

Section I

Shipbuilding, ship repair, and ecological safety of the ship

Bychkov V.Y., Grosheva L.S., Pluyshchaev V.I.

The calculation of wind force impact on the ship hull with wheel propulsion steering unit «golden ring»

Key words: *ship, wheel-propulsion steering complex, wind impact*

The article represents the calculation of wind force impact on the ship hull with wheel propulsion steering unit «Golden Ring».

Gramuzov E.M., Ivanova O.A.

Complex study of spatial fluctuations of floating objects and their stabilization parameters in the experimental basin

Key words: *basin, amplitude of fluctuations, wave-recording gauge, Froude number, model, platforms, experimental studies*

The article presents the results and analysis of experimental studies of spatial fluctuations of floating objects and their stabilization parameters in the experimental basin. A scheme for performing measurements of spatial fluctuation parameters for floating objects on physical models of drilling platforms has been developed. The characteristics of angular and translational fluctuations of physical models are determined using the developed complex of digital equipment, the parameters of their stabilization depending on the configuration of the platforms.

Kupaltseva E.V., Ronnov E.P.

Substantiation of elements and characteristics of passenger vessels with electric propulsion for intraurban and suburban lines

Key words: *passenger vessel, electric propulsion, mathematical model, economic efficiency*

The estimation of the economic efficiency of vessels with an atypical complex of the ship power plant (SES) is made for «small» passenger vessels operating on intraurban and suburban lines. The result of the developed methodology is a software product in the Visual Basic For Application (VBA) environment. With certain initial data, it is possible to calculate the economic efficiency criteria for a ship with both a classical SEM and a given non-typical complex.

Lebedeva S.V., Merzlyakov V.I.

Analysis of the effect of water damping on the stability boundary of a ship steering system with a wheeled propulsion-steering complex

Key words: *Stability, Gurvitz, self-damping.*

An influence of system inherent (or artificially introduced) self-damping on stability boundaries is studied using Hurwitz criterion.

Lyubimov V.I.

Peculiarities of the substantiation of the architectural-design type of the cruise ship

Key words: *passenger vessel, cruise ship, architectural and constructive type, hull, superstructure, wheelhouse, passenger compartment, passenger cabin, architectural analysis.*

The features of the substantiation of the architecturally-constructive type (ACT) of promising river cruise vessels, including mixed (river-sea) navigation vessels, are considered allowing to form a virtual model of a ship at the stages of conceptual design, to perform architectural analysis.

Ronnov E.P., Presnov S.V., Kochnev U.A.

Calculation and investigation of the forces arising in the coupler of the pushed convoy during a wave run

Key words: *pushed convoy, automatic coupler, regular pitching, differential rolling equations.*

The article contains the formulation of the problem and a mathematical model for determining the forces in the coupler of the pushed convoy. The results of test calculations are presented and the analysis of the obtained values is carried out.

Frantsev M.E.

Project justification of the choice of the material of the middle layer of the superstructure made up of the composites of a passenger hydrofoil vessel

Key words: *passenger hydrofoil vessel, composite superstructure, light middle layer.*

The article describes the design rationale for the selection of Nidaplast and Divinycell H materials as a material for the light middle layer of the superstructure made up of composite of a passenger hydrofoil vessel based on the research of prototype of superstructure elements manufactured using these materials. A comparative study of the mechanical characteristics of both materials was carried out. The mass of the superstructure was calculated using each of the materials. Forecasting characteristics of the durability of sandwich based on these materials was carried out using non-destructive testing methods. Extensive zones of delamination were found in the material Nidaplast. This determined the choice in favor of the material Divinycell H.

Shabarov V.V., Chekmarev D.T., Tumanin A.V., Peplin F.S.

Determination of Damping Forces of Air Cushion Vehicles in Vertical Motion

Key words: *Air cushion vehicle, ACV, Surface Effect Ship, SES, Computational Fluid Dynamics, CFD, damping, air cushion, pressure patch.*

The present paper deals with damping pressures associated with vertical motions of air cushion vehicles. A damping pressure is defined as a difference between an actual air cushion pressure of a vehicle in a vertical motion and a pressure inside a vehicle's air cushion calculated by a simple mass balance law. The paper presents the problem statement and the simulation results. It is demonstrated that taking into account this kind of forces leads to significant decrease in heave and pitch as well as vertical accelerations in head sea conditions.

Section II

Financial and accounting-analytical problems of the modern economy

Bastryekin S.V., Rudikova E.D.

Improvement of the statistical support system of government management bodies as a tool to increase economic security in the territory

Key words: *economic security, statistics, official statistical information, quality of information.*

The object of the study is statistical information provided by the Federal Service of State Statistics and its territorial bodies, as well as its role in ensuring economic security at the regional level. A comprehensive analysis of the formation and processing of statistical information by the regional bodies of the Federal State Statistics Service has been carried out. The analysis reveals the main problematic issues that arise when collecting, processing and using statistical information. The problematic moments are systematized into four groups depending on the reasons for their occurrence: problems related to the non-submission or provision of inauthentic information by respondents on statistical fees; problems related to incorrect inquiries of statistical observation bodies; problems associated with the occurrence of errors during the processing of information and its interpretation; problems associated with information threats: leakage and violation of the integrity and availability of information, computer viruses, expert errors, user errors, failure of the technical system for collecting and processing information as a result of hacker attacks. The main measures to neutralize threats caused by inaccuracies and inadequate quality of official statistical information were developed and integrated into the scheme for problem-solving groups. The conclusion is made about the direct influence of the reliability and timeliness of statistical data on decision-making by state authorities and the state of economic security of the territory.

Karaleu Y.Y., Myshkovets Y.A.

Features and benefits of using the Activity Based Costing Method

Key words: *expenses, management accounting, absorption costing, overheads, Activity-Based Costing*

The authors of the article examine Activity Based Costing (ABC) method, which is one of the alternative methods for calculating the cost in management accounting. The prerequisites for the origin and development of the method, its essence and features are analyzed, some advantages and disadvantages are evaluated. On the base of hypothetical example benefits of applying Activity Based Costing in contemporary conditions are illustrated. Some recommendations on the organisation, effective implementation and use of the method are given. Recommendations are given how to implement and use effectively the Activity Based Costing method.

Sataeva D.M.

Documented information management: ISO 9001:2015 based approach

Key words: *ISO 9001:2015, document, record, information, quality management, standard, management.*

The article defines the elements of the quality management system to be documented; the structure of the organization documented information is developed; the procedure for ISO 9001:2015 requirements implementation with regard to external and internal documentation is defined, including the certificates of organization activity conformity (records).

Telegus A.V., Kruchinin M.V.

Business trip travel expenses: legal and tax aspects of personal income taxation

Key words: *business trip, travel expenses, personal income tax.*

Staff travel is one of the sides of the economic activity of any organization, including the one engaged in transportation. There are situations when clear legal regulation is not defined in normative acts, or there is a contradiction with the provisions of Chapter 23 of the Russian Federation Tax Code «Personal Income Tax», which may affect financial interests. The article deals with some problems concerning travel expenses reimbursement, which law enforcers face.

Section III

Economics, logistics and transport management

Veselov G.V., Ivanov M.V., Mineyev V.I., Mitroshin S.G.

Expediency substantiation of subsidizing of the high-speed water passenger transportation in the Privolzhsky Federal District

Keywords: *passenger transportations, transport accessibility, high-speed vessels, subsidizing of water transport*

The article analyzes the necessity of using high-speed water transport to increase the transport accessibility for the population of the Russian Federation. The issue of subsidizing passenger river transportations in modern conditions is considered.

Zhavoronkov N.A., Zaretskaya E.V., Mitroshin S.G.

Transport and technological multimodal systems with the participation of inland waterway transport as one of the key integrating elements

Key words: *ferry transport logistics system, high margin cargo, transport and non-transport effects.*

The article deals with the technical and technological approach to the organization of multimodal transportation of high-value cargoes with the participation of inland water transport (IWT). A methodology is given that allows to calculate the parameters determining the transport and non-transport effects as a result of participation of key integrating links in the ferry transport logistics system (FTLS).

Zadrovsky P.V., Frolova O.N.

Methodological aspect of the analysis of tendencies of the development of the transport complex of the region (using the example of perm region)

Key words: *methodology of the analysis of tendencies, transport complex of the region, forecast of indicators by means of transport.*

In the article the methodological aspect of the analysis of tendencies of the development of a transport complex of the region is developed, forecast calculations of indicators of activities of means of transport on analytic functions of trends and the choice of forecast values using the theory of mathematical expectation are given. The conclusion on the analysis results of the need of the balanced development of all means of transport for a regional transport complex is given.

Kegenbekov Zh.K., Tyulubayeva D.M., Garmash O.V.

Professional portrait of a forwarder in Kazakhstan

Key words: *logistics, transport, freight transport, forwarder.*

In the article the main requirements for forwarders and basic skills which are necessary for specialists working in this field and those who use their services are given.

Mordovchenkov N.V., Sirotkin A.A.

Modern theoretical and practical trends of innovative activity in the transport and logistic sphere

Key words: *innovative activity; transport and logistic sphere.*

The evaluation method of transport and logistic projects including the evaluation criteria meeting the requirements to the results of innovative development of the transport and logistic sphere is developed. The role of the infrastructure in the innovative development of the transport and logistic sphere is considered. The Russian and foreign practice in rail freight transportation as a segment of the transport and logistic sphere is presented.

Tsverov V.V., Puchkova A.V.

Improving the process of the warehouse service as a factor of increasing the reliability of delivery in time

Key words: *delivery in time, logistics process standards, organizational factors influencing failures in warehouse maintenance.*

The article considers the possibility of the increasing of reliability of the delivery of products in time due to the identifying organizational and technological factors destabilizing warehouse maintenance and reducing their impact by improving the framework for the process of warehouse service.

Section IV

Operation of water transport, navigation and safety of navigation

Vinogradov V.N., Ivanovsky N.V., Novoselov D.A.

The random parameters influence analysis on the vessel manoeuvrability and safety

Key words: *navigation safety, risk estimation, the marine vessel mathematical model, automatic control.*

The article deals with random parameters influence on the vessel, such as the attached water masses, the inertia moment, the vessel draught and others; the influence on the motion trajectory, the vessel manoeuvrability and safety is meant. The article also presents a universal safety criterion that can be used in any vessel manoeuvring operation and particularly in the narrowness passage.

Churin M.Y.

The barrass's method use for the river fleet vessels dynamic drawdown calculation

Key words: *analysis, calculation method, dynamic drawdown, river fleet vessels.*

The article considers th Barras's method widely used for sea vessels for calculationg the river fleet vessels dynamic drawdown value while passing in the shallow areas. The method use possibility for the river vessels is analysed. Having analysed this method applicatin we offer to use the Russian authors' for the river fleet vessels particularly and taking into account some specific shallow water conditions.

Yanchenko A.A.

Scientific Approaches to the Sea Ports and Port Terminals Operating Processes Study

Key words: *modelling, port, transport process, container terminal, management system, process-based approach*

The article focuses on the current scientific studies overview devoted to the ports and port terminals improvement on the basis of queueing theory. The various authors' works systematic analysis allows identifying the main trends concerning the port operation technological processes study . As a result, it was concluded that the process-based approach to building queue serving systems is the most promising for today.

Section V

Operation of ship power equipment

Samuleev V.I., Guskova T.N.

Peculiarities of application of the asynchronous frequency-regulated electric drive at zemsnyaryads

Key words: *frequency-controlled winch electric drive, parking mode under current, frequency ratio f_1 and voltage U_1 on the engine stator, the AD operation with fluctuating supply voltage.*

The article deals with the operational winch electric drive functioning «to the stop», that is, in the parking mode under the current. This model study allows us to obtain expressions for the minimum losses for certain voltage ratios U_1 and frequency f_1 . We also consider the operational winch electric drive frequency-controlled regime with changes in the voltage concerning the supply ship's network, which happens quite often when starting powerful consumers and the relation $\alpha = f(M)$ is shown.