

NATO IAMD Education and Training

Back to the New Normal

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Russia's air and missile attacks on Ukraine underscored the importance of Integrated Air and Missile Defence (IAMD) and, more specifically, Surface-Based Air and Missile Defence (SBAMD) as an essential part of NATO's Defensive Counter-Air (DCA) capability. As the military conflict continues, the looming question

hangs heavily on NATO's eastern border: are NATO SBAMD forces ready for action at a moment's notice? It is vital to the security of NATO that Air Defence (AD) operators are NATO mission qualified now because they must be ready to act and fight with little or no warning, as a crisis can quickly turn to conflict. After experiencing thirty years of air superiority in NATO operations, the change in threat perspective urges NATO nations to reconsider defence against air threats.

During the Cold War, NATO commanded air force units, which were on high-alert status. They had to adhere to a strict exercise and evaluation schedule to ensure the proper levels of readiness and preparedness to counter any surprise attack from the Warsaw Pact. Although the Cold War lies decades behind us, the essence of enabling a NATO-qualified AD is still the same. It is up to the NATO countries to regain these readiness standards of decades past, enabling a credible 'ready to respond' AD.

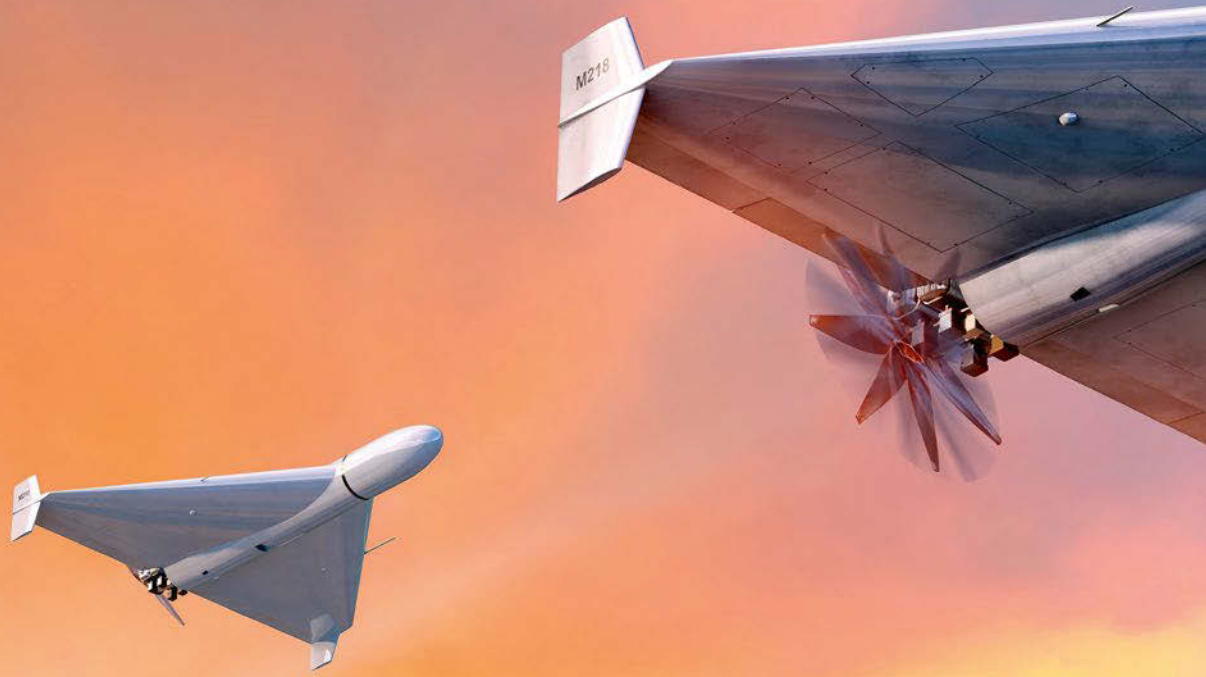


IAMD is a cornerstone of our security that requires continuous effort, investment, and dedication both in peacetime and crisis. In NATO, ensuring SBAMD combat readiness is a national responsibility. This article will give a better insight into the challenges and available tools to prepare NATO SBAMD. The Alliance has the required Education and Training (E&T) tools in its inventory, like the IAMD Common Education and Training Program (CET-P), and exercises like Ramstein Legacy (RaLy) and Joint Project

Optic Windmill (JPOW). But given that SBAMD is a national responsibility, how can the NATO nations sharpen, shape, and particularly use the existing tools most efficiently?

Background

IAMD protects strategic interests, territory, population centres and (deployed) forces against the full spectrum of air and missile threats. It is an essential and enduring mission across the spectrum of peacetime competition to crisis and conflict. In NATO doctrine,



IAMD falls under DCA and, as such, is an integral component of Joint Air Power and a core task for the Joint Force Air Component (JFAC). All NATO AD forces need to comply with the Allied Command Operations Forces Standards if we are to seamlessly integrate effects against a dynamic threat environment.¹

For IAMD, the total threat spectrum ranges from microdrones to fifth-generation aircraft, ballistic missiles, and hypersonic threats. IAMD includes all active measures to prevent a potential opponent from effectively employing weapons in or through the air domain. Holistically, IAMD consists of airborne (fighter) AD and SBAMD, which should complement, when applicable, offensive operations to reduce potential air threats. A mix of offensive and defensive capabilities provides credible deterrence but demands well-trained crews. They must operate under utmost concentration in a dynamic environment to neutralize various enemy threats and protect friendly assets.

Requirement: High Readiness

The United States (US) Army AD artillery has a long-standing motto: 'Air Defence, First to Fire!' It is as true

now as it was during the Cold War. Since the early 1990s, allied and non-allied operations have all started with an air dominance operation immediately followed by neutralizing the enemy's Command and Control (C2). This sequencing requires that AD must be able to fight in the twilight between crisis and conflict, with little or no warning. In such a situation, a combination of civil and military air procedures and command structures will be enforced, complicating time-critical operations.

SBAMD must be quickly deployable and under high readiness in peacetime, while in crisis or conflict must be able to sustain 24/7 high-intensity operations indefinitely. High readiness requires resilience and redundancy. On top of the high standard of training and readiness, modern SBAMD weapon systems have high-technical demands, both in terms of skilled operators and technicians and in terms of technological infrastructure.

During the Cold War, DCA was a standing NATO mission, and SBAMD forces were essential to NATO's DCA capability. An AD barrier from Norway to Türkiye encompassed surface and air-based AD systems integrated under an air commander. It protected the Alliance



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members against an assumed first air strike from the Warsaw Pact. AD forces could switch to 'war-mode' in minutes or even seconds. After the Cold War, the Alliance decommissioned the surface-to-air missile barrier and SBAMD capabilities diminished or disappeared with nations' desire to harvest the peace dividend. The air defence fighter's role atrophied to only air policing.

Within NATO, the JFAC commands and controls SBAMD as part of DCA. The national Control and Reporting Centres (CRC), which direct SBAMD forces, represent an essential node in the Air C2 architecture.² Technology and standardized procedures enable NATO SBAMD forces to fight side-by-side with airborne assets simultaneously without fear of fratricide. This performance is made possible by the JFAC, which is doctrinally responsible for planning the DCA defence design.

Protecting friendly aircraft is as essential as maximizing attrition to enemy air assets. Unfortunately, maintaining SBAMD forces in high-alert status can have deadly consequences. Operators will be under stress in ambiguous situations, urged to make a split-second decision. It could result in fateful incidents, as witnessed in the 1983 Soviet downing of Korean Airlines Flight 007

and the 1988 US Navy downing of Iranian Air Flight 655. A more recent instance is the downing of the Ukraine International Airlines Flight 752 near Teheran in 2020. In the last forty years at least twenty-five similar catastrophic mistakes occurred. One assumes these incidents occur when the taut nerves of military controllers, in a state of high alert, misread their instruments or deviate from (identification) procedures, erroneously identifying commercial flights as hostile. These gruesome incidents underscore the requirement for proper coordination and accurate identification, made even more challenging in the fog and friction of unfolding conflict.

In critical situations like the above, the decision to engage an aircraft or not will result from a split-second decision-making process since there will be no time to 'look it up' or ask for guidance. To achieve a satisfactory military skill level in the AD domain and prevent such tragedies, extensive E&T is needed down to the lowest tactical level. Since most of the work is done in crews, any change to the crew could affect the qualification standard. The complexity of the AD mission drives particular requirements for SBAMD systems and crews. AD crews must be capable of decentralized mission execution at any

time, under standing orders and procedures. Good tactics, techniques, and procedures, backed by a diligent E&T programme, develop the ability to act quickly and correctly in demanding situations.

National Responsibilities

After 1991, as the air threat to European NATO countries seemed non-existent, only a few nations maintained their SBAMD forces at NATO training standards.³ Some withdrew from the NATO evaluation (validation) programme, and others abandoned their SBAMD assets. The current events in Ukraine have changed this mindset.

Within NATO, it is a national responsibility to organize, train, and equip forces before transferring them under NATO command in crisis or conflict. Maintaining certain training levels is essential, and national training activities must lay the foundation of technical competence long before the needs of war. After recruitment, basic training, and weapon handling, the air warfare procedural education will produce a minimally trained AD soldier. From here, the AD soldier starts gaining expertise through advanced education, training, exercises, and evaluations. The evaluation completes the AD training with a NATO quality validation. Thereafter, it is a national responsibility to uphold that standard.

Training Opportunities

IAMD exercises are an essential link in the qualification chain of an AD capability. They practice the art of truly *integrated* air and missile defence by combining land, sea, and air-based systems into a single air defence design. National exercises like Tobruk Legacy, which morphed into the RaLy NATO exercise series, and JPOW (facilitating Steadfast Armour and Ramstein Century NATO exercises), are scarce and cherished events. JPOW takes place in odd years, with RaLy in even years.

Joint Project Optic Windmill is a German-Netherlands-led networked computer-assisted exercise with a simulated air and missile threat that focuses on doctrine, techniques, tactics, and procedures. It enjoys strong support from US EUCOM and the US Missile Defence Agency. JPOW provides IAMD training for ally and partner nations. Players from the strategic to tactical levels exercise their role in NATO's IAMD mission in a near-future (+five years) air threat scenario. By including a concept development and experimentation phase, which precedes the execution phase, it offers the opportunity to demonstrate, practice, evaluate, and validate different IAMD programmes and concepts that may require specific circumstances. A considerable part of NATO's IAMD procedures and parts of its current command structure was developed and evaluated during JPOW exercises.



Ramstein Legacy grew from a Czech Republic-Slovakian initiative into a NATO chapter 1 IAMD exercise. RaLy is a live exercise with a tactical focus to deliver a robust strategic message and improve readiness. RaLy aims to support SACEUR's Concept for the Deterrence and Defence of the Euro-Atlantic area. It incorporates several existing live NATO exercises into one AIRCOM-led exercise, which runs biennially. It uses a tactical data link network, live flying red assets, and can incorporate live electronic warfare. Typically, it also includes a live-firing phase. The exercise's host nation rotates and is generally at the NATO eastern border.

These two exercises are the only events where Air C2 crews, airborne assets, and SBAMD units train together in a challenging and realistic scenario. In these exercises, the action of one directly shows an effect on the other, and mutual trust building inherently leads to improved air defence. The involvement of a NATO JFAC in both exercises is essential because, in the European theatre, we will only fight collectively. It was 'fighting the NATO fight' during these two exercises that indicated the need for the CRCs and JFAC to streamline NATO Air C2 procedures and harmonize the actions of both SBAMD operators and Air C2 crews. These considerations led CAOC Uedem and the JAPCC to create the CET-P.

Common Education and Training Program

Driven by the challenges encountered during the above-mentioned exercises and smaller Air C2 training opportunities, it was clear that additional attention to the NATO DCA battle was required.

In April 2021, Commander CAOC Uedem recommended starting a NATO IAMD CET-P. With AIRCOM's full support, CAOC Uedem and the JAPCC created a framework for a Basic IAMD Training plan in close cooperation with the GE/NE Competence Centre Surface-Based Air & Missile Defence and the IAMD Centre of Excellence (COE). The CET-P Basic IAMD training focuses on the tactical level and contains lessons learned regarding NATO C2 tasks and responsibilities, SBAMD air planning, tactical data links, air reporting,

and current threat intelligence. The JAPCC hosted the first three training sessions at their facilities in Kalkar, Germany. The follow-up trajectory for the CET-P will take place under the responsibilities of the IAMD COE in Souda, Crete, Greece. In addition to this basic IAMD training, which has a tactical focus up to the CRC level, the CAOC E&T sections attend to the 'higher echelon' CET-P training, focused on Air C2.

Although basic training is a national responsibility, the CET-P initiative offers valued support to newcomers in the SBAMD realm and to forces that train to operate outside of NATO's area of responsibility or are unfamiliar with NATO procedures. Since CET-P training is scarce (two to three per year), the best efficiency is achieved by training the national trainers, thus enabling them to teach their respective national crews.

Quality Control

There is a more than justified emphasis on the quality control part of E&T to identify capabilities and highlight shortfalls. Quality control validates mission readiness or provides direction for securing it.

NATO's quality control of air entities resides with AIRCOM's Evaluations Division as 'SACEUR's audit team'. SBAMD and other air entities must adhere to the NATO Tactical Evaluation (TACEVAL) or Forces Evaluation (FORCEVAL) Standing Operating Procedures and Instructions, parts of the Allied Command Operations Forces Standards. These directives provide training guidance and evaluation criteria for tactical air units offered to NATO. As a reactive organization, NATO depends on swift responses and units must qualify before operations. AD units must be qualified before the nations offer them to NATO operations. This implies that all AD forces designated for any NATO response or reaction force should be NATO qualified before admission. Therefore, NATO members should strictly adopt and follow the NATO Allied Command Operations Forces Standards for their training.

In addition to the TACEVAL/FORCEVAL, SBAMD units can perform a NATO-evaluated tactical firing. This can be done from the NATO Missile Firing Range at Chania,



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on the Greek Island of Crete, or any firing range with a NATO-supported evaluation team. Performing a live firing in accordance with NATO standards is a challenge that provides a solid crowning accomplishment for the unit and its nation.

Conclusion

E&T is often undervalued and even easily downsized. Too often, a lack of proper E&T is recognized at the time of crisis when it is too late to adjust. NATO AD forces need to be ready today. Nations, supported by NATO, should take every available step today to ensure the availability of NATO-qualified, combat-ready SBAMD forces for a time when conflict may be upon us. The established E&T opportunities backed up by

NATO, national IAMD exercises, and the consequent evaluations constitute the framework for all SBAMD units to achieve the required proficiency levels. The readiness tools are still available and efficient, but we must use them. SBAMD forces are inherently defensive, they are logical to improve deterrence through strength. It is up to the nations to use these tools effectively and judiciously to ultimately increase proficiency, technical interoperability, and readiness! ●

1. Allied Command Operations Forces Standards, Volume II & III.
2. NATO Industrial Advisory Group, Report of Study Group 220, Chapter 7.9.3, '... need for distributed control if the GBAD becomes isolated from the higher echelon (CAOC or JFAC), the concept of distributed control empowers subordinates' commanders, GBAD organization and Operations Centre platforms to cooperate according to a pre-planned combat airpower through a resilient C2 architecture. C2 means will be congested and contested/vulnerable to Cyber and/or Electronic Attack'.
3. Ibid. 1.

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