

ECONOMICAL IMPLICATIONS OF THE NEW INTERNATIONAL COURT OF JUSTICE MARITIME DELIMITATIONS IN THE BLACK SEA

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In February 2009, the International Court of Justice pronounced its decision in the process on the Black Sea Maritime Delimitation (Romania vs. Ukraine) regarding delimitation of continental shelf and to the exclusive economic zone. The Decision puts a final end to a complex bilateral dispute which had been lasting for 42 years between Romania and Ukraine and which could not be resolved by any other means. Romania fulfilled thus its strategic objective in this file: drawing an equitable line, non-susceptible to interpretations and which allows the exploitation of the hydrocarbon resources from the area allocated to it by the International Court of Justice solution. The interesting point is how an international law decision, can end a half a century debate between two countries and to produce immediate economical effects. This new maritime boundaries will allow Romania to begin a systematic prospection of the area and extraction of oil and gas resources in location already certified. Quantification of these resources is still subject of debate between specialists, but on the existing data we tried to define the economic benefits of Romania for the near future.

THE EFFECT OF THE SEA WATER AS CORROSIVE ENVIRONMENT ON THE SUPERFICIAL TREATED SAMPLES

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The experimental research was made on superficial layers laid-down through electrical sparking on the steel carbon OLC 45 samples, the used electrode being made from a corrosion resistant material (Copper).

The probes being immersed 285 days in static sea water at the environments temperature. The superficial layers subjected to gravimetric corrosion have been analyzed through optical metallographic microscopy, using the computers QX3 Intel Play microscope.

The fine determining of the topography surfaces exposed to the action of the corrosive environment was made using the atomic force microscope (AFM).

AN EXPERIMENTAL METHOD OF INVESTIGATION OF AN ASYNCHRONOUS INDUCTION MOTOR'S MAGNETIC FIELDS

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The asynchronous induction motors are the most commonly used motors in ship electric drives. The investigation of their magnetic fields is an essential part of their working regimes exploring. The magnetic fields of an asynchronous induction motor are studied using an experimental method that enables the screening of the magnitude and the shape of the magnetic fields in the stator and in the rotor, separately and in joint action in different working regimes of the motor.

BASIC DYNAMIC COUPLING EFFECT REGARDING THE MARINE ENGINE PROPULSION SYSTEMS

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The purpose of the present paper is to be a tutorial one, intended to show the model of coupled torsional and longitudinal vibration of the marine engine shafting systems. Extension of the analytic method for a multi-dimensional system, modeling of typical marine propulsion plant, and results for some realistic examples are also presented and they show that neglecting the propeller coupling effect can result in prediction of vibratory response.

USING FLUENT AS AN EXPERIMENTAL STAND FLOW THROUGH A BROKEN BARRAGE

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In the paper we propose to use the FLUENT program as experimental stand. Why do we do this? It is often difficult and expensive to achieve a model. It is also difficult to calculate the phenomena in the nature scale using the FLUENT. So we calculated the physical parameters, using FLUENT on the model and we passed them, using the similitude criteria, in the nature. We illustrated the method with a spectacular example: the flow through a broken barrage.

First, we established the model law, taking into account the physical magnitudes which influence the analyzed phenomena. Afterwards we calculated the scales of these physical magnitudes for normal similitude (a single geometrical scale). Using FLUENT we determined the values of the velocity and forces acting on the barrage (the unbroken part). Finally, we passed the "experimental" data in the nature by application of scale for physical magnitudes.

COMPARATIVE INVESTIGATIONS INTO NAVAL WELDED STEEL, METALLOGRAPHY AND MICROHARDNESS

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The purpose of this paper is to make comparative investigations of heat affected zones (HAZ) at naval welded structures in condition of normal welding (submerged arc welding– NW), ultrasonic welding (ultrasonic submerged arc welding– UW) and after thermal stress-relief (HT) and ultrasonic stress-relief (UT) methods. After welding this steel exhibits a uniform field of hardness, because it is low-alloy steel with a low carbon percent. The alloying elements can produce carbides and nitrides which may cause problems. Post weld heat treatment, such as thermal and ultrasonic stress relief methods reduces the residual stress field and solves the problems with improvement of mechanical characteristics.

A STUDY ON THE TURKISH REGULATIONS CONCERNING EMERGENCY RESPONSE AND INDEMNIFICATION OF DAMAGES ARISING FROM MARINE ENVIRONMENTAL POLLUTION

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The issue of marine pollution is one of the main and important topics of maritime world. Following the principle of “*Safe, Secured and Clean Seas*”, several international regulations have been created by the international bodies, such as IMO. These international regulations are rapidly followed by internal regulations of many countries. Accordingly, Turkey enacted majority of the relevant international regulations into its domestic law, within a short time.

Among these provisions, “The act Nrd. 5312 Relating to Emergency Response and Indemnification of Damages Resulted from Marine Environmental Pollution by Petroleum and Other Harmful Materials” and the “Regulation Regarding the Application of the Act Nrd.5312” have special importance for vessels, carrying Turkish and/or foreign flag, sailing in Turkish waters and calling any Turkish port and owners, managers and insurers of these vessels.

The aim of the study is to give information on the above mentioned rules, together with an evaluation from the legal point of view.

THE PREVENTIVE AND CONTROLLING MANAGEMENT OF THE BITUMEN POLLUTION IN THE MANGALIA PORT

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The new conditions from maritime transport have many implications for shipping companies, marine pollution and state or port authority. In Romania the imports of the bitumen are a new experience for our country until 1998. The Mangalia port has a new position in the maritime transports and the business of this domain is in development. But the bitumen represents the dangerous goods for the port area. In this paper is presented the problems and the preventive management at the ship and terminal

THEORY AND PRACTICE OF COMPLEX SAR OPERATIONS IN THE CONDITIONS OF THE BLACK SEA

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The paper tries to define complex SAR operations as a specific form for providing high level of maritime safety and security in the Black Sea region. The main tasks of the research are to overview the complex SAR operations in the Black Sea; to give highlights in the theory of complex SAR operations and to cover some practical aspects of complex SAR operations in the Black Sea. The achievement of the goals of the complex SAR operations needs a set of complex capabilities. Their very important component, as a mental aspect of these capabilities, is the new SAR culture. Connected with this, the paper gives some directions for new educational and training activities of the maritime universities.

MODELLING OF THE REFRIGERATED SEAWATER SYSTEM ON BOARD OF FISHING VESSELS

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The fishing industry is a very competitive one. Professionals of this industry understood that making profit by offering quality is possible by using the best technology on board of the fishing vessels. Storing the catch in refrigerated water system brings many advantages to fishermen. This paper presents the flow sheet diagram of this cooling and storage system and its mathematical model. Are written balance equations, each component of the system being modeled as an object. These equations contain mass flows, pressure and enthalpies on the suction side and the discharge side of the components. The model allows to avoid an oversized system on board of fishing vessels.

EXPERIMENTAL RESEARCH OF A JAMMING OVER A DIRECT SEQUENCE SPREAD SPECTRUM SYSTEM

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In this article an experimental research of a broadband noise jamming over GPS receivers is considered. The limitations of the effectiveness of the jammer in accordance with the distance is overviewed. In that case the power density levels of the signal and the noise at the input of each GPS receiver are compared.

IMPROVE MARITIME EDUCATION TRAINING THROUGH ONLINE TEACHING

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Online teaching is able to exclude the inconvenience of social life schedule, offering access to knowledge's anytime, from any location. Another gain of this method is the ability of transmitting knowledge's also for present students or former students interested in latest developments in maritime industry, and certainly for teachers and trainers, especially at the beginning of their lecturer careers. The present paper presents the online teaching system used by our university, for teachers and students, for former students, now officers onboard ships, to access the latest information's about technical development in maritime field. This system can improve the communications and interconnectivity between academic institutions and civil society, first as developer of knowledge's and scientific research, second as beneficiary and applicants of these. The international work to improve maritime education and training (MET) has identified lack of access to quality learning material and tutors in many countries. It is assumed that increased use of information and communication technologies will be one major component for future quality improvement of maritime education and training.

A PROPER STYLE OF COMMAND AND THEIR IMPACT IN MARITIME SAFETY

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Very often, when speaking about the exercise of command, we think rather on how to control the crew, than how to achieve the best of them. We also may classificate captains according the way they exercise their command and so we speak about authoritarian captains, dialoging captains, weak captains, etc, as if the style of command would be something depending of their character. However, in a proper sense, the style of command is something that doesn't depend of the character of a captain, but on the professional maturity of the different crew members.

ANALYSIS OF DIESEL ENGINE OPERATION

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In this paper is presented a method for both combustion irreversibility and working medium availability computations, in a diesel engine. The results of the second-law analysis of engine operation with dodecane ($C_{12}H_{26}$) fuel are compared with the results of a similar analysis for cases where a light, gaseous (CH_4) and an oxygenated (CH_3OH) fuel is used. It is shown theoretically that the decomposition of lighter molecules leads to less entropy generation compared to heavier fuels. This is verified computationally for the particular fuels and the corresponding decrease in combustion irreversibility is calculated. Special reference is made to the effect of the lower mixing entropy of the exhaust gas of an oxygenated fuel (CH_3OH) as a contribution to the discussion of the advantages and disadvantages of the use of such fuels.

NEURAL MODELING AND SIMULATING IN A STEAM TURBINE POWER PLANT APPLICATION

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In the paper a neural simulator of steam power unit is presented as an example of application of artificial neural networks (ANN) for modeling complex technical objects. A set of one-directional back-propagation networks was applied to simulate distribution of main steam flow parameters in the cycle's crucial points for a broad range of loading. A very good accuracy and short computation time was obtained. The advantages make the simulator useful for on-line diagnostic applications where short response time is very important. The most important features of the simulator, main phases of its elaboration and a certain amount of experience gained from solving the task was presented to make the practical application of the method in question more familiar.

THE DYNAMICS OF THE MARINE PROPULSION SYSTEMS

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This paper represents a step forward toward the introduction of engineering advanced research methods for the study of dynamic behavior of marine propulsion systems. The large dimensions of this work and its both theoretical and research material developed in it via numerical simulation are witnessing the authors' effort for an exhaustive treatment of the proposed theme.

THE ARCTIC CONFLICT: PROTECTING SHIPPING IN THE ARCTIC REGION

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Global warming and the growing need of energy resources have created a new conflict zone for shipping, the Arctic. This article deals with the results of several research initiatives designed to determine the nature of the conflict in the Arctic, the shipping trends in the region, the possibilities for new threats and risks to emerge with regard to the maritime transport system as well as recent shifts in the concept for protecting shipping in time of peace or during war.

THE ECOBONO. A PROPOSAL BASED ON EXTERNAL COSTS SAVINGS

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According to the mid-term review of the EU White Paper on Transport, Short Sea Shipping is expected to grow at a rate of 59% (metric tonnes) between 2000 and 2020. If we consider that the overall expected increase in both freight exchanges and volume is 50%, sea transport appears as one of the most feasible options to reduce traffic congestion on European roads. However, this alternative has not been definitely adopted because of technical, administrative and legal reasons. Moreover, society still regards maritime transport as a slow, inefficient mode since shippers do not yet offer the best value for money. Infrastructures need to be balanced by using tariff principles which reflect the exact external costs incurred by these infrastructures. Along this line of action, in 1998 the European Union published the White Paper on Fair Payment for Infrastructure Use: A Phased Approach to a Common Transport Infrastructure Charging Framework in the EU COM (1998) 466. This paper will conclude proposing an environmental bonus based on external cost savings associated with the use of the short sea alternative instead of road-only transport

IS IT POSSIBLE TO APPLY ECO-DESIGN IN MARINE ENGINEERING?

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The paper presents some general aspects regarding the eco-design principles applied to machine design domain and the basic concepts of the ecological design of mechanical systems and analyses the possibility to use ecodesign in marine engineering field.