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SECTION I – NAVIGATION AND MARITIME TRANSPORT

1. SHIFTING OF CARGO ON BOARD SHIPS, A SERIOUS THREAT TO LOSS OF INTACT STABILITY

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ABSTRACT

Ship's intact stability is one of the most important aspects that have to be taken into consideration when loading the ship as well as during the voyage. Despite the fact that many vessels left the ports with a proper intact stability, the experience proved that during the voyage, the stability has been lost. One of the factors that contributed to loss of intact stability was shifting of cargo during the voyage. In the present paper is examined the impact of cargo shifting on intact ship stability. Real case accidents involved losses of intact ship stability due to shifting of cargo are presented. Analytical equations of forces acting on a cargo piece during motion are explained.

Keywords: *cargo, shifting, stability.*

2. SURF-RIDING OF A SHIP IN FOLLOWING AND QUARTERING WAVES AND VULNERABILITY TO LOSS OF INTACT STABILITY

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ABSTRACT

Dynamic stability is one of the most important nautical qualities of ships. Large waves can have a negative influence over ship's stability that may lead to dangerous situations. In the present paper the surf-riding phenomenon of ships in following and quartering waves is examined. Surf-riding is one of the phenomenon that can lead to ship stability loss or even capsize in following and quartering waves. Analytical considerations of equation of surging motion in following and quartering waves explain the critical condition of surf-riding. The physics behind the connection of surf-riding with broaching and loss of ships stability resulted in capsize is explored. Practical explanation of the surf-riding on board ships is explained, followed by recommendation for assessment of dangerous situation related to surf-riding.

Keywords: *surf-riding, broaching, stability, capsize.*

3. STABILITY AND RECOVERY MEASURES AFTER THE SHIP STABILITY WAS DAMAGE

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ABSTRACT

Ship damage due to maritime casualties leads to marine pollution, loss of life and properties for this the improvement of damage survivability is very important in maritime safety. The maritime casualties generally come from the rough sea and bad weather condition. Therefore the large-scaled casualties will be derived from loss of structural strength and stability due to the progressive flooding and enlargement of damage by the effect of wave and wind. To increase the safety of the ship in sailing and for the safety of life, different crews of international conferences have set certain limits the loading of ships, for different geographic areas and seasons.

Keywords: *ship stability, damage to the hull, event of damage, stability calculations in case of emergency, waterline damage, center of gravity.*

4. SATELLITE FIX ACCURACY AND ERRORS

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ABSTRACT

Satellite positioning of the ship is done by measuring pseudo-ranges from multiple navigation satellites of which derive several satellite lines of position (LOP). At the intersection of these lines of position is obtained the satellite position of the ship, i.e. *satellite fix*. Considered to be the most accurate positioning system used in maritime navigation, a navigation satellite system may have specific operational errors that produce errors in the accuracy of the fix, which in certain technical and environmental conditions can be significant.

Keywords: *satellite, line of position, errors, accuracy.*

5. WEATHER AND OCEANOGRAPHIC INFLUENCE ON THE MARITIME NAVIGATION

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ABSTRACT

At the sea, the ship is subjected to the action of weather and oceanographic factors. These can generate dangerous phenomena (hurricanes, storms, moving ice, low visibility, huge waves - tsunamis, etc.) that makes maritime navigation extremely difficult, worsening the storage conditions of the goods on board, can lengthen the voyage, increase fuel consumption, ship's ageing, and its instability, can create stressful living conditions for the crew, and in some negative cases, can become real threats to ships and navigation safety

Keywords: *Weather and oceanographic factors, navigation safety.*

6. MODERN HYPERBOLIC NAVIGATION SYSTEMS. PRESENT AND FUTURE

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ABSTRACT

Hyperbolic navigation systems are systems designed to provide long distance positioning information. LORAN C system is operating and provides position information for ships and land vehicles, too. Today, there are some modernization programmes called Eurofix, eLoran, which aim to increase the positioning accuracy, high reliability, and independence from satellite navigation systems. Theoretical accuracy of these modern systems is compatible with navigation satellite systems accuracy.

Keywords: *hyperbolic navigation systems, LORAN C, accuracy.*

7. RESTRICTED VISIBILITY IN CONSTANTA. SYNOPTIC CONDITIONS AND CONSEQUENCES ON ROAD AND MARITIME TRANSPORT

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ABSTRACT

Restricted visibility is most often associated with fog, haze, but is also caused by rain and snowfalls, drizzle or blizzards. Very bad visibility, less than 200 m represents a high risk for air, road and maritime transports and for other types of economic activities. In 2014 it caused road accidents and restrictions of Constanta or other ports operations or

their closing and suspension of the manoeuvres on the Danube – Black Sea canal. Bad visibility and weather phenomena frequencies during the months of January, February and March 2014 in Constanta are analyzed in this paper. The synoptic conditions during the days when bad visibility was recorded are also studied, based on GFS (re)analysis maps – SLP, 500 hPa geopotential, 2 m temperatures and precipitations, as well as on approximate soundings for Constanta.

Keywords: *visibility, weather phenomena, synoptic conditions, port operations, road transport.*

8. SHIP-BOARD WEATHER ROUTING SYSTEMS

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ABSTRACT

Optimising a vessel's route based on environmental information such as wind, waves and current patterns can lower fuel consumption and decrease delays while also reducing structural and cargo damage claims. Weather routing software products utilize not only weather and oceanographic data but also the hydrodynamic details of the vessel to provide the ship's crew with real-time ship-specific routing advice. The paper refers to software characteristics and benefits of voyage optimization.

Keywords: *weather routing, software, routing services, waves forecast.*

9. THE INFLUENCE OF A WAKE EQUALIZING DUCT OVER THE CAVITATION OF A MARITIME SHIP PROPELLER

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ABSTRACT

Marine propellers are the most common propulsion systems owing to the high efficiency supplied by them; nevertheless, it is possible to improve its propulsive performance using additional auxiliary propulsion devices (unconventional propulsions). During the last three decades considerable research and development activities have taken into place within this context. Most of these devices are used to improve propulsive efficiency, but some of them aim to improve other performance characteristics, such as cavitations, vibration, noise, manoeuvrability, etc. The wake equalizing duct (WED) is one of the most commonly used energy saving devices for improving the propulsion performance of a ship; and reducing the propeller-excited vibrations and viscous resistance forces. In this paperwork two versions of an existing ship in normal version and retrofitted with WED device were analyzed in order to demonstrate the influence on the WED device on the propeller cavitations (if any). It was demonstrated that the maximum values for the pressure coefficient is 1.98 for WED free version and 2.029 for WED retrofitted version. The difference is so small that without chances of being wrong, the obvious conclusion is that WED device has no influence over the cavitations of the propeller. To decrease the cavitations we have other choices including a sound design of the propeller biased to improve the propeller behaviour in cavitations. WED is clearly not a choice.

Keywords: *Wake Equalizing Duct; Propeller Cavitations; Maritime Ships; Finite Volume Analysis*

10. THE INFLUENCE OF A WAKE EQUALIZING DUCT OVER THE FLUID FLOW AROUND THE AFTER BODY OF A PORT CONTAINER AND PROPELLER EFFICIENCY

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ABSTRACT

To get a more uniform wake, placing several flow control devices in front of the propeller location may be a good choice. Most of these devices are used to improve propulsive efficiency, but some of them aim at improving other hydrodynamic characteristics, such as the cavitation behavior, vibration level, maneuverability, and so on. The most commonly used control devices are the wake equalizing ducts (WED hereafter), Grothues spoilers, stator fins, or different combinations of them. The goal of this paper is to calculate via software Ansys 13TM the influence of placement of a WED to an existing ship over the propeller efficiency in terms of propulsion. The wake equalizing duct (WED) is one of the most commonly used energy saving devices for improving the propulsion performance of a ship; and reducing the propeller-excited vibrations and viscous resistance forces. In this paperwork two versions of an existing ship in normal version and retrofitted with WED device were analyzed in order to demonstrate the influence on the WED device on the propeller efficiency. It was demonstrated that the propulsion is increased with 4.64% which is very well in line with the results of other researchers which are crediting the WED influence somewhere in between 5 to 10%. Moreover it became obvious that the WED device is transferring some of the streamlines which in the WED free after body would simply pass beside the propeller, to the propeller fluid domain improving by this the overall efficiency of the propeller. This is demonstrating beyond any reasonable doubt that WED device is improving the performance of the propeller and the choice of retrofitting a ship with such a device may trigger fuel savings along with a less environment impact.

Keywords: *Wake Equalizing Duct; Propeller Efficiency; Maritime Ships; Finite Volume Analysis.*

11. ON A RISK THAT MAY OCCUR DURING THE OPERATION OF PLATE ROLLS WITH C-TYPE DEVICES

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ABSTRACT

The paper aims to analyze the behavior and operating principles of C-type devices in cargo handling operations such as loading, carriage and discharging of plate rolls. It highlights the economic advantages of using C-type devices during plate rolls handling operations, as well as the risks and hazards associated with it. The papers also provides a numerical example related to the use of a C-type device for roll handling designed by SC Butan Grup SA Galati.

Keywords: *C-type devices, plate rolls, cargo handling operations*

12. COASTAL IMPACT SIMULATION OF A WAVE DRAGON FARM OPERATING IN THE NEARSHORE OF MANGALIA

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ABSTRACT

The objective of the current work is to simulate the influence of a Wave Dragon farm operating in the vicinity of the Romanian nearshore, more precisely in the Mangalia sector. As a first step, the SWAN model was initially used to identify the wave conditions from the vicinity of the target area in order to highlight the main wave characteristics for a ten-year time interval (between 1999 and 2008). Some relevant wave patterns were identified based on this data, which were further used to determine the influence of the Wave Dragon systems on the local wave heights distribution. The physical implementation of the wave farm in the geographical space was possible by considering the obstacle command, which is included in the SWAN model. The shielding effect induced by the wave farm is more significant in the case of the average and extreme scenarios, which suggest that beside the production of electricity such projects, could be considered also suitable for the coastal protection on a local level.

Keywords: *Romanian nearshore, SWAN, Wave Dragon, renewable energy, coastal dynamics.*

13. EXPERIMENTAL RESULTS TO EVALUATE THE WAVE AND CURRENTS CONDITIONS IN THE ROMANIAN NEARSHORE

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ABSTRACT

The objective of the present work is to provide a general overview of the wave and coastal currents from the Romanian Black Sea coast. The measurements sessions were carried out in three coastal sectors (Saint George, Cap Tuzla and Vama Veche) by using the system Midas 808-400, which is capable to monitor various parameters from the marine environment. The results are reported for the time interval June-August 2011 being indicated for several reference points located on water depths of 11-45m. Much higher wave heights are in general noticed in the sector Saint George (which can reach 2.4m), while in terms of the coastal currents was highlighted that the longshore currents are oriented from north to south and in general present similar or more significant values than the rip currents.

Keywords: *Black Sea, Romanian nearshore, in situ measurements, waves, coastal currents.*

SECTION II – MECHANICAL ENGINEERING AND ENVIRONMENT

14. COLD START AND WARM UP PHASE EMISSIONS FROM DIESEL ENGINES

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ABSTRACT

This paper is a result of experimental study of “Cold start and warm up phase emissions from diesel engines” that carried out at Constanta Maritime University. Diesel engines shows a significant increase in CO, CO₂ and HC emissions during cold start and warm up period, studying the emissions during this phase or period takes a lot of attention because of the increase in concentration worldwide about gas emissions from diesel engines, and many systems were invented for reducing these emissions during this phase.

Keywords: *cold start, warm up, emissions, diesel engines.*

15. PM-NO_x TRADE OFF IN THE DIESEL ENGINES

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ABSTRACT

This paper discusses the relation between PM and NO_x emissions and the conditions that affect the formation of PM and NO_x emissions, where temperature and the fuel air ratio considered the most influencing factors that affect the formation of both of them, the real challenge in reducing pollutants from diesel engines involves a trade-off between NO_x and PM emissions. There is a tendency when decreasing NO_x emissions to increase PM. Conversely, reducing PM tend to increase the formation of NO_x, also this paper discusses the solutions for PM-NO_x trade off and how we can reduce both of them and avoiding the trade-off.

Keywords: *NO_x, PM, Particulate matter, Emissions, Trade off, Diesel Engines.*

16. A POINT OF VIEW ABOUT CONNECTION BETWEEN NATIONAL SYSTEM AND OPERATIVE COMMANDMENT FOR MARINE DEPOLLUTION

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ABSTRACT

The present paper refers to the Operative Commandment for Marine Depollution (OCMD), the national planning, coordination and ruling of the activities in case of marine pollution by hydrocarbons and other harmful substances structure, which is part of the national system. The OCMD component, its attribution as well as those of the OCMD members' authorities, the training programme, the specialized personnel, trained and certified in the field of intervention, the specialized equipment, as well as a national intervention strategy are the factors contributing to the efficient functioning of the national system of action against the marine pollution.

Key-Words: National System, Operative Commandment for Marine Depollution, marine pollution, operations, division, attribution, responsibilities.

17. ROTARY INTERNAL COMBUSTION ENGINES

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ABSTRACT

This paper aims to make contributions to the study of one of the oldest aspirations of mankind, that of overcoming its limitations of movement: moving faster and with more load than what it is possible through man's own power.

The study of internal combustion engines is a study intrinsically linked to our knowledge of the environment that surrounds us, but especially about matter as an energy carrier, about combustion as a fundamental process of releasing the energy contained in matter, and about mechanical devices that can retrieve and convert to movement the energy released from combustion.

Nowadays in propulsion systems the research efforts are concentrated on alternative fuels in classical engines or on methods not involving combustion at all (i.e. electrical propulsion systems). The rotary engines occupy a niche segment of research that has only seen mass production in automotive application developed by the Mazda Company with Wankel-type Renesis engines.

This paper summarizes the research in Wankel engines and other ongoing efforts in the development of rotary internal combustion engines with application in land, maritime or air propulsion, giving some details about their performances, advantages and disadvantages when compared to classical piston engines, things that contribute to larger topics like efficiency of power systems on-board mobile platforms.

Keywords: Rotary Engine, ICE, Wankel, Wave Disk Engine, Toroidal Engine, Tesla Turbines

18. REGRESSION AND ANOVA FOR A SET OF DATA

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ABSTRACT

The paper concerns utilization of linear regression and ANOVA for a set of data. The set of data regards the nonconformant housings of electric motors for different diameters of housings. Using the linear regression theory one can assess if there is a relationship between the types of defects. On the other hand, using analysis of variance for the set of data one can draw the conclusion regarding the fact that the defects have the same mean or not.

Keywords: Housing of electric motor, linear regression, analysis of variance (ANOVA), non-conformity, defect

19. PLANNING OF A STRAIN GAGE EXPERIMENT FOR A LARGE CRANE

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ABSTRACT

Complex experimental projects and hybrid models in engineering are long run research concerns of the authors, the current subject being a subsequent result. The paper presents the basic stages regarding the planning of an experimental mechanics project required by a private company. The goal of the experimental project is to measure the strains in a set of points located on a rail mounted quay crane, the location of the points being chosen by the customer company. The paper presents the ideas employed to analyze the demand of the customer company vs. the real conditions and practical capabilities. The analysis takes into account various aspects: scientific, technical, economical and legal, in the planning of an experimental mechanics projects being required a special kind of know-how based on an extensive experience and on an overview level in several fields. The main stages are: initial analysis, on-site documentation, thorough analysis taking into account various aspects, results and conclusions to be included in the planning of the experiment.

Keywords: *plan of the experiment, strain gage technology, maximum data relevancy, minimum costs.*

20. CONCEPTS REGARDING THE USE OF THE EXPERIMENTAL METHODS FOR THE WEIGHTING OF THE RAIL MOUNTED STRUCTURES

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ABSTRACT

Certain projects require the weighting of a particular structure, any industrial instrument being incompatible with the problem to be solved. In these cases new measuring instruments must be conceived. The paper presents some basic concepts regarding the development of such instruments. The study is dedicated to the weighting of the rail mounted structures. Experiments may be conducted in static or dynamic conditions. Basically, the strain gage technology offers the means to develop customized weighting instruments. The weighting operation implies the insertion of a sensor between the mass and the ground. Several solutions were studied, being presented a first method which uses strain gages and another solution based on displacement sensors. Both solutions are thoroughly analysed, by taking into account various parasitic effects. Finding the criteria to automatically process the experimental data for a load in motion along the measuring beam was an important target of the study. Numerical data were used to verify the range of the strains, of the stresses and of the deflections. Variations of the strains and displacements were graphically presented in order to have a higher degree of relevancy which leads to a more explicit interpretation and comparison of the solutions. The concepts presented in the paper may be used for rail wagons, rail mounted cranes and other rail mounted structures.

Keywords: *concepts, strain gages, displacement sensors, optimal solution.*

21. STOCHASTIC METHOD FOR MODELING FUEL SPRAY IN DIESEL ENGINES

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ABSTRACT

In this paper, we are interested in problems, such as high-pressure fuel injection in an internal combustion engine, in which the spray carries sufficient momentum to entrain and set into motion the surrounding gas. In turn, the motion of the gas in the vicinity of the particles reduces the resistance to their motion and allows the spray to penetrate much further than would otherwise be the case. It is important, therefore, to account for the interaction between the particles and the gas. This interaction is of course always present, but it is particularly significant whenever the total mass and momentum of the particles is comparable to that of the gas, and when the size of the particles is sufficiently small so that the coupling of a particle to the gas is strong.

Keywords: *spray, interaction, particle, momentum cells, probabilistic.*

22. FLOW MODELLING FOR A PANAMAX TANKER

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ABSTRACT

The present study is devoted to the computation of a PANAMAX tanker in head wave. A RANS solver using finite-volume discretization and free-surface capturing approach is employed for the computation. The expected results may be different when using various turbulence models approaches. The main target is to identify the most convenient approach for the adopted turbulence model with regard to the near-wall treatment.

Keywords: *tanker, hull, drag, force, turbulence, model*

SECTION III – ELECTRONICS, ELECTRONICAL ENGINEERING AND COMPUTER SCIENCE

23. MONITORING OF POWER FACTOR

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ABSTRACT

Monitoring of Power factor is of particular interest for the electricity producer and for the carrier, distributor, supplier and end user because it influences the performance characteristics of all operators on the electricity market, electricity supply costs and available capacity to transfer energy equipment.

Economic impacts caused by operation with low power factor must be taken into account in determining energy electricity tariff aiming to compensate for energy losses that this mode has caused. Given that reducing the power factor is due to phenomena (causes) local technical and financial measures taken to increase its, relate, especially at the node in the power system where is connected user who produce its reduction.

Although the consumer who determines this mode is penalized by price for energy losses in the power system which is determined by the energy transfer to low power factor, the reduction of system performance characteristics and the need to increase the produced power to cover these losses' corresponding harmful effects on the environment make this energy consumption mode not supported.

Keywords: *single-phase circuits, three-phase circuits, power factor, electricity supply, energy losses.*

24. THE INFLUENCE OF PROPULSION FACTORS ON THE FUNCTIONING REGIMES OF A NAVAL POWER PLANT

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ABSTRACT

This paper presents determining the factors propelling a marine power plants.

The ship must carry the parameters for which it was designed and built, thus satisfying all the technical and economic aspects.

For the successful design of a thermal plant, it is required to estimate the major costs involved, to consider the various assumptions, make predictions about the economic, technological, legislative aspects and to use techniques of engineering economics.

The operating regimes of propulsion engine depends on: the type of ship, sailing under construction hull, propeller type and mode of transmitting power from the engine to the propeller.

Keywords: *ship's speed, deadweight, ballast, engine, propeller*

25. THEORETICAL INVESTIGATION OF THE ADIABATIC SATURATED TWO – PHASE FLOW – THE SEPARATED FLOW MODEL

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ABSTRACT

Heat exchanges specific to refrigeration are condensers and evaporators; these present a fairly uniform wall temperature.

The aim of this paper is to offer an algorithm for the analysis of the adiabatic saturated two-phase flow, on the basis of saturated flow model.

The importance of such a model results from the lack of attempts in this respect, being found more researches regarding the single phase flow.

Also, the study is about the flow of a pure fluid, in marine refrigeration being met many situations in which the refrigerant is a pure fluid.

The separated flow model considers different properties and velocities for the two phases. Will be given equations involving the first and second laws of thermodynamics, in accordance. Will result a presentation of the entropy generation under this flow condition.

By the help of the entropy generation number it will be possible the performance assessment of heat exchanges with phase change.

Keywords: *heat exchanger, two phase flow, entropy.*

26. ASSUMPTIONS OF FIRST AND SECOND LAWS OF THERMODYNAMICS DELIVERED TO FUTURE MARINE ENGINEERS IN CMU

MITU DANIELA-ELENA

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ABSTRACT

From technical point of view and from environmental point of view, and also for a sustainable development of our society are needed tools which enable to analyse the effects of human activities, including maritime transport.

For this reason the education of future marine engineers is in closely connected to environmental protection. With the development of shipping industry appeared also several of undesired and negative effects.

The paper is focus on needed to knowledge and to understanding of the thermodynamics laws, tools which should be at hand of future marine engineers.

These competences should be gained during master education, through a discipline called “THERMODYNAMICS” included in the curricula of the license program entitled “NAVAL ELECTROMECHANIC”, developed in Constanta Maritime University.

Keywords: *Thermodynamics, First law, Second law, Kelvin-Planck statement, Clausius statement*

SECTION IV – MATHEMATICAL SCIENCES AND PHYSICS

27. COMPARATIVE NUMERICAL ANALYSIS OF LARGEST LYAPUNOV EXPONENT CALCULATION TECHNIQUES

DELEANU DUMITRU

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ABSTRACT

Detecting and qualifying chaos in a dynamical system is an important issue that is solved by computing the largest Lyapunov exponent, which measures the average exponential rate of convergence or divergence of nearby orbits in the phase space of the considered dynamical system. In this article, we consider two approaches for computing the largest Lyapunov exponent: orbit separation method and power method. These techniques are briefly reviewed and applied to

two discrete-time dynamical systems, Lorenz map and Gumowski-Mira map, and the results are compared and discussed.

Keywords: *Lyapunov exponents, order and chaos, discrete dynamical systems.*

SECTION V - TRANSPORT ECONOMICS

28. THE ROLE AND OBLIGATIONS OF A MEMBER STATE OF THE INTERNATIONAL MARITIME ORGANIZATION AND EUROPEAN UNION

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ABSTRACT

As a member of the International Maritime Organization, requirements which should be fulfilled by Romania are differentiated on three main directions which are in the same time characteristics of a maritime state: costal state, flag state and port state. Those tree characteristics impose obligations as per mandatory IMO instruments in one hand and as per the European maritime legislation in the other hand. The characteristics deal with safety of navigation requirements implemented to our own ships and also regarding the safety measures for safe navigation in the Romanian jurisdiction waters as well.

The role played by the Administration through Flag state and Recognized Organizations is of the highest importance to fulfil the obligations assumed by the Romanian government when the Conventions and other mandatory IMO instruments were agreed and signed. To delegate the flag state competences to a Recognized Organization is a great responsibility.

The respect for the environment is covered by MARPOL requirements but also by the European directives which should be fully implemented by the Administration.

The SAR convention deals with the salvage of the human life at sea and imposes a series of requirements to be fulfilled as special equipment, well prepared and trained people and designated salvage ships. A special communication system is required as well.

The Port State characteristic should be implemented and well connected to all regional agreements within the world for the global benefit of safety and the environment.

Keywords: *Costal state, New Inspection Regime, Port State.*

29. ROMANIA IS A MEMBER OF PARIS MOU AND BLACK SEA MOU

BERESCU SERBAN

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ABSTRACT

Today, Paris MoU is recognized for having the highest applicable standards for inspecting ships arriving for operation in ports and areas of jurisdiction of the signatory states.

The manner of performing Port State Control (PSC) is regulated by the provisions of the regional Memorandum of understanding establishing the general frame and obligations of the signatory states and the PSC Manual which details the control activity. Proper character of ships according to provisions of relevant IMO instruments concerning working and repose conditions of crews, safety of navigation and prevention of pollution of marine environment represent the essence of PSC activity. By introducing in 2011 a new inspection regime (NIR) a decisive impact on the results have had obtained. The BGW Lists is the challenging tool to conclude the efforts done by the controlling authorities and by the owners and operators as well. The ROs are the most important actors in eradicating the substandard ships and their place in the rankings is important to be known.

The ship's certificates represented the first impression of the situation of a ship.

Keywords: *New Inspection Regime, Port State Control, Memorandum of understanding.*

30. IMPLEMENTATION OF A HUMAN RESOURCE MANAGEMENT COURSE AT A SHIPPING COMPANY

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ABSTRACT

In the spirit of The 2010 Manila Conference recommendations, concerning amendments to the International Convention on Standards applied of Training, Certification and Watch-keeping the or Seafarers, 1978 and to the Seafarers Training, Certification and Watch-keeping Code (STCW Convention and Code), a shipping company deemed necessary to implement an internal course, to be applicable to both those who work on the deck and on the engine room. This was created just for the reason that the amendments to be referred to include common references applicable in both sectors. It is a course called Maritime Team Management, which itself is a human resource management course. Maritime Team Management training program is designed to equip seafarers with an understanding of the human issues that may affect them when dealing with the design, build, maintenance, operation and management of, in particular, safety critical technologies. The purpose of this course is to develop the skills and knowledge of Seafarers, Professional Standards and increasing their enhancing job satisfaction.

Keywords: *STCW Manila, resource management, team skills, training program.*

31. A BRIEF STATISTICAL ANALYSIS OF THE ROMANIAN FREIGHT TRANSPORT

BRANZA GRATIELA

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ABSTRACT

Transport sector is essential for every country and its society. It connects good and services to markets, it gives access to jobs, education, healthcare; it is the key of economic growth, contributing to the prosperity of a nation. The present article stresses the importance of indicators in measuring all these aspects. As freight transport has the largest share in total transport activity, I have realised a short statistical analysis of freight transport in our country through specific indicators, which have to be considered both generally and in terms of sustainable development, as one of the main priorities of Romania in the field of transport.

Keywords: *statistical analysis, freight transport, Romania, sustainable development indicators, road transport, railway transport, maritime transport, transport infrastructure investment, energy consumption.*

32. THE IMPACT OF EXTERNAL COSTS IN TRANSPORT.CASE STUDY IN MARITIME TRANSPORT

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ABSTRACT

It is clear that transport costs are an important element which influence the final cost of a product, due to the fact that they represent a more complex area than in many other industries. Beside the internal costs (time and operation), representing costs incurred by individuals or operators for providing services required by the market, the external costs, which were seriously taken in consideration in the last few years, are considered to be a negative impact of transport. Thru this paper we tried to establish the important role of those costs, how they influence the transport activity, especially the maritime transport sector. This article contains a welfare economic analysis of transport's external effects regarding congestion, accidents, noise, air pollution and climate change.

Keywords: *Transport activity, external costs, negative impact.*

33. EU STRATEGY ON ENVIRONMENTAL ACCOUNTING

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ABSTRACT

Improved environmental accounting is increasingly seen by corporate managers and environmental advocates alike as a necessary complement to improved environmental decision-making within the private sector. This paper develops an economic approach to the evaluation of environmental accounting's benefits and derives the value, and determinants, of improved accounting information in several production and capital budgeting contexts. Using concepts from managerial economics, finance, and organizational theory, the analysis identifies the types of environmental accounting improvement that are most likely to yield significant financial and environmental benefits.

Keywords: *environmental accounting, Economic and Financial Affairs Directorate, Eurostat.*

34. THE IMPORTANCE OF MANAGERIAL ACCOUNTING IN MANAGERIAL ACCOUNTING SYSTEM

DRAGAN CRISTIAN

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ABSTRACT

In order to determine the role of Managerial Accounting in a company's information system we must start with a systematic approach. According to systematic approach, this system is a structure that produces:

- transformation;
- self-adjusting;
- synergy (the principle of totality).

Therefore, considering the above, the total is higher than the sum of the component parts, when we are referring to plus- value creation.

Keywords: *managerial accounting, role, accounting system.*

35. MARINE ENVIRONMENT IN THE ROMANIAN LEGISLATION

GHEORGHE LUCIAN

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ABSTRACT

In the overall context of sustainable development, shipping is a very powerful and positive force, making a major contribution to global trade and prosperity in a way that has only a relatively small negative impact on the global environment. Prevention, reduction and control of marine pollution caused or is linked to the activities of the internal waters, the territorial sea, the exclusive economic zone and the atmosphere above shall be carried out in accordance with the Romanian legislation and Conventions to which Romania is a party.

Keywords: *environment, marine, pollution*

36. SPECIAL RULES OF PROCEDURE FOR CONDUCTING RESEARCH ON BOARD

GHEORGHE LUCIAN

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ABSTRACT

1982 Convention requires Member shall cooperate in this area and to exercise freedoms granted taking into consideration the interests of other countries and their rights on the international activities of the submarine areas.

Seas must be used exclusively for peaceful purposes, is prohibited, for example, nuclear testing in the high seas and airspace above it (treaty of 1963) or the placement of nuclear weapons on the seabed (Treaty of 1971). Seas is not, however, demilitarized and nuclear-free neutralized restrictions set partially in character, so that in time of peace on the high seas is allowed there military navies and seas in wartime can be used as a theater of operations military.

Keywords: *rules, procedure, research on board.*

37. PERSPECTIVES OF MEMBERSHIP OF THE SUPPLY CHAIN IN SHIPPING

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ABSTRACT

Developments in recent years in the field of maritime transport, inland waterways and port operation required a number of situations of belonging to a supply chain. There were two distinct situations: the strength in employment or to join a chain. Studying the situation of maritime shipping companies, river and port operators observed a direct link between their relationships in a supply chain evolution and involution of their respective companies. Amid the global economic recovery, shipping companies and related are failing to thrive after the economic crisis, having gone through difficult situations. This paper presents the conditions that influence participation in a supply chain, advantages and requirements of this belonging.

Keywords: *logistics, shipping, port supply chain.*

38. LEADERHIP IN PUBLIC SECTOR.OPTIMIZING RNA'S LOGISTIC SYSTEM

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ABSTRACT

This study develops the concept of integrated leadership in public sector, and particularly in portuar public services. Integrated leadership could be conceived as the combination of five leadership roles that are performed collectively by employees and managers at different levels of hierarchy. This approach tests the hypothesis that integrated leadership has a positive effect on organizational performance in the public services sector.

The paper also discusses issues related to the link between global financial crisis and human resources management, at a general level, focusing on human resources management in port administration, in the management of uncertainty. This paper's literature review regarding recent research on managerial strategy in the public sector has found that aggressive strategies aimed at exploiting opportunities in the external environment can be as effective as change-oriented leadership behavior when it comes to improving organizational effectiveness. The paper's research treats some various other aspects that have been linked to organizational effectiveness in the public sector, including goal setting, motivating employees and the shaping organizational culture. The data sources from Naval Romanian Authority and the sample on which the emphirical analysis is based suggest that the findings are generalizable across the national bureaucracy. **Strategic decisions** are those that determine the goals of the entire business organization, its purpose and direction. Top management has the big picture of all the elements of a complex business enterprise, and it must be able to integrate all aspects of a business into a coherent whole. The decisions made at this level also determine how the busniess will relate to external environments. Beacause strategic policies affect the entore business, they can best and must be made at the highest level within an organization. These policies and goals are not very specific because they must be applied to all levels and departments in a company. Strategic decisions are usually nonprogrammed in natureThese decisions determine the manner in which operations are conducted-operations designed to accomplish the tactical decisions made by mid-management. These decisions concern the most effective and efficient way to accomplish the goals stated on the operational(day to day) level. The decisions' management is properly applied when the logistic system is operational. The study's objective is optimization of the informational fluxes by implementing a modern informational management instrument, responsible with the improvement of the managerial and operative activities, information and the processes carried out within the pyramidal structure and the RNA's organizational chart. The study's objective is to create the parameters for a management informational system of documents and of the work fluxes, which is functional and can be implemented within the RNA and its 5 subordinated units. We will analyze the parameters of a **Disaster Recovery Data System** and of a **Portal** which will constitute specialized archiving and compression software, in order to assure the reduction of the decision times and generate proper statistics and reports regarding the institution's activity.

Keywords: *public sector leadership, integrated leadership, shared leadership, performance, port services.*

39. TRIP DISTRIBUTION AND TRAFFIC ASSIGNMENT FLOW OF ROADS NETWORK IN URBAN AREA IN VLORA, WITH TRANSCAD

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ABSTRACT

During the performance in planning process of the traffic flows in an urban area, the case of Vlora City, a very important stage is the distribution trip phase or the build of the matrix of tripping O-D. For the build of this matrix is important the balanced table of trip, generated and extruded. Method that have to be used for the distribution trip, is gravitational method. Build of tripping matrix is the base for the loading in the roads network of the urban zone. This is accomplished next phase that is the traffic assignment phase (assignment). Assignment of traffic flow over the road network will be based in method "all or nothing". Both phases have to be worked in TRANSCAD program. On the base results, we will draw the relevant conclusions, which will be issuing the part of network less loaded and the issuing parts with more heavily loaded.

Keywords: *distribution, trip, flow, assignment, method.*

40. SOME FORMS OF POLITICAL UNITY IN EUROPE BEFORE THE ADVENT OF THE EUROPEAN UNION

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ABSTRACT

Due to its geographical location and its culture and economy, Europe has never been a closed or isolated area from the rest of the world. Since antiquity, the first forms of government in Europe have proven economic, cultural and spiritual openness. The openness is partially the result of the geographical and cultural specificity of Europe. This openness led to the appearance and development of major trade routes of antiquity. The development of the trade routes resulted in the development of economy and has strengthened the economic and cultural relations among the European nations. To the closeness of the European states contributed the diversity of natural resources, soil fertility and the deepening social division of labour. The first attempts of association and alliance of European states are lost in the mists of time. A first step in the development of legal rules related to public international law was the occurrence of the first interstate military alliance. Concluding alliances using international treaties or agreements proved necessary to resolve international disputes. Countries in Europe have been associates and "friends" in one way or another in order to avoid wars. Leaders of European countries and thinkers of the time conceived the idea of "building" a federation of states or a large European country to avoid any war.

Keywords: *Europe, history of Europe, the European Union, European unity.*

41. LISBON TREATY - ORIGINS AND EXPECTATIONS

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ABSTRACT

The establishment of the European Communities in the '80s was one of the first steps in the process of developing the European Union as we know it today. Creation of the European Union marked the beginning of a new phase in European countries that have made efforts to understand the need for the working team. Its fundamental principles were also established - freedom, democracy and human rights, aiming to promote economic and social progress. Through a series of international treaties adopted at European level structures have been established that we call the European Union today. These treaties, known as "modifying treaties" began with the Marshall Plan in 1947 and ended in 2009

with the well-known Lisbon Treaty. U.E. today operates through a system of supranational independent institutions that make decisions through negotiation with Member States. The most important institutions of the European Union are: the European Commission, European Parliament, European Council, European Court of Justice and the European Central Bank. Perhaps the most important achievement of the European Union is the creation of the European single market comprising a unified system of economic and financial laws which apply in all member states. Legal rules imposed by the European Union guarantees the free movement of people, goods, services and capital. European law promotes common policies in the field of justice and home affairs, environment, health, agriculture, commerce and agriculture. There is a clear set of rules within maritime domain, fisheries and regional development. It was also established a monetary union, the so-called "Eurozone" currently consists of 17 states. Union has a combined population of over 500 million, i.e. about 8 % of the world population. The European Union had an annual GDP of about 18 trillion U.S. dollars in 2011. That means it is the first in the world bringing together about 21 % of global GDP.

Keywords: *Lisbon treaty; European treaties; European Union, European institutions.*

42. MARITIME LAW IN ROMANIA

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ABSTRACT

The Romanian maritime law consists of a set of legal rules contained in several acts. Among these are commercial code, ordinary laws, ordinances, government decisions, plus maritime usages. The Romanian maritime law also contains a number of provisions of international conventions ratified by Romania. Romanian maritime law is not a component of the transport law. Maritime law refers not only to transport by sea, but also to the status of property and persons involved in shipping. The study subject of maritime law is much diversified. Maritime law rules describe vessel ownership, maritime rights and transport-related activities. Another object of study refers to the status of seafarers, maritime security, rescue and assistance at sea, crew hiring and obligations, arrest, prosecution and forced sale of the commercial ships. Other topics of study relate to ship owners, shipmasters, charterers etc. Due to the dangers of the sea, maritime risk is found in almost all analyses and works on maritime law. The dangers of the sea transport justify the principle of the limitation of the liability. Because of this principle, the theoretical institutions of joint damage, maritime assistance and collision assistance have been established.

Keywords: *vessels, maritime safety, the European Union, maritime pollution;*

43. COMMUNICATION AND MANAGEMENT IN TECHNOLOGICAL INNOVATION AND ACADEMIC GLOBALIZATION

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ABSTRACT

Globalization and the telecommunications revolution have brought to developments that were largely unanticipated. The first is the reemergence of the importance of regions and geographic proximity as important units of economic activity. That innovative activity has become more important is not surprising. What was perhaps less anticipated is that much of the innovative activity is less associated with footloose multinational corporations and more associated with high-tech innovative regional clusters, such as Silicon Valley, Research Triangle, and Route 128. Only a few years ago the conventional wisdom predicted that globalization would render the demise of the region as a meaningful unit of economic analysis.

Keywords: *Technological collaborations; managerial strategies; emerging challenges; new technologies.*

44. TRANSPORT ECONOMICS AND SEAWORTHINESS OF VESSELS

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ABSTRACT

This article describes the research conducted by the writer concerning the possibilities in enhancing the safety of ships and seaworthiness through risk management and marine insurance connected to new possibilities developed by research results achieved by solutions developed for Bridge Resource Management and Crew Resource Management. The article describes the basic solution in new Nordic Marine Insurance Plan 2013 for encouraging the ship owners to develop safety practices which can be accepted by the insurers as safety regulations in insurance policies to affect the risk management and to create safety practices which in turn increase safety on vessels and create cost efficiency through decreased insurance premiums when risk management on a ship or whole fleet is taken care of by using these modern safety practices which are made possible through effective use of modern technology and use of research models adjusted to practices on vessels. The further research will identify possibilities to develop similar practices to enhance safety culture by developing similar models which can be used as models to decrease transport costs.

Keywords: *Transport economics, Risk management, Seaworthiness, Unseaworthiness, Marine insurance, Crew Resource Management, Ship owner's liability, Bridge Resource Management*

45. SETTING THE PRODUCTIVITY OF A TYPE 2 CHEMICAL TANKER ON A PARTICULAR ROUTE AND EMPLOYMENT TERMS

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ABSTRACT

Through this paper we do analyze productivity of a chemical tanker – IMO type 2, on a specific route and under specific employment terms. Within the introduction chapter will be shown technical differences between those three IMO types of chemical tankers that impose certain limitations on their use for chartering; further, a short definition will show us that productivity is one of the way of measuring the efficiency of any element, in our case the chemical tankers fleet. Due to the business environment which is changing dynamically in the shipping industry, beside the financial instruments that every shipping companies have to use in order to survive on this market, the type of contract in which the ships are involved are very important in raising the productivity of the entire company. Depending on the ship's employment situations based on two types of contracts, time charter and voyage charter, we tried to determine the productivity of each other, using a voyage in which the vessel was hired to transport a quantity of 35,000 m³ MTBE (methyl tertiary butyl ether). In each case the two participants have different interests, but one of them is common, releasing a satisfactory profit. Striking conclusions were drawn from the calculation of productivity and also cover solutions have been proposed to achieve optimum productivity in this sector.

Keywords: *productivity, voyage charter, time charter, ship-owner, charterer, Certificate of "On-Hire"*