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Technical paper

SHIPBOARD AND SHORE-BASED MARINE POLLUTION EMERGENCY PLANS FOR OIL AND/OR NOXIOUS LIQUID SUBSTANCES

Among amendments of the MARPOL 73/78 convention, accepted on March 13, 2000, there is new Regulation 16 of Annex II which is in correlation with new the Regulation 26 of Annex I and binds ships transporting oil and/or noxious liquid substances to make a shipboard marine pollution emergency plan for oil and/or noxious liquid substances. The dead line for preparing the Plan was January 1, 2003.

The shipboard marine pollution emergency plan for noxious liquid substances is an innovation for ships carrying dangerous cargo, but was standard for tankers transporting fuel oil and oil products.

All shore-based firms in Croatia, manufacturing devices and equipments that might cause the environmental pollution, are bound by such marine pollution emergency plans according to the Law on environmental protection (Official Gazette of the Republic of Croatia 82/94) and to the Maritime Code (Official Gazette of the Republic of Croatia 17/94, 74/94, 43/96).

The minimum demands for a shore-based marine pollution emergency plan for oil and/or noxious liquid substances are defined in the Croatian plan for water protection (Official Gazette of the Republic of Croatia 8/99), while the minimum demands for a shipboard marine pollution emergency plan for oil and/or noxious liquid substances are defined in the Guidelines for the Development of Shipboard Marine Pollution Emergency Plans for Oil and/or Noxious Liquid Substances. (MEPC 44/20).

This paper aims at presenting how this problem is to be approached to, the similarities and differences of these two documents as well as the similarities and differences in case of shore-based or shipboard Marine Pollution Emergency Plans for Oil and/or Noxious Liquid Substances.

Key words: MARPOL, Annex II, Regulation 16, Marine Pollution Emergency Plans for Oil and/or Noxious Liquid Substances

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Professional paper

IMPORTANCE OF SHORT SEA SHIPPING AND SEA MOTORWAYS IN THE EUROPEAN AND SLOVENIAN TRANSPORT POLICY

The scope of this article is to provide a sound description of short sea shipping and motorways of the sea as an innovative method aimed at shifting the increased road traffic to sea transport as an alternative method of transport. The shifting of cargo to other traffic routes is the result of the improvements made in port services, in the colleration and cooperation between ports and with the further development of inland waterways should help to reduce the road transport on the congested European transport network. Short sea shipping represents a very good alternative to road transport and it is an environmentally accepted service as it gives a contribution to the decongestion of the European motorways and to the reduction of air pollution and energy consumption.

The creation of a sea motorway network is an excellent support to the short sea shipping. The implementation of sea motorways in the European Union might provide new opportunities for the regional development and for the development of the East Mediterranean countries. Slovenia and Croatia included, should take advantage of this concept. The European sea motorway network is still on a planning level, but the target of the European Commission is to have a complete network of sea motorways spread around Europe by the end of the year 2010.

The infrastructure and equipment that support an efficient, rapid and low cost cargo shifting procedures in the East Mediterranean is a poor one. Therefore, major investments have to be made for the introduction of sea motorways.

Leading an active transport policy all countries in the region, including Slovenia and Croatia, should benefit from the the introduction of this well-developed concept of sea motorways and short sea shipping

Key words: short sea shipping, sea motorways, ports, inland waterways transport.

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Review article

TRANSPORT COMPANIES

The financial result of a maritime transport company is very important for the management, owners and stockholders, creditors, business partners and government authorities. It is presented in financial reports based on audit business.

For the management of a maritime transport company, it is very important to get reliable information basis obtained by a quality leadership and by recording business changes. Based on the correctly recorded business changes, an audit business is presented for the past period of time. The business results are presented in the form of financial reports. The financial reports are bearers of information of which the balance and the profit and loss account are the most significant ones.

The balance is a systematic overview of the assets, capital and liabilities on a certain day. The profit and loss account shows the activity of a maritime transport company for a certain period of time and is different from the balance, the fundamental elements being incomes, expenditures and business results.

Functioning as the element of survival, growth and development of a maritime transport company in this unstable environment, the financial result, as a parameter of the business stability and success, is of utmost importance. Owners and stockholders, management, employees, banks and other creditors, the state and the units of local self-government are becoming aware of the asset, duties, capital, expenditures and incomes and profit or loss of the company through financial reports.

Key words: *incomes, expenditures, profit, balance, profit and loss account, cost price, capital and stocks.*

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Preliminary communication

THE INTEGRATION OF THE REPUBLIC OF CROATIA INTO THE PANEUROPEAN TRANSPORT CORRIDOR NETWORK

A greater mutual dependence of the world's and European marketplace as well as the increase in the international trade, as one of the basic goals of the European Union traffic policy, emphasizes the inner traffic connection as well as the traffic connection between other European countries with a modern transport network. In this context, the significant European interest has been shown within the European traffic policy for the traffic position the Republic of Croatia holds, as well as its transport corridors that, by passing the Croatian territory, integrate Croatia with the European traffic and economic system. According to the above mentioned facts, this paper analyses the European traffic policy and the aspects of the European interest shown for the traffic position of the Republic of Croatia, the geo-traffic aspects of the Paneuropean transport corridor network as well as the exploitation possibilities of current and potentially new corridors that pass through the Croatian territory. According to that, significant conclusions are being derived regarding the level of the integration of Croatia into the Paneuropean corridor network, including the existent corridors as well as the potentially new ones that would also significantly contribute to a better integration of the Croatian transport network into the European corridor network.

Key words: transport corridors, Croatia, Europe, Paneuropean transport corridor network

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Original scientific paper

A SIMULATION METHOD IN MODELING EXPLOITATION FACTORS OF SEAPORT QUEUING SYSTEMS

While a considerable amount of research effort has been devoted to modeling seaport systems, models capable of producing results that match the data are proving elusive. In this paper, we have contributed to the literature which models port systems as the queuing processes and builds a general equilibrium model which is suitable for both the analyzing of a number of potential determinants of the systems behaviour, and the carrying out of a numerical analysis of the port system operation indices. Furthermore, we seek to establish the potential role played by various elements that impact the operational behaviour of the system. The proposed model is tested with real data of the Bakar bulk cargo terminal. Using several years data set, we have synthesized variances in terminals' operation indices. Following the assumption that the discharging terminal for bulk cargo presents the queuing system type M/M/1, while the loading terminal shows the behaviour of the queuing system type M/D/1, the goal is to create the simulation model that will result in the functional explanation of the behaviour indices and assist in the decision making procedure to improve the effectiveness of the seaport system.

Key words: simulation method, modeling service systems, discharging and loading terminals for bulk cargo.

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Review article

COMPARATIVE ANALYSIS OF THE DESCRIPTIONS AND VALUES OF GEOGRAPHIC, OCEANOGRAPHIC AND METEOROLOGICAL PARAMETERS IN PILOTS OF THE EASTERN ADRIATIC COAST (published by various official publishers)

Together with the nautical chart a pilot is a navigational tool which the navigator uses in solving a navigational task. The pilot contains complex data obtained during long multidisciplinary researches in the sea. A special section of the pilot contains descriptions of geographic, oceanographic and weather data for the area covered by the pilot. The accuracy of the data and their optimal presentation in the pilot has a great significance for the safety of navigation. The approach to processing the data important for navigation and the description of an aquatorium may be various. Therefore the contents of the pilots in various countries may be different in some sections. In this paper the authors analysed, by means of method of comparison, the exactness of the description of data published in existing official national and foreign pilots, and differences in contents and values of certain parameters for the same areas are presented.

Possible solutions have been presented which may reduce to minimum the observed differences and discrepancies in descriptions of certain parameters used by various publishers of official maritime publications.

Key words: *navigational handbook, pilot, description and reliability of data*

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Review article

FACTORS ATTRACTING JOBS AT SEA OR ASHORE

Based on the three empiric researches carried out in 1974,1979 and 1992, the author aims at presenting the factors attracting jobs at sea or ashore. The results obtained have proved that the attractiveness of a job at sea is the crucial force that influences seamen to remain in the maritime navigation service. These forces are set forth through the notions of their commitment to navigation, of giving up the service, of the activity level or time spent at sea needed to obtain a certificate of competence, of being satisfied with the work on board a ship, of the hierarchical relations on board a ship and of the way in which off-time on board a ship can be spent.

Key words: *low, medium and high commitment to maritime navigation service, giving up the service, permanent and temporary seamen, satisfied and unsatisfied with the job, spending off-time*

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Original scientific paper

A CONTRIBUTION TO THE DEVELOPMENT OF THE MARINE STEAM TURBINE IN LOAD CONDITIONS

The aim of this paper is to present the successful application of the system dynamics simulation modelling in the research carried on the performance dynamics of the marine steam turbine in load conditions, and in this very example at load of a marine synchronous generator.

The marine steam turbine at load of a synchronous generator is a complex non-linear system, which needs to be systematically researched into as a unit consisting of a number of subsystems and elements, which are linked by cause-effect (CE) feedback loops (FBL), both within the propulsion system and with the relevant environment.

The authors of this paper aim at presenting the efficient application of the scientific methods used in the research of the complex dynamic systems called System dynamics qualitative and quantitative simulation methodology, which will make the production and use of a larger number and a variety of simulation models of the observed elements possible, thus enabling the continuous computer simulation, which will significantly contribute to the acquisition of new information about the non-linear character of the turbine and generator system performance dynamics in the designing and education process.

The marine steam turbine will be presented by a set of non-linear differential equations, after which mental and verbal structural models and flowcharts in the System dynamics symbols [1 and 2] will be worked out, and the performance dynamics in load conditions will be simulated in the POWERSIM simulation language [5].

Key words: Steam turbine, synchronous generator, simulation modelling, simulation and heuristic optimization

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Review article

EXPLOITATION ADVANTAGES OF ELECTRIC PROPULSION

The exploitation advantages of diesel-electric propulsion with the last generation of podded drives using permanent magnet electrical motors towards diesel-mechanic propulsion systems, in the field of fuel consumption, utilisation of on-board space, availability, manoeuvrability and environmental impact are elaborated. Comparative analysis of fuel consumption is performed on the basis of specific consumption per shaft power, as well as consumption per mile in respect to ship's speed. All investigated exploitation aspects show positive advantages of podded electric propulsion, not only for ship types traditionally predisposed to electrical propulsion, because of their specific operation profile, but also for almost any type of ship. Thanks to the exploitation advantages and to actual trends in fuel prices and environment protection as well as to the decrease of investment costs due to severe market competition between great electrical equipment manufacturers, further electrical propulsion expansion in the world's fleet could certainly be expected.

Key words: ship, electric propulsion, consumption, manoeuvre, ecology