

Морской Вестник



№4(72)
декабрь
2019
ISSN 1812-3694

Morskoy Vestnik

Честь - Флот - Отечество

2020

2010



1910

Санкт-Петербургское
Морское Собрание





Editorial Council

Chairman

A.L. Rakhmanov, President of JSC United Shipbuilding Corporation

Co-chairman:

M.V. Alexandrov, General Director JSC SSTC, President of the Association of Shipbuilders of St. Petersburg and Leningrad Region

V.S. Nikitin,

President of the International and Russian Scientific and Technical Association of Shipbuilders named after Acad. A.N. Krylov

G.A. Turichin, Rector SPbSMTU

Council Members:

M.A. Alexandrov, Director JSC CRIME

A.S. Buzakov, General Director JSC Admiralty Shipyards

A.A. Diachkov, General Director

JSC Severnoye Design Bureau

V.Yu. Dorofeev, General Director

JSC SPMD B Malachite

V.V. Dudarenko, Chairman of the Board of Director

JSC Sudpromkomplekt

G.V. Egorov, General Director

JSC Marine Engineering Bureau SPb

S.G. Filimonov, General Director

JSC Concern Morflot

E.T. Gambashidze, General Director

JSC Control Systems and Instruments

E.A. Konov, Director

JSC Publishing House Mor Vest

A.A. Kopanov, General Director

JSC SPF Meridian

G.A. Korzhavin, General Director

JSC Concern Granit-Elektron

A.V. Kuznetsov, General Director JSC Armalit

L.G. Kuznetsov, General Designer

JSC Compressor

G.N. Muru, Executive Director JSC 51 CDTISR

N.V. Orlov, Chairman

St. Petersburg Marine Assembly

A.G. Rodionov, General Director

JSC Kronstadt Technologies

S.V. Savkov, General Director

JSC NE

I.V. Scherbakov, General Director JSC PDB Petrobalt

V.A. Seredokho, General Director JSC SNSZ

V.V. Shatalov, General Director

JSC DB Vypel

K.Yu. Shilov, General Director

JSC Concern SPA Avrora

A.V. Shlyakhtenko, General Director JSC CMD B Almaz

K.A. Smirnov, General Directors JSC MNS

A.S. Solov'yev, General Director

PI SC Vyborg Shipyard

S.B. Sukhov, General Director

JSC Pumori-north-west

I.S. Sukhovinsky, Director JSC VINETA

V.S. Tatarsky, General Director JSC ERA

G.R. Tsaturov, General Director

OJSC Pella

A.L. Ulyanov, General Director

LLC Neva International

N.M. Vikhrov, General Director

JSC Kanonersky Shiprepairing Yard

CONTENTS

SHIP DESIGN AND CONSTRUCTION

<i>Ice class patrol ship Ivan Papanin was launched at the Admiralty Shipyards</i>	1
A.G. Egorov . <i>Determination of the actual passenger capacity of domestic river cruise passenger ships with a forecast up to 2030</i>	7
M.A. Aleksandrov, D.A. Skorokhodov . <i>The choice of motion parameters of the hydrofoils of the vessel's executive organs</i>	15
<i>To the 60th anniversary of M.A. Aleksandrov</i>	17
A.V. Shlyakhtenko, A.L. Ivchenko . <i>«Svetlyak» – 30 years on guard of the sea borders</i>	19
<i>Pella sets records in the construction of the fishing fleet</i>	27
V.V. Krylov, R.A. Shmakov . <i>The first high-speed titanium submarine. On the 50th anniversary of the creation of the nuclear submarine of project 661</i>	29

TECHNOLOGY OF SHIPBUILDING, SHIP REPAIR AND ORGANISATION OF SHIPBUILDING

A.G. Smirnov . <i>Analysis of the material consumption of floating docks used for launching ships on water and lifting from water to shore</i>	33
<i>Sredne-Nevozsky shipyard – shipyard of the future</i>	39
V.L. Kudinov . <i>Analysis of the restoration of operability of remote automated control systems for main and auxiliary engines, general ship systems on foreign-built ships</i>	41

SHIP POWER PLANTS AND THEIR ELEMENTS

A.R. Togunjac, S.L. Anchikov, L.I. Vishnevsky . <i>Coaxial propellers in foreign and domestic shipbuilding</i>	44
<i>Grinding engine blades – now a task for robots</i>	51
E.I. Vladimirov, A.A. Neyolov, M.P. Tikhomirov, R.S. Meshchero , V.I. Chugunov . <i>Electric heating on ships. Necessary solutions for combating icing of sea vessels</i>	53
K.E. Elizarov . <i>A brief overview of the stationary engine market for the small fleet. Proposals of domestic enterprises</i>	58
G.A. Kushner, V.A. Mamontov . <i>Improving the methodology for calculating the static strength of the shaft shaft elements</i>	62
V.A. Kolesnik, V.N. Krugleevsky, A.V. Markovskiy, M.V. Markovskiy . <i>Improving the effectiveness of fire hazard assessment tools in ship compartments when using an electric induction fire detector (IPEI) in their composition</i>	64
B.Yu. Semenov, R.N. Kodryan, O.F. Vorob'yov, A.V. Bondarets . <i>Modeling the heat transfer flow for predicting the temperature of electronic components in environments with elevated ambient temperatures</i>	71



INFORMATION-MEASURING AND MANAGEMENT SYSTEMS

I.V. Bednyakov, V.V. Efimov, D.Yu. Sarychev, F.V. Sushchinsky. <i>The Monsoon Platform – New Opportunities for Creating Ship Integrated Navigation Systems</i>	74
K.Yu. Shilov, S.V. Fedorov, K.O. Strokin. <i>Technology for debugging software for shipboard automated control systems based on computer modeling</i>	81
V.V. Kobzev, V.V. Ivanitsky, Yu.N. Sizov. <i>The use of on-board simulators for the training of ship operators in the specialty</i>	83
G.A. Korzhavin, Yu.F. Podplyokin, O.G. Maltsev. <i>Estimation of the systematic errors of course systems of the tactical group of interacting surface ships</i>	88
V.G. Eryshov, R.D. Kulikov, D.A. Bogdanov. <i>Modeling the process of unauthorized access to confidential information at the enterprises of the industrial sector</i>	93
Yu.I. Nechaev. <i>Unsteady dynamics of emergency computing in shipbuilding and marine engineering</i>	99

OPERATION OF WATER TRANSPORT, SHIP NAVIGATION

L.M. Klyachko, V.V. Dudarenko. <i>Rating estimates of the development of marine activities of the regions of the Russian Federation</i>	103
<i>To the 80th anniversary of V.V. Dudarenko</i>	107
M.A. Smirnov. <i>Fast passenger ships: transport, technical and operational aspects</i>	108
P.O. Astakhov, F.V. Kuzin. <i>Electronic navigational sextant</i>	114
O.I. Arishina, Yu.L. Danchuk, L.A. Promyslov, V.N. Ilykhin. <i>On the need to adopt the concept of developing a security system for water bodies in St. Petersburg</i>	115

IN THE SCIENTIFIC AND TECHNICAL ASSOCIATION OF SHIPBUILDERS

V.S. Nikitin, A.N. Miroshnikov. <i>The path drawn by fate. On the occasion of the 100th anniversary of G.L. Prosyankin</i>	121
K.V. Rozhdestvensky. <i>PAAMES/AMEC 2020 starts in St. Petersburg on September 28, 2020</i>	122

IN THE ASSOCIATION OF SHIPBUILDERS

<i>Results of the joint meeting of the Association of Shipbuilders of Saint-Petersburg and the Leningrad Region and the Shipbuilding Section of the Maritime Council under the Government of Saint-Petersburg</i>	123
-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----

IN THE MARITIME ASSEMBLY

G.A. Grebenshchikova. <i>Saint-Petersburg Maritime Assembly. 110 years in the service of the Fatherland</i>	124
--------------------------------------------------------------------------------------------------------------------------	-----

Editor-in-Chief

E.A. Konov, Ph. D.

Deputy Editor-in-Chief

D.S. Glukhov

Phone/Fax: +7 (812) 6004586

Fax: +7 (812) 5711545

E-mail: morvest@gmail.com

www.morvest.ru

Editorial Collegium

G.N. Antonov, D. Sc.

V.I. Chernenko, D. Sc., Prof.

A.I. Gaikovich, D. Sc., Prof.

E.A. Gorin, D. Sc.

V.N. Ilukhin, D. Sc., Prof.

B.P. Ionov, D. Sc., Prof.

D.V. Kazunin, D. Sc.

R.N. Karaev, Ph. D.

Yu.N. Kormilitsin, D. Sc., Prof.

A.I. Korotkin, D. Sc., Prof.

P.A. Krotov, D. Sc., Prof.

P.I. Maleev, D. Sc.

Yu.I. Nechaev, D. Sc., Prof.

Yu.F. Podplyokin, D. Sc., Prof., member of the Academy

of Rocket and Artillery of Sciences of Russia

V.N. Polovinkin, D. Sc., Prof.

L.A. Promyslov, Ph. D.

A.V. Pustoshny, corresponding member

of the Academy of Sciences of Russia

A.A. Rodionov, D. Sc., Prof.

K.V. Rozhdestvensky, D. Sc., Prof.

N.P. Shamanov, D. Sc., Prof.

Editorial staff

Phone/Fax +7 (812) 6004586

E-mail: morvest@gmail.com

Editor

T.I. Ilyichiova

Design, imposition

S.A. Kirillov, V.L. Kolpakova

Editorial office

office 13H, 84, Nab. r. Moyki,

190000, St. Petersburg

The magazine is registered by RF Ministry of Press,

TV and Radio Broadcasting and Means of Mass

Communications, Registration Certificate

ПИ № 77-12047 of 11 march 2002

Founder-Publisher

JSC Publishing House «Mor Vest»

office 13H, 84, Nab. r. Moyki,

190000, St. Petersburg

The magazine electronic version

is placed on the site LLC «Nauchnaya elektronnyaya

biblioteka» www.elibrary.ru and is also included to the

Russian index of scientific citing

By the decision of the Council of VAK the Morskoy

Vestnik magazine is entered on the list of the leading

scientific magazines and editions published in the

Russian Federation where basic scientific outcomes of

doctoral dissertations shall be published.

www.perechen.vak2.ed.gov.ru

You can **subscribe to the Morskoy Vestnik** magazine

using the catalogue of «Rospechat» agency (subscription

index 36093) or directly at the editor's office via the

Morvest Publishing House

Printed in the Printing-House «Premium-press»

Circulation 1000. Order № 2081

Authors and advertisers are responsible for contents of information and advertisement materials as well as for use of information not liable to publication in open press.

Reprinting is allowed only with permission of the editorial staff

1. Authors shall submit articles of up to 20,000 characters, including figures, in electronic form. The text shall be typed in MS Word under Windows, formulas – in the equation editor «MathType.» Illustrations present in the article shall be submitted additionally, in the following formats: TIFF CMYK (full color), TIFF GRAYSCALE (grayscale), TIFF BITMAP (dashed), EPS, JPEG, with resolution of 300 dpi for grayscale figures and 600 dpi for dashed ones and in sizes desired for placement.

2. Articles shall contain an abstract of up to 300 characters, keywords, and bibliographic library UDC identifier. Authors shall indicate their degree, academic status, place of employment, job position, and telephone number, as well as provide a written permission of the Editor to place articles on the Internet and in the Scientific Electronic Library after publication in the journal. Articles shall be submitted with reviews.

3. The articles of postgraduate and degree-seeking students shall be accepted for publication on a free and royalty-free basis.

4. The control review of these articles shall be performed by the editorial board, with the assistance of dedicated experts, if necessary. Reviews of articles are stored in editorial office of the magazine within 5 years.

5. In case of refusal to publish articles, reviews shall be sent to authors. Copies of reviews go to the Ministry of Education and Science of the Russian Federation at receipt of the corresponding inquiry in editorial office of the magazine.

6. The contents of the journal shall be submitted to the editorial board quarterly. The decision concerning the next issue of the journal shall be formally established with the protocol.

ABSTRACTS

UDC 629.5.01 **Keywords:** river cruise, river cruise passenger vessel, passenger capacity, utilization, modernization, conversion, prognosis, analysis

A.G. Egorov. Determination of the actual passenger capacity of domestic river cruise passenger ships with a forecast up to 2030 // Morskoy Vestnik. 2019. № 4 (72). P.7

Active river cruise passenger vessels are defined, main characteristics and design approaches accepted in modernization and conversion projects are analyzed. Estimation of passenger capacity with forecast on mid-term perspective till 2030 is executed. T.3. Fig.5. Bibliography 11 titles.

UDC 629.5.062.13 **Keywords:** SPK, executive body, motion parameters, heading angle

M.A. Aleksandrov, D.A. Skorokhodov. The choice of motion parameters of the hydrofoils of the vessel's executive organs // Morskoy Vestnik. 2019. № 4 (72). P.15

Mathematical expressions are determined for the spectral densities of sea waves affecting a hydrofoil vessel when it is stabilized along the course angle. The transfer functions of the linearized equations of the lateral motion of the SEC, the spectral densities of the parameters of its motion and the spectral deviation densities of the nasal wings, aft flaps and rudder, and their first and second derivatives, which made it possible to determine the variances of the deviation angles and their derivatives, necessary for calculating the hydraulic load moment, are presented. Executive drive of executive controls in stabilization mode and during its maneuvering. Bibliography 6 titles.

UDC 629.5 **Keywords:** CMDB Almaz, design, construction

A.V. Shlyakhtenko, A.L. Ivchenko. «Svetlyak» – 30 years on guard of the sea borders // Morskoy Vestnik. 2019. № 4 (72). P.19

The history of the creation of border guard ships (PSKR) in CMDB Almaz, their development and modernization. The characteristics of PSKR are described, equipment is described. T.1. Fig.9.

UDC 629.562.2.004.17 **Keywords:** Pella OJSC, fishing fleet, projects

Pella sets records in the construction of the fishing fleet // Morskoy Vestnik. 2019. № 4 (72). P.27

On the construction of trawler-processors pr. 03095, crabbol pr. 03070, fishing vessel made of composite material pr. 03870, etc. Fig.4.

UDC 629.5 **Keywords:** nuclear submarine, titanium, design, construction

V.V. Krylov, R.A. Shmakov. The first high-speed titanium submarine. On the 50th anniversary of the creation of the nuclear submarine of project 661 // Morskoy Vestnik. 2019. № 4 (72). P.29

The history of the design and creation of the world's first nuclear submarine, project 661, made of titanium, is disclosed. Talked about the participants in the design and construction. Fig.6. Bibliography 6 titles.

UDC 629.081.328 **Keywords:** transfer floating dock, material consumption, load-carrying capacity, architectural design, characteristics

A.G. Smirnov. Analysis of the material consumption of floating docks used for launching ships on water and lifting from water to shore // Morskoy Vestnik. 2019. № 4 (72). P.33

In connection with the upcoming updating of shipbuilding and ship repair enterprises and the replacement of hoisting structures with new ones, an analysis of the material intensity of floating docks has been performed. The possibilities of increasing the carrying capacity of these docks and the need for a preliminary feasibility study of the creation of coastal and hydraulic structures are shown. T.2. Fig.4. Bibliography 3 titles.

UDC 629.5.04.035 **Keywords:** Sredne-Nevisky shipyard, composite shipbuilding, project 12700 Aleksandrit, features, digitalization, project 23290

Sredne-Nevisky shipyard – shipyard of the future // Morskoy Vestnik. 2019. № 4 (72). P.39

The possibilities of building composite vessels at the Sredne-Nevisky shipyard, including under state defense order, are examined. Examples of such vessels are given (ship «Alexander Obukhov» «Vladimir Emelyanov»). The prospects of the enterprise, its modernization are outlined. Fig.3.

UDC 621.436:629.5.06 **Keywords:** remote automated control systems, vehicle hardware control systems, modernization, repair

V.L. Kudinov. Analysis of the restoration of operability of remote automated control systems for main and auxiliary engines, general ship systems on foreign-built ships // Morskoy Vestnik. 2019. № 4 (72). P.41

The problems of restoring the operability of remote automated control systems (DAU) of the main (DP) and auxiliary engines, general ship systems of ships (ACS) of foreign construction are considered. The problems arising during the after-sales service and repairs of ship automation equipment during replacement of components of foreign manufacture discontinued are indicated. The eligibility of making changes to the components of the ship products of foreign manufacture. The necessity of modernizing the DAU DG, DG and OKS systems based on modern microprocessor technology to ensure the continued operation of ships and vessels of foreign construction is determined.

UDC 629.5.035.58 **Keywords:** counter-rotation coaxial propellers, power transmission

A.R. Togunjac, S.L. Anchikov, L.I. Vishnevsky. Coaxial propellers in foreign and domestic shipbuilding // Morskoy Vestnik. 2019. № 4 (72). P.44

A review is given of the use of coaxial opposite rotation propellers (SVG) on ships for various purposes. The operational advantages of SVG compared with single propellers are shown. The features of options for transmitting power to SVG are reflected. The relevance and the possibility of further improving the operational characteristics of propulsion devices with SHW are noted. T.1. Fig.9. Bibliography 28 titles.

UDC 621.4 **Keywords:** engine, blades, robot, grinding
Grinding engine blades – now a task for robots // Morskoy Vestnik. 2019. № 4 (72). P.51

Pumori-North-West introduced the robotic finish system for engine blades. Its composition, capabilities are described. Fig.2.

UDC 621.3 **Keywords:** electrical heating, operation, stability of a vessel, icing of vessels, heating capacity of heating means, self-regulating cables

E.I. Vladimirov, A.A. Neyolov, M.P. Tikhomirov, R.S. Meshcherov, V.I. Chugunov. Electric heating on ships. Necessary solutions for combating icing of sea vessels // Morskoy Vestnik. 2019. № 4 (72). P.53

For discussion, the problem of electric heating on ships and ships for safe navigation in the climatic conditions of the Arctic and Far Eastern seas is proposed. Fig.5. Bibliography 14 titles.

UDC 002 **Keywords:** diesel engines, import substitution, propulsion systems

K.E. Elizarov. A brief overview of the stationary engine market for the small fleet. Proposals of domestic enterprises // Morskoy Vestnik. 2019. № 4 (72). P.58

Introduces the development of stationary engines for the small fleet at Russian enterprises, in particular Vineta JSC. The characteristics of a prototype of a converted diesel engine based on automobile engines of Diesel JSC of the YaMZ-534 and YaMZ-536 models with power up to 260 and up to 450 hp are presented. T.1. Fig.2.

UDC 629.5.035–233.1:624.042.6 **Keywords:** ship shaft line, strength calculation, shaft bending, stern bearing

G.A. Kushner, V.A. Mamontov. Improving the methodology for calculating the static strength of the shaft shaft elements // Morskoy Vestnik. 2019. № 4 (72). P.62

The problems of calculating the strength of the vessel shaft system are considered. A technique is proposed for calculating the stress-strain state of the propeller shaft, taking into account the elastic properties and length of the stern bearing. Graphs of the shape of the bending of the shaft, the distribution of bending moment and cutting force along the length of the shaft are obtained. It is concluded that it is possible to use the methodology when designing a ship shaft line system. Fig.5. Bibliography 3 titles.

UDC 629.553 **Keywords:** ship (vessel), fire warning, assessment, IPR

V.A. Kolesnik, V.N. Kruglevsky, A.V. Markovskiy, M.V. Markovskiy. Improving the effectiveness of fire hazard assessment tools in ship compartments when using an electric induction fire detector (IPEI) in their composition // Morskoy Vestnik. 2019. № 4 (72). P.64

The problem of ensuring the fire safety of ships and ships is complex and provides for various interconnected ways to solve it. A review is given of promising means to assess the pre-fire situation in the ship compartment when the fire has not yet begun. Particular attention is paid to one of these devices, namely, an electric induction fire detector (IPEI). Brief information is given on the results of his full-scale tests on special stands and on

the existing ships of the fleet. An assessment of the possibility of its application with appropriate revision as part of promising integrated fire safety systems is given. T.1. Fig.13. Bibliography 3 titles.

UDC 536.2.01 **Keywords:** virtual tests, thermal calculation, finite element method

B.Yu. Semenov, R.N. Kodryan, O.F. Vorobyov, A.V. Bondarets. Modeling the heat transfer flow for predicting the temperature of electronic components in environments with elevated ambient temperatures // Morskoy Vestnik. 2019. № 4 (72). P.71

A new approach to SPF Meridian JSC is considered to study the issues of ensuring the thermal regime of products – virtual thermal testing of products. This approach is a simulation of thermal processes occurring in structures over time, which allows us to speak not about thermal calculations of individual structural elements, but about the study of the heat release process of the whole structure as a whole. The advantages of the new approach are investigated in comparison with the «classical» methods for calculating the thermal regime of structures. It is concluded that the approach is promising and the need for its full implementation in the production cycle of the enterprise. Fig.3.

UDC 629.123.56: 539.38 **Keywords:** unified technological platform, information technology, integrated navigation system, software architecture, software interface, independently compiled software module – plugin

I.V. Bednyakov, V.V. Efimov, D.Yu. Sarychev, F.V. Sushchinsky. The Monsoon Platform – New Opportunities for Creating Ship Integrated Navigation Systems // Morskoy Vestnik. 2019. № 4 (72). P.74

The results of the development work «Development of a unified technological platform of a new generation of shipboard integrated navigation systems» are considered. The information on the main decisions on the creation of the Monsoon platform is given. The characteristic of information technologies is given, allowing to use the Monsoon platform as a tool and at the same time the technological core of shipboard integrated navigation systems. Fig.5. Bibliography 12 titles.

UDC 681.5 **Keywords:** computer modeling, software debugging, virtual environment, control system model, control object model

K.Yu. Shilov, S.V. Fedorov, K.O. Strokin. Technology for debugging software for shipboard automated control systems based on computer modeling // Morskoy Vestnik. 2019. № 4 (72). P.81

The role and place of complex mathematical models of control objects in the process of developing new products are presented. One of the key areas for reducing the cost of design work through the use of modern information technologies is reflected. The technology of computer simulation of control systems in a virtual environment for debugging functional software is described. T.1. Fig.3. Bibliography 4 titles.

UDC 681.322–181.48: 629.12 **Keywords:** simulator, training, training, operator, learner, standard, module, architecture, action, error, system, mode, control, remote control, script, table, task

V.V. Kobzev, V.V. Ivanitsky, Yu.N. Sizov. The use of onboard simulators for the training of ship operators in the specialty // Morskoy Vestnik. 2019. № 4 (72). P.83

Issues related to the use of flight simulators (BT) for the training of ship operators in the specialty are considered. Various options for integrating BT into integrated control systems for technical means are described: as part of a backup console and on a separate rack. The advantages and disadvantages of each option are given. The presence of a new information element as part of the BT module of the reference scenarios is noted. The

technology for creating such a module is described. Fig.4. Bibliography 5 titles.

UDC 621.396.67 **Keywords:** systematic error of course system, tactical group of surface ships, bearing to interacting ship, the satellite navigation, the backward geodesy task, integral processing of information

G.A. Korzhavin, Yu.F. Podoplyokin, O.G. Maltsev. Estimation of the systematic errors of course systems of the tactical group of interacting surface ships // Morskoy Vestnik. 2019. № 4 (72). P.88

A possibility of determination of systematic errors, caused by slow altering errors of the course systems, in bearings measurements to sea emission target detected by the passive radars of the tactical group interacting surface ships is investigated. This possibility is based on the information integral processing of direction finding station of system for information mutual exchange and orientation and navigation systems, providing high-precision positioning of interacting ships by methods of satellite navigation. The settlement data and the results of a statistical modeling of developed algorithms on the computer are given. T.2. Bibliography 5 titles.

UDC 004.056.53 **Keywords:** information security, information security violator, unauthorized access, confidential information, model, industrial enterprises

V.G. Eryshov, R.D. Kulikov, D.A. Bogdanov. Modeling the process of unauthorized access to confidential information at the enterprises of the industrial sector // Morskoy Vestnik. 2019. № 4 (72). P.93

The developed model is described, which allows obtaining the probabilistic-temporal characteristics of an information security violator regarding unauthorized access to confidential information at industrial enterprises with variable input data of incoming and outgoing event flows of the process under study. The model was developed as part of measures to increase the effectiveness of the integrated information security system at Armalit JSC. Fig.3.

UDC 517.9: 629.5 **Keywords:** shipbuilding, marine engineering, non-stationary dynamics, basis, calculations

Yu.I. Nechaev. Unsteady dynamics of emergency computing in shipbuilding and marine engineering // Morskoy Vestnik. 2019. № 4 (72). P.99

The theoretical basis and conceptual solutions for the implementation of non-stationary dynamics in shipbuilding and marine engineering are considered. The non-stationary dynamics modeling strategy determines the construction and interpretation of the behavior of marine dynamic objects (MDO) in extreme situations in the software package of the decision support system (DPR). The practical application of the developed computing technology is focused on the use of large amounts of data in artificial intelligence systems (SII), virtual training grounds and laboratories operating in emergency computing mode (Urgent Computing – UC). The dynamic model of the modern theory of disasters (STK) is implemented on the basis of a multifunctional computing complex (MVK) that integrates intelligent technologies and high-performance computing in new generation artificial intelligence systems (SRI). Fig.5. Bibliography 13 titles.

UDC 629.153 **Keywords:** marine activities, region, rating
L.M. Klyachko, V.V. Dudarenko. Rating estimates of the development of marine activities of the regions of the Russian Federation // Morskoy Vestnik. 2019. № 4 (72). P.103

The results of rating assessments of marine activities in the regions of the Russian Federation, based on the comparative method, are analyzed. The main indicators for the rating of marine activities are proposed. This allows you to assess the level of marine activity in its individual areas in dynamics. T.2. Fig.1. Bibliography 2 titles.

UDC 629.541.2: 629.5.016 **Keywords:** high-speed passenger transportation, high-speed passenger vessel, displacement high-speed vessel, energy efficiency of high-speed passenger vessel

M.A. Smirnov. Fast passenger ships: transport, technical and operational aspects // Morskoy Vestnik. 2019. № 4 (72). P.108

The features of passenger transportation using high-speed vessels are considered, the position of high-speed passenger vessels and transportation on the world and Russian markets is described, the approximate number and composition of the domestic passenger high-speed fleet is given, development trends of high-speed passenger shipbuilding are indicated. Based on statistical data on high-speed passenger ships, a range of technical and design characteristics characteristic of them has been formulated. A comparative analysis of the technical and operational indicators of high-speed passenger ships with various methods of movement and architectural and structural types in order to select the most effective of them. T.1. Fig.17. Bibliography 15 titles.

UDC 557 **Keywords:** electronic navigation sextant, JSC Marine Navigation Systems

P.O. Astakhov, F.V. Kuzin. Electronic navigational sextant // Morskoy Vestnik. 2019. № 4 (72). P.114

The device of the electronic navigational sextant, which was finalized by MNS JSC and the German company «Cassens & Plath», is considered. Its advantages are given. Fig.1. Bibliography 2 titles.

UDC 627.772 **Keywords:** safety, water bodies, emergency, accident rate, search and rescue service, concept, search and rescue equipment, rescue station, program

O.I. Arishina, Yu.L. Danchuk, L.A. Promyslov, V.N. Ilykhin. On the need to adopt the concept of developing a security system for water bodies in St. Petersburg // Morskoy Vestnik. 2019. № 4 (72). P.115

The issues of the state and development of the security system at water bodies, the main sources of security threats, the main directions and mechanisms, as well as the main stages and results of the implementation of the Concept for the development of a security system at water bodies of St. Petersburg are considered. T.2. Fig.5. Bibliography 8 titles.

UDC 629.5 **Keywords:** G.L. Prosyankin, biography, 100th anniversary

V.S. Nikitin, A.N. Miroshnikov. The path drawn by fate. On the occasion of the 100th anniversary of G.L. Prosyankin // Morskoy Vestnik. 2019. № 4 (72). P.121

A brief biography of one of the founders of the nuclear submarine fleet G.L. Prosyankin. Fig.1.

UDC 061.43: 623.8 **Keywords:** PAAMES, AMEC, conference, plan

K.V. Rozhdestvensky. PAAMES/AMEC 2020 starts in St. Petersburg on September 28, 2020 // Morskoy Vestnik. 2019. № 4 (72). P.122

Information about the Pan-Asian Association of Marine Engineering Societies (PAAMES) – the Advanced Marine Engineering Conference in St. Petersburg, its preparation and plans. Fig. 2.

UDC 629.5 **Keywords:** St. Petersburg Sea Assembly, creation, history

G.A. Grebenshchikova. Saint-Petersburg Maritime Assembly. 110 years in the service of the Fatherland // Morskoy Vestnik. 2019. № 4 (72). P.124

The story of the creation of the Saint-Petersburg Maritime Assembly is described in detail. His goals are announced, the main events and tasks are indicated. Fig.1.