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Air Power

Credible deterrence and defence call for superior air forces. NATO has realised that.

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NATO is considered to be the most powerful military alliance in history. An essential element of its power is the punch of its air forces. However, this element which is termed “air power” in expert circles, must not be seen as invariable. On the contrary, it has to be adjusted to present and future security policy challenges if it is to meet the demands associated with the deterrence of aggressors and the discharge of present mission-related functions. NATO has commissioned a study to find out how that can be achieved.

In their Warsaw Communiqué of July 2016, the heads of state and government of the NATO member countries grant a lot of room to the uncertainties and threats on the eastern and southern peripheries of the Alliance posed by governmental and non-governmental actors, military forces, terrorists, information attacks, cyber-attacks and hybrid attacks. Russia, which sees targeted aggression as an established tool for achieving political objectives, is referred to in the communiqué as just as much a challenge to the security of the Alliance as instability and terrorism in North Africa and the Middle East. This renders a renewal and reinforcement of the concepts of deterrence and collective defence all the more important.

Due to their range, speed, flexibility and high state of readiness, NATO’s air forces contribute a key share of the Alliance’s deterrence and defence capability. So what does the altered security environment imply for the Alliance’s air power? NATO Allied Command Transformation (ACT) asked this question after the 2016 Warsaw Summit and ordered the Joint Air Power Competence Centre (JAPCC) in Kalkar, Germany to find an answer.¹ In its following study entitled *Joint Air Power Following the 2016 Warsaw Summit – Urgent Priorities*, the JAPCC identified six chief categories in which a particular need for action is seen and which are presented in this paper.²

¹ In addition to Allied Command Operations (ACO), ACT is one of two NATO major strategic military commands. While ACO in Mons/Belgium plans and conducts all NATO operations, ACT in Norfolk/Virginia is responsible for the constant transformation of structures, forces, capabilities, doctrines and exercises. Thus it is also the driving force behind the future capability of NATO. ACT has command of 24 *Centres of Excellence*, of which the JAPCC, founded in 2005, was one of the first. It is responsible for working on concepts for adapting the air and space capabilities of NATO and of its members to the changing necessities.

² Joint Air Power Competence Centre (2017): *Joint Air Power Following the 2016 Warsaw Summit - Urgent Priorities*, <https://www.japcc.org/portfolio/airpowerafterwarsaw/>. The study does not have the character of a formal NATO document. Instead, it combines the findings of five experts, among them former generals and similarly high-ranking civilians, who have written six cohesive contributions. The study is meant to serve as a key source of information for a future NATO joint air power strategy that is currently being developed by ACT.

1. Deterrence and collective defence call for military strength

Superior air forces are a key prerequisite for deterring Russia as a potential opponent.³ If that deterrence failed, aircraft would also be the fastest tool available for countering a conventional Russian attack. This necessity was not a focal issue for many years. Instead, the air forces of numerous NATO members, above all those of the United States, played a crucial part in combatting the so-called Islamic State (ISIL) in recent years. As they did against Al-Qaeda and the Taliban in Afghanistan, they are now flying demanding missions over Syria and Iraq, but they are encountering no noteworthy threat either from the air or from the ground. It is precisely the difficult relationship with Russia, however, that makes it necessary for NATO's air forces to win out over a potential adversary who confronts them with full spectrum capabilities. On the one hand, asserting one's superiority against a tough adversary calls for early-warning capabilities that extend one's response time. On the other, fast and superior crisis response forces must be capable of fixing attackers as early as possible in the air and of winning out over them.

Optimising these two high-tech capabilities costs money, and funds must now again be increasingly poured into the forces in view of the current economic prosperity. The economic strength of the NATO nations does not in itself generate military strength, and it is military, not economic strength that is a key foundation of any deterrence.⁴ Armed forces cannot be well-equipped without adequate funding. Effective deterrence cannot be ensured without such forces being properly trained, fully operational and indeed assigned to NATO, that is to say, being fully available to NATO. The expectations that are linked to the concept of military strength are high. The forces have to be sustainable, robust, deployable, interoperable and capable of conducting operations covering the full range of conventional and nuclear deterrence operations. No value is fundamentally more important for NATO than coherence, that is to say, reliable cohesion, particularly during times of crisis. Potential opponents know that they have to weaken this sensitive spot if they want to undermine NATO's credibility. That is what Russia aims at when it brings potential nuclear counter strikes into play in the event of NATO mounting an Article V response. Such rhetoric is meant to weaken reliability within the Alliance. Joint military strength, in turn, is the most effective remedy, for strength generates confidence, and if you are confident, you exude credibility and are hard to intimidate.

2. Information is key

An important characteristic of air power is speed. This goes not only for the ground-based and flying systems themselves and their terminal effectiveness, but also for their ability to communicate and the availability, transmission, evaluation and use of information. Advanced and highly agile command and control capabilities are needed to carry out complex air operations hallmarked by speed, flexibility, range and short warning times. Effective joint air command and control (Joint AirC2) essentially requires reliable command, control and communication systems as well as integrated information, surveillance and reconnaissance systems in order to provide theatre information, detect changes in the situation early and so provide for a timely response. The security situation is changing rapidly, in particular in terms of the relationship with Russia. In addition, it has been realized that the cyber and information domain is growing in influence and that the utilisation of outer space is advancing. Thus, there is an urgent need not only to refine NATO's guidelines and concepts, but also to further develop its technical systems and some of its structures in order to maintain the Alliance's operational lead on potential opponents. These changes call for all member states to adopt NATO's standards, to share any information required and to provide well-trained military and civilian personnel for the command structures.

³ In this context, the term air capability includes not only air-to-air combat by attack aircraft, but also the engagement of ground targets from the air and ground-based air defence.

⁴ The authors assume that the total annual gross national product of all the NATO member states will be 36 trillion US dollars. The European states have relied upon the United States for too long, while the US are now focussing increasingly on China, North Korea and the entire Pacific region. The European NATO members will be unable to avoid intensifying their efforts. So they in particular are taken up on their promises by the authors and are urged to improve their air-to-air refuelling, strategic airlift, UAV and reconnaissance capabilities as well as means to provide air support for special forces.

3. Air power calls for strength from the ground

The authors of the study emphasise that effective ground-based missile defence systems provide an essential contribution to NATO's integrated air and missile defence⁵. If serious consideration is given to NATO's 360-degree approach, according to which threats exist at all escalation levels and can come from various geographic directions, it is no longer sufficient for NATO to focus, as at present, on so-called theatre ballistic missile defence (TMBD). TMBD refers to the capability to mount a defence against short or medium-range ballistic missiles that are both launched and targeted within a theatre. They have a range of about 300 to 2,500 kilometres. Yet the threat situation noted in the Warsaw Communiqué calls for a capability to mount a defence not only against these tactical ballistic missiles, but also across the spectrum of ground-based air and missile defence (SBAMD), to be capable to intercept long and medium range missiles.

The JAPCC does not intend to use its study to primarily demand the fielding of new missile defence systems at that upper end of the defence capability scale. For the US has in the past few years significantly increased its contribution to NATO's missile defence capabilities by deploying warships with this capability (Aegis destroyers) in the Mediterranean Sea since 2011 and constructing static Aegis missile defence platforms in Romania (completed in 2016) and Poland (scheduled for completion in 2018). The authors are more concerned that the political and military strategic leaders in NATO should assume joint responsibility for the entire spectrum of integrated air and missile defence. This just as much includes the specification of alert times and sustainability targets as it does the possible transfer of national responsibilities that are mainly required because of the short time available to respond to ballistic missile attacks. The plans that need to be developed must comprise standardised rules of engagement as well as active and passive protection measures for NATO's missile defence units. The task of adapting the entire spectrum of SBAMD to the rise in requirements will call for an expansion in the training that the relevant units undergo, primarily in the form of exercises in which operational forces from various sectors of the spectrum interact. This will be the only option available to them for practicing how to operate jointly across the defence spectrum, from ground-based short-range air defence to long-range ballistic missile defence, in a way that they might have to in case of an emergency.

4. Air power counters hybrid threats

The annexation of the Crimean peninsula, the war in Eastern Ukraine, the wide range of terrorist attacks by Islamic fundamentalists and the considerable successes achieved for a while by the ISIL are all events that have confronted single member states with hybrid attacks in recent years. Hybrid conflicts and hybrid warfare are the results of a highly complex and adjustable combination of conventional and non-conventional means. They are characterised by overt and covert operations carried out by such governmental and non-governmental actors as armed forces and militias, terrorists, criminal organisations or individuals and/or specific actors in the cyber and information domain. One of the biggest challenges results from hybrid attacks often being very hard to track, so that it is possible for the attackers to remain covert or to divert suspicion from themselves. Hybrid means range from all kinds of criminal activities, through (dis)information campaigns and propaganda, cyber and network attacks and the execution of terror attacks to the use of the latest war assets and weapons of mass destruction.

Hybrid air-delivered munitions, for instance, range from amateur-like unarmed and armed mini UAVs to high-tech manned and unmanned air systems with a very low radar signature due to the incorporation of stealth technology. Conceivable hybrid threats are repeated and wearing airspace violations, the testing of alert measures, the activation or mere deployment of air defence systems and the conduct of attacks on space-

⁵ NATO Integrated Air and Missile Defence System (NATINAMDS) refers to all measures and capabilities that are apt to reduce or neutralise the enemy air and missile threat. It is based on the timely detection, identification and, if necessary, engagement of enemy manned and unmanned airborne weapon systems such as UAVs, helicopters, fighter aircraft and ballistic missiles. NATINAMDS ranges from air policing over NATO territory in peacetime to complex air war operations.

based data and information systems or airspace surveillance infrastructure. Highly specific hybrid air threats are aircraft hijackings for the purpose of carrying out terrorist attacks (so-called renegade cases) and military swarming, an activity by which the enemy's air defences are overstrained and thus saturated, for example by the use of large numbers of mini UAVs. NATO is even of crucial importance for the military protection of national airspace in peacetime. The member states maintain military airspace surveillance stations and may order fighter aircraft to fly sorties aimed at clarifying the situation and, if applicable, at taking defensive action (so-called quick reaction alert elements). This protection might be even more effective if success were achieved in lifting all border area restrictions and in establishing NATO-wide standard procedures for renegade cases. This admittedly ambitious legal step would considerably increase the deterrent effect of air policing. Moreover, the NATO airspace surveillance system has not yet been adequately adjusted to slow mini aircraft, which currently often remain under the detection threshold of the radar stations and are unsuitable for engagement by fighter aircraft. Both these disadvantages could be countered by NATO making improvements to its radar technology and maintaining appropriate remedies, in the form of, say, attack helicopter quick reaction alert elements. Finally, the fact that NATO's high-tech air power is also particularly susceptible to cyber-attacks means that investing in cyber resilience is a matter of major importance.

An invocation of NATO's Article V could quickly turn air policing into a firm air defence mission. In that case, the Alliance's air forces must not only assume the role just described, but also perform the tasks of planning and conducting appropriate offensive and defensive campaigns across the full spectrum. Initiating this move, however, above all poses the need for hybrid attacks to be reliably attributed, for agreement to be reached on when they become acts of war and for rules of engagement to be developed on whose basis air assets can be employed in such a case. In an emergency, expert teams at the Allied Joint Force Commands in Brunssum and Naples are expected to make sure that the supreme commander is offered the right air options.

Things do not work without partnership...

In addition to internal coherence, the cultivation of external partnerships is a second pillar NATO has in the cooperation strategy that provides a key contribution to its security. Today the Alliance interacts at varying levels of intensity with 21 states under the Partnership for Peace (PFP) programme, with the Gulf Cooperation Council (GCC) with its six members as well as with five so-called enhanced partners in enhanced partnerships, among which Sweden and Finland play a special part in terms of security.

With an eye to NATO's air forces, the authors of the JAPCC study do not point so much to the current deficiencies in the internal and external partnership fabric, but rather to the scope for further deepening. One demand they make is for an improvement in the command and control capability of the Allied Air Command in Ramstein and the headquarters in Brunssum and Mons by expanding the 24/7 situation evaluation capability. Training and advisory teams should assist external partner states in optimising their air forces and synchronising them with NATO. Tailored advisory packages for the GCC and enhanced partners should further consolidate the relationships with them and sound out options for future operational coordination as well as host nation support in an operational contingency.⁶ The authors conceive that a new NATO air combat centre to which external partner nations could contribute on the basis of their own needs could further improve training and exercise activities. With regard to the external partners, a matter of particular importance is the need to improve interoperability and data exchange so as to enhance the coordination of joint air operations. Even a NATO partner cooperation wing would be conceivable.⁷

⁶ Host Nation Support (HNS) is the support provided to units deployed in another country. HNS, which is provided not only in the form of fuel, protection, medical support, but also in the form of easing of visa and customs restrictions, and related issues, makes military operations considerably easier. Currently, Jordan, for example, provides HNS for the German wing and other wings operating from Al Azraq against ISIL.

⁷ NATO as an organisation has so far only resorted to means that have been temporarily provided by its members. The only exception is the AWACS wing in Gelsenkirchen (E-3A Component), which is directly and permanently subordinate to NATO.

And not without industry either...

A special type of partnership within NATO and between the Alliance and external partners is multinational cooperation for the purpose of developing and procuring defence goods. At a time when innovations outstrip each other at an ever increasing speed, the technical demands on military equipment, and with them the costs, are also rising continuously. Smart cooperation in logistics, development and armament is one way to remain technically progressive and still keep the costs for each individual partner in check. In the Conference of National Armament Directors (CNAD), NATO has a body that began promoting armaments cooperation back in 1967. Since 2014, NATO's Framework Nation Concept (FNC), a somewhat unwieldy term, has concealed the intention as regards armament that individual members team up with a cognizant partner in voluntary projects. The authors of the study call for this concept to become more efficient as an armament cooperation platform while remaining closely and complementarily linked to EU initiatives, and indeed for compatibility with EU projects to undergo further improvement.

Focusing on NATO air power capabilities, the JAPCC points out that cooperative development must be concentrated wherever possible and deduces specific innovations that are required due to the impact of the hybrid and digital threats described. They include detectors of and weapons for combatting mini and swarm UAVs, new aerial platforms for improving the capability to counter cyber as well as electronic attacks and more effective protection of friendly command, control and communications facilities against cyber-attacks. It would be wise to maintain a consolidated and prioritised list of the key capabilities in need of development. Innovations cost money and best flourish in an industry-friendly environment. It is not least for this reason that the authors reiterate the fact that numerous NATO members are still investing significantly less than the two per cent of their annual gross domestic products in their defence announced to be reached by 2024 and also call for procurement bureaucracy to be confined to what is really needed.⁸

Conclusions

The study contains an in-depth evaluation of the necessities resulting from the findings established at the Warsaw Summit, and it presents specific conclusions deduced for NATO's air power. The circumstance that each text of the document, which is designed as a collective volume, is self-contained is not a weakness but rather a strength, for the very fact that the five authors identify similar tendencies in spite of all the differences between their individual subjects. In addition, their pointing into the same direction lends weight to their demands at large. Russia's hybrid and increasingly antagonistic policy is seen as a key and long-term challenge for NATO, ranking even higher than any difficulties it might have on the southern periphery, and adequate joint air power must be prepared for this if it is to remain a credible factor in NATO's deterrence and defence. The authors conclude by listing 150 tasks and requirements prioritised by cost and effectiveness. Although neither the study nor the conclusions have the character of a formal NATO document, the authors have provided a key foundation for such a document – a NATO air power strategy. Each authority responsible for making decisions in the field of security policy and drafting security policy is well advised to give good consideration to the JAPCC's arguments.

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⁸ 20 per cent of those two per cent are, in turn, expected to be invested in the defence sector.