Academia Navală „Mircea cel Bătrân”

A XIII-a ediție a sesiunii de comunicări științifice a studenților masteranzi

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1. Analysis of Maritime Safety Conditions in the Transport of Noxious Liquid Bulk Cargoes
Author: Ervin ABDURAMAN, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Prof. univ. Dr. ing. Florin NICOLAE
Abstract: *In maritime transport, noxious liquid bulk cargoes are an important sector of maritime trade. From this perspective maritime safety is a priority issue, to which stakeholders pay particular attention. In order to clarify all the aspects associated with this topic, the paper has been organised in two parts: the first part is a bibliographical survey of the literature in the field of maritime safety in the transport of noxious liquid bulk cargoes; the second part is devoted to aspects related to the analysis of maritime accidents involving noxious liquid bulk cargoes. The conclusions reached can be used both for strengthening the safety culture on board ships and for building the analysis of accidents, which have occurred in between.*

2. Cargo Operation on an Oil Tanker Vessel
Author: Alin-Nicolae ANGHEL, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Conf. univ. Dr. ing. Dinu ATODIRESEI

Abstract: *Tanker vessel are one of the most dangerous types of vessels and operating the cargo of this type of vessel is an important job that the sailors have to carry out. In this presentation it is shown what actions seafarers need to follow in order to have a good and safe cargo operation, without pollution or any unpleasant events that can happen. The entire procedure of cargo operation will be explained and commented.*

3. Manoeuvring of the Vessel in Narrow Spaces. Transiting Moneuvring of Mississippi River. Study Case

Author: Cezar BĂICOIANU, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: S.L. Dr. ing. Sergiu ȘERBAN

Abstract: *This project refers to a case study divided into 4 chapters of a panamax bulk carrier vessel named „Karpaty" which is operated by the POLSTEAM company regarding the manouevring of the ship in special conditions, the manoeuvring of the ship in narrow space, more precisely the transiting and piloting manoeuver of the Mississippi River.*

4. The Use of Autonomous Underwater Vehicles for Marine Environment Research

Author: George BÎRGĂUAN, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Ș.L. Dr. ing. Andra-Teodora NEDELCU

Abstract: *This paper examines the impact of autonomous underwater vehicles (AUVs) on the marine environment. It is structured into four chapters, each of which focuses on a specific aspect of AUV technology and its usage. The first chapter provides an introduction to AUV technology, including its history, current technologies, and advantages over other*

methods of marine research. The second chapter examines the use of AUVs in oceanographic research, highlighting its applications in mapping, sample collection, and monitoring environmental changes. The third chapter discusses the use of AUVs in marine environment monitoring, including water quality, marine populations, and events such as pollution and climate change. The final chapter analyzes the impact of AUVs on marine life and ecosystems, and the steps that can be taken to manage and minimize these impacts. Overall, this paper provides valuable information on the topic of AUVs and their use in marine environment research.

5. Ship Maneuvering in Confined Spaces. The Transit Maneuver of the Danube - Black Sea Canal

Author: Dorina BOLOHAN, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: S.L. Dr. ing. Sergiu ȘERBAN

Abstract: *The Danube-Black Sea Canal is a navigable canal in Romania, which runs from Cernavodă on the Danube river via two branches to Constanța and Năvodari on the Black Sea. The canal shortens the distance from the Black Sea to Danube ports by approximate 400 km. The length of the canal is 64.4 km and locations along the canal are referenced by their kilometers distance from the Constanta entrance. Manoeuvring the ship in confined spaces involves a thorough study of local conditions and the establishment of special measures to ensure safety of navigation. The most important measures are: the use of large-scale maps, the road drawing taking into account the ship's turn, the ship's management is taken personally by the master and the watch of navigation is executed by the watchman,*

continuously determining the position of the ship, informing the master of any deviations from the road drawn on the map.

6. The Implications of Economic Crises upon International Maritime Transport

Author: Razvan BRATU, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Conf. univ. Dr. ing. Romeo BOȘNEAGU

Abstract: *In this thesis I will be studying and presenting the affect and results of the economical crises (2007-2010 and the crisis due to the COVID pandemic) which affected all the maritime sectors, from logistics to shipping, from bulk carriers, container carriers up to passenger vessels, and the most important financial aspects of this industry.*

7. Procedures for Entering and Working in Enclosed Spaces Onboard Container Vessels

Author: Iulian-Ionuț CHIRIAC, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Ș.L. Dr. ing. Andra-Teodora NEDELCU

Abstract: *Enclosed spaces are very dangerous places to work or even just to entry. It is required to follow a lot of steps before entering an enclosed space, steps that will be shown in this presentation. Working in this type of space require some skills and only those crew members that have some experience can perform the job. Container vessels are not the most dangerous types of vessels, however enclosed spaces require increased attention on any vessel.*

8. Ship Manouvre – Approaching an Offshore Platform

Author: Iustin-Adrian CIUGOLIA, Academia Navală „Mircea cel Bătrân", Constanţa

Scientific Advisor: S.L. Dr. ing. Sergiu ȘERBAN
Abstract: *In this presentation I am going to talk about how an offshore vessel approaches an offshore platform. I am going to be talking about the particulars of the ship and the system which was used in the manouvre, the route of the vessel, the port and the offshore platform. I am also going to be detailing what is a DP system and how it is used.*

9. Study of the Naval Transport System in Poland
Author: Robert COMAN, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: S.L. Dr. ing. Sergiu ȘERBAN
Abstract: *The present study was born out of the desire to x-ray the shipping system in Poland in the period 2010-2020 for the purpose of diagnosis. Through statistical research, I set out to outline the dynamics of freight and passenger transport through Polish ports as well as the evolution of the Polish shipping industry in the period 2010-2020.*

10. The Use of Remote-Controlled Underwater Vehicles for Marine Environment Research
Author: Eduard-Nicolae COMANDARE, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Ș.L. Dr. ing. Andra-Teodora NEDELCU
Abstract: *This scientific paper, titled "The use of remote-controlled underwater vehicles for marine environment research" aims to improve the existing literature and enrichen it through mentioning new topics that unfortunately have not been mentioned previously. Henceforth, through studying existing resources, such as academic papers, books and various documents from existing underwater vehicles, as well as through elaborating a case study on the hazards that may arise due to precarious inspection and maintenance of underwater vehicles, this paper will present valuable contributions to both*

academicians and other people working within the field of marine environment research. This thesis will explain in detail the potential use of remote-controlled underwater vehicles for marine environment research and the possible actions that can be taken by using them. Furthermore, this paper will explain the purpose and the importance of the underwater vehicles, as well as present in detail the different types of them, highlighting their specific advantages and disadvantages.

11. The Study on the Effects of Synchronism in Container Ships

Author: Alexandru-Cristian COSTACHE, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Conf. univ. Dr. ing. Sergiu LUPU

Abstract: *Aspects of ship synchronism (parametric roll) have been recognized for more than half a century. The fundamental dynamics that create this type of phenomenon are nowadays considered reasonably clarified by the fact that the frequency of encounter with waves of similar length or greater than the length of the ship is comparable to twice the natural frequency of the ship's roll. The hull shapes with a pronounced bow, the flat stern and the vertical parts of the ship near the waterline are the most vulnerable to synchronism. Such vessels have a wide cargo deck beam to store a large number of containers and at the same time the underwater hull is streamlined to minimize resistance. Such characteristics contribute to the variation of the stability characteristics of the container ship due to the constant change of the geometry of the underwater hull as the waves travel along the ship.*

12. Maneuver STS at Suez Canal with LPG Ship

Author: Andrei COTET, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: S.L. Dr. ing. Sergiu ȘERBAN

Abstract: *The Suez Canal is bordered by Port Said and the Gulf of Suez. It has a total length of 193 km, and its width, at its narrowest point, is 300 m. The canal has no locks as there are no level differences. It allows the passage of ships with a displacement of up to 150,000 tons. Ships with up to 22 m draft can pass. There is only one navigation lane with several overtaking places. Typically, three convoys cross the canal daily, two southbound and one northbound. The crossing takes between 11 and 16 hours, with a speed of about 8 knots. The reduced speed prevents erosion of the canal banks by the waves generated by the ships.*

13. The Risk of Pollution in the Event of an Oil Tank Grounding

Author: Fabian CRISTOFOR, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Prof. univ. Dr. ing. Florin NICOLAE

Abstract: *Maritime practice shows that the failure of ships constitutes a major danger, which can have disastrous consequences. In most cases, the literature highlights that aspects of the risk associated with the failure of a ship need to be assessed in a systematic way. In such situations, the probabilistic analysis associated with the risk of damage to the ship, taking into account the potential damage caused by the structural failure of the ship's body, is necessary. Taking into account the maximum foreseeable consequences associated with such a risk event involves assessing the sustainability of the area(s) potentially affected, areas adjacent to the ship's failure location. The work shows that such a problem solving proves its usefulness not only for maritime decision-makers but also for national authorities who have responsibilities in providing assistance and intervention services for the failure of a ship/including in the case of a tank petroleum.*

14. Study on the Implementation of the Safety Management System on Board the Ship

Author: Alexandru Eduard DIMA, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: S.L. Dr. ing. Sergiu ȘERBAN

Abstract: *SMS manual is intended to be a guide for the operation and safe management of your vessel. The safety management system provided within conforms to the requirements of the International Maritime Organization ISM Code. The Safety Management System is designated to cover the on board responsibilities, regulations, and good working practices with regard to Safety, Training, Maintenance and Reporting. The purpose of the audit is to verify the implementation of the ISM system, the understanding and compliance with the company's policy on board the ship regarding the safety of life at sea. Facilitates the effective control of aggregates and activities that have as their final goal a good organization and the avoidance of risks or situations that can create risk and/or accidents. It serves for a good appreciation of the activities of the ship's crew terms of the International Conventions that regulate the act of navigation, representing an evaluation benchmark of their compliance.*

15. Safety Management in the Conduct of Marine Incident Investigations

Author: Andrei DOBRE, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: S.L. Dr. ing. Sergiu ȘERBAN

Abstract: *Maritime accident investigation management refers to the process of evaluating and analysing incidents that occur on ships, boats and other vessels. The goal of this type of investigation is to determine the cause of the accident and identify ways to prevent similar incidents from happening in the future. The management of maritime accident investigations*

involves a variety of steps, including collecting evidence, interviewing witnesses and crew members, analysing data and assessing the condition of the vessel. It also requires knowledge of maritime laws and regulations, as well as an understanding of ship design, construction and operation. Overall, the management of maritime accident investigations plays an important role in ensuring the safety and security of the maritime industry, by identifying the root causes of accidents and implementing changes to prevent similar incidents in the future.

16. STUDY REGARDING the Removal of the Danger Generated by the Presence of Marine Mines in the Territorial Waters of Romania

Author: Bogdan-Andrei DRIMUȘ, Academia Navală „Mircea cel Bătrân", Constanța

Scientific Advisor: Ș.L. Dr. ing. Andra-Teodora NEDELCU

Abstract: *The project "Study regarding the removal of the danger generated by the presence of marine mines in the territorial waters of Romania" has the object of study the establishment of the possibilities that the Romanian Navy has in removing the danger of marine mines in the territorial waters area. The main study material is the Russian-Ukrainian conflict and the mines that are detached from dams or intentionally launched into the Black Sea and are found failed or adrift on the main shipping corridors, in the harbourd exit/entrance zone or near the oil drilling platforms an important aspect of the work is the conflict zone, the Black Sea, which is a semi-closed sea, with certain tactical, operative and strategic peculiarities. Also, the paper addresses legislative issues, aspects regarding mining activities, mine clearance and possibilities to improve MCM (Mine Counter-measures) measures in order to eliminate the current danger which is inside of a semi-closed sea.*

17. Environmental Impact Due to Pollution from Cruise Ships

Author: Andrei Laurentiu DUMITRU, Academia Navală „Mircea cel Bătrân", Constanţa

Scientific Advisor: Conf.univ.Dr.ing. Alexandru COTORCEA

Abstract: *Cruise ships are popular floating hotels that offer luxury and transport to multiple destinations. But their growth has raised concerns over pollution. Pollution from passenger ships at sea comes from oil spills, waste discharge, air pollution, ballast water discharge, and chemical releases. Such pollution can harm marine life and ecosystems. The cruise industry must take responsibility for minimizing its impact and operate sustainably.*

18. Ship-To-Ship Operation Performed by Oil-Chemical Tankers

Author: Iacub-Sabin GAFAR, Academia Navală „Mircea cel Bătrân", Constanţa

Scientific Advisor: S.L. Dr. ing. Sergiu ȘERBAN

Abstract: *The aim of this paper is to offer an overall idea in regards to the ship-to-ship operation that is performed by oil-chemical type of ships. In the first part of the paper, not only the way in wich the operation is being prepared, considering the pre planning and the regulations that impose certain rules for the safety of all parts involved, but also the person who is in overall advisory charge and his attributes are presented. Moreover, the essential aspects for a good development of events during the process are also discussed. In the second part of the paper, the main and special types of equipment used in this process are introduced and explained. Finally, at the end of the paper a ship-to-ship operation that actually took place will be shown and discussed, ending with the related conclusions.*

19. Ship Maneuvering in Confined Spaces. Maneuvering to Dock at the Port of Santos with the Maersk Lota Vessel

Author: Dumitru-Gabriel IATAN, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: S.L. Dr. ing. Sergiu ȘERBAN

Abstract: *Navigating through straits, narrow waters, and difficult passages is carried out based on a thorough study of local conditions and the establishment of special measures for navigation safety, which includes large-scale maps/plans, route plotting, the captain takes personal command, the navigating officer keeps watch, the ship steers more sluggishly, and resistance to the ship's progress. The vessel's speed is reduced by 20-25%, the rudder effect is smaller, and areas with shallow depths are considered challenging to navigate. Docking maneuvers are specific to each type of vessel and the conditions in which it is maneuvered. Classic methods include berthing with the side to the quay without/with the use of anchors, as well as particular cases of maneuvering. Ships dock more easily with the opposite side to the propeller rotation, and the vessel approaches the quay at an acute angle in case of bow striking.*

20. Man, Overboard Maneuver at Corvette-Type Ships

Author: Robert-Bogdan ICHIM, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: S.L. Dr. ing. Sergiu ȘERBAN

Abstract: *This project contains information related to how the man overboard maneuver must be performed under certain conditions on a corvette-type ship belonging to the Romanian Naval Forces. Also, it exemplifies several methods by which the man overboard maneuver can be executed, explaining and*

comparing them step by step. Furthermore, I tried to bring a personal view on these methods, although they are already well known by people working in the naval field.

21. Bosphorus Strait Transit Maneuver with Tank Type Ships. Case Study

Author: Alexandru ION, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: S.L. Dr. ing. Sergiu ȘERBAN

Abstract: *The Greenwich Park ship arrives in the vicinity of the southern entrance to the Bosphorus on 05.01.2023 at 14:00. The coast radio station, Canakkale, Istanbul, is informed and the ETA for the pilot is 14:50. The pilot will be accompanied on the command deck by the ship's captain, the chart officer and a sailor. Also, there will be a sailor in the bow of the ship who will carefully monitor the ship's path and who will immediately alert the command deck about any obstacle or ship that could become a danger for the smooth transit of the strait. The Pilot Card is prepared by the chart officer, a document that contains all the ship's specifications that could help the pilot.*

22. The Use of A.U.V. in Mine Counter Measure (MCM)

Author: Octavian-Ion MANTA, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Conf. univ. Dr. ing. Sergiu LUPU

Abstract: *Mines are by no means a new threat. From the very beginning sea mines have remained an effective means of asymmetric warfare, being especially used by small countries against much stronger opponents. AUVs are vehicles capable of operating underwater without a human pilot. These vehicles are able to performed sea mine detection and classification missions, resulting in decreased risks of loss of human life.*

Given the current situation created in the Black Sea, these vehicles could survey and protect port entrances, access passes and recommended routes, which could be controlled remotely. When classifying a potential object as a mine, they signal the operator to proceed to the phase of neutralizing the danger. Since the danger of mines exists in the Black Sea, these vehicles are very important to ensure the safety of shipping.

23. Particular Problems of Maritime Safety for Vessels which are Carrying Solid Bulk Goods

Author: Maria-Teodora ANDRONESCU, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: Prof. univ. Dr. ing. Florin NICOLAE

Abstract: *The term „safety" for a seafarer must bear in mind before starting his job. The safety status of bulk carriers is a sensitive chapter for maritime navigation. A bulk carrier is a merchant ship specially designed to transport unpackaged bulk cargo in its cargo holds. Nowadays, bulk carriers make up 21 percent of the world's merchant fleets. A frequently occurring problem taking place when a bulk carrier transports wet granular solid bulk cargoes is liquefaction. Liquefaction of a solid bulk cargo can occur when excessive dynamic loading, induced by rough seas and vessel vibrations, is transmitted to the cargo.*

24. Maneuvering in Special Conditions – Anchoring Maneuver of the Vessel with a Single Anchor in the Huelva Anchorage Area

Author: Andrei-Teodor MARIN, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: S.L. Dr. ing. Sergiu ȘERBAN

Abstract: *The anchorage is approached, as much as possible, with the bow into the wind, current or the resultant of the two. If this is not possible, the influence of these factors on the movement of the ship will be taken into account, especially when the machines are stopped, and the potential danger of approach. The engine stops in time. In the place where it needs to be anchored, the engine is put back. When the ship starts to move backwards, the anchor sinks. In bad weather or when the ship stays at anchor for a long time, a length of chain 6-7 times the depth of the water can be spun. If there are various obstacles near the place where it is anchored, the ship approaches at reduced speed until it reaches the point, stops the cars and anchors the windward by placing the rudder in the board where the anchor was anchored until the ship comes with the bow into the wind.*

25. Maneuvering the Ship Through the Ice

Author: Silviu-Andrei MIRON, Academia Navală „Mircea cel Bătrân", Constanţa

Scientific Advisor: S.L. Dr. ing. Sergiu ȘERBAN

Abstract: *In this work I wrote about types of ice and descriptive terms, particular meteorological parameters of the area (as an example for meteorological parameters I chose the Antarctic area). Measures required for maneuvering the ship in ice areas, ship handling measures. Vessel characteristics and protective equipment.*

26. Maneuver of the Ship in Special Conditions in the Strait of Malacca

Author: Răzvan-Valentin MITREA, Academia Navală „Mircea cel Bătrân", Constanţa

Scientific Advisor: S.L. Dr. ing. Sergiu ȘERBAN
Abstract: *Economically and strategically, the Strait of Malacca is one of the most important shipping routes in the world. Piracy has been a problem in the strait. Piracy had been high in the 2000s, with additional increase after the events of September 11, 2001. In the paper we briefly presented how the passage of the strait went and what should be considered from the point of view of navigation.*

27. The Impact of COVID-19 in the Cruise Industry
Author: Ana-Laura MOCANU, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Conf. univ. Dr. ing. Sergiu LUPU
Abstract: *As a result of the COVID-19 pandemic and the many infected ships in the first quarter of 2020, the entire cruise industry was stopped and a prohibition on resuming this industry was impose worldwide. Due to the dramatic impacts on the entire industry, some cruise lines are trying to resume despite the fact that the COVID-19 is not yet under control. The first aim is to cover the cruise industry and its importance for society, introduce the main facts of the COVID-19 outbreak, and the correlation between cruise ships and the spread of this disease. The second aim is to present the new pattern to resume the cruise industry and its challenges.*

28. Panama Canal Transit Maneuvre
Author: Nicolae-Antonio MOGA, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: S.L. Dr. ing. Sergiu ȘERBAN
Abstract: *The Panama Canal transit maneuver is a process that involves navigating a ship through the Panama Canal,*

which is a critical waterway that connects the Atlantic and Pacific Oceans. The Panama Canal was built in 1914 and it spans approximately 80 km, allowing ships to bypass the dangerous and time-consuming trip around the southern tip of South America. The transit maneuver requires precise navigation and planning, as the ships must negotiate locks, narrow channels, and other obstacles along the way. The ship's draft, height, length, and beam are all factors that must be considered during the transit. The Panama Canal is a vital artery for global trade, and the successful completion of the transit maneuver is critical for the safe and efficient transport of goods and cargo.

29. Maneuvering the Ship in Ice Areas

Author: Adrian MORARU, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: S.L. Dr. ing. Sergiu ȘERBAN

Abstract: *For an unfortified ship or a ship whose structural capacity does not match the prevailing ice conditions, it is preferable and safer to take any alternative open water route around the ice, even if considerably longer. An open water route is always better than going through a lot of ice. Any estimated fuel savings will be more than offset by the risk of damage, and actual fuel consumption may be higher by driving through ice, even if the distance is shorter.*

30. Man Overboard - Williamson Turn

Author: Ersin NEZAMALI, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Conf. univ. Dr. ing. Alecu TOMA

Abstract: *In this paper I will talk about the activities carried out on board the ship in the "Man Overboard" situation and the types of ship manoeuvres that can be carried out in the case of man overboard and I will present in more detail the Williamson Manoeuvre.*

31. The Influence of Naval Incident Simulation in the Learning Process

Author: Carmen NICOLAESCU, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: Conf.univ.Dr.ing. Alexandru COTORCEA

Abstract: *In recent decades, there has been a drastic change in the shipbuilding industry due to the development of technology. The duties of seafarers experienced, with these developments, a dramatic transfiguration, in response to all the changes in the industry. Some of the changes recognized at first glance may be the expanded containerization and the transport of goods on board ships registered under flags of convenience. Training is an integral part of the process of preparing/teaching seafarers for shipboard work. The training offered to seafarers could thus be divided into two segments, pre-sea and post-sea. Post-sea training requires simulators, so necessary to train seafarers once they have gained experience on board. Training is an integral part of the process of preparing/teaching seafarers for shipboard work. The training offered to seafarers could thus be divided into two segments, pre-sea and post-sea. Post-sea training requires simulators, so necessary to train seafarers once they have gained experience on board. Training simulators are widely used to provide operators working within complex systems with the appropriate skills to deal with normal and abnormal situations. Improved technology and greater*

computing power have significantly increased the use of training simulators in seafarer training programs. Increasing the functional fidelity of the simulation during training results in improved performance during complex tasks such as maritime incidents that can be realistically reproduced in modern simulators.

32. Maritime Pilotage. The Study on the Collision of Two Ships in the Humber Estuary

Author: Mihai Dragos PETEU, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Conf. univ. Dr. ing. Sergiu LUPU

Abstract: *This scientific paper, titled "Maritime pilotage. The study on the collision of two ships in the Humber estuary." aims to improve the existing literature and enrichen it through mentioning new topics that unfortunately have not been mentioned previously. Henceforth, through studying existing resources, such as academic papers, books and various documents from existing maritime pilotage, as well as through elaborating a case study on the hazards that may arise due to lack of experience of maritime pilots, this paper will present valuable contributions to both academicians and other people working within the field maritime pilotage research. This thesis will explain in detail the potential use of maritime pilotage and the possible actions that can take by using them. Furthermore, this paper will explain the purpose and the importance of the maritime pilotage, as well as present in detail the different types of them, highlighting their specific advantages and disadvantages.*

33. Vessel Maneuvering in Confined Spaces. Entry Maneuver, Mooring, Tying up of Missile Carrier Ships in Port of Mangalia. Case Study

Author: Gabriel-Andrei RUSU, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: S.L. Dr. ing. Sergiu ȘERBAN

Abstract: *This project contains information related to how a missile carrier type ship, which belongs to Romanian Naval Forces, is maneuvered and moored step by step in port of Mangalia. Additionally, it describes technical details regarding de missile carrier ship, the port of Mangalia and the possible difficulties during the process of entering the designated port. Moreover, I wrote about my experiences, being a participant in these actions in spite of the fact there are people working in the Naval Forces who already know how to maneuver this type of ship.*

34. Maneuvering of the Ship in Bad Weather Conditions of an Oil Tanker in the Indian Ocean

Author: Endis SEPTAR, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: S.L. Dr. ing. Sergiu ȘERBAN

Abstract: *The ship Jupiter Sun was traveling in bad weather in the Indian Ocean, and for 2 days it was in the vicinity of a monsoon that caused strong winds and rough seas, factors that made navigation difficult. When entering an area crossed by a tropical cyclone, for safe navigation it is required to keep the ship only in the maneuverable semicircle.*

35. Case Study Concerning Search and Rescue on Sea Using Helicopter

Author: Constantin ȘOLDAN, Academia Navală „Mircea cel Bătrân", Constanţa

Scientific Advisor: Ș.L. Dr. ing. Andra-Teodora NEDELCU
Abstract: *This scientific paper, titled "Case study concerning search and rescue on sea using helicopter" aims to improve the significant role of helicopter in Maritime Search and Rescue operation and it is based on response plans when accidents occur. Since, in the last years the international maritime trade is increasing continuously, more and more ships are involved in a number of serious accidents. This scientific paper will explain in detail how to evaluate the response plans comprehensively before performing them. Furthermore, this paper will explain the purpose and the importance in maritime search and rescue that will increase the efficiency of rescuing activities using helicopter operation. Additionally, this paper will reflect how easily this operation can adapt to the new environment.*

36. Sea Mine Destruction
Author: Ciprian-Marian STAN, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: Conf.univ.Dr.ing. Alexandru COTORCEA
Abstract: *In the current context of conflict in the northern part of the Black Sea, sea mines have become a significant threat to the freedom of navigation. Destroying these mines requires an impressive mobilization of forces. These mines can only be destroyed by certain procedures by authorities. Mines are destroyed with the help of specially designed mine warfare ships and with the help of explosive ordnance disposal divers.*

37. COVID-19 Effects on Port State Control Regimes
Author: Viorel ȘTEFAN, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: Conf. univ. Dr. ing. Sergiu LUPU
Abstract: *Port State Control (PSC) is a ship inspection of foreign ships in national ports to verify that the condition of the*

ship and its equipment comply with the requirements of various international maritime regulations. PSC are of regional nature, meaning that several countries sharing common waters are grouped together under a Memorandum of Understanding (MoU) ensuring the vessels trading in the area are not substandard. This also helps checking as many vessels possible while avoiding multiple inspections of the same vessel. COVID-19 pandemic took the world by surprise, prompting countries to impose health and travel restrictions to halt the virus spread. As PSC inspections involve getting onboard vessels and in-person communications between inspectors and crew, its procedure and results are highly likely to be influenced by the COVID-19. In this study we explore how the PSC inspections, deficiencies and detentions are influenced by the pandemic through analyzing data from all PSC regimes.

38. Danish Straits Transit Onboard Suezmax Crude Oil Carrier

Author: Cristian STOIAN, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: S.L. Dr. ing. Sergiu ȘERBAN

Abstract: *A short but on point analysis regarding Danish Straits Pilotage and the challenges that comes with it, creating shipping routes within shallow water areas and underwater obstructions, transiting narrow channels and using deep water routes, all coming together for a safe passage onboard a considerable size Crude Oil Tanker.*

39. Cyber Security on Board Offshore Vessels

Author: Dumitru TRASCU, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: Conf.univ.Dr.ing. Alexandru COTORCEA

Abstract: *This scientific paper, titled "Cyber security on board offshore vessels" aims to improve the existing literature and*

enrichen it through mentioning new topics that unfortunately have not been mentioned previously. Henceforth, through studying existing resources, such as academic papers, books and various documents from existing cyber security, as well as through elaborating a case study on the hazards that may arise due to precarious inspection and maintenance of systems, this paper will present valuable contributions to both academicians and other people working for cyber security. This thesis will explain in detail the potential use of cyber security on board vessels. Furthermore, this paper will explain the purpose and the importance of the cyber security, as well as present in detail the different types of them, highlighting their specific advantages and disadvantages.

40. Transport of Dangerous Goods in a Multimodal Transport Chain

Author: Vlăduț-Ștefan ȚURCANU, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: Conf. univ. Dr. ing. Mihail PRICOP

Abstract: *Transport is considered, in the simplest analyses, the heart of trade, mobility and economic growth and consists in the movement of goods and people in space. However, there are also transports of dangerous goods that are regulated by specific rules. Each mode of transport (air, sea, road, rail and inland waterways) has its own regulations. A dangerous good, also known as a hazardous material or hazardous substance, is any substance or material that is capable of presenting a risk to health, safety, property and the environment when transported in commerce. Identifying dangerous goods is the first step to reducing the risks posed by the product through proper packaging, communication, handling and storage. Dangerous*

goods substances and articles are assigned to one of the 9 existing dangerous goods classes.

41. Ship's Manouvering in Special Condition. Port Manouvering. Berthing with/without Anchors

Author: Georgian ȚUȚUIANU, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: Conf. univ. Dr. ing. Mihail PRICOP

Abstract: *For berthing manouvering there are no strict rules but we can keep in our mind some principles of vessel specific for a good landing.*

42. Black Sea. The Law of the Sea under the Conditions of the A2AD System

Author: Daniel-Andrei VASILE, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Conf. univ. Dr. ing. Sergiu LUPU

Abstract: *The maritime field, in and through which operations are conducted on and under oceans and seas, presents unique challenges, as well as benefits for maritime nations and military forces. The oceans and seas still play a vital role in the prosperity and protection of most of the world's population. The Black Sea is a very important intersection that connects the European Continent, the Caucasus, Russia, Central Asia and Middle East. The Black Sea region has a very advanced economic potential. Therefore, Russia has strived to gain excessive control over the Black Sea. The A2/AD system is an attempt to deny an adversary's freedom of movement on the battlefield. Anti-acces inhibition of enemy military movement into an area of operations, utilizes attack aircraft, warships, specialized ballistic and cruise missiles designed to strike key targets. The Area Denial is an attempt to deny enemy freedom of actions in areas under friendly control, employs more*

defensive means such as air and sea defense system, naval mines, etc.

43. The Risk of Fire in the Maritime Transport

Author: Daniel-Vasile VELICU, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Prof. univ. Dr. ing. Florin NICOLAE

Abstract: *SOLAS imposes fire prevention measures through the constructive features of ships, fixed systems, portable equipment, familiarization and drills for action against fire. The IMDG Code imposes rules regarding the prevention (by segregation of cargo) and fight against fire (supplement) caused by dangerous goods. These being the main source for fires on board container ships. The quantity, type and distribution on board increase or decrease the risk of fire on board. Companies are introducing new risk mitigation measures in addition to the IMDG code. Ports introduce additional risk mitigation procedures for certain types of DG cargo that exceed certain quantities. The crew members find themselves in the situation where they have to comply with the IMDG code, the company's procedures and the rules imposed by the local authorities to reduce the risk of fire as much as possible.*

44 Study on the Safety Of Life at Sea and Protection Marine Environment in the Northern Sector of the Black Sea on the Duration of the Russian-Ukrainian Conflict

Author: Mihai VESPAN, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Conf. univ. Dr. ing. Dinu ATODIRESEI

Abstract: *The theme I will present consists of a parallel between the current period of Russian-Ukrainian conflict in the*

northern sector of the Black Sea. With the start of the war and its development, the northern area of the Black Sea became a difficult to impossible area to cross due to the restrictions created by the Russian side. The Russian forces, blocking the passage of ships to the ports, thus stop the incipient supply of the Ukrainian state and then a substantial decrease in the transport of goods from and to Ukraine. Through the actions carried out in this sector, negative actions on the marine environment could also be observed, influencing its good performance. During the presentation I will present the basic factors that mostly influence the good evolution of the selected area and what impact it had in the international system as well as in the natural course system.

45. Maneuvering the in Confined Waters. The Transit Maneuver of the Rio De Plaza River

Author: Stelian-Antonio LEGANATU, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: S.L. Dr. ing. Sergiu ȘERBAN

Abstract: *My project is based about my experience in my last contract at „MV CARME" bulk carrier with 4 cranes under Cyprus flag. I will present my transit from Montevideo area to Zona Comuna the place where the river it's divided in 2 arms to Uruguay and Argentina. From Zona Comuna to alongside in San Pedro port. All this area from Montevideo until alongside it's transit only with pilot on board and shallow waters.*
After departure from San Pedro we have 180 degrees turning in the channel without bowthurster only with engine, steering and anchor, of course with pilot. All manuvring in Parana river arrival and departure, turning its executed without any tug. When the vessel it's in confined water, or with pilot on board,

or transit some river, arrival departure from port its more stressfully for the master and all officer of watch.

46. The Maneuver of the Ship Involved in Search and Rescue Incidents at Sea with the Ship Type Dragor Maritim. Case Study

Author: Denisa Luciana MIHĂESCU, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: S.L. Dr. ing. Sergiu ȘERBAN

Abstract: *This work has the role of bringing to the fore the subject regarding the incidents of search and rescue at sea in special conditions, at the Minesweeper type ship belonging to the Romanian Naval Forces. For a better understanding of the topic addressed, I will structure the paper into three chapters, as follows: Chapter I will contain introductory information on the maritime minesweeper type ship and search and rescue incidents at sea, Chapter II will consist of the case study dealing with a recent incident at sea, and Chapter III, will be represented by the conclusions on the subject addressed in this paper.*

47. The Security of Navigation on the Danube in the Current Geopolitical Context

Author: Emanuel-Marian RADU, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: Conf.univ.Dr.ing. Alexandru COTORCEA

Abstract: *In this project it is about the geopolitical situation at Romania's borders, if it endangers the transport of internal and external goods, if it endangers Romania's interests and if traffic on the Danube is affected in any way. As well as about the old geopolitical problems and measures to prevent them for the future.*

48. Ship's Manouver in Narrow Channels. The Suez Canal Transiting Manouver with the Passenger Ship „Mein Schiff 2"

Author: Alexandru Alin TIMOFEI, Academia Navală „Mircea cel Bătrân", Constanța

Scientific Advisor: S.L. Dr. ing. Sergiu ȘERBAN

Abstract: *The objective of this work is to present and describe, step by step, the transit of the Suez Canal with the „Mein Schiff 2" passenger ship. This is a special maneuver that requires preparation and an increased effort on the part of all crew members. Emphasis will be placed on describing the preparations and requirements from the authorities of the Suez Canal which ultimately aim to reduce the risks of collision and stranding.*

SISTEME ELECTROMECANICE NAVALE

Biroul secțiunii
Președinte: Conf.univ.Dr.ing. Marian RISTEA-KOMORNIKI
Membri: Ș.L. Dr. ing. Daniel MĂRĂȘESCU
Lect. univ. Dr. Adriana SPORIȘ

1. Chemical Products Tank 50000 tdw. Optimizing the Operation of the Propulsion System

Author: Radu Emanuel ACSINCIUC, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Asist. Univ. Dr. ing. Ionel POPA

Abstract: *The hereafter developed document has the title* ***Chemical Tanker Optimizing the operation of the propulsion plant.*** *As pointed out, the project is structured in 3 quasi-distinct parts: tanker chemical ship that would involve the details discussed in Chapter 1, Chapters 2-4 to more fully address the sizing anchor - binding, and in the last chapter discuss its safe operation. Chapter 1 provides information on the general criteria related to the chemical vessel, information about the chosen ship, a small historical deployment of the ship's construction in connection with the construction of a single hull respectively double hull, the location of aggregates on the ship, the ship's construction dimensions as well as the dimensions and parameters of the main engine. In the second chapter is presented the diagram of the anchorage and its sizing construction elements consisting of the installation present, as well as detailing the equipment of the chosen vessel. The third chapter addresses the hydraulic actuation of the anchor winch and the binding winch, in which preliminary operations are carried out, the use of the anchor winch and the local and remote control and control system of the maneuvering plant anchor and winch binding winch or STS. In*

the final chapter the case study will be analyzed in detail, the operation of the anchor-binding plant in safety conditions.

2. Calculation of the Mooring Installation Container Vessel. Command and Control of the Optimal and Safe Operation

Author: Alexandru-Dumitru ANGHEL, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Prof. univ. Dr. ing. Beazit ALI

Abstract: *Safe usage of the mooring installation on a container vessel. Strengths of the cabstands and winches. Safe Weight Load of the mooring ropes in accordance with the dimensions of the vessel. Calculation of the mooring installation according to ship size, operational condition and class requirement. Command and control of the mooring winches.*

3. Container ship. Calculation and Construction of an Exhaust Gas Boiler. Control and Supervision in the Operation of the Exhaust Gas Boiler

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

Abstract: *Considering the major importance of the boiler for the steam installation on board of a container ship, because it generates the steam required for most systems such as the fuel system, I decided to choose for my diploma "Container ship. Calculation and construction of an exhaust gas boiler. Control and supervision in the operation of the exhaust gas boiler" under the guidance of Conf. Eng. Corneliu Moroianu PhD. This paper is structured into four chapters, as follows:*
In chapter one I described the Container ship followed in chapter two by determining ship's water resistance. In chapter three I made the thermic calculus of the main engine and also, in chapter four, I continued with thermic calculus of the exhaust gas boiler.

4. Optimization of Ballast Installation Operations for an AFRAMAX Tank

Author: Mirel Robert CLINCI, Academia Navală „Mircea cel Bătrân", Constanţa

Scientific Advisor: Asist. Univ. Dr. ing. Ionel POPA

Abstract: *The ballast installation is intended to ensure the condition of the vessel by changing the center of gravity of the ballasted vessel; the minimum draft at the stern required for the operation of the propeller; the possibility of correcting the trim(s) of the vessel caused by the uneven loading of the cargo on board or of any damage caused below the waterline of the ship's body. According to the degree of generality of use, ballast installations can be classified as follows:*

(A) general ballast facility - found on all types of sea and river vessels;

(B) specialized ballast units - used only in specialized vessels (the installation is involved in ensuring the functional role of the vessel).

a. The general ballast system shall meet in general cargo ships with the aim of modifying the medium draft and correcting the inclinations, longitudinal and transverse.

b. Specialized ballast units. They meet at ice breakers, container ships, portbards, floating docks and submarines.

5. NPR-Type Ship. Calculation of the Propulsion System of TG 12000CP. Elements of Calculation and Construction

Author: Sandu Cristian ENE, Academia Navală „Mircea cel Bătrân", Constanţa

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

Abstract: *The present paper, describe the analysis of the gas turbine installation cycle in which the fuel flow and air flow necessary for the combustion were determined, as well as the flue gas flow and the specific fuel consumption resulting from the combustion. Following the pre-sizing of the compressor,*

both the power required for the compressor drive and the number of steps. For the longest possible service life of the propulsion system, a maintenance plan and periodic revisions are drawn up to be followed. With the period during which the maintenance and repair work must be performed, their level of complexity and the devices used during the process also differ. The paper presents the composition of the propulsion system, both the maintenance operations and the repair work to be performed on the installation, as well as the functional parameters in march and in standstill.

6. Tank Type AFRAMAX. The Comparative Study Regarding the Use of the Shaft Generator

Author: Ciprian-Ioan GĂLUȘCĂ, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Asist. Univ. Dr. ing. Ionel POPA

Abstract: *A comparative study regarding the use of a shaft generator would involve comparing the performance and efficiency of a shaft generator to other types of generators, such as steam turbine generators or internal combustion engines. The study would likely analyze factors such as cost, maintenance requirements, power output, and overall efficiency. Additionally, it may also consider the specific application or industry in which the generator is being used, and how the shaft generator compares to other generator options in that context.*

7. Lubrication System Modelling for a Diesel Generator Using Programs Based on Finite Volume Theory. 12000 TEU Container Ship

Author: Radu-Stefan MUSAT, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Ș.L. Dr. ing. Daniel MĂRĂȘESCU

Abstract: *One of the most important of an internal combustion engine is represented by the lubrication system without which moving parts could not be engaged without their prior destruction. In the design of these machines the lubrication factor and the efficiency of this system is always taken into consideration. The first chapter is a classification specific requirements of engine lubricants. As the lubricants have different physical properties and performance levels for different applications, this first chapter will therefore represent a quantification of the different uses of oils in marine engines, hence the dependence of lubricant types in specific applications. Considering this brief classification of types of lubrication systems for different types of engines, being the foundation of this lubrication system design and modelling. In the second chapter a generalized description of the lubrication system of a marine diesel generator for a 12000 TEU ship will be given explaining its functionality, its components and how they are lubricated. In the last chapter I will present the particularities of the selected oil cooler and its modelling in a program based on finite element method.*

8. Cargo of 8700 tdw. Design Elements of the Cable Drive Mechanism for the Lifting Arm of the Cargo Crane. Maintenance and Disassembly and Assembly Technologies

Author: Petru-Romică ORUZ, Academia Navală „Mircea cel Bătrân”, Constanţa

Scientific Advisor: Conf. univ. Dr. ing. Dumitru DASCĂLU

Abstract: *The calculation of the crane boom lifting mechanism involves evaluating the forces and moments acting on the mechanism during operation to determine whether it is capable of supporting the maximum load and operating safely. There are several methods of calculation, but one of the most used is the force and moment analysis method. This involves identifying and analyzing all the forces and moments acting on*

the mechanism during operation, such as lift force, material resistance force, friction force and moment of inertia.

9. Tank Type AFRAMAX. Optimal Operation of the Propulsion Plant

Author: Cătălin-Gabriel PAGU, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Asist. Univ. Dr. ing. Ionel POPA

Abstract: *The propulsion installations of modern commercial ships are built with a sufficiently high level of automation for routine operations during sea voyages to be carried out from the bridge. Exceptions to this are some passenger ships and ships sailing in congested waters where machine supervision is preferable. The manning level in the machinery space, when operating the machinery unattended, should meet the requirements of handling and damage situations. An Aframax is an oil tanker with a cargo capacity of between 80,000 and 120,000 tones. The term is based on the Average Freight Rate Assessment (AFRA), a tanker rate assessment system developed in 1954 by Shell Oil to standardise the terms of shipping contracts. Due to their favorable size, Aframax tankers can serve most ports in the world. These vessels serve regions that do not have very large ports or offshore oil terminals to accommodate very large crude oil carriers and ultra-large crude oil carriers. Aframax tankers are optimal for transporting crude oil over short and medium distances. Aframax class tankers are mostly used in the Black Sea, North Sea, Caribbean Sea, South and East China Sea and Mediterranean Sea basins. Exporting countries outside OPEC may require the use of this type of vessel because the ports and channels through which these countries export their oil are too small to accommodate larger Suezmax crude oil tankers or still very large crude oil tankers and ultra-large crude oil tankers.*

10. Propulsion System Modeling Using Programs Based on Finite Element Theory. 12,000 TEU Container Ship

Author: Ciprian PRIOTEASA, Academia Navală „Mircea cel Bătrân", Constanţa

Scientific Advisor: Ș.L. Dr. ing. Daniel MĂRĂȘESCU

Abstract: *The design speed of the vessel is usually set at the owner's desire, unless limited by regulations. In the fuel equation, the product of drag and speed is divided by the efficiency of all the components involved in propelling the ship. Considering this brief classification of the propulsion systems on board the main categories of ships, in the framework of the project the propulsion plant is modeled using programs based on finite element theory in the case of a ship. 12,000 TEU container ship. In the first chapter, an analysis of containerized transport and developments in the field is carried out, as well as a general description of the 12,000 TEU ship, while in the second chapter, the ship's propulsion installation is presented. The third chapter is the one in which the actual modeling of the propulsion plant is carried out using a program based on the finite element theory.*

11. Considerations Regarding the Optimization of the Bow Area Depending on the Speed of a 2500 TEU Container Ship. Case Study: Optimizing the Bulb for a Speed of 24 Nd.

Author: Ionut-Sebastian SERBAN, Academia Navală „Mircea cel Bătrân", Constanţa

Scientific Advisor: Conf. univ. Dr. ing. Adrian POPA

Abstract: *In maritime transport, the International Maritime Organization is working on various fronts to reduce emissions of polluting gases and greenhouse gases into the atmosphere. The first line of action aims to set a maximum CO2 index for new buildings. The second line of action focuses on ships already built and is trying to achieve a reduction in emissions.*

This plan must be approved and involves finding technically and economically feasible solutions. Third, an emission control system aims to reduce or offset emissions. In order to have an efficient ship from all points of view, several conditions must be met. Thus, new technologies and design concepts must be brought together with the main purpose of reducing the operating costs of the ship but at the same time reducing emissions. After calculating these efficiency coefficients, we proposed to equip the ship with innovative energy installations and we will calculate the efficiency indices again. The topic developed in Chapter Five includes both the study of the Energy Efficiency Coefficient in the design phase of the ship EEDI - Energy Efficiency Design Index (which is a mandatory technical measurement for new ships), and the study of the Operational Energy Efficiency Indicator EEOI - Operational Energy Efficiency Indicator (as a voluntary measurement of ships in service). During the paper, we proposed the study of the ship's endowment with the following types of installations, as follows:

- *shaft generator;*
- *vertical wind turbines;*
- *solar panels with spherical cells.*

Methods of reducing pollutant emissions from the exhaust gases of ship engines fall into two essential categories: primary methods, involving engine-functional modifications of the engine, and a second category consisting of treatments on the exhaust gases from the engine, or, alternatively, in modification of the operational characteristics of the ship.

12. Modelling the Flue Gas Flow in a Gas Scrubber on Board a Port-Container Ship

Author: Alin-Ionuț STOICA, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Conf. univ. Dr. ing. Marian RISTEA KOMORNIKI

Abstract: *Scrubber systems (e.g. chemical scrubbers, gas scrubbers) are a diverse group of air pollution control devices that can be used to remove some particulates and/or gases from industrial exhaust streams. An early application of a carbon dioxide scrubber was in the submarine the Ictíneo I, in 1859; a role for which they continue to be used today. Traditionally, the term "scrubber" has referred to pollution control devices that use liquid to wash unwanted pollutants from a gas stream. Recently, the term has also been used to describe systems that inject a dry reagent or slurry into a dirty exhaust stream to "wash out" acid gases. Scrubbers are one of the primary devices that control gaseous emissions, especially acid gases. Scrubbers can also be used for heat recovery from hot gases by flue-gas condensation. They are also used for the high flows in solar, PV, or LED processes.*

13. Bulk Carrier. Methods of Reducing Pollutant Emissions Produced by Burning Fossil Fuels

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

Abstract: *Exhaust gas emissions increasingly become a more stringent topic of public interest in the context of merchant shipping industry. Exhaust emissions from marine diesel engines comprise nitrogen, oxygen, carbon dioxide (CO2), carbon monoxide (CO), oxides of sulphur (SOx), nitrogen oxides (NOx), hydrocarbons, water vapour and smoke. Oxides*

of nitrogen and sulphur are of special concern as threats to vegetation, the environment and human health.

14. Elements of Design, Construction and Operation of Ships with Hybrid Propulsion

Author: Andrei Sebastian PODLOG, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Asist. Univ. Dr. ing. Ionel POPA

Abstract: *The topic of the research is: "Elements of design, construction and operation of ships with hybrid propulsion", a subject that arouses my personal interest because I consider that the noxes that are released into the atmosphere are very high, so in more and more protected areas in the world I see the need to use non-polluting transport vehicles or with a degree of pollution as low as possible.*

15. Chemical Products Tank 50000tdw. Optimizing the Operation of the Ballast Installation

Author: Ionut-Sebastian SERBAN, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Asist. Univ. Dr. ing. Ionel POPA

Abstract: *In maritime transport, the International Maritime Organization is working on various fronts to reduce emissions of polluting gases and greenhouse gases into the atmosphere. The first line of action aims to set a maximum CO2 index for new buildings. The second line of action focuses on ships already built and is trying to achieve a reduction in emissions. This plan must be approved and involves finding technically and economically feasible solutions. Third, an emission control system aims to reduce or offset emissions. In order to have an efficient ship from all points of view, several conditions must be met. Thus, new technologies and design concepts must be brought together with the main purpose of reducing the operating costs of the ship but at the same time reducing*

emissions. After calculating these efficiency coefficients, we proposed to equip the ship with innovative energy installations and we will calculate the efficiency indices again. The topic developed in Chapter Five includes both the study of the Energy Efficiency Coefficient in the design phase of the ship EEDI - Energy Efficiency Design Index (which is a mandatory technical measurement for new ships), and the study of the Operational Energy Efficiency Indicator EEOI - Operational Energy Efficiency Indicator (as a voluntary measurement of ships in service). During the paper, we proposed the study of the ship's endowment with the following types of installations, as follows:

- *shaft generator;*
- *vertical wind turbines;*
- *solar panels with spherical cells.*

Methods of reducing pollutant emissions from the exhaust gases of ship engines fall into two essential categories: primary methods, involving engine-functional modifications of the engine, and a second category consisting of treatments on the exhaust gases from the engine, or, alternatively, in modification of the operational characteristics of the ship.

16. Cargo of 8700 TDW. Design Elements of Cargo Crane Hook Cable Drive Mechanism. Maintenance and Disassembly and Assembly Technologies

Author: Alin-Gabriel OANCEA, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Conf. univ. Dr. ing. Dascalu Dumitru

Abstract: *Cargo or cargo boat is the name of a vessel intended for the transport of dry bulk goods or packaged or unpackaged goods. Freighters can be built to carry general cargo or be specialized for specific types of cargo. Cargoes sailing on the same shipping line are also called liner cargoes.*

General cargo carriers are built with one or more decks called shelterdocks. The shelter deck is a platform located

immediately above the upper deck covering a structure without an opening in the sides.
For loading and unloading cargo, general cargo freighters are equipped with biggies and naval cranes.
General cargo carriers are the most common sea transport vessels, with displacements between (500-30,000 tdw), the majority being 4,500-8,000 tdw. The interior arrangements and exterior appearance may differ from one freighter to another by: the location of the machinery compartment; the number, size and location of superstructures; the number and size of warehouses; the number of decks and walls; the shape of the stern and bow extremities, the general skeleton system; the facilities for loading and unloading goods (big trucks, cranes, etc.).
The cargoes are provided with continuous superstructures or racks and have large spaces for storing goods. The general frame system of cargoes can be transverse or combined. The economic speed of the freighters is (12...20) Nd being obtained, as a rule, with the help of engines with compression ignition (Diesel), slow or semi-fast, which drive propellers with fixed blades. The machinery compartment can be located at the stern, center or bow of the ship.
The training ship ALBATROS was built in Brăila Naval Shipyard and was delivered to Navrom Constanța under the name "DEJ" in July 1977. It sailed for Navrom Constanța until 1989, when, during the events of December 1989, a fire broke out in the cabin area fire. When the fire broke out, the cargo was in the port of Constanța. Although the fire was extinguished relatively quickly, the ship ALBATROS remained unused.

OPERAREA ŞI CONDUCEREA SISTEMELOR ELECTROENERGETICE NAVALE

Biroul secțiunii
Președinte: Prof. univ. Dr. ing. Vasile DOBREF
Membri: Conf. univ. Dr. ing. Florenţiu DELIU
Ș.L. Dr. ing. Iancu CIOCIOI

1. The Correlation Between the Energy Efficiency of Wind Turbines and the Air Noise Produced by Them

Author: Vasile AGAPIE, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: S.L. Dr. Ing. Tiberiu PAZARA

Abstract: *The dissertation proposes a study between the correlation between the energy efficiency of the turbines and the air noise produced by these energy systems. To carry out this analysis, the study is divided into three chapters that present various aspects. Globally, wind energy is at a stage of technological maturity, but in Romania, the share of electricity from wind sources in the energy balance remains for the time being below the real possibilities of their effective utilization. A major difficulty in the conversion of wind energy in terms of integration into the energy system, is the direct dependence of energy on wind speed variations over time. An important aspect is the controllability of the system, considering that wind energy is fluctuating.*

2. The Study of Grounding as a Method of Reducing Electromagnetic Interference

Author: Cosmin BONDĂR, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: S.L. Dr. ing. Iancu CIOCIOI

Abstract: *Grounding is a fundamental concept in electrical engineering and is used to provide a common reference point*

for electrical signals in electronic systems. In addition to providing a stable reference for signals, grounding also helps to reduce the impact of electromagnetic interference (EMI) on electronic equipment. EMI is the result of unwanted electromagnetic signals that can interfere with the normal functioning of electronic systems, leading to errors and system failures. This makes the reduction of EMI a crucial concern for designers of electronic systems. The study of grounding as a method of reducing EMI is an important area of research in electrical engineering. In this study, the effectiveness of various grounding techniques was investigated through experiments and simulations. The results showed that proper grounding techniques can significantly reduce the level of EMI in electronic systems. For example, the use of a grounded metal shield around electronic components was found to be an effective method of reducing EMI. Similarly, the use of grounded conductive materials as part of the electronic system design was found to be effective in reducing EMI. It is important to note that while grounding is a critical aspect of reducing EMI, it is not the only factor that contributes to the problem.

3. Study on the Protection of Human Personnel at the Action of the Electromagnetic Field

Author: Ligia-Maria-Diana CIULINĂ (MUREȘAN),
Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: S.L. Dr. ing. Iancu CIOCIOI

Abstract: *The study of the interaction of the electromagnetic field with living organisms, represents a current concern being of wide scientific interest worldwide. The exposure of the human body to high-frequency electromagnetic fields, generated by communication systems, involves conducting studies on the levels of electromagnetic fields in different regions, both in the far-field area of an electromagnetic field*

source and in its near-field area. In this paper I will present information on the disruptive effects of the electromagnetic field on the human body and I will present information regarding the protection of human personnel at the action of the electromagnetic field.

4. Study of the Operation of Asynchronous Motor Drive Systems with PWM Control

Author: Matei COTEȚ, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Prof. univ. Dr. ing. Vasile DOBREF

Abstract: *The study of the operation of PWM-controlled drive systems with asynchronous motors is an important topic in the field of electrical technology and automatic control. Asynchronous motors are used in many applications, from industrial machinery and equipment to power generation systems, and are valued for their reliability and efficiency. PWM control asynchronous motor drive systems focus on using PWM (pulse width modulation) technology to control the speed of an asynchronous motor. The PWM technique works by generating a signal with the modifiable pulse width, which is then applied to the engine coil. This signal has a direct impact on the speed of the engine, allowing for better controllability and accuracy. One of the advantages of using PWM technology in drive systems with asynchronous motors is the ability to provide precise speeds while reducing energy loss and noise. Pwm-controlled drive systems are also capable of operating in a wide range of speeds and can be used to control the motor speed dynamically.*

5. Efficiency of Photovoltaic Panels in the Context of Their Use on Board Ships

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

Scientific Advisor: S.I. Dr. Ing. Tiberiu PAZARA

Abstract: *The project of which's theme is "Efficiency of Photovoltaic Panels in the Context of Their Use on Board Ships" realizes a study aimed on the solar panels who can be used on naval ships as a source of renewable energy. The use of solar panels on naval ships provides a number of benefits, including reducing the ship's dependence on fossil fuels and improving its energy efficiency. This can result in cost savings, as well as reducing the environmental impact of the ship's operations.*

6. Speed Adjustment on Asynchronous Machine

Author: Robert Sebastian DRON, Academia Navală „Mircea cel Bătrân", Constanța

Scientific Advisor: Conf.univ. Dr. ing. Florențiu DELIU

Abstract: *The importance of this work is given by the requirements of the market which is looking for more and more performing regulation systems, having a low cost and being safe to use. In principle for electric machines, but especially for electric drives with asynchronous machines. This is exemplified by determining some mathematical models in the case of the asynchronous machine, where the speed can be adjusted with different strategies: controlled stator flux, controlled useful flux and controlled rotor flux. The triad of identification - modeling - with simulation in applications that have in mind the management of systems and processes. This is a field of maximum interest in the most diverse branches of science and technology. The purpose of identification is therefore the construction of the model. The realization of a usable model for simulation can be materialized in two ways: the abstract, analytical way, with the mathematical model as the end, and the way based on the experiment, briefly called identification. System modeling is seen as a real structure, which can integrate the electronic computer. Without the help of system*

modeling, modeling and simulation processes cannot be integrated.

7. Protection of Electric Motors
Author: Claudia Georgiana ENE, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: S.L. Dr. ing. Leon PANĂ
Abstract: *Protection of electric motors from overloading is essential for preventing damage and ensuring safe and efficient operation. There are several protection methods, such as using thermal devices such as fuses or thermistors that open in case of overheating or overloading. Electronic protection systems can be used to monitor and control the motor's current and voltage. Overload protection can also be achieved through proper sizing of cables and other electrical components. It's important to take appropriate protection measures to prevent costly damage and ensure safe and efficient operation of the electric motor.*

8. Speed and Position Sensor with Hall Integrated Circuit ATS627LSG Used in R.O.V. Industry
Author: Dan-Sebastian ROTARU, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: S.L. Dr. ing. Iancu CIOCIOI
Abstract: *The paper presents the operating principle of an speed and position sensor based on Hall Effect principle and the role of it in an ROV system.*

9. Isolation Amplifiers - Isolation Switches and Barriers for Areas with Explosive Atmosphere
Author: Stefan-Vladut HELGIU, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: S.L. Dr. ing. Iancu CIOCIOI

Abstract: *A single source of ignition could cause an explosion, which could result in property damage and injury, which in some cases could even be fatal. To achieve this objective of isolating and limiting the dangers on board ships caused by explosive atmosphere areas, dedicated solutions such as safety isolation barriers, galvanic barriers and Zener barriers have been identified. Although there is now a wide variety of intrinsically safe industrial equipment such as flashlights, video cameras, gas detectors and even radios, the biggest challenge remains in measuring pressure and weight. For these reasons, this presentation will focus on the specific aspects related to the equipment used to limit areas with an explosive atmosphere, namely the insulating amplifiers - switches and the insulating barriers.*

10. Design and Development an Application for Bridge Navigational Watch Alarm System Using PLC

Author: Hristache ISAC, Academia Navală „Mircea cel Bătrân", Constanţa

Scientific Advisor: S.L. Dr. ing. Iancu CIOCIOI

Abstract: *In line with the general developments and advances in technology, alarm systems for navigational surveillance have been improved and modernised. This paper deals with the implementation of an alarm system for navigation surveillance on deck using a programmable logic controller (PLC). In the naval domain, the role of an alarm system for navigation supervision on deck is to monitor the activity on the bridge and to detect the watch officer's incapacity, which could lead to maritime accidents. It must comply with IMO Resolution MSC.128(75) for Bridge Navigational Watch Alarm System (BNWAS) and MSC.302(87) for Bridge Alert Management. The novelty of the project is to realize and simulate a BNWAS using a Siemens LOGO! 0BA7, Siemens S7-1200 PLC and programming environments - LOGO!Confort 7 and TIA Portal.*

Integrated in the present design is a PLC LOGO! 0BA7, a proximity sensor that detects the presence of the watch officer, a timer reset panel and an optical and audible alert device.

11. Radar Fundamentals

Author: Ilie Claudiu IZMANĂ, Mirel-Alexandru SLABU, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: S.L. Dr. ing. Eduard DRAGOMIR

Abstract: *In this paper I will talk about the operation of the radar and its components. In present days, the high-tech RADAR has wider areas of applications, viz. aircraft anti-collision systems, air and terrestrial traffic control, surveillance systems, air-defense systems, meteorological monitoring, antimissile systems, RADAR astronomy, marine RADARs for ships, guided missile target locating system, remote sensing, geological observations, measurement of height and depths etc. I will detail some important elements of using radars on board ships.*

12. Study of Pod-Azipod Propulsion-Steering Systems

Author: Robert-Andrei MATCHE, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Prof. univ. Dr. ing. Vasile DOBREF

Abstract: *Since the middle of the 1990´s pod propulsion in marine applications have become common. There are mainly two manufactures on the pod market. ABB is the biggest producer and has two types of pod-types, Azipod (5-30 MW) and Compact (0.4-5 MW). Rolls-Royce (RR) is the second biggest company on the market, producing a pod called Mermaid (5-25 MW). The electrical system in pod propulsion normally consists of a transformer, a frequency converter and an electric motor. The transformer is used to divide the system into several parts in order to obtain different voltage levels but also for phase shift voltages for the used rectifiers. The purpose*

of the frequency converter is to control the speed and torque of the motor by changing a constant frequency from the main generator into variable frequency for the motor. The electric motor is used for conversion from electrical to mechanical power for the propeller.

13. On Resolving Reactive Power Problems in Ship Electrical Energy Systems

Author: George-Dan MOȘOIU, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Conf.univ. Dr. ing. Florențiu DELIU

Abstract: *This paper provides the main concept of reactive power compensation onboard ship electrical energy systems mainly as a retrofitting means towards assisting the generator plant and improving the ship efficiency in terms of fuel consumption and emissions. The alternative means are presented and discussed via the support of actual case studies.*

14. Protections in Power Systems

Author: Constantin-Cristian URSEA, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: S.L. Dr. ing. Leon PANĂ

Abstract: *Protections in power systems are essential for ensuring their safe and efficient operation. They handle the quick detection and tripping of faults and overloading of loads. There are several types of protections, such as overvoltage protection, overloading protection, short-circuit protection, and frequency protection. All these protections aim to prevent costly equipment damage and ensure continuity of electric power supply.*

15. Hybrid Propulsion in a Seagoing Vessel. Simulation Program for Naval Hybrid Propulsion

Author: Gabriel CÎMPANU, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Prof. univ. Dr. ing. Gheorghe SAMOILESCU

Abstract: *Hybrid propulsion systems in marine vessels combine traditional mechanical propulsion systems such as diesel engines with alternative power sources such as electric motors and batteries. Hybrid systems offer the potential for enhanced efficiency and reduced emissions. Simulation programs are available to assist naval architects in the design and analysis of hybrid propulsion systems. These simulations allow engineers to evaluate system components, analyze fuel consumption, and model power management strategies. Simulation programs can also be used to test different engine configurations and predict performance in varying operational conditions.*

16. Database for Management of the Component Elements of Fire Extinguishing Installation

Author: Aurelian DIMA, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: S.L. Dr. ing. Paul VASILIU

Abstract: *This paper seeks to develop a more efficient database for the management of fire extinguishing system components. The database will provide administrators and service personnel with an easy to use system that will facilitate the management of firefighting facilities onboard or on land. The database will be evaluated in terms of its ability to provide an efficient and accurate system for managing components of fire extinguishing installations. The final component of the database is the ability to track maintenance and inspection records for each component and to check if they are up to date. This information is essential to ensure that all components work as intended, and*

are in full compliance with latest national and international regulations.

17. Systems for Commanding the Operating of Naval Elevators

Author: Ionut GROSU, Academia Navală „Mircea cel Bătrân”, Constanţa
Scientific Advisor: Prof. univ. Dr. ing. Vasile DOBREF

Abstract: *In this paper I will present several types of elevators found on cruise ships. The work is divided into 5 chapters from the oldest models to the present:*

Chapter 1 general information naval lifts components and parts engine gearbox control panel electrification safety circuit displacement cable overspeed governor car/ctw car door handle from car box door operator.

Chapter 2 old generation elevators tms600 traffic master system there are elevators built between 80-2010 with a maximum capacity of 16 people/1200kg.

Chapter 3 elevators new generation lce electrification lift controller there are elevators built between 1996-present with a maximum capacity of 22 people/2000kg.

Chapter 4 elevators kce kone controller electrification elevators built between 2015-present are not recommended to be installed on ships.

Chapter 5 hydraulic lifts there are elevators that include hydraulic parts in addition to the obligatory components of conventional elevators.

18. Use of a PI Controller System for the Control of Drinking Water Supply Distribution on Board Ships Using PLC

Author: Luigi-Nicolae IONESCU, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: S.L. Dr. ing. Iancu CIOCIOI

Abstract: *The present paper aims to model and simulate an PI Controller for water distribution onboard ships, explaining the operation mode and how to optimize the cooling performance and to reduce failures. The system will ensure that constant pressure is always provided, independent from the number of consumers. The system will monitor the number of running hours of the feeding pump and also the pressure. The automation solution uses LOGO!Logic modules.*

19. Simulating and Interfacing a Thermocouple Using Arduino and Electronic Simulator Proteus

Author: Andrei-Gabriel MOGOȘANU, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: S.L. Dr. ing. Iancu CIOCIOI

Abstract: *Simulating and interfacing a thermocouple using Arduino and Electronic Simulator Proteus is a valuable technique for developing and testing temperature sensing and control systems. Arduino microcontrollers are widely used in the maker and engineering communities due to their ease of use and versatility, while Proteus is a powerful electronic simulation software that enables engineers to test and validate their designs before building the actual hardware. In this process, the thermocouple is connected to the Arduino, which reads the voltage output and converts it into a temperature value using a suitable equation. The temperature data is displayed on an LCD for further analysis. Proteus is able to simulate the entire system, including the thermocouple,*

Arduino, and other components, and to test its functionality under different conditions.

20. Study on the limitation of harmonic distortions within the naval power systems

Authors: Mirel-Alexandru SLABU, Ilie Claudiu IZMANĂ, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: S.L. Dr. ing. Eduard DRAGOMIR

Abstract: *The aim of the work is to study the limiting modules of harmonic distortions on board maritime ships. Continuous disturbances (other than long overvoltage or undervoltage duration) manifest as harmonic distortions. Among the sources of such distortions there are the synchronous generators of the electricity producers, the equipment of variable frequency control of the speed of asynchronous motors, bridge rectifiers, electric arc furnaces, welding machines, uninterruptible power supplies with electricity, switching power supplies of computing equipment, electromagnetic and electronic ballasts of fluorescent lamps. Nowadays, all electric receivers, except only lamps with incandescence and heaters equipped with resistors, produce harmonics. Harmonics are defined as voltages or currents whose frequencies are one integer multiple of the fundamental frequency. Usually, harmonics are defined by their order, which represents the multiple the fundamental to which it refers.*

21. Asynchronous Machine Controlled by Means of the Static Power Converter

Author: Virgil BEȘTEA, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: Prof.univ.dr.ing. Dobref Vasile

Abstract: *The most used motor in industrial installations due to its robustness, ability and low maintenance cost. Its characteristic is the high level of current that is absorbed at start-up by connecting directly to the network. By applying the entire voltages from the network produce starting and peak currents that have the effects of overloading the network.*

INGINERIE ŞI MANAGEMENT

Biroul secțiunii
Președinte: Prof. univ. Dr. ing. Florin NICOLAE
Membri: Conf. univ. Dr. ing. Filip NISTOR
Conf. univ. Dr. ing. Alexandru COTORCEA
Ș.L. Dr. ing. Rita AVRAM
Masterand Alinuța FEODOT

1. The Importance of Water Transport in the Event of a Military Conflict in the Black Sea Region
Author: Bianca-Mihaela AGACHE, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: Conf. univ. Dr. ing. Filip NISTOR
Abstract: *The Black Sea region has long been the scene of a fight for domination between great countries due to its strategic location at the border between Europe and Asia and at the meeting point of numerous civilizations, cultures, and interests. Providing the main connection between the Danube area and Eastern Europe, the Caspian and the Aegean Seas, it serves as a crossroads of important oil, gas, energy and trade routes. It is a dynamic with a variety of political, economic, and societal cultures that is characterized by strong linkages among the nations and their enormous economic potential, as well as by conflicting interests. The current paper presents a study of the importance of water transport in the event of a military conflict in the Black Sea region.*

2. Case Study Regarding the Organization of Import-Export Operations in A Multimodal System
Author: Alexandra ALEXE, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: Conf. univ. Dr. Cătălin POPA

Abstract: *The author's imprint can be noticed in the case study carried out for the shipment of a batch of 30 containers, on the route Constanța-Brașov-Constanța-Izmir-Ankara. The purpose of the diploma thesis is to carry out a case study on the shipment of a batch of 30 containers using multimodal transport. Statistical analysis, theoretical approach and case study contributed to the goal; In addition, additional sources were used, such as web pages and scientific research. The results of this paper can be found in the third chapter, more precisely, in the analysis of transport routes and the choice of the most efficient and advantageous variant in terms of transport cost and the main methods used in completing the diploma thesis. which are found in the summary of conclusions and recommendations.*

3. Analysis of Work Procedures in Logistics Operations for Containerized Goods to Improve the Working Conditions of Port Workers

Author: Alexandra-Nicoleta BARCAN, Academia Navală „Mircea cel Bătrân", Constanța

Scientific Advisor: Prof. univ. Dr. ing. Florin NICOLAE

Abstract: *Port activity includes multiple operations, each of them of crucial importance for the smooth running of maritime transport and the logistic processes that maritime transport involves. Container mooring is an indispensable process of maritime transport and implicit of the global economy. This is also one of the most physically demanding and dangerous processes not only in this field of activity, as dockers undergo a program that varies between six and eight hours of intense physical work handling heavy and sizeable tools in spaces uncomfortable, often against the clock and exposed to the elements. In this presentation we will analyze the container mooring process, the risk factors involved in container mooring, the most common accidents and possible measures*

that can be implemented to maximize safety at the workplace along with productivity and economic profitability.

4. Strategies and Logistics Activities on Board a Ship to Reduce Energy Consumption

Author: Mihai ALEXANDRU, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: Prof. univ. Dr. ing. SAMOILESCU Gheorghe

Abstract: *The work is based on the idea that energy efficiency in every logistics activity can be increased if the transport capacity is used to its maximum potential. One way to promote sustainable development in shipping is to focus on increasing energy efficiency. At the strategic planning level, horizontal cooperation and competition between shipping lines and vertical integration between shipping lines and other stakeholders must be considered. A case study was carried out regarding the strategies to be applied to reduce energy consumption on board the Harmony of the Seas cruise ship. International regulations applicable to cruise ships were taken into account, creating a SEECAT ship modeling platform and a data verification methodology used for the ship study. The work explored the effectiveness of methods to improve energy efficiency on board ships as well as the logistical activities that can be carried out in order to reduce energy consumption.*

5. Analysis of Sustainability of Port Activity in Specialized Terminals

Author: Andrada Gratiela ANDREI, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: Prof. univ. Dr. ing. Florin NICOLAE

Abstract: *Climate change has been in the attention of the general public for some time, from the European Union, international and national governments, to the common man who, through small daily energy-producing activities,*

generates carbon emissions into the atmosphere. As demonstrated over the years, maritime transport is an essential and important branch of the global economy, as it distributes more than 80% of the volume of international trade. Consequently, global warming represents a significant threat to the port environment as well, being a subject that becomes more and more critical with each passing day. The sustainability analysis focuses on the main container terminals located in the port of Constanța. The results obtained through this work can be the basis for identifying solutions to improve port activities to reduce their impact on the port environment.

6. Analysis of the Integrated Logistic Support System in NATO Joint Actions – Multinational NATO Logistics

Author: Iulia Emilia ANTONIE, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: Conf. univ. Dr. Cătălin POPA

Abstract: *While NATO's logistic concept embraces jointness, each component, due to the nature of their missions, has a slightly different approach to implementing the multinational logistic concept. Although the specific methods of supporting deployed multinational units do vary, their support requirements are very similar. That is, support elements must be flexible, mobile and responsive to the requirements of the component commander for multinational operations, logistics must function as an effective force multiplier. With the risk now omni-directional, the diminishing logistic support resources, and the principle of shared logistics responsibilities, the evolution toward multinational logistics becomes of utmost importance.*

7. A study of Enterprise Resource Planning (ERP) Implementation and Use at a Port Operator

Author: Elena-Rodica BAGAIOF, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: Conf. univ. Dr. Andrei BĂUTU

Abstract: *Enterprise resource planning (ERP) systems have been used in integrating information and hasten its distribution across activities and departments with the intent to raise companies' operational performance. The purpose of this study is to help in understanding the ERP system implementation and use challenges together with identifying the benefits, the advantages and disadvantages and the economic effectiveness of ERP system. ERP permits a company's functional units to communicate directly with each other and are used to support various resource planning as well as to provide managers with up-to-date information. This paper adopted a combined literature review and case study method.*

8. Human Resources Strategies and Policies in the Port Industry

Author: Maria Cristina BRADU, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: Conf. univ. Dr. ing. Filip NISTOR

Abstract: *The paper examines the role of human resources in the efficient and effective functioning of ports. It explores various HR strategies and policies that have been implemented in port organizations, including recruitment, training and performance management. The research findings suggest that the adoption of innovative HR practices can lead to improved organizational performance and increased competitiveness in the global port industry. The study also provides valuable insights for port organizations and human resource professionals in the field, highlighting the need for effective HR*

strategies and policies in the port industry to ensure organizational success and competitiveness. The study concludes that effective HR strategies and policies are crucial for the success of port organizations and highlights the need for continuous improvement in this area.

9. The Importance of the IT Systems for the Operations of Shipping Companies

Author: Alev BURMAMBET, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: Conf. univ. Dr. Andrei BĂUTU

Abstract: *In this paper, I will present a special purpose software, designed to simplify and facilitate the tasks of shipping companies or similar entities. In an increasingly digital economy, the use of such a software is almost a must, as it generates added value in terms of efficiency. I will discuss a case-study in which such software is used in order to avoid waiting times at the border crossing control points and the destination customs offices, by companies who carry out import/export operations of food ingredients and products of non-animal origin (e.g.: vegetables, fruits, cereals, etc.) in the member countries of the European Union.*

10. European Politics Regarding Transport

Author: Constantin-Adrian CAPMARE, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor Conf. univ. Dr. ing. Filip NISTOR

Abstract: *The purpose of this paper is the movement of people and goods from one location to another. The word "transport" is derived from the Latin words "trans," which means "from" to "up to," and "portare," which means "to lead" or "to move".*

11. Using Greenfield Analysis in the Supply Chain with Anylogistix

Author: Steliana Ramona CARAMIDARU, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: Conf.univ.Dr.ing. Alexandru COTORCEA

Abstract: *Greenfield analysis (GFA), sometimes called center of gravity analysis, is a supply chain network design method commonly used on the early stages of supply chain planning. Greenfield analysis helps to effectively solve a facility location problem - to determine the optimal quantity of distribution centers (DCs) or production facilities and the best locations to place them.*

12. Solar Temperature Control for Military Housing in the Middle East

Author: Alex CIOARA, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: Prof. univ. Dr. ing. Florin NICOLAE

Abstract: *The Applied Project is the design of an off-grid indoor temperature control system for military housing in the Middle East. The project incorporates a photovoltaic (PV) system with an energy storage system (ESS) and combines it with a heating, ventilation and air conditioning (HVAC) system that controls the indoor temperature. A thermal management system (TMS) is then used to control the temperature of the energy storage system. In addition, a generator is used in the system as a backup power source during summer, as well as days with low insolation, unpredictable weather.*

13. Analysis of the Opportunity to Use Modern Logistics Solutions in the Military Environment

Author: Alexandru Mitică CIOCAN, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: Conf. univ. Dr. ing. Filip NISTOR

Abstract: *Logistical issues have historically been a very important issue in war preparations, and often the outcome of a campaign depends on the quality of these services. Over the years, most battles were won thanks to well-developed logistics. When discussing the concept of logistics, the starting point for modern military experts is that they must define all the material and assistance conditions necessary for the successful implementation of military operations. In modern warfare, logistics takes on a new value, given its strategic reorientation, the quality of the human element used and the high level of technology contained in the means of war. The fact that Romania is a full-fledged NATO member implies a new approach to the military logistics system based on a new paradigm in this field.*

14. Fuel Price Evolution and Impact on Transport Methods

Author: Andrei CISMARU, Academia Navală „Mircea cel Bătrân", Constanța

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

Abstract: *This article combines the characteristics of oil supply and extraction. As part of this, we examine the evolution of oil prices on world markets to understand how this affects travel plans. In the presence of the paper, an analysis of the price of oil was carried out, more precisely, the price of fuel, for this purpose an analysis of the oil market was carried out, involving the strategy and attitude of OPEC (Organization of the Petroleum Exporting Countries) in setting the price. Consequently, in the paper we find the critical periods in which the price of oil underwent sudden changes. To observe the impact that the price evolution has in planning a trip, we conducted a case study in which we made a comparative analysis between two trips from period 2018, respectively the year 2021, its result being one that calls for solutions and alternatives.*

15. Designing an Environmental Performance Indicator for Shipbuilding, Ship Repairs and Ship Dismantling

Author: Cristina-Mihaela CLISERU, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: Prof. univ. Dr. ing. Florin NICOLAE

Abstract: *Global shipbuilding is a highly competitive industry, and it has also been affected by the current economic crisis. Thus far, the European shipyards have been able to maintain their leading position due to their innovative technologies, although low-wage countries have gradually increased their share of the industry. An environmental impact assessment of the most important emissions produced by the shipyards activities was studied. For this assessment, a novel frame-work has been attempted to develop which consists in methods and tools to estimate a ship's eco-efficiency throughout its life cycle. Different environmental indicators, indexes and methods designed to measure environmental impacts of companies and industries were explored in order to create basis for a transparent, measurable and comparable environmental performance indicator system for shipbuilding and ship recycling yards.*

16. Comparative Study of project Management Proprietary Software vs Open-Source Software

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

Abstract: *Many companies use project management systems for gathering information in one place, creating diagrams, or in general, to manage a project better. For all of these, companies and big industries have to decide which software is more suitably for their needs. I will begin my presentation with a short introduction about proprietary software and open-source software. Next, I will describe some of the project management*

tools that are being used these days, both for proprietary software and open-source software. In the end, I will briefly compare the project management tools and I will talk about pros and cons in choosing proprietary software or open-source software. I will end the presentation by summarizing the main points of the presentation.

17. China – Romania Maritime Transport Marketing Study
Author: Daniela-Alexandra CUCIUREANU-GHEORGHITA, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: Conf. univ. Dr. ing. Mihail PRICOP
Abstract: *In the mid-1960s, cumbersome methods of shipping by sea would change dramatically with the advent of containerization. For the first time in the maritime industry it was possible to load cargo with different types of transport without unpacking or changing the transport unit. China stands out among the countries that built the first container ships, and since their introduction, world trade in goods and the number of containers has grown substantially. Next, imports to Romania from China represent a multi-billion-dollar industry considering the volume of products people buy every year. This changed with the emergence of the Covid-19 pandemic in the year 2020 and later in 2022 with the start of the war between Russia and Ukraine. However, shipping has defied the disruption of COVID-19, especially on the China-Romania route and vice versa, and therefore in 2020, volumes have fallen less dramatically than expected.*

18. Analysis of the Operations of Import/Export in the Port of Constanta
Author: Vlad CUCIUREANU-GHEORGHITA, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: Conf. univ. Dr. ing. Filip NISTOR

Abstract: *Historically, maritime transport of goods has been a key factor in the development of international trade. Shipping by sea is still popular today due to the low cost, the loading capacity of the ships at sea and the minimal restrictions on the carrying capacity of the ships. Sea freight container services can significantly reduce shipping costs when transporting goods over long distances. The use of containers provides increased security for transported goods, speeds up the transport of goods in small pieces and facilitates loading and unloading.*

19. Modern Port Management

Author: Vlad Andrei DEMIANOVSCHI, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: Conf. univ. Dr. ing. Filip NISTOR

Abstract: *Seaports and maritime transport have a significant influence on economic, social and environmental development at local, regional and national levels. Nowadays, maritime trade is becoming more and more important in the world economy, as it contributes to the establishment of relations between different countries, as well as to world globalization. To achieve sustainable business, governments implement port governance structures with clear policy objectives. It is a complex problem that is inseparable, in different spatial and temporal combinations. Extensive administrative reforms of seaports have challenged the conventional patterns of seaport organization in recent decades. Transforming port governance models, including developments such as devolution and policy regionalization, have expanded the autonomy and responsibility of the port authority, giving it a wider role outside the port itself. Port governance has attracted significant attention from researchers, port authorities, politicians and decision-makers in the maritime sector over the*

past three decades, and port governance itself has become an important academic and practical concept in the port sector.

20. Methods of Estimating Safety Stocks in a Military Unit
Author: Laurențiu-Petrișor DUMITRACHE, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: Conf.univ.Dr.ing. Alexandru COTORCEA
Abstract: *In this paper, I wanted to carry out an analysis on "Methods for estimating safety stocks within a military unit". Supply is a complex activity carried out by the logistics structures of the Naval Forces, a component of the logistics of military actions, carried out in times of peace, crisis and war. The stocks represent the quantities of products and materials expected to exist, according to the echelon, on the troops and in the warehouses of all the echelons, necessary for the fulfillment of combat missions. In the military environment, logistics acquires „special valences", due to the fact that without adequate logistic support the ordered or assumed missions cannot be fulfilled according to the proposed objectives; we can have super sophisticated weaponry and equipment or have very well-trained troops, but if the necessary quantities and assortments of ammunition, fuel or food are not provided, success is absolutely the result of chance.*

21. Maritime Freight Transportation
Author: Mihai EUGUROF, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: Prof. univ. Dr. habil Dan LASCU
Abstract: *Maritime transportation is a critical component of global trade, providing an efficient and cost-effective means of moving goods and commodities around the world. This mode of transportation accounts for more than 80% of global trade by volume and plays a vital role in facilitating economic growth and development. The industry faces several challenges,*

including environmental concerns, piracy, and port congestion, but continues to adapt and innovate to meet the demands of an ever-changing global marketplace. As the world becomes increasingly interconnected, maritime transportation will continue to be a vital link in the global supply chain. The presentation entitled 'Maritime Freight Transportation' presents what is involved in maritime freight transportation, its history, the types of vessels and the types of cargo transported.

22. Analysis of New Technologies and Implementation of Digitalization in Maritime Containerized Transport

Author: Ana GUERITEE, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: Ș.L. Dr. ing. Rita AVRAM

Abstract: *Digitalization focuses primarily on automating business processes, operations, and information processing. On the other hand, Digital Transformation (DT) is currently a major trend penetrating many industrial and social domains and can be defined as the use of new digital technologies (analytics or integrated devices) to enable improvements in businesses (such as enhancing customer experience, streamlining processes), or to innovate business models in terms of strategy, tactics, and operations. Analysis so far shows that there are only a few recent studies that have addressed digitalization and digital transformation in the maritime sector and none of these provide a comprehensive overview of digital transformation in the maritime transportation sector. Most of these studies have focused on identifying the current state of digitalization, discovering managerial expectations of digital transformation and identifying potential barriers in the course of digitalization from the perspective of global supply chain collaboration, especially in maritime transportation.*

23. Analysis of Logistics Dynamics Specific to Maritime Transport

Author: Liliana-Alexandra HRISTU, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: Conf.univ.Dr.ing. Alexandru COTORCEA

Abstract: *Maritime transport implicates a very complex logistical system to prevent any mishaps to come into the light. Further into the paper I will present all the documentation, steps and errors encountered in this process. Moreover, there will be presented some situations where logistical flux is disturbed and how the issue is being addressed in real time. The past few years have taught us that we have to thrive in any situation that arises, and in logistics almost every day is a new bump in the road that needs to be chiseled. Presented further will be an issue that has affected this process and it will be explained from different points of view.*

24. Human Resource Management in a Transport Company

Author: Alexandra-Florina IAMANDII, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: Conf. univ. Dr. ing. Filip NISTOR

Abstract: *There have been many academic papers highlighting the importance of human resource management within a company. However, most research focuses on large companies, especially corporations that have a dedicated department for human resources. Thus, the lack of academic insights regarding how human resource management is performed within smaller companies, in which there is no allocated structure. This piece of work aims to cover this research gap and provide insights on how human resource management is conducted within small and medium transport companies operating in Romania. To do so, existing literature will be analysed and discussed, so that there is a clear view on the*

purpose and the importance of this topic. In order to asses human resource management within small and medium companies, both quantitative (questionnaire) and qualitative (interview) research will be carried out. Moreover, research findings will be compared to existing literature, creating links between them.

25. Role of Transport Systems in Transport Logistic

Author: Carmen-Andreea LISCAN, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: Conf.univ.Dr.ing. Alexandru COTORCEA

Abstract: *There are many concepts in the transport and logistics business: transport, logistics, transportation, forwarding, etc. There are also a number of different study programs and disciplines such as: transport economics, transport logistics, logistics management. All of these titles are often related to the content of the plan, planning, organization, management and control of the movement of human, material, informational and financial flows. However, in practice, they are often correlated and misused. Therefore, it is an important task to properly define these concepts. Therefore, a qualitative study was also used. The results of the research have shown that the concept of transport logistics is also understood differently.*

26. Quantitative and Qualitative Methods for Risk Identification and Assessment in the Maritime Industry

Author: Mihai MARĂ, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: Prof. univ. Dr. ing. Florin NICOLAE

Abstract: *The paper "Quantitative and qualitative methods for risk identification and assessment in the maritime industry" provides an overview of risk assessment for seafarers in maritime transport. The concept of risk is defined and the*

methods available for risk assessment in the maritime industry are described. The project is structured in three distinct chapters. First chapter of the work briefly presents the synthesis of the bibliographic study carried out. Presented in this chapter are a number of scientific papers and articles that address the broad aspects of maritime transport safety from the identification to the management of risks in the maritime industry. The identification and assessment of risks to ships should be continuous, flexible, regularly reviewed to improve safety and prevent pollution. Because "risk" is never a constant or concrete entity, the divergence of the nature of the perception and anticipation of the level of danger versus the risk assumed is resolved by experience, preparation, and disposition.

27. Analysis of the Influence of the Energy Crisis on Supply Chains

Author: Raul MREJERIU, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: Conf.univ.Dr.ing. Alexandru COTORCEA
Abstract: *Global economy survives on supply chains which, in turn, consume substantial amount of energy. The non-renewable resources used for production of energy are diminishing owing to various reasons, threatening survival of supply chains like never before. This feature analyses the situation. The term 'energy crisis' represents any significant bottleneck in the supply of energy resources such as coal, oil, gas, electricity etc. to an economy. If explained in more explicit manner, it is the concern that the world's limited non-renewable resources that are used to power industries and societies are diminishing as their demand keeps rising. Although these resources occur naturally, it takes hundreds of thousands of years to replenish them limiting their renewal in a foreseeable time frame. The main purpose of this paper is to*

analyse the influence of the energy crisis on supply chains in the current context, dominated by the contradiction between sustainable development goals and unstable global energy supply.

28. GDPR Implementation at a Crewing Agency

Author: Cristina Mihaela NEACȘU, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: Conf. univ. Dr. ing. Filip NISTOR

Abstract: *This paper studies the implementation of Data Protection Regulation (GDPR) at a crewing agency. The GDPR was implemented in May 2018 and has been affecting business in significant ways. This policy will be adopted by the management of company in relations with partners which are part of the system and with other entities with which the company collaborate. Companies that use using personal data processing are required to provide confidentiality and protection for all data collected. It is important for companies to comply with legal requirements to avoid subpoenas and inspections that can result in fines. At the same time, personal data will be safe, which also brings a plus for the company. Respect for customers or authorities is very important when applying safety rules. The implementation of the GDPR is a rather complex procedure because it must adapt to the provisions of the GDPR.*

29. Analysis of Quality Management in Logistics Activity

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

Abstract: *This article proposes a detail of the quality management system, which is a specialized system developed and used in the organization with the aim of forming the policies of the activities in the field of product/service quality,*

as well as the achievement of the objectives. In a more accessible form, the main task of the SMC is to ensure the high quality of the goods or services sold, adapting it to customer expectations. Total quality management focuses not only on the quality of the outputs, but also on the inputs - the tasks and processes by which the outputs were created. Ideally, the quality of a product and/or service is not only increasing, but the process by which the product and/or service is created is getting better and better, resulting in more consistent, higher quality products and services.

30. Analysis of Factors Influencing Logistics Operations for the Transport of Military Equipment

Author: Marius-Alexandru PĂTRU, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: Prof. univ. Dr. ing. Florin NICOLAE

Abstract: *In the age of modernisation and the introduction of new vehicles in the military, one of the most important features is their transportability. The contemporary theatre of operations requires the efficient movement of troops both by land and air. New wheeled and tracked vehicles need to meet a range of transportability requirements, from transport trailers to unit pressures. Properly applied transportability engineering is essential for the deployment of military equipment. Equipment is of little value if it cannot be transported quickly and efficiently to where it is needed. This dissertation aims to analyse the factors influencing logistics operations for the transport of military equipment. To this end, the paper uses a case study to examine the specifics of a transport operation carried out by a Marine unit. The paper analyses the transport process from the generation of the order from the military unit requesting the material (spare parts) to the transport to the final destination. Human resources are also the most important part of the broader military transportability process. In order*

to maximise the effectiveness of this resource, considerable investment is made in the training and education of the personnel servicing mechanisms useful in the transportability process as well as in the techniques and equipment used to carry out the mission. The development of a military logistics concept, eliminating waste and increasing the added value of the spare parts supply process, allows to improve the fulfilment of deliveries of marine infantry units to requesting military units, qualifying the correct fulfilment of their missions on national territory or in the area of operations.

31. Logistical Aspects Regarding the Implementation of Security Policies and Common Defense (CSDP) of the European Union

Author: Ștefăniță-Valentin PERIANU, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: Conf. univ. Dr. Cătălin POPA

Abstract: *The purpose of this paper is to form an overview of logistics. Logistics provides the foundation of our fighting power and can be described as a bridge that connects a nation's economy to a nation's fighting forces. Logistics is the process of planning and executing the movement and support of operational forces in the execution of a military strategy and operations.*

32. Investigation of Nanogrids for Improved Navy Installation Energy Resilience

Author: Cristina PIUARU, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: Prof. univ. Dr. ing. Florin NICOLAE

Abstract: *Military bases perform important national security missions. In order to perform these missions, specific electrical energy loads must have continuous, uninterrupted power even during terrorist attacks, adversary action, natural disasters,*

and other threats of specific interest to the military. While many global military bases have established microgrids that can maintain base operations and power critical loads during grid disconnect events where outside power is unavailable, many potential threats can cause microgrids to fail and shed critical loads. Nanogrids are of specific interest because they have the potential to protect individual critical loads in the event of microgrid failure. We present a system engineering methodology that analyzes potential nanogrid configurations to understand which configurations may improve energy resilience and by how much for critical loads from a national security perspective. This then allows targeted deployment of nanogrids within existing microgrid infrastructures. A case study of a small military base with an existing microgrid is presented to demonstrate the potential of the methodology to help base energy managers understand which options are preferable and justify implementing nanogrids to improve energy resilience.

33. Modelling of Procurement Processes in the Infrastructure Activity

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

Abstract: *Procurement is the process by which a company or organization solicits or contracts with third parties to obtain goods and services necessary to meet business objectives in the most timely and cost-effective manner. At the core of this process is the creation, establishment and management of business relationships. At the basis of the strategic continuation of the procurement process is the supply process that focuses on the impact of the decision-making chain, helping to achieve the overall business objectives of the organization.*

34. Green Port Strategies for Sustainable Growth and Development of Romanian Ports

Author: Postică DOBRE-OCTAVIU, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: Conf. univ. Dr. ing. Mihail PRICOP

Abstract: *There are growing concerns about the environmental impact of port operations and development due to pressing global issues such as climate change and energy conservation. From a sustainability perspective, a port should manage and balance three baselines, namely economic prosperity, social well-being and environmental quality. Building on this principle, this dissertation focused on identifying sustainable green port strategies used to facilitate the growth and development of new, cleaner and environmentally efficient ports. This dissertation provides a snapshot of the current challenges and barriers facing the maritime port industry in implementing cost-effective measures to reduce greenhouse gas emissions and improve energy performance. Factors such as lack of global standards, differentiated operational strategies, varying governance models, port and terminal sizes and business models influence approaches to overcome these barriers. The main objective of the work was to document proposals for improving the management of the port sector and to identify methods and strategies for implementing green ports to achieve maximum sustainability and development potential. The particularity addressed in the dissertation refers to the implementation strategy of efficiency measures for sustainable growth and development of Giurgiu seaport.*

35. A Comprehensive Risk Assessment Framework for Inland Waterway Transportation of Dangerous Goods

Author: Elena-Andreea-Denisa RĂSCOL, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: Prof. univ. Dr. ing. Florin NICOLAE

Abstract: *A framework for risk assessment due to inland waterway transportation of dangerous goods is designed based on all possible event types that may be caused by the inland transportation of dangerous goods. The objective of this study is to design a framework for calculating the risks associated with changes in the transportation of dangerous goods along inland waterways. The framework is based on the traditional definition of risk and is designed for sensitive riverside environmental conditions in inland waterways. From the perspective of transportation management, this paper introduced the concept of transportability of dangerous goods and constructed a transportability assessment framework, which consists of a multi-index evaluation system and a single metric model. The result of the assessment is as an auxiliary basis to determine the transportation permit and control intensity of dangerous goods in an inland waterway specific voyage. The methodology is illustrated using a case study of transporting fireworks in the Danube River.*

36. Management of Logistic Supply Chains in the Military System

Author: Eduard-Sorin RÎNDUNICĂ, Academia Navală „Mircea cel Bătrân", Constanța

Scientific Advisor: Conf. univ. Dr. Cătălin POPA

Abstract: *The purpose of this paper is to form an overview of the supply chain management in the military system. Supply chain management is a process of planning, implementation and control of supply operations carried out with the aim of satisfying the requirements of the beneficiary with maximum efficiency. Supply chain management refers to all the stocks and movements of raw materials, their processing and finished material goods, from the point of origin to the consumer. The management of the supply chain in the military field must take into account the experience and expertise of the private sector.*

Military logistics must be able to ensure the delivery of any material goods, at any time and whenever they are needed by the troops.

37. Case Study on Supply and Procurement Management in Naval Military Operations

Author: Paula ROȘU, Academia Navală „Mircea cel Bătrân”, Constanța
Scientific Advisor: Conf. univ. Dr. Cătălin POPA

Abstract: *Each vessel requires a number of supplies for the care and feeding of the crew, the maintenance of the ship, shore-based operations, and operational effectiveness. The navy uses some information systems to help it manage afloat supply operations for the force. Some of these are no longer supported by commercial vendors or have government ownership. Many are owned and operated by different parts of the navy. For example, each commodity type, such as food, ammunition, medical, retail, and o their commodities, has its own system. Some of these systems support only supply management. In this paper we will study and analyze the connection between systems that help the military navy manage supply and management operations.*

38. Air Defense Systems Management Through Modeling and Simulation

Author: Ștefania-Manuela RUSU, Academia Navală „Mircea cel Bătrân”, Constanța
Scientific Advisor: Conf.univ.Dr.ing. Alexandru COTORCEA

Abstract: *Nowadays, aviation technology has developed so the ability to defend a country's airspace has become increasingly important. Today's armed forces are deploying the most advanced short- and ultra-short-range air defense systems to protect their areas of interest from unmanned aerial systems and more agile precision-guided weapons systems. The*

introduction of modeling and simulation programs in air defense represents an important step in the development of aviation technology. Programs such as Any Logic can easily be used to perform air attack simulations that can help determine methods of action in the event of an air attack. These programs are all the more important as compared to the current context of the conflicts on Romania's borders, certain situations and the efficiency of the reaction time can be determined only by changing some parameters within the simulation.

39. Planning Tools and Logistic Support of NATO Naval Operations

Author: Ioan-Valentin TULAC, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: Conf. univ. Dr. Cătălin POPA

Abstract: *In order to reflect the changes in the current security environment, NATO is adapting its processes and procedures to be more responsive, effective and efficient. This includes implementation of the new NATO Defence Planning process and resulting implications into the operational planning process in the naval operations. The changes are also significantly affecting logistics planning and development of logistics capabilities. Logistics support for NATO operations must be designed the way to reduce the level of duplication of national resources, simplify and streamline logistics flows and to provide NATO Commander with visibility, sufficient authority and flexibility to meet operational requirements. The NATO Commander, to be able to adequately exercise his authority to coordinate and prioritize logistical support, need a visibility of available resources, requirements and processes as the general prerequisite for management of continuous logistic support of operating forces. The article is introducing NATO logistics information systems supporting NATO logistics*

defence planning as well as operational planning and managing required visibility and information sharing.

40. Consequences Associated with Risks in the Maritime Transport Logistic System

Author: Cătălin-George VASILE, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: Prof. univ. Dr. ing. Florin NICOLAE

Abstract: *One of the most frustrating problems when dealing with risks it's that they come in so many different forms. They can appear at any point in a port logistic system, they can interrupt the supply of raw materials or products, they can cause demand fluctuations (peak or collapse), inventory problems (lack or crowding), dispatch delay. Risks can range on a scale from small delay to a natural disaster, from short term to a permanent damage, with effects localized on a part of a supply chain or affecting the whole chain activity. The paper investigates the consequences of risks in the maritime transport logistic system and adequate measures to minimizing their effects.*

41. Challenges and Opportunities for Constanta Port in the Current Geopolitics Context

Author: Ioan VIERU, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: Conf.univ.Dr.ing. Alexandru COTORCEA

Abstract: *The security architecture in the Black Sea region is not clearly defined, therefore, the use of force remains a real option to achieve political goals in the region. The most important aspect of this arrangement remains the support of the Montreux Convention which makes Russia strong in the Black Sea by restricting the access of warships of other states in this space, especially warships of the US and NATO allies, gives Turkey control of the straits Bosporus and Dardanelles.*

That is why Romania needs a maritime strategy in which to clearly express both its options regarding the promotion and defense of maritime/river interests, as well as those regarding the optimal and efficient exploitation of the national maritime potential. Therefore, maritime security in the Black Sea must rest on two essential pillars, the cooperation and coordination between the riparian countries and the complementarity with the security systems at the world level.

42. Connecting the Activities of the Danube Ports to the National Transport Logistics System

Author: Bianca-Alexandra VOICU, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: Prof. univ. Dr. ing. Florin NICOLAE

Abstract: *The use of inland waterways has been and will be an ongoing concern as an integral part of the communication routes of states with rivers and land conditions for canal construction. The competitiveness of seaports is mainly influenced by factors external to the ports, mainly related to the quality of the hinterland and foreland infrastructure. Measures taken in these areas are reflected in the main objectives of port strategies. At the same time, measures can have negative environmental impacts (pollutant emissions, noise, land occupation, etc.) and can deteriorate the quality of life of port city communities.*

43. Digitalization of Crewing Agencies Through the Use of Information Systems

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

Abstract: *The changes caused by globalization and the evolution of information technology lead to the digitization of crewing activities. Along with the development of technology*

and the implementation of IT systems, labor distribution agencies in the maritime sector benefit from a series of advantages. In this paper, we will firstly analyze the particularities of a crewing agency and its main activity, that of recruiting seafarers, the evolution of IT systems over time, as well as the most innovative IT systems used in crewing sector.

44. Analysis of Current Trends in the Shipbuilding Market

Author: Diana Iuliana ZAMFIR, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: Conf. univ. Dr. ing. Filip NISTOR

Abstract: *Current shipbuilding trends are based on meeting technical requirements from international and national regulations as well as classification societies' rules and industry standards in all phases of a ship's existence, from design, construction to operation. The shipbuilding industry is an important strategic global player. Shipyards contribute significantly to regional industrial infrastructure and national security interests (military shipbuilding). This dissertation focused on analysing current trends in the shipbuilding market, using topical technological and environmental considerations to help promote improvements in shipbuilding requirements worldwide. The case study proposed for this paper addresses aspects of current trends in the shipbuilding market in Romania. Romanian shipyards have succeeded, in the more than 27 years after the revolution, to develop partnership relations with ship owners or shipyards in Europe, becoming the main outsourcing destination for ship production. The research carried out in the framework of the work on improving shipbuilding safety presents an overview of European shipyards and Romanian shipyards under the same common denominator, namely the need to implement a new vision of shipbuilding.*

45. On the Other Side of Leadership: Followership

Author: Cristina-Elena COSTEA, Mihnea-Alexandru MOISE, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: Lector univ. Dr. Laura CIZER

Abstract: *In today's world, everybody wants to be a leader, but what most people do not realize is that, as Aristotle said, "He who cannot be a good follower cannot be a leader". Everyone is a follower in one way or another: even the people that have a high-rank job have bosses, whether we talk about the commander of a unit or a high-school principal. Firstly, this paper will define the term "followership" and it will present its first apparitions in books. Secondly, the paper will point out the qualities of a good follower and last but not least we will compare and present the relationship between leadership and followership. In the end, the authors of this paper will formulate their personal opinion on the matter.*

46. The Study Regarding IT Security Measures in the Information System of a Passenger Transport Company

Author: Paul Valeriu DANCĂ, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: Conf.univ.Dr.ing. Alexandru COTORCEA

Abstract: *Technology and IT security is fundamental to the modern maritime domain and may be considered to be computer driven systems which operate on a platform or work within maritime operations (such as ports) to produce outcomes. Open standard technology will become central to the development of new platforms. That is to say that off the shelf technology which is widely available on the open market will be used throughout design and operations of platforms such as new ships, rigs and ports. Proprietary systems will continue to find their place, however open standard technology will continue to be appealing due to lower costs, service contracts and the capabilities that they will bring to the platform. The*

main purpose of the works is to approach scientific methods such as analyzes and syntheses, the comparative legal method and the formal legal method, all of which better describe the information system of a transport company. This paper provides a broad description of the information systems of transport companies, future perspectives and opportunities for economic growth.

47. Advantages of Solar Energy over Other Green Energy Sources

Authors: Toma-Ionuț DOBRE, Neculai IFRIM, Academia Navală „Mircea cel Bătrân", Constanţa
Scientific Advisor: Prof. univ. Dr. ing. Gheorghe SAMOILESCU

Abstract: *Solar energy is a renewable and environmentally friendly source of energy that offers several advantages. It is cost-effective over time, reduces dependence on finite fossil fuels, requires low maintenance, and is versatile in terms of installation options. Solar energy also creates jobs in the growing solar industry. Overall, solar energy offers a clean and sustainable solution to the world's energy needs.*

48. Production of Bulk Goods Consumption Analysis of the Efficiency of the Logistics System Integrity

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

Abstract: *The scope of logistics continues to grow rapidly, and this is reflected in the content of the work project. Was included key aspects of supply chain philosophy and practice, but have retained the focus on distribution and logistics that was a feature of the first and subsequent editions. The world economy was in a process of continuous transformation that accelerated significantly starting from the ninth decade of the 20th century.*

Among all these transformations, an increasingly important weight of commercial exchanges can be distinguished, the growth of their importance on the world level, reflected in the formation of numerous organizations with the object of their liberalization. The logistics industry continues to change radically and to grow in importance. The quality of logistics managers and staff has also developed with the growth in responsibility and scope that a job in logistics entails. Production of consumer goods analysis of the efficiency of the integrated logistics system are presented in four chapters.

Chapter 1, describes the important area of supply chain segmentation. This is used to ensure that the many different service and cost needs of the marketplace are addressed in a coordinated framework.

Chapter 2, concentrates on the integrated nature of logistics and the supply chain. The traditional, but still very relevant, total logistics concept is explained, and typical trade-offs are considered. A planning hierarchy for distribution and logistics is outlined.

Chapter 3, concentrates on the integrated nature of logistics and the supply of consumer goods and a logistic transport system.

Chapter 4, is concerned with manufacturing and materials management.

OCEANOGRAFIE ŞI HIDROGRAFIE

Biroul secțiunii
Președinte: Conf. univ. Dr. ing. Romeo BOȘNEAGU
Membri: Conf. univ. Dr. ing. Dinu ATODIRESEI
Ș.L. Dr. ing. Andra NEDELCU

1. Presentation of Ballast Water Treatment System

Author: Adrian STOIANOVICI, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: Conf. univ. Dr. ing. Romeo BOSNEAGU

Abstract: *Presentation of Ballast Water Treatment System Chlorination type - PURIMAR contain short introduction about the necessity of treating ballast water according with IMO resolution, a system description and a system configuration showing major components, how are interconnected and general operating procedure. In order to reduce and stop the threaten of spreading invasive species and to prevent an echological damages to biodiversity the IMO State Members adopted a convention-Ballast Water Management Convention-would represent a significant step towards protecting the marine environment for this and future generations. The Ballast Water Treatment System Chlorination type is using sea water in order to filter and produce an effluent which is injected into ballast water tanks during sea voyages and reduce close to zero the total amount of residual oxidants.*

2. Black Sea: The Weather Evolution from 1950 to the Present

Author: Diana-Ștefania BOANTĂ, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: Conf. univ. Dr. ing. Romeo BOSNEAGU

Abstract: *The theme chosen by me offers a broad perspective on the weather conditions in the Black Sea. A statistic on the weather in the Black Sea will be produced, providing data on weather factors from 1950 to the present.*

3. Types of Autonomous Underwater Vehicles (AUVs) Used in Oceanographic and Hydrographic Researches

Author: Dragoș MĂRGĂRINT, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: Conf. univ. Dr. ing. Romeo BOSNEAGU

Abstract: *Autonomous Underwater Vehicles (AUVs) are programmable, robotic vehicles that, depending on their design, can drift, drive, or glide through the ocean without real-time control by human operators. These vehicles can allow scientists to conduct other experiments from a surface ship while the vehicle is off collecting data elsewhere on the surface or in the deep ocean. There are seven types of AUVs: Remus, Sentry, Mesobot, Orpheus, Slocum Glider, Spray Glider and Autonomous Benthic Explorer (ABE).*

4. Model of Cartographic Representation of the Ecological and Macroeconomic Impact in the Development of a Tourist Marina in the Constanta-Mamaia Area

Author: Cristiana-Corina RĂDULESCU, Academia Navală „Mircea cel Bătrân", Constanța
Scientific Advisor: Conf. univ. Dr. ing. Dinu-Vasile ATODIRESEI

Abstract: *The current topic aims to develop a new tourist marina in the Constanta-Mamaia Black Sea area, representing a real challenge. The advantages that help the development of such a marina in this area are quite a lot, the first would be the development of new jobs, within the tourist marina and around it. The implementation of such a project can be the equivalent of a great success at the local level. The generation of benefits for the community, the accumulation of income brought to the*

local budget by the activity itself or its related activities represent a great advantage.

5. The Trial of the Republic of Romania in The Hague, the 100th Judgment of the ICJ, an Atypical Geopolitical Approach

Author: Petrică-Ionel CIOARĂ, Universitatea ”Ovidius” din Constanța
Scientific Advisor: Prof. univ. Dr. H.C. Constantin ANECHITOAE

Abstract: *In the preface of the book Oceanography, Mircea Eliade distinguishes youth from old age, through thinking and understanding. [2] So, we understand that Snake Island has great geopolitical importance. On February 24, 2022, the Russian Federation conquers this rock. [3] It is recovered by Ukraine, but the renunciation by the Republic of Romania, in the Related Agreement, the fact that: "...Serpent Island belongs to Ukraine"[4], determined a trial at the International Court of Justice, peacefully resolving an international dispute. The agent of our country, the current Minister of Foreign Affairs, Bogdan Aurescu, succeeds, through the 100th Decision of the C.I.J., of February 3, 2009, to obtain for Romania, after the delimitation of the continental shelf and the exclusive economic zone, approximately 9700 Km², 79, 34% of the demand.[5] It is a premiere for Romania, being the first international litigation process, even if the International Tribunal for the Law of the Sea in Hamburg would have been more competent, or an Ad-Hoc Arbitral Tribunal, if a clause had been included in the Treaty.*