ACADEMIA NAVALĂ „MIRCEA CEL BĂTRÂN”

A XI-a ediţie
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1. Study on the Integrated Management of Pollution Sources Within a Maritime Platform

Author: Akan APTULA, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Cdor. conf. univ. Dr. ing. Dinu ATODIRESEI

Abstract: *The subject of this paper consists in the analysis of the activities of exploitation of petroleum resources off the seas and oceans, their impact on the marine environment, short term consequences and long term effects from pollution and the current state of the industrial activities from different important economic zones. Discharges of toxic substances into the water from industrial activity have a persistent impact on marine life, being able to occur for miles along the surfaces of seas and oceans. The importance of the management system within the maritime platforms which privileges the prevention of pollution is a decisive factor for the good functioning of the oil industry and the management of the natural resources from seas and oceans.*

2. STS Bunkering Underway in Bad Weather Conditions

Author: Narcis-Alexandru BLEHOTESCU, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Cpt. Ş.L. univ. Dr. ing. Sergiu ȘERBAN

Abstract: *Through this paper I wanted to highlight the maneuver of STS bunkering underway in bad weather conditions. The paper is divided into 3 chapters. Chapter 1: Theoretical notions and information about the ship, Chapter 2: The maneuver itself, Chapter 3: Dangers that were taken into account during the transfer and finally are my own conclusions.*

3. Safety Management and Risk Assessment in Tug Operation

Author: Ioan-Cristian BOTA, Academia Navală „Mircea cel Bătrân", Constanţa

Scientific Advisor: Cpt. Ș.L. univ. Dr. ing. Sergiu ȘERBAN

Abstract: *This paper focuses on balancing safety and risk assessments in the operation of tugs. While towing is often seen as a routine event in the running of a ship, in terms of risks things should be viewed differently. Although for each towing operation, the procedure and principles can be the same - a ship being made to need tugs to guide it to its berth immediately after the connections between the ship and the tug end - there are multiple differences between each towing operation. These differences can be found in aspects such as the type of tug, the size and type of the ship, the environment; weather conditions, the channel and the experience of the parties involved. The towing operation is practically a state of permanent vigilance depending on a multitude of variables in a complex social environment - taking into account all parties involved. Given the accidents of recent years, it must be concluded that there is still a high degree of non-routine in towing operations caused by various aspects.*

4. Man Over Board Maneuver in Arctic Area

Author: Tiberiu- Andrei BURCEA, Academia Navală „Mircea cel Bătrân", Constanţa

Scientific Advisor: Cpt. Ş.L. univ. Dr. ing. Sergiu ȘERBAN
Abstract: *Man over board is an extremely serious and potentially fatal event that each crew could experience at least once in their career.*

5. Study Regarding Maneuvering Sailing Boats
Author: Alin CHIRIAC, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Cpt. Cdor conf. univ. Dr. ing. Sergiu LUPU
Abstract: *This paper aims to familiarize, explain and train a beginner in the field of yachting, both in terms of legislative aspects prior to becoming a skipper, and on the technical and practical part of this hobby. The paper is also useful to those experienced in the field, who could supplement or improve their knowledge, given that the paper presents updated aspects of various topics related to this field. The first chapter presents details that support those who want to get started in the field of yachting, from the institutions they will contact to take the exams, the conduct of courses and examinations and other relevant details. The following chapters focus the terminology of systems, accessories and elements present on board a yacht, navigation elements, anchorage, sail aerodynamics, International Regulation for the Prevention of Collisions at Sea (COLREG), communications, meteorology, dangers on board the boat, first aid and maritime law.*

6. The Process of Dry Docking of a Frigate T22
Author: Elena-Iuliana-Alexandra CHIRIȚĂ, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Cpt. Cdor conf. univ. Dr. ing. Sergiu LUPU
Abstract: *Dry docking a ship is the most complex and dangerous operation to be carried out in a dry dock. Each ship*

to be docked, must have a dry dock plan, forward and aft draft condition, displacement, load disposition, stability conditions and detailed information of damages, if any, at the dock entrance. Based on this dry dock plan and with all the information about ship dry dock conditions, the necessary calculations are made for the proper positioning of the ship on the blocks. Once the required work is completed and the ship is ready for departure, the dry dock filling process begins by pumping out water into the dock until the ship floats freely. At the moment when the water level inside the dry dock is equal to the water level outside, the gate is opened and the boat is towed out.

7. The Use of Hydrometeorological Information In Support of the Corvettes' Combat Actions

Author: Alexandru CIOROGAR, Academia Navală „Mircea cel Bătrân", Constanţa

Scientific Advisor: Cdor. conf. univ. Dr. ing. Dinu ATODIRESEI

Abstract: *The detailed introduction of this thesis paper includes a number of definite examples in which generally unfavorable weather conditions have made it difficult for the corvettes' commanders to succeed in their attempts.*

In the first chapter, the corvette is being studied in the view of a concept, being exemplified the circumstances and the time frame in which the first ship of this type was designed by the Royal French Navy. The advantages of these ships are also presented here. The second chapter analyzes weather information that can be received from and processed onboard of a corvette. In the beginning of the chapter, the emphasized idea is which type of corvette become the subject of the case study: a ship of Romanian production from the Tetal II class, built at Mangalia Shipyard during the 1990s. The third chapter

presents the analysis of the necessary information and the way of accomplishing the weather risk matrix for this type of ship.
In the fourth chapter of the project will be sought and identified new methods of optimizing the technical means of collecting and analyzing weather data for the situation on board the corvettes. This optimization can be achieved by identifying and using new ranges of weather sensors, more efficient and more accurate.

8. The Influence of the Hydrometeorological Factors on Fighting Qualities of the "Mărășești" Frigate

Author: Marcel CONDUR, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Cdor. conf. univ. Dr. ing. Dinu ATODIRESEI

Abstract: *The subject of this paper consists in the analysis of the activities of exploitation of petroleum resources off the seas and oceans, their impact on the marine environment, short term consequences and long term effects from pollution and the current state of the industrial activities from different important economic zones. Discharges of toxic substances into the water The project draws attention to the influence of the hydro-meteorological factors on fighting capabilities of the "Mărășești" Frigate. The study was realized in the Black Sea bowl. In the first chapter of the project are presented the capabilities of the Frigate ,,Mărășești". The main idea of the second chapter is to describe the Black Sea meteorological characteristics. By combining the information presented in chapters above-mentioned has resulted a third one, which main purpose is to determine the level of the global risk for making the missions of the Frigate impossible to accomplish by not taking into consideration the meteorological factors. The last part of the project is the innovation chapter where I analyse a list of equipments and technologies which can facilitate the*

naval architects' engeneering programmes for manufacturing modern warships. In this way, the Frigate may have a word to say among other nations. This project not only constitutes a process of self-development, but it can also contribute to a modernization strategy of the Frigate.

9. Maritime Transport of Goods Has Registered a Drop According to Global Restrictions Imposed by the Pandemic

Author: Robert-Flavius DUSA, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Conf univ. Dr. Romeo BOȘNEAGU

Abstract: *Most of the european states: Malta, Italy, etc have registered massive drops. In Denmark and Sweden the decay was minor and in Norway it was great.*

10. Transit of the Suez Canal With the Container Ship Cma Cgm Volga

Author: Adriana GAVA, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Cpt. Ş.L. univ. Dr. ing. Sergiu ȘERBAN

Abstract: *Transiting the Suez Canal is always an important manoeuvre for every seafarer around the world. It implies a great situational awareness, challenging the seaworthiness of the vessel. The whole bridge team must ensure the safe passage of the vessel whilst reducing incidents and accidents. This project reflects the vessel CMA CGM Volga transiting the Suez Canal on her way from the Suez Anchorage until berthing at Port Said.*

11 Man Overboard. Case Study - The Manouver of Man Overboard Using Williamson's Turn.

Author: Bogdan-Gheorghe GEORGESCU, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Cpt. Ş.L. univ. Dr. ing. Sergiu ȘERBAN

Abstract: *I chose to make this work because this subject is very important and must be known by any seafarer or person working on board the ship. I hope to be able to bring some useful information and thus make known how any person should act in the event on a man falling into the water. The better we know what to do on board the ship, the faster we can save the life of the fallen person overboard.*

12. VLCC Vessels Navigating in the Straits of Malacca and Singapore Author: Andrei-Geanin HÎNCU, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Cpt. Ş.L. univ. Dr. ing. Sergiu ȘERBAN
Abstract: *The Malacca and Singapore Straits are the primary routes for vessels plying their trade between the Far East, the oil rich states in the Middle East and all the way to Europe. Currently, the Straits of Malacca and Singapore bear more than 100,000 vessel movements per year. The large number of ships sailing through these straits means more risk, especially when such ships are concentrated at chokepoints. The passage of a loaded VLCC through the Malacca and Singapore Straits is a lengthy and carefully planned operation. The level of risk is increased due to many factors including: the traffic density, proliferation of fishing and other small vessels, draught and under keel clearance, tidal streams, length of operation, maneuverability and ability to evade actions of other vessels.*
The Malacca and Singapore Straits remain the key chokepoints of oil trade to and in Asia.

13. Peculiarities of Navigation in the Ice Area
Author: Cristian ITU, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Cpt. Ş.L. univ. Dr. ing. Sergiu ȘERBAN
Abstract: *The paper presents rules, indications and risks regarding navigation in areas where the sea is covered with*

ice. We will find out how to find out if there is an area full of icebergs and what are their peculiarities. Navigation in the polar areas is indicated only for ships with a specific construction and with precise information regarding the weather and the accuracy of the location of the icebergs. One of the most common incidents is the deposition of ice on board the ship caused by cold winds and which influences the stability of the ship.

14. Transport of Dangerous Goods

Author: Marian-Alexandru LUNGOCI, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Cdor. conf. univ. Dr. ing. Dinu ATODIRESEI

Abstract: *The international transport of dangerous goods on land is governed by agreements drawn up by the relevant international bodies. They are regularly updated to keep pace with technical progress and improve safety.*

15. Maneuver on Bad Wheder on Tanger Med

Author: Cristian MITREA, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Cpt. Ș.L. univ. Dr. ing. Sergiu ȘERBAN

Abstract: *The activity on board the ship is greatly influenced by the weather. In conditions of calm weather, sailing takes place in complete safety, but when the weather becomes bad (strong wind, high waves, precipitation, low visibility, etc.) the life of sailors is extremely difficult, maintaining the vitality of the ship is difficult. Rapid changes in the atmosphere have a special influence on the state of the sea. There is a strong transfer of kinetic energy materialized by the degree of agitation of the sea. In the hydro-meteorological discipline were presented in detail the climatic elements (temperature, pressure, humidity,*

wind, precipitation, etc.) and meteorological phenomena (fog, low visibility, etc.) with an impact on navigation.

16. Ship-to-Ship Transfer Operations

Author: Silviu-Orlando OȚELEANU, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Cpt. Ș.L. univ. Dr. ing. Sergiu ȘERBAN

Abstract: *An STS transfer operation is an operation where crude oil or petroleum products are transferred between seagoing ships moored alongside each other. Such operations may take place when one ship is at anchor or when both are underway. In general, the expression includes the approach maneuver, berthing, mooring, hose connecting, safe procedures for cargo transfer, hose disconnecting, unmooring and departure maneuver. The STS transfer of crude oil and petroleum cargoes has become common practice. Experience gained from these regular operations has proved that STS transfers are safe given the use of suitable equipment and compliance with proper procedures, including suitable weather and sea condition operating limits. When organizers are planning an STS transfer operation the should ensure that the ships to be used are compatible in design and equipment; that they comply with the various recommendations included in Ship-to-Ship Guide Operations; and that mooring operations, hose handling and communications can be conducted safely and efficiently. For all STS transfer operations each Master remains at all times responsible for the safety of his own ship, is crew, cargo and equipment and should not permit safety to be prejudiced by the actions of others. Each Master should ensure that the procedures recommended by the Ship-to-Ship Guide Operations are followed and, in addition, that internationally accepted safety standards are maintained. In this regard, the most prominent international safety manual in*

use for cargo handling advice is the ISGOTT (International Safety Guide for Oil Tankers and Terminals).

17. Passing Panama Canal

Author: Ilie Gabi POPESCU, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Cpt. Ş.L. univ. Dr. ing. Sergiu ŞERBAN

Abstract: *The current presentation contains the principal regulations for safe navigation and rules to be follow during transit of Panama Canal by all ships.*

18. Management of Pollution Sources on Board a Chemical Tanker

Author: Mihai Alexandru SCARLAT, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Cdor. conf. univ. Dr. ing. Dinu ATODIRESEI

Abstract: *The paper presented will show information regarding the integrated management of pollution sources on board a chemical tanker, all the emergency procedures to be followed in case of a pollution and also different kind of emergency or routine integrated management plans.*

19. Management of the Container Ship for Entering the Port of Constanța

Author: Alexandru Nicolae TANASĂ, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Comandant (Rector) Cdor conf. univ. Dr. ing. Alecu TOMA

Abstract: *Managing a ship to enter the port is always a process that must be very well planned and followed exactly. In order for a container ship to enter a port, the watch crew must first be trained in the knowledge of the port with he main characteristics of interest, knowledge of the area for the berth,*

working procedure with local authorities, communications with VTS Constanța, with the towing and the piloting service, etc. The responsibility is of course the commander, the navigation team must constantly support him and provide the best information during the maneuver so that the commander is constantly informed of the progress of the maneuver and make the best decisions at the pilot's direction.

20. *The Maneuvering in the Malacca and Singapore Straits*

Author: Bogdan TÎRȘOAGĂ, Academia Navală „Mircea cel Bătrân", Constanţa

Scientific Advisor: Cpt. Ș.L. univ. Dr. ing. Sergiu ȘERBAN

Abstract: *The project "**The maneuvering in the Malacca and Singapore Straits**" deals with the aspects regarding the efficient use of the available systems on board in order to reduce the chances of accidents occurring into the SOMS. The work is structured in three different chapters. The first chapter is represented as an analysis of different legs of the straits, dangers to navigation, tides and currents and vhf channel reporting's. The second chapter consists of a description of an accident that occurred in the Precautionary Area near a port. The third chapter of the paper presents the personal opinion of the writer. The purpose of the paper is to bring attention to the need of understanding of safety and the actions that can lead to devastating events.*

21. Study on Ship Registration, Rectification and Detention Procedures

Author: David BAICOIANU, Academia Navală „Mircea cel Bătrân", Constanţa

Scientific Advisor: Cpt. Cdor conf. univ. Dr. ing. Sergiu LUPU

Abstract: *The project "**Study on ship registration, rectification and detention procedures"** it sets out the conditions to be*

complied with in order to avoid maritime incidents of any kind, from conditions relating to the ship's resistance structure, life-saving equipment, fire safety and to certification and minimum standards for equipping ships. Here are some of the specific and most important procedures followed by the control of the state of the region and of the ship in order to ensure a safe climate. Port State Control (PSC) is the inspection of foreign ships in national ports for the purpose of verifying that the condition of the ship and its equipment complies with the requirements of international conventions and that the ship is equipped and operated in accordance with applicable international law. The project is a study on the detailed inspection carried out on board the ship Zim Los Angeles in the port of Hong Kong and presents the main aspects verified by PSC inspectors during this inspection, along with documents, checklists used in the inspection for various-equipment navigation, as well as the final report of the PSC.

22. The Analysis of a Maritime Security Operation on Board a Frigate Type T22 and of the Structure of a Group Ro Fnos Was Carried Out Author: George Cătălin BICHIȘ, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: Comandant (Rector) Cdor conf. univ. Dr. ing. Alecu TOMA
Abstract: *The project is an analysis of a maritime security operation on board a frigate type T22 and of the structure of a group ROU SOF was carried out, whose role is to carry out boarding missions to order. I chose as a reference ship the frigate F221 REGELE FERDINAND. Under national command or within the North Atlantic Alliance, F221, can carry out search and rescue missions at sea (SAR), maritime interdiction operations (MIO), the subject I have chosen for my work, the execution of air and naval surveillance, participation to humanitarian missions, transport of materials and personnel in*

the theaters of operations, naval diplomacy activities, participation in evacuation of non-combatant personnel.

23. Maneuvering the Ship With Damage to the Engine in Bad Weather

Author: Florin Bogdan BUCIUMANU, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Cpt. Ş.L. univ. Dr. ing. Sergiu ŞERBAN

Abstract: *In this project I explained the maneuver of the ship with damage to the engine, the measures taken on board in these situation and a case study.*

24. MEDEVAC of a Crew Member Suspected of COVID-19

Author: Marin BUZATU, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Cpt. Cdor conf. univ. Dr. ing. Sergiu LUPU

Abstract: *In today's global pandemic situation I will describe the MEDEVAC procedure of a crew member suspected of COVID-19.*

In order to protect the other crew members on board, the patient previously kept isolated will be transferred to shore by helicopter. A suspect case requiring diagnostic testing is generally considered to be: -a patient with acute respiratory illness (fever and at least one sign/symptom of respiratory disease (e.g. cough, shortness of breath), and with no other set of causes that fully explains the clinical presentation and a history of travel to or residence in a country/ area or territory reporting local transmission of COVID-19 during the 14 days prior to the onset of the symptoms or - a patient with any acute respiratory illness and having been in contact with a confirmed or suspected COVID-19 case during the 14 days prior to the onset of the symptoms.

25. Mooring Manuvre and Loading on SBM

Author: Ioan-Gabriel CERNAMORIȚ, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Cpt. Ş.L. univ. Dr. ing. Sergiu ȘERBAN

Abstract: *This document describes the mooring maneuver and loading at SBM. The document is structured in 3 chapters. Chapter 1 describes the characteristics of the ship and the SBM. Chapter 2 is characterized by the operation of the SBM, the anchoring arrangement, the cargo transfer system as well as the description of the loaded cargo. In Chapter 3 we have a case study, which describes how to prepare the ship for mooring, the mooring to SBM how it is done and the special conditions encountered. The document ends with personal conclusions.*

26. The Management of Human Errors on board Ships

Author: Titel Nicolae CHISA, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Cpt. Ş.L. univ. Dr. ing. Sergiu ȘERBAN

Abstract: *This present paper aims to study the human errors onboard ships and to present the significance of the management of risk, and why this activity is so important. Thus, the first chapter addresses the management of risk, the second and third chapters deal with the management of watch team regarding the prevention of human errors onboard ships. Finally, the last chapter includes the usage of AMOS (Asset Management Operating System) QMS soft regarding the prevention of risks onboard ships.*

27. Ship Maneuveringthrough the Suez Canal

Author: Liviu Gabriel CHIVU, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Cpt. Ş.L. univ. Dr. ing. Sergiu ȘERBAN

Abstract: *The study ahead high lights the total amount of time required for transiting the Suez Canal with a Container Ship named „CMA CGM Volga" of 10622 TEU's, as well as all the procedures followed to successfully complete this maneuver in special conditions. The results are show in that the total amount of time was 10 hours and 43 minutes, and all the procedures were followed as per all the requirements and regulations of Suez Canal. The personal conclusion highlights that the Suez Canal transits a maneuver which involves a lot of effort and focus from the bridge watch keeping crew as well as the other crewmembers of the vessel. The watch keeping crew has to provide extra focus to navigation conditions inside the Canal as well as the Pilot recommendation.*
Keywords: *Suez Canal, Transit, Container Ship, Pilot, Anchor, Chart, Time, Procedure, Regulation.*

28. Pollution on ROPAX Ships

Author: Mariana-Lavinia CIOCIA, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: Cdor. conf. univ. Dr. ing. Dinu ATODIRESEI

Abstract: *This project - "**Pollution on Ro-PAX ships**" - aims to conduct a detailed analysis of the specifics of RoPax ships, focusing on systems that pollute ships of this type and highlighting measures to prevent and combat pollution of the marine environment. The paper is structured in three distinct chapters. First chapter of the paper describes the generalities of Ro-Ro type ships. The ships have particularities that are not found in the construction and specificity of other ships due to their main destination, namely the transport of road vehicles, on wheels or tracks, with loading-unloading horizontally.*

29. Bad Weather Navigation with A 162,397 Tdw Ship in the Bay of Biscay

Author: Alexandru Mihai GHEORGHE, Academia Navală „Mircea cel Bătrân", Constanţa

Scientific Advisor: Comandant (Rector) Cdor conf. univ. Dr. ing. Alecu TOMA

Abstract: *In this project i will present my experience on board of oil tanker Miltiadis M II, when we were in bay of biscay. The project will describe the vessel, the voyage, bay charactersitics and the problems occured on board of this vessel due to the force of the waves and the strong wind. Will be presented also what restrictions master takes after some damages taken by the vessel.*

30. Study of ship survival capacity

Author: Marian Alexandru LUNGOCI, Academia Navală „Mircea cel Bătrân", Constanţa

Scientific Advisor: Cpt. Cdor conf. univ. Dr. ing. Sergiu LUPU

Abstract: *The existence of human life on the sea is based, first of all, on the maintenance of the vitality of the ship and only on the possibility of using some means of rescue. The purpose of the IMO is to provide a global system, which is indifferent to where people fly the search and rescue services (SAR) are worthwhile. The high-altitude rescue was in the attention of the ship-owners, but from the beginning of the sea transport, it was, initially, very regulated by land, land by land, by land and by land.*

31. The Assessment of the Offshore Solar Energy Potential in the North-Western Part of the Black Sea and the Influence on Recreational Boats with Hybrid Propulsion

Author: Tiberiu-Viorel MOISE, Academia Navală „Mircea cel Bătrân", Constanţa

Scientific Advisor: Cdor. conf. univ. Dr. ing. Dinu ATODIRESEI

Abstract: *The purpose in the paper I made is presenting the main theoretical and practical aspects related to solar energy. I colect the hydro-meteorological parameters on a 10 years period from 3 meteorological stations (Constanta, Mangalia and Tuzla) witch are situated in the northwest of the Black Sea. This graphs can couse anticipation of the possibility for the recreational boats with hybrid propulsion to make early decisions before entering the northwest area of the Black Sea. A hybrid vessel on the northwest coast of the Black Sea can retrieve statistical data underlying in my work or at least take conclusions from these data that highlights the main periods of time that is possible not to sail under optimal meteorological conditions.*

32. Analysis of the Contribution of the Human Factor to the Safety of Life at sea on Passenger Ships

Author: Ionela MUȘAT, Academia Navală „Mircea cel Bătrân”, Constanţa

Scientific Advisor: Prof. univ. Dr. Florin NICOLAE

Abstract: *An accident can be defined as the material and moral damage of a person, object or environment resulting from an unintentional or unexpected incident. Accidents at sea are defined as unwanted incidents which results are death, injury, loss of ship, damage to ship or cargo, damage to equipment or damage to the environment. Although there are numerous accident analyzes on cargo ships in the literature, the number of accident analyzes and safety assessment studies on passenger ships remains low. The main reason is that accidents involving passenger ships are less common than accidents involving cargo ships.*

33. Issues Associated with Emergency Management of Passenger Ships

Author: Andreea NEACȘU, Academia Navală „Mircea cel Bătrân", Constanţa

Scientific Advisor: Prof. univ. Dr. Florin NICOLAE

Abstract: *Often a passenger ship raises various and complex issues related to emergency preparedness. Practice shows that the emergency evacuation of a passenger ship is the most important issue in the event of an accident. Scenes such as the Titanic disaster entitle us to understand the importance of the provisions of the International Convention for the Safety of Life at Sea (SOLAS). The main purpose of the work is to find an optimal route for the safe evacuation of the crew and passengers. Mathematical programming is used in this paper, a method also analyzed from a cost perspective.*

34. Shipping Strategies in Dry Bulk and Tanker Markets: Specialisation Versus Diversification

Author: Cristian Marian PAULET, Academia Navală „Mircea cel Bătrân", Constanţa

Scientific Advisor: Conf. univ. Dr. ing. Mihail PRICOP

Abstract: *Recent history has shown that shipping cycles have gotten shorter and more volatile. Unprecedented highs in freight rates have recently been witnessed followed by market free falls, exposing shipowners/managers to ever increasing amounts of risk. Traditionally, an investor in the maritime transportation industry would seek to spread this risk by diversifying the assets in which he invests, which for the purpose of this dissertation are dry bulk and tanker vessels. Ships are therefore considered assets which form a portfolio and the degree to which a portfolio is diversified or specialized depends on the type of vessels included in a fleet. Furthermore, vessels may be fixed on the spot market or the time charter market, which affects the volatility and the earnings that an*

investor would expect. Will multiple energy and decarburization transformations dominate the industry agenda in 2021?

35. Ship Manoeuvring on the Danube River

Author: Adrian Claudiu RACHIERU, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Comandant (Rector) Cdor Conf. univ. Dr. ing. Alecu TOMA

Abstract: *The study aims to describe the maneuvering of ships on the Danube river which have certain particulars that are determinates by the geographical characteristics of the respective river.*

36. NS MIRCEA Trip Planning Study to Participate in the Tokyo Olimpics

Author: Cristiana-Corina RADULESCU, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Cpt. Cdor conf. univ. Dr. ing. Sergiu LUPU

Abstract: *The paper presents the study on NS Mircea's travel planning in the hypothetical attempt to participate in the Tokyo Olympics in Japan, having as main objective, the diplomatic approach, the training of seafarers and last but not least ways to raise funds. The main value of the diplomatic mission will be in the foreground, the promotion of Romania's image as well as the openness to mutually beneficial economic collaborations with the governments of the visited states. In order to reach one of the most important stages of this project, we also brought into discussion the diplomatic connections because they have a well-established role in the diplomatic approach of the mission of this trip. For the realization of the route we used specialized programs in the optimization of the trip, this being calculated in due time in order to better respect the real conditions. The*

part of the voyage involves planning the route, estimating the distances and times required, the stops required to meet diplomatic objectives, as well as for the maintenance and supply of the ship or even changing the crew. It is also necessary to analyze the risks and potential hazards that may occur at sea from a meteorological point of view. On board the ship there is a permanent professional training of the cadets and the permanent crew on board the ship, starting from the moment they board the ship and it leaves the harbor. The trip takes place between 01.02.2021 until 21.07.2021. Departure is from the of Constanta harbor and the final destination is in Japan harbor of Tokyo. The voyage route includes 19 ports in 16 countries. In each of these ports, events will be organized in collaboration with the Romanian diplomatic missions in the respective countries. The paper is structured on 4 chapters, each chapter being structured in the order of the proposed events:
Chapter I NS Mircea- A page of history of the Romanian Navy
Chapter II NS Mircea- Tokyo Mission 2021 - Diplomatic approach
Chapter III NS Mircea-Tokyo Mission 2021 - Navigating personnel training
Chapter IV NS Mircea- Tokyo Mia21 2021 - Fundraising

37. The Study on the Management of Maintenance Activities on Board Ships

Author: Dumitru-Robert VĂDUVA, Academia Navală „Mircea cel Bătrân”, Constanţa
Scientific Advisor: Lt. Cdor Ș. L univ. Dr. ing. Alexandru COTORCEA

Abstract: *Logistics encompasses aspects of military activities that deal with aspects such as: design-development, procurement, storage, transportation of materials, distribution, maintenance, evacuation and downgrading of materials,*

equipment, in the broadest sense - including ships, aircraft, vehicles, armaments, ammunition, fuels , etc., staff transport, procurement / provision of services and support of the medical and health service. The military logistics system is one of the components of the National System and consists of logistics structures organized hierarchically, at the level of each echelon, with the mission of providing logistical support and implementation of policies in this area. The logistics of military actions represent the science of ensuring the material and assistance conditions necessary for the successful accomplishment and conduct of military actions. In relation to the nature of military actions, the logistics of military actions include the logistics of armed struggle and the logistics of military actions other than war.

SISTEME ELECTROMECANICE NAVALE

BIROUL SECŢIUNII
Preşedinte: Prof. univ. Dr. ing. Beazit ALI
Membri: Ș.L. univ. Dr. ing. Ionel POPA
Lt. cdor. Ș.L. univ. Dr. ing. Daniel MĂRĂȘESCU

1. Tank of Petroleum and Chemical Products of 47,300 tdw. Some Research on the Efficiency of the Propulsion Installation on the Basis of the Fuel Reduction Criterion

Author: Gheorghe CODOI, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Ș.L. univ. Dr. ing. Ionel POPA

Abstract: *The adoption by IMO of mandatory reduction measures for all ships from 2013 and onwards will lead to significant emission reductions and also a striking cost saving for the shipping industry. By 2020, up to 200 million tonnes of annual CO2 reductions are estimated from the introduction of the EEDI for new ships and the SEEMP for all ships in operation, a figure that, by 2030, will increase to 420 million tonnes of CO2 annually. In other words, the reductions will in 2020 be between 10 and 17%, and by 2030 between 19 and 26% compared with business as usual. The reduction measures will also result in a significant saving in fuel costs to the shipping industry, although these savings require deeper investments in more efficient ships and more sophisticated technologies than the business as usual scenario. The annual fuel cost saving estimates states a staggering figure of $20 to 80 billion by 2020, and even more astonishing $90 – 310 billion by 2030.*

2. Oil Tanker 110000 TDW. Modelling the Heat Transfer Process in the Lubrication System"

Author: Rareș-Mihai MIHALCEA, Academia Navală „Mircea cel Bătrân", Constanța

Scientific Advisor: Lt. cdor. Ș.L. univ. Dr. ing. Daniel MĂRĂȘESCU

Abstract: *The Diploma Project presents the engineering design of the engine's main engine lubrication system on board an 110,000 tanker tanker. dwt. For this, the Morning Swan ship is 2190 m long, 38 m wide and 11.4 m long. According to technical documentation, the propulsion engine used is a MAN B-W 6S70 MC-C marine diesel engine with a maximum continuous output of 11910 kW at 91 r.p.m. The engine is 2T (reversible) and has 6 in-line cylinders coupled directly to the propeller, the normal operation being made with heavy fuel. The piston stroke is 2800 mm and the diameter is 700 mm. The propeller is made of special brass with 4 blades at a diameter of 8200 mm, and there is also a spare propeller with the same characteristics.*

3. Container Ship of 14000 TEU. Design of the Heat Transfer Process in the Cooling System.

Author: Ionel MUZICHEARU, Academia Navală „Mircea cel Bătrân", Constanța

Scientific Advisor: Lt. Cdor. Ș.L. univ. Dr. ing. Daniel MĂRĂȘESCU

Abstract: *In chapter I was made a presentation of the survey ship after that was presented some general notions of the installation of the engine cooling water. Chapter II refers to forces acting on certain parameters of the ship in the sea, air that influences movement of the ship and its proper functioning. The method is a compilation between the analytical method, the method experimentation model basins trials and calculus becoming more powerful. Available programs cover a wide*

range of possible applications. Such a specialized program DELFT SHIP is used in this chapter. In chapter III was discussed in general about cooling found on board and explained so that their operation and in port. They are shown components elements of cooling systems.

4. Container Ship. The Main Propulsion Engine. Command, Control and Supervision of the Engine in RT / Flex Version, with the Determination of a Transfer Function

Author: Nicolae GHEORGHIȚĂ, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: Conf. univ. Dr. ing. Corneliu MOROIANU

Abstract: *In this project I would like to present some of the main particulars of the RT/ Flex engine. The main things that made this engine a little bit different from a conventional marine engine is the electronical control of the exhaust valve and injectors.*

5. Naval Steam Turbine Propulsion System. Analysis of Thermodynamic Cycle Parameters as well as Adjustable Stage for Curtis Turbine.

Author: Bogdan Laurențiu POPOVICI, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: Conf. univ. Dr. ing. Corneliu MOROIANU

Abstract: *By elaborating this master thesis I have proposed to deal with some essential aspects regarding the maritime steam turbines, their construction and regulation, especially the adjustable stage that serves the steam's expansion inside them. The main subject which can be found in the last chapter, is dedicated exclusively to the calculation and adjustment of the steam turbine that will be part of the chosen propulsion system, operating together with an internal combustion engine. To help the last part of the thesis, I built a Matlab program dedicated to*

an algorithm for calculating the adjustable stage, bringing innovations to the classical method while also reducing the time needed to adapt the calculation for future adjustments.

6. Corvet Ship. Main Propulsion Engine. Analysis of the Dynamic Behavior of the Piston Group.

Author: Marcel TERCI, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Conf. univ. Dr. ing. Corneliu MOROIANU

Abstract: *In the diploma dissertation, I will present the corvette type project 1040 M. The main propulsion engine being ALCO 16V of 3286 HP. I will present aspects of the ALCO engine installation and maintenance but also the analysis of the dynamic behavior of the piston group.*

7. Ballast-Bilge Installation on A Bulk-Carrier Type Vessel. Command and Control of the Optimal Operation of the Installation. Automation of the Operation of Bilge Separators.

Author: Razvan-Ioan ADAM, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Prof. univ. Dr. ing. Beazit ALI

Abstract: *A variety of factors need to be taken into consideration for smooth and efficient operation of oily water separators on ships. Maritime professionals working on ships must take special care and responsibility while handling this important engine room machinery. To minimize the oily content in the bilge water, MARPOL has a regulation under "ANNEX I" which limits the oil content in the bilge water that vessels can legitimately discharge into the sea. Based on simple working principles and designed to be reliable and less labor intensive, oil water separators are however troublesome and demanding to engineers due to later's lack of knowledge, proper training, operational negligence and sometimes apathy.*

8. LNG Ship. The Main Propulsion Engine. Analysis of the Dynamic Behavior of the Piston Group.

Author: Baris BAYRAM, Academia Navală „Mircea cel Bătrân", Constanţa

Scientific Advisor: Conf. univ. Dr. ing. Corneliu MOROIANU

Abstract: *In this project we will discuss about some characteristics of an LNG vessel, it's type of Main Propulsion Engine, maker of the engine, the use of LNG vessels in world wide transportation, ship's forward propulsion resistance, analysis of dynamic behavior of the piston group.*

9. The Calculation of the Anchor - Binding System to a Container ship. Command and Control of the Optimal and Safe Operation for this System

Author: Dragos Vasile GURLUI, Academia Navală „Mircea cel Bătrân", Constanţa

Scientific Advisor: Prof. univ. Dr. ing. Beazit ALI

Abstract: *The anchor – binding system consists of several parts, mechanisms and devices designed to carry out the ships anchoring maneuver. This maneuver is executed with the purpose of ships standing in the open sea, berths or harbors, to anchor in different situations, to turn around the ships in different situations, to reduce the haviness and stop the ship in case of dangerous hazards. All the ships need to have in its systems an anchorage – binding system, usually dispozed at the ships forward, on the main deck, and needs to fulfill several conditions.*

10. Marine Engine Propulsion and Optimization

Author: Adrian PĂUN, Academia Navală „Mircea cel Bătrân", Constanţa

Scientific Advisor: Ş L univ. Dr. ing. Ionel POPA

Abstract: *This paper presents the analysis of an engine propulsion system of a container ship during maneuvering or*

underway and optimization. Also, here is presented the results of an optimized EEDI calculation for CO_2 emissions for the given years, based on the ship's particularities. It is also mentioned a new technology, a new method to discuss, for power optimization and distribution of a ship and its engine.

11. Optimization of the Propulsion System for an LNG / LPG Tanker, in Order to Reduce Fuel Consumption.

Author: Lucian STOICA STANCIU, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Prof. univ. Dr. ing. Beazit ALI

Abstract: *In my dissertation I will present in the first chapter the general presentation of a BW NANTES ship type LNG tank 45,000 tdw. It will include the following data: general data, identification, construction, owner, tonnage and dimensions, energy installations on board. In chapter two I will present the characteristic study of propulsion which will include: the presentation of the program and the chosen model, the presentation of the result of the program. In chapter three I will present: the choice of the propulsion system, the propeller parameters, the presentation of the main engine MAN B&W 6S70MC-C. In this project I will present all the measures taken in order to reduce fuel consumption.*

12. Calculation of the Gas Turbine Propulsion System

Author: Robert Cristian STANCIU, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Conf. univ. Dr. ing. Corneliu MOROIANU

Abstract: *Following the analysis of the cycle of the gas turbine installation, the fuel flow and the air flow required for combustion were determined, as well as the flue gas flow and the specific fuel consumption resulting from the combustion. Required to drive the compressor as well as the number of steps.*

13. Combustion Modeling of an Naval Heavy Oil-Water Emulsion Droplet

Author: Doru Ionel FURCA, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Conf. univ. Dr. ing. Corneliu MOROIANU

Abstract: *The vaporization and combustion characteristics of an heavy oil-water emulsion droplet are investigated by analyzing the multicomponent heat and mass transport processes in the gas phase and the gasification of an immiscible liquid mixture at the gas-liquid interface.*

OPERAREA ŞI CONDUCEREA SISTEMELOR ELECTROENERGETICE NAVALE

BIROUL SECŢIUNII
Preşedinte: Prof. univ. Dr. ing. Vasile DOBREF
Membri: Cpt. Cdor conf. univ. Dr. ing. Florenţiu DELIU
Ș.L. univ. Dr. ing. Paul VASILIU

1. "Wet Open Loop" Exhaust Gas Cleaning System

Author: Marius-Cristian GHIAURU, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Prof. univ. Dr. ing Vasile DOBREF
Abstract: *An EGCS uses seawater to remove sulphur oxides, commonly known as SOx from the exhaust gas stream. It use a technique which has been used on land for around 100 years, but is relatively new to marine industry, whereby the exhaust gases are cleansed by a seawater spray in a process commonly known as „scrubbing".*

2. Optimization of Overloads in the Naval Electric Power System with Power Management System

Author: Tiberiu-Cosmin GRASU, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Prof. univ. Dr. ing Vasile DOBREF
Abstract: *The power management system is controlled by two redundancy controllers (abbreviated RCU) located in switchboards FS-41 and FS-44, which are located in the main engine control room (ECR). Controllers are also interfaced by a redundant port with other arrays, which are remote controlled IO modules. The principles of the arrangement of the energy management system on board the ship are presented*

in the figure below. The on-board energy management system performs the following main functions:
- Generator control and monitoring;
- Switching on / off depending on the load applied on the generator;
- Restart in case of blackout;
- Net frequency control and load distribution;
- Blocking the start of heavy consumers;
- Preferential triggering at low frequencies.

3. Current Trends in the Propulsion of Modern Ships. Performance of Propulsion Systems POD'S and AZIPOD Type
Author: Adrian Florentin MOISE, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Cpt. Cdor conf. univ. Dr. ing. Florenţiu DELIU
Abstract: *The paper presents aspects and trends in ship propulsion. Two propulsion system shaves been reviewed: pod-propulsion and azimuthons thrusters. Pod – propulsion is an industry standard today in passenger cruise and has been applied also for product tankers, icebreakers and offshore vessels. Space saving is obvious, big propulsion motors are moved from the tank top outside the ship. An azimuthons thruster replaces a conventional propulsion and rudder steering system, which perform both the propulsion and steering function.*

4. Asynchronous Machine Speed Control, with Calculation Blocks for Changing Supply Voltage and Frequency
Author: Gheorghe Ciprian ŢÎRMONEA, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Cpt. Cdor conf. univ. Dr. ing. Florenţiu DELIU

Abstract: *Varying parameters in the orthogonal model of asynchronous machine does not influence achievement of prescribed final values. Control system is provided with information about shaft speed hence regulators adjust speed within prescribed limits by means of voltage and frequency. Response times are more often influenced by inductance values and less by resistance values. Variation of rotor resistance influences values of the electromagnetic torque and the variation of the stator resistance changes the value of the supply voltage. Scalar control systems are influenced by errors in determining the parameters and for this reason the voltage and frequency must be changed at the end of the adjustment period, so as to achieve the prescribed value for torque. For this reason, a speed transducer is required and all asynchronous machine control schemes are provided with speed regulators.*

5. Automatical Engagement of a Backup Power Supply in the Naval Electrical Power Systems.

Author: Marius Cosmin TUDORACHE, Academia Navală „Mircea cel Bătrân”, Constanţa
Scientific Advisor: Ş.L. univ. Dr. ing. Leon PANĂ

Abstract: *This paper addresses the issue of the automatic operation of a backup power source in naval systems(AAR), for the uninterrupted supply of electricity to high demanding consumers and it has a number of specific issues related to the design and implementation of such a system. The paper shows undesirable effects that may be sustained by the consumer in case of accdiental power outages or in other cases where the continuity of electricity supply is adversely affected. It proposes a concrete solution for a system of the AAR type. Finally, the paper presents a series of conclusions that recommend usage in applications designed to continuously supply electricty to consumers.*

6. Increasing Energy Efficiency By Using Variable Speed Drives Author: Andrei TIMOFTE, Academia Navală „Mircea cel Bătrân", Constanța

Scientific Advisor: Cdor Conf. univ. Dr. ing. Paul BURLACU

Abstract: *In industrial processes over 70% of electricity consumption is attributed to electric motors and over 60% of this energy is used to drive devices such as pumps, compressors, fans, etc. Pumping systems are responsible for almost 20% of the electricity used by electric motors. Traditionally, flow or pressure control is done by mechanical methods using valves and taps, the engine running continuously at maximum speed. As maximum flow is not always required, a speed control system offers the possibility of energy savings of up to 70%.*

Use of variable speed drives in pumping systems

1. Operating characteristics of a pumping system.

Centrifugal pumps have the widest distribution covering a very wide range of powers, flows, pressures, being used in many applications. The operation consists in the aspiration of a fluid from a level A and the discharge at a level B, through a piping system called "network".

2. Flow regulation by changing the network characteristics.

One of the classic methods of flow regulation is the modification of the network characteristic, by introducing a regulation valve in the discharge circuit of the pump. As the pump speed is constant, the pump characteristic H = f (Q) does not change. Closing the control valve changes the characteristic curve of the network due to pressure losses.

3. Flow adjustment by changing the speed.

In operation, there are situations in which the operation of centrifugal pumps is required at values other than the flow rate Q and the pumping height H, than the nominal ones.

The most economical way to achieve this operation is to change the speed of the pump rotor.

INGINERIE ŞI MANAGEMENT

BIROUL SECŢIUNII
Preşedinte: Prof. univ. Dr. ing. Florin NICOLAE
Membri: Lt. Cdor Conf. univ. Dr. ing. Alexandru COTORCEA
Ș.L. univ. Dr. ing. Rita AVRAM

1. Analysis of the Quality of Logistics Services

Author: Petronela ADINCU, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Cpt. Cdor. conf univ dr. ing. Filip NISTOR
Abstract: *The quality of logistics service performance is an important key marketing component that helps create customer satisfaction. Both corporations and researchers are becoming increasingly aware of the strategic role of logistics service in a firm's overall success. Anecdotal evidence from firm such as Dell and Federal Express suggest that logistics excellence has a significant impact on revenue and profitability. Logistics excellence has become a powerful source of competitive differentiation with diverse marketing offerings of world-class firms*

2. Carbon Footprint Estimation Method for the Shipping Supply Chain

Author: Nicoleta-Cristina BACIU, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Prof. univ. Dr. ing. Florin NICOLAE
Abstract: *This paper proposes a method for the calculation of the carbon footprint of international supply chains, focusing on the maritime sector. Using data from a survey of major companies comparing more than 25 import supply chains*

involving UK, France and Belgium, the main shipping characteristics were identified. This approach enabled a comparison to be made between each supply chain segment, expressed in grams of oil equivalent per kilogram me of product and grammars of CO2 equivalent per kilogram me of product. On one of the longest trips for imports from the southern hemisphere, a potential reduction of up to 20% in energy use was identified by considering the use of different vessels and routes. The approach adopted has limitations due to the limited number of supply chains for which it was possible to collect complete data from origin to destination. Therefore only typical international maritime routes, common products, major container lines and vessels of average size have been considered.

3. Analysis of Increasing Energy Efficiency in Short sea Shipping Author: Nicolae-Emil BĂLAN, Academia Navală „Mircea cel Bătrân", Constanța

Scientific Advisor: Prof. univ. Dr. ing. Gheorghe SAMOILESCU

Abstract: *Short sea shipping (SSS) can be defined as the movement of goods and passengers by sea between ports that do not involve an ocean crossing. Short sea shipping now accounts for almost 40% of all goods moved to Europe, and volumes have increased over the years, while market share has been stable. In 2014, total short sea transport in the EU-28 accounted for almost 1.8 billion tones of freight and accounted for 60% of EU-28 maritime freight transport. Bulk transport is the distribution of unpackaged or large packages of raw materials and bulk goods and can be divided into liquid bulk, such as crude oil and dry bulk, such as cereals, coal and ore. The former accounted for almost half (46%) of total short sea freight to and from the EU-28. Dry mass is the second type of goods with 20%. Bulk transport is therefore a very important*

part of European water transport. Ships used for high-speed transactions are often smaller versions of deep-sea commercial vessels. Many dry cargo carriers can carry different types of cargo on different journeys. A ballast leg for maneuvering a ship in the position for the next port of loading is very common in bulk transport due to the global geographical distribution of production and consumption regions. Moreover, some of the common bulk goods, for example cereals, are affected by seasonal demand fluctuations. All of these factors demand high demands on the ship operator in a shipping company to find profitable combinations of missions. The main role of the ship operator is to plan the ship's voyage as well as to appoint and train port agents on a daily basis. The port agent is responsible for managing transport and freight in ports on behalf of shipping companies. As a result, good market knowledge has traditionally been needed among short-haul shipping companies, as well as organizational skills such as flexible ship positioning, minimizing ballast legs and avoiding porting on ports on weekends. or holidays.

4. Industry 4.0. Logistics chain management

Author: Gabriela Mădălina BILU, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: Cpt. cdor. conf univ dr. ing. Filip NISTOR

Abstract: *In the age of industrial digitalization, companies are increasingly investing in tools and solutions that allow specific processes, machines, employees and even products themselves, to be integrated into a single network cohesive for data collection, data analysis, evaluation of company development and improving the performance of the organization and the supply chain. To study the impact of the Industry 4.0 concept on the organization, the Porter supply chain model can be used, which is particularly useful when analyzing corporate areas that have a key role in creating value for their customers.*

As the primary impact coming from the Industry 4.0 concept is perceived in value creation processes and has so far had the greatest transformative effect in this area, the state model presented in the case study can be considered appropriate. The project emphasizes the importance of the Industry 4.0 concept, starting from a brief analysis of the literature in which this topic was analyzed in more detail. In the second part of this chapter was presented Porter's theory that relates the supply chain to the concept analyzed.

5. An Overview of the Romanian Renewable Energy

Author: Claudiu-Andrei CERCHIA, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: Prof. univ. Dr. ing. Gheorghe SAMOILESCU

Abstract: *Renewable energy sources are gaining an increasing importance in the distribution system and they are predicted to play a more important role in the near future. Over the last decade, the movement towards a greener world has intensified worldwide, and it is proposed that innovation and development go hand in hand with environmental protection. This paper contains a brief about renewable energy sources, advantages and disadvantages, then it will focus on Romania's most important renewable energy sources. Romania has a balanced and diversified energy mix. Our country benefits from important domestic energy resources, such as oil, natural gas and coal. Romania has a significant hydropower potential and sufficient uranium reserves for the supply of the Nuclear Power Plant in Cernavodă. Romania has invested and supported the development of renewable energy sources, such as wind energy, solar energy, biomass and energy produced in micro hydropower plants. The current energy mix is balanced, which can ensure in critical situations, caused either by extreme*

weather phenomena or operational reasons, a reasonable degree of energy security, both nationally and regionally.

6. Project Management in the Implementation of Port Constanţa Development Projects

Author: Daniela-Mihaela COSTICĂ PLĂCINTĂ, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Conf. univ. Dr. ing. Mihail PRICOP

Abstract: *The paper includes the steps and stages of implementing a European project. The case study describes the projects carried out between 2010 and 2020 in the Port of Constanta. The starting stages, the control of the works and the final results are described in the tables. The role of management is the basis for the completion or non-completion of the project. As I wrote in the paper, the Port of Constanta has several major projects underway to modernize the port infrastructure.*

7. Increased Efficiency of Logistics Services Through Streamlining and Optimizing the use of Storage Facilities and Tooling From Storage

Author: Andreea COZOȘ, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Prof. univ. Dr. ing. Beazit ALI

Abstract: *Following the concerns of existing national and international, the industrial companies were forced to develop and implement effective management methods specific production systems, in order to become leaner organizations. In any organization, these methods are the basic elements used in effective management of production systems, optimal allocation of resources necessary, optimizing production costs, eliminate losses and reducing the time between the receipt of customer orders and shipment to the final product.*

8. Analysis of Strategic Management Tools Applicable in Port Services

Author: Andrei CRISTEA N., Academia Navală „Mircea cel Bătrân", Constanţa

Scientific Advisor: Conf. univ. Dr. Cătălin POPA

Abstract: *Strategy and strategic management are two concepts that must not be mixed up. The process of strategic management includes, among others, the foundation and drafting of a strategy. Furthermore, strategy also represents an efficient means to adapt and answer to the requests of the external environment. Therefore, the application of an efficient strategic management process allows the organization to adapt to the external environment changes, and furthermore to the knowledge based management and organization. Strategy and strategic management are two concepts that must not be mixed up; as strategic management illustrates not only a process to form a strategy that overlays the organization's management system, but also a form of management based on strategy. It is my opinion that strategic management represents the processes of foundation, drafting, implementation and control-evaluation of a strategy that satisfy fulfilling the organization's mission in a continuously changing environment.*

9. Energy Management Analysis for a Port Enterprise

Author: Aysen CURTGEAFAR, Academia Navală „Mircea cel Bătrân", Constanţa

Scientific Advisor: Prof. univ. Dr. ing. Gheorghe SAMOILESCU

Abstract: *This paper deals with the relevance of analyzing the necessary development and of proposing a plan for research and remodeling the electrical infrastructures of port facilities. The ports are the interface of maritime transport and are integrated in the surrounding land. The energy management of a port area may be a great business opportunity for the port*

authority, which until now was not, involving different stakeholders who may benefit from service, including the same power utility company that benefits from the optimization and control of the energy flows.

10. Energy Efficiency in the Transport Sector in Romania

Author: Cristina Florentina DELU, Academia Navală „Mircea cel Bătrân", Constanța

Scientific Advisor: Prof. univ. Dr. ing. Gheorghe SAMOILESCU

Abstract: *Energy efficiency is at the center of all international strategies for smart and sustainable development and at the same time a transition to an efficient economy. Improving energy efficiency is one of the priority elements of Romania's energy strategy given the major contribution to achieving food security, ensuring sustainable development and competitiveness, saving energy resources and reducing greenhouse gas emissions. Currently, Romania has a wide range, but reduced in quantity, of primary sources and minerals of fossil nature such as oil, natural gas, coal, uranium and a usable potential of renewable sources. In order to contribute to the transition to a more efficient and sustainable European transport system, technological innovation must act on three main factors: vehicle efficiency (new engines and materials, design innovation), greener use of energy (fuels and new propulsion systems), better use of the network and more secure operations (computer and communication systems). This paper aims to analyze energy efficiency in the transport sector in Romania.*

11. The Role of Maintenance in the Logistics Process of Naval Forces

Author: Maria GHERGHIȘAN, Academia Navală „Mircea cel Bătrân", Constanţa

Scientific Advisor: Cpt. Cdor. conf. univ. Dr. ing. Filip NISTOR

Abstract: *Over the last 50 years, maintenance techniques have changed significantly. While maintenance was initially reactive only to the occurrence of failures, maintenance of government structures and reputable companies is a proactive activity. As a profession for a long time it was believed that maintenance is a field reserved only for traders, but the evolution of this activity has shown that this field includes the contribution of engineers and planners who manage this field. Within companies and government organizations that have a global expansion, maintenance is now seen as an integral part of an organization's operations because it has a significant impact on corporate and public profitability. Over time, experts in the field have also put forward the idea of progressive maintenance. They promoted all sorts of ideas that are representative of the status of maintenance within a company. In its earliest eras, maintenance was seen as a necessary evil. This chapter describes the role of maintenance in the logistics process of the Naval Forces considering the position of maintenance in relation to the organization of logistics management but also how to integrate maintenance in this process. In addition to the way of conception implemented in Romania, specific ways of other nations are also described.*

12. An Analysis of Lean Six Sigma in the Romanian Armed Forces

Author: Alexandra GHINGHILOSCHI, Academia Navală „Mircea cel Bătrân", Constanţa

Scientific Advisor: Prof. univ. Dr. Florin NICOLAE

Abstract: *The purpose of this Study is to analyze the application of Lean Six Sigma (LSS) in the Romanian Armed Forces, and more specifically, to provide examples for the Army, Navy, and Air Force using LSS. This research project discusses examples from other countries and analyzes the applicability of these models in the Romanian Armed Forces. Through the data that was analyzed, it was found that all three military branches have done a good job in implementing LSS. It was very difficult to find any data that mentioned negative aspects or things that could have been done differently when implementing Lean Six Sigma.*

13. The Impact of SARS-COV2 on Shipping Industry

Author: Andreea LEMNARU, Academia Navală „Mircea cel Bătrân", Constanţa

Scientific Advisor: Col. Conf. univ. Dr. Cătălin POPA

Abstract: *The coronavirus pandemic is currently affecting us on a global scale. It has had a significant negative economic impact on various sectors of the economy. It is important to recognize that the first sector to experience these effects was the shipping industry. The current downturn in production output is putting a significant strain on the shipping business, as it is inherently dependent on production output in order to secure cargoes. Continued and efficient shipping and port operations are crucial both for short term policy response to the Pandemic and for speedy and sustainable recovery. The decrease in production and consumption activities leads to a slowdown in maritime trade, which reduces shipping demand and port traffic and turnover. The number of reported total shipping losses of vessels over 100 gross tons (GT) declined in 2019 to 41 – the lowest total this century and a nearly 70 percent decline over 10 years.*

14. Distribution of Consumer Goods Computerization of the Integrated Logistics System. Sales Promotion.

Author: Laura MATCAS, Academia Navală „Mircea cel Bătrân", Constanţa

Scientific Advisor: Prof. univ. Dr. ing. Beazit ALI

Abstract: ***Logistics*** *is generally the detailed organization and implementation of a complex operation. In a general business sense, logistics is the management of the flow of things between the point of origin and the point of consumption to meet the requirements of customers or corporations. Every economic system has segments that produce products and consumers who need them. Between these segments is the distribution system. No matter how it functions, the role of the distribution system is to efficiently find consumers who need particular products and to ensure that they have access to buy them if they want. Unfortunately, many managers in the logistics department did not know how to take advantage of this new status of the activity they coordinate. In essence, they could not convince their superiors of the added value that logistics brings to both the efficiency and profitability of the company.*

15. Logistics in the Romanian Naval Forces

Author: Iuliana Silvia MIRON, Academia Navală „Mircea cel Bătrân", Constanţa

Scientific Advisor: Col. Conf. univ. Dr. Cătălin POPA

Abstract: *Logistics is the managerial science that deals with the planning, cooperation, coordination, operation, command and control of all material resources and services necessary to support the forces for the execution of military actions in time of peace and war. In the case of a multinational naval force, logistical support may be provided in the port, while stationed at the quay or in the district, during the march or while stationed at anchor. The realization of the logistic support in the port, includes the activities carried out by the specialized*

logistic bases arranged on land, in the direct support of the multinational maritime force.

16. Logistics Modelling in a Courier Company Using Anylogic

Author: Anamaria Georgiana MITRAN, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: Conf. univ. Dr. Andrei BĂUTU

Abstract: *This paper presents theoretical and practical aspects, analyzing the courier company and it's activity, the problems who needs to be analyzed and solved and the general way of solving them. The purpose of this paper is to highlight the modeling of logistics, as well as conducting a case study to highlight the current state of the courier company analyzed using the Anylogic program.*

17. Simulation of the Optimal Number of Equipments Used in A Terminal Using Ecological and Sustainable Concepts

Author: Georgiana MUDRAG, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: Prof. univ. Dr. Florin NICOLAE

Abstract: *Following the development of trade, ports have adapted to market requirements becoming commercial and industrial centers. Ports are considered logistics and distribution platform, viewed as intermodal nodes of supply chain networks. Ports need to consider loss elimination approaches and the sustainable approach. The design of the loss elimination system is the most important step in the handling of goods. The simulation was use to determine the optimal number of container handling equipment in order to increase the capacity to eliminate losses. Environmental damage from handling was addressed in this study and objectives were achieved.*

18. Resilience Framework for Seaport Infrastructure: Theory and Application

Author: Anda-Gabriela NICOLAU, Academia Navală „Mircea cel Bătrân", Constanţa

Scientific Advisor: Prof. univ. Dr. Florin NICOLAE

Abstract: *The efficient movement of goods is crucial to the economic growth of communities. This makes the existence of seaports essential for the marine transportation system. Due to their natural location, ports are continuously threatened by natural hazards such as wind action, which necessitates a continuous monitoring and assessment for their performance. The work presented here aims at assessing the resilience of ports against natural disasters. This is done by identifying the performance and the recovery rate of such infrastructure during the period following the event. The research commenced with gathering information about the port's main components that are influenced by natural hazards.*

19. Analysis of the Implementation of Solar Panels in Port Terminals

Author: Gabriel PATRICHE, Academia Navală „Mircea cel Bătrân", Constanţa

Scientific Advisor: Prof. univ. Dr. ing. Gheorghe SAMOILESCU

Abstract: *The theme aims to achieve the main benefits of implementing alternative energy use, by using solar panels in port terminals. The case study includes an analysis on a specific field and compares the amount of fossil fuel needed to develop an equal amount by using alternative energy. As humanity has faced a major crisis in the consumption of fossil fuels in obtaining electricity in the last twenty years, it has aggressively shifted away from fossil fuels despite alternative energy, such as solar energy, which is endless and non-*

polluting. compared to using other technologies such as hybridization or mildew.

20. Research on Naval Freight Transport in the Context of Global Logistics

Author: Dorina – Diana STRĂTULAT, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Cpt. Cdor conf. univ. Dr. ing. Alexandru COTORCEA

Abstract: *As world economies become ever more globalized and interlinked, international logistics and maritime (shipping and port) industries are experiencing challenges as well as enjoying greater business opportunities.*
Maritime Logistics, as the primary means of transporting parts and finished goods (viz., outbound logistics) on a global scale, has recently attracted increasing attention from academics. Maritime Logistics, however, is a term which is not easy to define, and its precise definition, scopes and roles within the global supply chain network are yet to be established. In an effort to gain a better understanding of such matters, it might be useful to consider the underlying scope and characteristics of the overlapping terms Maritime Transport, Logistics and Supply Chain Management and Maritime Logistics. It is clear that Maritime Transport (shipping and ports) is largely concerned with the movement of goods and/or passengers between two seaports by sea. Logistics and Supply Chain Management generally relates to the co-ordinated management of the various functions responsible for the flow of materials from suppliers into an organization through a number of operations within the organization, and then reaching out to its customers. Hence, it consists of a series of activities along the network concerned, which in many cases will involve maritime activities.

21. Ventilation Systems

Author: Valentin-Alexandru STURZU, Academia Navală „Mircea cel Bătrân”, Constanţa
Scientific Advisor: Prof. univ. Dr. ing. Gheorghe SAMOILESCU

Abstract: *Efficient ventilation has become a "must" to have a home that provides a healthy environment in which to spend most of your time, especially during a pandemic. Thus, for an energy efficient home, which is close to the concept of passive housing, it must benefit from a ventilation system with heat recovery.*

22. The Problem of Environmental Externalities Associated with Military Activities.

Author: Daniela Roxana TECUCEANU, Academia Navală „Mircea cel Bătrân”, Constanţa
Scientific Advisor: Prof. univ. Dr. Florin NICOLAE

Abstract: *While essential to the world’s economy and well-being, the commercial marine shipping industry is a major contributor to global air pollution and without action, the industry’s emissions are expected to increase. These emissions can harm human health and our environment. New regulations and practical initiatives are planned or in force to reduce the amount of air pollution produced by ships. Ships move approximately 80% of the world’s goods. When compared to other forms of transportation, marine shipping is the most energy-efficient way to move large volumes of cargo. The military activities within the Romanian Naval Forces through the ship units they operate, have an impact on the environment and therefore I propose to study the impact of the carbon footprint of a ship unit during a year and also to propose a plan measures to reduce energy consumption.*

23. Logistical Analysis of Unconventional Transport Systems for Energy Efficiency of Freight Transport

Author: Andreea-Mihaela TÎRLESCU, Academia Navală „Mircea cel Bătrân", Constanţa

Scientific Advisor: Prof. univ. Dr. ing. Gheorghe SAMOILESCU

Abstract: *The problem of energy has been, is and will be one of the central problems of mankind. Because there is this dependence on energy and because the majority of the Earth's population uses fossil fuels to meet their energy needs, it creates, every day, a high degree of environmental pollution, thus defending the strict need to seek new sources of energy, sustainable and environmentally friendly. Scientists' studies have become increasingly convergent in recent years in appreciating the fact that a sharp increase in global greenhouse gas emissions will lead to a global warming of the Earth's atmosphere, with a disastrous effect on ecological balances. Thus, it is imperative to find the energy sources that produce the least possible pollution, as well as its implementation in all areas. Due to the fact that all the traditional energy sources used pollute the environment, renewable energies are practically devoid of this negative effect.*

24. Technical Optimization of Energy Management

Author: Daniel ȚOLEA, Academia Navală „Mircea cel Bătrân", Constanţa

Scientific Advisor: Prof. univ. Dr. ing. Gheorghe SAMOILESCU

Abstract: *The study on the development of an uninterruptible power supply system with PV panels describes the practical realization with the purpose of implementing an autonomous PV system. The first chapter describes the current state of the*

issue. The second chapter presents theoretical notions and technical details about photovoltaic panels, cells, systems, etc.

25. Models for Outsourcing Strategies in Transport Services

Author: Andreea TOMA, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Col.Conf. univ. Dr. Cătălin POPA

Abstract: *Outsourcing strategy describes the organizational practice of contracting either parts or all of the logistics activities, that have previously been performed by the company, to other contractors, specialized in specific fields of expertise. The main purpose of the contracting third parties is to deal with the most competitive providers for logistic activities to assure the overall performance of the business on higher levels. 3PL is associated with offering multiple package services. Even used on large scale, the 3PL research is still empirically descriptive and there is a generally lacks a theoretical basis. 3PL is a constantly changing sector, which shows us more generic perspectives on the dynamic behavior of inter-organizational realities and networks.*

26. Human-Robot Collaboration and its Risks in Automated Warehouses

Author: Roxana – Georgiana VACEA, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Prof. univ. Dr. Florin NICOLAE

Abstract: *Collaborative robotics has begun to play an increasing role in modern industrial environments, such as manufacturing, mining, agriculture and more. Of course, this trend introduces a number of advantages, including increasing productivity or efficiency. However, with these advantages come the disadvantages, such as risks and dangers due to the elimination of barriers between humans and robots. In this*

paper we present risk assessment for an automated warehouse use case in which mobile robots and humans collaborate in a shared workspace to deliver products from the shelves to the conveyor belts.

27. Minimizing Transportation Costs of Gasoline and Diesel

Author: Alin-Constantin VASILE, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Lt. Cdor Conf. univ. Dr. ing. Alexandru COTORCEA

Abstract: *The paper entitled: „Minimizing transportation costs of gasoline and diesel "approaches solving the problem of transport petrol and diesel from refineries to gas stations, with costs as low as possible, by the following steps: determination (finding) a initial solution (basic, non-degenerate); Improvement of a solution; Finding (determine) the best solution. To achieve this requirement, the work is divided into three chapters, as follows: In the first chapter i presented the northwest corner method; In the second chapter i presented the minimum element method;*
In the last chapter I presented the mixed difference method.

28. Manging Greenhouse Gas Emissions from Warehouse Activities and Transshipment

Author: Rodica Ana Maria ZAMFIR, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Prof. univ. Dr. Florin NICOLAE

Abstract: *Nowadays, people are facing with a real and big problem regarding pollution. They suffer by various affections due to pollution which in fact was caused by their past generations. This case study is focusing on greenhouse gas emission from warehousing and transshipment. The article is based on showing that all the activities that occurs in a warehouse has a huge impact on natural environmental.*

Specialty researchers are dealing with problems such as: how to asses, manage or control the greenhouse gas emissions in warehouses. There are still major research and standardizations issues which until now was not provide a solution which may be used in every sector. This article addresses the develop method and wants to provide an argumentative basic research for further standardization. The case study will provide solutions which will have straight purpose in order to decrease emissions from this activity.

29. Risk Issues in Containerized Shipping Chains

Author: Ionela ZAMFIR-ŞERBAN, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Prof. univ. Dr. Florin NICOLAE

Abstract: *The concept of "safety" must be well internalized by all workers involved in any port activities. In addition, port authorities should have the right to require port workers to hold certain certificates similar to those of the ship's crew. Moreover, port authorities should consider security to be at least as important, even more important than security. Port workers should also be aware that safety is the concern and responsibility of all involved, not just port authorities. Therefore, it can be stated that proper management of health, safety, occupational safety and environmental issues in ports is crucial and requires continuous monitoring of risks, so that vulnerabilities can be detected and control measures implemented.*

30. Cargo Distribution Company by Electronic Post. Sales Advertising. Customer Relations. Transport and Warehouse Activity Optimization.

Author: Cezara-Roxana CALIN, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Prof. univ. Dr. ing. Beazit ALI

Abstract: *Digital goods and services can be traded in electronic distribution and the place where these digital goods are trade descaled electronic market (e-marketpace) - the virtual context in which buyers and sellers are each other and trade electronic business. Electronic distribution presents the multitude of software and commercial processes necessary for business processes to operate, alone or primarily, using digital data streams. E-commerce involves the use of the Internet, digital communications and software applications in the sale / purchase process, it being a component of the e-business process. The use of all electronic means to participate in an e-commerce activity is called an electronic transaction. Electronic distribution allows even the smallest suppliers, regardless of their origin*
geographical, to be ubiquitous and to do business in the world;

31. Consumer Goods Production Company. Supply Essential Link of the Efficiency of the Integrated Logistics System

Author: Georgiana Andrada CHIRIEAC, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Prof. univ. Dr. ing. Beazit ALI

Abstract: *The supply chain is a system of organizations, people, technology, activities, information, and resources involved in moving a product or service from supplier to customer. Supply chain activities turn natural resources, raw materials and components into a finished product, which is then delivered to the end customer. The supply chain incorporates the production process along with the purchase of raw materials and the distribution of finished products, encompassing the entire existing process responsible for transforming the materials taken from the supplier to the finished products delivered to customers.*

32. Process on How to create a Ship Adapted to the User's Requirements

Author: Claudia-Mălina CIUCĂ, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Prof. univ. Dr. Florin NICOLAE

Abstract: *The objective of this paper is to demonstrate the feasibility of a littoral corvette ship with respect to geometry, arrangement, performance, sea keeping, structural adequacy, stability and survivability. The final design was highly influenced by the current and future trends in naval ship design as reducing ship signatures, driving the ship using an Integrated Propulsion System (IPS), using advanced materials for construction and putting a lot of emphasis on comfort and efficiency. The purpose of this process was to develop the insight and thought processes needed for designing naval surface ships. In order to meet this goal, each student in the class was assigned with a different combination of speed, endurance, payload and propulsion system for his own design variant.*

33. Identifying Opportunities on Sustainable Development of EU Shipbuilding Sector

Author: Raluca Simona COJOCARU (MAZILU), Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Prof. univ. Dr. Florin NICOLAE

Abstract: *Shipbuilding industry is one of the hardest metal industries with several chemical and hazardous material exposures. Most of the traditional production processes such as welding, painting, blasting and fiberglass production have direct impacts on workers' health and safety as well as adverse effects on environment. Thus, this article highlights the current issues and challenges of green shipbuilding and recycling and also encompasses some initiatives and measures. This article is based on a comprehensive literature review related to the*

issues of green shipbuilding and recycling. It is found that green shipbuilding and ship recycling contribute to minimize threats on human health, environmental and resource risks by reducing the pollution to air, water and soil; save resources; and improve economic and social benefits. Hence, several initiatives of green shipbuilding and recycling by the International Maritime Organization and other shipping industry players have also been discussed.

34. Modernization of Containerized Transport

Author: Andreea Mădălina DUMITRAȘCU, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: Conf. univ. Dr. ing. Filip NISTOR

Abstract: *From the invention of the container to the present day, containerization has generated economies of scale. Technological development in this field has grown, reaching mega ships, mega ports with related terminals, high speed of cargo exchanges. However, the ability they remain limited, not to mention the traffic congestion generated by such economies of scale, emissions and harmful environmental damage, and synchronization with regional development inside the land where road transport has an extremely important share high. Therefore, I believe that the implementation of the dry port concept could managed to reduce all these shortcomings both by reducing their negative impact on daily life with day, as well as on future development*

35. Analysis of Supply Logistics Processes for Port Operators

Author: Madalin- Rafael DUTA, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: Col. Conf. univ. Dr. Cătălin POPA

Abstract: *Having proper understanding of ports operations as well as utilizing methods of development by the means of value-*

added service, could change role of a port from a transportation node to an efficient point in a transportation chain. Trend of globalization has been followed by an increase in level of demand for freight transportation and thereafter establishing suitable port services. Developments of transportation chains,
Logistics and progress of these networks have enhanced the sustainable condition and level of transportation. What is assumed to increase efficiency in the performance of the ports is to provide an environment for the activities that can meet high potential, reduce cost and increase replacement speed in parallel with the development of international business. Today, use of logistic activities and providing areas in the coasts of ports are important as a general process for improving the ports.

36. Identification and Analysis of Unconventional Solutions for Container Transhipment in Constanta- South Agigea Area

Author: Iasmina MACRIDIS, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Prof. univ. Dr. Florin NICOLAE

Abstract: *Floating Container Storage & Transshipment Terminal, FCSTT is a new concept of a preliminary technical and economic evaluation. The main purpose of the FCSTT is considered to handle transshipment traffic, although its use could extend to supporting existing land- based terminals within ports. This concept offers potential for significant capital and operating cost.*

37. Analysis of Socio-Economic Factors that Influence the Hinterland of Port of Constanta.

Author: George MERGIANI, Academia Navală „Mircea cel Bătrân", Constanţa

Scientific Advisor: Conf. univ. Dr. ing. Filip NISTOR

Abstract: *The Port of Constanta is a multimodal transport centre for any type of cargo and an important trade gateway for the Central/Eastern Europe and the Black Sea countries. The hinterland of Port Constanta supports the port regarding the produced, consumed and forwarded goods to/from the port. During the year 2019, the position of Port of Constanta within its hinterland was at its strongest, as a result of the quality services and conditions provided to its clients and partners.*

38. Offshore Project Management: Exploration, Development And Exploitation of Blocks Located on the Continental Shelf of the Romanian Black Sea

Author: Rareş-Dan MESESAN, Academia Navală „Mircea cel Bătrân", Constanţa

Scientific Advisor: Prof. univ. Dr. Florin NICOLAE

Abstract: *PROJECT DESCRIPTION*

The Ana and Doina reservoirs lie in the XV Midia Block of the western part of the Black Sea, some 110 km to the east of Constanta, Romania. The titleholder intends to develop the Midia Gas Development Project to produce and process gas from the Ana and Doina discoveries and route it to export to consumers within Romania and/or the EU. Both the Ana and Doina fields have high methane content (>99 mole%) with minimal contaminants. The fields are predicted to have an overall production life of 10 to 15 years with a predicted peak production capacity of 3.115 million standard cubic metres per day (MMSCMD) will be considered. This nominal capacity is equivalent to a yearly average of 2.83 MMSCMD.

The facilities required for the development can be summarised as follows:

• Doina: The field will be a single, vertical subsea well tied back, via an 8" x 18-kilometre pipeline, to the Ana Platform – well controlled via an electro-hydraulic-chemical (EHC)

umbilical providing electrical power, control, hydraulic power and MEG. A flanged tie in spool will be installed at the Doina location to accommodate any future near-field gas discovery.
• Ana: Normally Unmanned Wellhead Platform with 4 × Platform wells, pipework fully rated to well closed-in tubing head pressure, cold vent, helideck, chemical storage and injection pumps for MEG, temporary refuge, lifeboat, facilities to enable temporary installation of pig receivers and pig launchers, minimal other facilities.
• Ana to shore pipeline: 16-inch x 121 km carbon steel pipeline with concrete coating for stability, continuously inhibited against hydrates with MEG.
• Beach crossing: 1,500 m horizontally directional drilled beach crossing.
• Pipeline from the beach crossing to the Gas Treatment Plant: trenched and buried 16-inch x 4 km
carbon steel pipeline, continuously inhibited against hydrates with MEG.
• Onshore gas treatment plant: Pig receiver, slug catcher/separator, single stage turbine driven compressor (with scrubbers and air-cooled aftercooler), triethylene glycol (TEG) dehydration of gas, fiscal metering, MEG regeneration and storage, control room, power generation, utilities, cold vent, etc.
• Gas produced from the Midia Gas Development will be exported to the onshore gas transmission network.

39. Case study on the Efficiency of Logistic Insurance of sea Voyages

Author: Coralia MIHAI, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Col. Conf. univ. Dr. Cătălin POPA
Abstract: *In this paper I explained the organization of the logistics activity and the activities carried out within the*

logistics of the goods. They are presented: the types of goods transported, the port operators, the factors that can influence the maritime transport and the logistic models. The case study is based on the role of the logistics system in the transport of goods on the maritime segment (taking over the order, proper storage of goods, periodic control of goods and their unloading). All the processes listed above are supervised by qualified personnel. Finally, the paper will describe the importance of cargo shipping in the international logistics system.

40. The Current State on Implementing Marine Scrubber Solutions

Author: Teodor-Andrei MOCANU, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: Lt. Cdor Conf. univ. Dr. ing. Marian-Valentin RISTEA-KOMORNICKI

Abstract: *The year of 2020 has brought new regulations to marine transporters which set an important milestone in terms of improving air and water quality, preserve the environment and protect the human health. IMO has also revised the compliances within MARPOL Annexes, especially for Annex VI, related to regulations that emission control has to meet. This paper aims to picture these new regulations and their benefits, together with the alternative solutions proposed by the big companies from marine industry.*

41. Applicable Techniques of Production Management in the Field of Port Services

Author: Raluca-Elena NĂSTĂSESCU, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: Col. Conf. univ. Dr. Cătălin POPA

Abstract: *In this essay are presented the applicable techniques of production management in the field of port services. Ports*

are important actors in many supply chains. Up to 90 % of all cargo are transported through sea transport today, and containers are used for transporting the cargo on the vessels. Containers play a crucial role with its loading capacity and unification, facilitating the loading and unloading processes. The operations that concerns the containers in container terminals are quite similar for many ports, however other factors such as IT systems and choice of equipment differ and thereby affect the performance of the port

42. Case Study Regarding the Optimization of the Supply Function in the Naval Forces

Author: Radu-Șerban POPESCU, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Col. Conf. univ. Dr. Cătălin POPA

Abstract: *This paper stands for a better organization of the supply function. It is it's main objective to make it easier to get in the possession of a specific item regarding the terms of time and resources spent in this activity. By all means necessary we have to put the technology to our benefit and we need to get rid of the classic bureaucracy system. Due to this era in which we find ourselves, acquiring items must, and will be more efficient.*

43. Innovative Techniques for the Digitalization of Maritime Transport

Author: Florin STROE, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Col. Conf. univ. Dr. Cătălin POPA

Abstract: *Digitalization and new developments in artificial intelligence, block chain, the Internet of things and automation, are of increasing relevance to maritime transport. They help optimize existing processes, create new business opportunities and transform supply chains and the geography of trade. Notwithstanding the potential opportunities and benefits*

offered by these technologies, they also entail risks and potential costs to maritime actors in developing countries. It is thus necessary to establish a level playing field. This paper discusses the role of interoperability and global standards, the importance of promoting technological innovation, while avoiding monopolistic outcomes, and the need to ensure that digitalization works towards the achievement of the sustainable development goals.

44. Modeling the Cargo Flow of a Port Operator Using Siemens Plant Simulation

Author: Maria ZIGAROV, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Conf. univ. Dr. Andrei BĂUTU

Abstract: *In this paper we will try to present activities carried out by a port operator from the port of Constanta. The main activities we will focus on are related to the flow of goods, trying to synthesize them with the help of the Siemens Plant Simulation program.*

OCEANOGRAFIE ŞI HIDROGRAFIE

BIROUL SECŢIUNII
Preşedinte: Conf. univ. Dr. ing. Boşneagu Romeo
Membri: Cpt. Cdor Conf. univ. Dr. ing. Sergiu LUPU
Cdor Conf. univ. Dr. ing. Dinu ATODIRESEI

1. Airborne Laser Bathymetry

Author: Vlad Alexandru AHTAMON, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Cpt. Cdor Conf. univ. Dr. ing. Sergiu LUPU

Abstract: *The lidar technology used in bathymetric determinations, based on sensors capable of capturing the depth- topography of shallower waters or coastal waters is continuously evolving concerning sensor technology and data processing methods. Conventional systems are mounted on manned aircraft operate at an altitude of 500m. Miniaturization of lidar sensors has created the possibility of mounting these systems on unmanned aerial vehicles (drones) that can operate at a much lower altitude between 50 and 150 m. The new approaches technologies have proven effective in data processing, increasing spatial resolution, advanced waveform processing and water depth penetration. This paper aims to briefly review current trends in laser bathymetry and restriction of this optical technique.*

2. Planning and Execution of a Multibeam Echo Sounder Hydrographic Survey at the Confluence Area of the Danube - Black Sea Canal with the Danube River.

Author: Dorin Ovidiu CLIM, Academia Navală „Mircea cel Bătrân", Constanţa

Scientific Advisor: Cdor Conf. univ. Dr. ing. Dinu ATODIRESEI

Abstract: *The present paper represents the planning and execution of a multiband echo sounder hydrographic survey on a Navigable Canal, in compliance of the rules of IHO S-44, special order. The paper contains data on: purpose and area of the study, equipment used, acquisition and data process technique, obtained results, conclusions.*

3. Diving Computer G2

Author: Gelu COCA, Academia Navală „Mircea cel Bătrân", Constanţa

Scientific Advisor: Conf. univ. Dr. ing. Romeo BOŞNEAGU

Abstract: *With all of its new features, its full-color screen options, plus the ability to use as much or little of the technology as you want, the GALILEO 2 (G2) is poised to become the favorite computer for divers of all skill levels, from beginner to tech diver. It's easy to read -- a choice of four colorful screens quickly draws your attention to what you need to know. It's easy to use - the G2 has the same three-button control, incredibly intuitive menu structure, and diver-friendly functions that earned the Galileo its reputation as the hands-down easiest computer to use. Designed go anywhere - open water to free diving to CCR to side mount, the G2 is ready to go wherever your passion for diving takes you.*

4. Ten Years Analyses of the Sound Speed Spatio-Temporal Distribution in the Western Black Sea

Author: Nina-Camelia SANDU, Academia Navală „Mircea cel Bătrân", Constanţa

Scientific Advisor:

Abstract: *This paper presents results of investigations on the specific physical parameters in the Western Black Sea. Seasonal Temperature and salinity and underwater sound*

speed profile are analyzed. The sound speed variations follow the variation of the temperature and salinity, showing strong interconnection between the three parameters in this area. Also, Sound speed profiles indicate a drastically downtrend across the thermocline.