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"GENERAL M.R. STEFANIK"
ARMED FORCES ACADEMY
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PERSPECTIVE OF AIR DEFENCE

Milan SOPÓCI*

* Department of Management, Armed Forces Academy of General M. R. Štefánik in Liptovský Mikuláš, the Slovak Republic

Abstract : *The contribution speaks about new role of Air Defence in conditions of asymmetric threats and new safety environment. The article refers according these observations about new requirements on Air Defence means, command and control system, warning systems, detection means, radars and missiles systems. In conclusion it shows on new perspective Air Defence for future.*

Keywords: *air defence, evaluation, perspective, fire unit, mission, operation, environment, protection.*

Fulfill participation observe responsibility which results from participation to generic integrated system of safety air area NATO (NATINADS) require different understanding operational preparation, training of personal and building other specific competence of Air Forces. Considering fulfilling task in national control of sovereignty air area with the same resources which are available for NATINADS, it is very important their complex coordination following by disposition of air situation with homogenous command and control system ACCS/ASACS to selected powers and means[1].

In these days competences of Air Forces in general present capabilities:

- support to built safety scene in system of corporate defense with common and combination operations,
- provide integrity of air area – to monitor and control of air area, safety of sovereignty of air area NATINADS countries,
- to fulfill operational requirements of battle support and battle safety of Ground Forces,

- ensure air search salvage service and transfer injured person (CSAR),
- to make air transfer in favor of Armed Forces,
- use information of strategic intelligence early and correctly identify threats,
- keep up and develop competence stationary and mobile communication and information system,
- ensure in meteorological services and photogrammetric map,
- defend chosen object of critic infrastructure,
- accept forces of NATO and EU in fly over area of arrangement and in course of activity.

We can see the majority of task it is role of Aviation and position of Air Defence is on the periphery of interest. Air Defence can play more important role in present time too.

Variability of Air Defence tool in battle use have to guaranty without safety strategic objects and sectors Air Defence in interest tendency, also flexible maneuver means to another sector for example in this assistance in monitor state boundary, like to safe

understanding of civil emergency planning and public administration in boost attack through recco subsystem(Fig.1).



Fig. 1 Air Defence SA – 6 launcher

Recco subsystem have to be able to fulfill full-value radiolocation information in real time for national command and at the same time for Air Defence systems in command and control system C2I(C4I2) NATINADS[2].

Air area is considered to be continual. It comes to this that entity, which isn't latticed on military and civil. Some part is mainly from cause of safety restricted for particular user – these users are Armed Forces, aero clubs, air repairs.

Strategic intent is unification of air area, which leads to one, integral air area in whole Europe. This study is based on continual air area axiom, which presents maximal freedom for users in required level of security in services. It will be done with holdback safety and security each state.

Presently is also very often discussed about relevancy and building of radars or positions for rocket systems in the area of Czech republic and Poland. Reasons of these suggestions are very interesting. Supposed improvement of security of countries of NATO by empowering of defence against potential terroristic air attacks, especially against attack with ballistic rockets by creating of anti-missile umbrella. In closer analysis we could find out that this threat is not so realistic because of more reasons. In the first place, the probability that terrorists capture ballistic rockets with launchers is very low. In addition, countries which have weapons of mass destruction which could be abused for terroristic attack don't have own carriers which could enable transportation of these weapons to point of destination for targets in countries of NATO. Because these reasons we

are not threatened in this way from the air. There is another danger from the air space in last years which is more serious than air terrorism. It is not controllable movement of various means in the air (aero planes, helicopters, ultra light aircraft etc.). In last five years there were more than 200 cases of violation of principles in air traffic in air space of Slovak republic, from simple case, e.g. violation of flight level or deviation from flight corridor, to the disturbance of air space and not controlled movement in this space. How it is possible that these situations occur? In past years the count of forces and means of Armed forces and count of means of Air forces recognition were significantly reduced. Therefore also possibilities of locating and reliable monitoring of targets, especially on low altitudes, that is why sport aero plane from Austria in flight corridor can threaten airliners, another ultra light plane from Hungary half of hour threatens training of army pilots in space close to airport.

Concluding this question we can claim that the development in this area is in harmony with requests of Armed Forces of SR and coalition partners in NATINADS. However, we need to build subsystem of recognition using also another means. Conception of competencies of Air Forces especially in part "Operations of national security" have to be more concrete and to refer to possibilities and problems of recognition subsystem.

When we see more closely on possibilities of warning system and on capabilities to react on threats by actual Air Defence means we can observe that these ability Air Defence has but its using is disesteem. It is result from different views under review possibilities of Air Defence. NATO countries were always oriented for using aviation ,fighters or multifunctional aircrafts and the same is it in present time. New armies from NATO countries, in nowadays do not dispose of the highest technology and financial resources for purchase of modern Air defence means. For all that exist means and sensors which make possible these means of air attack to uncover and armies and objects early to alert and protect.



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There are from warning system the first of all radars means – active and passive too. Because ballistic missiles have extreme small effective reflection surface, we can use from active radars only radars with millimeter and meter extension. While the first type is more accurately and has smaller range, the second has bigger range but smaller precision for locking and tracking of targets.

Besides them is possible to use passive radars too, the third generation of radars has in equipment some NATO countries and has ability to detect air targets using technology STEALTH.

Considering also ability of obtaining information about air targets from space reconnaissance, with accent in areas with high probability of threat by ballistic missiles we have wide spectrum information in disposition for fire units.

Because ballistic missiles(in asymmetric conflicts) very often ,there are not classic means of tactic assessment (e.g. with range to 100km) and often there are not neither rockets with typical ballistic air trajectory, but there are launched from range a few kilometers, max. some tenth kilometers, in consideration will not come middle and long range Air Defence missiles systems. The application vice – versa will be here short and very short range Air Defence systems especially combined missile – artillery systems with reactive time some seconds. These systems are characterized high killing probability of targets, useful killing zone, ability parallel firing of targets missiles and artillery firing and possibility repeat firing on targets in short time period.

Big advantage of modern reconnaissance and fire means is fact that do not need special command and control systems. Actual technologies and computers makes possible to transmission information and commands

practically in real time. It means that fire units can open fire on targets depending up reactive time directly after target detection.

Opposite these requirements and possibilities, present Air Defence have to satisfy new appeals and perspectives in next spheres[3]:

Operational Intelligence:

- Ability to afford strict and relevant operational and intelligence information for NATO, partners and coalition organizations for early planning and operations leading and for increasing of understanding on operational levels.
- Ability of common gathering, coordination and control requirements on intelligence informations and information management with NATO interoperability tools, processes and practices which permit effective and coordinated collection of information from different sources.

Air Surveillance Capability – Deployable Electronic Surveillance Measures

- Ability uncontinual passive air reconnaissance in daily and nighty time in all weather to support statement creation about air situation,
- Ability active air reconnaissance to enable search on long distance of wide radar field,

Fire Capability

- Ability to destroy wide spectrum of air targets(planes, helicopters, space means, rockets, missiles, balloons and others

C2 System

- Ability to monitor and evaluate move operations
- Ability to change information with others command and control systems automaticly,
- Ability to create RAP (Recognised Air Picture),
- Ability to afford RAP to COP (Common Operational Picture)

Air Command and Control Capability (Static or Deployable)

- Ability to apply measures for vulnerability minimalization against cybernetic attacks
- Ability of effective communication with command posts of force protection.

In conclusion we can emphasize fact, that not only typical tasks is the future of Air Defence . New roles will come with development information technologies, with new abilities in the subsystems fire, reconnaissance and command. The Air Defence importance will increase with enlargement of possibilities to supply more sophistic information for wide spectrum of

users. We have to get back to history and think up that forces and Air Defence means belong as inseparability component every operation on random level.

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