



Air Defense of the Baltic States: Looking toward the Future

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Abstract

The article offers a discussion of the origins, current state, and the future of air defence for the Baltic states. It relates developments in the field of air defense to changes in the security environment and the defence policies of the Baltic states. The article starts with a retrospective on the origins and development of air defence in the Baltic states before they joined NATO. Then, it focuses on the early years of integration with NATO Integrated Air Defense System and implications for air defence related to changes in the security of the Euro-Atlantic region stemming from aggressive Russian actions. An assessment of the current posture of air defence in the Baltic states serves as a starting point for a discussion on requirements for future developments and predicting possible outcomes. The research uses unclassified, publicly available documents and analytical reports to provide background information for a discussion on the future of air defense for the Baltic states. The Baltic states are aware of the limitations of their air defense and try to develop this capability within available resources. Changes to security environment after 2014 gave a new impetus to develop the air defense of the Baltic states, both through efforts undertaken by NATO and for national capability development.

Keywords

air defense, air defense system, Baltic states, NATO

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1. Introduction

Air defense is a crucial capability for guarding the sovereignty over national airspace and preventing aggressive actions by hostile air and missile threats. It is continuously needed during peacetime, crisis, and conflict. Air defense contributes to national defense and deterrence, and during conflict, it becomes a part of the joint force efforts to create favorable conditions for friendly military operations. The case of the Baltic states is a telling example of the criticality of air defense for national security. It shows also the challenges that small nations face in developing credible capability to defend against air and missile threats. The Baltic states' efforts in the field of air defense date back to the first days of their independence after the collapse of the Soviet Union. With limited resources available, the Baltic states were initially able to provide only for air surveillance of their national airspaces and did not develop capabilities to engage air threats. Membership in NATO brought allied support to the Baltic states in the form of air policing. The early days in NATO contributed to the increased interoperability of the Baltic states' air defense systems, but the development of air defense capabilities was rather slow. A turning point in the development of air defense of the Baltic states was Russian aggression against Ukraine and the occupation of Crimea. These aggressive actions added a sense of urgency for both NATO and the Baltic states' actions. Allied reassurance measures reinforced the air defense posture in the Baltic states, and increased funding supported the development of air defense capabilities by the Baltic states. While the development of air defense capabilities by the Baltic states competes for resources with other defense capabilities, it clearly remain one of the top priorities in defense spending. With allied support and long-term national modernization plans, the air defense of the Baltic states is destined to develop and be better prepared to face air threats in the future.

This research aims to discuss the origins, current state and the future of air defense in the Baltic states. It looks at external and internal factors that have influenced development of air defense capability by the Baltic states. The research explores the synergy of NATO, bilateral defense cooperation, and national efforts in the field of air defense. It uses unclassified, publicly available documents and analytical reports as a source of information for the discussion on the origins, current state, and future of air defense of the Baltic states. The research focuses on several distinctive periods in the development of air defense for the Baltic states.

The article starts with a retrospective on the origins and developments of air defence of the Baltic states before their membership to NATO. Then it focuses on integration of air defense of the Baltic states within the NATO Integrated Air Defense System prior to 2014. The next part of the article examines the implications for the air defence of the Baltic states related to changes in the security of the Euro-Atlantic region stemming from Russian aggression against Ukraine and the occupation of Crimea. The final part of the article discusses the future of the air defense of the Baltic states while trying to reconcile requirements for future developments and possible outcomes.

2. Doctrinal framework for studying air defense

Air defense is crucial for state sovereignty as it assures the integrity of national airspace and prevents aggressive actions against the state by hostile air and missile threats. Air defense is an essential, continuous mission in peacetime, crisis, and conflict. It aims at safeguarding and protecting state territory, populations, and forces against air and missile threat and attack. Air defense contributes to national defense and deterrence against both state and non-state actors. Should the deterrence fail, air defense as a part of joint counter air operations aims at assuring the required level of control over the airspace to create favorable conditions for friendly military operations. While studying the air defense of a particular state or a group of states, a valid question to pose is to what extent their air defense is capable of providing protection during peacetime, crisis, and war. It depends on the nature and magnitude of air and missile threats and the costs of development and maintenance for these air defense capabilities.

Another important point for studying air defence is the organization and conduct of air defense operations. Such operations are implemented through the integrated air defense systems, comprising of elements allowing for the effective execution of air defense functions. That is especially relevant to those functions that enable active air defense. Air defense system should allow for integrated detection, identification, assessment, interception and engagement of air and missile threats to facilitate active air defense operations and support passive air defense. The implementation of those functions requires an air defense system to have specialized components such as airborne and surface based combat assets, surveillance assets, and command and control elements (NATO Standardization Agency, 2010). The issue of integration is an important point for studying air defense. The integration of air defense system elements allow for simultaneous coordinated engagement of air and missile threats, mutual support and increased survivability. It is crucial to understand what air defense functions can be performed by such an air defense system and to what extent. Air defense related capabilities need to be studied along with respective capacities.

Air defense, which aims at the protection of friendly forces from enemy air and missile attacks, is seen in military doctrine through the prism of active and passive defense. Active air defense activities include the use of airborne and surface based air defense assets to destroy missile and air threats or reduce the effectiveness of their employment. While many researchers focus on active defense, it is worth noting the value of passive defense as well. A good point for studying air defense is a comparison of the case studied to a model set up. A desired model for air defense calls for a layered defense-in-depth that allows for multiple engagement opportunities and integrated employment of airborne air defense assets along with surface based air and missile defense assets. It aims at combining active air defense operations with passive air defense and to increase the survivability of defended assets (NATO Standardization Office, 2016). As it is difficult to find an ideal air defense in the real world, how case studies differs from the doctrinal model and what are the consequences of these differences must be analyzed. For any assessment of air defense, it is important to understand the synergic capabilities of different types of assets and operations. In addition, it is important to realize implications of not having a specific capability or assets, for example for effectiveness of engagement against air and missile threats or for the survivability of an air defense system.

While studying air defense of the Baltic states, one need to address most of those important problems. Starting with understanding the nature and magnitude of missile and air threats that this air defense has faced, one needs to explore the divide between the capabilities required for effective air defence compared to those that can be afforded in more detail.

Then, it is possible to discuss the choices that have been made, their implications for air defense operations, and the organization of air defense system.

3. Development of air defense of the Baltic states prior to NATO membership

After collapse of the Soviet Union, the Baltic states had to develop their armed forces nearly from almost nothing. They did not inherit advanced post-Soviet combat weapon systems nor trained personnel. With struggling economies, the militaries of Estonia, Latvia, and Lithuania were doomed to remain small, low-tech, land-centric and light for a long time. Air forces of the Baltic states tasked with air defense missions lacked virtually all components of an integrated air defence system. A priority for the development of air defence back in the nineties was the integration of national air surveillance assets into a joint air surveillance system of Estonia, Latvia and Lithuania. The decisions to establish an integrated air surveillance system for the Baltic states were made in 1994 and 1995. The project gained external support as a year later the United States decided to extend its Regional Airspace Initiative to the Baltic states. Thus, the Baltic states took the path of introducing Western standards similar to Poland and other Central European states seeking membership to NATO (Cieślak, 2019).

The value of BALTNET to the development of air defense for the Baltic states stemmed from the fact that it facilitated introduction of Western and NATO standards and fostered interoperability. The Baltic states cooperated closely with NATO's Committee for European Airspace Co-ordination and the NATO Air Defense Committee in air surveillance and air defense matters. The international support to the BALTNET project involved training, provision of equipment, and expertise. Extensive US, Norwegian, and Danish support to the project must be noted. Supporting countries have also assisted in the development of the concept of operations and standard operating procedures for the BALTNET system. BALTNET proved to be a successful cooperation project for the Baltic states themselves. They were able to work together in planning the placement of radar sensors in the three states, avoid unnecessary multiple radar coverage, and ensure economical use of resources (Harper, Lawrence, & Sakkov, 2018).

Modernization efforts related to air defense prior to membership in NATO focused on air surveillance and control elements of the national air defense systems. Lithuania and Latvia bought a limited number of man-portable air defense systems, which could be used for the land forces' organic air defense missions. Only Lithuania possessed two jet trainers L39 which offered limited capability to react to air threats in peace time. Bearing that in mind, one could argue that prior to 2004, the Baltic militaries were able to perform only a part of air defense functions. They could detect, track, and identify aerial objects but lacked the capability to engage them. The air defense of the Baltic states lacked fighter force and credible surface based air defenses. National air surveillance assets integrated within BALTNET offered basic radar coverage of the Baltic states' airspace and provided a backbone for limited command and control capability to active air defense operations.

4. Integration with the NATINADS and developments before 2014

Integration of the air defense assets within the NATO Integrated Air and Missile Defense System started before the Baltic states formally joined the Alliance in 2004. BALNET was integrated into the allied air surveillance and command and control structures, and its role expanded to include not only air surveillance but also air traffic control and tactical management of air policing operations. Efforts undertaken by the Baltic states within BALNET project paid dividends, as they enabled the NATO Baltic Air Policing mission to start on the first day of their membership to the North Atlantic alliance. Air policing has constituted the principal Allied air presence in the Baltic states since March 2004. It was agreed as a peacetime mission to ensure the integrity of airspace of all member states of the Alliance. The main aim of the mission was to offer assistance to the Baltic states, as they did not possess air defense fighters. This mission was initially planned for a limited period of time, but it was changed in 2012 to a standing one. Until 2014, the Baltic Air Policing mission was considered primarily as a means for demonstrating allied cohesion, shared responsibility, and solidarity (NATO, 2021). To put this mission into a broader context, one needs to reflect on the nature of air threats at that time. Relations between NATO and Russia were quite stable and cooperative, and the focus of air defense operations in peacetime was preventing terrorist use of civilian airplanes (a stark reminder of the 9/11 attacks). Because of these considerations, the Baltic Air Policing mission was limited in scale. It used one air base in Siauliai, Lithuania as a home for usually four air defense fighters deployed by Allied nations on three and then four months rotations. While some politicians and even researchers did not consider the NATO Baltic Air Policing to be an air defense mission, in fact it has been such, although restricted by division of national/allied decision-making authorities and responsibilities. In peacetime, the decisions to intercept aircraft violating national airspace of any of the Baltic states is made by the NATINAMDS command and control agencies. However, when use of deadly force against such aircraft is considered, the decision-making authority rests with the nation in which airspace this engagement occurs. With a fighter force belonging to an allied nation, the decision-making process would involve not only one or more of the Baltic states, but also a nation that deployed its fighters to the mission. Despite the aforementioned limitations, there is no doubt that the air defense of the Baltic states benefited from the Baltic Air Policing mission. The message that the airspace of the Baltic states started being protected by NATO has been understood by all stakeholders (Adamowski & Banks, 2019). The success of this mission depended heavily on the host nation support provided by Lithuania, which put substantial efforts in upgrading Siauliai Air Base and assuring combat support and combat service support functions to deployed aviation detachments. Air policing served also as a catalyst for development of the Baltic states air defense' intelligence, surveillance and reconnaissance and command and control capabilities. It provided numerous training opportunities for the air defense personnel of the Baltic states and prioritized modernization efforts.

A retrospective on the first decade of the Baltic states' membership to NATO brings two points to discussion on air defense. One of the factors that influenced air defense of the Baltic states before 2014 was the focus of NATO operations and burden sharing debate. Allied commitment to out of area operations in stabilizing the security environment overshadowed the issue of article five operations. As an armed aggression against NATO states deemed unlikely, there was no appetite among the member states to develop capabilities for high intensity conflict operations. Limited air defense capabilities centered on airborne assets were considered sufficient in peace time, and legacy surface based air defenses remained in service, but were not considered a critical capability. The Baltic states were expected to contrib-

ute to NATO and coalition expeditionary operations and rely on allied support for air defense. Such thinking was in line with the smart defense initiative that called for role specialization and avoiding overlaps in capabilities and defense spending. A decision on making the Baltic Air Policing mission a continuous presence agreed by the North Atlantic Council in February 2012 serves as a good example of the smart defense concept. The Baltic Air Policing paved the way for other missions that assisted member state without sufficient air defense assets in assuring integrity of their airspace. Missions in the Balkans, Benelux, and Iceland, along with enhanced air policing, are telling examples of NATO commitment to collective defense and solidarity for all its member states. In 2012, the NATO Secretary General observed that “collaboration in air policing also exemplifies the kind of cooperation among Allies that will become increasingly important in the future, as we reconcile our security requirements with budgetary realities”. Ten years later, it still holds true.

Another factor, which limited allied support to development of air defense of the Baltic states, was the interpretation of the founding act of 1997 between NATO and Russia. During early years of the Baltic Air Policing, some of member states opted for a very limited, temporary air policing so as to not to provoke negative reactions of Russia and to stick literally to promises of not deploying major forces to the new member state territories (Lorenz, 2012). The discussion on burden sharing inside NATO raised the need for the Baltic states to contribute to NATO expeditionary capabilities to compensate for support to their air defense. The opponents of the Baltic Air Policing claimed that the threat in the region was marginal, and the Baltic states did not do enough for their own security to warrant additional allied support. For the supporters of the Baltic Air Policing mission, it was evident that it was crucial for the credibility of NATO collective defense. Russian aggression against Georgia in 2008 and the military exercises *Zapad* and *Ladoga* in 2009, during which simulated attacks against the Baltic states were rehearsed, raised allied support to the Baltic Air Policing mission. The pledge of the Baltic states to increase the support to the mission was also helped in the continuation of the Baltic Air Policing. One must however note that increased support to NATO missions also meant limiting budgets for national air defense capabilities of the Baltic states prior to 2014.

5. Air defense of the Baltic states after 2014

Russian aggression against Ukraine and the occupation of Crimea since 2014 has served as a turning point in thinking about the defense of the Baltic states. This translated into actions taken both by NATO and the Baltic states themselves. For NATO, collective defense returned as the number one priority and a unifying principle for actions taken by its member states. Immediate reinforcement of the NATO Eastern Flank under the framework of reassurance measures translated into enhanced Forward Presence, and for the air defense of the Baltic states, it meant the enhanced Baltic Air Policing. Enhanced air policing became a means for demonstrating the collective resolve of Allies and the defensive nature of NATO. It has served as a military tool for deterring Russia from aggression or the threat of aggression against NATO Allies. An inherent feature of enhanced air policing is its flexibility and scalability that allows for tailored response to changes in the security situation. Enhanced air policing offers also capability to send a strong, unambiguous message to all of the stakeholders. In practice, member states make additional air defense assets available to NATO to reinforce the Baltic Air Policing capabilities and, augmenting national air policing capabilities in other regions (NATO, 2021).

The post-2014 period has seen an increase in the number and scope of NATO military exercises directly related to air defense of the Baltic states. Rammstein Alloy exercise focuses on air defense missions in the Baltic region and is conducted on regular basis bringing allied fighters and AWACS aircraft to the Baltic states airspace and air bases. It is worth noting that Sweden and Finland air defense forces participate in the exercise. NATO regularly conducts exercises that involve deployments allied surface based air defense assets in the Baltic states. Tobruq Legacy exercises involve air defense assets from Lithuania since 2015, and this series of exercises is conducted more and more frequently on the territory of the Baltic states. It is also the case for bilateral exercises between the Baltic states and the US military. In 2017, the first deployment of long-range Patriot systems to Lithuania took place, and a year later, such systems made it to Estonia. Although Patriot systems deployments to the Baltic states were initially considered rather symbolic, it is fair to say that this paved the way to more regular deployments in the future. Limited deployment of surface based air assets to exercises in the Baltic states so far is critically assessed by a number of experts (O'Hanlon, Skaluba, 2019). Some of them argue that as long as the number of surface based air defense assets deployed to the Baltic states do not change the balance of power in a meaningful manner, it has no credible deterrent effect (Ploom, Šliwa, & Veebel, 2020)

The Baltic states provide substantial support to NATO enhanced Forward Presence and air policing. In June 2016, the Baltic states signed a new agreement with NATO on airspace management arrangements in support of NATO's Air Policing mission and other air activities in the Baltic Sea region. The agreement facilitates an increase in the number of air training opportunities in the Baltic region by improving civil-military coordination and ensuring the safe and efficient use of airspace. The costs of host nation support provided by the Baltic states to allied air defense fighters detachments deployed to the Baltic Air Policing mission are also notable. The US security assistance to the Baltic states through the newly created Baltic Security Initiative may alleviate this situation to some extent.

Recent years have seen substantial development of air defense capabilities of the Baltic states. Russian aggression against Ukraine triggered a rise in defense budgets and military modernization programs in all three Baltic states. Looking at projects directly linked to air defense, it is worth noticing developments related to the air surveillance and command and control elements of evolving BALTNET and decisions on procurement of surface based air defense assets by the Baltic states. The Baltic states are successfully developing the air surveillance and C2 network for air defense, based on experience gained with BALTNET project (NATO, 2019). Starting from 2020, the BALTNET Future Configuration is operational. The Baltic states agreed in 2019 to establish three separate national Control and Reporting Centers that will conduct air surveillance respectively in their territories, and allow for enhanced command and control of active air defense operations (Riigiteataja.ee, 2019).

Procurement of additional RBS 70 and Stingers by Latvia and Mistral air defense systems by Estonia were the immediate reaction of the Baltic states to increased military threat from Russia after 2014 (Dura, 2015). While this improved air defense against low flying air threats, the problem of medium range air defenses has not been fully solved yet. Lithuania became the only Baltic state that introduced a short range Norwegian Advanced Surface to Air Missile System (NASAMS) that provide limited capability of area air defense. The remaining two states are capable of providing only a very limited air defense capability to protect their ground troops (Ministry of National Defense, Republic of Lithuania, 2020).

6. Future of air defense of the Baltic states

Discussion on the future of air defense of the Baltic states needs to address any changes to security environment and evolving air and missile threat first. Russian aggressive and opportunistic activities will remain most likely the major source of instability in the Euro Atlantic region. Those activities will demand continuation of NATO adaptation and reassurance measures and will remain a key driver for the national defense efforts of the Baltic states. This will translate into continuation of Allied support to air defense of the Baltic states. The Baltic Air Policing mission will most likely remain authorized as enhanced air policing, which allows for a greater flexibility and responsiveness to any deteriorations in security environment. At some point in the future, the proposal of changing air policing to air defense mission may also be revisited (Reuters Staff, 2016). Rotational deployments of allied fighter force will raise the interoperability capabilities of the national air defense forces of the Baltic states. Increased costs of host nation support in the Baltic Air Policing mission will have an impact on the availability of resources to develop national air defense capabilities of the Baltic states. With the continuous nature of the mission, contributions of the Baltic states need to be considered as long-term ones.

The regular deployments of allied surface-based air defense assets to the Baltic states will continue as a part of exercises and bilateral defense cooperation. One of the proposals for that is to integrate air defense capability into the NATO battalion battle groups that rotate in the Baltic states (Harper, Lawrence, & Sakkov, 2018). This type of activities may increase in the future if Latvia and Estonia acquire short range air defense system. Although the permanent deployment of ground based air defenses to the Baltic states has not been publicly discussed yet, it may be the case in the future. A number of deployments of Patriot missile systems to Turkey throughout the recent decade suggests that a serious deterioration of security in the Baltic region may be a trigger for deployment of allied surface based air defense assets on the territory of the Baltic states. Such a move may aim at the prevention of the escalation of a crisis and provide NATO a greater freedom of action and security in the region. As the allied decision-making process is lengthy and complex, such crisis deployments are likely to be a part of bilateral defense cooperation between the Baltic states and sending nations rather than a NATO-integrated mission.

Development of air defense capabilities by the Baltic states will continue. The evolving nature of air threat will need improvements in the air surveillance capabilities (Kulik, 2020). Threat of unmanned aircraft systems and hybrid threats employing civilian planes demand better radar coverage at low altitudes (Cieślak, 2021). At some point, dedicated anti-drone systems may become a priority for national air defense efforts by the Baltic states. Fielding short range air defense systems by Latvia and Estonia at some time in the future is very likely (Metha, 2018). While immediate modernization efforts by those Baltic nations favor ground forces and capabilities required for high intensity conflict (such as long range artillery), such assets will need cover from air threats. Therefore, one may expect further procurements of very short air defense systems, but also some attempts to field more costly short range surface to air missile systems. The US assistance program to the security of the Baltic states envisages air defense as one of the priorities, so it is likely that this may translate into acquisition of the US surface based air defense weapon systems (Harper, Lawrence, & Sakkov, 2018). With limited defense budgets, the Baltic states will most likely not attempt to field long range surface to air missile systems. The costs are clearly prohibitive, and limited capacities would undermine the value of developing such capability by the Baltic states.

Conclusions

Air defense remains crucial capability for the Baltic states' security and defence. The case of the Baltic states is a telling example of the criticality of air defense for national security. It also shows the challenges that small nations face in developing credible capability to defend against air and missile threats. The lessons learned by the Baltic states suggest that for states with small defence budgets, even long-term efforts result in a limited air defense capability. The period before the Baltic states joined NATO saw some developments only to air surveillance capability, while the functions of air defense related to engagement of air threats could not be performed. Allied support to air defense of the Baltic states has significantly improved the situation. Since 2004, NATO provided the Baltic states with the capability to react to intrusions into their national airspaces and offered credibility of protection against air and missile threats. Russian aggression against Ukraine and the occupation of Crimea in 2014 triggered reinforcement of air defense of the Baltic states. Implementation of reassurance measures by NATO reinforced air defense posture in the Baltic states by enhanced air policing and intensified trainings of surface based air defense troops. Development of air defense was given priority in the Baltic states, and some improvements to surface based air defense capabilities have been achieved. Looking into the future, one can expect that the air defense of the Baltic states is destined to develop in coming years. While it may not be able to deal with all of future air and missile threats, it will be better prepared to inflict attrition to a possible aggressor and to contribute to overall military deterrence of the NATO's Eastern Flank.

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