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April 28th-29th, 2014
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Book of Abstracts

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DEVELOPMENT OF DUBROVNIK AIRPORT THROUGH THE DEVELOPMENT OF WINTER TOURISM IN THE DUBROVNIK REGION

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ABSTRACT

This paper analyzes the tourist demand and the development of the Dubrovnik region through air traffic during the winter period. Air traffic in recent years in the world recorded high growth rates, especially in the part that relates to travel and tourism in the Dubrovnik airport. The air transport has the largest share in the development of Dubrovnik region tourism. But the traffic and demand apply only to the summer period. Number of serviced passengers through airport of Dubrovnik during the summer months is more than 1.3 million passengers, while traffic in the winter makes only 200,000. Tourism in the winter period is reduced to individual actions and events and is not strategically organized. In order to assess and predict the development of tourism in the winter through the development of air transport, it is necessary to analyze the type of passengers in the winter, offer accommodations to be provided in the winter, the turnover of foreign tourists in the winter, the short comings that limit development and tourism bid through the facilities of the winter. This paper discusses the advantages and disadvantages of the Dubrovnik region during the winter season also features the deficiencies of Dubrovnik Airport considering the forecast of foreign tourists. Also in paper will be present the resources and options that would in future contribute to increase passenger traffic during the winter period.

KEY WORDS

air transport, Dubrovnik region, foreign tourism, demand Dubrovnik Airport forecasting development possibilities

ANALYSIS OF THE EFFECTS OF LOW-SULPHUR FUEL OIL ON MARINE DIESEL ENGINES OPERATION

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ABSTRACT

The purpose of this paper is to discuss and analyse the problems occurring when using low-sulphur fuel oils in marine diesel engine operation as well as the measures taken to prevent damage to individual engine components. The paper discusses the effects of low-sulphur fuels on marine diesel engine operation.
Exhaust gas emissions are often directly related to the impurities contained in fuels that are being used. High level of sulphur oxides SOx and nitrogen oxides NOx in the emissions of exhaust gas is an inevitable result of using heavy fuel oil - HFO. Maximum emissions of these oxides are regulated by IMO (International Maritime Organization), according to [3].
Requirements for reducing SOx emissions in certain areas of navigation have resulted in using low-sulphur fuel oils in diesel engine operation. Using HFO with high sulphur contents has become unacceptable after adopting the regulations brought by Annex VI of the International Convention for the Prevention of Pollution from Ships (MARPOL 73/78), designating some seas as particularly sensitive areas (Emission Control Areas - ECA), and after introducing the monitoring of emissions from ships in ECAs.
Maximum allowed sulphur content in fuel in European ECAs amounts to 0.1 % for ships in ports and all inland waterways across the European Union, whereas California Air Resources Board (CARB) applies the regulation limiting the sulphur content in fuel to 0.1 % within 24 nautical miles of the California's coastline, according to [1], [3].

KEY WORDS

Low - sulphur fuel, lubrication, combustion, leakage, viscosity

MARITIME CYBER DEFENSE

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ABSTRACT

The purpose of this paper is to inform about the current state of cyber security in the maritime industry. Maritime security commonly addresses physical security, but now it should include cyber security. Cyber attacks on ships and crew are deliberate disruptions of critical automation systems that cause problems for computer networks. Future attacks are inevitable and the shipping industry may be vulnerable of collateral damage if sensitive information, as business confidential information, company proprietary data, details of vessel schedules and personnel data is picked up by malicious adversaries. Many activities in the maritime industry depend on electronic and communication systems, and that makes them susceptible to cyber attacks. It will be wise to establish and maintain a maritime cyber defense system that includes cyber security in all major maritime information and communication technology (ICT) components. Recently, IMO has created the position of an Electro Technical Officer (ETO) designation with core ICT skills and Certificate of Competency (COC). Though there is no specific IMO requirement for carrying an ETO crewmember, it would be wise to integrate this higher version of an electrical officer position into their crew. The maritime community would benefit from forming a maritime cyber defense team that would design a strategy and define policies in assisting standardization of cyber security guidelines in the maritime industry. The time is right to make this preventive move using the latest cyber defense methods to guard against future cyber threats.

KEY WORDS

cyber security, cyber defense, cyber threats, Electro Technical Officer, ETO, IMO, ICT, COC

THE OBLIGATIONS AND LIABILITY OF THE SHIPPER UNDER THE ROTTERDAM RULES

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ABSTRACT

This paper presents and analyses provisions of the Rotterdam Rules in respect of the shipper's obligations and liabilities. Also these provisions are compared with the solutions of the current conventions that regulate the carriage of goods by sea. Three main obligations of the shipper - duty to delivery for carriage, duty to cooperate with the carrier in providing information and instructions and shipper's obligation to provide information, instructions and documents are examined in detail. The article also deals with the liability of the shipper and liability of shipper for other persons. Special attention is devoted to the provisions deal with the basis of shipper's liability to the carrier. The objects of the examination are also recent solutions in respect of defining and prescribing the liability of documentary shipper. Assumption of shipper's rights and obligations by the documentary shipper is also analysed. Other important innovations are pointed out, like special rules on dangerous goods and shipper's liability for failure to provide information for compilation of contract particulars. Rotterdam Rules attempts to regulate in a comprehensive and contemporary manner the obligations and liability of the shipper. The overall assessment is that the shipper's obligations and liability are not substantially increased under the Rotterdam Rules.

KEY WORDS

carriage of goods by sea, Rotterdam Rules, shipper, documentary shipper, obligations, liability.

CHALLENGES OF MARINE SPATIAL PLANNING IN EASTERN ADRIATIC

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ABSTRACT

Marine spatial planning (MPS), being a public process for analysing and planning the spatial and temporal distribution of human activities in sea areas to achieve economic, environmental and social objectives, is a mean for a rational and scientifically-based use of sea space. Its main purpose is to identify and manage spatial uses and conflicts in maritime areas and to provide a framework for arbitrating between competing human activities and managing their impact on the marine environment. MPS enables the recognition that the oceans are no longer free for all commons, but rather a space where human interests, responsibilities and ecosystems interact. There is no MSP in Croatia, or spatial planning with regard to the Adriatic Sea, but only a fragmented sectorial legislation. The paper identifies MPS as an important legal tool for the effective governance of marine areas. Any MSP should be developed in a transparent manner and should advocate public interest. Also, coherence between terrestrial and MSP should be achieved. Conducted properly, MSP should optimize the use of the sea, reduce the cost of information, regulation, planning and decision-making, it represents strategic planning, facilitates conflict resolution and sustainable resource use, helps to ensure that developing marine sectors are allocated space to develop, supports environmental economy, improves stakeholder involvement, and develops common approaches to the acquisition and dissemination of information. The authors are proposing that MSP in Eastern Adriatic should in particular take account of new land-based developmental hazards such as new construction and creation of impermeable surfaces.

KEY WORDS

marine spatial planning, governance of marine areas, integrated protection of marine environment, Adriatic Sea

SOLUTION FOR EDUCATION OF SEAFARERS

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ABSTRACT

Education of seafarers is very complex process because it is regulated with the STCW convention and in the same time with the national rules in higher education. We compare the study programs in maritime faculties in Croatia, Montenegro and Slovenia. These countries changed their study programs in last year and there are several differences between them. The objective of all is to have qualified seafarers with high competence. International collaboration in maritime education and in training in accordance with METNET can be a solution. In this paper we propose o new way of education of seafarers where we build a team/group of expert with all necessary knowledge and experience in the field of maritime science and with appropriate title in high education. This team of expert will rotate between the faculties and ensure that the level of knowledge in all studies programs for maritime education is in accordance with STCW and scientific requirements.

KEY WORDS

Education of seafarers, STCW, METNET

CALCULATION OF THE HYDRODYNAMIC LOADING ON A VERTICALLY SUBMERGED CYLINDER BY MEANS OF THE MORISON EQUATION

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ABSTRACT

Oil and natural gas are among the most important sources of energy. Price of these sources determines to a large extent all other branches of industry and global economy. The search for oil has resulted in the development of many technologies, primarily petroleum engineering and geosciences. Whereas land oil reserves are mainly exhausted, under oceans and seas there are vast deposits of oil and gas. This fact has influenced the development of marine engineering and extremely rapid progress of sea keeping. As a field of hydrodynamics, sea keeping theory researches the design and maintenance of offshore structures. Statistical analysis, wave models, force and energy calculations, structural analysis, etc. are various fields of research in sea keeping theory. In this paper the Morison equation, a semi-empirical equation for calculating the inline force on a body in oscillatory flow, has been used for calculating wave loads on submerged structures.

KEY WORDS

fluids, sea keeping, waves, Morison equation

CHANGE MANAGEMENT AND POSSIBILITIES OF ITS APPLICATION IN SEAMENSHIP

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ABSTRACT

At a time when changes have become a constant in business, and the economic crisis has affected even the strongest economies and societies in the world, one has to agree that good management, i.e., management adaptable to changes is necessary in all countries, economies, as it is the case with seafaring and all its segments. In a turbulent surroundings it is difficult to recognize real threats, but also real chances for further development of maritime companies. All maritime companies, even those with a leading position on the maritime market, must comply with the changes in surroundings, enabling them to survive as leading competitors.

This paper aims at exploring the way the changes affect the business performance of the maritime companies and by virtue of the chronologic sequence determine how and at which pace they develop. Company management has a difficult task to fulfill, and the task of a researcher is at the same time to develop a constructive, pragmatic debate on the ways and mechanisms enabling adjusting to changes, their acceptance and working atmosphere in which the change is a normal occurrence, but not the unexpected or unwanted one.

KEY WORDS

maritime market, maritime companies, change management

EU MARITIME POLICY AND THE NEW PROVISIONS OF CROATIAN MARITIME CODE ON COMPULSORY PILOTAGE

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ABSTRACT

Pilotage is guiding a water craft through the water by trained crew (a pilot) and giving expert advice to its master for the sake of safe navigation in ports, straits and other areas of internal waters and territorial sea in the coastal states. The compulsory pilotage is determined for vessels of certain types and sizes if required for the safety of navigation. In Croatia, the pilotage services are regulated by the Maritime Code of the Republic of Croatia and Marine Pilotage Code. In an attempt to achieve more liberalisation in port services within the European Union, maritime pilotage regulations remained separate from those pertaining to other port services due to their importance for navigational safety. The reason for this is to allow various pilotage regulations depending on specific requirements of an individual port, primarily having in mind the safety of navigation. The coastal states may decide to carry out the pilotage operations themselves, or to directly entrust them to specific operators. In Croatia, these operations are conducted by domestic legal entities based on the approval of the Ministry of Maritime Affairs. Each state regulates compulsory pilotage for vessels, taking into account their dimensions, type of cargo and the density of traffic in a specific fairway, or within a certain area. The flag of the vessel is not a decisive criterion for the exemption of vessels from the obligation of pilotage. The new provision, included in 2013 Amendments of Maritime Code, which regulates compulsory pilotage (Article 70, Paragraph 2, Subparagraph a) excludes from compulsory pilotage not only the Croatian passenger vessels that ply on regular routes (as before), but also the passenger vessels flying the flags of other EU member states. European states do not recognize the system of vessel exemption according to their flag, so it was not necessary to change the existing provision in order to harmonize the Maritime Code with the EU acquis communautaire. Moreover, due to the fact that the new provision on exemption from compulsory pilotage causes much more danger to the safety of navigation inside the internal waters and territorial sea of the Republic of Croatia. In addition, the provision is not in accordance with the 1923 Convention and Statute of the International Regime of Maritime Ports whose party is the Republic of Croatia based on the Notification of succession. The provision fails to provide equal treatment to the vessels that do not fly the European Union flag, which is contrary to the provisions of the Convention and the Statute.

KEY WORDS

pilotage, 1923 Convention and Statute of the International Regime of Maritime Ports, the principle of equal treatment, Pilotage Exemption Certificates - PEC, Amendments to the 2013 Maritime Code

ASSESSMENT OF THE CURRENT SITUATION AND THE SUPPOSITIONS FOR THE EFFICIENT WORK OF THE REGIONAL PORT AUTHORITIES IN THE REGION OF ISTRIA

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ABSTRACT

Several port authorities have been established for the purpose of management, construction and operation of ports open to public traffic of regional and local significance within the Adriatic regions in Croatia. In legal terms, the Region independently decides on the appropriate, best model of management of ports of regional and local significance. The management of ports plays a special role because the ports the primary benchmarks of development of the maritime economy.

In the paper the authors analyse the status of the port authorities from the institutional and economic aspects and explain their technical-technological and organizational-economic structure. The paper also researches and analyses the port authorities' level of development, level of integration, project opportunities and the compliance of all the factors in the structure of the port and its surroundings.

The operating result of a regional port authority is the indicator of its success, the role and importance it has for the port, traffic and economic system both at the national level and within the scope of the competitive transport market.

The authors analyze the operations of port authorities of the Region of Istria and determine the significance of the administrative capacity and the effects on the improvement and development of port infrastructure. Measures are proposed for the improvement of knowledge and of the effects of the operating process.

KEY WORDS

ports, regional port authorities, administrative capacity, operating results, Region of Istria

SUSTAINABLE MARITIME TRANSPORT

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ABSTRACT

Due to high fuel prices on the world market and regulations for emission reduction, nowadays many shipping companies are forced to experiment with different types of ship propulsion in order to minimize fuel consumption and meet the criteria for CO2 release into the atmosphere, and thereby to reduce the transportation costs. This paper will give an insight into the range of alternative energy sources and various possible alternative solutions for ship propulsion. According to IMO it can be noticed that cutting down emissions in shipping industry is developing in two directions; usage of hybrid systems for better performance where the main power source is still fossil fuel; and systems without fossil fuel. Ship owners united under International Chamber of Shipping stated that shipping industry is determined to cut down emissions from ships by 20% until 2020 with significant reductions thereafter. Interest in biodiesel is more enhanced nowadays primarily because of uncertainty in oil prices but advantages in environmental benefits cannot be ignored. Emission restrictions are coming in force internationally or regionally in Emission Control Areas.

KEY WORDS

Emission Control Area, Sustainable development, Biodiesel, Renewable energy

HOW LEARNING STYLES AFFECT THE EXPIRIENCE OF E-LEARNING

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ABSTRACT

Putting emphasis on the Moodle platform as a contemporary model of teaching, which is used at the Faculty of Maritime Studies Kotor, in this study we have investigated how students perceive such an alternative model of teaching through the use of different learning styles. The study has shown that individual learning styles and experience of e-learning are statistically significant. All that contributes to greater efficiency and improvement of active teaching models.

KEY WORDS

learning styles, E-Learning, lms, moodle

QUALITY MANAGEMENT AS THE PART OF AIRPORT SUSTAINABLE DEVELOPMENT

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ABSTRACT

Term Sustainable development has evolved from 1987 until today; from basic organizing principle for human life on a finite planet to holistic approach for managing Economic viability, Operational efficacy, Natural resource conservation, and Social responsibility. Today modern airports are fully featured international gateway and destination catering to the needs of both travelers and visitors. They are an arm of the local economy focused on moving passengers and freight efficiently. Their impact on the local economy and the environment can't be ignored and every day is more challenging. The paper will analyze contemporary approach of Airport Sustainability; in particular Airport Quality Management as the part of Sustainable Management Plan.

KEY WORDS

sustainability, airport, management, quality, development

DIAGNOSING FAULTS OF MARINE PROPULSION SYSTEMS BY MEANS OF VIBRATION PARAMETERS ANALYSIS

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ABSTRACT

The application of vibro-acoustic analysis methods in marine technology has been presented in the paper. This element of Base Diagnosing System (BDS) is accepted and used in the ships, which are powered by the COGAG power plant from a few years in the Polish Navy. The paper presents investigations of permissible in-service unbalance and appropriate assemblage of turbine rotors on the basis of selected vibroacoustic parameters, and finally determination of their permissible operation time resources. Another element of BDS is vibration control of misalignment of propulsion shafts. The described conception concerns evaluative process of the centring state in a transmission shafts within powered, marine gas turbine system as a function of ships displacement. Some structural components of the gas turbine unit and reduction gearbox have been selected for the analysis. Some results of the vibro-tests have been presented as well. All tests had been worked out during sea trials and have theoretical background.

KEY WORDS

propulsion plan, diagnosing, vibration

HOW DEPENDENT IS THE COMPETITIVENESS OF PORT OF KOPER ON ITS RAILWAY CONNECTION

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ABSTRACT

North Adriatic ports, namely Venice, Trieste, Koper and Rijeka operate in a common market and serve similar gravitational area which extends up to the Central European counties. By theory, the functioning of any single port deeply depends on its hinterland connections. Four North Adriatic ports are located in three different countries, and each of them has certain national strategic priorities, however all of them share the same goal, which is to establish a competitive railway connection on corridor V. Slovenia seems to be rather indecisive in achieving this goal, and the construction of second railway track linking port of Koper to the corridor V has not yet been confirmed.

The paper presents three developmental possibilities of the port of Koper in regards to its hinterland railway infrastructure development. First forecast is based on "status quo" scenario, meaning that no significant improvements would occur on the port's railway connection. The second scenario considers some major upgrades to the existing line, while the third scenario implies the construction of second railway track in the length of 27 kilometres.

KEY WORDS

ports, hinterland connections, railways, infrastructure development, traffic flows

P&I COVERAGE REPATRIATION COSTS OF CREW MEMBER IN CASE OF SHIPOWNER INSOLVENCY

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ABSTRACT

Repatriation of crew member as a consequence of death, personal injury, illness or desertion is a subject of the standard insurance cover under the P&I clubs rules. Repatriation costs in other circumstances – shipowner bankruptcy (insolvency), until recently, were outside the scope of insurance cover. According to the solutions Regulation 2.5 – Repatriation, Standard A2.5.1. (b) and Guideline B2.5.1. (b) (iii) – Entitlement to repatriation of the Maritime Labour Convention (2006) provides that Member States Parties shall ensure that crew members on vessels flying their flag are entitled to repatriation in case where the shipowner is no longer able to fulfill his legal and contractual obligations as an employer of a crew member ie. he is unable to pay the repatriation costs. The author presents and analyzes the P&I cover repatriation costs of the crew member under the P&I clubs rules before and after entering into force of the Maritime Labour Convention (2006) on international level (20 August 2013) pointing to the necessity of amendments to the relevant P&I Clubs Rules in relation to the following insurance period. The author concludes that the application of international legal solutions in order to provide a better living, working and social conditions of the crew members, the extension of P&I insurance coverage and negative effects of the global financial crisis on the maritime insurance market will be reflected in the payment of supplementary calls members of P&I clubs and changes in insurance terms in P&I clubs rules.

KEY WORDS

P&I cover, repatriation costs, crew members, shipowner insolvency

ALBANIA NATIONAL STRATEGY IN RESPONSE TO COASTAL POLLUTION FROM SHIPS AND MARITIME DISASTERS

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ABSTRACT

Coordination of national operations, reaction and time interaction with all stakeholders maritime and logistical means necessary, including all activities necessary to reduce the damage and to conduct and coordinate operations from the ground. Operations managed by the Marine Department, according to a local emergency plan to deal with the components of the civil service and national defense, under the emergency plan to protect coastal areas from sea and marine pollution caused by maritime shipping accidents. Information will be provided by the Ministry of Environment on the situation of marine disasters at sea in coastal areas pollution. The plan shall be implemented in accordance with all required operational procedures related to logistics, planning, and administrative and legal aspects of the guidelines set out in the planning stage to actual implementation in a given situation. This strategy finds its first application by the coordination service activation key units from the prime relevant ministries and local governments. Sea area in which the emergency plan is implemented and how it's application refers to the Albanian government laws are in effect. The authors will determine available resources and equipment necessary to meet the pollution of coastal areas in Albania and will explain all the procedures.

KEY WORDS

marin pollution, marine environment, ship, emergency plan, environmental pollution, coastal marine protection

LOGISTIC ROLES AND RESPONSIBILITIES CONSIDERING OPERATIVE LOGISTIC CHALLENGES

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ABSTRACT

The paper elaborates roles and responsibilities that represent the key functions of logistic operations. The study has been primarily aimed at the analysis of the specifics of daily operative logistic functions. Logistics has been one of the most changing and developing functions in modern business over past few decades. Following and respecting the constant changes and improvements within the logistics operations resulted indemand of the change and improvement in logistic experts' skills and competencies in respect to the logistic roles and responsibilities. Authors of the paper researched the current logistic job positions demand as well as the detailed descriptions of some logistic positions in companies that have logistic or supply chain department. Principal aim of this paper has been to present consolidated logistic functions with highlight at specific logistic skills and competencies. The research has been expected to result in competent and expert advice to the educationalinstitutions with existing and new educational programs related to logistics and supply chain.

KEY WORDS

Logistics, logistic functions, logistics skills and competencies

SHIP'S CLASS AS A MARINE INSURANCE CONTRACT TERM

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ABSTRACT

Ships must be designed, constructed and maintained in compliance with the technical standards of seaworthiness provided by the international conventions, national regulations and rules of classification societies, ensuring an acceptable level of ship stability and safety, its environmental impact, etc. Classification societies supervise the ships' technical soundness, i.e. their compliance with the respective technical standards, through a specific system of inspections and certification. There are a number of classification societies, the leading ones being the members of the International Association of Classification Societies (IACS) promoting the new unified technical standards for ships, internal quality management systems and the members' code of ethics. The class certificate, inter alia, serves as a proof of a ship's sound condition upon contracting the hull or P&I insurance. Commonly, the insurance cover or the insurer's obligation to indemnify under the insurance contract is subject to the ship's class being maintained. Change, suspension, discontinuance, withdrawal or expiry of the ship's class may lead to a termination of insurance, exclusion of the insurers obligation under the insurance contract or a similar legal consequence negatively affecting the coverage. The standard marine insurance clauses containing the special terms regarding the ship's class shall be analysed hereunder. The aim, nature and effect of such terms shall be discussed in the context of Croatian law and comparatively in the foreign laws governing the most common standard marine insurance clauses, particularly the Institute clauses, P&I rules and the Nordic Marine Insurance Plan.

KEY WORDS

marine insurance, classification societies, ship's class

THE OVERVIEW OF SEA WATER QUALITY MONITORING REGULATIONS IN CROATIA

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ABSTRACT

In this paper, Croatian and International regulations for marine protection and water quality control together with the water quality parameters are analized. It brings the measures for water quality monitoring system. The water quality monitoring projects are also given. Croatian coast and sea are particularly valuable natural resources. Thereby, water quality is issue of special national interest, not only for tourism but also biodiversity preservation. Croatia continues with water quality control after joining the EU. Croatian administrative division to counties defines the management and the enforcement competences over confined geographical area. In different counties, management practice may slightly vary, but, in essence, they have to meet established criteria, as well as, existing regulations.

KEY WORDS

regulations, sea water quality, Croatia, EU

THE IMPACT OF TECHNOLOGY ON SEAFARER'S WORK AND LEISURE

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ABSTRACT

Technological development has contributed to different possibilities of the seafarer leisure, as well as to providing connections with his family and friends. Furthermore, modern ships are technologically advanced systems that require constant investing in seafarers' knowledge, working abilities and willingness of decision-making at all levels of the crew for high-risk situations in which the ship can be found. In this sense, it is important to emphasize the need for conscious and conscientious labor, as the data shows that, despite the distinct technological advancement in marine systems, the majority of maritime accidents are caused by human error. Technology boosts the productivity and quality of products or services, but only if used duly, both during working and leisure time. A number of devices we utilize every day increases fatigue, occupies us and leads to an uncritical reliance on technology. The most conspicuous are tensions which occupy seafarer's minds during working hours such as the potentiality of virtual investments, gambling or participation in family activities in real time without physical presence, by using information technology. Due to fatigue that stems from work and leisure, as well as shifting of the initiative from human to machines, it is necessary to review the effects of technology on the successful performance of maritime profession.

KEY WORDS

ship, technology, seafarers, work, leisure, conscience

THE IMPACT OF THE LAW OF THE SEA TOWARDS GLOBAL OCEAN POLICY ISSUES: MARITIME ADMINISTRATION PERSPECTIVE

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ABSTRACT

The implementation of the appropriate maritime policies, legal norms and the main principles of the international law of the sea, represented mainly by the Law of the Sea Convention (1982), for ensuring the quality of global shipping industry and seafarers, maritime environment protection, maritime safety and security, along with an effective economic management of maritime functional areas, are considered the main responsibilities of the maritime administration in nowadays. Nevertheless, the sustainable development of ocean resources and space at international level, as well as the management of the integrated maritime management practices are becoming currently an imperative task for the maritime administration, which based on the international law of the sea and domestic legislation, must play more active role towards these important matters for the international community. In this respect, the focal point of this study is to analyse the possible role and impact of this administration towards international ocean policy issues such as living marine resources, exploitation of oceanic mineral and energy resources, and ocean environmental protection, as crucial matters for the national interests of a coastal state as well as considered important key factors for the international system and for the international relations in general. The authors agree that the maritime administrations worldwide need to strictly implement the international law of the sea in order to cope with these recent changes global in nature in order to fulfil its main objectives.

KEY WORDS

Maritime administration, international law of the sea, Law of the Sea Convention, ocean policy, maritime security, maritime safety, maritime environmental protection, ocean natural resources, living marine resources

THE ROLE AND IMPORTANCE OF SAFETY IN MARITIME TRANSPORTATION

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ABSTRACT

Today, safety is a very important factor that affects all elements of maritime industry. However, safety management and its implementation in the maritime industry are more important than ever. International legislation and regulations in shipping were rather scarce at the time of the Titanic tragedy. Present-day maritime industry has a number of codes, conventions and guidelines that set the boundaries of safety and efficiency in shipping. The development of maritime industry has resulted in the great development of technology, design, size, propulsion and safety of ships. Consequently, the development of new technologies in the maritime industry has brought changes in the education systems over the last few decades. After the Second World War the maritime education system has been evolving proportionally to the demands of the industry. Despite great breakthroughs in technology and safety at the workplace, the marine industry is still a relatively dangerous place to work. This paper presents the flow and the analysis of the development of technologies that have been major milestones in shipping with regard to their contribution to maritime safety. The paper also discusses important factors that adversely affect the safety of navigation today and points out the dangers affecting the future of maritime safety, with the aim of minimising the dangers, i.e. material and human losses, and maximising the environment preservation.

KEY WORDS

maritime safety, the development of ships, professional training, international regulations and standards, competent authorities for safety

THE IMPLEMENTATION OF THE CONVENTION ON BIOLOGICAL DIVERSITY

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ABSTRACT

The Convention on Biological Diversity is the key global instrument on the conservation and sustainable use of biological diversity and the fair and equitable sharing of the benefits from the use of genetic resources. In 1992, the Convention on Biological Diversity was mentioned for the first time on the United Nations Conference on Environment and Development. The Convention promotes the maintenance of healthy ecosystems, the protection of threatened species and the conservation of the genetic material that underpins populations of wild and domesticated species. Recent studies have shown that biological diversity decreased due to habitat destruction. Therefore, the protection of nature is imperative precondition for the survival of the diversity of living components, ecosystems and landscapes. The aim of this paper is to present current state of biodiversity in the world, and future strategic plans for conservation of biodiversity and preventing further destruction of biological systems.

KEY WORDS

Biodiversity, Convention, Protocol, Biological Security Strategy

ANALYSIS OF INVESTMENT IN EMPLOYEES IN MICRO AND SMALL MARITIME COMPANIES AND THEIR IMPACT ON BUSINESS RESULTS

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ABSTRACT

Knowledge and high technology, education, expertise and innovation of employees are becoming key elements of mastering change and competitive advantage of organizations, and societies as a whole. Therefore, the requirements for training and development of employees are constantly growing, and in their knowledge and skills become more invested in, both on the macro-economic, national and at the microeconomic, level of organization. The revenue and costs per employee per some maritime companies, such as Split Ship Management, Jadroplov Splitska plovidba, Linijska nacionalna plovidba, will be observed in the period since 2008. by 2010. year. Because of the relationship that exists between revenues and expenses per employee in this paper will be the access to quantify and determine the correlation between them. The subject of this paper is to examine and determine whether there is a strong positive or negative relationship between income and the cost per employee, based on a sample of shipping companies. The comparison of revenue per employee and changes in cost per employee will demonstrate the importance of our employees and the importance of investing in our employees have for the entire business. Research that will be conducted in the accession work will contribute to giving more importance to investing in employees. Also the contribution of businesses in pointing to the employees, their work and investing in training and education of employees may affect the operating results and lead to a weakening, but on the other hand to extraordinary results. Acknowledges businesses to focus increased attention on investing in employees through various types of motivators.

KEY WORDS

human resources, micro and small shipping company, employee training, revenue per employee, the cost of education

SUSTAINABLE MARITIME TRANSPORT IN BALTIC AND THE MEDITERRANEAN REGION: POLICIES AND CHALLENGES

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ABSTRACT

The paper describes a research into the sustainable maritime transport policies and challenges related to achievement of sustainable maritime transport systems in the Mediterranean and the Baltic Sea Regions. Sustainable development being a global objective, has found reflection in European Union legislation on regional and local levels and has resulted in a number of strategies for development - for maritime transport as well. Maritime transport, being an important part of the economies of the regions, provider of work places is also a controbutor to gloabl warming through the exhaust gases and is a potential source of pollution. Thus it is a challenge when it comes to achievement of sustainable development and protection of the environment of the region. Being both European Union regions, the Baltic and the Mediterranean are part of strategies for sustainable development and the purpose of the paper is to make a comparative analysis of the approaches towards sustainable maritime transport in both regions, policies, similarities and challenges. Despite the differences in the geography and governance, lessons learned from both regions could be benificial for achievement of the sustainable maritime transport system and protection of the seas.

KEY WORDS

sustainable development, maritime transport, Baltic Sea, Mediterranean Sea

PASSENGER LINER SHIPPING INFORMATIZATION MODEL

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ABSTRACT

Passenger liner shipping system includes passenger and vehicle transport on lines which are under concession approved by the authorised institutions. Services providing process within the passenger liner shipping involves many areas of activity, while activities are related to the reception of vessels, passengers and vehicles at the port, transport services, reservation services and ticket sales. Bearers of those activities are port authorities, operators, shipping companies and travel agencies.

Such a complex whole can be efficiently handled only by appropriately designed information databases, integrated information systems and well-developed governance mechanisms. The purpose of the functioning of the system, to whose accomplishing all the elements and their activities should be directed, is related to the optimization of the process according to market principles, and optimizing public benefits.

The need to increase the efficiency of the management liner shipping traffic, results from the features of the environment, i.e. the wider economic entity. The globalization and internationalization trend is becoming more relevant environment moderator, driven primarily by involvement of Croatia in the European integration processes. Coping successfully with market principles and the rapidly changing dynamic of business conditions, is becoming a necessity for all operating entities of the system and the criteria of the management process. Implementation of modern management and value-oriented concept involves establishing principles of feedback control and continuous improvement through a high level of integration of the system and taking into account the requirements of all stakeholders, as well as internal and external factors in the function of on-going market positioning and maintaining the level of competitiveness. Information technology and appropriate designed information system in combination with standardized system elements are the foundation and the basis of functionality of these principles.

KEY WORDS

passenger liner shipping, information system, management system, process-based management, continuous improvement

IMPROVING THE EFFICIENCY OF CUSTOMS PROCEDURES IN THE MEDITERRANEAN SEA PORTS AS A FUNCTION OF DEVELOPMENT OF PORT TRANSPORT NETWORKS

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ABSTRACT

It is well known that European ports encourage reevaluation of their management strategies in order to attract investments in the field of transport. In addition to the infrastructure needed to develop new, reliable and cost-effective transport network, there is a need for the enhancement of port services and customs procedures through the simplification and harmonization of procedures using the information-technology systems. Currently, there is an obvious progressive shift toward electronic access to the implementation of various port procedures where customs administration plays a key role. Project MEDNET-Mediterranean Network for Custom Procedures and Simplification of Clearance in Ports, was recently accepted by the MED program and will be co-financed by the European Regional Development Fund (IPA MED). The main objective of the project is to establish and manage a network port authorities and traffic experts in the Mediterranean, and the long-term goal is to focus on the exchange of experiences in the field of port and customs procedures and simplification of customs procedures for vessels and cargo. Expected result is an increase in mutual understanding of the procedures and promotion of the introduction of information systems in ports as well as the possible introduction of these systems in other intermodal hubs.

KEY WORDS

customs procedures, MEDNET project, port systems, transport policy

ANALYSIS OF SWITCHING OVERVOLTAGES IN SHIPS ELECTRIC POWER SYSTEM

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ABSTRACT

Ships electric power systems can work in different regimes. Power system usually works in normal work regime in which needs of all customers are fulfilled with values of frequency, voltages and other characteristic variables deviations in ranges defined by regulations. Transitions of regimes can be spontaneous (as consequence of some unpredictable events such as failures, environment influences and so on) or by purpose (as consequence of dispatching operations). They cause transient processes because power system consists of differently connected oscillatory circuits. The transient processes can trigger of high values of voltages, so called inner overvoltages. High voltages can be very dangerous for insulation of electrical equipment. The causes for the appearance and existence of the different types of inner overvoltages and their consequences are numerous and different, and therefore special attention should be paid to them by means of power system reliability and security. Switching overvoltages are one of inner overvoltages. This type of overvoltages is caused by breaker's commutation in the cases of normal regime or in the cases of failure. Due to large number of influencing parameters, calculation of these overvoltages is very complex, and exact results demand application of advanced computer programs.
The possibility, which can make the calculations and analysis of switching overvoltages originated by different causes faster and easier by using relatively simple, but exact enough, derived mathematical method and computer application, will be presented in the paper. Calculated results will be used for the analysis of the advantages and disadvantages of the proposed procedure and for validation of the introduced improvements.

KEY WORDS

ship's power systems, power system failures, inner overvoltages, switching overvoltages

COMPULSORY LIABILITY INSURANCE UNDER CROATIAN MARITIME LAW

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ABSTRACT

The owner of the ship may as a result of its use sustain substantial losses by incurring liability to third parties. Various sources of maritime law impose an obligation on the shipowner or other person operating the ship to have sufficient insurance covering his liability for damage caused by the ship to other persons and property. Moreover, these sources of law impose obligations on the State in whose port the ship enters as well as on the State in whose register the ship is entered to verify the existence of liability insurance cover and to take appropriate measures in respect of ships not covered by such insurance. These sources of law are international agreements to which Croatia is a party, EU regulations and directives as well as Croatian internal laws. All these sources are identified and studied in this paper. Special attention is given to a number of important and recent amendments to Croatian maritime legislation dealing with this subject-matter. Main objectives to be achieved by prescribing compulsory liability insurance are better protection for victims, property and shipowners as well as the elimination of substandard ships. Generally, compulsory liability insurance may be a useful tool to improve the quality of merchant shipping. However, there are some problems related to the implementation of these rules. They are elaborated in the paper.

KEY WORDS

maritime law, marine insurance, compulsory liability insurance of shipowners, direct action, Protection & Indemnity (P&I) Clubs

USING ANALOGY TO EXPLAIN CHEMICAL EQULILIBRIUM TO PARTICIPANTS OF THE SPECIAL EDUCATION PROGRAMME FOR SEAFARERS

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ABSTRACT

A model of lifelong learning known as Special education programme for seafarers has been offered by Croatian universities from March 2011. It is an alternative programme which enables participants to meet requirements for the award of vocational competency certificates for the highest ranking positions on board the ships. According to IMO model programmes Special education programme for seafarers in marine engineering contains course Fuels, Lubricants and Water. One of the topics covered in the course is industrial water treatment. Participants have practical experience in the field and they are familiar with significance of achieving the adequate water quality, water pH being one of important parameters. However, to the question why is necessary to adjust pH of boiler water, participants answer that water becomes acidic at higher temperatures. In order to rectify this spread misconception, concept of chemical equilibrium has to be introduced. In this paper we propose the use of analogy in order to qualitatively explain temperature dependence of ionic product of water to students who graduated from high school some time ago and therefore may have insufficient background in chemistry.

KEY WORDS

maritime education, teaching/learning chemistry to maritime students, boiler water treatment, chemical equilibrium

SIMULATION OF IMPORTANT FACTORS' IMPACT IN THE CHOICE OF DIELECTRIC MATERIAL FOR MARINE APPLICATIONS

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ABSTRACT

In maritime's practice, dielectric materials, as a part of ship's systems, are under significant influence of different factors. The most influential factors, which are responsible for material's selection, are the area of application, operating frequency range, predictable temperature range and moisture of the environment (operating atmosphere). If other less important factors are in tolerable/acceptable range, it is necessary to select optimal material based on dominant influential factors. Based on the fact that dominant factors contribute directly to the value of the relative dielectric constant (permittivity), and the relative dielectric constant is the material's characteristic, a material is numerically represented by the value of it. Numerical simulation of the mentioned factor's influence to the complex relative dielectric constant is simulated in the paper. Program package Octave (compatible with Matlab) is used for the simulation.

KEY WORDS

dielectric materials, complex relative dielectric constant (complex permittivity), material's selection

LIGHTHOUSES IN THE SYSTEM OF METEOROLOGICAL SAFETY OF NAVIGATION

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ABSTRACT

The Adriatic is a semi-enclosed sea, a large bay enabling the Mediterranean to get deep into the European continent. The importance of the Adriatic Sea in maritime communications system at the European and global levels was fully recognized by the Austrian-Hungarian government, which created a system of waterways as we know it today. Specifically, during the nineteenth and early twentieth century, Austria-Hungary built all major lighthouses along the eastern coast, thus establishing a network of light landmarks, making the journey to the eastern side of the Adriatic feasible even at night and in adverse meteorological conditions. The task of maritime meteorological service provided by the Marine Meteorological Center Split, an organizational unit of the Meteorological and Hydrological Service of the Republic of Croatia, is to enable and to enhance the efficiency and economy of maritime activities. In order to operate efficiently, marine meteorological services require data from the high seas. Since the lighthouses are built at the most prominent and/or farthest points of Croatian territorial waters, meteorological data observed and measured in such places are of particular importance. The paper gives an overview of Croatia's major lighthouses performing active meteorological service for the benefit of the safety of navigation.

KEY WORDS

lighthouses, Adriatic Sea, meteorological service, safety of navigation

WINDWAVE REGIME IN THE PORT OF SPLIT

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ABSTRACT

Given that the wind is a meteorological element that largely affects (directly and/or by causing waves) on the safety and stability of vessels at sea, knowledge of the distribution of wind speed and direction is vital during the planning of operations of crews during docking. Features of surface waves generated by wind primarily depend on the direction and strength of wind blowing over some areas, the dynamics of changes in direction and strength of the wind, its duration, fetch length for each direction, and the topography of the seabed. The mechanism of creation of the waves due to the wind indicates a correlation of wind and high waves it causes. Knowing the wind-wave regime of the area can reduce the negative impact of wind and waves in the system safe docking. Split port is intended also for international public transport. Exceptional and also record passenger traffic of 4.230,075 passengers and 642,104 vehicles in the 2012th puts the Split port in the first place of the passenger ports in Croatia and in the top of the leading maritime seaport on the Mediterranean. This paper presents a windwave regime port of Split and its impact on the safety of maritime traffic in the port.

KEY WORDS

wind, waves, port, security

HUMAN RESOURCES ASPECT OF THE GAS FUELLED FLEET EXPANSION

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ABSTRACT

Increasingly stringent environmental requirements, the availability as well as the price of fuel oil, encourage maritime industry to develop and use alternative propulsion systems. Liquefied natural gas (hereinafter LNG) propulsion is one of the solutions that has recently gained more attention.
The article outlines the benefits of LNG fuelled vessels from the economic and environmental point of view, however the focus is given to the necessary skills and knowledge that crew members in various roles on board of such vessels need to attain in order to assure constant safety of operations and navigation.

KEY WORDS

LNG, LNG fuelled vessel, emissions, fuel price, crew licensing, crew certificates

A CASE STUDY ON THE PREDICTION OF SOME HYDRODYNAMIC CHARACTERISTICS OF A SMALL MARINE VEHICLE

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ABSTRACT

The determination of hydrodynamic characteristics of a marine vehicle is an important element of ship design process. Among the hydrodynamic characteristics, the prediction of resistance and power is one of the most important elements of ship design process, because they affect the size and weight of propulsion plant, assessment of fuel consumption and operational cost. Prediction of resistance and power can be achieved through experimental methods, CFD calculations, regression equations and data of systematic series. The choice of power predication method depends on available capacity, the accuracy required, funds available and the approach to project development. Among the possible options in the hands of the designer to predict the resistance and power the experimental procedure remains the most reliable prediction tool.

Nevertheless, for certain type of hull, the results based on data of systematic series have a high reliability on the final result of calculations, comparable to that of the experimental procedure. In this paper will be treated a specific procedure for the prediction of power and resistance of a small marine vehicle based on data of NPL systematic series. Also, in this paper, will be treated the assessment of some other hydrodynamics characteristics of this boat, based on data of NPL series. The assessment of these characteristics is achieved by combining the data of NPL series with CAD applications, as supporting part of the design process.

KEY WORDS

Resistance, Power, Hull, Systematic Series, CAD

THE OWNERSHIP RIGHT IN THE MARITIME DOMAIN

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ABSTRACT

The paper discusses the legal concept of ownership rights in the maritime domain, analyzing its aspects de lege lata and de lege ferenda. This is particularly important with regard to possible legal issues that may occur in practice, and to which the authors try to give answers: acquisition before the prohibition of the existence of ownership rights enters into force, expropriation problems and a number of other issues.

KEY WORDS

ownership rights, maritime domain, prohibition, expropriation

INDEMNITY CLAUSE IN STANDARD BAREBOAT CHARTER BARECON 2001

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ABSTRACT

The aim of the paper is to analyse the Indemnity Clause contained in the standard BIMCO bareboat charter form with the code name BARECON 2001 as the most frequently used contract form in a bareboat charter. Due to the complexity of this issue, a special emphasis is placed on the analysis of BARECON 2001 provisions regarding the Indemnity Clause (clause 17). This paper includes provisions for the indemnification in case of any loss of the chartered Vessel. The prescribed clauses are also compared with the clauses contained in the BARECON 89 standard form which was preceded by the BARECON 2001 and with the options prescribed by the Croatian Maritime Code. The differences in the contents of the indicated sources are emphasised. The analysis refers to other provisions of the standard form primarily those relating to the insurance of the ship. It covers the provision of the origin of the contract in case of any loss of a chartered Vessel as a result from not acting according to the clauses of the agreement. Conclusively, the detailed analysis of the Indemnity Clause in BARECON 2001 points out the relevant questions influencing the content of the rights and liabilities of the parties. The Indemnity Clause in this standard agreement form also underlines the importance of interpretation in which parties participate in the risks. Furthermore, the importance of applying this clause is in order to avoid the unwanted disputes between the parties, as is outlined in the represented terms of the contract.

KEY WORDS

Indemnity Clause, BARECON 2001, Loss of chartered Vessel

SECURITY OF COMPUTER SYSTEMS ON SHIP

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ABSTRACT

Safe operation of the ship, among other things depends on the security of data and information generated by the computer systems that are embedded in the ship's systems or standalone computer systems. Security of data and information, or the safety of the ship's computer environment is a reality and needs. The building a manageable system of information systems on board the necessity of a special computer network security and industrial computers as critical components of an integrated information system. Establishment (definition, implementation, maintenance and improvement) the security of computer systems can be crucial in order to achieve and maintain competitiveness, provide material and financial profits and meet regulatory standards and ensure the business reputation of the ship. In other words, it is necessary to introduce policies and systems security to ensure information resources accordance with the defined standards.

KEY WORDS

security, standards, networks, data, information, computer system, boat

APPLICATION OF THE VECTOR QUANTIZATION COMPRESSION METHOD IN THE VIDEO SUPERVISION OF MARITIME SYSTEMS

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ABSTRACT

Video supervision represents important feature in a maritime systems, especially in the aspect of navigation security and control. In the age of internet there is a need for video supervision systems to be network based, allow online monitoring of different processes and enable fast transmission of quality image and video signal. This paper presents custom software solution of the image compression using vector quantization and Matlab programming language. Advantages of this compression method in terms of data transmission rate improvement and memory saving will be presented through a video supervision of a maritime systems. Grayscale images of a different vessels and maritime systems are taken as an input data for testing of the proposed method. As a result, quality of the compressed images is retained, while the data transmission rate over network is significantly increased, which is of great importance for the safety of navigation. Practical results are presented in the paper.

KEY WORDS

maritime video supervision, signal compression, vector quantization

POSSIBILITIES AND LIMITATIONS OF MEGA YACHTS REPAIR IN BOKAKOTORSKA BAY

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ABSTRACT

Repair of yachts and mega yachts in the Bay of Kotor is a subject that is very topical in recent times. By the construction of the port of Porto Montenegro in Tivat, and future construction of luxury hotels in Kumbor and tourist resort Lustica Bay that will include two modern marinas with 170 berths, the issue becomes even more actual. It is already clear that in the Bay will stay a large number of yachts of various sizes and thus appears a need for their maintenance or repair.

In this paper, entitled "Possibilities and limitations of mega yachts repair in Bokakotorska Bay" are described abilities i.e. advantages and limitations or disadvantages of this type of activity in the Bay. The biggest advantage is definitely the stay of an increasing number of vessels in such close proximity and the need for their survey, docking, etc., in accordance with requirements of Classification Societies. In addition, the existence of shipbuilding port in Bijela with its facilities opens up the possibility for these activities with much less investment than it would be if there is no such shipyard. Natural beauties of the region as well as a quick and safe arrival up to it certainly will attract a large number of yachts and mega yachts in the Bay.

Is it possible a repair of ships, which involves grit blasting, painting, noise, etc. in the vicinity of luxury hotels, villas, yachts, etc that is a question that arises in itself and the same represents the biggest constraint for implementation of this plan.

The paper describes all major sources of pollution and environmental protection measures during repair of vessels in Bijela.

KEY WORDS

repair, mega yachts, shipyard, Bay, limitations

ASSESSMENT OF TRAFFIC ENVIRONMENT ON BOATMASTERS

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ABSTRACT

Global industrialization and traffic density raise the level of subjective impediments on personnel operating in the traffic environment of inland navigation. A study on ergo-assessment of traffic environment aims to propose measures in order to reduce damage risks on boatmasters caused by subjective disturbances. Survey techniques used as part of research for the targeted group of boatmasters which operate on Rhine-Main-Danube inland waterway network E-80-104 have found that primarly noise and other mental and physical disturbances damage health and cause a number of diseases. Due to increased influence of transport environment in circumstances of increased traffic after the construction of multipurpose channel Danube-Sava E-80-10, boatmasters on Croatian inland waterways will be subjected to similar structured psychophysical complex disorders. With regard to survey results authors propose technical and economically feasible measures to reduce the workload risk of boatmasters to minimum level.

KEY WORDS

transport environment, measures, boatmasters, subjective disturbances

A STUDY ON THE CAPABILITY OF THE MOTORWAYS OF THE SEA OF BEING COMPETITIVE TO ROAD TRANSPORT

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ABSTRACT

The Motorways Of the Sea (MOS) have been defined by the European Commission as follows: "existing or new sea-based transport services that are integrated in door-to-door logistic chains and concentrate flows of freight on viable, regular, frequent, high-quality and reliable short sea shipping links". The European Commission strongly supports the Motorways of the Sea policy: the 2001 White Paper considers intermodal transport based on MOS as a transport mode which can develop an effective competition compared with all-road transport. Several authors strongly outline the competitiveness of MOS. On the other hand, MOS show some disadvantages. Firstly, the target characteristics of MOS: frequent, fast, reliable, short sea shipping link, are not often achieved, specially because of the high transit times at ports. In this paper a comparison between intermodal transport based on MOS and all-road transport is carried out with reference to the applicative case of the trips from the Italian mainland to Sicily.. The paper tries to determine the critical reasons affecting the competitiveness of intermodal transport based on MOS respect to all-road transport. Different strategies have been considered: all-road transport; intermodal transport based on MOS, with the driver accompanying the cargo; intermodal transport based on MOS, in which cargo travels unaccompanied. Intermodal unaccompanied transport registers lower monetary costs, but higher travel times than all-road transport. Furthermore intermodal unaccompanied transport registers lower total costs (monetary cost directly incurred plus the monetized cost of time) basing on a monetary value of time taken from the literature.

KEY WORDS

Motorways of the Sea, road transport, EU Commission's White Paper, Competitiveness

STRUCTURE, ORGANISATION AND OPERATION OF THE VTS CENTRE IN MALMÖ

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ABSTRACT

The study of the organization and efficiency of the VTS services is an important part of the sea traffic safety research. The performance of the VTS staff as well as the impact of various engineering and technological factors exercise a major influence on the efficiency of the VTS service. The study of the organizational structure of and the technology applied in the VTS centres as well as the study of the working conditions of the VTS operators give an insight in the circumstances in which a VTS service operates. By observing the interaction between the VTS operators and the participants (in the sea traffic) over a period of time, it becomes possible to introduce desirable practices and by experience sharing to improve the work of other VTS centres. The main goal of this study is to present the work of the VTS Centre in Malmö in order to gain a deeper insight into the functioning of that VTS service and to acquire new knowledge and practice. The role played by the VTS staff in advancing the seafaring safety and the preservation of the marine environment is also stressed, being the main purpose of the VTS service. Additionally, the information and communication technologies applied in the surveillance system are described in the paper along with the given geographical and hydrographical characteristics of the areas under surveillance.
The conclusions on the performance of the VTS Centre Malmö have been made analysing the application of the modern IT technologies to the given area and by analysing the interaction of the VTS operators and participants.

KEY WORDS

Vessel Traffic Service (VTS), VTS centre, VTS staff, maritime safety, analysis

ISSUE ENTRY CONTROL OF ILLEGAL IMMIGRANTS IN THE REPUBLIC OF CROATIA BY SEA

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ABSTRACT

The aim of this paper is to address the problem of controlling the entry of illegal immigrants to Croatian territory by sea and to discuss the consequences of that act. Avoiding entry at official border crossings is done in secrecy and contrary to the laws of the state. The information gathered about these events is compared with their future expected frequency. This paper also describes the European Union's directive on the supervision of state borders, organization centers for violating persons, navigation routes and land migration. This paper also discusses the structure and water service units, personnel, statistical data, and tangible benefits to participating organizations of such criminal activity.

KEY WORDS

control, illegal, borders, waterway, EU organization

QUALITY MANAGEMENT - KNOWLEDGE MANAGEMENT

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ABSTRACT

Nowadays every day brings new and rapidly changing environment. Knowledge of contemporary trends and managerial tools and their application in the economy is the key to development, to gain competitive advantage and to the survival and advancement of businesses in the markets. Of all the resources that are available to them, the most precious in the modern business world today is knowledge, intellectual capital. Organizational knowledge and resources form the basis of the intellectual capital of the company. Radical changes in the business environment seeking new concept of management in relation to the previous practice. Thus, the need to control the use of such tools and technologies that enable a comprehensive, fast and efficient utilization of all available data and information, both inside and outside the operating system are important for the successful management of the company. This paper seeks to emphasize the importance of a culture of learning, investing in knowledge, intellectual entrepreneurship through the creation of a learning organization. The aim is to provide a new approach to the problem of knowledge management and utilization of knowledge in particular based on the data using business intelligence tools. In order to promptly respond to the challenges of the market the company must improve the quality of their products, processes and work on educating employees. You will see the importance of business intelligence for business enterprises, with a particular emphasis on the importance that has the concept of business intelligence in a learning organization.

KEY WORDS

Quality management, knowledge management, business intelligence, learning organization

SUSTAINABLE SHIP SPEED CRITERIA FOR DIFFERENT SEA STATES WITH EXAMPLE ON CONTAINER SHIP

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ABSTRACT

The aim of this paper is to show application of operational criteria that are used to select sustainable speed for different sea states. Also is given overview how seamen feel operational criteria and which is sustainable speed for some sea states in real life.
Selected criteria are bow accelerations, slamming and green water occurrence.
Large container ship is used as example to show application of operational criteria on North Atlantic sea environment. Operability polar plots are calculated and selected for interesting sea states. Method used for this calculation is 3D panel method.
In conclusion are given advantages and disadvantages of existing criteria and guidelines for future research.

KEY WORDS

operational criteria, seakeeping, sustainable speed, North Atlantic sea states, container ship

DECISION MAKING IN THE PROCESS OF COLLISION AVOIDANCE AT SEA – THE COGNITIVE ASPECT

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ABSTRACT

While conducting a vessel, the watch-keeping officer constantly makes decisions. His cognitive process is laden with developments in the area, with the movement of the own vessel and navigational devices that provide information about the movement of the own and observed vessels (by sight and sound). He/she uses all of the knowledge required in the given situation. Decision making is fast and dynamic and there is no room for wrong decisions. But people do make mistakes. The vast majority of maritime accidents are due to human error, so it is necessary to investigate the nature and cause of these errors. This article focuses primarily on the cognitive abilities of the individual in the decision making process: how we collect and process complex information and how bridge automation works for us.

KEY WORDS

Maritime Accidents, Decision Making, Human Error, Human Factor Analysis

WHAT BRINGS THE NEW COMMUNICATION ON THE EUROPEAN PORT POLICY?

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ABSTRACT

In its Communication on the European Port Policy in 2007 the European Commission identified the main challenges faced by the port sector. These challenges are related to port performance and hinterland connections, the need to modernize ports while respecting the environment, the lack of transparency in the use of public funding, restricted market access to port services and issues related with organization of labour in ports. The approach taken in 2007 was to regulate those issues by means of horizontal legal instruments and soft law measures. Since then, some progress have been made and number of developments have taken place. But some issues related to the functioning of the port sector identified in 2007 are still relevant today. After a long and detailed consultation process the Commission has come to the conclusion that the review of the port policy should address issues such as connection ports to the trans-European network, modernization of port services, attraction of investments to ports, promotion of social dialogue, raising the environmental profile of ports, encouragement of innovation in ports. Those issues are being analyzed in this paper.

KEY WORDS

port policy, modernization of port services, attraction of investments, promotion of social dialogue, environmental protection, encouragement of innovation

MARITIME MEDICINE AND MEDICINE FOR SEAFARERS

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ABSTRACT

Maritime medicine and medicine for seafarers are not the same. Maritime medicine is specialization for medical doctors. Medicine for seafarers is some part of medicine which some crew members (master, chief mate) need to know. Seafaring has always been considered a dangerous occupation with a higher morbidity and mortality than in most occupations ashore. Crews of merchant ships are exposed to extremes of weather, hazards connected with the operation of mechanical equipment, toxic cargoes and toxic substances used aboard. Their health is affected by noise, vibration, smoke inhalation, fatigue, overwork, and other exposures. Travel to the tropics results in exposure to exotic diseases as malaria, and other infections. Due to the nature of their work, seafarers spend long periods of time away from their families and, therefore, represent a group at risk for sexually transmitted diseases, including HIV infection. Seamen are swept overboard by heavy seas; they can die as a result of vessel casualties (foundering, capsizing, explosions, fires).

The continuing medical challenges of injury and illness on board remained the same as before, but better communications have enabled tele-medical advice to be readily obtained in all parts of the world's oceans. The introduction of antibiotics and better antimalarial drugs has further reduced the threat from infectious disease. Physical, chemical and biological health hazards as well as the ergonomic ones related to physical job demands, and psycho-social ones from isolation, organization pressures and complex work demands remain or have increased because of reduced crews and tighter schedules.

In case of sudden illness or an accident and injury during the ship's voyage, the chances of receiving proper and effective treatment are not as good for seafarers as for a worker on shore because of lack of direct and prompt access to qualified medical assistance. Due to the above mentioned, seafarer's health education and training of seafarers to provide basic medical services on board are mandatory.

Maritime medicine has important areas of shared interest and competence with occupational medicine, primary health care, emergency medicine, public health, tropical medicine, and travel medicine.

KEY WORDS

Maritime medicine, medicine for seafarers, health risks

FINANCING THE SMALL AND MIDDLE-SIZED MARITIME SHIPPING COMPANIES IN THE REPUBLIC OF CROATIA

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ABSTRACT

By applying the theories, concepts and techniques of the financial management, the financial managers attempt to secure indispensible financial resources required to pay off mature debt, as well as finance the company's capital investments. Due to the recession limitations and insufficiently developed financial markets, in an effort to invest and maintain competitiveness of the fleet, the financial managers of maritime companies are often forced to make decisions that give rise to increasing financing costs, thus unfavourably influencing the company's capital structure. This paper, using the multiple case studies method, based on the sample of six (6) small and middle-sized maritime shipping companies in the Republic of Croatia, researches the abilities of the companies with regard to investing and financing the capital investments. Also, it aims at determining whether the basic characteristics, such as the company's size, structure, ownership dispersal, capital structure, market and the like, impact the sources of financing capital investments.

KEY WORDS

financial management, capital investment, financing sources, maritime shipping companies

THE ROLE OF SUPERVISORY BOARDS OVERLOOKING SMALL AND MIDDLE-SIZED MARITIME COMPANIES IN THE REPUBLIC OF CROATIA

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ABSTRACT

Characterised by the dual board structure of corporate governance, the supervisory board of small and middle-sized maritime companies assumes an ever more significant role, thus representing a quite significant economic segment for the export-orientated shipping countries. Due to the recession limitations and strong competitive rivalry, also coupled with the intensive focus of shipping companies hold on the challenge of maintaining liquidity and long-term market survival, whilst maintaining their traditional role of management monitoring, supervisory board members also participate in other business areas. This paper, using the multiple case studies method, based on the sample of six (6) small and middle-sized shipping companies in the Republic of Croatia, researches the impact supervisory boards have on business activities. More specifically, it aims to determine in what scope is their influence most prominent and whether the recession periods impact the sway the supervisory board holds, especially when compared to the periods of favourable economic conditions.

KEY WORDS

supervisory board, supervisory board impact, small and middle-sized shipping companies

COMPOSITE MATERIAL APPLICATION AND POTENTIAL IN SHIPBUILDING

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ABSTRACT

There is a notable increase of applications of fibre reinforced polymer composite materials in the past few decades in the marine industry. A variety of applications ranges from specialized equipment components to large structural parts. The paper presents basic mechanical properties of composites in comparison to usual shipbuilding materials like steel and aluminium. An overview of major advantages and disadvantages of using composites in shipbuilding is given in terms of production, design and exploitation. Governing regulation, identified as a key problem for wider composite use in shipbuilding, is mentioned.

KEY WORDS

Composite materials; Shipbuilding, SOLAS

SIMULATION OF THE MARINE ENGINE PERFORMANCE WITH THE PURPOSE OF PREDICTING PARAMETERS

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ABSTRACT

The paper elaborates a computer-aided model for simulating the performance of a marine slow-speed diesel engine. The simulation model provides an analysis of the specific fuel consumption, temperature within cylinders and the effective engine power while changing the compression pressure in the cylinders. The results of the model's examination have revealed a close correspondence with the ones obtained at the testbed, which proves the validity of the model. It is possible to apply the model to the electronically controlled engines and, in addition, in the foreseeable future, the model may foster the implementation of new technologies, such as neuron networks, into the control systems of marine two-stroke slow-speed diesel engines. The results presented in the paper have been obtained in the scientific research project No. 250-2502209-2364 and the international research Project "The possibilities of reducing pollutant emissions from ships in the Montenegrin and Croatian Adriatic implementing Annex VI of MARPOL Convention" supported by the Ministry of Science, Education and Sport of the Republic of Croatia.

KEY WORDS

Diesel engine, Simulation, Compression ratio, SFOC

EUROPEAN AIR TRAFFIC MANAGEMENT SYSTEM WITH REFERENCE TO BOSNIA AND HERZEGOVINA

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ABSTRACT

The continuous growth of air traffic and transport demand in Europe caused high rates of airspace congestion and delays in air traffic at the end of the last century. The impact of delays and congestion in air traffic is reflected on the economy in huge financial losses and unnecessary costs. The European Air Traffic Management System (ATMS), due to the large number of defects, greatly contributes to the creation of congestion and delays in air traffic, and it is, therefore, necessary to reorganize and optimize it.

Reorganization and optimization of the European ATM system began in early 2000 by introducing the Single European Sky project. This project identified the main problems of the European ATM system, such as fragmentation of airspace, technical obsolescence systems and infrastructure, differences in procedures used by the European air navigation service providers, lack of the plans and the development strategies at the European level, poor cooperation between the neighboring countries, poor information flow, mismatch of the route network, poor coordination between military and civilian authorities, and the lack of airspace capacity. This paper analyzes the current status of implementation of the European air traffic management system, and the projection of air traffic following the implementation of the Single European Sky legislation.

In this context, the paper specified the main determinants of strategic development of air traffic management system in Bosnia and Herzegovina, and its implementation and operationalization.

KEY WORDS

Air Traffic Management System, Single European Sky, SESAR project, Air Navigation Service Provider

PROVIDING CONTEMPORARYNESS IN MARITIME EDUCATION: SOME EXPERIENCES FROM MONTENEGRO

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ABSTRACT

This paper considers efforts in implementing blended learning as a combination of tradional and e-learning into seafarers' education at the Faculty of Maritime Studies of Kotor (University of Montenegro). These attempts are the result of the enthusiasm of few professors, being partly supported by two small, initial projects of bilateral cooperation between Austria and Montenegro, as well as by one bigger Tempus project at which University of Montenegro has been a partner. The paper comprises the following segments: (i) The first one contains a brief description of the important moments of the maritime history (with a focus on education) in the areas of today's Montenegro littoral zone; (ii) The second one concerns contemporary issues in maritime education including possibilities of getting advantages through introducing e-learning within blended learning environment into this important field of education; (iii) Within the third part are described the projects which have supported implementation of blended learning at the Faculty; (iv) The fourth segment deals with measuring users', i.e. students' and teachers' level of satisfaction with newly implemented web based Moodle management learning system; (v) The fifth part considers some contemporary tools for creating e-instructional materials; (v) The last part recommends considerably greater promotion and valorization of cultural and historical heritage which has Montenegro in the field of maritime affairs, including maritime education as it inseparable part, as well as optimal combining maritime traditional and e-learning models.

KEY WORDS

maritime education, traditional learning, e-learning, blended learning

GEOSPATIAL DATA IN MARINE SDI SERVICES

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ABSTRACT

The knowledge of spatial data is necessary for a large number of human activities. A Spatial Data Infrastructure (SDI) is a data infrastructure implementing a framework of geographic data, metadata, users and tools that are interactively connected. In Croatia much has already been written about SDI, but primarily from land-based perspective. In this paper marine dimension of SDI (MSDI) that encompasses marine geographic and business information in its widest sense is described. It is pointed out that hydrography, as modern applied science, plays very important role in measurements and description of oceans and seas. Hydrographic spatial data forms the key base reference layer for the sea space in MSDI data. There are a large number of MSDI stakeholders. MSDI should be established according global, regional and national conventions and policies.

KEY WORDS

marine geospatial data, hydrography, MSDI

IMPLEMENTATION ASSESSMENT OF AIRPORT COLLABORATIVE DECISION MAKING AT SPLIT AIRPORT

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ABSTRACT

The problem of aircraft delay within airport system has been present for the last few decades and represents a major generator of delay in the whole system of air traffic. Due to the complexity of operations at the airport as well as the number of participants involved in the process, there is a need for a unique collaborative system. The Airport Collaborative Decision Making (ACDM) system is based on two key elements: the predictability of events and on-time performance. Improving the two key elements in all phases of flight planning would allow participants in the air traffic system significant improvements in operation performing. The ACDM system is one of the five priority measures in the Flight Efficiency Plan, which was developed by the International Air Transport Association (IATA), Civil Air Navigation Services Organization (CANSO) and the European Organization for the Safety of Air Navigation (EUROCONTROL).
The paper will analyze the issue of traffic at the Split Airport in terms of delay and on-time performance. Also the paper will analyze the main causes of aircraft delay by IATA codes and according to participants in air transport. The results of the analysis will indicate the need for implementation of the ACDM system.

KEY WORDS

Airport Collaborative Decision Making, Split Airport, aircraft delay, aircraft on-time performance

CROATIAN MACRO ECONOMIC CONTEXT AND MARITIME SYSTEM DEVELOPMENT

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ABSTRACT

Croatia is strategically located in Central and Southeast Europe, bordering Hungary to the North-East, Slovenia to the North-West, Bosnia and Herzegovina and Montenegro to the South-East, Serbia to the East, and the Italy via Adriatic Sea to the South-West. The country covers a land area of approximately 56,594 km2 with a coastline of 6,278km (1,880 km is mainland coastline, while 4,398 km is island coastal length). The Croatian economy is still in recession. Current indicators and future forecasts point towards a continuing downward trend that will continue beyond 2013. Industrial production has dropped by 11.6% in 2011 compared with 2008, while financial intermediation, insurance and ICT sectors are generating a positive and steady growth in almost all segments. Key sectors of the Croatian economy are retailing and tourism, manufacturing and mining, and public administration. This is also mirrored in the number of employed workforce in each of these major sectors. Manufacturing and mining currently employs higher number of workforce in comparison to the retailing and tourism sectors. In terms of trade structure, merchandise trade accounted for almost 52% of the country's GDP in 2011, down from over 64% in 2008, which confirm the trend of deindustrialisation of the economy despite manufactured goods still dominating both merchandise exports and imports. Equally, the origin-destination pattern of Croatia's foreign trade is dominated by proximity trade with EU and CEFTA (Central European Free Trade Agreement) countries notably Italy, Bosnia and Herzegovina, Germany and Slovenia.

KEY WORDS

macroeconomic, Croatia, maritime, development

MANOEUVRING SIMULATION METHODS APPLIED TO DETERMINE THE SHAPE AND OPERATIONAL CONDITION OF NEW PORTS – MIELNO PORT CASE STUDY

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ABSTRACT

This paper presents a complex method of establishment of optimum design of sea ports with regard to navigational safety. Real-time simulation method was implemented in the presented study. The limited task real-time simulation model was created together with characteristic ship models and environment. The paper presents several stages of the research, such as the designing of the model, planning of simulation experiments and statistical analysis of results, The results are used as design guidelines for the small Polish sea port of Mielno which is currently under development.

KEY WORDS

Ship manoeuvring simulation, safety of navigation, port design, breakwater optimization

TOWARDS THE MODEL OF OPTIMAL ALLOCATION OF OIL POLLUTON RESPONSE UNITS

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ABSTRACT

Massive catastrophic oil spills on Baltic Sea such as Baltic Carrier focus public attention on the damage caused by oil. Such large disasters occur relatively rarely, but when it comes to a major spill, negative effects may be felt for years. In the event of an oil spill rescue action should be taken to collect the pollution. Such action should proceed smoothly and its duration should be as short as possible. Such actions involve the dispatching of cleanup equipment. This paper presents a model algorithm designed to optimize the deployment of response resources to combat oil spills due to the cost of oil spill fighting action.

KEY WORDS

oil spill, allocation, optimization, evolutionary programming

HIGH-SPED MARINE DIESEL ENGINES TUNING AND DIAGNOSING USING VIBRATION METHOD

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ABSTRACT

Results of studies that aim was to develop a diagnostic method for high-speed marine diesel engines are presented in this paper. High-speed marine diesel engines are used to drive small vessels or more often to drive ships' generators. Polish Navy is operating significant number engines of this type. Motors of this type do not have indicator valves, which complicates the assessment of their technical condition in exploitation. These engines also, some of them because of their age, are relatively poorly equipped with control and measurement devices. In the era of cost reduction in operation of marine equipment there is a tendency to reduce the cost of maintenance and repair works on diesel engines too. One of the ways to avoid malfunction of such engines can be systematic and/or permanent monitoring of the technical condition of selected critical systems on these engines using reliable diagnostic methods. Polish Naval Academy (PNA) in Gdynia for years has been doing research on methods of diagnosing marine internal combustion engines. In recent years, a diagnostic method for high-speed marine diesel engines based on the analysis of envelope of vibration accelerations generated by valve gear mechanism and fuel system has been developed. Some tests results made on Mercedes-Maybach MB820 and WOLA-Henschel engines types are presented in the paper.

KEY WORDS

Transport, maritime transport, marine high-speed diesel engines, tuning, diagnostics

AN ANALYSIS OF VARIANCE OF FISHING VESSEL REFRIGERATING SYSTEMS FAULTS

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ABSTRACT

We have performed an analysis of variance to verify the hypothesis that independent variables differentiate the number of faults and frequencies of faults occurring in refrigerating systems installed on board fishing craft. The analysis specifies a probability with which identified factors may cause differences between values of observed category means. The grouping factors used in the analysis are: year of fault occurrence, fault category and a type of fishing vessel. We have tested hypotheses that mean numbers of faults or mean frequencies of fault occurrence are approximately equal in each group of independent variable. The examined faults of refrigerating system components, derived from data collected in the years 2007 - 2011, have been divided into seven categories and analyzed statistically. We have gathered and estimated 235 faults of refrigerating system components from 25 fishing vessels of the Polish fishing fleet. The vessels are divided into two types depending on the refrigerant used in their systems.

KEY WORDS

analysis of variance, refrigerating systems

TRANSPORT AND SPATIAL CORRELATION OF REGIONAL DEVELOPMENT

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ABSTRACT

The paper is intended to analyze transport and spatial correlation in strategic context of European regional development, which assumes the all levels of regional planning, and especially with regards to integration role of cities as nodes of cohesion policy. Additionally, the paper discusses transport function in urbanization and transport sector as one of the main sector of green economy.

KEY WORDS

Transport, cohesion policy, urbanization, regional development, green economy

ABOUT ORGANIZER

University of Split
Faculty of Maritime Studies

Higher education of seafarers in Split began with the establishment of the Maritime College in 1959.

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The Faculty of Maritime Studies and Transport is a member of the University of Ljubljana. Its mission is to provide educational as well as research activities, primarily in the fields of traffic and maritime studies. In June, 2015, the faculty will celebrate the 55th anniversary.

The Faculty of Maritime Studies and Transport has gained national and international standing in the education of academic and professional human resources in the fields of maritime studies and traffic, post-graduate (now second-cycle) professional masters and doctors of science, and research activities in the field of traffic sciences. In 2009/10 the Faculty of Maritime Studies and Transport completed the reorganization of all study programmes in accordance with the principles of the Bologna Reform of higher education.

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