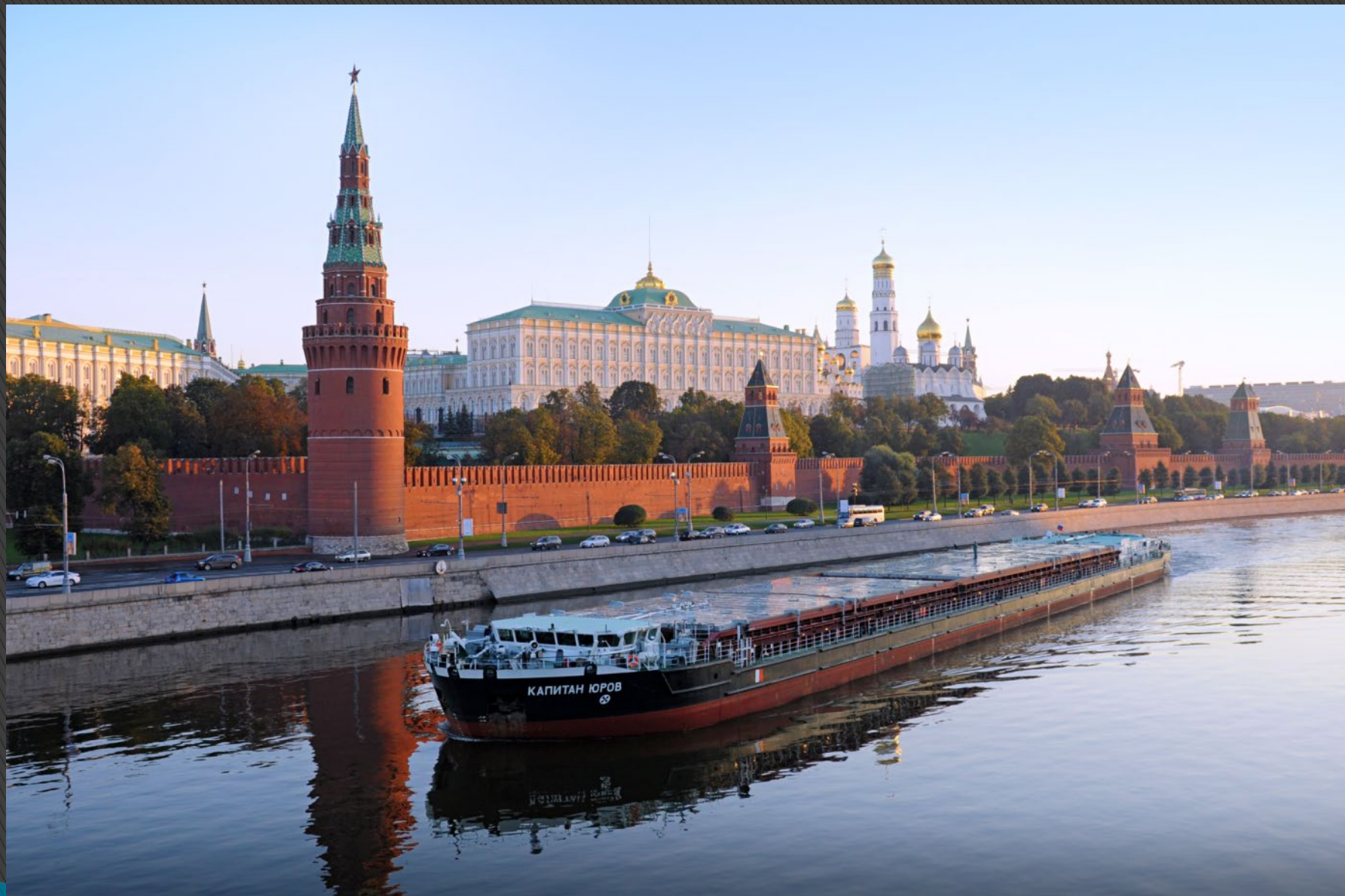
PROJECT RSD44

5716 / 5698 DWT multipurpose dry-cargo vessel type of "Volgo-Don max" class

Purpose - carrying of the general and bulk cargoes, including TEU and FEU up to 9'6" height in holds, steel, scrap, grain, timber, logs and carving woods, potash and mineral fertilizer, niter, sulphur, coal, building materials, paper, large-dimension cargoes.

Name	Shipyard, building number	Keel laying date	Launching date	Delivery date
Kapitan Ruzmankin	Oka SY	24.02.10	23.11.10	20.05.11
Kapitan Zagryadtsev	Oka SY	27.04.10	12.04.11	16.06.11
Kapitan Krasnov	Oka SY	26.06.10	05.05.11	14.07.11
Kapitan Gudovich	Oka SY	26.08.10	27.05.11	10.08.11
Kapitan Sergeev	Oka SY	29.11.10	15.07.11	07.09.11
Kapitan Kadomcev	Oka SY	29.11.10	16.08.11	10.10.11
Kapitan Afanas'ev	Oka SY	28.12.10	14.09.11	10.11.11
Kapitan Jurov	Oka SY	28.12.10	14.10.11	18.11.11
Kapitan Shumilov	Oka SY	05.05.11	22.11.11	29.04.12
Kapitan Kanatov	Oka SY	22.06.11	18.01.12	29.04.12













PROJECT RSD59

8144 / 5320 DWT multipurpose dry-cargo vessel "Pola Makaria"
type of "Volgo-Don max" class

#	Name	Value
1.	Main dimension	
	Length overall, m	140.88
	Length between PP, m	137.08
	Breadth overall, m	16.98
	Breadth scantlings, m	16.90
	Depth, m	6.00
	L x B x H	140.88 x 16.98 x 6.00 = 14 352
2.	Draught (in sea / in river), m	4.706 / 3.60
3.	Deadweight (about) (in sea / in river), t	8144 / 5320
4.	Endurance (in sea / in river), days	20 / 12
5.	Number of holds	2
6.	Holds capacity, m³	11400
7.	Container capacity (hold / deck), TEU	248 (192 / 56)
8.	Russian maritime Register of Shipping class	KM ⚙ Ice2(hull; power) R2 AUT1-ICS BWM(T) CONT (deck, cargo holds Nos.1,2) DG (bulk, pack)
9.	ME power, kW	2 x 1200
10.	Rudder and propellers complex	2 x Rudderpropellers
11.	Bow thruster, kW	1 x 230
12.	Auxiliary engines:	
	diesel-generators, kW	2 x 332
	emergency diesel-generators, kW	1 x 90
13.	Crew / berth, pers.	11 / 14
14.	Speed (at draft 4.5 m and 100% MCR), knots	10.2 ±0.2



PROJECT RSD59

8144 / 5320 DWT multipurpose dry-cargo vessel "Pola Makaria"
type of "Volgo-Don max" class

Purpose - sea and mixed (river-sea) carrying of the general and bulk cargoes (including grain), packaged lumber, timber, scrap-metal, bunched and rolled steel, large-dimension and heavy-weight cargoes, coil, hazardous cargoes of classes 1, 2, 3, 4, 5, 6.1, 8, 9 in accordance with IMDG Code and category "B" cargoes from IMSBC Code.

Name	Shipyard, building number	Keel laying date	Launching date	Delivery date
Krasnoye Sormovo Shipyard				
Pola Makaria	06001	05.09.17	20.04.18	24.05.18
Pola Filofeya	06002	19.09.17	08.06.18	05.07.18
Pola Sofia	06003	25.09.17	12.07.18	08.08.18
Pola Feodosia	06004	20.12.17	17.08.18	14.09.18
Pola Fiva	06005	25.12.17	21.09.18	15.10.18
Idel 1	06006	25.09.18	21.02.19	16.05.19
Idel 2	06007	27.11.18	05.04.19	23.05.19
Idel 3	06008	14.12.18	14.05.19	28.06.19
Andrey Zuev	06009	28.02.19	21.06.19	16.07.19
Pola Harita	06010	18.04.19	02.08.19	06.09.19
Pola Pelagiya	06011	21.05.19	20.09.19	11.10.19
Aleksandr Sokolov	06012	28.06.19	25.10.19	12.11.19
Pola Anastasiya	06013	20.08.19	12.12.19	
	06014	30.09.19		
	06015	01.11.19		
	06016	02.20		
Neva shipbuilding and ship-repair yard				
Pola Anatolia	591	18.05.17	05.07.18	18.12.18
Pola Anfisa	592	25.05.17	13.11.18	20.05.19
Pola Gali	593	12.11.17	01.04.19	
Pola Kallista	594	22.12.17		
Pola Kirena	595	02.07.18		
Oka SY				
	5901	30.07.19		













Thank you for your attention!

