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Abstracts of XX International
conference of higher education students
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POLIT.
CHALLENGES OF SCIENCE TODAY

**MODERN INFORMATION AND
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MILITARI TACTICS AND TRAINING OF MILITARI PERSONNEL

AIR TERRORISM

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The dangers of many countries and their citizens, the negative consequences of economic, social and moral losses, are severe psychological pressures on a large number of people than on others, the most important are the lives of mostly peaceful citizens.

The fight against air terrorism, as one of its constituent parts, is an important part of the fight against terrorism and extremism.

The absence of comprehensive measures to protect people and aviation transport, the unresolved legal side of air terrorism allows criminals to use civil aviation as one of the tools to achieve their goals. This form of terrorism often leads to political conflicts between countries.

The problem of international law is that of the global problem of our time and the future, and it threatens world security caused by gaps in the legal struggle at the level of national legal systems. The international fight against terrorism in civil aviation has become one of the directions of international policy, and the legal struggle at the national level - the task of each aviation state [1, p. 131]. It threatens people with panic, fear and suffering.

Since 1967, a wave of panic began in international civil aviation, first in America, and then in the world began the capture and theft of air power, divarica and shantazhi, so first of all countries were concerned with the issue of air terrorism in civil aviation. The situation with air terrorism shows that more than 44,000 thousand people have died in the world in recent decades, and in 2017 amounted to 0.5% of the world's casualties[4].

Americans faced air terrorism - on September 11, 2001, large United States cities were attacked by aircraft that captured the suicide bombers. The aftermath of this tragic event was the death of 2,973 people, with American citizens taking air attacks as a global threat to the nation's national security and terrorism as America's main enemy. The issue of countering air terrorism is the subject of special attention of the media and is discussed in the USA in various aspects [3].

Most of the kidnappings and kidnappings before September 11, 2001, were aimed at demanding the country's power. For the most part, the theft of aircraft (90% of the total number of incidents), including one-fifth, was fatal. Most of the people died as a result of the air crash caused by the terrorist attack, others were killed by

kidnappers or in a shootout between terrorists and the security service. Since the crash of the World Trade Center on September 11, 2001 in the US, each air attack has been viewed as a potential suicide bomber[2].

Many governments are willing to issue an executive order to shoot down a stolen plane, thereby preventing even more casualties. Thus, in the case of the terrorists seizing the aircraft, the crew and passengers are now even more dangerous. It has gradually come to realize that the impunity of terrorists is contrary to the interests of all States, regardless of their political and social order. This has enabled more effective ways to deal with terrorism.

To date, the International Civil Aviation Organization (ICAO) is an important body for responding to violations in civil aviation, in particular, the International Civil Aviation Organization (ICAO), which was established in accordance with the provisions of the Chicago Convention on International Aviation of 1944 [4, p. 82]. It is interesting that to date no special convention has been adopted regulating the issues of combating and responsibility for air terrorism.

The response to the outbreak of terrorism in the world was the ICAO resolution in 1969. Accordingly, to which the Committee was established, the illegal interference in the actions of civil aviation. An important development was the establishment of a permanent group of experts with civil security in 1987, which is working to develop rules to assist countries in implementing the rules on stopping acts of unlawful interference in civil aviation. The basis for ICAO activities is international cooperation, for which in September 2005 the aviation security cooperation and development sector was established, whose task is to provide assistance with new technologies and financing programs for aviation security.

World experience shows that basic safety measures must be carried out on the ground, even before passengers get on the plane. The security system of any airport when transporting passengers is based on a convenient combination of two main elements: the search for dangerous objects, including weapons and explosives, and simultaneously the monitoring of those who fly. The planning and organization of the airport's aviation security system takes into account the lack of universal methodologies in this area, which would meet all requirements.

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**ACTUAL ASPECTS OF TACTICAL CALCULATIONS FOR THE USE OF
THE ARMED FORCES OF UKRAINE DURING COMBAT IN MODERN
CONDITIONS**

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Combat potential - a set of material and spiritual factors that determine the status of troops (forces) and their ability to perform the tasks they set. Based on this definition, the combat potential of a particular military formation (units, units, units) depends on many factors, in particular, the number of personnel, their level of training and moral and psychological status, availability and status of weapons and military equipment (WME). The preparation of command staff for the management of the troops, as well as the provision of supplies (munitions, missiles, fuel and lubricants, etc.) [1].

According to the combat statute: Combat - the main form of tactical units, which is a concerted by purpose, objectives, location and time of strikes, fire and maneuver of military units, units (ships, aircraft) and is used to repel the enemy, his destruction (defeat) and performing other combat missions in a restricted area for a short period of time [2].

Based on the definition of all-military combat, it is imperative to take into account the integrated simultaneous impact of combat capabilities and combat potential. The estimated (available) total combat capability of a unit is defined as the sum of the combat potential of all the number of major weapons in this unit, expressed in terms of units [4].

The combat capability of a single weapons and military equipment sample is defined as the ratio of the multiple combat capability of an individual armament and the probability of its use to the set of time index expressed in terms of units:

$$БП = \frac{Бn * Pб}{Tn * PT}$$

where $Бn$ - an indicator of the combat potential of the firearms unit. It is calculated by the formula of total uncertainty [4]. A conventional unit that is calculated by determining the ratio of combat capabilities of a particular firearm compared to the tactical technical characteristics of a similar sample of weapons and military equipment of the enemy:

$$Бn = \frac{TTX_1}{TTXa_1}$$

It is possible to use the table data as a separate indicator of Combat Weapons and Military Equipment Д3.1 [3].

The average total combat potential ($\sum Бn$) of the unit is in simplified form:

$$\sqrt{Бn_1^2 + Бn_2^2}$$

In complex form: $\sum B_n =$

$$\sqrt{\sum_{i=1}^N (B \dot{n}_i)^2 * B n_i^2 * P \sigma^2 + 2 \sum_i^n \sum_j^N * B n_i * B n_j * r_{ij} * P \sigma_i * P \sigma_j}$$

P_σ - the probability of using combat potential;

$B \dot{n}_i$ - effect factor (derivative of combat potential), which ranges from 0 to +1 and depends on existing factors of battle:

- timely detection of the enemy;
- availability of ammunition;
- learning to calculate a firearm and more.

$P_\tau = 1 - P_\sigma$ - the likelihood of the opposite action against P_σ

T_n - total conditional time of use of unit combat potential. Depends on:

- time of withdrawal from occupied positions in battle;
- time of enemy detection;
- the time of the fire.

General definition of the equation of the total combat capability of the unit (with the i -th number of individual samples of armed military equipment) in the simplified form will be as follows:

$$ЗБП = \frac{\sqrt{\sum B \dot{n}_i^2 * B n_i^2 * P \sigma^2}}{\sqrt{\sum (T n_i)^2 * (1 - P \sigma)^2}}$$

If r_{ij} is absent, it is an indicator of correlation (covariance) dependence of i th and j factors [5].

The application of the considered methodology of calculating the total combat potential of the unit provides an opportunity to improve the assessment of operational and tactical calculations of the capabilities of their forces against the forces of the enemy during the planning of the operation and will increase the accuracy of forecasting operations.

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FIGHTING SPIRIT PHENOMENON AND MODERN SCIENCE

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The task troop's fighting spirit educating will remain relevant until the armed struggle exists. As armed struggle is one of the varieties social communication, included in the system society life, changes in the existing public whole, as well as each element, given in the armed struggle signs, and also on the basis, methods, means of forming readiness and ability to fight and win.

Concerns about the difficulties encountered in ensuring military personnel fighting spirit voiced by analysts from foreign countries, who belong to them as a wholly effective and capable military organization with battle-hardened military traditions. Modern governments forced to seek new approaches to analyze strategic doctrines and implementation. This accompanied by the emergence of new trends, schools, technologies to influence the morale and psychological state of their own and enemy troops.

That is why an important component is an analysis of potential modern scientific approaches to the fighting spirit problem providing.

Traditionally, fighting spirit is defined as one of the basic concepts military psychology and military ethics. In the context of these sciences, "fighting spirit" means the ability and a serviceman readiness, unit, and armed forces as a whole to confront difficulties and deprivation, and a constant focus on victory.

Among the influential methodological approaches to the fighting spirit study are the active and behavioral ones that work on the additionality principle at different theory and practice levels. If the activity approach concentrates on the semantic structures actualization processes and the abilities formation in human action, the behavioral approach unfolds the relations phenomenology and the system "actor-environment" interactions.

To date, various disciplinary approaches have been deployed in scientific research to identify the fighting spirit determinants in the activities and societies variety context. Socio-philosophical, socio-psychological, political-psychological, political-anthropological, military-anthropological, cultural approaches allow to reveal the organic fighting spirit connections in the human communities life-world midst.

Relative autonomous and interdependent social-ideological and socio-psychological foundations and manifestations are accord distinguished in the fighting spirit - reflected, conceptualized, and direct assessed, behavioral and practical. Their unity and integrity reflects the overall society's consciousness development level.

In the socio-psychological, political and psychological approaches application, the fighting spirit arises as a concentrated people's mentality representation. Such approaches allow us to highlight exactly the common "mental instruments", "psychological tooling", which allows us to perceive and understand their

surroundings and themselves. In this perspective the influence on the properties fighting spirit and social and psychological people organization features belonging to one social and cultural community. The fighting spirit condition and structure consequent is a specific community mentality expression in extreme preparation and warfare situations.

The consecutive political-psychological approach involves studying an important influence on the fighting spirit formation and maintenance, which makes the nation's psychological composition "top floor" - the national consciousness. As such national consciousness is a set of social, political, economic, moral, aesthetic, philosophical, religious and other views that characterize the content, level, national-political spiritual development specificity.

The fighting spirit as a social and military-ethical interaction condition and consequence explored by military ethics. Military ethics, in accordance with the structure of the historical emergent types of military-ethical complexes, reveals value military moral justification ways, moral military activity meanings; moral regulations - norms, models, standards in the military environment, moral and combat qualities, which reflected in the military duty and moral categories.

Therefore, along with value-ideological and descriptive-experiential components, the society and the armed forces' fighting spirit providing system must include extra-scientific developments that reveal new reality images and empirical existing diverse attitudes, collective and individual.

The following fighting spirit study tasks distinguished: components identification, levels, fighting spirit relationships as a state and the army capability; the existing condition and prediction diagnosis its development; fighting spirit providing high level psychological and other management types. To solve these problems, conceptual and methodological assimilation and adaptation to the practical diverse modern science developments applied to the fighting spirit problems are necessary.

Thus, further scientific approaches development and implementation in Ukraine should ensure sufficient military personnel fighting spirit.

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LOGISTIC OF THE ARMED FORCES OF UKRAINE

WAYS TO IMPROV THE LOGISTICS SUPPORT OF THE ARMED FORCES OF UKRAINE: EXPERIENCE OF GERMANY

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Experience in the history of wars and war conflicts shows that in every successful military company, operation, battle, as in any defeat, it is necessary, among other reasons, to look for the positive and negative sides in the work of the rear - its organization, capabilities and methods of logistics[1].

The rear as a special organization providing troops emerged with the advent of regular armies. With the increase in the number of troops, the principle of "war feeds war" no longer worked - the resources of the territory in which the armed struggle was fought was not enough. There was a need for early creation of material supplies and delivery to troops [2].

The current notion of logistical support for the Armed Forces of the Federal Republic of Germany covers not only logistical issues, but also aspects such as fire safety, security of use of weapons and ammunition, radiation, chemical and bacteriological protection, infrastructure support, and environmental protection in areas the use of military units.

According to the Bundeswehr Logistics Support Concept, the main Bundeswehr logistics management bodie is the IV Headquarters of the General Staff of the Armed Forces of Germany (German equivalent of J-4 headquarters of the corresponding level in NATO countries). The name of the Bundeswehr rear (Logistics); Weapon Protection and Defense Task[3].

It is tasked with carrying out the tasks of planning, organizing and managing the logistics of the Bundeswehr, including overseas missions, as well as the task of organizing the defense of the Armed Forces against weapons of mass destruction.

The tasks of organizing centralized logistical support for troops both within the territory of Germany and in the zones of military use abroad are entrusted to the Bundeswehr Base Force.

As a result of the analysis of the organization of functioning and development of logistics systems in the armies of the leading countries of the world, a number of stable tendencies have been identified:

- centralization of planning and organization of logistical support at the level of the main governing body of the AF;
- implementation of the territorial system of providing military units regardless of their belonging to a particular type of AF;

- reduction of intermediate supply units, concentration of basic efforts in the central, territorial bodies and directly where the expenses of material and technical means are carried out - in the units;
- automation of material flow management processes;
- implementation of outsourcing - transfer to civil contractors of a considerable number of functions of logistics support;
- the constant increase in the volume of tasks for the material support of the troops.

In our opinion, the main problems in the organization of logistics support of the Armed Forces of Ukraine are the following:

- lack of a unified system for planning transportation of material means and transportation;
- necessity of revision and normative determination of volumes of maintenance and order of separation of stocks of rockets, ammunition, fuel and lubricants, food, material and other military-technical property, taking into account the ways of application, combat missions and prospective structure of the Armed Forces of Ukraine[4-6].

Thus, taking into account the best practices of logistics (logistics) of the leading states, its analysis and creative application will allow a gradual transition to a modern, unified and integrated system of logistics of the Armed Forces of Ukraine, without losing control of the system of providing troops and prevent loss of financial and material resources.

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ANALYSIS OF THE STATUS AND PROSPECTS OF APPLICATION OF AVIATION TECHNOLOGY SHELTERS IN THE EXPERIENCE OF THE LEADING COUNTRIES OF THE WORLD

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The engineering equipment of military airfields is one of the important measures for the protection of personnel and aviation equipment in hostile situations, as well as in conducting military and anti-terrorist operations. Engineering equipment of aerodromes is carried out in stages with a consistent increase in the degree of security of equipment and personnel.

The selection and engineering equipment of the areas of dispersal of aircraft and other equipment at the aerodrome is carried out, as a rule, during the construction of the aerodrome. They are carried out taking into account the requirements of combat readiness of the part and type of aircraft based on the aerodrome. Shelters are constructed at the airfields of the Air Force [1]. The most commonly used are open-type surface shelters (bonfires, capons) and closed-type shelters are usually arched, usually arched. A considerable thickness of reinforced concrete flooring and ground cover provides reliable protection of the aircraft and its servicing personnel from damage by cannon and rocket fire, from fragments of aircraft bombs, striking factors of a nuclear explosion [2].

The Israeli Armed Forces have a widespread practice of building interconnected aeronautical shelters (so-called DATAKS) interconnected by a network of subways and passageways. The advantages of such a complex of shelters can be attributed to the ease of servicing the aircraft, also in DATAK can be located command post, being in close proximity to the aircraft and in a secure move. The disadvantages include the high cost of construction and the considerable complexity of installation, including ventilation, waterproofing of premises, etc. [3].

Thus, the arched shelters used at the Permanent Air Force airfields provide not only protection against enemy blows but also against weather events such as snow, sandstorms, earthquakes, hail, hurricanes, storms. Steel arched shelters used at US Army airfields and inflatable awning or aluminum or carbon-fiber frame shelters are appropriate to be used at field aerodromes to ensure speed of erection and protection of aviation technology.

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WAYS OF IMPROVEMENT THE EQUIPMENT OF FUEL AIRCRAFT FILLING SYSTEMS

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Modern combat is characterized by high intensity, transience, the use of various methods and means of defeat by dramatic changes in the environment and the widespread use of aviation.

The experience of local wars in the period from 1990 to the present shows that the victory is gained by the one who has the advantage in the air, which is achieved by the use of modern aircraft, UAVs, reducing the time for their preparation for combat.

In order to reduce the time for refueling aircrafts, stationary centralized refueling systems and group refueling units have been widely used in the USSR. Unfortunately in Ukraine all centralized fuel refueling is being dismantled at present years.

The analysis of various sources of information [1-4] shows that the issue of Improvement of fueling systems is receiving high attention. For example, in France, a REUGEOT (Fig. 1) military fueling unit with a throughput capacity of fueling aircraft from a system of underground fuel stations is used 3800 l / x, which is intended for refueling airplanes from a system of underground fuel stations.



Fig. 1 French military group tanker of PEUGEOT planes

- Several group tankers are used in the Armed Forces of the Russian Federation:

- Fig2. Designed for filtered fuel planes and helicopters in the field GZST-4-1250 for refueling airfields. It consists of PSG-75 and a special single-axle car trailer.



Групповой запрашивщик самолетов топливом ГЗСТ-4-1250

Fig. 2 GZST-4-1250

Fig3. GTZ-240-6 the equipment, which includes reservoirs with pipeline lining, fine fuel filter, station, PVC liquid dispenser, two filters - (Fig. 3) pump-separator assembly, six ZA-4M filling units, main pipeline and DU-150 manifold, pipelines from dispensing manifold to DU-100 filling units, DU-32 drain pipeline and communication facilities .

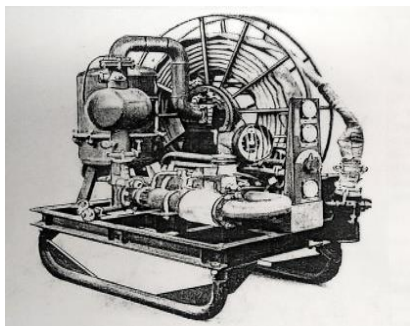


Fig. 3 GTZ-240-6

The filling unit 3A-4M consists of a filter of fine cleaning of TFB with the filter package 8D2.966.063, the counter SZh-100-1,6 of the vortex type, the dispensing sleeve with the tip of the closed filling 2561A-5. All the equipment is mounted on the frame and protected from the effects of atmospheric sediment by a metal casing. Thus, in order to reduce the time for refueling of the aircraft of the Armed Forces of the Ukrainian Armed Forces with fuel, it is necessary to design and manufacture a group tanker, which must satisfy the following Requirements:

- to provide a throughput of not less than 1000 l / xv. through one filling unit;
- provide refueling of at least 6 aircraft at a time;
- the kit should be compact, mobile, car and air transportable;
- provide a nominal filtration fineness of 5 microns, dissolved water content in the fuel - more than 0.0015%;
- be easy to maintain and operate;

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