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SECTION I

NAVIGATION AND MARITIME TRANSPORT

1. APPROACHES ON CONTAINER SHIP STABILITY CRITERIA

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ABSTRACT

The paper proposes new evaluation criteria for the container ship stability based on computer calculations. As it know when sail through heavy weather a vessel is exposed to a significant variation of stability in waves and lead to loss of intact stability. Understanding the dynamic stability in waves is a big challenge because ship's behaviour cannot be framed in clear mathematical and physical rules. For this reason any effort in order to assess the stability of the vessel is welcomed. One solution to evaluate the response of the vessel in heavy seas according to some parameters variations could be the OCTOPUS program developed by AMARCON.

Keywords: *safety, stability, casualty, navigation, criteria*

2. CONSIDERATIONS REGARDING SHIPS STABILIY LOSS IN SEVERE SEA CONDITIONS AND THE IMPACT ON SAFETY OF NAVIGATION

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ABSTRACT

The paper presents the importance of ship's intact stability. It is evidenced the factors that contribute to correlation between ship's stability with safety of ship and safety of navigation. Ship stability failure is presented as a threat to safety of navigation and this aspect is presented in a form of casualties involved in loss of ship stability in severe sea conditions in order to emphasis the causes that leads to ship stability loss. A study of various ship stability casualties in heavy weather conditions is presented and the causes are analysed. The actual intact ship stability criteria are analysed and the importance of a new generation of stability criteria for preventing ship stability loss in severe sea conditions is highlighted.

Keywords: *safety, stability, casualty, navigation, criteria.*

3. ANALYSIS OF THE MIDSHIP SECTION'S FATIGUE USING FINITE ELEMENT METHOD FROM A CARGO SHIP

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ABSTRACT

The midship section is subject to a long-term claim caused by an increased number of containers on the unit area. The fatigue is playing a determinant role in this work, but in order to assess the fatigue, the normal, shear and Von Mises stresses on the midship section should be determined using the finite element method.

Keywords: *fatigue, CAD, finite element method, stress, midship section.*

4. COMPARATIVE ANALISYS OF ENERGY EFFICIENCY INDICATORS FOR A CRUDE OIL SUPER-TANKER SHIP

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ABSTRACT

Main ideea of this paper is not only the study of the Energy Efficiency Design Index for a crude oil super tanker ship, witch is a mandatory technical measure for the new ships, but also the study of Energy Efficiency Operational Indicator whitch is a voluntary mesurement for ships in service.

Keywords: *energy efficiency design index, energy efficiency operational indicator, technologies.*

5. CONSIDERATIONS ON THE POWER SYSTEM RECONFIGURATION FOR A VERY LARGE CRUDE CARRIERS TANKER SHIP

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ABSTRACT

The concept of energy efficiency (or energy optimization) has become, today, one of the main concerns of humanity to the whole world.

In recent decades, the maritime industry, has strived to optimize the fuel consumption of ships through the development of engines and propulsion systems, improved hull design, or using alternative energies, this way making a reduction in the amount of CO_2 released to the atmosphere.

Main ideea of this paper is to improve the energy performance of a crude oil super tanker ship of 305000 dwt, by studying the possibility of introducing alternative energy sources onboard.

Keywords: *shaft generator, wind turbines, photovoltaical pannels, efficiency.*

6. NUMERICAL ANALYSIS OF A CARGO VESSEL MOTION

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ABSTRACT

A modern ship design procedure can be seen as an iterative process where requirements, regulations and rules including, amongst others, analysis of seakeeping and intact stability criteria issued by the International Maritime Organization and ship design solutions are compared in order to achieve an optimum solution. The combination of the ever growing population together with high demand for goods and increasing oil prices have resulted in the design of merchant ships that are optimized for minimum resistance and maximum load capacity. Certainly, prediction of ship motion can be done in many different ways. Testing several full scale ships would unquestionably give the best estimate, but would of course be too costly and practically impossible. Another way of analysing ship motion is by testing ship models in wave basins. Although a better option than testing full scale ships, it is often time consuming and costly. A third option is the prediction of ship motion by computer simulation. Computer simulations are done with respect to simplified models. These models represent physical reality to a degree that depends on the simplifications and assumptions made. The aim of this paper is to determine via numerical methods with Ansys CFX the motion of a Cargo vessel involving modeling the ship seakeeping for 2 DOF. The paper is showing how, by using advanced numerical simulation techniques, one may describe accurately the ship motion due to the marine environment conditions like waves and wind. This simulation was done in order to have the input data for further studies like the sloshing effects of liquid freight inside the hold of the cargo ship; study to be described inside some subsequent articles. As the sloshing effect take place, the structure of the ship is loaded and in some points of the structure the stress may become critical. By using the motion curves calculated, all these intricate simulations may be successfully developed.

Keywords: *Ship motion; CFD, Finite Volume Analysis*

7. STUDY OF SHIPYARD INTERVENTION BASED ON ANSYS SOFTWARE

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ABSTRACT

The shipbuilding industry is a segment of a continuous engineering development facing many problems generated by flexible environment that induces considerable force in the resistance of ship structures. Determination of stresses and strain of shipbuilding plate is done with commercial software ANSYS for five study cases. Shipbuilding has changed since building the training ship in 1939 and all rivet bonding are replaced by weld plates.

Keywords: *shipyard intervention, structural analysis, stress, deformation.*

8. COLLOCATIONS IN MARITIME ENGLISH

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ABSTRACT

The paper presents an approach to collocations in Maritime English for their manual extraction and classification using one of the Admiralty publications – Sailing Directions (Pilot Books). Firstly, collocations are defined in general. Secondly, the field of Maritime English, in the broader sphere of English for Specific Purposes (ESP) is stated and then Pilot Books are described. Finally, classification of the collocations is given.

Keywords: *English for Specific Purposes (ESP), Maritime English, Sailing Directions, collocations, Pilot Book.*

SECTION II
MECHANICAL ENGINEERING
AND ENVIRONMENT

9. NUMERICAL FRAZZLE MODELING OF WHEEL-RAIL CONTACT (STICK-SLIP EFFECT)

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ABSTRACT

The article proposes study of the frazzle of the portal crane during in the motion of braking. In specifically the study is refers to highlight the phenomen of "stick - slip". The mechanic phenomen is achieving in the numerical modeling of contact between wheel and rail during braking. The numerical modeling will be done using the computer program Matlab Simulink and FEM software ANSYS. When friction occurs then an intermittent slippage it's hearing a acoustic phenomenon. This explains why the sounds is generated by the bow moving on the wire of the violin or the squeal during braking of the wheels on the rail.

Keywords: *stick and slip effect, coefficient of friction, partial slip.*

10. THE R32 REFRIGERANT - A SOLUTION FOR SHIP REFRIGERATION PLANT

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ABSTRACT

The paper concentrates on a theoretical investigation on the performance of the vapour compression refrigeration cycle. Generally, the refrigeration plants on merchant vessels play a vital part in carrying refrigerated cargo and provisions for the crew on board and also air conditioning for accommodations. In reefer ships, the temperature of the perishable or temperature sensitive cargo such as food, chemical, or liquefied gas, is controlled by the refrigeration plant of the ship. The work presents a comparative study between the new R32 refrigerant and R22, R407C and R134a.

Keywords: *cooling capacity, R32 refrigerant, GWP, ODP, refrigeration plant.*

11.CFD STUDY ON THE REDUCTION OF NOX EMISSIONS FROM MARINE DIESEL ENGINES

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ABSTRACT

The aim of this study is to simulate the reduction of NOx emissions by using different reduction technologies, the effect of combination between the use of EGR and injection timing on the formation of NOx emissions will be discussed and illustrated. The first strategy of NOx reduction is the combination between 10% EGR and to retard the start of injection 3 degrees. The second strategy is the combination between 5% EGR and to retard the injection 6 degrees. The study uses ANSYS ICE program to predict the reduction in NOx emissions.

Keywords: *Diesel engines, NOx, NO, EGR, injection timing.*

12. PREDICTION OF NOX EMISSIONS FROM MARINE DIESEL ENGINES BASED ON EDDY DISSIPATION MODEL

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ABSTRACT

The aim of this study is to predict the NOx emissions from marine diesel engines by using computational fluid dynamics (CFD). ANSYS program is the simulation software that was used for performing this study. The commercial code of eddy dissipation model (EDM) is the code that was used for simulating the combustion process. The simulation is carried out between 330 CAD and 485 CAD. The principle steps of simulation are illustrated and explained. The result of simulation is validated with result of the experiment that was carried out on direct injection diesel engine.

Keywords: *Diesel engine, CFD, NOx, NO, Prompt NO, eddy dissipation model.*

13. THE COMPLEX DESIGN OF NAVAL BALL VALVE

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ABSTRACT

This article is a design study using NX Siemens CAD and computer fluid dynamic analysis (CFD) for the complex type of naval valve, also called three way ball valves (TWB). This valve' design was based on descriptive drawings of component parts, all dimensions being chosen and established by the authors. Computer Fluid Dynamic analysis is

based on finite element method (FEM), meshing, boundary condition and loads, finally we get important conclusions regarded by velocities of fluid inside body valve.

Keywords: *TWB, CAD NX Siemens, Revolve, Extrude, Velocities, CFD.*

14. HOW TO APPLY THE EASW METHODOLOGY DURING A WORKSHOP RELATED TO IMPROVING SKILLS AND COMPETENCIES FOR RENEWABLES

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ABSTRACT

Constanta Maritime University and Varna Business agency are implementing, as partners, the project Green Energy Cluster Constanta Dobrich, within Romania–Bulgaria Cross–Border Cooperation Programme 2007–2013. An activity scheduled in the Work Package 5 is the organization of a workshop entitled "Workforce for renewables–skills and competencies improvement pathway", during two days. This workshop is developed on the fact that green jobs require new competencies. In order to be able to provide, at the end of this activity, a statement elaborated by the participants, the EASW methodology was proposed as a basis.

In this paper are given the features of this methodology, resulting that the workshop implementation requires: a group of 30 participants, invited from residents, students, authorities, experts in RES and business representatives, an organizing team, facilitators and an adequate time for the preparation and running of the workshop.

This workshop will provide to the project a statement, as deliverable, indicating proposals for reaching an improvement in the skills and competencies in RES, in the cross border area.

Keywords: *skills, competencies, RES, workshop, methodology.*

15. A POINT OF VIEW ON THE ROLE OF THERMODYNAMICS IN THE EDUCATION OF FUTURE ENVIRONMENTAL ENGINEERS

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ABSTRACT

The aim of this article is to point out the strong link between Thermodynamics and ecology. Since ancient times there is a strong connection between man and nature, but the development of our society, based on an increased substance and energy consumption, led to the observation in the degradation of environment.

Therefore, modern and future industry need specialists able to deal with these challenges, having skills and a approach suitable to such problems. In Constanta Maritime University are educated future environmental engineers on basis of a curricula which allows facing the energy crisis, green energy production and sustainable development.

In the sections of this paper are used concepts as ecosystem, energy, ecology in order to point out the need of a student learning and thinking, on the basis of Thermodynamics principles, when it is about the approach of industrial processes in our modern days.

By some examples, it is shown that Thermodynamics is an useful discipline in the explanation of ecological phenomena.

Keywords: *Thermodynamics, ecosystem, energy, ecology, specialist.*

16. LIMITS OF THE CLOSED THIN WALL SECTION HYPOTHESIS – CASE STUDY: RING-LIKE CROSS SECTIONS

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ABSTRACT

Methods of analysis in strength of materials use simplifying hypotheses. These assumptions are useful to minimize the overall amount of calculi. Torsion of beams having thin wall sections use Bredt's hypothesis that states that the shear flow is uniform, i.e. constant in the cross-section which has a 'closed' hollow box form. Usually a thin wall is defined by the ratio $\frac{H}{b} > 10$, where H is one of the major dimensions of the section and b is the thickness of the wall. Because there aren't calculus relations for thick wall closed sections having a rectangle-like shape, Bredt's hypothesis cannot be tested using the strength of materials 'classic' theory. However, for ring-type sections there are so called 'classic' calculus relations. The paper explores the extents of each type of hypotheses which use either the thick wall or the thin wall theory for ring-type sections. In this way, the ratio between the inner diameter and the outer diameter, $k = \frac{d_i}{D_e}$, $k \in [0,1]$ is the variable for which the calculus relations are tested. There were considered the relations used to compute the stresses and the relations used to compute the rate of change of the angle of twist. The resulting functions of k are graphically represented and their variation is analyzed especially for the $k \in [0.9, 1.0]$ range of values, that are applicable for thin wall sections. The conclusion is that for the ring-type particular shape, the results of both types of hypotheses are closed one to the other. However, if accurate values of the shear stresses are needed in the $k \in [0.9, 1.0]$ range of dimensions, there should be used the relations specific to the thin wall section theory. Significant differences are expected for other shapes of 'closed' cross sections.

Keywords: *closed thin wall section, Bredt's assumption, ring-type section, classic calculus relations, comparison.*

17. TESTS REGARDING THE DIMENSIONS OF THE 'NARROW' RECTANGLES BELONGING TO OPEN THIN WALL SECTIONS

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ABSTRACT

Strength of materials theory is based on several simplifying hypotheses which were conceived in an era of technological development when the calculus instrument was not advanced. One of the goals of the according methods of analysis was to include a small volume of calculi. Therefore, the calculations should consider the limits of the simplifying hypotheses in order to have accurate results. According to the torsion of open thin wall sections theory, the cross section loaded by a twisting moment must be divided in 'narrow' rectangles for which the recommended ration of the sides should be $\frac{h}{b} > 10$. There are no analytical methods to assess the variation of the shear stresses and of the angle of twist with respect to the $\frac{h}{b}$ ratio. However, if a unique rectangle is considered, there are methods to compute the shear stress and the angle of twist. For variable $\frac{h}{b}$ ratios there may be noticed the values of the shear stress and of the angle of twist for both rectangular sections and a cross section having a 'narrow' rectangle shape. The first test is dedicated to the evaluation of the values of the $\frac{h}{b}$ ratios which are in the 'transition' zone from one hypothesis to the 'narrow' rectangle hypothesis. Moreover, the error between the values computed under the both types is also evaluated, being possible to assume if the $\frac{h}{b} = 10$ is the appropriate ratio from which the 'narrow' rectangle hypothesis may be

used. This is an exploratory examination, more accurate methods being used in the follow-up studies where the results of the analytic model will be compared with the results of the numerical models based on the finite element method. The second test considers an open thin wall section which may be discretized in several 'narrow' rectangles. The conclusion is that the 'mid-line' rule used to divide the section is a sufficient condition in order to have a unique value of the torsion second moment of area also known as the torsional moment of inertia, I_t.

18. CASE STUDY REGARDING THE PRODUCTION OPTIMIZATION AND THE ACCORDING COMPUTER BASED SOLUTION

OANTA M. EMIL

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ABSTRACT

Production demassification leads to small series production or unique product production. The according activities may be expressed with respect to project management principles. A particular production process requires a customized solution, in this way the use of an original software instrument being necessary to synthesize the relevant indicators of the project and to conceive optimization scenarios. The paper presents a case study and the original software solution that allows a flexible and optimized approach regarding the optimization of the processes.

19. MIXED ANALYSIS IN DYNAMIC MACHINERY SYSTEMS

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ABSTRACT

A mixed analysis was done in Strength of Materials Laboratory using experimental stand PT 500 and Machine Diagnostics Toolbox Type 9727 with Pulse Labshop. This paper presents the general use of the measurement equipment in machinery systems based on a fixed test configuration and bearing damages. Results are distinctive for each bearing fault according to vibration frequency for known bearing damage. The analysis present comparative information for a bearing fault identification, using two different measuring equipments.

20. NUMERIC SIMULATION FOR A J-LAY SUBSEA PIPELINE LAUNCHING SYSTEM

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ABSTRACT

Over the last decade deepwater pipelaying has gone through a spectacular development. In the early 90s a water depth of 300 meters was considered deep, while today depths of 2000 meters are common practice. The unprecedented global demand for oil and gas is the main drive in the offshore petroleum industry, which in turn demands improved pipeline technology. The installation of pipelines and flowlines constitute some of the most challenging offshore operations handled, and the required engineering sophistication, as well as the share size and complexity of the vessels used, has developed pipelaying into an engineering discipline of its own accord [13]. Present trends in the marked indicates an increase in deepwater projects as well in length as depth, according to [12]. In this paper, following the trend of involving the Finite elements models and using Ansys 15 software advanced features, a J-Lay subsea pipe J-Lay launching system shall be approached, in order to determine the main stresses and strains inflicted by the upper structure of launching system of a vessel over the pipe. The integrity of the subsea pipe during launching from a J-Lay

vessel is the most important criteria to judge a successful launching. In the J-Lay systems as the one presented in this paper the vessel launching structure is stressing the pipe sometimes beyond the elastic domain and the verification of the stresses inside the pipe is of a paramount importance. This paper is providing a modern involvement of Finite Elements Methods in calculating stresses and strains during launching, being the basis for any optimization studies. The optimization of the launching geometry will be the object of another paper.

Keywords: *Subsea Pipelying; Numeric Simulation; J-Lay.*

21. NUMERIC OPTIMIZATION FOR A J-LAY SUBSEA PIPELINE LAUNCHING SYSTEM

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ABSTRACT

Economical and political factors have changed the conventional point of view on the development of new submarine pipelines crossings: in fact, the laying of present lines is now driven by the increasing globalization of the market, with longer distances covered from producers to end-users, and not only by the exploitation of new offshore resources. Therefore, new capabilities to operate in deep waters are needed more and more, with ongoing development plans considering projects in water depths up to 3500 m and more. This paper is following another paper issued by the same authors in which the strains and deformations of the very same J-Lay launching system were calculated. Now we'll make a step further in order to optimize the geometry and dimensions of the structural arrangement of the launching ramps in order to have the smallest stresses inside the subsea pipe during launching. The integrity of the subsea pipe during launching from a J-Lay vessel is the most important criteria to judge a successful launching. In the J-Lay systems as the one presented in this paper the vessel launching structure is stressing the pipe sometimes beyond the elastic domain and the verification of the stresses inside the pipe is of a paramount importance.

This paper is providing a modern involvement of Finite Elements Methods in calculating the optimum launching system arrangement in order to have the minimum equivalent stress inside the subsea pipe during launching. After optimization the maximum calculated stress inside the pipe is 8.06e7 Pa instead of 9.97e7 Pa before optimization, therefore a reduction of 19% is to be reached by simply lowering the upper ramp and decreasing the force developed by the Tensioner 1.

Keywords: *Subsea Pipelying; Numeric Simulation; J-Lay; Optimization.*

22. SEAS AND OCEANS, SUPPLIERS OF THE NEW AND INNOVATIVE RENEWABLE ENERGY

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ABSTRACT

The seas and oceans have the potential to become important sources of clean energy. Marine renewable energy, which includes both offshore wind and ocean energy, presents an opportunity to generate economic growth and jobs, enhance the security of the energy supply and boost competitiveness through technological innovation, contributing to the decarbonisation goals.

In the context of a decrease of the primary resources, the blue energy generated by the oceans and seas captured the interests of many countries. We see today many studies, researches, projects that crossed the borders of the countries, developed by collaborative mixed teams. The results are promising, the success is guaranteed.

The present paper is a desk research on the ocean energy in Europe and not only in this region, showing the best practices in this area of activity and their implementation.

The conclusions are very clear and sustained by the figures; the blue energy gained its own place in the mix energy of many countries. This inexhaustible resource seems to gain more and more interests year by year.

Keywords: *blue energy, currents energy, ocean energy, renewable resource, tidal energy, wave energy.*

23. OFFSHORE MARINE ENERGY IN THE EUROPEAN AREA

STAN LIVIU-CONSTANTIN

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ABSTRACT

In the energy system, the renewable energy sources (RES) play an increasingly important place, contributing to a sustainable and efficient development, compatible with a cleaner environment. Among these energy sources, the marine RES, and especially the offshore energy increased from one year to another.

The paper contains a desk analysis of the offshore energy area, showing figures, images, dates and conclusions on these new technologies and their effects on short and long terms. Also, a SWOT analysis is included, representing a necessary assessment of the strong and weak points, trying to adjust the strengths to the opportunities and reduction at a minimum level of the threats, eliminated the weak points.

The projects based on this type of energy source, their positive results outline a promising perspective for the investors and authorities. The benefits are conclusive in this area: this inexhaustible and free resource generates energy with zero emissions, provides permanent and temporary jobs, services and economic growth, a balanced proportion between supply and demand of energy.

Keywords: *marine RES, ocean energy, offshore energy, offshore wind farm, wind turbine.*

24. SPECIFICS OF THE TOPOCLIMATES, IN A MICROCLIMATE PROFILE ON THE BEACH AND THE HILLSIDE – CONSTANTA

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ABSTRACT

This study measurements were performed simultaneously regarding the evolution of some climatic parameters in the microclimate space. Depending on the different place of placing the observation stations, these differ in the measured values (wind temperature, precipitations).

Keywords: *microclimate profile, Constanta, wheater data.*

25. DAMAGE ANALISYS OF A GEAR BOX SHAFT UNDER UPSET WORKING CONDITIONS USING ANSYS nCODE

[1]VELCEA DOREL-DUMITRU, [2]RADU IULIAN, [3]CALIMANESCU IOAN

[1,23]Constanta Maritime University, Romania

ABSTRACT

Determining the fatigue life of parts under periodic, sinusoidal vibration is a fairly straightforward process in which damage content is calculated by multiplying the stress amplitude of each cycle from harmonic analysis with the number of cycles that the parts experience in the field. The computation is relatively simple because the absolute value of the vibration is highly predictable at any point in time. The purpose of this paper is the damage estimation of a gear box shaft subjected to severe overloads. This is part of an upset conditions testing to which a statistical significant population of gear boxes is subjected in order to have confidence and demonstrate the reliability of the device. Prior to this the simulation with finite element analysis (FEA) might be done in order to have a clue and a benchmark for testing.

In our simulation using nCode under Ansys Workbench, we concluded that the upset conditions to which the gear box was subjected, at least for the analised shaft, had or will have no noticeable impact

Keywords: *Damage Analysis, Fatigue, nCode, Finite Element Analysis, Gear box Shaft.*

26. STRESS FATIGUE LIFE OPTIMISATION OF AN AIRPLANE LANDING GEAR LEVER ARM USING ANSYS nCODE

[1]VELCEA DOREL-DUMITRU, [2]RADU IULIAN, [3]CALIMANESCU IOAN

[1,2,3]Constanta Maritime University, Romania

ABSTRACT

In this paper we'll show a way to optimise the shape of an airplane landing gear lever arm in order to increase the confidence that its behaviour is improved in terms of life. The main tool to be used under Ansys Workbench is the optimisation via Response surface module. Ansys software has its own fatigue and life calculation module. The incorporation of nCode inside Ansys Workbench has provided a larger palette of options and resources for Life evaluation of a wider class of problems. As was demonstrated the nCode module of Ansys is more accurate in terms of life calculation as teh native Ansys fatigue module can predict, and that's why the nCode is more suitable to be used for optimisation simulations. In our simulation using nCode under Ansys Workbench, we've concluded that the optimised geometry shows a bigger life expectancy as the initial model. This way of dealing with the fatigue issues is certainly due to improve the safety of the sensitive devices as the landing gear of an airplane.

Keywords: *Fatigue, nCode, Finite Element Analysis, Gear lever arm, Optimisation.*

SECTION III
ELECTRONICS, ELECTRONICAL ENGINEERING AND COMPUTER SCIENCE

27. THE INTELLIGENT SENSORS FOR HOUSE RISKS FACTORS

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ABSTRACT

Intelligent house is the new name of the house which can be monitored at the distance using different sensors. This paper presents a prototype at reduced scale of the house equipped with various sensors which prevent the risk factors. The risk factors could be the humidity, gas, temperature, et.al. All the data are sent by phone and alarms ring if the values are not in the normally ranges. This prototype demonstrates that it is able to take over the real status of the environment and to process it in a timely manner in order to prove its effectiveness.

Keywords: *intelligent sensors, risk factors, monitoring, intelligent system.*

28. AUTOMATED TEST PLATFORM FOR CHARACTERIZATION OF ANGULAR DEPENENCE IN OPTOELECTRONICS AND RFID

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ABSTRACT

The angular dependence is a concern of system designers in applications where the performance of the system depends of the position and orientation of its components. Considering either an optoelectronic system (consisting of an emitter and a receiver), or a RFID communication system (consisting of a reader and a transponder), the relative angular position between the system components determines the capability of the system to function properly. This paper summarizes the automatic test procedures developed by the authors for an extended and accurate evaluation of the angular dependence of optoelectronic and RFID systems [1-3]. The paper presents an automated platform implemented for this purpose, which can be customized in order to fit the requirements for system characterization in both

optoelectronic and RFID applications, and also the measurement results for various system components tested (optical emitters /receivers and RFID readers/transponders).

SECTION IV
ENGLISH FOR SPECIFIC PURPOSES

29. TEACH IT WITH A CLOUD

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ABSTRACT

The purpose of this paper is to suggest activities through which teachers of Maritime English can help their students to bridge the gap betwenn the mastery of structures and the use of language to communicate meanings in real situations.

Throughout the history of language teaching, theories and methods have gone a recurring cycle. And yet, technological progress has taken its toll in the sense that students of EFL have a strong liking that internet-based learning. When it comes to learning Maritime English the going gets tough meaning that the task of the teacher is somewhat made difficult. In order to ease the pain of passing knowledge on to the eager beaver student of maritime English we have considered appropriate to present in this paper a newly-formed concept used as a teaching/ learning tool: word clouds. And, as the achievements of the past cannot but be ignored, we have also focused on some old-fashioned methods of teaching specialized vocabulary.

30. EXPRESSIONS MOULDED IN BRITISH AND RESTORED IN AMERICAN WORDYARDS

GEORGESCU MIRCEA

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ABSTRACT

Since neither the Indians nor the War of Independence brought about changes in the total stock of words and idiomatic combinations of their language, British and American have kept a very close association. From the time of the first passengers disembarking from the May Flower to present day cross-Atlantic tweetings, 'the two nations divided by one common language' countries have shared in the development of English lexis. Many words and phrases used in the USA have retained Elizabethan English meanings although some have been jettisoned in the Mother Country. Of course, there are many American phrases which have not been imported by other countries; for example, '*lead-pipe cinch*' (an absolute certainty: *It's a lead-pipe cinch they'll be there*), and '*presto chango*' (a sudden change or transformation, as a magic trick in which one object appears to be suddenly transformed into another) are widely understood in the US, but would receive puzzled looks in other countries.

The purpose of this paper is to see what idioms are, their characteristics and classification and, last but not least, to find Romanian idioms that have the same meaning as those used in the English-speaking world.

31. FEATURES OF EST, A SUBFIELD OF ESP, WITH A FOCUS ON MARITIME (ENGINEERING) ENGLISH

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ABSTRACT

This article focuses on the features of maritime (engineering) English in terms of EST (English for Science and Technology) and on the specific needs of students of EST, i.e. maritime (engineering) English along with teachers' role in integrating general English vocabulary in EST/maritime (engineering) English classes. As far as future (maritime) engineers are regarded, English teachers need to steer their boat carefully in order to meet the specific needs of students of EST, a subfield of ESP (English for Specific Purposes). Maritime (engineering) English involves basic general English proficiency prior to the study of specialized vocabulary. It is a teacher's task to assist students in attaining the linguistic skills they need in their future profession.

Keywords: *ESP, EST, maritime English, engineering English, maritime English teachers, linguistic skills.*

32. HOW TO EMBED GENERAL ENGLISH GRAMMAR AND VOCABULARY IN MARITIME ENGLISH TEACHING

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ABSTRACT

This article is aimed to provide various manners in which to reach the same goal, i.e. to embed general English grammar and vocabulary in maritime (engineering) English classes. Research has revealed that almost half of the accidents at sea are due to poor knowledge of maritime English. Hence, it is quite a challenge for maritime English lecturers to know what and, more importantly, how to teach future maritime engineers. It is vital for all seafarers, regardless of their rank on board, to be able to communicate in English. As for marine engineers, just like deck officers, they need to master all four skills even if, depending on the circumstances, some skills may prevail at times. Therefore, it is desirable for them to convey coherent and cohesive messages about their work, both orally and in writing.

Keywords: *maritime English, engineering English, general English, maritime English teachers, marine engineers.*

SECTION V
TRANSPORT ECONOMICS

33. IMPACT OF ENERGY TRANSITION ON ECOMOMY

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ABSTRACT

This paper analyses the impact of Energiewende on German markets, industry, utilities and households. It identifies and discusses public support, greenhouse emissions, economic growth and energy security as factors associated with the successful energy transition. The paper also gives an insight of the outcome of Romanian energy policies, aimed to provide energy security, sustainable development and energy efficiency. The results of two cases are then compared, giving consideration to present status and prospects of development. The paper formulates conclusions pertinent to the critical analysis.

Keywords: *energiewende, energy transition, renewables, carbon emissions, energy security, power generation mix, base load, power distribution, social cost, market liberalisation, markets, utilities, household, industry.*

34. PROTECTION OF THE HUMAN RIGHTS IN THE MARITIME LAW

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ABSTRACT

The core of the present scientific work revolves around the idea of the incidence for human rights in the maritime transport. In essence the study is organized in five chapters. The first chapter illustrates most of all the maritime international treaties and conventions which are applicable for the human rights in the maritime law. The second chapter notes the importance of the romanian naval authorities and also the international organisations in the field of the human rights, regarding their attributions and competences. The third chapter underlines the importance of the human rights in the search and rescue assistance revealed by the Tampa case. The fourth chapter evokes the obligations for the captain in case of an action stipulated by the criminal law and the human rights of the perpetrator. Finally, the fifth and last chapter points out the judgements and decisions of the European Court of Human Rights regarding the protection of the human rights in the maritime law.

Keywords: *Maritime law, human rights, conventions.*

35. THE CHARACTERIZATION OF MARITIME PIRACY ACCORDING TO THE ROMANIAN CRIMINAL CODE

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ABSTRACT

Despite declining number of pirate attacks, seas are still far from safe as facts show. Uderstanding the phenomenon will help prevent piracy on maritime level. The main purpose of this article is explaining and giving accessible information on the maritime piracy offense according to the Romanian Criminal Code. The complex maritime piracy offense is stipulated in the special part of the Romanian Criminal Code in the 235 article. This article situated in the second title named offenses against property which includes chapter ii - robbery and piracy.

Keywords: *Maritime piracy, the Romanian Criminal Code, the piracy offense.*

36. ECONOMICAL ASPECTS REGARDING COMBINED TRANSPORT IN EUROPE

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ABSTRACT

Efficient transport is the key of a developed economy. Every society searches alternatives for road transport which is polluted and with higher costs. A successful solution is combined transport, which is friendly for the environment, economy and the society as a whole. Combined transport improves the green performance of freight transport in Europe. The present study approaches the forms of combined transport and the standards for efficient combined transport services. It gives a statistical overview of European Union combined transport and it concludes on solutions to boost the efficiency in combined transport. The main objective of this paper is to highlight the effectiveness and importance that has combined transport for the transport industry, but also for the entire society. In support of this scientific approach are legislation and research studies and reports conducted by various organisations of the European Union in this area. The final purpose of the paper is to transmit the essence data about combined transport in Europe to interested parts, in order to bring a small contribution to their decision making.

Keywords: *combined transport, Europe, efficiency, rail, road, combined transport services, European Union*

37. ASPECTS OF THE INTEGRATED MARITIME POLICY OF THE EUROPEAN UNION

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ABSTRACT

The EU policies on maritime transport, industry, coastal regions, fisheries etc have been developed separately, for a long period of time. The European Parliament, through the voice of several parliamentary committees, often criticized this, with the concern of the formation of a common maritime policy aimed at integrating the internal market for maritime transport and services within the European Union. Through this article we intend to do a brief analysis on the importance of a uniform management of regional maritime policies of the European Union and its objectives, in order to promote a political leadership in international maritime affairs. This new approach aims to foster optimal development of all maritime activities in a sustainable manner in various fields such as employment in maritime sectors, fisheries, maritime and river transport, marine research in the marine sector, construction of ships, maritime surveillance, maritime and coastal tourism, coastal development and external relations in maritime affairs

Keywords: *Integrated Maritime Policy, shipping.*

38. RIGHTS AND OBLIGATIONS OF NEUTRAL STATES DURING WAR AT SEA

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ABSTRACT

The neutrality in maritime war is the situation born from the state of war, which implies certain rights and duties for the neutral, that is a reflex towards the rights of belligerents.

Through this article we intend to do a brief analysis on the rights and obligations of neutral states in maritime war, with their capacity as subject of international law ,through the three types of neutrality - permanent neutrality, incidental and impartial. We emphasize on the particular legal situation in which the neutral states find themselves, states who during armed conflict don't take part in hostilities, but continue to maintain relations with other countries, including the belligerents.

The main legal instruments regulating the status of neutrality, which is the common law in this matter are two classic conventions adopted at the Hague Peace Conference of 1907, namely:

- The 5th Convention "relating to the rights and duties of neutral powers and persons in case of war on land" and
- The 13th Convention "relating to the rights and duties of neutral powers in case of maritime war."

At the beginning of armed conflict, the competent public authorities of the neutral state issue a statement of neutrality that shows the the advantage of clarifying relations between sovereign states, for example in the case of neutral subjects found in warring countries at the beginning of the war.

Keywords: *naval war, neutrality.*

39. FREE PORTS

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ABSTRACT

Through this article we try to emphasize the economic importance of a free port with jurisdiction more relaxed compared to the country where it is located: exemption from customs duties and a special customs regime with favorable customs regulations. We emphasized the legal definition of free port in binding with another institution, the free economic zone which together play an important role in the global economy.

Free ports or "Porto Franco" have a millenary existence, whose first origins were in China and Greece. At the end of the century, the great port cities were equipped with Zona Franca, in order to attract cargo, ship owners, merchants, to develop the local economy. Through continual adaptation to new needs, this concept has its origins in the Middle Ages and is not yet obsolete. Free port development was particularly significant during the last decades.

Keywords: *Free port, free zone, port operators.*

40. STUDY OF THE ECONOMICAL EFFECTS OF THE BIO-INVASIONS

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ABSTRACT

This paper aims to examine the economical effects of the bio-invasive phenomenon, begining with global considerations in this respect, and ending with proposing legal and scientifical measures, for prevent the undesirable effects of this phenomenon. As an example, it is analised the Black Sea ecosystem problem.

Keywords: *invasion, Black Sea, industry,legislation , biodiversity.*

41. COMMENT ON THE IMPLEMENTATION OF "0 – 1" TEST FOR TINKERBELL MAP

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ABSTRACT

Recently, Gottwald and Melbourne proposed a new technique for characterization the regular or chaotic nature of dynamical orbits. Their "0 – 1 test for chaos" takes as input a scalar time series of observations and returns the value unity in the presence of chaos, and zero otherwise. Since its appearance in 2004, the test has undergone several modifications which aimed to increase its reliability. The purpose of this paper is to check how these refinements have improved the test's performances and to highlight the role played by the main parameters. To achieve this we generate data that we use from the 2D Tinkerbell map, known for its rich dynamical behaviour. Our findings show that the last variant of the test succeeds even better to give the right answer on the type of the investigated orbit.

Keywords: *Tinkerbell map, 0 – 1 test, ordered and chaotic orbits, time series analysis.*

42. MODELLING THE GROWTH OF WIND-INDUCED OSCILLATIONS IN OVERHEAD LINES. NON-RESONANT CASE

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ABSTRACT

Galloping is a high amplitude periodic oscillation of both single and bundle conductors due to aerodynamic instability hitting high voltage overhead lines, with a single or a few loops of standing waves per span. The inability to control galloping can lead to severe disruptions in the electrical power supply.

In the paper, a simplified two-dimensional nonlinear discrete model of an iced suspended cable, excited by uniform wind velocity, is developed in quasi-static regime. The equations of motion are coupled through cubic terms and the ratio of the associated linear frequencies is not close to a ratio of two positive integers (so we speak about the non-resonant case). The Krylov-Bogoliubov method is employed to obtain a set of four amplitude modulation equations, which provides us the steady state solutions. Analytical results are compared with direct numerical integration results of discrete nonlinear equations and conclusions are presented.

Keywords: *Galloping in overhead lines, non-resonant case, approximate solution.*

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43. INFLUENCE OF EMOTIONAL INTELLIGENCE ON THE WORK PERFORMANCE OF SEAFARERS

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ABSTRACT

Maritime Transportation process is a complex and closed system in which human factor has arisen as an important concept. Seafarers try to adopt themselves to the vessel environment and perform their tasks while creating new social interactions with each other. These social interactions can be directly shaped by the trait emotional intelligence of the seafarers. Accordingly in this study, it is aimed to understand the relationship between the trait emotional intelligence of the seafarers and the job performances of them during a maritime transportation process. Through our study, it is seen that the seamen with high emotional intelligence show high performances as well. Furthermore positive relation has been monitored between ages, years of employment, level of education and duty on ship, and emotional intelligence as a result of correlations established with demographic features.

Keywords: *maritime transportation, human factor, emotional intelligence, work performance.*

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44. IMPROVING ORGANIZATIONAL PERFORMANCE THROUGH THE APPLICATION OF INTEGRATED MANAGEMENT SYSTEMS IN MAINTENANCE ACTIVITIES IN THE SHIPYARDS

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ABSTRACT

Shipyards must act for ships maintenance cost reduction by new strategies based on performance indicators analysis (achieved firm bookings percentage of their submitted bids number; repair costs percentage reduction; ships docking period improving by acting for less days for ships staying on docking; number of delay days at delivery of the ships; percentage of the technical inspections repetition for final scope of works settlement) and so, through corrective actions taken, may not be alliterated the shipyards basic objectives: their docks capacities and available manpower constant time loading, collaboration with traditional customers and opening new collaboration opportunities for customer portfolio extending. This work paper purpose is for the author's original contributions and research results

presentation concerning integrated management systems application into the shipyards, aiming systems performance indicators and organizational strategies applied for ships maintenance shipyards presenting and analyzing.

Keywords: *shipyard; maintenance; performance indicators; variability in operation; Balanced Scorecard.*

45. COSTS ANALYSIS IN MULTIMODAL TRANSPORT

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ABSTRACT

It is well known that multimodal transport refers to the transportation of goods by using more than one mode of transport. The purpose of this paper is to determine the best transport solution in terms of transport costs, taking into account the combinations of transport modes that can be used to transport the freight, the transport distances for each segment and also the handling and transport costs involved on each segment.

Keywords: *Multimodal transport, cost, ITU, TIET.*