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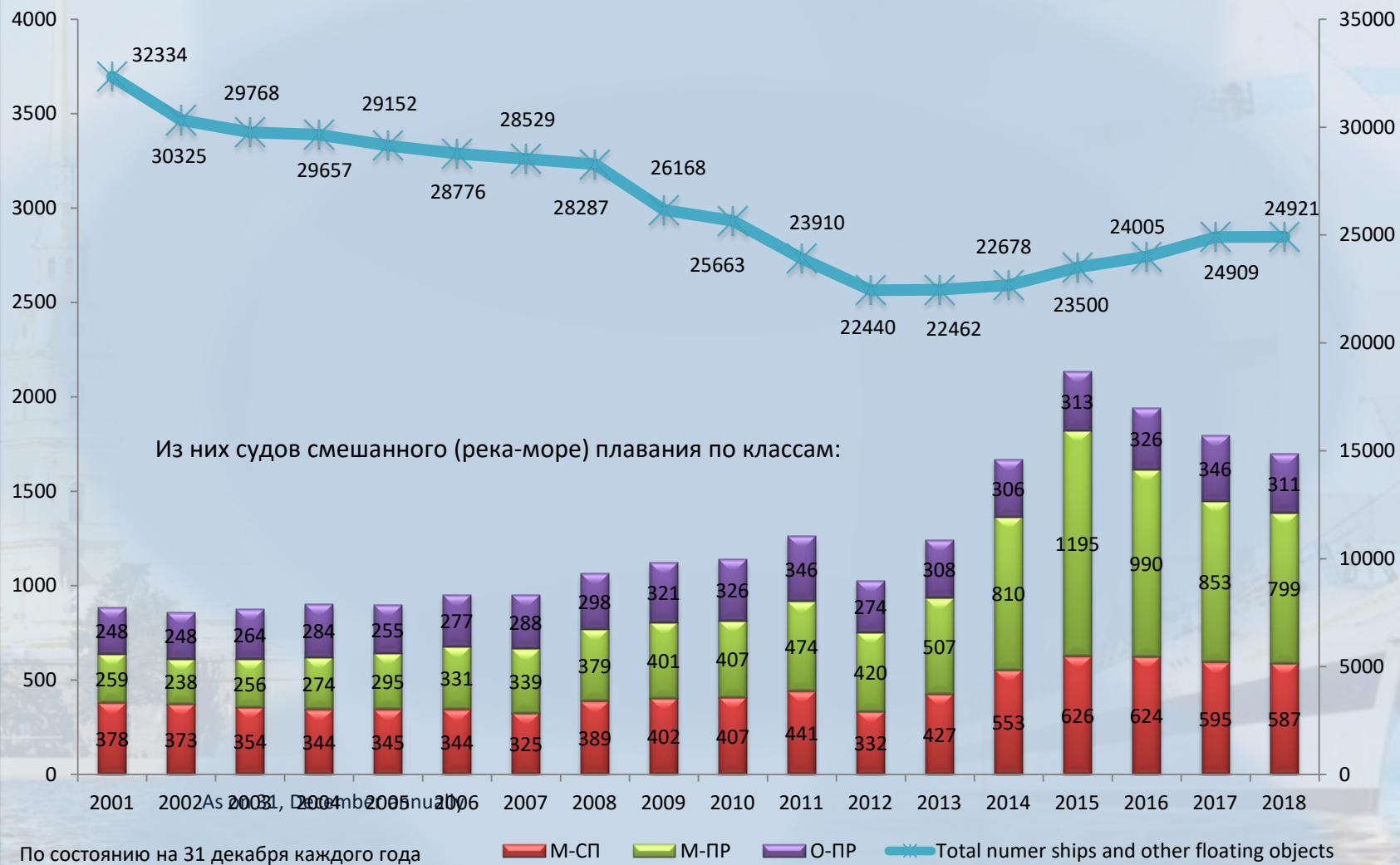
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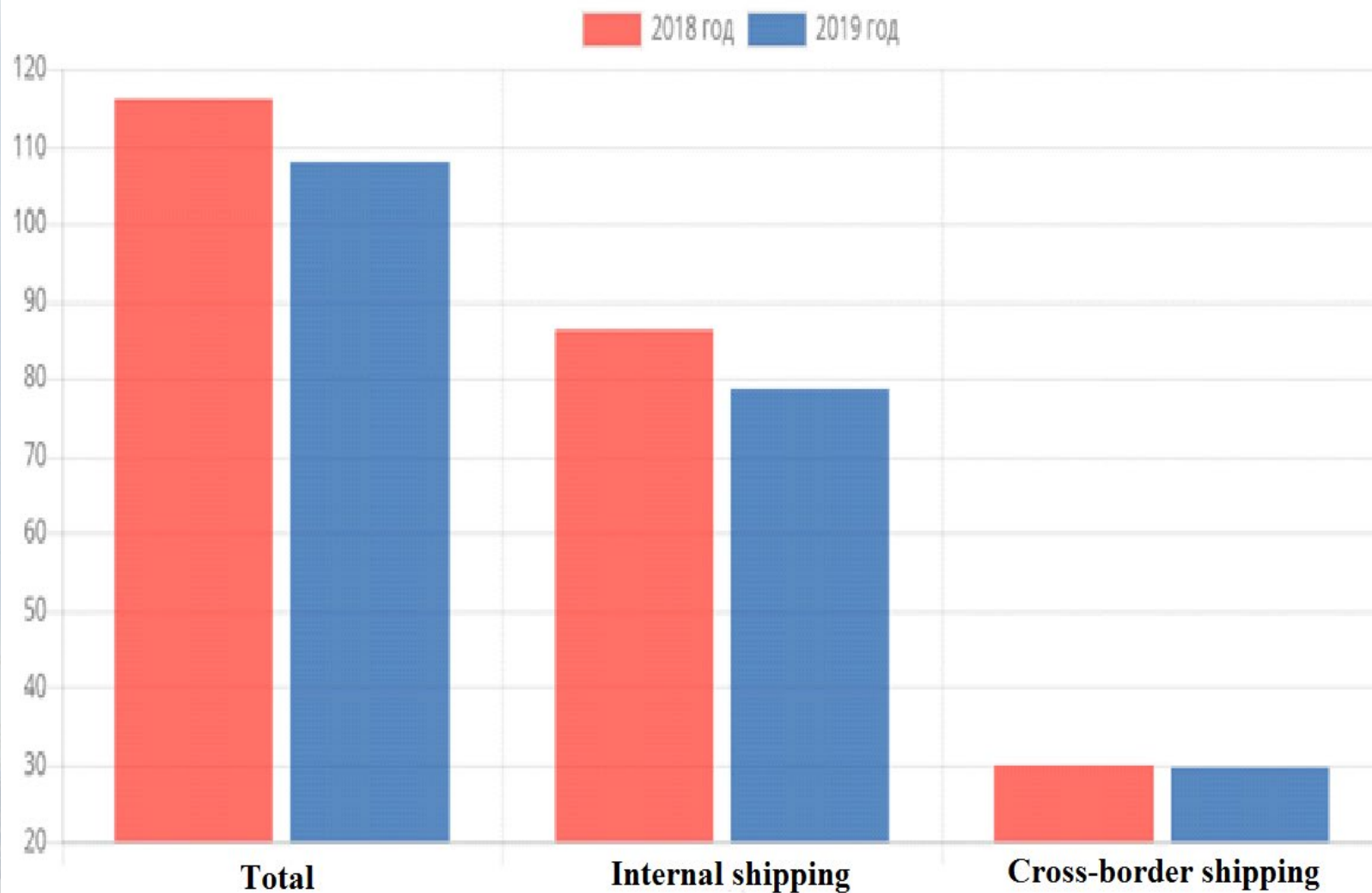
EDUCATIONAL STANDARDS FOR TRAINING OF RIVER-SEA SHIP CREWS IN RUSSIAN FEDERATION



Number of ships registered by the Russian River Register



The carriage of goods by inland water transport of Russia, million tons





North-Western Shipping Company

Leadership traditions



WWW.NWSHIP.COM

Map symbols

- City**
 - Populated areas
 - Cities and towns
- State borders**
 - Other states
 - Russia
- Sea depth**
 - 0–1,000 m
 - 1,000–2,000 m
 - 2,000–4,000 m
 - 4,000 m and more
- Transport**
 - Railways
 - Sea ports
 - River ports
 - Rivers
 - Northern Sea Route
 - Sea routes
 - River routes
- Primorsk**
- Belovo**



Key clients

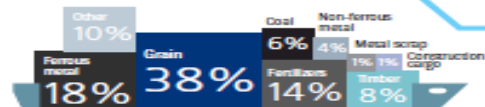
- Shipbuilding**
 - 1 Baltic Shipyard
 - 2 Gazprom Refinery
 - 3 Zvezdochka
 - 4 Rosneft Refinery
 - 5 Rosneft Refinery
 - 6 Rosneft Refinery
 - 7 Rosneft Refinery
 - 8 Rosneft Refinery
 - 9 Rosneft Refinery
 - 10 Rosneft Refinery
- Railway**
 - 11 Rosneft Refinery
 - 12 Rosneft Refinery
 - 13 Rosneft Refinery
 - 14 Rosneft Refinery
 - 15 Rosneft Refinery
- Nuclear power industry**
 - 16 Rosneft Refinery
 - 17 Rosneft Refinery
 - 18 Rosneft Refinery
 - 19 Rosneft Refinery
 - 20 Rosneft Refinery
- Non-ferrous metal industry**
 - 21 Rosneft Refinery
 - 22 Rosneft Refinery
 - 23 Rosneft Refinery
 - 24 Rosneft Refinery
 - 25 Rosneft Refinery
- Pharmaceutical industry**
 - 26 Rosneft Refinery
 - 27 Rosneft Refinery
 - 28 Rosneft Refinery
 - 29 Rosneft Refinery
 - 30 Rosneft Refinery
- Food industry**
 - 31 Rosneft Refinery
 - 32 Rosneft Refinery
 - 33 Rosneft Refinery
 - 34 Rosneft Refinery
 - 35 Rosneft Refinery
- Chemical industry**
 - 36 Rosneft Refinery
 - 37 Rosneft Refinery
 - 38 Rosneft Refinery
 - 39 Rosneft Refinery
 - 40 Rosneft Refinery
- Wood industry**
 - 41 Rosneft Refinery
 - 42 Rosneft Refinery
 - 43 Rosneft Refinery
 - 44 Rosneft Refinery
 - 45 Rosneft Refinery

Shipping structure

- Baltic Sea, North Sea and Bay of Biscay**
 - 48% of total freight volume.
 - Steel, chemical fertilizers, timber, equipment.
- Inland water ways**
 - 16% of total freight volume.
 - Grain, timber, equipment (41 voyages), chemical fertilizers, metal.
- Black Sea, Caspian Sea, Mediterranean Sea**
 - 36% of total freight volume.
 - Grain, metal, equipment, coal, project cargo.

Cargo flow structure

Cargo mix



Development of hydrocarbon deposits in the Caspian Sea (NWSC involved since 2003)

Total weight of equipment delivered from 2013 exceeds 17,000 tonnes, volume exceeds 125,000 cbm

Expansion or production at SIBUR's Tobolsk refinery plant

Total volume of petrochemical equipment delivered in 2010-2011 exceeds 50,000 cbm

Construction of Oryol's Vysok LNC production and transmission terminal in the Leningrad Region

2016. Delivery of two gas liquefaction units weighing 240 tonnes each and two cooling units weighing 50 tonnes each

Expansion or production at SIBUR's Zapadneksk plant

Total weight of heavy and bulky equipment delivered in 2015-2017 exceeds 27,000 tonnes

Upgrading or Caspian Flare's Desulfurization

Total weight of 73 equipment units delivered in 2015-2016 is about 9,500 tonnes

Construction of wind farms in Kazakhstan and Russia

2016. Delivery of wind power generation turbine components with total weight of 5,000 tonnes (34,000 cbm) to Barents and Arktika ports on the Caspian Sea and Kirovsk port on the Volga river

Construction of Arktika icebreaker at Balakovo Zavod shipyard

Three ship propellers weighing 300 tonnes each delivered in 2016

Expansion or production at rattle facilities in Kazakhstan and Turkmenistan

Total weight of heavy equipment delivered in 2014-2015 for Caspian Maritime Service, TANAP and TAPOL is about 6,500 tonnes, volume is about 50,000 cbm

Expansion or production at Pevkovo Federal District's rattle facilities

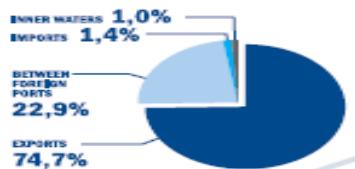
Total weight of rattle facilities delivered in 2013 to Khabarovsk, Novosibirsk and Tyumen is about 3,000 tonnes

Expansion or production at Bessmertnyy Shipyard

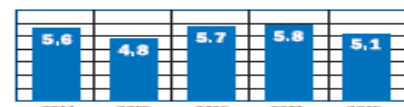
Total weight of 30 equipment units delivered in 2012-2013 is about 5,500 tonnes

Upgrading or Bessmertnyy's plants

Total weight of rattle and steam generators delivered in 2013-2015 for Barents, Novosibirsk and Leningrad NPPs amounts to 1,500 tonnes



Shipping volume, mln t



Largest Industrial projects Involving North-Western Shipping Company

NWSC fleet



Length, m	width, m	gross tonnage, GRT	net tonnage, GRT	gross reg. tonnage, GRT	gross reg. tonnage, GRT	gross reg. tonnage, GRT
89.96	6.4	4 800	5 026	Nº1 60x11.5x9.4	6 227 / 220 000	
depth, m	draft, m	max. cargo capacity, GRT	max. cargo capacity, GRT	max. cargo capacity, GRT	max. cargo capacity, GRT	max. cargo capacity, GRT
14.5						

"Amethyst"

10 units

VESSEL CLASS: KM (*) Ice3 AUT1 Russian Maritime Register or Shipping



Length, m	width, m	gross tonnage, GRT	net tonnage, GRT	gross reg. tonnage, GRT	gross reg. tonnage, GRT	gross reg. tonnage, GRT
128.2	4.34	5 200	5 470	Nº1 26.98x12.6x8	8 125 / 286 931	
depth, m	draft, m	max. cargo capacity, GRT	max. cargo capacity, GRT	max. cargo capacity, GRT	max. cargo capacity, GRT	max. cargo capacity, GRT
16.74	3.6	3 650	3 860	Nº2 26.98x12.6x8		
				Nº3 26.98x12.6x8		

"Rusich"

11 units

VESSEL CLASS: KM (*) Ice2 AUT1 Russian Maritime Register or Shipping



Length, m	width, m	gross tonnage, GRT	net tonnage, GRT	gross reg. tonnage, GRT	gross reg. tonnage, GRT	gross reg. tonnage, GRT
139.95	4.7	7 000	7 152	Nº1 26.0x12.7x8.37	10 920 / 385 585	
depth, m	draft, m	max. cargo capacity, GRT	max. cargo capacity, GRT	max. cargo capacity, GRT	max. cargo capacity, GRT	max. cargo capacity, GRT
16.5	3.6	4 400	4 525	Nº2 52.0x12.7x8.37		
				Nº3 27.3x12.7x8.37		

"Neva-Leader"

7 units

VESSEL CLASS: KM (*) Ice2 R2 AUT1 C Russian Maritime Register or Shipping



Length, m	width, m	gross tonnage, GRT	net tonnage, GRT	gross reg. tonnage, GRT	gross reg. tonnage, GRT	gross reg. tonnage, GRT
139.0	4.1	5 700	6 050	Nº1 21.6x12.3x7.1	9 338.1 / 329 772	
depth, m	draft, m	max. cargo capacity, GRT	max. cargo capacity, GRT	max. cargo capacity, GRT	max. cargo capacity, GRT	max. cargo capacity, GRT
16.75	4.2	5 700	6 050	Nº2 24.0x12.3x7.1		
				Nº3 22.2x12.3x7.1		
				Nº4 22.2x12.3x7.1		

"Volzhsky"

4 units

VESSEL CLASS: KM (*) Ice2 R2 RSN Russian Maritime Register or Shipping



Length, m	width, m	gross tonnage, GRT	net tonnage, GRT	gross reg. tonnage, GRT	gross reg. tonnage, GRT	gross reg. tonnage, GRT
128.2	4.34	5 150	5 440	Nº1 26.98x12.6x8	8 360 / 295 230	
depth, m	draft, m	max. cargo capacity, GRT	max. cargo capacity, GRT	max. cargo capacity, GRT	max. cargo capacity, GRT	max. cargo capacity, GRT
16.74	3.6	3 600	3 835	Nº2 29.82x12.6x8		
				Nº3 26.98x12.6x8		

"Valda"

4 units

VESSEL CLASS: KM (*) Ice2 R2 RSN Russian Maritime Register or Shipping



Length, m	width, m	gross tonnage, GRT	net tonnage, GRT	gross reg. tonnage, GRT	gross reg. tonnage, GRT	gross reg. tonnage, GRT
119.2	4.3	3 500	3 855	Nº1 17.6x11.4x6	4 717 / 167 300	
depth, m	draft, m	max. cargo capacity, GRT	max. cargo capacity, GRT	max. cargo capacity, GRT	max. cargo capacity, GRT	max. cargo capacity, GRT
13.4	3.6	2 500	2 755	Nº2 22x11.4x6		
				Nº3 22x11.4x6		
				Nº4 15.4x11.4x6		

"Sormovsky"

12 units

VESSEL CLASS: KM (*) Ice3 R2 RSN Russian Maritime Register or Shipping



Length, m	width, m	gross tonnage, GRT	net tonnage, GRT	gross reg. tonnage, GRT	gross reg. tonnage, GRT	gross reg. tonnage, GRT
108.4	3.3	2 900	3 070	Nº1 18x12.8x5.2	4 383 / 154 719	
depth, m	draft, m	max. cargo capacity, GRT	max. cargo capacity, GRT	max. cargo capacity, GRT	max. cargo capacity, GRT	max. cargo capacity, GRT
14.8	3.3	2 900	3 070	Nº2 18x12.8x5.2		
				Nº3 18x12.8x5.2		
				Nº4 16.4-17.4x12.8x5.2		

"Omsk"

7 units

VESSEL CLASS: KM (*) Ice3 R2 RSN Russian Maritime Register or Shipping



Length, m	width, m	gross tonnage, GRT	net tonnage, GRT	gross reg. tonnage, GRT	gross reg. tonnage, GRT	gross reg. tonnage, GRT
102.3	3.0	3 600				
depth, m	draft, m	max. cargo capacity, GRT	max. cargo capacity, GRT	max. cargo capacity, GRT	max. cargo capacity, GRT	max. cargo capacity, GRT
16.5						
85.7	2.25	2 190				
depth, m	draft, m	max. cargo capacity, GRT	max. cargo capacity, GRT	max. cargo capacity, GRT	max. cargo capacity, GRT	max. cargo capacity, GRT
16.48						

"Volgo-Baltika", "2033", "2034"

3 units

Non-ice class ships: "Ufa" & "Ivan Shchepetov"

NATIONAL QUALIFICATION SYSTEM



A Venn diagram with three overlapping circles. The top circle is red and labeled 'INDUSTRY QUALIFICATION REQUIREMENTS'. The bottom-left circle is yellow and labeled 'PROFESSIONAL STANDARDS'. The bottom-right circle is blue and labeled 'EDUCATIONAL STANDARDS'. The intersections of the circles are shaded with different colors: orange for the intersection of Industry and Professional standards, purple for the intersection of Industry and Educational standards, and olive green for the intersection of Professional and Educational standards. The central intersection of all three is a darker shade of olive green.

**INDUSTRY
QUALIFICATION
REQUIREMENTS**

**PROFESSIONAL
STANDARDS**

**EDUCATIONAL
STANDARDS**

SHIP CREW STRUCTURE



Ship Officers

Navigators: Master, Master Mates

Ship Engineers - Chief Engineer, Assistant Engineers

Ship Electrician Engineers - Chief Electro Technical Officer, ETO Assistant

Ship Refrigerator Engineers

Seaman, Motorman, Electrician, Ship Refrigerator Motorman, cook



Ship Crew



Ratings

Qualification requirements for river-sea ship crews

A voyage out of Russian territorial waters

Seafarer Certificate of Competency (STCW)

Russia inland voyage

Inland Shipping Certificate of Competency

International voyage
(with one Russian port)

Seafarer Certificate of Competency (STCW) + Certificate of Russian Inland Navigation Rules Awareness

Blagoveshchensk bridge in Saint Petersburg



GEOGRAPHICAL LOCATIONS OF EDUCATIONAL ORGANIZATIONS



THE PROFESSIONAL EDUCATION SYSTEM OF THE RUSSIAN FEDERATION

VOCATIONAL EDUCATION

NAVIGATORS
SHIP ENGINEERS
SHIP ELECTRICIAN
ENGINEERS

SECONDARY PROFESSIONAL EDUCATION

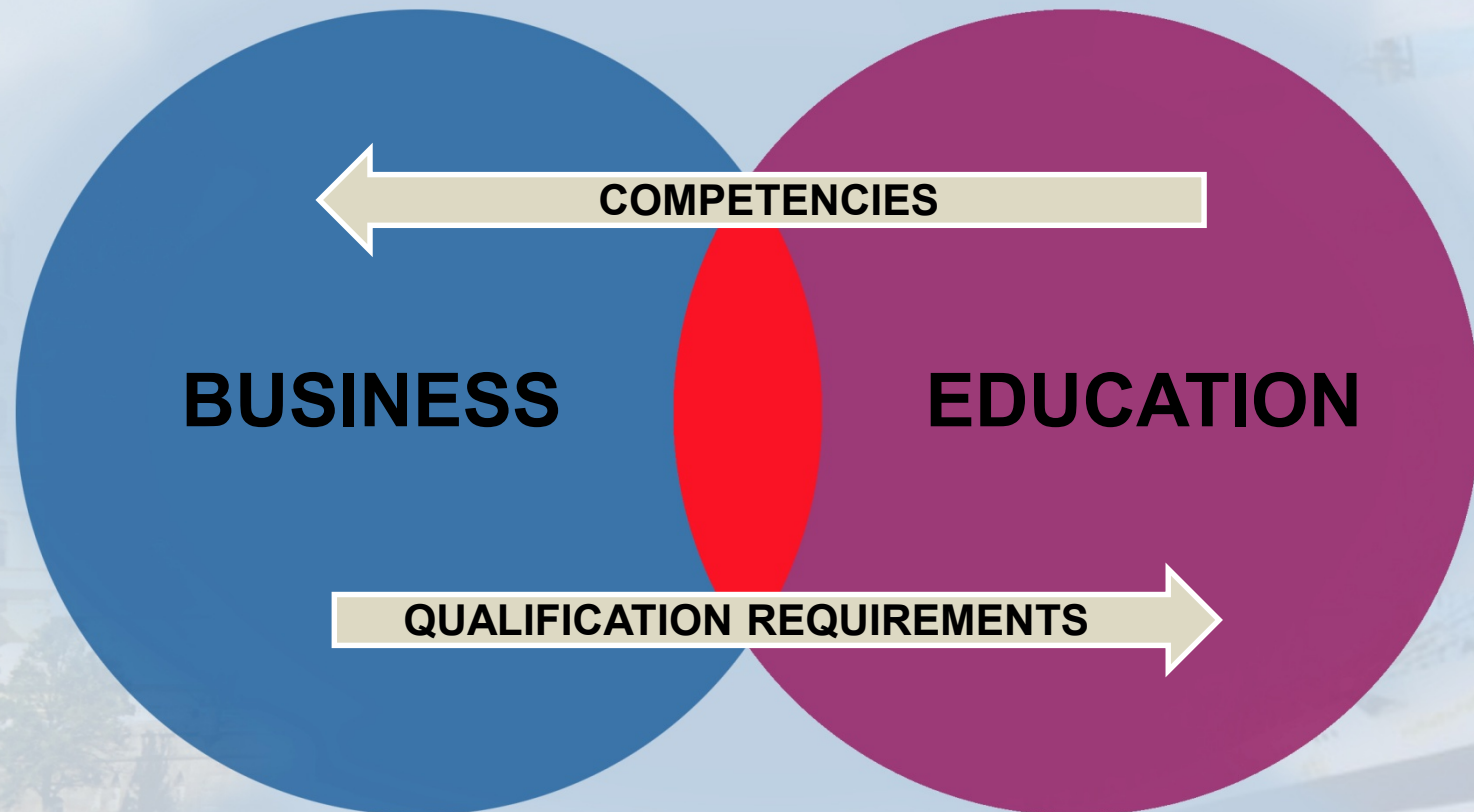
NAVIGATOR (a technician)
SHIP ENGINEER (a technician)
SHIP ELECTRICIAN ENGINEER
(a technician)

HIGHER EDUCATION

SEAMAN, MOTORMAN,
ELECTRICIAN, SHIP REFRIGERATOR
MOTORMAN, COOK

ADDITIONAL VOCATIONAL EDUCATION

INTEGRATION OF BUSINESS AND EDUCATION



CREW TRAINING OF RIVER-SEA SHIPS IN RUSSIAN



NAVIGATORS

NAVIGATION

- NAVIGATION IN MARITIME AND INLAND WATERWAYS
- NAVIGATION ON INLAND WATERWAYS AND IN COASTAL AREAS WITH THE RIGHT OF SHIP POWER PLANTS OPERATION



SHIP ENGINEERS

OPERATION OF SHIP POWER STATIONS

- OPERATION OF SHIP POWER PLANTS FOR RIVER-SEA VESSELS
- OPERATION OF THE MAIN SHIP PROPULSION SYSTEM



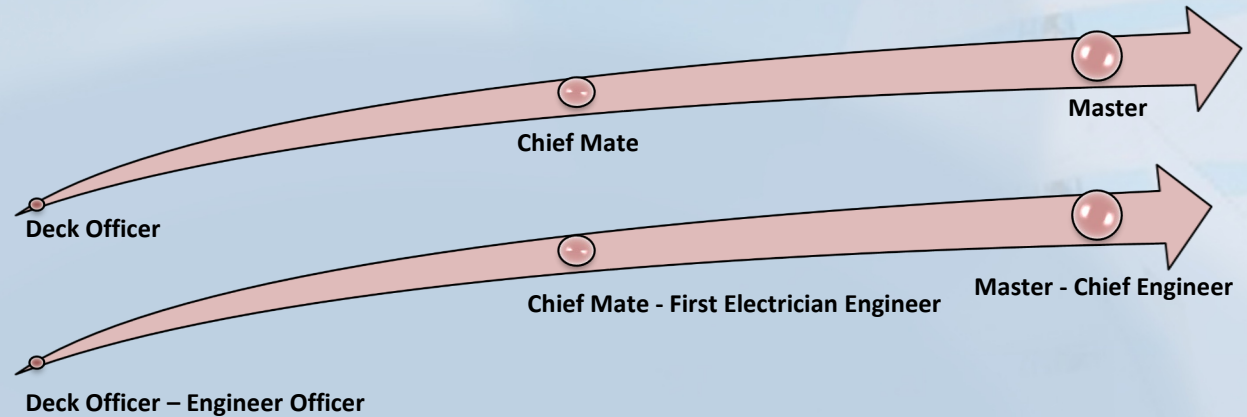
SHIP ELECTRICIAN ENGINEERS

OPERATION OF SHIPBOARD ELECTRICAL EQUIPMENT AND AUTOMATION

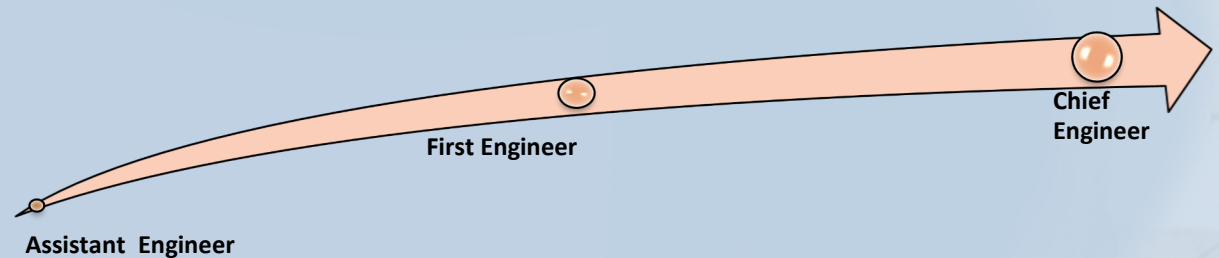
- OPERATION OF SHIPBOARD ELECTRICAL EQUIPMENT AND AUTOMATION
- OPERATION OF ELECTRICAL EQUIPMENT AND FACILITIES AUTOMATION OF WATER TRANSPORT OBJECTS

CERTIFICATION OF INLAND NAVIGATION CREWS

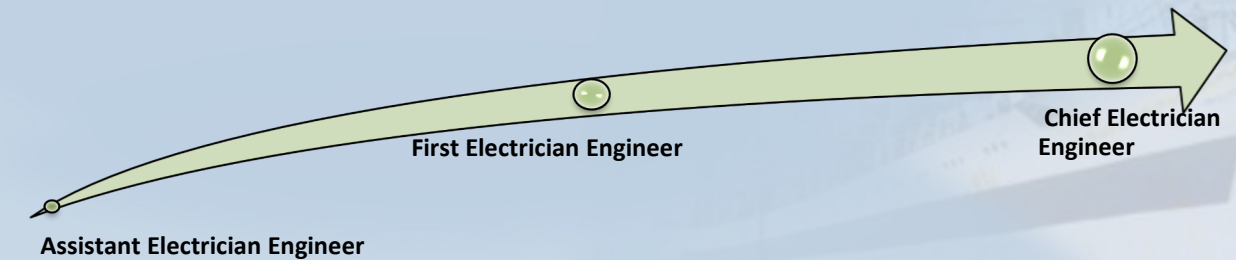
NAVIGATORS



SHIP ENGINEERS



Ship Electrician engineers





THANK YOU FOR YOUR ATTENTION

