

Section I

Shipbuilding, ship repair, and ecological safety of the ship

Blagovidova I.L.

Peculiarities of ice loads estimating on the example of the implemented project of the fixed sea ice-resistant shipping berth «Varandey»

Keywords: *fixed sea shipping berth, ice load, model test, actual ice conditions.*

The ten-year accident-free operating experience of the fixed sea ice-resistant shipping berth «Varandey» located in the Pechora Sea justified the correctness of both the calculations of ice loads on similar structures and methodology of designing ice-resistant terminals. The gained experience makes it possible to construct similar ice-resistant terminals in the Russian Federation for operation in other regions of the Arctic seas.

Girin S.N., Gulyaev I.A., Efimenkov Yu.I.

General principles of accounting operational limitations for justification of a navigation characteristics of coastal ships

Keywords: *vessel of mixed navigation, operating conditions, seaworthy characteristic, long-term security, model track*

An algorithm is presented to substantiate the possibility of operating ships of mixed navigation in new sea areas, based on the assumption of equal security of exceeding a given seafaring characteristic (characteristics) in the operating conditions under consideration and on the developed route.

Erina O.N., Tereshina M.A., Koli V.M., Vilimovich E.A., Sokolov D.E.

Effect of meteorological conditions on the hydro-ecological state of a riverine part of the Cheboksary reservoir

Keywords: *Cheboksary reservoir, Oka, Volga, nutrients, trophic state, weather conditions, eutrophication, chlorophyll, organic matter*

In this paper, we characterize the ecological state of a riverine part of the Cheboksary reservoir (from Oka to Sura river confluence) by the results of the Floating University of the Volga Basin expeditions in summer of 2017 and 2018. Differences in spring and summer hydrometeorological conditions of these years caused significant variation in hydrochemical regime of the reservoir. Data of 2018 confirmed the existence of two distinctive water masses in the Cheboksary reservoir, which were identified in 2017: the right-bank zone with predominance of Oka water, and left-bank Volga zone. These parts differ in nutrient content, and consequently the level of photosynthetic activity.

Klimenko E.S., Borodina L.N., Rychenkova A.Y.

Applied using of automated design systems for modelign of mechanisms and machines on the maritime transport

Key words: *Mathematical and computer modeling, model, professionally-oriented tasks, design, computer technologies.*

The article deals with the development of some applied modeling problems, as well as psychological and pedagogical problems that can be solved by modeling in the learning process, in particular, in the formation of concepts, interpretation of graphical models and solving educational design problems in designing the simplest elements of general-purpose machines and mechanisms on sea transport.

Naumov V.S., Plastinin A.E., Volkova N.I., Otdelkin N.S.

Peculiarities of forecasting in the basin plans for the prevention and liquidation of oil spills44

Keywords: *oil spills, forecasting, basin plans, prevention and elimination*

The article presents the results of researches on determination of the forecasting features in the composition of the basin plans for the prevention and elimination of oil spills. The maximum possible volumes of oil and oil products spill on the Oka River within the borders of the Volga and Moscow basins have been determined. The analysis of the characteristics of transport vessels providing cargo transportation on the Oka River is performed. The results of the research are applied in the development of two plans for the prevention and elimination of oil spills in the Moscow and Volga basins of inland waterways.

Smirnova M.V., Gluhova V.S., Nosova A.D., Cheban E.Y., Sustretova N.V.

Spatial variability of hydrochemical parameters at selected sites of the Gorky and Cheboksary reservoirs on the territory of Nizhny Novgorod region

Key words: Reservoirs, expeditionary studies, hydrodynamic processes, hydrochemical measurements

Three sections of the Gorky and Cheboksary reservoirs with different hydrological characteristics are considered. As a result of complex hydrodynamic structures in local parts of reservoirs zones with higher concentrations of suspended solids and dissolved substances and the deterioration of the hydrochemical characteristics of water are formed. According to the results of the expedition the pictures of the distribution of some hydrochemical indices obtained. These pictures allowed to define the zones of concentration of impurities and the degree of non-uniformity of their distribution.

Shurganova G.V., Zhikharev V.S., Gavrilkov D.E., Zolotareva T.V., Ruchkin D.S.

Bioindication of the river part of the Cheboksary reservoir and estuary of the Oka river based on quantitative indicators of zooplankton development

Key words: bioindication, zooplankton, zooplankton community, species structure, water quality, trophic status, Cheboksary reservoir, Nizhny Novgorod region

In the work, a modern assessment of the water quality of the river part of the Cheboksary reservoir and estuary of the Oka River was carried out. Bioindication was based on the analysis of the ratio of quantitative indicators of zooplankton. Water quality classes were determined according GOST. The modern spatial distribution of the zooplankton communities of the river part of the Cheboksary reservoir and estuary of the Oka River is described, and their trophic status based on the taxonomic composition of zooplankton was estimated.

Section II

Financial and accounting-analytical problems of the modern economy

Butchenko V.N., Solodimova T.Yu.

Economic factors of small business support in the field of transport services

Keywords: small business entities, small enterprises, transport sector

The Federal Law «On the Development of Small and Medium-Sized Businesses in the Russian Federation» has been in force since 2007. It defines the criteria for small and medium-sized businesses. Russia has headed for the development of small business in order to stabilize the economic component of the country. This study examines the factors of small business supporting, including the field of transport and also negative phenomena that do not allow expanding the scope of small businesses are identified. It is noted that they significantly destabilizes the economic situation in the country.

Telegus A.V.

Personal income tax and travelling expenses of transport organizations employees: legal regulation issues

Keywords: traveling nature of work, on a way work, personal income tax, compensation

In most transport infrastructure organizations there are employees whose work involves travelling or is carried out on a way thus being guaranteed reimbursement of certain expenses at the legislative level. Meanwhile the process of travelling

work (on a way work) is not clearly regulated, what can lead to violation of employees' financial rights. The article deals with some problems related to the reimbursement of relevant expenses in the context of personal income tax.

Section III

Economics, logistics and transport management

Azimov P.H., Kamolidinov B.T.

Economic diagnostics of the transport and logistics system in the Republic of Tajikistan

Keywords: *economic diagnostics, transport and logistics system, methodology, the Republic of Tajikistan, problems, analysis*

The study is preceded by the disclosure of the content of changing external conditions of transport and logistics complex functioning in the Republic of Tajikistan. The authors prove the necessity of conducting economic diagnostics as a particular type of economic analysis regarding economic systems state. The specific features of economic diagnostics are defined. The concept «economic diagnostics of the transport and logistics system» is disclosed. The methodology of conducting economic diagnostics of transport and logistics system is proposed. Based on the methodology application, the main groups of problems related to the transport and logistics system in the Republic of Tajikistan are established. The main directions in solving the revealed problems are determined. In particular it is required to ensure the development of the legal framework regulating the transport and logistics system functioning. One of the directions in the development of the Tajik transport and logistics system is attracting private investments and increasing their share in the total volume of investments in the transport and logistics complex. Another direction is integrating disparate objects of the logistics infrastructure of various transport modes. Creating additional institutions to support the transport and logistics system of the country is also necessary.

Artamonova M.Yu.

The development of a new system of seaports efficiency criteria indicators

Keywords: *seaports, balanced indicator system, the seaport efficiency assessment.*

The article provides an overview of the international systems for assessing the seaports activities and proposes their efficiency criteria indicators based on the concept of a balanced indicator system.

Barabanov R.A., Garmash O.V.

Analysis of the open-type BRT corridor section in Almaty: review of megacities urban construction experience and the experience of Almaty

Keywords: *the BRT system, an open type BRT system, BRT in Almaty, traffic balancing, BRT planning, High-speed Bus Transportation System, urban construction, transport planning*

This article considers the main specific features of the BRT project in Almaty and touches upon the subject of planning and growth of urban spaces and their connection with transport planning and urban environment improvement.

Zhmachinsky V.I., Zhang Zhen

Labour motivation as an effective personnel management important factor

Keywords: *motives, incentives, need, factors, labour efficiency.*

The article discusses the personnel labour motivation essence and structural system, as well as various motivation theories use specifications in the market relations development. The needs theory is considered as the most preferable one.

Kapranov A.V., Korshunov D.A.

Actual problems and their solutions in the customs sphere

Key words: *customs, customs control, foreign economic activity*

The article discusses the customs control issues and customs goods registration in the organizations foreign trade activities taking into account changes in the customs legislation since January 2018. The acute problems are covered and their solution variants are suggested from both scientific and practical ways

Kegenbekov Z.K., Baimushkina Ye.Yu.

Directions for the Kazakhstan Republic transit potential implementation in the passing through the territory routes evaluating framework

Key words: transit potential, international transport corridor, foreign economic relations with China, alternative route, competitiveness, container transportation.

As a means of integration into the global logistics system, the Republic of Kazakhstan considers transport corridors connecting the largest trade regions of Western China and Western Europe. The previously established communication routes in these regions are beginning to lose competitiveness as a result of alternative routes variants functioning start through the Kazakhstan territory. That, in turn, will allow the Republic of Kazakhstan to increase the transit cargo volume .

Kraynova V.V.

Internal control efficiency in the navigation companies: problems and evaluation criteria

Key words: internal control efficiency, evaluation criteria, shipping companies, effectiveness evaluation methodologies

The article analyzes the existing methods of evaluating the internal control efficiency , identifies their advantages and disadvantages. The author proposes a methodology for assessing the internal control efficiency for shipping companies by implementing the control functions embedded in business processes performed by process managers within their functional responsibilities.

Kuzmichev I.K., Veselov G.V., Novikov A.V., Zakharov V.N.

The transport fleet needs for freight transport features determining in the uncertainty and globalized conditions

Keywords: shipping companies functioning reliability, production and consumption inequality, fleet reserve.

The article deals with the shipping companies reliability functioning increase issues using the reserve fleet.

Kydykov A.A.

The Kyrgyz Republic role increasing in the international transport corridors system

Keywords: logistics, transport and logistics centre, multimodal transportation, international transport corridor

The paper analyzes the existing and projected international transport corridors routes . The increase in economic interests and their importance for the Central Asian republics and Kazakhstan is shown. The research shows that the rail routes number on the Eurasian continent is growing, providing transit traffic between Europe and the PRC, and the Asia-Pacific region as a whole. The possible railway routes analysis through the Kyrgyzstan territory is proposed.

Mordovenchenkov N.V., Zakharov V.N., Kuzmichev S.V., Panina E.V.

Conceptual matrix model of the leasing potential in the transportation market: a managerial and consulting aspect

Keywords: investment projects, infrastructure, controlling, consulting, consultant-manager, leasing, transport company management, transportation services, shipping company profits.

The organizational and economic mechanism of financial leasing occupies a priority place in the organization of business and transport entrepreneurship. At the same time, at the present stage there are no economically and econometrically sound recommendations on the effective use of system leasing models in the context of globalization and state regulation of the economy and finance.

Murashova N.V.

Staffing of the agricultural sector in the transition to the digital economy

Keywords: *agribusiness, digital economy, knowledge economy, trajectories of development of countries, personnel of the category «Knowledge», target model of competences.*

The article reveals the main changes in staffing of agricultural enterprises in the transition to the digital economy, analyzes the impact of new tasks of the economy on staff security, analyzes the current state of personnel support in the agricultural sector and the need for personnel to acquire targeted enterprises in the agricultural sector in terms of digitalization.

Shpak A.S.

Information technologies in the logistics of international container shipping: the customs aspect

Keywords: *preliminary informing, customs authorities, carrier, information exchange, technology, sea transport.*

The issue of optimizing information exchange between participants of the transport process of international sea container transportation through the introduction of modern customs technologies, such as preliminary informing state control authorities and preliminary customs declaration, is considered. A comparative analysis of these technologies has been carried out and distinctive features have been identified, and logistic advantages and factors hindering their wide use in practical transport have been identified.

Section IV

Operation of water transport, navigation and safety of navigation

Budnik V.Yu., Cherny S.G.

The use of technology expert and technological foresight in decision-making when maneuvering a ship

Keywords: *Kerch Strait, Kerch-Yeni-Kale Canal, Krymsky Bridge, pilotage.*

Sea and river ports of the Chernomor-Azov region have a large number of exported goods and provide significant cargo turnover among all ports of Russia. This leads to an annual increase in ship traffic in the ports of the Black Sea-Azov region, which, as a result, leads to the creation of potentially dangerous navigation situations when vessels diverge, especially in the waters of the Kerch Strait, where shallow water conditions, the construction of the Crimea Bridge and seasonal hydrometeorological factors complicate safe navigation. The purpose of the work is to find ways to ensure uninterrupted ship traffic through the Kerch-Yeni-Kale channel, providing the necessary level of security.

Vinogradov V.N., Ivanovsky N.V.

Synthesis of random parameter identification and estimation of the vessel movement current parameters algorithms

Key words: *safety of navigation, risk assessment, mathematical model of a sea vessel, automatic control, identification of random parameters of a sea vessel.*

The article deals with the problem of the algorithms for identification of vessel random parameters synthesis, such as the added masses, the moment of inertia and estimation of the vessel motion current parameters according to the onboard sensors measurements in real time.

Volnov I.N., Shpak A.S.

Assembly catastrophe and modeling of marine dynamic objects in extreme situations

Keywords: *catastrophe theory, bifurcation, research engineering, dynamic system, accidents, safety of navigation*

Theoretical aspects of using the assembly catastrophe in modeling the behavior of marine dynamic objects in emergency situations are discussed. The review of currently developed mathematical models of complex technical systems «man-ship-external environment» with the application of this theory is reviewed. It is concluded that the use of the assembly in the theory of catastrophe management due to the universality and adaptability of the latter to the analysis of any dynamic system

allows solving various problem aspects in the field of commercial operation of a ship, which is confirmed by the results of studies of domestic and foreign scientists.

Domnina O.L., Ivanov M.V., Mitroshin S.G., Isanin K.A.

Justification of high-speed water passenger transfer organization in the Volga federal district

Keywords: *passenger traffic, high-speed fleet, hydrofoil vessels, promising transport lines, organization of transportation.*

The article analyzes the need for the use of hydrofoil vessels in order to improve the transport accessibility of transportations in the Volga Federal District, provides a comparative analysis of various types of hydrofoil ships. The most promising directions for the Valdai -45R SEC use are considered, and the economic rationale for its commissioning is given.