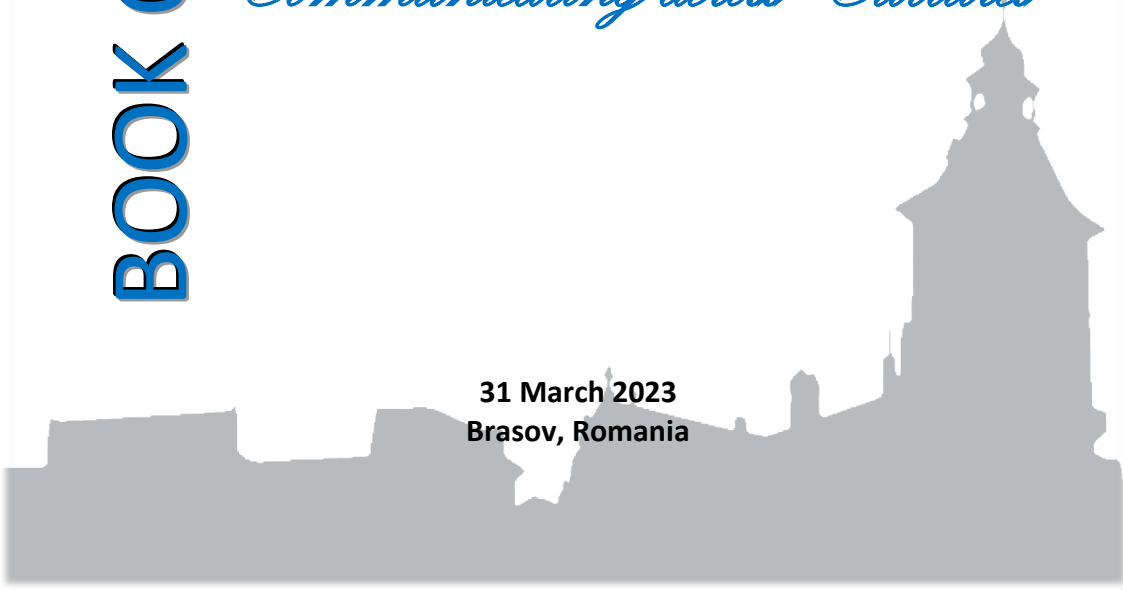
Henri Coanda
Air Force Academy
Brasov, Romania

BOOK OF ABSTRACTS

AFASTUD 2023

The 24rd Students' International Conference

Communicating across Cultures



31 March 2023
Brasov, Romania

Conference Agenda

THURSDAY, March 30, 2023

14.00 hrs – 18.00 hrs	Arrival of delegations/ "Henri Coanda" Air Force Academy
19.00 hrs – 21.00 hrs	Ice breaker /"Henri Coanda" Air Force Academy (all participants are invited/dress code: smart casual)

FRIDAY, March 31, 2023

08.30 hrs – 09.30 hrs	Breakfast *(*Students' Dining Facility*)*					
10.00 hrs – 10.45 hrs	**Official Opening of the International Conference "Communicating across Cultures" AFASTUD'23** *(Academy Auditorium)*					
10.45 hrs – 11.00 hrs	**Photo Session** *(In front of Bdg A1)*					
11.00 hrs – 14.30 hrs	**Panels (I)**	**Weapons & Defense Technology** ***E - 10***	**Fundamental sciences & Engineering** ***E – 44***	**Humanities & Social Sciences** ***E – 73*** ***E - 77*** ***E - 78***	**Military sciences & Management** ***F.E – 2.10***	**Aeronautical History** **K - 6**
14.30 hrs – 15.30 hrs	Lunch/ Students' Dining Facility *(*Students' Dining Facility*)*					
15.30 hrs – 17.00 hrs	**Panels (II)**	**Weapons & Defense Technology** ***E - 10***	**Fundamental sciences & Engineering** ***E – 44***	**Humanities & Social Sciences** ***E – 73*** ***E - 77*** ***E - 78***	**Military sciences & Management** ***F.E – 2.10***	**Aeronautical History** **K - 6**
17.00 hrs – 17.30 hrs	**Closing of the International Conference "Communicating across Cultures" AFASTUD'23/ "Henri Coanda" Air Force Academy's** *(Academy Auditorium***)**					
19.00 hrs – 22.00 hrs	Students' Official Dinner *(*Students' Dining Facility*)*					

SATURDAY, April 1, 2023

09.00 hrs – 10.00 hrs	Breakfast *(*Students' Dining Facility*)*
10.00 hrs – 15.00 hrs	**Departure of delegations**

Moderators

1. MILITARY SCIENCES & MANAGEMENT

Brig Gen (r) Prof. Vasile **BUCINSCHI**, PhD
Lt. Col. Lect Bogdan **CHIOSEAUA**, PhD
Student Alexandra **TUDOR**
Student Tudor **PANĂ**

2. WEAPONS & DEFENSE TECHNOLOGY

Lt.Col. Cristian **ENE**
Lt.Col. Dănuţ **BĂLOS**
Student Marius **ŢIFIR**
Student Alexandru **BRĂTESCU**

3. HUMANITIES & SOCIAL SCIENCES

Lect Daniela **NAGY,** PhD
Lect Ramona **HĂRŞAN**, PhD
TA Kinga **KOLUMBÁN**
Student Ovidiu **SZABO**
Student Ștefan Vladimir **POPESCU**
Student Maria **MILEA**
Student Andra Maria **CERNIAVSCHI**
Student Mădălina Mihaela **HILOTE**
Student Ioan Virgil **FOLEA**

4. FUNDAMENTAL SCIENCES & ENGINEERING

Lt.Col. Liviu **GĂINĂ**, PhD
Lt.Col. Mihai-Alin **MECLEA**
Student Ana Maria **RONTEA**
Student George+Alexandru **BĂRAN**

5. AERONAUTICAL HISTORY

Lect Jănel **TĂNASE**, PhD
Student Ștefania Denisa **VLAD**
Student Elena **CĂLIMAN**

Scientific Committee

Assoc. Prof Elena **BUJA**, PhD
"Transilvania" University of Braşov, Romania
Prof. Sorin **CHEVAL**, PhD
National Meteorological Administration, Romania
Col. Assoc. Prof Eng. Dilyan **DIMITROV**, PhD
"Vasil Levski" National Military University, Veliko Târnovo, Bulgaria
Col. Assoc. Prof. Eng. Laurian **GHERMAN**, PhD
"Henri Coandă" Air Force Academy, Brasov, Romania
Assoc. Prof Ioanna **LEKEA,** PhD
Hellenic Air Force Academy, Acharnae, *Greece*
Col. Prof. Adrian **LESENCIUC**, PhD
"Henri Coandă" Air Force Academy, Brasov, Romania
Assoc. Prof. Eng. Doru **LUCULESCU**, PhD
"Henri Coandă" Air Force Academy, Brasov, Romania
Assoc. Prof. Eng. Liliana **MIRON**, PhD
"Henri Coandă" Air Force Academy, Brasov, Romania
Maj Gen Prof. Gabriel-Florin **MOISESCU**, PhD
"Henri Coandă" Air Force Academy, Brasov, Romania
Col. Assoc. Prof. Vasile **ŞANDRU**, PhD
"Henri Coandă" Air Force Academy, Brasov, Romania
Prof. Mariselda **TESSAROLO**, PhD
University of Padua, Padua, Italy
Prof eng. Michael **TODOROV,** PhD
Technical University, Sofia, Bulgaria
Assoc. Prof. Ilona **URYCH**, PhD
Faculty of National Security, War Studies University, Poland

Conference Panels

1. Military Sciences & Management

Conference ROOM F.E – 2.10

Moderators:

Brig Gen (r) Prof. Vasile **BUCINSCHI**, PhD

Lt.Col. Lect Bogdan **CHIOSEAUA**, PhD
"Henri Coandă" Air Force Academy, Brasov, Romania

Student Alexandra **TUDOR**
"Henri Coandă" Air Force Academy, Brasov, Romania

Student Tudor **PANĂ**
"Henri Coandă" Air Force Academy, Brasov, Romania

The Bulgarian Contribution to the Establishment of the Aircraft as a Combat Tool

Radina Ivanova BODUROVA
Faculty of Aviation, Air Force Academy "Georgi Benkovski", Dolna Mitropolia, Bulgaria

The idea of aviation in Bulgaria was born in early times and is supported by many myths and legends. In a very short period after the rise of the first heavier-than-air aircraft, the first flights with an aircraft in a combat environment were already available in Bulgaria. Reconnaissance flights and bombing raids are carried out. Of course, there are two theories for the implementation of the set tasks, which will be considered in more detail.

Study on the Role of Organizational Climate on Work Efficiency in a Private Company

Alexandru-Florinel CALOTĂ
"Nicolae Bălcescu" Land Forces Academy, Sibiu, Romania

Organizations are entities present in our environment. People coexist with organizations, and the globalized society and the nature of the flow of information and resources make possible the accelerated development of organizations. In such a context, it is necessary to study some elements within the organization to understand the relationship between the components of the organizational system and the possibilities for its efficiency. The present paper discusses the influence of organizational climate on work efficiency in a private company, Kiwi.

Innovative Technologies for Combating Health Risks Associated With Rapid Manoeuvring of Fighter Aircraft

Vlad CONTESI
Institute of Military Medicine, Bucharest, Romania

One of the most important factors in achieving victory on the battlefield in today's military environment is air superiority. As such the arms race that begun almost 100 years ago is still raging to this day. As the competition for supremacy over the sky is a fierce one the selective pressure acting on the design of aircrafts has made human biology the limiting factor in the kinetics of improving today's planes in terms of mobility and manoeuvrability. This paper aims to analyse the physiological problems associated with flying and manoeuvring at high altitude and provide a model rooted in biology for the development of equipment that will help the pilot survive and even thrive in conditions in which no creature, that we know of, ever lived.

The Effects of Fake News in Modern Conflicts

Andrei Stelian COZMA
"Henri Coandă" Air Force Academy, Brașov, Romania

The main purpose of this article is to address the topic of information warfare, more exactly the term "Fake News", making the reader more accustomed to the issue. The concept of "Fake News" has become one of the most observed aspects of the 21st century wars. By acting on all media platforms, it can influence the masses, support destabilizing organizations and movements and, generally, sow discord among the society. The following article analyses the rise of the Islamic State in the Middle East and the actions of the Russian Federation in the Crimean Peninsula annexation. By oversaturating the media platforms with fake news, one cannot discern between false and real information anymore. In their attempts to greatness, some authoritarian states have even resorted to changing history, in order to increase their public opinion. In order to become resilient to actions of information warfare, the government must strongly cooperate with the population, media sources and technology companies, in order to improve the critical thinking skills, media literacy and journalism credibility standards.

Deficiencies of Russian Supply Lines in the Southern Area of the Russian-Ukrainian Conflict in 2022

Denis-Georgian DINU, Adelin CHELARIU
National Defense University "Carol I", Bucharest, Romania

The Russian-Ukrainian conventional conflict that erupted in the first part of 2022 has changed the environment of security of the European area, the way the big pawns on the European map related to the security of national territories. Level I and Level II supply lines, respectively, the key element of logistical support and supply to the frontline fighting force, are analysed, with the spatial and temporal landmarks being the southern axis of the Russian-Ukrainian conflict in the first year of the conflict, 2022. This paper aims to interpret some key events of the conflict period, thus finding causality between the military

actions taken by the two states and the deficiencies of the logistical support of the Russian Federation army, especially on tactical supply lines. This analysis is based on a comparison of the elements of logistical support found at the doctrinal level of the Russian Federation, Romania and the North Atlantic Alliance with the logistical support itself, put in execution by the army of the Russian Federation in the conflict.

Spatial Disorientation

Alin DRELCIUC
"Henri Coandă" Air Force Academy, Braşov, Romania

Spatial disorientation is a phenomenon that can occur when a pilot's sensory inputs are disrupted or distorted, leading to a mismatch between their perceived orientation and the actual orientation of the aircraft. This can result in confusion, disorientation, and potentially dangerous flight maneuvers, including loss of control or controlled flight into terrain. The causes of spatial disorientation are varied and can include physiological factors, such as the vestibular and visual systems, as well as environmental factors, such as weather conditions or terrain features. Understanding the underlying mechanisms of spatial disorientation and implementing effective prevention strategies is critical for ensuring aviation safety. This abstract provides an overview of spatial disorientation, including its causes, effects, and prevention strategies, highlighting the importance of education and training for pilots, as well as ongoing research and development in the field.

Burnout Syndrome in the Military Environment

Maura-Andreea MATEI
"Henri Coandă" Air Force Academy, Braşov, Romania

Burnout syndrome is a complex condition that manifests itself particularly in the military. This condition can be caused by a number of factors, including the emotional and physical stress of military assignments and the living conditions associated with them. The effects of burnout syndrome can be devastating to the servicemen involved, affecting both their performance in the military mission and their personal lives. In this paper, we aim to explore the Burnout syndrome in the military environment and analyze its causes and effects on the military involved.

Improving the Flight Instructors-Student Pilots Relationship and the Introduction of Eye Tracking Devices in the Flight Learning Process

Dumitru–Claudiu PANAL
, "Henri Coandă" Air Force Academy, Braşov, Romania

Learning to fly an airplane is one of the most difficult learning processes a person may go through in their lifetime. Because of the large number of aviation accidents over the last 50 years, most of which have been proven to be caused by human error, theoretical and practical tests have become increasingly stringent for flight licensing, and aviation safety

measures and the establishment of close communication links between crew members are of increasing interest to authorities responsible for the welfare of flight. But the problems that still exist in aviation today do not necessarily stem from inadequate assessments of student pilots, but rather from deeper layers of the flight learning process. The causes of aviation accidents caused by human error are directly linked to the synapses in those processes of sedimentation of information from flight instructors and their failure to discover these shortcomings in time, as early as during the pilot training course, in particular through effective communication and feedback. This paper aims to improve the relationship between student pilots and their instructors and modernize the methods by which instructors provide the feedback necessary to better understand their students' piloting, communication, and guidance errors. Thus, errors in flight perception and incorrect mastery of piloting techniques can be recorded very easily by introducing eye tracking devices in the training flight equipment, recordings that can be analyzed and commented on in detail during debriefing sessions between the two, thus avoiding the unnoticed passing of small errors in the novice students' observation of cockpit instruments and elements outside the cockpit using conventional recording methods.

The Influence of Leadership Skills in History

Andrei-Vasile RUS
Faculty of History and Philosophy, Babeș-Bolyai University, Cluj-Napoca, Romania

Humans' behavior has been studied by people in various ways throughout the centuries. Aristotle was one of the first persons to study the psychology of individuals, observing their need for communication with each other. As humans form communities in order to be safe from the external dangers, there will be an hierarchy formed between the individuals, some of them being leaders and others being led by someone. Military is one organization that is structured this way. In this hierarchy exists different ranks between the individuals, ranks that make a difference between the importance of military personnel. But the military is a special case, because not only the leader needs to have leadership skills, but all the people that take part in it, in order to have a better performance. The analysis of the leader from the military field can be useful in determining his performance as a leader and can be done by looking into his psychological portrait. By doing this, not only the leaders from the past can be analyzed, but also the leaders from today. When trying to analyze contemporary leaders, their time in power can be predicted by using different methods.

The Art of Planning An Air Operation

Andrei ȚÎNȚĂREANU
"Henri Coandă" Air Force Academy, Brașov, Romania

In an age where military conflicts are no longer fought with numbers but with professional armed forces trained with quality and not quantity in mind, planning and preparing operations, especially in the Air Force, will make the difference between victory and defeat. There have been so many examples of brilliant planning that changed the

course of wars or made military operations extremely efficient but also world-class oversights that have brought the downfall of a promising campaign. A great plan is based on solid strategy, an effective management of ways, risks and means of achieving a certain end goal or goals. We should also understand that the purpose of a certain strategy has never been to "win", destroy or conquer but to resolve the conflict in favorable terms for hopefully all the parties involved.

The Importance of Communication Between Pilots Fighting in Formation

Flaviu-Georgian URZICĂ
"Henri Coandă" Air Force Academy, Brașov, Romania

The success of air combat missions often depends on the ability of pilots to communicate effectively with each other, especially in formation fighting. This study investigates the critical importance of clear and concise communication between pilots engaged in formation fighting. The research examines the various risks associated with poor communication, such as compromised situational awareness, decreased combat effectiveness, and increased risk of accidents. The study evaluates different communication methods utilized by pilots, including radio, hand signals, and visual cues, and their effectiveness in various scenarios. Effective communication facilitates situational awareness, which is crucial in air combat, enabling pilots to be aware of their position relative to their wingman, the enemy, and other potential hazards in the environment. The study emphasizes the need for pilots to be proficient in different forms of communication, allowing them to communicate effectively in any situation.

Integration of Unmanned Aerial Vehicles in the Command And Control Process

Florin-Gabriel ZAGONI-ONĂU
"Henri Coandă" Air Force Academy, Brașov, Romania

Technology has been in continuous development from the beginning of times and also there has always been war and conflicts. The latest development regarding war technology are drones, or unmanned aerial systems, these systems have caught everyone's attention and new ways of engaging them in combat have been developed. This paper examines the integration of UAVs in the command and control process. Drones use has significantly increased in recent years due to their operational flexibility and ability to provide real-time situational awareness. However, integrating them in the command and control process is a real challenge, but there is already some software developed to integrate the UAV technology in military operations. It discusses the variety of factors that affect the integration in the C2 process. The paper concludes that the integration of drones in the command and control process requires a specific training and a special amount of effort between UAV operators and personnel to understand and use the system correctly and so, easing their work in reconnaissance missions, and even its adaptation in the defense of a ground based air defense.

2. Weapons & Defense Technology

Conference ROOM E44

Moderators:

Lt.Col. Cristian **ENE**
"Henri Coandă" Air Force Academy, Brasov, Romania

Lt.Col. Dănuţ **BĂLOS**
"Henri Coandă" Air Force Academy, Brasov, Romania

Student Marius **ŢIFIR**
"Henri Coandă" Air Force Academy, Brasov, Romania

Student Alexandru **BRĂTESCU**
"Henri Coandă" Air Force Academy, Brasov, Romania

Minuteman III Ballistic Missile

Alexandru ANTON
"Henri Coandă" Air Force Academy, Brașov, Romania

The Minuteman III missile is a key component of the United States' strategic nuclear arsenal, designed to provide a reliable and effective nuclear deterrent against potential adversaries. First deployed in the early 1970s, the Minuteman III is an intercontinental ballistic missile capable of delivering a nuclear warhead to targets over 6,000 miles away. It is housed in underground silos across several western states and has undergone numerous upgrades over the years to ensure its continued reliability and effectiveness. The missile is equipped with advanced guidance and control systems that enable it to penetrate enemy defenses and strike targets with unparalleled accuracy. While its primary role remains that of a nuclear deterrent, the Minuteman III has also been used in non-nuclear roles, such as space launches and scientific experiments. Despite its age, the Minuteman III remains a crucial component of the US nuclear triad and is expected to remain in service until at least 2030.

SAMP/T ASTER 30 MAMBA

Alexandru-Iulian APETREI
"Henri Coandă" Air Force Academy, Brașov, Romania

The SAMP/T ASTER 30 range rocket system also called MAMBA in the French army it`s a long range antimissle system designed to protect the battlefield and tactical sites (airports, seaports etc.) against all airborne threats, including tactical ballistic missiles

(600km range class),manned and unmanned aircraft, UOV, ,cruise missiles. The SAMP/T has been designed to perform in extreme clutter and electronic countermeasures environments. Interoperability with other NATO air defense structures is any other key for the SAMP/T application.

The Usefulness of Machine Learning in Radar Jamming Identification

Cosmin-Constantin BALTARIU
"Henri Coandă" Air Force Academy, Brașov, Romania

In an age of technology, everything evolves rapidly. From planes and missiles that reach very high speeds, to various methods of interception and securing information of belligerent parties. The presence of jamming, both in the field of communications and in its military applicability – surveillance and reconnaissance - is keenly felt in the modern theater-of-war. Machine learning opens the door to a new possibility: identifying jamming and executing countermeasures faster than any human.

Diplomacy and Its Evolution

Robert-Andrei BIRO
"Henri Coandă" Air Force Academy, Brașov, Romania

This article is based on the concept of diplomacy and its forming principles. Diplomacy is the practice of conducting negotiations and maintaining relationships between nations, and other organizations through peaceful means. It involves the exchange of information, ideas, and opinions in an effort to reach agreements or resolve disputes. Diplomacy has evolved significantly throughout history, reflecting changes in technology, communication, and political systems. Diplomacy can be traced back to ancient civilizations such as Egypt, Greece, and China, where emissaries were used to conduct negotiations and establish diplomatic relations. During the Renaissance period, diplomats began to serve as permanent representatives of their countries abroad. This led to the development of a complex system of diplomatic etiquette and protocol. The 20th century saw a significant expansion of diplomatic activity, with the establishment of international organizations such as the United Nations and the World Trade Organization. Diplomacy also became more complex and specialized, with diplomats working on issues such as arms control, human rights, and environmental protection. The rise of digital communication has had a profound impact on diplomacy in recent years. Diplomats now use online platforms to communicate with citizens and other stakeholders. Overall, diplomacy has evolved from a relatively informal practice in ancient times to a highly structured and specialized profession in the modern era. Despite these changes, the fundamental goal of diplomacy remains the same: to promote peace, stability, and cooperation between nations.

Ground Based Air Defence Systems. NASAMS Air Defence System

Bianca-Valentina BOCA
”Henri Coandă” Air Force Academy, Brașov, România

Taking into account the current context in which weapon systems are constantly developing, in which technology manages to control almost everything, ground-based defense systems have a special role in air defense, providing increased capability. This article presents the role of ground-based air defense systems, while also illustrating the importance of an air defense focused on all types of threats.

The Importance of Providing the Romanian Army with the Python-5 Missile

Iustin Stefan BOGHEAN
“Henri Coandă” Air Force Academy, Brasov, Romania

In this publication I will present the Python-5 (full-sphere imaging infra-red (IIR) missile for air-to-air or air defense mission) missile which is the newest member of the Python family. The fifth-generation air-to air missile provides engaging an enemy aircraft with a revolutionary full-sphere launch capability. The missile can be launched from very short ranges to beyond visual range, with a high kill probability, excellent resistance to countermeasures, regardless of the target’s evasive maneuvers or countermeasure deployment.

2K12 Kub – General Information, Variants, Operational History and Development

Raul-Cristian BOICIUC
“Henri Coanda” Air Force Academy, Brasov, Romania

This paper focuses on some general information about the "Kub" anti-aircraft missile system, which did not have such a good start, but over the years has been optimized, learning from mistakes to improve its weaknesses, so that it has had a good development; and the results of some situations in which it has been used and some of the system variants.

Lethal Autonomous Weapons: The New Dimension of the Weapon Technologies

Ivanov BORISLAV
Faculty of Aviation, Air Force Academy “Georgi Benkovski”, Dolna Mitropolia, Bulgaria

With the advancement of technologies in recent decades, especially in the military sphere, weapons operating without human intervention, also known as lethal autonomous weapons or killer robots, are increasingly gaining popularity. They are a kind of autonomous military system that can independently detect and destroy targets based

on artificial intelligence. Their ability to perform tasks on land, in and under water, in the air, even in space makes them the increasingly desired human equivalent of a pilot.
After much disagreement by the authorities and after many meetings held regarding the operation of such weapons, they are limited, as the majority claims that the final command to attack must be given by a human, with the exception of certain types of defense systems.
Depending on the different points of view of the military and civilian institutions, LAW's must be limited or even banned, or on the contrary, established as the better analog of an operator and to be set the beginning of investing in their production and enforcement on the market.
A consequence of this, to this day, the establishment of LAWs remains an unsolvable dispute that presents developers of LAWs with a difficult choice.

A Holistic View of Stealth Characteristics of the F-16 Operated by the Romanian Air Force, in Terms of the General Lo (Low Observability) Capabilities Available for this Air Platform

Diana-Maria BOTEZAT
"Henri Coanda" Air Force Academy, Brasov, Romania

The property of aircraft or any military asset to be invisible or nearly invisible to the radar effect is a considerable advantage in air combat. Self-protection during aerial battles is not only about the use of the weapon system, as the technology in the field of aeronautics is developed continually and more and more identification equipment is being fitted to modern aircraft.
The importance of the following paper is to provide knowledge about the most controversial technology for avoiding detection by hostile radars, the methods for its implementation in modern aircraft and the prospects for the future of this relatively new facility. It is important to know what is the level of the Romanian Air Force aircraft in terms of stealth features, specifically technical data about the airframe and radar absorbing materials from which they are made and even the prospects of their survival in a possible conflict, depending on their operating capabilities. From an engineering point of view, the construction of these improved flying machines has been difficult, because the problem of ensuring a balance between their structure and flight aerodynamics (in order to obtain reliable mechanisms) inevitably occurred. As a result, it will be clarified the principle approached in the creation of low observability air platforms, and it will be possible to outline a comparison between the version of the F-16 Fighting Falcon owned by Romania and the stealth capabilities of other blocks of the same aircraft.

Effectiveness of the MIM-23 Hawk in the War in Ukraine, its Upgrades, Components and Destination

Matias- Andrei BREAZU
"Henri Coandă" Air Force Academy, Brasov, Romania

The airspace of Ukraine is threatened daily by more and more aerial targets, but they have found a solution to be able to face the attacks made by Russia. In this presentation, I

provide information regarding the effectiveness of the Mim-23 HAWK system against aerial targets and the improvements that have been made to the system throughout its evolution, as well as the operation of its components. I chose the MIM-23 Hawk missile system because it is part of the Ukrainian component and is currently used against Russian attacks with drones and cruise missiles. I also made a comparison of the technical details between the first version of the system and the updated one.

An Investigation into the Effectiveness of Encryption Techniques in Data Protection

Alexandra Mihaela BUFTEANU
"Henri Coanda" Air Force Academy, Braşov, Romania

Data security and privacy are crucial in the current digital era. Sensitive information must now be protected using encryption methods due to the rise in cyberattacks and data breaches. When plaintext is encrypted, it is turned into ciphertext, rendering it unintelligible to those lacking the necessary decryption keys. The efficacy of encryption methods for data encryption is examined in this research article. The research investigates different encryption techniques, including symmetric and asymmetric encryption, and assesses their advantages and disadvantages. The significance of key management and the effects of quantum computing on data encryption are also covered in the research paper.

SWOT Analysis for Microwave Landing System and Instrument Landing System

Constantin-Marian CHIRAN
"Henri Coandă" Air Force Academy, Braşov, Romania

An important role in ensuring aeronautical safety and security is the study of the systems that aircrafts uses starting from take-off, during the actual flight and until landing. This paper presents a SWOT analysis of two of the most important systems used for landings in aviation, the Instrument Landing System (ILS) and the Microwave Landing System (MLS). The analysis assesses the technical characteristics, performance, cost and safety of each system, identifying their strengths, weaknesses, opportunities and threats. The ILS is a ground-based radio navigation system that provides precise guidance during the final approach and landing phase of a flight, while the MLS uses microwave signals for vertical and horizontal guidance. The strengths of the two systems, such as accuracy and precision, and their weaknesses, such as the short range of the MLS, are analyzed. Opportunities for improvement of the systems and potential threats are also considered. The results of the study provide aviation representatives with an overview and understanding of the advantages and disadvantages of MLS and ILS, contributing to the appropriate choice of landing systems for each airport and aircraft, thus maintaining high aviation safety standards.

Air Craft Missile

Catalin-Ionut CIOBANESCU
"Henri Coanda" Air Force Academy, Brașov, Romania

Less than a quarter of a century ago, there was no semblance of a rocket or guided missile industry; today, there exists a multibillion-dollar business employing a sizable fraction of the Nation's most skilled scientists, engineers, and technicians. This industry has brought into being, in the relatively short span of some dozen years or so, some of the most sophisticated and complex mechanical and electrical systems yet conceived by man. There exist today target-seeking missiles for military applications, and vehicles for exploring cislunar space, not to mention the highly automated ancillary devices and equipment required to support operations and missions which existed in the realm of fantasy only several decades ago. In this presentation I will talk about the CA-94 missile system and compare it to the stinger system and their effectiveness in combating aireal targets.

Starstreak Anti-Aircraft Guided Missile System - The Necessity to Implement the System in the Romanian Armed Forces

Alexandra Ioana CIULE
"Henri Coandă" Air Force Academy, Brașov, România

This thesis is supposed to analyze a hypothetical tactical situation and compare Star streak Anti-Aircraft Guided Missile System and CA-94 Anti-Aircraft Guided Missile System. Both being a MANPAD are supposed to kill the enemy but there is a fine line between destroying the aerial threat and being destroyed.

SA-6 Kub Missile System

George Alexandru COZMAN
"Henri Coandă" Air Force Academy, Brașov, Romania

The Kub missile system is a Soviet-era air defense system that was first introduced in the 1960s. It was designed to protect military installations, troops, and strategic targets from enemy aircraft, helicopters, and cruise missiles. The Kub missile is a medium-range missile with a range of up to 24 kilometers. It is guided by radio command guidance and has a speed of Mach 2.8.

The Gepard System and its Efficiency

Ionut CRACIUN
"Henri Coandă" Air Force Academy, Brașov, Romania

Even when there are no fighting operations taking place, the battlefield is a deadly area for ground forces. Every unit is required to adopt air defense measures due to the aerial threat. That describes a wide variety of targets, for which the hit/kill probabilities of various weapons vary greatly. The majority of real-world solutions rely on VSHORAD missile systems or small-caliber anti-aircraft guns. All of these systems have unique

engagement characteristics, which has some negative effects on efficacy. The features of both pieces of equipment can be utilized to their fullest potential by combining guns and missiles in mixed air-defense systems, giving the troops greater coverage and effectiveness. The document also includes two advancements from Romania and some fundamental mixed-AD systems theory concepts.

Mixed Systems of Artillery and Missiles Provide a Viable Solution for Short-Range Air Defense

Ionela CVASNIUC
"Henri Coandă" Air Force Academy, Brașov, Romania

With the rapid progress of technology, the danger posed by highly intelligent and efficient weapon systems has increased significantly, presenting a new and more complex challenge for Air Defenses to overcome. In order to effectively respond to the evolving air threats, particularly in the context of SHORAD defenses, there is a need to modernize the administration and operation of GBAD units. Developing mixed systems could be a viable solution to meet the current operational requirements.

IRON DOME

Alexandru DIACONU
"Henri Coandă" Air Force Academy, Brașov, România

The IRON DOME is a unique air defense system developed by Israel to provide protection against short-range rockets and artillery shells. Its development was in response to frequent rocket attacks launched by terrorist groups in the Gaza Strip towards Israeli communities. The system has been operational since 2011 and has since proven to be a highly effective defense system that has saved countless lives and minimized infrastructure damage. Its success has gained international attention, with other countries expressing interest in acquiring similar defense systems. This system is a vital component of Israel's overall defense strategy, and this article will provide an overview of the IRON DOME's development, capabilities, and success.

C-300 Anti-aircraft Missile System

Kaloyan DIMITROV, Martin IVANOV, Martin KANEV
Faculty Artilery, Air Defense and CIS, Shumen, Bulgaria

This project explores the C-300 System, an advanced air defense system designed to identify and intercept incoming aerial threats. Through simulations and testing, the project demonstrates the system's capabilities and potential use cases for enhancing national security.

The Stinger Anti-Aircraft Missile System

Cosmin-Alexandru DRAGU
"Henri Coandă" Air Force Academy, Braşov, România

The STINGER anti-aircraft missile system is a portable and efficient air defense system used by military forces around the world to protect military bases and other important targets from airborne threats. The system includes infrared missiles, portable launchers, targeting systems, fire control systems, and missile batteries. STINGER has a range of up to 8 kilometers and can reach a maximum speed of approximately 800 meters per second. The infrared guidance system of STINGER missiles allows the detection and tracking of airborne targets by detecting the heat emitted by them, and the system's accuracy is over 90%. The STINGER system is capable of dealing with a variety of airborne threats, including small and medium-sized aircraft, helicopters, and drones.

Tactical Data Links

Alina-Rebecca DUINEA
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Tactical Data Links (TDL) ensure optimal situational awareness and command and control capabilities in an increasingly complex and competitive environment. TDL provides both theater-level connectivity and real-time long-range communications and is a key enabler for modern armies in joint or combined operations. Tactical data links are becoming more prevalent and important in the battlespace. And while at first glance they appear to be just that, tactical, in reality their value is operational when you combine all that tactical information.

The Anti-Ballistic Missiles Shield from Deveselu

Mario - Andrei DUMITRACHE, Rareș - Iulian ROTARU
"Carol I" National Defense University, Bucharest, Romania

This paper presents general information about the European Phased Adaptive Approach (EPAA), a three phase missile defense project, achieving its full operational capacity in the 4^{th} phase, foreseen to be completed this year. In addition, the paper presents the missile model used by the Aegis Ashore anti-missile shield implemented in Deveselu, Romania, as well as in a twin site in Redzikowa, Poland. It is shown how the anti-missile shield operates to counter a potential ballistic missile attack targeting NATO member states or other European countries. In addition, the paper presents a potential threat to the Aegis Ashore installation, namely the new Russian RS-28 Sarmat supersonic missile system, including features such as the capacity to transport the nuclear warheads, the speed and the effective distance covered in flight.

Hawk Missile System

Flaviu-Cristian FODOR
"Henri Coandă" Air Force Academy, Braşov, România

The Hawk anti-aircraft missile system is a system designed by the Americans, well thought out, a fact confirmed by the more than 25 countries that have purchased it for air safety. Usually 3 missiles are arranged on a chassis with wheels or on a chassis senile.

U*AV Systems in Aerial Research*

Marius GALAN[*], Livia-Adela ȘTEOPAN[**]
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The use of unmanned aerial vehicles in the field of aerial research has long been an important factor in the development of the military field, but also in the civilian field. That is why it is increasingly used in important areas of aviation. The primary risk that of injury to the crew, is taken out of consideration it is precisely this quality that makes this area in continuous progress.
The execution of aerial research can be done in a multitude of ways, with a multitude of sensors. Each sensor helps with a particular mission, so it is very important to choose the scanning domain. With the help of NIR sensor cameras we can execute a field profile scan, helping to evaluate possible access ways. Scanning with an IR sensor can give us an image in the infrared spectrum of a terrain, from where we can analyze the thermal fingerprints in a designated area. There is also a wide range of sensors that can serve in countless ways.
At the same time, land analysis is a very important step in aerial research. The analysis can be done automatically, by implementing software and setting identification parameters according to the proposed mission. Or manually, by visually identifying some differences on maps created with the help of images scanned by unmanned aerial devices.

Performance and Innovation Analysis of S-125 Missile System

Daniela-Emilia GRECU
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Over time, the surface-to-air missile systems have evolved considerably. More importantly, every state is looking for weapons developed on a large scale, both technically and technologically. The development of air weapons systems and the required to safeguard the nation's most significant sites necessitated the creation of mobile missile weapon systems that could repel hundreds of aircraft and cruise missile attacks, even when operating at their combat minimum altitudes.

The Development of Electronic Attack Systems that Use Directed Energy

Liliana-Andreea GRIGORE
"Henri Coandă" Air Force Academy, Braşov, Romania

The new era of warfare has arrived, and if you want to win, you must control the electromagnetic spectrum. Today, a category of weapons has captured the world's attention: electronic attack systems. These systems work on the basis of electromagnetic energy but they have a main difference. Electromagnetic weapons are a game changer in terms of improving military operational capabilities. In this domain exists a lot of opinions if they are safe to be used. The paper discusses general aspects of electronic attack systems with the aim of introducing the reader to the sphere of electronic warfare, followed by knowledge of electronic attack systems. The article subsequently presents different electronic attack weapons and the differences between them.

Surface to Air Missile System CA-94

Vasile-Eusebiu HUTANU
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The CA-94 is the only Manpad system from Romania. It was very usseful in our army, but it's getting old and it need to be replaced. In my opinion, every country needs at least 1 Manpad System, and because we are in NATO, we can optimize our protection by replacing the CA-94 complex with Misstral or Stinger. That's two system are verry innovative and it is similated to CA-94, so our soldier could easily use it too. That change may save us from the enemy atacks.

Unmanned Aerial Systems: Challenges for Air Defense

Maria-Alexandra ILEA, Iustin Mihai CÂRSTOIU
"Henri Coandă" Air Force Academy, Braşov, România

One of the most important elements of armed conflict is air defense. Air defense is facing more and more challenges lately due to the rapid development of unmanned aerial systems (UAS). The technologies they are equipped with make UASs capable of a wide range of missions and their development is still in full swing. They are seen as weapons of modern warfare that will change air force tactics. This paper presents the capabilities of unmanned aerial systems and the future prospects for their development.

History of S-75 Dvina

Tudor Ioan ISTRATI
"Henri Coandă" Air Force Academy, Braşov, România

The S-75 Dvina is a long-range, mobile surface-to-air missile (SAM) system that was developed by the Soviet Union in the late 1950s. It is designed to intercept and destroy high-altitude aircraft and has a range of up to 75 kilometres. The system consists of

several components, including a radar unit, missile launchers, and a command and control centre. The S-75 Dvina is known for its mobility, and it can be transported on trucks and quickly deployed to different locations. It saw extensive use in several conflicts, including the Vietnam War, where it became notorious for shooting down American aircraft. Despite its age, it remains in service with several countries and has influenced the development of modern air defence systems.

The Airspace Revolution

Anamaria-Roxana LEIZERIUC
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The continuing development of aviation by all the world's powers is both a blessing and a curse, and one of the main reasons for the tensions created internationally. The airspace is host to fierce competition based on speed, strategy, discretion and tenacity. The development of supersonic and hypersonic aircraft technology has come so far that a load of cargo or passengers is expected to reach the other side of the world in less than two hours. Through this essay, I want to bring to light the evolution in terms of experiments, prototypes, and vehicles occupying the airspace. I believe reflecting on this visible development is necessary to understand its impact on the modern world and the future.

Air Traffic Control Radar GCA – 2000

Maria LINDE, Martyna WALIŃSKA
Polish Air Force University, Dęblin, Poland

The aim of the article "Accuracy in determining the parameters of the position of aircraft by air traffic control radar GCA – 2000" is to characterize manner of operation of radar GCA-2000 in aviation. Air traffic control radars are the primary tool used by radar controllers to provide air traffic control service. They enable the detection and determination of the position of aircraft in the area of responsibility of the air traffic control authority. This article is based on theoretical introduction aimed at explaining the operation of radars and GPS receivers, as well as presenting the characteristics of mentioned radar. The accuracy of coordinate determination by air traffic control radar GCA-2000, located at Dęblin airport has been investigated. It was realized by comparing the positioning data recorded by the GCA-2000 radar, with the positioning data recorded by the Mobile Mapper Pro GPS receiver located on board the aircraft performing the flight within the radar range. Methodology mentioned in this article is for acquiring the positioning data used in this work and for analyzing the accuracy of position coordinate determination.

The Romanian Air Defense System. Solutions for Combating Airborne Threats

Cristina Elena LIVADARU
"Henry Coanda" Air Force Academy, Brasov, Romania

Nowadays, the air defense system of a country represents one of the most important criteria in establishing the level of preparedness for defense measures and the resolution of crisis situations. The response to the growing number of new aerial threats is the development of improved weapons that can counter attack at any given moment. In this perspective, I presented the evolution of Romanian anti-aircraft missiles and artillery throughout the last century alongside some solutions to modern aerial threats. However, new does not necessarily mean better, meaning that the old GBAD systems can still provide the required level of fire support so that our air defense is impenetrable.

Oerlikon 35 mm Twin-Barrel Gun Oerlikon GDF

Liviu-Florin STERE
"Henri Coandă" Air Force Academy, Braşov, România

*Some of the consequences of the Second World War were the great discoveries and innovations in aircraft warfare. Thus, military combat technique also had to be improved and modernised to cope with the new flying fighting machines. Therefore, the creation of new **air defence** units was a necessity, along with the creation of more efficient, **modern** and faster **anti-aircraft guns**.*
*So, at the end of the 1950s in the factories of Oerlikon-Bührle (later Oerlikon Contraves) began the design, development and construction of an **modern anti-aircraft gun** that was to become an emblem of **anti-aircraft guns**, the 2x35 mm automatic **anti-aircraft gun** initially named 1ZLA/353 MK, which has remained in history as the **GDF**-001.*
*From the first **air defence** complex that left the factory in the late 1950s until the early 2000s, over 2000 units were produced and used in over 30 countries.*

FIM-92 Stinger System

David-Octavian LUPU
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The FIM-92 Stinger is a man-portable, shoulder-fired surface-to-air missile system designed to provide short-range air defense against low-flying aerial threats such as helicopters and fixed-wing aircraft. It has been in service with the United States and other countries since the early 1980s and has been used in numerous conflicts around the world. The Stinger is highly effective and has a proven track record, making it a valuable asset for military and security forces operating in a variety of environments. Its compact size and ease of use also make it a popular choice for special forces and other mobile units requiring a portable air defense capability.

MANPADS: Combating the Threat to Global Aviation

Alexandru MACIUCEANU
"Henri Coandă" Air Force Academy, Braşov, România

Late in the 1950s, countries from the world had developed the MANPADS to provide military ground forces with protection from helicopters and jet aircraft. They have received a great deal of attention because of their effectiveness against aerial threats. They were staged in 4 generations, starting from US Redeye and Soviet 9K32 Strela-2, coming in the 4th generation MANPADS such as US FIM-92 Stinger Block 2, Russian Verba and Chinese QW-4.

STARSTREAK LML-NG HVM System

Adelin MARIN
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MANPADS (Man-Portable Air-Defence Systems) are lightweight anti-aircraft weapons. They are designed to protect soldiers on the battlefield from attacking aircraft. Because MANPADS are intended to be carried and deployed rapidly by ground forces, they are low cost, light, compact and mobile. They require only a single operator to use, and can be very effective against low or slow aircraft. One of the newest and most capable MANPAD systems (considering the destruction probability, worldwide spreading and the high velocity missile) is STAR Streak LML-NG system which I will discuss.

The Evolution Over Time of the S-75 Dvina Anti-Aircraft Missile System. From S-75 to S-400, a New Life for a Missle System Marked by the Passing of Time

Raluca MATEŞ
"Henri Coandă" Air Force Academy, Braşov, România

This paper traces the evolution of the S-75 Missile System, the first Missle System of this type. Also, this paper shows the world how this System evolves over time, reaching from the S-75, which was built in 1957, to the S-400, which entered in service in 2007. Over time, many changes have been made to this System, all those upgrades being made to modernize NATO's intermediate range land forces in response to the continuing buildup of Russian S-75 Dvina Missle System. Operation, performance and mission effectiveness are discussed. S-Dvina, whatever type we're talking about, is an evolutionary weapon system development in response to changing mission requirements and advances in applicable operations.

MANPADs Evolution

Izabela-Antonia MISTOCLIU
"Henri Coandă" Air Force Academy, Braşov, România

This paper presents Man-Portable Air-Defence (MANPAD) systems and shows their evolution over time, in order to point out their importance in the current geopolitical situation. The paper also highlights the models that made a difference in actual conflicts.

T-14 Armata

Radu MITĂ
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The T-14 Armata is a modern Russian main battle tank that combines advanced technologies and innovative design features. It features powerful 125mm smoothbore cannon, advanced composite armor, and an unmanned turret that improves crew safety and combat effectiveness. The T-14 also has an advanced fire control system, a digital battlefield management system, and is equipped with active protection systems that can detect and intercept incoming threats. Overall, the T-14 Armata is a formidable tank that represents a major leap forward in tank technology, providing the Russian military with a potent and versatile combat platform for years to come.

Roland Surface to Air Missile System

Nicolae-Cristian MUSTĂȚEA
"Henri Coandă" Air Force Academy, Brașov, Romania

The Roland Surface-to-Air Missile System is a mobile, short-range air defense system developed by NORD AVIATION and BOLKOW. It is designed to provide protection against low-flying aircraft and helicopters, as well as ground targets such as armored vehicles and bunkers. The system consists of a launcher vehicle equipped with two Roland missiles, a surveillance and target acquisition radar, and a command and control vehicle. The Roland missile is a fire-and-forget weapon that uses infrared homing guidance to track and destroy its target. The system has been used by various countries, including France, Germany, and Saudi Arabia, and has undergone several upgrades to enhance its capabilities over the years. It remains an important component of many countries' air defense systems.

An Upgrade to the GEPARD SYSTEM. Possible Usage of the CA-94

Romeo-Catalin NASUI
"Henri Coandă" Air Force Academy, Braşov, România

The threat to state security is constantly evolving, and there are many factors that directly impact its development. Two of the most significant factors are the increasing prevalence of advanced weapons systems such as tactical ballistic missiles, air-to-surface missiles, antiradar missiles and cruise missiles, which pose a significant threat to land targets and require the improvement of air defense systems. Additionally, the threat to

state security is also influenced by the dangers faced by ground troops in the battlefield, including the constant threat of aerial attacks. To address these threats, mixed air-defense systems can be used to optimize the characteristics of both guns and missiles. This approach integrates small caliber anti-aircraft guns and VSHORAD missile systems to provide troops with increased coverage and efficacy against a variety of targets. Two Romanian developments in mixed air-defense systems theory are presented in the paperwork, providing basic considerations for the development and implementation of such systems. Overall, the evolving threat to state security requires ongoing innovation and adaptation to ensure the safety and security of nations and their citizens.

New Threats against Worldwide Security: Hypersonic Missiles

Gabriela NICULAI
"Henry Coandă" Air Force Academy, Braşov, România

The threat of hypersonic missiles to international security is growing. The hazards presented by ballistic and cruise missiles would be exacerbated if hypersonic weapons gained worldwide popularity. They are both far quicker and more maneuverable than current cruise missiles and ballistic missile re-entry vehicles. A novel class of missile, hypersonic missiles have the speed and maneuverability to fundamentally alter nuclear (and conventional) interstate rivalry. Hypersonic missiles have swiftly risen to the top of the most sought-after categories of missile systems in recent years, notably as a result of their alleged capacity to overcome air and missile defenses. The ability to fly for extended periods of time at speeds up to Mach 5 (five times the speed of sound) and beyond, as well as the ability to maneuver in a way that permits a varied flight profile, are characteristics of hypersonic missiles. Hypersonic boost-glide systems and hypersonic cruise missiles are the two primary subtypes of hypersonic missile systems . There is a range of potential hypersonic missile designs that mix various propulsion systems, trajectories, and glide capabilities, even though these two kinds include the majority of hypersonic missile systems now under research. Several hypersonic missile designs have varying degrees of speed, maneuverability, potential trajectories, and capacity to evade missile defenses.

The S-400 Triumph System and its efficiency

Alexandru NUNU
"Henry Coandă" Air Force Academy, Braşov, România

In this paper I present some information about the S-400 triumph anti-aircraft system. I start in the 90s when the foundations of this system were laid and continue until 2022 when it will be used in the war between Russia and Ukraine. I will present some features of the system and at the end a small conclusion about this anti-aircraft system.

The OERLIKON GDF Antiaircraft System

Tudor-Marian PANĂ
"Henri Coandă" Air Force Academy, Braşov, România

The OERLIKON GDF antiaircraft system is one of the most advanced and effective systems available for modern conflicts, including hybrid wars. Its development and deployment are crucial for protecting key military assets and critical infrastructure, defending against

missile attacks, reducing casualties, and creating a psychological impact on the enemy. The OERLIKON GDF system is capable of intercepting and destroying a wide range of airborne threats, including missiles, helicopters, and drones, before they reach their targets. Its advanced targeting system and quick response time make it a reliable defense mechanism for critical infrastructure such as airports, ports, and power plants. The OERLIKON GDF system's ability to deter potential aggressors is critical, as it can dissuade them from launching an attack in the first place, thereby reducing the likelihood of conflict escalation. Furthermore, the psychological impact of the OERLIKON GDF system is significant, as the enemy is aware of its effectiveness and may hesitate to engage in aggressive actions. Overall, the development and deployment of the OERLIKON GDF antiaircraft system is of great importance in modern conflicts, including hybrid wars, and should be a priority for any country seeking to protect its military and economic capabilities.

SPYDER™ Family

Iustina PANAITESCU
"Henry Coandă" Air Force Academy, Brașov, România

The main purpose of this article is to describe an Air Defense System, specifically the SPYDER (Surface -to-air Python and Derby) System capable of engaging aircraft, helicopters, unmanned aerial vehicles, drones, cruise missiles and precision guided munitions.

The Differences between Romanian Anti-Aircraft Artillery in the First World War and Now

Giulia PĂNCESCU
"Henry Coandă" Air Force Academy, Brașov, România

The purpose of this article is to show the sacrifices, the hard work and the risks that some people had to take so they could face the cruel enemy. Even though the anti-aircraft artillery did not have the high-tech canons that are now, it is impressive how they could combat the few zeppelins and, new at that time, the harmful and dreadful aircrafts that were predominant inthe sky. Also, another point of this thesis is to look back and learn from the someone else's mistakes and do a better work protecting the world and understand that without this type of forfeit we would not have evolved and would not have been the same human beings that we are right in this bright moment and also we would not have been so ready for the possiblerival that is so close to start The Third World War.

The Stinger Anti-Aircraft Missile System

Andreea PETRILA
"Henri Coandă" Air Force Academy, Braşov, România

The advancement of technology in the military branch has taken an unexpected leap and shows no signs of slowing down. This is due to the constantly changing threats posed by any aircraft displaying hostile intent over our troops or allied forces. If the first attempts to build weapons resulted in numerous improvisations, they have advanced to the point where, in the event of a potential aggression, they could use the weapons provided to survive longer on the battlefield or even to defeat the enemy. The Stinger missile system is one of the most recent combat weapons, serving in the armies of several countries. It's small and portable, and it's launched from the shoulder by a single fighter using passive and infrared guidance system. Because of its characteristics, it has the potential to become the most widely used portable system.

The Implementation of Technology in Anti-Aircraft Defense

Andreea PETROVAN
"Henri Coandă" Air Force Academy, Braşov, România

One of the most important elements of armed conflict is air defense. Therefore, the development of air defense systems plays a particulary important role in in ensuring national security and increasing the level of stability of the army. This paper presents the stage of development of air defense syste , consonant with the potential threats of the modern operating theater and also describes in a short presentation the defense architecture and systems as well as the technologies applicable to air and missile defense elements. The army of the future must be prepared to operate in theaters where a wide variety of air and missile systems could be used against it.

Comparative Analysis of Performances in Rocket Motors Using Computer Simulation

Adina-Andreea PÎRV
"Henri Coandă" Air Force Academy, Braşov, Romania

The evolution of rocket motors led overtime to a great capability of missiles to achieve their target at higher speed and more cost efficient. It goes without saying that the efficiency of a missile is influenced by its propulsion capabilities. Most of the surface-to-air missiles are using solid propellant for rocket engines. By changing several parameters, such as the type of charge, the performances of the rocket engine can increase or decrease. Using a computer simulator, those parameters can be changed to determine the efficiency of the missile, therefore the process of designing a missile becomes easier.

Study on UAVs in the Russian Army's

Ionuț-Daniel RĂDOESCU
"Henri Coandă" Air Force Academy, Brașov, Romania

This study aimed to provide detailed information on 6 of the most commonly used drones by the Russian military: the Forpost UAV, Orlan-10, Zala Aero, Orion, Tachyon, and Forpost-M. Each drone was presented in detail, including specifications, capabilities, and their use in military operations. Additionally, we provided a general introduction to the use of drones by the Russian military and the advantages they offer. The study aims to provide a better understanding of Russian military capabilities and drone technology used in current military conflicts.

The Gyroscope and Accelerometer Helmet. A New Approach in the Air Defense

Andrei Stelu ROTARU
"Henri Coandă" Air Force Academy, Brașov, România

For the past decades, technology has developed at a high speed and at times the inhabitants of planet Earth cannot keep up with the latest scientific discoveries. Such realities can be noticed in the military domain, as well, mostly in the Aviation. The state-of-the-art aircrafts and missile systems display characteristics that a few years ago appeared impossible to obtain. We live in the most advanced times in human history and most of the scientific innovations are firstly approached in the military field.

Study on Hungary's Anti- Aircraft Defense from the Perspective of Hybrid Threats

Florin-Ioan SAVA
"Henri Coandă" Air Force Academy, Brașov, România

This study scientifically analyzes Hungary's anti-aircraft defense systems in relation to current hybrid threats. The paper provides an essential overview of the anti-aircraft complexes (Mistral, NASAMS, 2K12 KUB), highlighting their characteristics and combat capabilities. Furthermore, the study presents the typology of hybrid threats and attempts to identify ways to counter a cyber attack against the information network within an anti-aircraft missile system, thereby contributing to the topic with potential countermeasures.

The Impact of Cruise and Ballistic Missiles on the Antimissile Defence Systems

Elena-Adriana SBINGHECI
"Henri Coandă" Air Force Academy, Brașov, Romania

Both the cruise and the ballistic missiles are very important vectors of every military power's development programes, due to their revolutionary capabilities. Modern missiles will not stop being a threat against any NATO states and against current air defense

systems which are still designed for classical aerial threats. The solutions in the regard of countering new types of weapons refer especially in seeking new algorithms of defense and increasing the current capabilities in order to combat these modern threats.

Why Has Alcohol Been the Most Powerful Weapon for Entire Centuries?

Marius ȚIFIR
"Henri Coanda" Air Force Academy, Brasov, Romania

When there is to talk about weapons people tend to think only about gunpowder-powered guns and cannons, or the rather new missiles and we regrettably forget about the fact that the most powerful and destructive weapon is actually men power, more exactly, the one that can convince or persuade its troops into being capable of fighting fiercely is the one that has already won half of the entire war. The idea of making soldiers capable of enduring prolong and exhausting fighting has existed since the very beginning of bigger-scale warfare, every great leader trying to convince his army that fighting is the only rightful way of tackling their problems or, way more effective, using things greater than the mere nation or sheer individual safety such as the will of the Divinity and its almighty status which no one can contest. During modern wars, the God-related ways of persuasion were not effective any longer because of the main purpose of the Illuminist movement and the concept developed by many philosophers of the XIX and XX centuries, such as Friedrich Nietzsche, which states that God is no longer present among our beliefs and that people lost their faith in the institution of the Church because of a variety of factors, eventually being replaced by substances made specifically for altering one's ability to think rationally, therefore being braver.

Impact of Technology on Military Aviation

Cosmin-Alexandru TIMOCEL
"Henri Coandă" Air Force Academy, Brașov, România

This research explores the impact of technology on military aviation. The author highlights the transformative impact of advanced avionics and mission systems, as well as the emergence of unmanned aerial vehicles (UAVs) or drones. The use of technologies such as artificial intelligence (AI), machine learning, and big data analytics are also discussed, with a focus on how these technologies are transforming the way military aircraft operate. The author acknowledges the challenges posed by these technological advancements, including the development of anti-aircraft systems and the need for continued innovation. Overall, the essay demonstrates the profound impact of technology on military aviation and highlights the need for ongoing development to maintain a strategic advantage.

SKYGUARD-SPARROW Anti-aircraft Missile System

Gabriel Ioan TISĂLIȚĂ
"Henri Coandă" Air Force Academy, Brașov, România

This project explores the SkyGuard-Sparrow System, an advanced air defense system designed to identify and intercept incoming aerial threats. Through simulations and testing, the project demonstrates the system's capabilities and potential use cases for enhancing national security.

Combat Effectiveness of the CAMM Missile System

Alexandra TUDOR
"Henri Coandă" Air Force Academy, Brașov, România

The CAMM (Common Anti-Air Modular Missile) is a family of surface-to-air missiles designed to provide air defence against a wide range of threats, including aircraft, helicopters, unmanned aerial vehicles (UAVs), and cruise missiles. In terms of performance, the CAMM missile system has demonstrated high levels of accuracy and reliability during testing and live-fire exercises. The system has a range of up to 45 kilometers and can engage targets at altitudes of up to 12 kilometers. The missile's high maneuverability, combined with its advanced sensors and guidance technology, allows it to intercept highly maneuverable targets, such as cruise missiles and UAVs, with a high probability of success. The CAMM missile system is a highly efficient and effective air defence system, providing a comprehensive defence against a wide range of threats. Its modular design, advanced sensors, and guidance technology, and high levels of accuracy and reliability make it a valuable asset to any military force requiring air defence capabilities.

S-400 Missile System

Vlad Alexandru TUFARU
"Henri Coandă" Air Force Academy, Brașov, România

The purpose of my reaserh is to present the S-4000 Missile System because it's a top tier air defender system built by Rusia, which is a good competitor with USA's best air defender missile system PATRIOT.

RBS 70 Short-Range Anti-Aircraft Missile

Florina Ungur
"Henri Coandă" Air Force Academy, Brașov, România

The "air-counter air confrontation" is a defining component of the contemporary war reality. This antagonism determined the continuous transformation of the air-space environment and fueled the constant progress of its main actors: the offensive air

platforms, respectively antiaircraft fighting systems. To keep the pace with the rhythm imposed by the air combat means, the surface-to-air missile systems constantly find new solutions to cope with the modern challenges of the constantly evolving battle space.

Enhancing the Capabilities of the "Regina Maria" Frigate: The Role of the 35 mm Doubled-Cannon "Oerlikon"

Denis-Alexandru VANTA
"Henri Coandă" Air Force Academy, Brașov, România

Regina Maria is a multi-role frigate designed and built for the Romanian Navy, named after Queen Marie of Romania. The frigate is designed to perform a variety of missions, including air defense, anti-surface and anti-submarine warfare, and maritime security. It is equipped with a range of advanced sensors and weapons systems to enable it to perform these missions effectively. Despite all its capabilities and performance, based on the armament mounted on the frigate, the medium and short-range defensive systems are making the frigate more vulnerable.

Interoperability of Air Defense Systems - A Requirement for Integration within the NATO Alliance

Daniel VOICU
"Henri Coandă" Air Force Academy, Brașov, România

Over time, technology has developed at an accelerated pace, and multiple defense systems have emerged on the market. Their diversity has created challenges in communicating and integrating them to achieve higher performance and efficiency. Thus, the concept of interoperability has been highlighted and developed in recent years. This process involves solving information transmission problems between systems and can improve the efficiency of the human factor.

3. HUMANITIES & SOCIAL SCIENCES

Conference ROOM E77

Moderators:

Lect Daniela **NAGY,** PhD
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Student Maria **MILEA**
"Henri Coandă" Air Force Academy, Brasov, Romania

Student Ştefan Vladimir **POPESCU**
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A Story of Cooperation: The Berlin Airlift and the Establishment of NATO

Andrei BAR
"Nicolae Bălcescu" Land Forces Academy, Sibiu, Romania

When World War II ended in 1945, Germany was divided between the United States, the United Kingdom, France and the Union of Soviet Socialist Republics into four occupation areas. Its former capital, Berlin, which was lying in the Soviet controlled zone, was also split among these nations. However, the following years have seen tensions rising between the former allies. Both the Soviets and the Americans had two irreconcilable visions for Germany. Stalin wanted to create a buffer zone between his eastern European satellite states and the western powers. To reach his goal, the dictator planned to create a puppet state and to evict the Anglo-American forces out of Berlin. In 1948, the Soviets installed a blockade around the city and stopped the American supply lines. This article aims to present the story that unfolded in those 11 months of encirclement and the ability of the European nations to work together towards a common purpose: creating the North Atlantic Treaty Organization.

Radicalization in Religious Terrorism in the Middle East

Alexandru BRĂTESCU
"Henri Coandă" Air Force Academy, Braşov, Romania

The rise of religious terrorism in the last decade demonstrated that new grounds for terrorism have been discovered. It has taken on new dimensions, in which both military personnel and civilians must participate. New rules have been established, and more have been broken, which is why this specific wing of terrorism has allowed many research

subjects to emerge. As a result, this paper provides a brief overview of what these new dimensions have to offer.

The Impact of Disinformation and Propaganda on International Security. Analysis of Russian Aggression Against Ukraine

Martyna BRZEZNICKA
War Studies University, Warsaw, Poland

Since the beginning of Russian aggression against Ukraine, the international security system has changed drastically. There are various factors, which make it difficult to reclaim peace and balance. One of them is disinformation and propaganda. The aim of this paper is to show the difference between these terms and illustrate their impact on international security using Russian aggression against Ukraine, as well as present the function of mass media in the existence of those two dangers. The main research problem of the paper is: How can disinformation and propaganda affect international security? For the realization of such an aim and to provide an answer to the research problem, methods of Russian propaganda and disinformation activities were analyzed as well as cases from either international organizations or the academic community were used.

The Evolution of Aviation Vocabulary and Language

Anisia BUTNARIU
"Henri Coandă" Air Force Academy, Braşov, Romania

This paper explores the evolution of aviation vocabulary and language over time, examining its development from the early days of aviation to the present day. The study examines the changes in vocabulary, language use, and communication methods that have occurred as aviation has evolved.
The early days of aviation were marked by a limited vocabulary and simple communication methods. As aviation technology advanced, however, so did the language used to describe it. This led to the development of technical terms, acronyms, and jargon that are now widely used in the aviation industry.
The introduction of radio communication in the 1920s revolutionized aviation communication, enabling pilots to communicate with air traffic controllers and other pilots in real-time. This led to the development of a standardized aviation language known as Aviation English, which is now used by pilots and air traffic controllers around the world. This paper also examines the evolution of aviation vocabulary and language with a particular focus on gender bias. While aviation has traditionally been a male-dominated field, efforts have been made to address gender bias in language and promote inclusivity in the industry.
The study also explores the impact of culture and language on aviation communication, highlighting the importance of clear communication and the potential for miscommunication due to language barriers.
Overall, this paper highlights the dynamic nature of aviation vocabulary and language, which continues to evolve alongside advancements in aviation technology and communication methods.

Myths and Legends of the Deep

Alexandru-Robert FOCA, David-Nicholas MIHALCEA
"Mircea cel Batran" Naval Academy, Constanta, Romania

Taking into consideration that most of Earth's surface is composed of oceans and seas, it's no wonder that numerous of the world's myths have stories that deal with beings from the ocean or sea. However it is still unclear if some of these creature even existed, or if they still exist to this day but are hiding themselves.
Some of these creatures are vicious beings that intend on either enslaving humanity or devour it. These creatures are said to have their underwater homes in lakes, abysses, ponds and gutters all over the world.
Mythological sea creatures have been part of human folklore and imagination for centuries. These creatures are legendary creatures or mythical creatures that have been described in various mythologies, including Greek, Roman, Norse, Celtic, and many others. They are often depicted as having supernatural powers or being guardians of the oceans. Some of the most famous mythological sea creatures include mermaids, sirens, selkies, krakens, sea serpents, and sea dragons. These creatures have captured the human imagination and continue to inspire artists, writers, and filmmakers today. While they may not exist in reality, the allure of mythological sea creatures remains strong, and they continue to fascinate and enchant us.

Obstruction of Signal Transmission in Interpersonal Relationships and in the Aeronautical Field

Diana-Violeta PAUL
"Henri Coanda" Air Force Academy, Brasov, Romania

Adapting to the modern world means empathizing with others. In this paper, one branch of the vast field has been addressed, which concerns the transmission of data packages in interpersonal relationships. The collected references reflect on the difficulties encountered in conducting various conversations. To begin with, an introduction to the world of these shortcomings has been made in the article, after which the definition and categorization of the discussed concept have been continued. Next, the field of study in the aviation industry is outlined, with a focus on pilot-controller conversations. The content is exemplified through signal simulation software. The end of the paper is strengthened by attaching means of improvement and overcoming these barriers, followed by the conclusions and opinions extracted from the documentation.

Technology Era, Between Evolution and Involution

Nadia PETRUSE
"Henri Coandă" Air Force Academy, Brașov, Romania

The evolution of technology and the gradual intrusion of the Internet into our lives had as their primary objective the facilitation of living and the transmission of information as quickly as possible, which could be accessed by as many individuals. Unfortunately, we see that a new reality is being established, marked by numerous changes in perception, in

which the connection between man and "machine" can be dangerous if the safety limit is not respected.

Study on the Influence of Military Life on Civilian Life

Nicolae Lucian RADU
"Henri Coandă" Air Force Academy, Brașov, Romania

This research aims to highlight aspects related to how the military career influences civilian life. Our study was carried out on soldiers at different stages of their career: rookies, experienced military personnel and armed forces at the end of their career heading towards reserve or retirement. Most of the studies have been conducted on veterans, and we believe that our work adds value by extending the study to the military at different stages of their career. It is a predominantly qualitative research because it relies heavily on the personal experience of each subject participating in the study. This topic presents us with a socio-human reality that cannot be quantified through purely statistical results.

Three Seas as an Opportunity for Economic Development and Increasing the Security of Poland and Romania

Adam STALERZUK
War Studies University, Warsaw, Poland

After the fall of the Iron Curtain and the possibility for the countries of Central and South-Eastern Europe to connect with the rest of Western Europe within the European Union, it began to be noticed that the infrastructural differences between these countries are significant. Various measures have been taken to eliminate these differences. Currently, since 2016, the latest initiative that aims to eliminate these differences is the Three Seas Initiative.
The aim of the article is to present the opportunities offered by the Three Seas Initiative for Poland and Romania in the field of economic security. The main research problem of the article is: how will the Three Seas Initiative affect the development of Poland and Romania? Document analysis methods were used to achieve this goal and provide answers to research problems.

Cultural Immersion and Personal Growth: Insights into a Personal Study Experience in Poland

Mihai-Dănuț TIMOFTE, Ionut-Cristian URECHE
"Mircea cel Batran" Naval Academy, Constanta, Romania

This paper explores the importance of cultural immersion and personal growth through the lens of a study experience in Poland. This allowed the author to gain a deeper understanding of the Polish culture, develop new intercultural communication skills, and ultimately become a more better-rounded and compassionate individual. The article examines the importance of cultural immersion, the differences and similarities in the Polish culture, language and communication barriers, and personal growth and

development. The article concludes by emphasizing the value of study experiences abroad in promoting personal growth, cultural understanding, and the development of important professional skills. This article serves as a valuable resource for anyone considering a study experience abroad, or interested in the benefits of cultural immersion and personal growth.

Cancel Culture

Camelia TRIF, Maria-Gabriela CULCEA
"Mircea cel Batran" Naval Academy, Constanta, Romania

Studying people and implicitly the society they live in is a very complex process, because this society is constantly changing and the adopted values are not always among the best. Nevertheless, all good and bad facts make up the society. Therefore, we have chosen to talk about a currently known topic, namely „cancel culture". The aim of this paper is to bring to your attention this topic, the way we see it and also to take into consideration different points of view that we have encountered while researching this interesting concept.

One Language Multiple Voices

Cătălin-Costin VLAD
"Mircea cel Bătrân" Naval Academy, Constanța, Romania

This paper includes my personal overview over the history of English, the origins of accents and the experience of learning English in a multicultural environment.
Firstly, the paper provides an overview over the history of English starting from the Roman period, followed by the invasion of Jutes, Angles and Saxons.
Secondly, the paper explores the origin of accents and how accents develop. In addition, I will mention the consequences of accents.
Finally, I will share my personal experience of learning English in a multicultural environment and unveil how the exposure to different accents enriched my language experience and improved my communication skills.
To conclude, this paper emphasizes the importance of understanding the history of English and the diversity of accents that exist within English. It also highlights the value of learning English in a multicultural environment.

The Impact of Migration on the Society and International Security of States on the Example of Russia's Aggression Against Ukraine in 2022

Dorota ZEMBIK
War Studies University, Warsaw, Poland

The aim of the article is to characterize the impact of migration on the society and international security of states on the example of Russia's aggression against Ukraine in 2022. In particular, the article provides a descriptive context of dealing with migration and its impact on international relations. The problem was shown on the example of the

situation caused by the outbreak of war in Ukraine in 2022. This article illustrates the reaction of the government of a neighboring country, that is Poland, to the previously mentioned armed conflict. The analysis carried out showcases the attitudes of citizens towards the issue and highlights the welfare-related issues of migrants. The entire consideration is also based on the impact of this conflict on international security and diplomatic relations of the countries. The study uses a method that involves analyzing past events, statements by politicians, and synthesizing the elements contained in the article.

Conference ROOM E72

Moderators:

Lect Ramona **HĂRŞAN,** PhD

"Henri Coandă" Air Force Academy, Brasov, Romania

Student Andra Maria **CERNIAVSCHI**

"Henri Coandă" Air Force Academy, Brasov, Romania

Student Ovidiu **SYABO**

"Henri Coandă" Air Force Academy, Brasov, Romania

Burnout among the Pilots

Elena-Bianca CĂLIMAN

"Henri Coandă" Air Force Academy, Brașov, Romania

Pilots are in many ways unique, owing to the fact that a significant part of their life is traveling trough sky. But, in order to keep people and aircrafts safe, the mental health of a pilot is supposed to be the key. In this article I am about to present one of the potential threat of these critical criteria: burnout. This syndrome is the result of chronic stress which has not been managed in a proper way. Even though, the pilots are annually tested in order to monitoring their mental health, there can be an unwanted breach in this system. As an outcome, some studies with pilots showed that a large amount of the pilots can experience burnout.

Operation Mincemeat, or How the British Played a Hoax on Germans

Maria-Denisa CHIRIAC
"Mircea cel Bătrân" Naval Academy, Constanța, Romania

The purpose of this paper is to bring to light a historical moment during the World War II: the operation called Mincemeat that started during the night of July 9th-10th, 1943 when the United Kingdom was deeply entrenched in the war. It was one of the most complex operations to fool the enemy during the war. In fact, it was the biggest hoax played by the Allies to Nazi Germany in order to trick the Germans into believing the target was Greece instead of Sicily. The operation entailed a corpse carrying false secrets and washing ashore. The corpse is dumped near Spain, in the ocean, and found by a fisherman. The Spanish secret police service took the documents to the Germans, and the plan followed its course towards success. This paper will compare and contrast the way Operation Mincemeat is shown by the 2021 British war drama film directed by John Madden.

Technology and Communication

Ștefan-Alexandru CIOBANU
"Henri Coandă" Air Force Academy, Braşov, Romania

Technology has had a significant impact on the way people communicate. With the advent of new technologies such as messaging apps, social networks, virtual reality, and artificial intelligence, communication has become more convenient, efficient, and accessible than ever before. However, there are also drawbacks to these advancements, such as the potential for privacy breaches, cyber bullying, and a decrease in face-to-face interaction. This abstract explores the benefits and disadvantages of using technology in communication, as well as its impact on social relationships and business. Ultimately, it is essential to strike a balance between utilizing technology for its advantages while minimizing the negative consequences that may arise.

The Art of Propaganda

Andrei-Dorian GHEORGHE
"Mircea cel Bătrân" Naval Academy, Constanța, România

Propaganda is a form of communication that seeks to influence or manipulate public opinion and behavior through the dissemination of information, ideas, or opinions. One of the most influential figures in the history of propaganda is Edward Bernays, a public relations pioneer who used his knowledge of psychology to shape public perceptions. Bernays' work was controversial, and some criticized him for his manipulative tactics. However, his impact on the field of propaganda is undeniable, and his ideas continue to be studied and debated today. In America, propaganda remains a powerful force in politics and advertising, and Bernays' legacy continues to influence the way we think about public relations and the media.

Fear of the West in the Post-Soviet Russian Leadership`s Psychology

Robert-George HULEA
”Henri Coandă” Air Force Academy, Brașov, Romania

This article seeks to analyze the underlying causes of Russia's fear of the West, whether real or imagined, and if it has shaped the psychology of post-Soviet leaders. Starting from the originator of the concept of the "Third Rome" (Filofei, a Russian monk), advocated in the 19th century by the diplomat F. I. Tyutchev and the authors of the idea of an utopian future about Russia, continuing with the Messianist philosophers Vladimir Solov'ev and Nikolai Berdiaev and on to Alexander Prokhanov and Alexander Dugin (the founder of neo-Eurasianism), Russian leaders had a significant anti-Western infusion, linking themselves to Russia's past in terms of shaping its future. Therefore, the triad of history-culture-religion seems to play an important role in understanding the mindset of Russian leaders and this article aims to analyze the emergence of ideas that have shaped Russia's distinct role and protection from the West, ideas that were mirrored in Russian leadership after 1991.

Is the Sea Transmogrifying Ships into Corpses or Ghosts?

Sonia-Monica ILIESCU
“Mircea cel Batran” Naval Academy, Constanta, Romania

Since the mankind started travelling to new and further places all around the world the necessity to finding modern and more adaptive ways to move from one point to another. The idea of boat and eventually a ship made us create. This was just one of the first steps in revolution of traveling likewise for upcoming mystery to keep humans in complete darkness and unsure about the reality around them. However, it is well known that all the beautiful voyages at sea have a great beginning but when surrounded by water one’s luck can change any second and usually the most foolish ones who pretend to understand the whims of oceans are the first to hit the rock bottom. This is not a story about surviving, this story is about the shadows of the past which resurface from time to time to prove the fate combined with stubbornness which can turn one into either a legend or a ghost. The aim of this paper it’s very provocative, we would like to make you believe that ghosts exists.

The Illegal Annexation of Crimea by the Russian Federation

David-Florin MOCEAN, Robert-Cristian BASARABA
“Alexandru Ioan Cuza” Police Academy, Bucharest, Romania

Russian military actions in Ukraine has illustrated that rules of international law were abused in the attempt of achieving military and political objectives in the face of the massive condemnation by the world governments. In the international arena is important to provide diplomatic solutions which are acceptable to all parties, but Russia acted differently in the beginning of 2014, in total contradiction to the international laws.

Without an in depth analysis of Russia´s actions and Ukraine response on the Russian annexation of Crimea, there is a risk of a situation in which the crisis might escalate and lead to further military aggressions which in turn might lead to destructive events.
This paper analyzes the Russian military consequences in the Autonomous Republic of Crimea in February 2014 and the repercussions of the current political-militarized conflict of the 21st century between the Russian Federation and Ukraine, respectively the Russian war against Ukraine.

Malala Yousafzai as a Living Archetype: A Perspective on Women's Rights as Described in *I Am Malala*

Andreea MUTICĂ
"Henri Coandă" Air Force Academy, Brașov, Romania

I am Malala *is an autobiography of Malala Yousafzai, a young Pakistani activist who fought for women's right to education and survived an armed attack by the Taliban. The Taliban, an extreme Islamist organization, are portrayed as brutal rulers who use intimidation and fear to impose their vision of Islamic law. The following article highlights how women are treated in Pakistani society and how their rights are restricted under the Taliban regime through the analysis of Malala's book, by outlining significant events indicating their precarious status. Despite the risks and the threats received from the Taliban, Malala is still determined to fight for education and women's rights. Thus, she becomes a symbol of empowerment, inspiring people from all around the world to stand for the rights of girls and women.*

Leonka versus Dmitri: Fiction and Historical Truth Around the Romanovs' Kitchen Boy

Andreea NIȚĂ
"Henri Coandă" Air Force Academy Brașov, Romania

The book The Kitchen Boy: A Novel of the Last Tsar *presents the perspective of a poor boy who worked in the house where Romanov family was imprisoned in 1918. The tumultuous life of Romanov's family was debated by all social classes. This dynasty ended when the Tsar Nikolai II and his children died in a distressing way.*
There have been many speculations about their life and the way Russian citizens lived during their reign. The perspective of the writer tends to match the reality, but at the end of every book and movie we cannot know the whole truth of history.

Maritime Superstitions: The Forgotten Tales

Alexandru ONCIOIU
"Mircea cel Bătrân" Naval Academy, Constanța, Romania

Due to the difficulties that sailors and fisherman were constantly facing, they made up stories and rules to give themselves comfort in the idea that they could prevent terrible occurrences. Several of these superstitions have their roots in the inherent dangers of sailing and in luck, both good and bad.

This paper will address some of them, and will also retrace their history. In the end it will be pointed out that nowadays, we use safety rules to prevent such disasters such as using a life jacket or a fire extinguisher

Why Standardization is Important?

Octavian Constantin PĂTRU
"Henri Coanda" Air Force Academy, Brasov, Romania

This research paper examines the importance of standardization in the aviation industry. The paper explores how standardization has been integral in ensuring safety, efficiency, and effectiveness in aviation operations. The study analyzes the various standardization efforts that have been implemented in the aviation industry, including international regulatory frameworks and industry-specific standards., today named ICAO. The paper also considers the challenges and benefits of standardization, including its impact on innovation and competitiveness. The research concludes that standardization plays a critical role in ensuring the safety and reliability of aviation operations while also contributing to the growth and success of the aviation industry. The findings of this research provide valuable insights into the importance of standardization in aviation and its potential impact on the industry's future.

Neuroscience of Communication in the Military System Mapping of Brain Areas and Functions

Iasmina-Georgiana SAUCIUC
"Henri Coandă" Air Force Academy, Brașov, Romania

With the present article we aim to address, with the scientific tools of communication theories, issues of the nature of nonverbal communicative behaviour prescribed by military regulations. Starting from the inventory of the types of frontline training movements prescribed in the frontline training regulations, we found that they can be analyzed from a neurophysiologic point of view. Taking into account the broad physiological process of transmitting the military command and executing it, as well as the other non-verbal communicational aspects prescribed by the regulations, i.e. drawing on the common area of knowledge in communication sciences and neurosciences, we proposed a mapping of the brain areas and which ones are being active during the military's frontline training in order to streamline the training process.

"The Tattooist of Auschwitz"- The Balance between Fiction and Reality

Alexia-Anamaria SAVONEA
"Henri Coanda" Air Force Academy, Brasov, Romania

This article aims to outline the differences that arise between works of fiction based on real facts and actual reality. Particular historical events such as World War II tend to make us subjective in our view. The Tattooist of Auschwitz seems at first glance to be a memoir, but the later critical analyses reveal a lack of accuracy in the chronological

account of events or the hyperbolic representation of certain personality traits of the characters. I will analyze the similarities between reality and the book under review, focusing on the critics' view of the book.

Conference ROOM E78

Moderators:

TA Kinga **KOLUMBÁN,** PhD
"Henri Coandă" Air Force Academy, Brasov, Romania

Student Mădălina Mihaela **HILOTE**
"Henri Coandă" Air Force Academy, Brasov, Romania

Student Ioan Virgil **FOLEA**
"Henri Coandă" Air Force Academy, Brasov, Romania

Radicalism as a Ubiquitous Threat

Adam BICZYK
War Studies University, Warsaw, Poland

Radicalism is a threat known to mankind for ages. This unique and special type of danger caused events that changed course of the history. In today's world radicalism is rightfully considered to be a ubiquitous threat that is a potential danger for every government. The main research problem and focus of this paper is the question: what makes it such a threat? As well as why governments should always work towards preventing it? To answer these questions, I will analyze the process of radicalization as well as an example that portray the dangers of radical and extreme behaviors and ideas. I will also focus on factors as well as the process itself, of radicalization. Lastly using examples of regulations and international laws I will depict the system of combating these types of threats

Communication – The Key to a Successful Adaptation in the Military Environment

Diana BULARCA
"Henri Coandă" Air Force Academy, Braşov, Romania

Communication plays an important role in people's social life, especially when trying to integrate in a specific group. Therefore, the military environment which is found in all the military units and academies of Romania might cause a number of problems for the civilian youth in terms of adaptation to a large number of firm rules and to the strictness specific to this environment. Taking into consideration the fact that most of the military activities are based on teamwork, strong connections and close relationships between

comrades, an unsuccessful integration attempt could bring long-term problems for the people with integration issues and also for the group they belong to.
Considering this matter, this paperwork will identify the major problems that might occur in the process of adaptation and to present solutions and strategies for the improvement of the process given through communication.

The Importance of Semiotics in Military Communication

Andrada-Giulia COSTEA
"Henri Coandă" Air Force Academy, Braşov, Romania

We all know that nowadays communication is the key to everything, wheter verbal or non-verbal. Espacially in the military environment, an effective communication is essential in achieving the success of any military operation. Due to its own jargon, unique terminology, acronyms, which must be understood by all staff, semiotics, the study of signs, symbols and meaning making, plays a vital role in military communication, helping to ensure that information is transmitted efficiently, correctly understood and safe. By using semiotics, the military can be sure that this specialized language will only be known by those who need to understand it, while preventing it from being unterstood by those who do not.

Military-Civilian Relations: Challenges in the Context of National Security

Iuliana-Bianca GHINGHILOSCHI
"Henri Coandă" Air Force Academy, Braşov, Romania

A society is made up of citizens who can choose a career in the military or in civil society. The military space is created and developed to provide protection and security to the population. The activities carried out in areas of common interest and spheres make the military-civilian relationship important in the context of national security. This paper addresses the interaction between the military and civilians by assessing the challenges that members of society encounter as collaborators. In search of a common denominator, issues such as the acceptance of women in a predominantly male environment, the influence of military operations on the civilian environment, but also the ethics, professionalism and leadership present in military-civilian relations are pursued. Strengthening military-civilian relations is essential as they live in coexistence, depending on each other to ensure a qualitative approach to the society in which they live.

Media and its Effects on the American Population During the Cold War

Roxana-Georgiana GRIGORE
"Henri Coandă" Air Force Academy, Braşov, România

The end of World War II marked the birth of a new generation of modern warfare, presenting a different face of combat - with asymmetric and unconventional features. One of the factors that contributed to the need for redefining the types of war was the

role of the media and its effects on the population, as its main purpose - informing people about relevant aspects of society, but above all, transmitting correct and impartial information - was reconfigured and became a weapon in a war where military tactics and strategies were no longer enough, and the fight shifted to fronts farther from the traditional battlefield. Thus, this paper aims to analyze the methods used by the American Government that turned mass communication tools into a means of manipulating the population in the context of the Cold War.

The Egyptian Fleet, the First One in the History

Andrei-Mihai MOGA, Adrian-Florescu GEAPANA, Emil-Iulian NICULESCU
"Mircea cel Batran" Naval Academy, Constanta, Romania

The Egyptian Naval fleet is the first one to ever appear in history's records, dating back in 2500 BC. The very first purpose of the fleet was to navigate the Nile river in order to ease the trades. Ships were initially constructed using reed and afterwards, to endure longer and harder travels, the Egyptians changed the material to cedar wood, which they usually imported from Byblos. As the time passed, the ships started to gain another purposes, being mostly used for prisoners transportation, to support the land troops and to engage the enemy ships in battle at sea. This usage of the ships gave the Egyptians important wins over its history, some of the most notable ones being the siege of Avaris and the war against the Sea People. Even though they were the first to use ships, other nations like Greeks and Persians will impose their authority in the centuries that will come, surpassing the mastery of the Egyptians.

The Capacity of Higher Education Institutions to Train Future Personnel of the Romanian Military

Maria Christiana MORARU
"Henri Coandă" Air Force Academy Brașov, Romania

In our country, there are several forms of higher education that aim to train the future personnel of the Romanian Military for the different categories of forces: land forces, naval forces and air forces. This paper is meant to analyze the methods by which these institutions manage to prepare future military officers and keep them motivated throughout this process. Furthermore, by interpreting the statistics regarding the reasons and the number of students who cease military higher education, the deficiencies of this training system will be identified.

War and Disease: The Spanish Flu Pandemic (1918-1920) and its Impact on American Society and Economy

Lorena Maria POP
"Nicolae Bălcescu" Land Forces Academy, Sibiu, Romania

World War I was one of the deadliest conflicts of the 20th century, involving over 30 countries from 5 continents. It was an industrial war, where each side tried to out

produce the other one, but it was also a mass mobilization conflict. Around 60 million people were sent to the front lines and forced to fight in muddy trenches, which led to the development of infectious diseases and illnesses. One of these infections would affect a third of the world's population, killing more than 25 million people. The deadly influenza pandemic broke out at the end of WWI and it quickly affected the combat units that were engaged in war all across the globe. This paper aims to present some historical data on the Spanish flu pandemic and how it affected the United States in numerous ways. The study also analyses the medical systems that fought hard to prevent and cure the disease and whose scientific discoveries allowed the implementation of a new and efficient method against viruses: vaccines.

The Battle of Midway

Robert OPREA, Narcis NEAGOE, Gabriel POPA
"Mircea cel Bătrân" Naval Academy , Constanța, Romania

This paper includes research about the "Battle of Midway" and our analysis of the greatest naval fight which is a turning point in the Pacific Theater of World War II. Firstly, our motivation for the chosen topic will be given; more precisely why we have chosen this topic and how this fight gave us another perspective on the strategic importance of the navy in the war. Secondly, the short history of the „Battle of Midway" will be presented. Thirdly, the effects brought by this major event will be pointed out by some historical faces and our perspective on it. Finally, a solid conclusion will be drawn showing that it takes just a small impulse to start such a major event.

The Importance of Women in the Military

Delia-Georgiana SIDOREAC
"Henri Coanda" Air Force Academy, Brasov, Romania

Until recently the Armed Forces have been a male-dominated environment, so when women were given the right to join, attention was drawn to their physical and mental aptitude in carrying out missions. The aim of the present study was to evaluate gender differences in military thinking during active service in order to find the challenges and opportunities for the integration of women in the military and also, the important role that they play.

The Garden of Healing for Veterans. General Review

Antonia-Claudia SIMEA, Erika-Andreea TOTH, Andrei SOPORAN, Flavia STINGA-TOTHPAL, Radu Dan MUREȘAN, Szilard SZABO
Faculty of Horticulture and Businesses in Rural Development – Institute of Horticulture Advanced Research of Transylvania, University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca, Romania

War veterans often return home with physical and psychological wounds that can significantly impact their quality of life. To aid in their recovery and rehabilitation,

therapeutic landscapes have become an increasingly popular option. These landscapes are designed to provide a space for healing and restoration, allowing them to reconnect with nature and improve their mental health. Therapeutic landscapes can take many forms, from community gardens to wilderness retreats. What they all have in common, however, is a focus on promoting physical activity and social engagement in natural settings. For veterans struggling with post-traumatic stress disorder (PTSD) or other mental health issues, these landscapes can be a powerful tool for overcoming their symptoms and improving their overall well-being. One of the primary benefits of therapeutic landscapes is their ability to provide a sense of community and social support. Many veterans experience feelings of isolation and disconnection after returning home, and a therapeutic landscape can provide a space for them to connect with others who have shared experiences. This can be especially important for veterans who may have difficulty adjusting to civilian life, as it allows them to find a sense of belonging in a safe and supportive environment. Other key benefit of therapeutic landscapes for veterans is their ability to promote physical activity and outdoor recreation, also promoting social engagement and providing a sense of purpose and accomplishment. Studies have shown that spending time in nature can reduce symptoms of anxiety and depression, improve cognitive function, and boost overall well-being. As more communities and organizations recognize the importance of these landscapes, we can expect to see an increasing number of veterans benefitting from their transformative power. This review article is about different types of therapeutic garden showing the dimension of social sciences and humanities applied in landscape architecture for military interest.

Psychological Barriers in the Profession of Air Traffic Controller

Viorel-Laurențiu STROE
"Henri Coanda" Air Force Academy, Brasov, Romania

This scientific research aims to identify and analyze the psychological barriers faced by air traffic controllers in their profession. This analysis is done on stress, fatigue, anxiety, burnout, overconfidence and many others, aiming to identify their causes, consequences and, most importantly, to reduce or even neutralize them. Being an air traffic controller is not an easy job, with many factors challenging him on each shift, complicating his work life because of the complexity, the need for attention and vigilance, the use of a specific phraseology, which is different from what he is used to, especially if he is not a native English speaker. Thus, the factors that lead to the psychological barriers to which ATC is subject are: the pressure of time, the large volume of information to be processed, the limited attention span, the need to make quick and important decisions. Consequences include: risk of accidents or system errors, burnout, reduced cognitive and information processing capacity, chronic stress and anxiety, reduced motivation and commitment to work. Ultimately, this project aims to contribute to ongoing efforts to improve the safety and well-being of air traffic controllers and air transport safety through the methods presented. By identifying and addressing psychological barriers in the profession, we can help ensure that air traffic controllers are better prepared to perform their critical role in aviation safety.

4. Fundamental Sciences & Engineering

Conference ROOM E45

Moderators:

Lt.Col. Liviu **GĂINĂ**, PhD
"Henri Coandă" Air Force Academy, Brasov, Romania

Lt.Col. Mihai-Alin **MECLEA**, PhD
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Student Ana Maria **RONTEA**
"Henri Coandă" Air Force Academy, Brasov, Romania

Student George-Alexandru **BĂRAN**
"Henri Coandă" Air Force Academy, Brasov, Romania

Real Time Tracking System

Elena-Lorena BACÎREA
"Nicolae Bălcescu" Land Forces Academy, Sibiu, Romania

GPS technology is an important asset in our lives since it is useful in multiple domains. This technology can be essential in certain scenarios, as it can be used for tracking and saving people in critical circumstances, such as emergencies. This paper presents the development of a real-time GPS tracking system based on Raspberry Pie 4 model B and GPS-NEO-6MV2 module. The tracking system also includes software applications developed for equipment interconnections and a user interface (website) used to follow the device position in real time. The proposed system could be used for several military and civilian purposes. The presented device is a low-cost solution for vehicle tracking.

Integrated Design of Valve Actuation System and Turbulence Generator

Iustin-Teodor CAPĂT
Faculty of Mechanical Engineering, Transilvania University of Brasov, Brasov, Romania

Nowadays, not in only in the automotive segment but in any engineering branch, emissions regulations require engineers to come up with new solutions. Within this project, the starting idea was using natural gas as fuel for a four-stroke internal

combustion engine and addressing operating difficulties which might occur such as deposits on the intake channel. Thus, a turbulence generator needed to be added, but since the addition of turbulence usually decreases the flow rate, a way to account for this decrease was the development of a cam that controls by itself the full stroke of the intake valve, while keeping it open at maximum opening height.

The Directivity Characteristic of the Yagi-Uda Antenna

Mihaela CIUCA
"Henri Coanda" Air Force Academy, Brasov, Romania

One of the most important factors that contributed to the development of modern society means the ability to communicate with each other at any time from any place on the surface of the Earth. The Yagi-Uda antenna is an antenna used in many fields such as television, VHF wave reception, as well as in the military field. The Yagi-Uda antenna is a directional antenna, and due to this fact, the antenna has been and is used in radar systems for airspace surveillance, perfectly foldable for the reception of UHF waves since the end of the Second World War.

Telemetry - The Measurement of Distances Using Electromagnetic Waves

Alexandra COTORANU
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Telemetry is a powerful tool that allows for the collection and transmission of data from remote or inaccessible locations. As the technology has advanced, telemetry has become increasingly sophisticated and now it is used in a wide range of applications from radiolocation to healthcare and transportation and plays an important role in enhancing our understanding of the world around us.

Analysis of the Effects of Ultraviolet Radiation on Plants

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Crop seeds and plants may experience beneficial or negative effects on their growth, development, and final productivity depending on how long they are exposed to ultraviolet radiation. The main goal of the research was to examine how exposure to UV radiation affected the growth of wheat and bean plants. Early research findings suggested that crop plants were slightly stressed by the electromagnetic field treatment. Both agricultural plants showed slowed membrane development and lower plant growth. As the therapy period went on, this tendency became increasingly obvious.

The Newest Trends in Electronic Warfare Technology

Dumitru Cornel DASCĂLU
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With time, the military domain started to rely more and more on the electromagnetic spectrum for different duties like reconnaissance, communications, navigation, auto-protection, etc. Furthermore, talking about Navy Electronic Warfare, we saw big updates regarding the systems for regular ships and the most impressive ones are designed for submarines. Considering the last threats that happened in Ukraine and Russia conflict, we can agree that the aggressor tried to prove himself with his electronic warfare systems. We should be aware of their capabilities even if they were not that successful.

Internet of Things

Ștefan-Andrei GURLEA
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The Internet of Things (IoT) is a technological field that is expanding quickly and has the potential to change many facets of our lives. Large amounts of data can be collected, analyzed, and shared thanks to IoT devices, which increases automation, efficiency, and personalized experiences. In this article, we examine the current state of IoT technology, its applications in various fields, and the advantages and disadvantages of using it. Overall, this paper offers a thorough analysis of the IoT landscape and can be a valuable resource for researchers, practitioners, and policymakers who are interested in the potential of IoT and its social ramifications.

The Role of Cyber Security Professionals in the Fight Against Cyber Attacks

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Cyber security professionals work to prevent, detect, and respond to these threats by implementing security measures such as firewalls, intrusion detection systems, encryption, and other technologies. They also conduct regular risk assessments, develop and implement security policies and procedures, and provide training and education to employees to raise awareness of cyber risks.
Given the increasing sophistication and frequency of cyber attacks, the role of cyber security professionals has become increasingly important in recent years. They are a critical part of the overall strategy to protect organizations from cyber threats and ensure the safety and security of computer systems, networks, and data.
Cyber security professionals are responsible for designing and implementing security measures that safeguard computer systems and networks from unauthorized access and malicious attacks. They also monitor systems and networks to detect and respond to security breaches and other cyber security incidents.
In today's digital age, cyber security is more important than ever. With the increasing amount of sensitive information that is stored and transmitted online, the need for skilled

cyber security professionals is greater than ever.

Considerations regarding automatic air traffic control systems (ADS-C and CPDLC)

Filip-Cristian ILIE
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The goal of automatic air traffic control systems *is to increase the effectiveness and safety of air traffic control. The safety review lists the flight's approach and landing phases as its most crucial ones. Airspace designated as TMA (Terminal Maneuvering Area) has a high volume of air traffic, increasing the workload and performance standards for pilots and controllers. These procedures are not intended to replace voice communications, but to improve and facilitate flight operations, which could also be implemented in military aviation in Romania, such as CPDLC and ADS-C systems that I will detail in my research.*

New Phase of History

Gabriel-Marian LEIZERIUC, Sorin-Mugurel SCORUS
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A new phase in computing history, known as the "Internet of Things" (IoT), is upon us. Whatever you want to call it - machine to machine, machine to infrastructure, machine to environment, Internet of Things, Internet of Smart Things, intelligent systems - it's happening, and it's promising.
The intelligence that embedded processing provides is the foundation of the IoT. We envision the IoT as a network of billions of intelligent, interconnected "things" (a kind of "universal global neural network" in the cloud) that will touch every aspect of our lives. Smart machines that can interact and communicate with other machines, objects, environments and infrastructures form the Internet of Things (IoT). This will create huge amounts of data that will be transformed into actionable steps that can be used to "command and control" things to greatly improve our quality of life, make it safer, and reduce the impact on the environment. The potential of the inventiveness of this new era to improve our lives is limitless. The possibilities, value, benefits, and evolution of the Internet of Things will be discussed in detail in the following paper.

The Comparative Study between the VHF and UHF Antennas

Andreea-Mirela MĂNĂILESCU
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In this publication I wanted to compare the VHF whip antenna and the UHF whip antenna. The whip antenna is used for very high frequencies and ultra-high frequencies. is used for handled transceivers such as walkie-talkies. A walkie-talkie is a two-way radio transceiver and it is used to communication, emergency and security services. This article analyzes the comparison of the parameters of the two whip antennas such as radiation

pattern and reflection coefficient. To carry out the comparative study MATLAB R2018b software was used.

The Importance of Simulation Training in Military Aviation: AMST Advanced Ejection Seat Trainer

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This scientific document explores the significance of simulation training in military aviation. The use of simulators as a training tool has become increasingly prevalent due to the numerous advantages it offers over traditional methods. It provides an overview of the benefits of simulation training, including increased safety, cost-effectiveness, and improved training outcomes. Furthermore, it examines the various types of simulators available and how they are used in military aviation training. The study explores the challenges associated with simulation training and how they can be addressed to ensure optimal outcomes. Overall, I want to present the critical role of simulation training in enhancing the capabilities of military aviation personnel and the importance of continued investment in this area. In order to sustain this important training, the study describes the design and development of the AMST Advanced Ejection Seat Trainer (AEST), which is a high-fidelity simulator used for training military pilots in ejection seat procedures. The document explains the key features and components of the AEST, including the motion platform, visual display system, and ejection seat mock-up. The simulation capabilities of the AEST are detailed, including the ability to replicate a variety of emergency scenarios, such as engine failure, cockpit fire, and hostile missile attack.

Design of Solar Powered Aircraft

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The main goal of this project is to present how to design aircrafts that use solar energy generated by the sun as fuel. Designing a solar powered aircraft is a challenging task because it is difficult to generate enough energy to fly. The amount of power generated depends on the geographic area of operation, the weather and the number of panels used on the aircraft.

Space Exploration

Daniel MITICH, Damyan KUSHEV
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Space exploration is the investigation of outer space beyond Earth's atmosphere, using manned and unmanned spacecraft. It includes a range of activities, such as launching satellites, exploring other planets and moons, and conducting scientific research in space. Space exploration has led to significant advancements in technology and our understanding of the universe.

The Enhancement of Access to Military Units by Artificial Intelligence and Fingerprint Recognition

Alin Valentin MOCANU
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Access systems in military units are an essential component of maintaining security and controlling access to sensitive information and equipment. These systems are designed to restrict access to authorized personnel only, which helps to prevent unauthorized access, theft, and damage to military assets. By using a combination of physical security measures, such as locks and barriers, and electronic security systems, such as keycard readers and biometric scanners, military units can ensure that only authorized personnel are granted access to sensitive areas.

The Functionality of the Couplings Used in the Construction of Boeing CH-47 Chinook

Alexandru-Costel MOISUC
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Everybody knows the iconic American aircraft that is capable of carrying big machines like Humvees, cargo trucks, tanks or cannons like the massive M777 Howitzer or at least seen some pictures of a big helicopter that has two rotors and a very aggressive look while lifting big cargos. That aircraft is called Boeing CH-47 Chinook (the name came from the Native American Chinook people of Oregon and Washington state) and it is among the biggest and the heaviest lifting Western helicopters. It is a tandem rotor helicopter developed by American rotorcraft company Vertol and manufactured by Boeing Vertol. Thanks to its two engines that work together, it is capable of a top speed of 170 knots (200mph; 310kmh) which makes him one of the fastest and also heaviest helicopters that have been manufactured. The first fully equipped Army Chinook, designated the CH-47A, entered service in August 1962 with a gross weight of 33,000 pounds (approximately 15 tons) and the deployment of Chinooks in combat began in 1965 during the Vietnam conflict where they made history when a single Chinook was reported to have transported 147 refugees in one lift, highlighting its remarkable capacity. The CH-47A, B, and C models continued to serve until the end of the war in 1975.The main idea of this project is about the mechanical structure that sits behind this very complex aircraft and more exactly, about the transmission systems that make it possible for a helicopter to lift such heavy things.

Study on the Influence of Fog on Aviation Activity at *Avram Iancu International Airport* in Cluj-Napoca in the Period 2013-2022

Oana-Diana MOLDOVAN
"Henri Coandă" Air Force Academy, Romania

The purpose of this study is to determine the effects of fog on flights at the Avram Iancu International Airport *in Cluj-Napoca, Cluj County. The period covered is from 2013 to*

2022. This study was carried out by analysing the aviation events closely related to fog, in chronological order. Following the analysis performed, the years studied were compared by a severity score of the events that took place. Subsequently, we interpreted the results and provided additional information related to the context provided by the municipality of Cluj-Napoca.

Development Analysis Of The Unique Propulsion System on SR-71 Blackbird

Mihai-Rareș POEȚELEA
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We all know the legendary SR-71 Blackbird reconnaissance aircraft, or at least have seen some iconic pictures of it. Since its public announcement in January 1966, the aircraft has attracted the attention of aviation enthusiasts and researchers, but the main characteristics of it were classified at that time. As of its retirement from service and declassification of its technical data, many researchers have been conducted with the sole purpose of exploring the technical details and the operational capabilities of this remarkable aircraft. In this study, I have analyzed the main innovations and the unique design features of its propulsion system to better understand how they achieved outstanding performances.

Study Regarding the Purpose of Tilting the Helicopter Antitorque Rotor

Bogdan Adrian POPESCU
"Henri Coandă" Air Force Academy, Romania

Helicopter tail rotor or antitorque rotor is a crucial component of a helicopter's design, responsible for countering the torque produced by the main rotor and providing directional control. The efficiency of a tail rotor is measured by its ability to produce sufficient anti-torque force while minimizing the power required to do so. The efficiency of a tail rotor is affected by several factors, including the rotor's size, shape, and blade pitch, as well as the power output of the engine. Helicopter manufacturers continually strive to design more efficient tail rotors, as they have a direct impact on the aircraft's performance and fuel consumption. A tilting tail rotor system can help a helicopter to sustain its weight by providing precise directional control and improved maneuverability during flight. By adjusting the angle of the tail rotor assembly, the helicopter can maintain a constant heading and adjust its direction of flight as needed. This can help to improve the efficiency of the anti-torque system, which is responsible for counteracting the torque generated by the main rotor and preventing the helicopter from spinning out of control. Additionally, the ability to tilt the entire tail rotor system can help to improve the helicopter's stability and reduce drag, allowing it to sustain its weight more effectively during flight. Overall, a tilting tail rotor system is an important component of modern helicopter design, providing greater control and efficiency during flight and enabling the helicopter to operate more effectively in a wide range of environments and conditions.

Analysis of the Gnome Gamma 7B Engine

Dragoș POȘERBA
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This paper presents an analysis of the Gnome Gamma 7B radial engine, a significant innovation in aviation history, using Engine Analyzer software. The software is used to simulate the engine's performance and to compare the results with the engine's actual specifications. The paper discusses the process of modeling the engine in the software, including inputting data on its specifications, and calibrating the model to obtain accurate results. The results of the simulation are presented and analyzed, including power output, torque, and fuel flow. Additionally, the paper discusses the limitations of the software analysis, including the need for accurate input data and the limitations of the simulation in replicating real-world conditions.

The Development of an HTML Gui for the Study of Numerical Interpolation with Application in the Magnetic Deviation

Ana-Maria POSTOLACHI
"Mircea cel Bătrân" Naval Academy, Constanța, Romania

This paper aims to present a magnetic deviation calculator that uses the linear interpolation to reach its goal. To achieve this scientific objective, I have used three programming languages - HTML, JavaScript and CSS - and put them all together in Visual Studio Code. For the Graphical User Interface to be more user-friendly, I have picked Flexbox, that is just plain CSS, and Bootstrap, which contains not only CSS, but also JavaScript-based design templates. Therefore, the main objective of the present paper is to help the user find the deviation of the magnetic compass only by introducing the known data.

Aircraft Aerodynamic Performance Analysis Boeing 737

Petru RADU
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Our goal in the making of this research was an analysis of the main aerodynamic characteristics of Boeing 737, the most wide spread air transport aircraft worldwide which is also used in some military applications under the designated name C-30B. The aircraft is designed with a pair of CFM-56 engines and a standard width fuselage of low to medium capacity.

The Benefits of Using METAR and TAF Decoding Programs in Aviation

Noémi-Anna RÁDULY
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METAR and TAF decoder programs are software tools used to convert the coded language into plain language. These programs are helpful for pilots, air traffic controllers

and non-flying personnel, as they allow for easy interpretation of weather data, helping to make informed decisions for flight operations. Also, they are an ingenious instrument for learning and checking the correctness of decoded METAR and TAF reports by students. This paper will not focus only on the benefits of using decoding programs, but it will describe a software built by the author, which contains features needed in military aviation.

Analysis of Radar Performance Considering Variations of the Radar Range Equation's Parameters

Ancuța RUSU
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Radar performance represents a subject of peculiar interest in the context of a continuous necessity of air surveillance means development. Comparative analysis of the radar range and detectability performance, using modern means of digital simulation, with respect to the proportionality relations between the Radar Range Equation's factors, can lead to a deepening of the understanding of the theoretical knowledge.

Cyber Threat Intelligence: Methods, Tools and Security Counter Measures

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Cyber threat intelligence is a critical aspect of modern cyber security. It involves collecting, analyzing, and sharing information about potential cyber threats to prevent attacks and reduce the impact of successful ones. Cyber threat intelligence is a proactive approach to cyber security that allows organizations to identify potential threats and develop effective security measures to protect their digital assets.

Cyber threats come in many forms, including malware, phishing, ransomware, and social engineering attacks. Each type of threat requires a different approach to prevent and mitigate damage. Cyber threat intelligence analysts use a range of tools and techniques to identify potential threats and assess their level of risk. This includes monitoring dark web forums, analyzing network traffic, and researching new attack methods and vulnerabilities.

One of the key benefits of cyber threat intelligence is the ability to stay ahead of attackers. By analyzing the methods and tools used by attackers, organizations can develop effective security measures to prevent attacks before they happen. For example, if an organization identifies a new type of malware being used in the wild, they can develop specific anti-malware signatures to detect and block it before it can do any damage.

Another benefit of cyber threat intelligence is the ability to share information with other organizations to improve overall cyber security. Sharing threat intelligence allows organizations to learn from each other's experiences and develop more effective security measures. This is particularly important for critical infrastructure sectors, such as finance and healthcare, where a successful cyber attack could have serious consequences.

The Study of the Procedures for Landing the Aircraft on an Aircraft Carrier

Mihai-Robert STĂNCIUGELU
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This paper studies the techniques of landing the aircraft on the deck of an aircraft carrier. The procedures that the aircraft performs during the landing shall be analyzed and the braking system required for the accelerated stopping shall be presented. The forces acting on the aircraft during the landing procedure on the porairplane deck shall also be analyzed.

5. AERONAUTICAL HISTORY

Conference ROOM K6

Moderators:

Lect Jănel **TĂNASE**, PhD
"Henri Coandă" Air Force Academy, Brasov, Romania

Student Denisa **VLAD**
"Henri Coandă" Air Force Academy, Brasov, Romania

Student Elena **CĂLIMAN**
"Henri Coandă" Air Force Academy, Brasov, Romania

The Prague Spring of 1968. Romanian Air Defense

Darius-Dumitru BARBĂRASĂ
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55 years ago, Czechoslovakia, was a communist country with a severe censorship, a missing freedom of speech and which was going through a financial crisis. So Alexander Dubček came to lead the Communist Party of Czechoslovakia and established a set of political and economical reforms in favor of more civil rights in order to improve the country's relationship with the West, pledging to create a "socialism with a human face". This period of political liberalization and newfound freedoms is known in history as the Prague Spring, which lasted between January 5 and August 21, 1968. This dream of communism reformation had a bitter end because the Soviet Union and the Warsaw Pact countries invaded Czechoslovakia in order to overcome the reformist trends but both Albania and Romania refused to participate in this conflict. Furthermore, the romanian leader Nicolae Ceaușescu claimed that the Czechoslovakia occupation was a big mistake of the Soviet Union and placed the Socialist Republic of Romania one step away from being attacked too. Even though the attack never happened, the Romanian armed forces were prepared to respond to a potential assault.

The Interwar Period – The Major Changes of Romanian Anti-Aircraft Artillery on the Verge of War

Silviu-Valentin BIZOM
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At the end of the First World War, Romania was in a state of turmoil and had undergone significant changes. The war had a devastating impact on Romania, with significant loss of life, destruction of infrastructure and farmland, and economic collapse.

During the interwar period, Romania developed its anti-aircraft artillery capabilities to defend its airspace against potential threats. In the early 1920s, Romania acquired its first anti-aircraft guns, which were mainly of French and German origin.
In the mid-1920s, Romania began to acquire more advanced anti-aircraft guns, including the French 75 mm anti-aircraft gun and the German 88 mm Flak gun. These guns were more effective in shooting down enemy aircraft, but Romania still had a relatively small number of anti-aircraft units, and its anti-aircraft defenses were not well-developed.
In the late 1920s and early 1930s, Romania started to develop its own anti-aircraft gun, the M1939, designed to be used in both anti-aircraft and anti-tank roles.
By the mid-1930s, Romania had significantly improved its anti-aircraft capabilities, and it had a much larger number of anti-aircraft units than it did before the First World War. However, the country's anti-aircraft defenses were still not fully developed, and it faced significant challenges in modernizing its military in the face of limited resources and political instability. Despite these challenges, Romania's anti-aircraft artillery played a critical role in defending the country's airspace during World War II.

Major Aviator Milu Ioan, Ace of the Romanian Fighter Aviation in the Second World War

Bogdan BLEANDĂ
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The chief adjutant av. Ion Milu was decorated with the Order of Aeronautical Virtue of war with swords, Golden Cross class (September 19, 1941) because "in the air battle over Grigoriopol he shot down a Soviet plane", Golden Cross class with 2 bars (November 4, 1941) "for the heroism shown in air combats from Comrat, Duboşari and Fomima-Balka, when he shot down three enemy planes", Cavaler class (February 16, 1944) "for the courage and bravery shown in air battles with enemy fighters, shooting down 3 planes. Carried out 98 missions on the front.", Knight class with 1st barrette (16 February 1944) "for courage and bravery shown in aerial combat with enemy fighters, managing to shoot down 4 Soviet aircraft, performing 83 fighter missions" and Knight class with 2 barrette (October 6, 1944). He was promoted to the rank of crew officer cl. III on January 1, 1943 and at the rank of crew officer cl. II on January 23, 1946.

International Missions of the Romanian Air Force After World War II

Alexandru Gheorghiță BUHOSU
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After the end of the Second World War, the Romanian Air Force suffered a large number of human and technical losses, but a period of regrouping followed and after more than 3 decades the Romanian Air Force executed its first international mission, in Angola, followed by missions in theatres of operations. In this paper I propose to present the international missions in which the Romanian Air Force took part after the Second World War until today, executing each mission with professionalism at the highest level.

A Brief History of Romania's Aviation Pioneers and Their Constructions

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Important achievements in aviation were accomplished in the first decade of the 20th century, the progress being constant and fast. Despite the enthusiasm and the efforts made by the aviation pioneers of the first half of the 20th century, aircrafts were sanctioning even the slightest mistakes of pilots due to poor aerodynamics. Consequently in this paper I intend to present the evolution of Romania's aviation helped and sustained by some of the greatest people of the time.

Brigadier General (AF) Luca Dorel – A Life Dedicated to Military Aviation and the Passion for Supersonic Flight

Marinel CÎRCU
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Romania has given the entire world pioneers in aviation, being among the first countries in the world that really achieved a great human desideratum in order to supply its armed forces with specialized aircraft. One of the most important and gifted air force pilots is embodied by Dorel Luca, who has been considered the finest Romanian Air Force pilot of the last decades. By defying the laws of physics, by representing Romania honorably at several air shows and aeronautical exhibitions, by convincing the public with his tremendous handling skills in a MIG 21 aircraft, Dorel Luca is the pilot who became a legend for his spectacular performances at the command of the aircraft that stood and will forever stand out as the star of the Romanian Air Force. Thought to be a brilliant air force pilot, he had a profound and deep influence upon the world of the entire military aviation, achieving around 2300 flight hours during 23 years of service and in the same time, flying on three different classes of jet aircraft, as well as being loyal to the aircraft that got his heart and remained his lifelong best friend: the MIG 21. Dorel Luca has revolutionized the aerobatics, overcame barriers and clearly highlighted the limits and boundaries, he has also touched the consciousness of people who did not have direct contact with aviation, promoted for instance military flight whenever he had the chance and inspired young people towards one of the most fascinating professions that still exists - that of an air force pilot.

Electronic Warfare In Romania, 1989

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Electronic warfare refers to a permanent war, a system that is constantly upgrading its" weapons", always ready to take action under any circumstances. In the NATO dictionary it represents any military action that implies the use of electromagnetic energy for

controlling the electromagnetic spectrum or the enemy attack. It is applicable on air, sea, land and even in space by using unmanned and manned systems.
This electronic warfare can be found during the events from 1989 whereas misinformation and electronic deception were the most used procedures. The hardest test the 90s Romania faced was the radio-electronic diversion given the fact that on the radar's screens were simultaneous shown fake targets that were moving at different speed and highs. This sabotage was possible because of some electronic warfare systems, the size of a book, that were reflecting the electromagnetic waves emitted by the radiolocation stations, causing the jamming of the radars. Given their dimensions, they could be easily attached to any means of land transport, so they were moving along transmission means, their effectiveness being increased. The presence of these systems caused misinformation and restlessness among both the army and civilians, the repercussions and the flow of events both being presented in this project

Meteorology in the History of Romanian Aeronautics

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This paper contains information related to the importance of meteorological phenomena in the field of military aviation and how meteorology influenced the history of Romanian aeronautics. Although, in the past, the study of the meteorological field was considered a less important one, remaining only the responsibility of the Meteorological Institute, nowadays the importance of atmospheric conditions for flight safety can be observed. In truth, many of the serious accidents, which cost the lives of some people, had as their source this disinterest in this specialization, but also the experience and knowledge of meteorological phenomena.

Great Commanders of Romanian Anti-Aircraft Artillery: General Ion Bungescu

Constantin-Alexandru DUMITRAȘCU
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Known for his inventions in the field of anti-aircraft artillery, student of the School of Artillery Officers and Engineers, graduate of the Higher War School in Bucharest and then of the Higher War School in France, participant in the campaign in Moldova, instructor, teacher and reformer of the Romanian educational system in terms of anti-aircraft defense, fighting on the Western Front as chief of staff of a large unit, with a personality shaped under the impulse of two dimensions, science and conscience, brigadier general and inventor Ion Bungescu, is an example of ambition, perseverance and ingenuity thanks to the development of the theory of the movement and meeting in space of two objects and materializing it by inventing the first central firing device in the world, but also an example of motivation and courage, crystallizing the motto of the artillery fighters: "For the air defense of the country, the cannon will only stop firing when the last servant's heart stops beating".

Wernher von Braun-Father of Space Travel

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Wernher von Braun was a German-American aerospace engineer and space architect who was instrumental in the development of rocket technology. He began experimenting with model rockets at a young age and went on to study physics, engineering, and mathematics at the Technical University of Berlin. Von Braun became the technical director of the Peenemünde rocket research facility in 1937 and oversaw the development of the V-2 rocket, which would later be used in World War II. After the war, he was brought to the United States as part of Operation Paperclip and worked on American rocket projects. Von Braun played a key role in the development of the Saturn V rocket, which was used to send astronauts to the moon. His contributions to rocket science and space exploration were significant, but his association with the Nazi regime during World War II continues to be the subject of debate and controversy. Despite this, von Braun remains a towering figure in the history of space exploration.

Lieutenant Commander Dan Valentin Vizanty, Ace of the Romanian Military Aviation in the World War II and Post-War

Ștefan-Lucian FODOR
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This paper focuses on the analysis of the life and career of Lieutenant Commander Dan Valentin Vizanty, commander of the 43rd Hunting Squadron, 6th Hunting Aviation Group, 1st Hunters Group and 6th Group and 1st Hunters Group, ace of the military aviation, one of the most important military pilots of the World War II and post-war. The purpose of the paper is to present Vizanty's biography, his experiences in missions against enemy troops in air combat during the war, the footprint he brought on the modernization of Romanian military aviation, his subsequent recognition and the leadership skills he demonstrated in the defensive fight against 100 enemy aircraft that attacked Bucharest and oil area in 1944.

Herman Oberth, the Father of Interplanetary Missiles

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Born in the plains of Romania, in Transylvania, Herman Oberth, the scientist who laid the foundations for missile technology, was fascinated by rocket propulsion since his elementary school days. He built his first missile model, conceiving the use of liquid fuels for the propulsion of interplanetary vehicles. In 1908, he deduced the fundamental equation of missile flight, and in 1917, he was the first person in the world to realize a long-distance flight project based on liquid fuel.

In 1920, Hermann Oberth completed the project of the first three-stage space rocket, weighing 100 tons. Later, in July 1930, he successfully experimented with the first burning of the conical engine, inventing the first liquid-fuel missile engine. As a professor at

Stephan Ludwig Roth High School in Mediaș, Oberth created most of his scientific work on rocket construction and flight in space, making Mediaș, after Roswell in New Mexico, Berlin, and Moscow, one of the blessed places in the world where the experimentation and launch of the first liquid-fuel missiles were achieved. Throughout his career, Oberth remained dedicated to space exploration and the peaceful use of space technology. He received numerous awards and honors for his contributions to missile science, including the prestigious Wilhelm Exner Medal in 1969. After a life crowned with multiple scientific discoveries, Herman Oberth could say with conviction that future generations will make fascinating discoveries that he had only intuited.

The Influence of Climate on the Military Airport Infrastructures in Romania

Andra-Ioana HOLBAN
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The effects of climate change have a big impact all over the world and are being studied in detail by specialists in this field. These changes are taking place as we speak and nothing suggests that they will end in the near future. Along with all these climatic changes, the weather is becoming more and more unpredictable, fact that can considerably influence the development of activities in any field. More than that, meteorological conditions are closely related to local geography and are considered to be one of the main sources of atmospheric processes which can affect most of the aeronautical activities. This article analyzes the effect that the climate has on military airport infrastructures in Romania and it is supposed to show the negative effects that might occur on the entire aeronautical activity.

The Organisation and the Actions of the Romanian Air Corporation During 1-30 April 1944

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During the period of April 1944, the Romanian Air Corps played a crucial role in the events of World War II. As part of the Axis Powers, the Romanian Air Corps was primarily involved in supporting German operations on the Eastern Front, particularly against Soviet forces. Despite facing significant challenges such as limited resources and outdated equipment, the Romanian Air Corps continued to carry out bombing raids and ground attacks, as well as providing air cover for ground troops. Overall, the actions of the Romanian Air Corps during April 1944 reflected the difficult position of Romania during World War II. Despite being a relatively minor power within the Axis, the Romanian Air Corps played an important role in supporting German operations and defending Romanian territory. However, they faced significant challenges and ultimately proved unable to withstand the onslaught of the Allied forces.

A Pilot in the Service of Greater Romania, Captain Aviator Vasile Niculescu

Simina ILIE
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The present study is a research of a historical event of aviation during Romanian's Great Union.
At that time, our flying personnel performed many flights in order to support the national ideal. Thus Romanian's Air Force distinguish themselves in those days that preceded the great national act from 1 December.
Analyzing in greater depth, this article explores the participation of Vasile Niculescu at Romania's unification.
Captain Aviator Vasile Niculescu is a symbol less known of Romanian aviation from the period of The War of National Integration, who flew above the holy ground of Ardeal and brought with him from Iași the hope of Greater Romania.
This hero of military aviation from Romania, a pilot in "Farman 4" Squadron, Group 2 Aeronautical from Tecuci, was a fearless military man who accomplished a famous mission in 23 November 1918 flying from Bacău to Blaj and carrying important documents for the Romanian Government into the plane's cockpit.
The purpouse of this documentation is to inform us about the life and herioc deeds of the captain aviator Vasile Niculescu and to remind us that, on the stage of history will always be people who risked their life as a contribution at national asspirations, people who deserve to have their story known by everybody, people who inspire us to protect what we have as a simbol of respect for what they achieved, people who ussualy die as anonymus.

The Great Commanders of Romanian Anti-Aircraft Artillery: General Ștefan Burileanu

Marius-Emilian ISTRATE
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The greatest general, destined to become an expert of Romanian artillery due to his qualities, absolvent of Polyethnic School of Paris and Military School of Fontainebleu, doctor in air defence artillery science after studying at Sorbona, with an impressive career which began to take shape during World War I and continued to rise with the design of cannons and artillery systems, Ștefan Burileanu was one of the most established officers of Romanian army. However, at the end of his career, he ended up being both a mechanical engineering professor at Cluj-Napoca University and a metallurgy professor at Training School of Artillery Officers.

The Lieutenant Commander Doru Davidovici, the Poetry of Supersonic Flight

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There are many who have carried their wings, body and spirit through the Bărăgan air. We always remember them with honors, especially those who joined the "Squadron from Heaven". We speak in this article about Doru Davidovici, a name that was once synonymous with escape from the dark. Aviator and writer, he gave courage to those who dared to hope. Dubbed "the pilot who taught birds to fly", he led a multitude of people to fall in love with aviation, many of whom are pilots today. In the 1980s, he was one of the most beloved fiction writers in Romania, thanks to his introduction into Romanian literature of the hypothesis of the encounter with unidentified flying objects. 34 years after his last take-off (because according to him "Pilots never die, they take off and never come back".[1]), I feel, in my pilot's soul that I'm performing a duty of honor, and more precisely the sign of respect that the young owe to the older ones. This name, Doru Davidovici, engraved in gold letters in the gallery of Romanian fighter pilots, remains in our minds and souls as a flying hero, and proves that heroic deeds are not only performed in wartime.

Lieutenant-General Aviator Ioan di Cesare, Ace of Romanian Fighter Aviation in the Second World War

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As a result of his prestigious and courageous activity on the front, Ioan Di Cesare becomes one of the best Romanian fighter pilots of the Second World War. Showing strong character, miraculous courage and cold blood, he participated in over 500 combat missions, becoming an ace with 19 aerial victories. Lieutenant General aviator Ioan Di Cesare defended his country with pride and participated in military campaigns in Stalingrad, Dnipropetrovsk and Mariupol, where he had the courage to fight against the powerful military aviation of the Soviet Union. Also, in 1944, upon his return to national territory, he fought to defend political-administrative, economic and military objectives against American and later, German aviation. His courage and actions propelled him to high war distinctions, including the 'Order of Mihai Viteazul', 'Virtutea Aeronautică', 'Coroana României'. Ioan Di Cesare was a personality with complex aeronautical training, a perfect war aviator, and a legendary figure of Romanian wings.

Evolution of Air Traffic Control

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Air traffic control is a critical function in the aviation industry, ensuring the safe and efficient movement of aircraft in the sky. The history of air traffic control is one of

innovation and technology and dates back to the early days of aviation when the first airports were established and pilots relied on visual signals to navigate through the air. Over time, advancements in technology and communication have transformed air traffic control into a complex system that relies on sophisticated equipment and highly trained professionals. This paper will explore the history of air traffic control from its humble beginnings to the present day, highlighting key milestones, developments, and challenges that have shaped the industry. It will also present the impact of the emergence of radar and its significant role in the evolution of air traffic control.

Aviator Captain Droc Emil, Flight Instructor and Feared Air Fighter in World War II

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After hundreds of hours searching for the secrets of the IAR 80 fighter jets, Emil Frideric Droc decided there must be more to discover than what he thought he already knew about them. And determined to see what it was, he volunteered as a fighter pilot on the Eastern Front in World War II in 1942 in Stalingrad, because the secrets of what you love are not fully known, making test flights and test alarms. Maybe it was a mid-life crisis or something like that - he was 39 years old when he decided to go from being a test pilot at IAR Braşov to being the captain of the 60th Squadron of the 8th Fighter Group, an aviation group that carried out a very well-prepared activity on the east front. In the IAR 80B "199 White" flew throughout the Eastern campaign, flying 42 successful air combat missions in which he participated in the downing of four Soviet fighters - aerial victories cleverly marked with a "V" above the number 199.

Adjutant Major Aviator Niculescu Dumitru, Fighter Pilot of the 3^{rd}3rd Hunter Fleet in the Air Fight on the Frontlines of the Liberation and Unity of Romania

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Dumitru Niculescu was a Romanian aviation pilot, ace of the Romanian Air Force during the Second World War. Airman Adjutant Dumitru Niculescu was decorated with the Order of Military Aeronautical Virtue with swords, Golden Cross class in 4 November 1941, because "he attacked the enemy from Țiganca and Batâcu, as well as the one from Taşlâc. He shoot down an enemy plane in air combat". He was decorated with the Gold Cross class with first and second bars in 1 July 1942 "for the courage and spirit of sacrifice shown in the 90s war missions executed during the 1941 campaign, during which he managed to shoot down 3 enemy aircraft: one by personal action, and the other two within the patrol".

The Defense against Aircraft of the Romanian Army's Operational Device and the National Territory in the Second World War

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World War II was one of the bloodiest conflicts in history, which took place between 1939 and 1945. In this war, the air force played a crucial role in the military conflicts, as airplanes were used to carry out air strikes and to obtain information's from the field. Defence against aircraft was a major problem during the Second World War. One of the first measures taken by the Romanian army was the creation of a network of observation and signaling posts. These stations were located through the country and were equipped with radar detection equipment and optical instruments. This system included variety of anti-aircraft weapons, such as cannons and machine guns, which were placed around the main cities and strategic objectives. The Romanian Air Force grew significantly during the war, although it failed to reach the level of other major air powers. One of the most important problems was the limited resource of funds and equipment.

A Brief History of Military Helicopters

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The possibilities that came along with being able to take of vertically, from the early 1900s, made people realize helicopters are a powerful resource that can change the course of battle during wartime. Over the decades, missions such as evacuation, troop transport or reconnaissance were optimized by using military helicopters, which needed less landing space and were harder to be detected, thanks to the low altitudes they were able to operate.

The Establishment and Evolution of Aeronautical Education in the Romanian Anti-Aircraft Artillery and Surface-to-Air Missile Forces

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The Aurel Vlaicu Air Force School is one of the essential pillars of aeronautics, being considered the continuation of the traditions of the first Military Pilot School in Romania. Romania played a significant role in the development of aeronautics at a global level, being one of the first countries to succeed in exploring the airspace. By making the first flight in a Romanian-built aircraft, Aurel Vlaicu paved the way for two pioneers of Romanian and world aviation - Trăian Vuia and Henri Coandă.
Initially, machine guns and adapted land guns were the main options for anti-aircraft combat. With the passage of time and industrial progress, a wide range of ground-to-air means specialized in combating air targets was developed. The two areas outlined above have contributed to a continuous progress in fulfilling the missions assigned to our country and nation.

The Causes of the Slowdown in the Development of the Romanian (Military) Aeronautical Industry Immediately After the Second World War

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Worldwide, the foundations of aeronautics were established in stages, first in the late 18th century with the emergence of the hot-air balloon and then in the late 19th century with the invention of the first flying machine. The aeronautical industry in Romania started to develop approximatively at the same time with worldwide one, and it is said that it was seriously affected by Romania's participation in the Second World War. Starting from this assumption, I will try to identify the causes that brought the Romanian (military) aeronautical industry to the brink of collapse immediately after WWII by using a historical approach.

Illustrious Air Force Monuments in the Interwar Period: Air Doctrines

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At the precocious end of The Great War and one step closer to the gulf that World War II would create, several countries developed doctrines for what would become at the end of 1918 the 5th domain of forces, aviation. Two personalities who had a notable involvement in the evolution of interwar air doctrines were General Giulio Douhet in Italy and General Joseph Vuillemin in France. For the ideology of the air war, the doctrine of the famous general Douhet constituted an altar of the bombing strategy that would place aviation on the pedestal of the dominant force of the war, the force that could ensure absolute victory. French air doctrine brought to light the air force as a support force for ground troops, as opposed to standing as an independent force. General Vuillemin noted the concept of "espirit de corps", which emphasized the importance of cooperation between the branches of the military. The interwar period is accentuated by progressive and experimental changes in air power domain to develop unique doctrines and approaches for the use of aviation capabilities in war.

IAR 80 - The Ace of Romanian Aviation in the Second World War, the Operational Resources of the IAR 80 Fighter in the Military Aviation Campaign for the Liberation of Bassarabia and the Conquest of Odessa

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It is well known that the Second World War definitely left its mark on the history of Romanian wings, causing the appearance of new aircraft and exceptional pilots who

proved their superiority in air combat. Due to the military political situation at the time, but also the need for a new fighter jet to replace the technology that the military aviation had, the IAR 80 proves to be a successful project showing its performance in air combat and its superiority over the better German, Japanese and British aircraft, being the ace of the Romanian military aviation in the Second World War. The Royal Romanian Air Force continued to operate this aircraft on the Eastern Front, in air missions, throughout 1942 in the military aviation campaign for the liberation of Bessarabia and the capture of Odessa until they were finally withdrawn from service on the Russian front due to aviation equipment Romanians in the second part of the war with German aviation material. However, the operational performance of both the aircraft and the pilots was embodied in the aerial victories achieved and formed the essence on which this work is based.

Organization of the Ground-Based Air Defence System After the Events of December 1989

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The present paper focuses on the study of the evolution of the organization of ground-based defence systems after the events of late 1989. They represent an important element of defence for Romania, which is also emphasized in the context of the border war between Russia and Ukraine. The events of 1989 represent not only a change of defence structures but also of people. Thus, their impact on the development of ground-based air defence structures in more than 30 years of democracy will be highlighted.

Regulations Regarding the Use of Aircraft as a Combat Weapon – The Hague Conferences of 1899 and 1907

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Even if the late 1800's amplified the world geopolitical situation by expeditiously inventing and developing mechanisms and aircraft engines which contributed to a chain reaction of technological progress in terms of warfare means, the legal background of safely and legitimately operating aircraft was not counted among the interests of the most important potential air power states. The Hague Conferences, followed by the Madrid Conference in 1911, represented the first phase in generating a new perspective of air warfare, of considering the proper differentiation between the air means that serve military purposes and the civil ones. The following article analyzes the criteria considered for enacting the principles of using aircraft in battle at the beginning of the 'air war' era, but it also provides an overview of the Hague Conferences proceedings, of the main conventions adopted in the early years of the 20th century.

Colonel Grigore Zadik, Commander of the 5th Anti-Aircraft Artillery Regiment in the Aircraft Defense of Rostov

Ioan-Alexandru POPA
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A graduate of the Special School of Artillery, and later the School of War, a personality of the Romanian Army, Colonel Grigore Zadik with a complex artillery training, but also a good observer in the balloon, he was a dignified figure, but also a devoted officer. His superiors considered him an eminent artillery and staff officer, a leader of outstanding qualities, and they considered him worthy of being entrusted with the higher command and promoted to the rank of brigadier general, but this was not achieved. He did his duty with professionalism, but he was transferred to the reserve at an age when he still had a lot to say, he handed over the command of the anti-aircraft artillery, retiring into undeserved anonymity.

Captain Aviator Constantin Cantacuzino, the Romanian Elite Fighter Pilot of the 7th Fighter Group in the World War II

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The paper provides a detailed perspective on the life and career of Captain Constantin Cantacuzino, highlighting his achievements in military and civil aviation, as well as his contributions to the development of aviation in Romania. Endowed with a strong personality, courage and exceptional flight abilities, one of the most distinguished fighter pilots of his time, a legend in the history of Romanian aviation, decorated with numerous medals and war decorations, such as The Order 3rd class "Mihai Viteazul", The Order Commander class "Virtutea Aeronautica", fighter pilot of the 7th Fighter Group in the World War II, against Nazi Germany, educated at the best schools in France, attended the "Mircea Cantacuzino" Flight School and beginning his flight activity in 1926, performing 608 air combat missions, of which 56 were ictories in air war missions and shooting down 4 enemy bombing aircraft, the Captain Aviator Constantin Cantacuzino was and will be among the most important Romanian flight pilots.

The Organization and Actions of the Romanian Air Force During the Period of August 23rd to November 30th

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During the period of August 23 to November 30, 1944, the Romanian Air Force played a critical role in the political and military upheaval that occurred in Romania during World War II. At the time, Romania was caught between Nazi Germany, which had occupied the country since 1940, and the Soviet Union, which was advancing towards its borders.

On August 23, 1944, a coup d'etat overthrew the pro-German government in Bucharest and Romania switched sides to join the Allies. The Romanian Air Force immediately swung into action, engaging in combat operations against German forces in support of the Soviet advance.
Despite being poorly equipped and heavily outnumbered, Romanian pilots proved to be highly skilled and determined, inflicting significant damage on German forces and disrupting their retreat. In addition to their combat missions, Romanian pilots also played a vital role in transporting troops and supplies to the front lines.
However, the transition to fighting alongside the Soviets was not without its challenges, and tensions arose between Romanian and Soviet commanders over strategic objectives and operational tactics. Nevertheless, the Romanian Air Force continued to provide critical support to the Soviet advance, culminating in the liberation of Bucharest on August 31, 1944.
Overall, the actions of the Romanian Air Force during this period represented a significant turning point in the war in Eastern Europe, and played a crucial role in paving the way for Romania's eventual liberation from Nazi occupation.

The Divisional General Gheorghe D. Marinescu, the Commander of the Aircraft Defense of the Operational Armies, Near the Greatest Headquarters, During the Second World War

Silviu SFETCU
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Motivated by his qualities to become an artilleryman, a personality with long-term artillery training, being a graduate of the Special Artillery School, with a recognized activity in the history of anti-aircraft defense artillery in the interwar period and during the Second World War, being the commander of the artillery anti-aircraft during numerous campaigns of the Romanian Army in Hungary, Czechoslovakia and actively participating in the liberation campaigns of the national territory, he was captured and arrested for insubordination, refusing to parade with the anti-aircraft artillery troops in front of the leadership of the communist party, serving a sentence of 14 years of imprisonment in various prisons in the country. He would die, after years of severe deprivation of all kinds, at the age of 98, in August 1989, remaining in Romanian history an example of integrity, courage and patriotism.

Alexandru Șerbănescu - The Commander Hero of 9th Hunting Group

Ștefania ȘOPU
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Discovering his true life vocation and falling irreversibly in love with aviation, Alexandru Șerbănescu managed to become the Romanian sky ace, an elite fighter pilot and a patriotic individual who, in numerous aerial confrontations, demonstrated extreme courage, calmness, and composure, often disregarding death. The spirit of sacrifice and dedication that he had for his nation became a way of life for the aviator Alexandru

Șerbănescu, who, until the moment he was shot down, had completed 590 combat missions, engaged in 235 aerial battles, and brought down 47 enemy planes. Although for some Romanians, he may just be another name in Romania's history, for today's aviators, Alexandru Șerbănescu means more than just the name of an air fleet; he represents a bridge to history, to the idea of heroism and sacrifice for the country.

Great Commanders of the Romanian Antiaircraft Artillery: Major General Gheorghe Pârvulescu

Liviu-Florin STERE
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Umberto Eco states that "A true hero is always a hero by chance. He aspires to be an honest coward like everyone else", in my opinion I tend to believe that Major General Gheorghe Parvulescu was guided in his life and military career by this phrase. Major General Gheorghe Parvulescu was born on December 10, 1891, in Țânțăreni, Dolj County. He took his first steps in his military career at the Military School of Artillery, Engineer and Navy, finishing in 1918 the Heavy Artillery Shooting and Intelligence Course in Tecuci. He gained a wealth of experience by participating in the military campaigns in which the Romanian army was engaged in 1913 and then in the First World War. In the following years he held various command positions in the anti-aircraft artillery unit, a weapon that was created on 15 August 1916 with the establishment of the Anti-Aircraft Defence Corps, together with positions in the Ministry of Air and Navy, until the outbreak of the Second World War. As a result of the results achieved on the front and the exceptional appreciation of his superiors, on 20 March 1943 he was promoted to the rank of Brigadier General.
After the change of sides on August 23, 1945, he was promoted to the rank of major general, and on December 1, 1946, after a new reorganization of the army, he was appointed second in command of the Air Force.

The System of Research, Surveillance and Recognition of the Airspace in Romania after the Events of December 1989

Cosmin-Gabriel STIRBAT
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Radar surveillance of the airspace, an important component of aerial surveillance, represents the set of actions and measures carried out by specialized forces and means for the creation and distribution of the recognizable aerial image of the area of operations. The nature of the military actions that took place during the Revolution of December 1989 confirmed the fact that, in the current conditions of development, improvement and diversification of electronic systems, military actions without the presence of radio-electronic warfare are inconceivable. The electronic war had, has and will have continuity. The main objectives subject to electronic warfare actions were: the radio-technical system of anti-aircraft defense (radar means), the radio-electronic communication systems of anti-aircraft defense troops, aviation and ground troops and the airspace research means existing in missile and artillery units anti-aircraft. The events of December 1989 would fundamentally influence the Romanian army and, implicitly, the

radiotechnical troops of the anti-aircraft defense of the territory, participating in the research of air and land space, in the conditions of a jamming of imitation and radioelectronic disinformation. The subsequent analyzes of the combat actions carried out by the radio technical troops during this period of confusion were not fined, information about the air situation being provided permanently. The way of analyzing aerial situations and the decision-making of reaction by some responsible factors in aviation, missile troops and anti-aircraft artillery remained debatable.

Operation Tidal Wave - The Black Sunday of the U.S. Air Force

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Operation Tidal wave was an important event of the World War II which took place at 1st of august 1943 and involved an aerial bombardment of the United States Air Force over the oil refineries in Ploiesti, Romania. The mission was executed by 179 heavy B-24 Liberator bombers, which took off from Benghazi, Libya and attacked the refineries from low altitude. The bombing was prevented by the strong German and Romanian defences, 53 planes were lost in that day. As well, 440 American aviators were killed and 220 captured. Despite the heavy loses, the bombing did not manage to reduce the oil production from Ploiesti refineries. Five American pilots received The Medal of Honour for their sacrifice and bravery in that mission, this number of medals offered was the greatest number offered by the United States Air Force for a single mission. The event remained one the costliest missions in the United States of America aviation history, that day was named The Black Sunday and Ploiesti by the American aviators The Bombers Cemetery.

Fighter Jets after World War II

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Conflict, war, or combat situations between two parties has occurred and will continue to occur all over the world. Whether it is in the diplomatic, economic, military, or social field, they all have one goal: to accomplish a mission by imposing brute force on one of the organizations. In an objective treatment, the existence of two opposing sides with opposite missions is discussed, directing their efforts, visible or invisible, through their own method of organization supported by available system.

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