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NATO/EU Air Transport Training Exercises and Interoperability



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Comments and queries on this document should be directed to the Air Operation Support (AOS) Branch, JAPCC. Please visit our website www.japcc.org for the latest information on JAPCC, or e-mail us at contact@japcc.org.

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FROM: The Executive Director of the Joint Air Power Competence Centre (JAPCC)

SUBJECT:

Air Transport Training, Exercises and Interoperability Study

DISTRIBUTION:

All NATO Commands, Nations, Ministries of Defence and Relevant Organizations

It is my pleasure to present to you this JAPCC Air Transport Study. At its heart, this is an update to the study we produced in August 2011, 'NATO Air Transport Capability - An Assessment'. This JAPCC study examines the current status of interoperability and the multinational training opportunities across Europe. Our intent in this update is to provide a comprehensive reference manual for basic and advanced training opportunities available to Alliance mobility forces.

Interoperability is the name of the game with regard to global operations and this certainly applies to Air Transport within NATO. From local exercises to sustained expeditionary operations, the ability of nations to work with each other with minimal or even no barriers is paramount. While being constantly sought after, interoperability is still not a standard and the nations must continue to work to make it so.

It is our hope that through this study and the implementation of its recommendations, NATO Air Transport will gain enhanced interoperability to support both global operations and the safety and security of Alliance and partner nations. Please direct all questions and feedback to the Air Transport subject matter experts at at@japcc.org. We look forward to your thoughts and questions.

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CHAPTER 1

Introduction

'If I had a wish list, it would be more ISR capability, more airlift or more rapid global mobility, particularly with respect to air-to-air refuelling. I encourage things that will give us better interoperability among equipment that we have.'¹ General (ret.) Frank Gorenc, USAF

Air Transport (AT) allows a military to deploy, employ and redeploy forces and equipment quickly, sustain those forces, and support effective application of military effort. The speed and flexibility of airlift make it the preferred means of transport in support of many military and humanitarian operations.²

1.1 Objective

The objectives of Air Transport are contained in the preface of the Allied Tactical Publication (ATP) 3.3.4 Volume 1 as follows:

1.1.1 'AT enables the global, regional, and local movement of personnel and materiel, both military and civilian. With acknowledged limitations in payload compared with other modes of transport, it is a fast and versatile way to deploy, sustain, and redeploy forces.³

1.1.1.1 'AT is a fundamental enabler of rapid movement of forces especially when ground threats or terrain features or conditions (weather or security) hamper freedom of movement. Due to its quick reaction, speed of execution, and global range, AT also offers the most effective means to enable and sustain the rapid, even decisive, projection of air power to distant theatres and remote locations.'⁴

1.1.1.2 'AT operations range from the small-scale insertion of special forces to full-spectrum airborne operations, which enable concentration of combat power at high tempo. Moreover, a credible capability to conduct airborne operations will force an opponent to reserve and confine a number of forces in order to counter this potential threat to its vital assets. An airborne operation capability constitutes an important element of coercion, diversion and surprise.'⁵

1.1.1.3 'AT is vital for aeromedical evacuation from austere locations. Where risks to life in combat are high, intra- and inter-theatre AT strongly underpin the moral component of fighting power; it is often the only way to get wounded soldiers to specialized medical support in time to administer life-saving treatment.'⁶

1.2 Aim and Scope

1.2.1 This AT Assessment is an analysis of the most current programmes for AT training, standardization and interoperability and examines the appropriate range of AT training, from initial to advanced, that the Nations are currently supporting collectively. This study provides a practical example of how to implement the Smart Defence and/or Pooling & Sharing concepts through common AT training initiatives under the NATO/EU umbrella which could fill existing gaps and serve as a cornerstone for NATO AT standardization and interoperability improvement while avoiding duplication of effort.

1.2.2 Although this study focuses on efforts within Europe, the findings and recommendations are applicable to the entire Alliance. The 2011 JAPCC AT study primarily analysed NATO's current and future AT capability but did not highlight training, exercises, or interoperability.⁷ Also, the previous study looked at Air Transport solely from the NATO perspective. It did not go into detail on the important work the European Defence Agency (EDA) and European Air Transport Command (EATC) are doing to improve AT for their member nations and ultimately for the Alliance. For the purposes of this study, AT refers to both tactical

and strategic fixed-wing AT but does not address the important role helicopters and tilt-rotor assets play in air logistics.⁸

1.3 Methodology

1.3.1 The information in the study was gathered at various NATO, EATC and EDA meetings and through national responses to a JAPCC questionnaire. This questionnaire was sent to the Air, Mobility and other relevant National Military staffs in the 28 NATO Member Nations. The questions covered a number of topics including AT training, exercises, and interoperability. (A copy of the questionnaire and a summary of the responses are provided in Annex B). Recommendations did not have to be proposed by more than one Nation to be considered noteworthy. Rather, they are included based on their merits and possible effects on future operations.

1.4 Classification

1.4.1 This Assessment has been compiled from open sources, previous studies and active participation in different meetings. It therefore carries no security classification and is releasable to the public.

- Defence News Interview: USAF Gen. Frank Gorenc by Aaron Mehta, http://www.defensenews.com/story/defense/2015/03/10/interview-usaf-gen-frank-gorenc/24701435/
- 2. Definition reported in the Allied Tactical Publication (ATP) 3.3.4 Volume 1.
- 3. Ibid. 1.
- 4. Ibid. 1.
- 5. Ibid. 1.
- 6. Ibid. 1.
- 7. Aug. 2011 NATO Air Transport Capability study, p. 2.
- Rotary Wing doctrine is partially managed by the MCLSB and it is a little bit more land oriented. To cover the role of helicopters and tilt-rotor assets play in air logistics would require a dedicated study.



CHAPTER 2

AT Standardization in Multinational Cooperation through Training, Projects and Agencies

2.1 Introduction

2.1.1 Historically, NATO has based its standardization and interoperability on the Standardization Agreement Process. This process has resulted in more than 30 documents related to AT (well known as STANAGs), many covering similar issues. Due in part to the necessity to search multiple locations and the duplication of coverage, the sheer volume of dispersed information has not aided cooperation amongst Nations. With the NATO AT Working Group's active intervention in the last several years, the Nations have consolidated the STANAGs into three main documents that will contain all the information related to AT. This process has simplified the process of developing interoperability in AT.

2.1.2 From its very beginnings, NATO has had a strong standardization and interoperability process and structure for combat air forces (i.e. fighter aircraft). Since logistical functions (under which AT aircraft and roles largely fall) have historically been predominantly national, this has not been as true for AT forces. Even with the large number of STANAGs mentioned above, the structure to enforce such standardization processes in AT (such as the TACEVAL for combat forces) has not been implemented with the same rigour by NATO. In the absence of NATO assuming responsibility, several multinational initiatives have been established and have provided products and training which have made progress in NATO AT standardization. These initiatives, programmes, and associated organizations currently enable all European Nations – even those with a limited number of AT aircraft - to share the burden with the larger contributors whilst informing procurement strategies and improving efficiency amongst existing Alliance inventories. A secondary effect of this multinational approach is to enhance cohesion, interoperability, and standardization across

participating nations, most of whom are Alliance members. Most of these initiatives were covered in the NATO Air Transport Capability Study (August 2011)¹.

2.1.3 Many deficiencies in NATO's AT capability are being addressed by groups such as the EDA and EATC. However, many issues remain unresolved at the NATO level. There is still work in the areas of training, exercises and interoperability that needs to be done to harmonize the initiatives started by Allied nations and other Non-NATO organizations. Closer cooperation and coordination between NATO and organizations like the EDA and EATC will significantly enhance NATO's current AT capability and allow Alliance members and partner nations to achieve a higher level of interoperability. Real-world operations present additional challenges, because if NATO needs AT assets they have to refer directly to national chains of command, which can be problematic if the nations themselves have ceded day-to-day authority for their assets to an international organization such as EATC.

2.2 AT Standardization through Projects and Training

2.2.1 Airlift training inside the Alliance has traditionally been left to the Nations. While the fighter community has engaged for decades in training its aircrews to operate together, the AT community has only recently begun. Furthermore, coalition operations are increasingly becoming the rule rather than the exception. For this reason, European organizations such as the EDA and the EATC have responded to the lack of training and standardization by establishing several training initiatives. The driving forces behind these training initiatives are consistency, standardization and promoting common procedures and interoperability among the European Nations belonging to the European Air Transport Fleet (EATF)² project (and to the NATO Alliance). The vast majority of EATF assets are currently part of NATO's inventory³. The strong need for standardized training at the operational level pushed the EATC and NATO to support these EDA initiatives with manpower and operational expertise.



2.2.2 EATF Project. At the time of the 2011 study, the EATF Project was just a concept created as a result of an EDA initiative and accepted by the signatory nations of the EATF with a Programme Arrangement (PA) in March 2012. The EATF Project is designed for the provision of airlift in the European Union via a flexible and inclusive partnership for national/multinational military air transport fleets and organizations. To do so, it addresses the way different air transport assets are acquired, operated, supported and managed to ensure these are done in the most efficient way possible. The long-term vision of the EATF Project is to establish a robust network linking various European air transport entities and aiming at the efficient employment of all present and future air transport capabilities. An Ad Hoc Working Group on Operations and Training (AHWG O&T) was created to deal with all issues regarding airlift operations, including training. The most important topics under the AHWG's purview are:

- European Air Transport Training (EATT);⁴
- European Advanced Airlift Tactics Training Course (EAATTC);⁵
- European Advanced Tactical Instructor Course (EATIC),⁶
- European Air Transport Symposium (EATS).⁷

2.2.2.1 European Air Transport Training (EATT).

The first major training initiative from the EDA was the EATT. It is a pooling and sharing initiative designed to train crews to an appropriate level of interoperability. It is the only multinational air transport event in Europe that includes Intel, Maintenance, Aeromedical Evacuation, Combined Air Terminal Operations and Cross Paratroopers⁸ training. The first Multinational Air Transport block training was held in Zaragoza (Spain) in June 2012 using a tactical scenario reflecting possible real world situations. The exercise comprised an intensive flight agenda, including tactical navigation, formation flying, cargo and personnel airdrop, Composite Air Operations (COMAO) and assault landing. This unique exercise has become an annual event and can be considered a flagship example of multinational air transport training.

2.2.2.2 European Advanced Airlift Tactics Training Course (EAATTC). EDA designed this course as a European alternative to the USAF's Advanced Airlift Tactics Training Course (AATTC) initiative, which airlift crews from Allied nations have attended for decades. The European Member States were seeking more economical ways to provide their crews with this much-needed training and now benefit from high level training closer to their home bases, saving the cost of a trip across the Atlantic. The course aims to achieve a higher level of interoperability between airlift crews from different nations and increase harmonization of advanced tactical training, leading to higher effectiveness and survivability in operations. It takes crews into a theatre deployment mindset, exposing them to air-land and airdrop missions in a tactically challenging environment. Designed to provide crews with academic as well as flying tactics and procedures training, the course uses missions of increasing complexity, culminating in low-level flying with air-to-air and surface-to-air threats. Three main courses are offered: single ship, multiple ships and night vision goggles. Instructors for the course are provided by Belgium, Germany, Spain, France, Italy, and the Netherlands.

2.2.2.3 European Advanced Tactical Instructor Course (EATIC). From the very early stages of EATT/EAATTC project, there has been active discussion about the qualifications needed to be an EATT mentor or an EAATTC instructor. Finally, a course was created to establish a pool of standardized instructors. Regardless of the excellent backgrounds of instructors offered to the course, it was acknowledged that common training was necessary to reinforce teaching skills and their knowledge of the EAATTC syllabus. The course is aimed at giving selected instructors expertise on Tactics, Techniques and Procedures (TTPs) and knowledge of different aircraft and associated mission capabilities to harmonize and standardize training provided during the EAATTC. The course helps Instructor Pilots and Navigators develop instructional skills to assist crews with flight preparation, support and feedback while evaluating the crews on all aspects of the mission. The EATIC course is now hosted at the 46th Air Brigade in Pisa (Italy). The course is designed and run by instructors from the nations that attend the EAATTC.



2.2.2.4 European Air Transport Symposium (EATS).

The focus of this meeting is on improving operations and training from the operators' perspective. The delegates discuss operational and training challenges with the objective of tangibly improving air transport interoperability. The symposium is organized by EDA every year. The location is agreed every year during O&T AHWG meeting.

2.2.2.5 European Tactical Airlift Centre (ETAC).

Several nations participating in the above exercises and events agreed to establish a permanent centre in charge of organizing different training activities within Europe. This centre will be in Zaragoza, Spain. At the time of publication, the legal framework is under development and several nations have signed an interim Technical Agreement (TA). If a sufficient number of nations sign the TA, the centre could open by the end of 2016. The ETAC will work to enhance transport capability through the pooling and sharing of experience, training opportunities, organizational costs, and the development of agreed common TTPs to better meet the challenges of flying transport aircraft in the joint and combined environment.

2.3 Standardization through Multinational Agencies/Initiatives

2.3.1 In the 2011 study, we analysed multinational initiatives, programmes and associated organizations, some of which have evolved in the last five years.

2.3.2 Movement Coordination Centre Europe (MCCE). MCCE operates via a programme called the Air Transport, Air-to-Air Refuelling and other Exchange of Service (ATARES), which provides a framework facilitating mutual support in the realm of air force activity through the exchange of services instead of financial payments. For example, if one MCCE Nation carries the goods of another, the second nation would 'owe' comparable airlift or AAR services back to that Nation. The MCCE uses C-130 flight hour costs as a baseline and has a formula that is applied if another airframe is used. In 2011, 25 nations participated and in 2015 two more nations decided to join this organization. One challenge faced by the MCCE is that today the ATARES TA is signed only by 22 nations belonging to the MCCE, which complicates operations with the five non-signatory MCCE members.



2.3.3 European Air Transport Command (EATC). In

2011 four nations established the EATC with the intent of providing voluntary Europe-wide command and control of military AT, Air-to-Air Refuelling (AAR) and Aeromedical Evacuation (AE). Today EATC plans, tasks, controls, and reports on missions on behalf of seven nations, also acting as a facilitator in planning and executing international training events.

2.3.4 The remaining organizations and initiatives described in the previous study have not significantly changed since that time.

2.3.5 A summary of current training opportunities and the nations to which they are currently available is presented in Annex C. A summary of multinational organizations and the nations which belong to them is at Annex D.

2.4 Future Opportunities

2.4.1 In the future, all training opportunities under the EATF PA will be available for transport pilots under the direction of the ETAC. Under the guidance of EDA, most of the European Nations have worked together to develop common and robust training for the AT community. NATO should continue to support this initiative since the entire alliance will benefit from those activities. A good example is what we have inside the Fighter community with the Tactical Leadership Program (TLP). JAPCC will continue to act as a liaison between EDA, EATC, and NATO to mitigate gaps in AT training and increase standardization among nations, but NATO Command Structure (NCS) organizations should also be directly linked to the various European events and organizations.

2.4.2 To summarize current European AT training offerings, at the time of publication the following exist:

- EATT: One per year, in different locations decided by the participating nations.
- EATTC: Four per year, typically two in Zaragoza (Spain), one in Plovdiv (BGR) and one in Orleans (FRA).
- EATIC: Four courses per year, hosted in Pisa (ITA).
- EATS: One per year, in different locations.

2.4.3 NATO will continue to rely on the individual member states to provide the Alliance AT capability. The real challenge is to ensure all organizations can work collectively and at an appropriate operational tempo. Concern remains that, while these models are proven to work in the context of peacetime training and exercises, their utility in the face of the inherent risk of actual operations may be constrained by a lack of will and consensus. In case of urgent need, NATO will again contact the individual nations.

- 1. Aug. 2011 NATO Air Transport Capability study Chapter VII.
- 2. All the initiatives are going to clarify in this chapter.
- NATO itself does not 'own' any Strategic or Tactical Air Transport assests but is reliant upon contributing nations.

- 6. Ibid 2.
- 7. Ibid 2.
- 8. Paratrooper from one nations who will jump from another nation aircraft.

^{4.} Ibid.

^{5.} Ibid 2.



CHAPTER 3

Interoperability

3.1 Introduction

Within NATO and the European states, national defence budgets continue to be constrained. Not surprisingly, this is driving a decrease in AT fleet size and a corresponding reduction in the number of AT flight crews. Unfortunately, the costs of aircraft modernization continue to grow, making pooling and sharing of resources amongst the Allied nations imperative. Without interoperability, real savings through cooperation will not be realized. Interoperability goes far beyond operating the same or compatible equipment. It extends to having common Command and Control (C2), communications structures, operational and tactical procedures (for drop or Landing Zone), as well as for cargo, passenger, and airworthiness regulations. Many organizations like NATO, EDA and EATC have worked tirelessly to harmonize national differences and build interoperability, but national and

political interests and sovereignty concerns have held nations back from achieving their full collective potential. Hopefully, these roadblocks to cooperation and interoperability will be removed before it is too late to defend against or react to threats. As an Alliance, we succeed or fail together; our collective success must have its foundation in interoperability.

3.2 Command, Control and Communications

3.2.1 A key factor in interoperability is the ability of the NATO Command Structure (NCS) and National C2 structures to communicate, coordinate, and control AT assets and missions.

3.2.2 C2. The EATC is an excellent example of nations pooling their AT C2 resources into one combined multinational command. The EATC has gone to extraordinary lengths to harmonize differing national C2 procedures into a collective C2 structure that rarely uses national 'red cards'. This type of unified C2 is much more difficult for the Alliance to replicate

because AT is seen as national business even during many NATO operations. As reported in the previous JAPCC AT study, nations often hold back their tactical AT assets to support their own interests and consequently lose any efficiency that could be gained by pooling AT resources to meet the collective need. To aid in the C2 of AT assets supporting NATO operations, AIRCOM has instituted an Airlift Coordination Cell (ALCC) in the NATO Air Operations Centre (AOC) structure. This concept was successfully tested in Exercise RAMSTEIN AMBITION 2015; however, it is easy for nations to transfer C2 of aircraft on paper to NATO. 'Real hardware' and personnel transfers have yet to be tested.

3.2.3 Communications. If nations are to coordinate AT actions and missions, they need to be able to communicate with each other's C2 systems. However, many nations have incompatible communications systems and must rely on telephone and non-secure email communication systems. The Movement and Coordination Centre Europe (MCCE) created the European Planning and Coordination System (EPACS) to help nations exchange excess AT and AAR capacity or request support from other nations. The EATC created the Management European Air Transport (MEAT) application to coordinate EATC AT requests and requirements. These systems have the ability to work together, but not all nations use them to their full capability. Also, there is no current link between these systems and NATO C2 communications systems. Ideally, Air Command and Control System (ACCS), NATO's long-anticipated replacement for Integrated Command and Control (ICC) system, would have the ability to interface with these systems as well as national C2 systems; however IT, monetary, and security issues are preventing further integration. Since ACCS¹ is behind schedule, it is doubtful any new improvements or enhancements will be added to this system until it is finally fielded.

3.2.4 Intel and Tactics Information. The sharing of Intel and tactics information is likely the hardest hurdle for nations to leap when coordinating AT activities. It is imperative for nations to classify AT-related protected information at a NATO classification

level as much as possible so Allied nations can share critical information more easily. Many nations are quick to classify information at their national level without adding a caveat that it is releasable to NATO. Also, if NATO nations are to be fully interoperable, using common aircraft and defensive systems, consideration should be given to developing tactics releasable to and usable by all NATO nations. This ensures much easier training and participation in exercises and operations together. Pre-mission planning and post-mission reporting and debriefing would be much more beneficial to all if Allied participants had fewer limitations on what they discussed. Perhaps the most pressing danger is that in a real operation with a hostile and dynamic environment critical information may not get passed from one Ally to another in time to prevent the loss of a crew or damage to an aircraft. Nations should classify information at the NATO level or add releasable to NATO caveats so valuable intelligence and tactical information is immediately available to the NATO nations participating in operations.

3.3 Procedures

3.3.1 Interoperability of AT forces from Allied Nations depends on crews following a common set of procedures, to include formation, air land, air drop and loading/unloading procedures.

3.3.2 Developing Common Procedures:

3.3.2.1 Current Status. As stated in para 2.1.1, the NATO AT Working Group (ATWG) has diligently worked to harmonize and consolidate about 30 AT Standardization Agreements (STANAG), Allied Tactical Publications (ATP), and studies into 3 new AT ATPs: ATP-3.3.4.1(A), Tactics, Techniques and Procedures for NATO Air Movements; ATP-3.3.4.3(B), Tactics, Techniques and Procedures for NATO Air Transport Operations; and ATP-3.3.4.4(A), Tactics, Techniques and Procedures for NATO Airborne Operations. The members of the ATWG approved the final drafts of these ATPs at its May 2015 meeting and forwarded them to the NATO Standardization Office (NSO) to enter the ratification process. These new ATPs could be ratified by the nations by the end of 2016 if not earlier.



3.3.2.2 Future Work. Although the titles of these ATPs would suggest that they are Tactics, Techniques and Procedures (TTP) manuals, they are very basic in nature and not as specific or detailed as many national or aircraft specific TTP manuals. These ATPs are more like procedural guidance because the nations are hesitant to adhere to more specific common AT tactics and techniques. As initially identified in our 2011 AT study, NATO has yet to develop an AT TTP manual similar to the guidance for Fighter assets in the Tactical Employment Manual Allied Command Operations (ACO) 80-6. The EATC has developed a more detailed TTP booklet for the crews of its member nations. The NATO ATWG should consider using the work the EATC has done as a basis for a NATO AT TTP manual that could be added to ATP-3.3.4.3 as a Standards Related Document (SRD). Groups like the EATC are developing other AT-related guides and they could be added as SRDs as well. These guides will be discussed more later.

3.3.3 Formation. It is vital to keep formation skills fresh in our AT crews because formations allow more aircraft to be massed together for airdrop, mutual threat support, escort or jamming support or to meet time and airspace limitations. Multinational formations require precise mission planning and detailed briefing by the crews involved. ATP-3.3.4.3 makes little

mention of formation flight except that it must be thoroughly briefed. Formation procedures are typically detailed in aircraft-specific national guidance and this guidance may be quite different from one nation to another. Many nations have adopted or based their own formation procedures on those of Allied nations with large AT fleets or manufacturerprovided guidance. Just as flying in formation with similar aircraft requires specialized manuals and standardized procedures, formation flight of dissimilar aircraft makes these requirements even more necessary. Small in-flight differences can usually be worked out by aircrew flying similar aircraft, but if differences in aircraft such as size, speed capability, wake turbulence creation, lighting, and communication equipment are not addressed in pre-mission study and planning, there could be grave consequences to safety of flight and mission success. A NATO SRD to ATP-3.3.4.3 detailing a common set of formation procedures for similar as well as dissimilar aircraft would allow crews to better prepare for their missions. This guidance could potentially be limited to multinational formations, but nations should consider changing their national procedures to harmonize them with the common procedures. Having a set of common procedures in writing would make it easier for multinational formations to ensure all formation members are clear on the formation procedures to be used. Briefings should not be relied upon as a way to standardize and they should not assume all participants understand the formation procedures to be followed. The ATWG should develop common formation procedures for similar and dissimilar transport aircraft and include them in ATP-3.3.4.3, either in the base document or as an SRD.

3.3.1 Many may be resistant to common multinational formation procedures because they believe it is unlikely that operational multinational AT formation missions will be flown. However, many nations are already participating in multinational formations during training and exercises and it is a capability that would certainly be an asset during future operations. As many nations' AT fleets shrink and high operation tempos leave fewer assets available for a multi-ship formation, nations are looking at multinational AT exercise and training events like EATT and EAATTC as good opportunities for training that they could not get on their own. These events would be the perfect proving ground for any developing multinational procedures. Currently, the crews and planners at these

events are already working on resolving these issues. Formalizing the work that has been done in these venues would allow future multinational formation flight to take place under carefully considered and proven procedures, reducing risk during future training and operations.

3.3.4 Airdrop. Is one of the most challenging parts of the AT interoperability puzzle; partly because there are both equipment and procedural aspects to it. We will discuss procedures now and leave airdrop equipment for a later section of this study. NATO airdrop procedures are covered in ATP-3.3.4.4(A) (this ATP was under ratification at the time this study was published). This ATP contains very basic procedures to allow nations to drop personnel and equipment from other nations and does not contain detailed aircrew, aircraft or formation airdrop procedures. This ATP also contains national annexes with specific information about nations' parachutes and air drop rigging and equipment. The EATC is developing a cross reference checklist for parachute operations (cross para²) and procedures that are more detailed than the current



ATP and the ATWG should consider adding this as an SRD to ATP-3.3.4.4. Additionally, more detailed formation air drop information should be added to ensure air drop interoperability in multinational formations as well.

3.3.4.1 Another factor complicating airdrop interoperability is that loadmaster and jumpmaster qualifications and duties differ greatly between nations. In most nations, the loadmaster is responsible for the aircraft airdrop systems and emergency procedures, but, in a few, this is the responsibility of the jumpmaster. Some nations require a jumpmaster from their nation to be on board even if the jumping nation is supplying their own jumpmaster. When you have vastly different crew responsibilities in the back of the aircraft for airdrop, it is absolutely critical to brief and coordinate all procedures prior to flight. Having more detailed written procedures for cases like this would help ensure this coordination is done correctly and understood by all involved. Since it is unlikely that all Allies will change their procedures to a common standard, nations should provide expanded details and procedures as part of their national annexes to ATP-3.3.4.4.

3.3.5 Cargo/Passenger Handling. During multinational operations, the loading and unloading of the aircraft and securing of cargo is much more complicated. Even though ATP-3.3.4.1 spells out NATO Combined Air Terminal Operation (CATO) procedures, there are still national differences in procedures and regulations. For example, many nations differ on when and what they will allow to be Engine Running On/Off-loaded (ERO). To complicate things, both the regulations of the CATO team and the aircrew have to be accounted for. There are also differing regulations governing the mixing of different types of cargo and passengers. The securing of vehicles and rolling stock (cargo on wheels) can also be complicated in multinational operations. Some nations have very restrictive cargo certification and tie-down regulations that often restrict them from carrying un-palletized cargo that is not in their own national inventory. Other nations are much more flexible and can carry just about anything as long as the loadmasters are allowed to calculate the

appropriate tie-down scheme to secure the load. Currently, the NATO ATWG is sponsoring discussions to rationalize and harmonize regulatory guidance among NATO nations. Once this has been completed, an SRD can be drafted to provide common guidance. This complicated process is essential to the improved standardization and interoperability of AT operations and should continue to be supported by NATO and non-NATO stakeholders.

3.4 Drop Zone, Landing Zone, Preparation and Control

3.4.1 It is critical Allied nations are able to utilize Drop Zones (DZ) and Landing Zones (LZ) surveyed, marked, and controlled by other nations. During dynamic, multinational operations, there may not be time to get one's own national assets in place to facilitate an air drop or air land insertion or approve/waive the use of other nations' personnel or products. Currently, there are significant differences across the Alliance in the areas of DZ/LZ Surveys, Markings, Control, Size and Restrictions.

3.4.2 Surveys. Much can be done to increase the interoperability of DZ/LZ surveys and surveyors. Many nations will not accept a survey from another nation, which leads to duplication of effort and mission delays or cancelations during operations. There is a checklist for DZ surveys in ATP-3.3.4.4, but there is no guidance on the qualification of DZ/LZ surveyors. If nations could agree on, or at least state the qualifications of, their surveyors, it would be easier for nations to accept and trust surveys from other nations. ATP-3.3.4.4, which is being translated and should be promulgated in late 2016, has a template for DZ/LZ surveys instead of just a checklist. The adoption of this template would standardize the way crews and jumpers are presented survey information and would eliminate confusion and errors created by reading unfamiliar forms. Nations could keep their national templates; but for multinational NATO operations data from the national survey could be used to complete the NATO survey. If there is no existing survey, the NATO template should be used when the initial survey is completed.

3.4.3 Markings. ATP-3.3.4.4 does a good job presenting standard DZ/LZ markings and identifies some variations across the nations. However, there is information missing for some nations. These gaps should be filled or notations made to clarify missing information is not applicable and why it is not, for example due to a lack of airborne/air drop capability.

3.4.4 Control. Like DZ/LZ surveyors, there are many differences between the qualifications and requirements for DZ/LZ controllers. Once again, a standard set of qualifications and requirements may make it easier for nations to accept control from other nations' controllers. At the very least, nations should list their requirements and state from which nation(s) they recognize controllers. Multinational exercises in which nations become familiar with the procedures and qualifications of the controllers from other nations would be an excellent method to begin breaking down the barriers that currently exist between nations in this area.

3.4.5 Size and Restrictions. Many nations already have very similar, if not identical, DZ/LZ length and width regulations. These common standards could be used to develop a set of NATO-wide size guidelines. Nations would then state in their national annexes to ATP-3.3.4.4 any differences they have with those common NATO guidelines. At a minimum, national annexes should state their minimum DZ width and length for each type of drop and aircraft (if applicable) and all restrictions (though NATO guidelines should be developed to consider the most restrictive size requirements among the nations). Similarly, they should list any minimum runway lengths and widths and minimum taxiway widths for LZ operations to include any peacetime restrictions or higher minimums and associated waiver authority.

3.5 Air Drop Equipment and Loads

3.5.1 When considering interoperability, it is imperative to consider material and equipment because there are differences in both that impact the safe operation of aircraft involved in this complicated mission type.

3.5.2 Aircraft Airdrop Equipment. As nations modernize their AT fleets, there is an opportunity to standardize the airdrop equipment on their aircraft. Even identical models of aircraft may have differences in the type of airdrop equipment used depending on the nation employing the aircraft. These differences make certifying airdrop loads more difficult and complicate the comparison of one national drop certification to another nation. As new aircraft like the Airbus A400M Atlas and Embraer KC-390 tactical airlifter come online, nations that procure them should make every effort to ensure their airdrop systems are the same as their allies' systems on the same aircraft and coordinate any modifications with these nations.

3.5.3 Airdrop Load Certification. One of the most critical multinational interfaces in AT is the dropping of one nation's personnel and equipment from another nation's aircraft. This is easier if nations have the same aircraft, airdrop systems, airdrop containers, rigging, and chutes, but this is rarely the case. Each different combination of the above must be evaluated and certified before it is allowed to be dropped. The problem is many nations have different standards for how these evaluations and certifications take place. These differences make it much harder to use data from other nations to do a simple comparison from the tests already performed by other nations. The ATWG should revise ATP-3.3.4.4 to have an SRD that is a living document listing which nation's air drop loads are certified to be dropped by other nations' aircraft. Further consideration is given below to the current status of multinational personnel and equipment air drop within NATO.

3.5.3.1 Personnel. The EATC has put quite a lot of effort into developing personnel air drop interoperability. They are coordinating tests between EATC nations using the same personnel chutes. In the end, EATC hopes to have complete personnel air drop interoperability between all EATC nations. Such interoperability will obviously benefit NATO operations as well.

3.5.3.2 Equipment. Significant work remains to be done to harmonize multinational equipment airdrops. The Joint Precision Airdrop Capability (JPAC) was originally chartered by NATO Air Force Armaments Group (NAFAG), Aerospace Capabilities Group 5 (ACG5), to develop high-altitude precision air drop capabilities for NATO nations but it is seeking to expand its mandate to gather information on multinational equipment air drop certifications. The ATWG is working with this group to develop an archive or SRD to collect and share this information. The JPAC is a technical organization, and as such, could help the ATWG on technical matters since the ATWG is mostly composed of operators and focuses primarily on procedural matters. In support of this requirement, the JAPCC will host a web page that will allow nations to easily share information about cross para and Air Drop certifications.

3.6 Regulatory Constraints

Many nations have different regulations regarding the transport of passengers and cargo. This is most evident when it comes to dangerous goods. When nations have vastly different regulations, it makes it all the more difficult to operate in a multinational environment. NATO Airlift Coordination Cell (ALCC) or multinational mission planners must be well versed in the participating nations' regulations or they will schedule missions aircrews cannot execute. It is recommended all Allied nations provide simplified information on, and restrictions or limitations to, carrying passengers or dangerous goods. Currently, EATC is conducting a study to accomplish this goal, which may lead to publication of this information in the form of a Standards Related Document to NATO ATP-3.3.4.1. One major challenge posed by this process is that nations routinely place caveats upon their agreement to such documents. Over time, NATO and other stakeholders must work to achieve true consensus which will support interoperability – this will require constant effort.

- Actually, also differences regarding the names of similar types of Air Operations, inside of the doctrinal documents (E.g. AJP3.3 and ATP49G), are affecting the Initial Operation Capability of the ACCS.
- 2. Cross Paratroopers: see Ch 2, Note 7.
- OCCAR is an international organization whose core-business is the through life management of cooperative defence equipment programmes. OCCAR has currently Member States: Belgium, France, Germany, Italy, Spain and the United Kingdom.



CHAPTER 4

A400M Case Study

4.1 A400M Operational Users Group

4.1.1 During the development of the A400M, Airbus sponsored the formation of the A400M Operational Users Group to foster interoperability through the sharing of nearly all aspects of A400M acquisition, fielding, and operation. As the programme has been delayed for various reasons, the OUG has become less interesting to member nations and some of the initiatives have languished. However, the OUG could still achieve many of the initial goals for the group if the nations are willing to reinvigorate the programmes.

4.1.2 The OUG is a test case for both pooling and sharing resources as well as building and maintaining interoperability among the A400M user nations. Currently, six NATO nations participate in this OUG:

Belgium, Germany, Spain, France, Luxembourg and the United Kingdom. Other non-NATO and/or non-EU nations have been invited to participate but have chosen not to. The OUG is an open forum where the A400M user nations can discuss their A400M programme and propose efforts to work together and coordinate their development inputs to Airbus, lowering costs, ensuring interoperability and preventing duplication of effort.

4.1.3 Collective Development. Although each nation has its own development and procurement programme, the OUG nations are coordinating their actions to present a united front to the manufacturer and share development costs and lessons where they can. The Organization for Joint Armament Cooperation (OCCAR) is managing the contract between the OUG nations and the manufacturer to ensure the nations coordinate their activities before contract requirements or aircraft designs are modified.¹ Because the A400M is still in the capability development phase, aircraft already released to the nations

are in different configurations depending on the development of the aircraft when released. For example, all 6 of France's A400Ms have different configuration standards, so even national interoperability is currently a problem. This problem should be solved by 2020, when the fleets of all OUG nations are scheduled to have been fielded and retrofitted to the final operational configuration. However, through the OUG, nations still awaiting their first aircraft can benefit from the growing pains experienced by Germany, France, and the United Kingdom.

4.2 Maintenance and Support

4.2.1 Germany, France, and the United Kingdom have built or are building maintenance facilities to support the A400M, while other nations are initially relying solely on the manufacturer for maintenance support. Another opportunity for nations to share maintenance capability and really commit to interoperability is through the training of maintenance personnel. The United Kingdom is currently running courses that meet manufacturer standards to train mechanics on the A400M. Many other nations are relying on Airbus technicians or training, but as some nations develop this capability organically, it could be shared with the other nations. If the nations train their technicians to the same standards with the same courses, this will make it easier for technicians from one nation to work on the aircraft of another nation. To enable this cross-servicing to work, the nations must remain committed to keeping their A400Ms in near identical configurations and blocks.

4.2.2 Maintaining configuration harmonization will also help A400M OUG nations by allowing them to use the same pool of spare parts, tools, and support equipment. The UK has already identified spare parts as a critical problem leading to lower than expected serviceability rates. This scarcity of spare parts should lessen when the parts manufacturers shift from development and initial production to sustainment, but, even then, nations would benefit from a shared spare parts pool that could be accessed globally. Also, many specialized tools and pieces of support equipment are required to maintain modern aircraft

and some of these are specific to the model aircraft being serviced. Many of these tools are not used on a frequent basis but are very expensive. A pooled stock of tools and diagnostic equipment would reduce cost and provide spares as needed. Finally, the A400M is intended to be a global asset, but it is difficult for nations to provide global support for these aircraft on their own. Sharing maintenance personnel, tools and support equipment will widen the reach of their collective support capability.

4.3 Aircrew Training

4.3.1 Aircrew training provides another excellent opportunity for nations to share resources and build interoperability. Germany, France, and United Kingdom are already coordinating their aircrew training efforts and sharing training facilities and resources like A400M flight simulators. Once all A400M OUG nations receive part of their aircraft delivery, serious consideration should be given to designating shared training centres where the nations' aircrew receive the same initial qualification and tactical mission training. It is unlikely all training will be done at the same location, since many nations will want at least a part of the training to be in their nation, but it is possible that a pool of nations could each provide a specific part of the qualification and training spectrum. Since it is not likely that all nations will set aside a squadron for training, if each nation takes a part of the training, there will be less impact to the manning, mission, and schedule of the operational flying squadrons. Spain plans to have their own autonomous training centre 3 to 4 years after the A400M enters service, but they expect to have spare simulator capacity they could share with other nations. If the Nations commit to a common training programme, then nations that do not develop a training centre or need additional training capacity can use the spare training capacity of nations that do develop a training centre.

4.3.2 Multinational Procedures/Crews. On the A400M operational procedure, concept, and doctrine side of interoperability, the EATC is leading the way. It developed the EATC A400M employment concept and doctrine, and these were accepted by all the

A400M OUG nations and promulgated. The EATC is currently drafting a Common Operations Manual for the A400M and the concept may be extended to other airframes in the EATC fleet. The implementation draft has been sent to the nations, but national staffing has proven to be slower than anticipated, delaying its acceptance and promulgation.

4.3.3 If crews receive the same training, use the same procedures and manuals, and nations operate commonly configured aircraft, the door opens for multinational crews. Currently, Germany is not planning to put into service its complete order of A400Ms. This means nations (OUG and non-OUG) should consider pooling resources to form a multinational consortium to operate some or all of the 10 extra A400Ms Germany has purchased. This could be done as part of the existing Strategic Airlift Capability (SAC) or as a new entity depending on the desire of the partnering and SAC member nations. It is recommended if nations take this option, that they procure AAR kits as well so both the Air-to-Air Refuelling (AAR) and strategic AT shortfall in Europe can be addressed.

4.3.4 Multinational crewmembers could potentially be used to supplement national crews with a crewmember from another nation. This would be very useful in deployed operations when nations may not bring extra aircrew for a normal rotation or to cover for

crewmembers who cannot fly for various reasons. Even if crews are not mixed, it would be helpful in a deployed environment to be able to swap/share aircraft, support equipment and maintenance personnel. This would lower the footprint of each nation when participating in a multinational operation. The swapping of crews and aircraft will not be easy. Many legal and liability issues will have to be solved before any crew sharing can take place.

4.4 Applicability to Other Airframes

As nations modernize their AT fleets, they can take lessons from the A400M OUG even if they are procuring different aircraft. Some nations are purchasing Lockheed Martin C-130J 'Super' Hercules, Embraer KC-390 or Alenia C-27J Spartan. If they work together to keep the configurations of similar aircraft between different purchasing nations common and pool resources for training and maintenance, they should benefit from increased interoperability. For future contracts or upgrades, nations which purchase similar aircraft types should consider a common development framework like the A400M OUG, which would not only increase interoperability but should decrease development and procurement costs and duplication of effort.

OCCAR is an international organization whose core-business is the through life management of cooperative defence equipment programmes. OCCAR has currently Member States: Belgium, France, Germany, Italy, Spain and the United Kingdom.



CHAPTER 5

Recommendations and Conclusion

5.1 List of Key Recommendations

Chapter II

Paragraph 2.2.2. EDA and ACT via organizations like JAPCC must create a deeper cooperation between the Alliance and the European Partners by integrating the EAATTC into the NATO training and exercise programme by pushing for NATO accreditation of this training.

Paragraph 2.2.2.5: When open, the ETAC should work with ACO, via EDA and JAPCC, to ensure its training is integrated into NATO procedures and doctrine and it should include this cooperation as part of the future TA.

Paragraph 2.1.3: The NATO AT Working Group (ATWG) should work with the ETAC to include, as appropriate, the publications they develop, such as the EAATTC tactics syllabus, into the NATO AT STANAGs.

Chapter III

Paragraph 3.2.4: Nations should classify information at the NATO level or add releasable to NATO caveats so important Intel and tactical information is immediately available to the NATO coalition participating in operations.

Paragraph 3.3.2.2: The NATO ATWG should consider using the work the EATC has done as a basis for a NATO AT TTP manual that could be added to ATP-3.3.4.3 as a Standard Related Document (SRD).

Paragraph 3.3.3: The ATWG should develop common formation procedures for similar and dissimilar transport aircraft and include them in ATP-3.3.4.3 either in the base document or as an SRD.



Paragraph 3.3.4: The EATC is working a cross-para checklist and procedures that are more detailed than the current ATP. The ATWG should consider adding these as an SRD to ATP-3.3.4.4.

Paragraph 3.3.4.1: Since it is unlikely that all Allies will change their procedures to a common standard, nations should provide expanded details of their air drop crew qualifications and procedures as part of their national annexes to ATP-3.3.4.4.

Paragraph 3.4.2: ATP-3.3.4.4 should have a template for DZ/LZ surveys instead of just a checklist.

Paragraph 3.4.5: A suggested set of minimum size limitations and restrictions should be developed based on the most common airdrop standards used by the nations. Nations would then state in their national Annexes to ATP-3.3.4.4 any differences they

have with the common NATO guidelines. At a minimum, nations should state their minimum DZ width and length for each type of drop and aircraft (if applicable) and all restrictions. Similarly, they should list any minimum runway lengths and widths and minimum taxiway widths for LZ operations to include any peacetime restrictions or higher minimums and associated waiver authority.

Paragraph 3.5.3: The ATWG should revise ATP-3.3.4.4 to have an SRD that is a living document that lists which nation's airdrop loads are certified to be dropped by which nation's aircraft.

Chapter IV

Paragraph 4.1.7: For future acquisition programmes, nations should consider a common development framework like the A400M OUG; this would not only



increase interoperability but should decrease development and procurement costs and duplication of effort.

5.2 Conclusion

In the beginning of this document we promised to give you an update of our 2011 Air Transport Assessment. We endeavored to analyse advancements, or lack thereof, in training, standardization, and interoperability keeping the budget realities of a post-2008 global recession in mind. Hopefully, we have made the case for sharing the burden of costs while furthering NATO and European interoperability and continuing to focus on the development of advanced tactical AT training. You should now be familiar with the benefits and challenges facing NATO in maintenance, operation, and sustainment of new aircraft like the A400M. You should also be familiar with the multitude of European, NATO, and industry agencies involved in these procurement and employment programs. Finally, you should now have a good understanding of current and future improvements to AT doctrine and TTPs for NATO and Europe. In a 2015 Defence News interview, General Gorenc, the former Commander of USAFE, USAF-Africa, Allied Air Command and former Director of the JAPCC stated 'The thing that makes NATO such an effective alliance is the fact that the day-to-day routine in NATO is all designed to create an interoperability that will allow for very quick transition from peacetime into war." God forbid the transition from peacetime to war should ever come, but if NATO and Europe take this Assessment to heart, they will be ready. Thank you for investing time in reading this Assessment and please stay engaged in the constant improvement process for air transport.

 Defence News Interview: USAF Gen. Frank Gorenc by Aaron Mehta, http://www.defensenews.com/story/defense/2015/03/10/interview-usaf-gen-frank-gorenc/24701435/

ANNEX A

Acronyms and Abbreviations

AAR	Air-to-Air Refuelling	CATO	Combined Air Terminal Operations
AATTC	Advanced Airlift Tactics Training Course	cMS	contributing Member States
		СРТ	Core Planning Team
ACO	Allied Command Operations	DoD	Department of Defence
ACCS	Air command and Control System	DZ	Drop Zone
ACG5	Aerospace Capabilities Group 5	EAATTC	European Advanced Air Transport Tactical Course
		EAG	European Air Group
AE AHWG O&T	Aeromedical Evacuation Ad Hoc Working Group	EATC	European Air Transport Command
	Operations and Training	EATF	European Air Transport Fleet
AJP	Allied Joint Publication	FATIC	
ALCC	Airlift Coordination Cell	EAHC	Instructor Course
AOC	Air Operations Centre	EATS	European Air Transport Symposium
AOR	Area of Responsibility		Symposium
AT	Air Transport	EDA	European Defence Agency
ATARES	Air Transport and AAR Exchange of Services	ENJJPT	European-NATO Joint Jet Pilot Training
ATP	Allied Tactical Publication	EPACS	European Planning And Coordination System
ATWG	AT Working Group	ERO	Engine Running Onload/Offload
BDA	Boom Drogue Adaptor	ETAC	European Tactical Airlift Centre
C2	Command and Control	ETTP	European Tactics Techniques
COMAO	Composite Air Operations		and Procedures

FOC	Full Operational Capability	NSO	NATO Standardization Office
HAW	Heavy Airlift Wing	OCCAR	Organization for Joint
ICC	Integrated Command and Control	РСМ	Partnership Cooperation Menu
ISR	Intelligence, Surveillance and Reconnaissance	PfP	Partnership for Peace
	loint Air Power Competence	SAC	Strategic Airlift Capability
JAPCC	Centre	SNR	Senior National Representative
JPAC	Joint Precision Airdrop Capability	SOFA	Status of Forces Agreement
LZ	Landing Zone	SRD	Standard Related Document
MCCE	Movement Coordination Centre Europe	STANAG	Standardization Agreement
MEAT	Management European Air Transport	TG	Technical Group
MANATT	'	ТІ	Tactical Instructors
	Multi-Mission Tanker Transport	TLP	Tactical Leadership Program
MoU	Memorandum of Understanding	тт	Tanker Transport
MRTT	Multi-Role Tanker Transport	ТТР	Tactics Techniques
NAFAG	NATO Air Force Armaments Group		and Procedures
NATO	North Atlantic Treaty Organization	UAS	Unmanned Aircraft Systems
NCS	NATO Command Structure	USAFE	US Air Forces Europe

ANNEX B

AT Questionnaire and Analysis

The following document is the AT questionnaire the JAPCC sent to twenty-eight nations in March 2015, before initiating this AT Study.

The JAPCC received sixteen filled or partially filled questionnaires. The information received from the nations via the AT Questionnaire or by direct contacts in working groups or AT events was of primary importance and highly considered during the development of the Study.

The questionnaire is composed of twenty questions. Following each question, in bold, the author provides information which may not appear as the direct answer to the question asked but it is in reality the analysis of the information hidden behind the question (e.g.: question number two; in the question it is requested the nations provide some numbers. The author's analysis of the received answers (in bold) does not report an average number or the higher and the lower number, but a consideration about the existing deviations among the nations, which is the real reason why that question was asked).

In the same way, in some questions, it was requested the nations submit proposals to solve experienced interoperability issues. The reader should not expect to find all the submitted proposals in the key recommendations list in Chapter Five, as some proposals or the issues to which they are related, are restricted to very few nations and sometimes only one. It was decided to report the issues and the relative proposals to the AT community and the key decision makers through this questionnaire analysis.

The questionnaires received from the nations can be consulted on the JAPCC's secure website after accreditation with the JAPCC webmaster.

AT Questions

1) Does your Air Force have different pilot training tracks for fighter/attack pilots and mobility pilots?

YES: 100% of responding nations.

2) How many flying/simulator hours are required in your national training to train a mobility pilot (through completion of initial pilot training: all flight training from the start of training to beginning of primary weapon system training)?

Minor variations in the total number of flying hours and simulator hours among the responding nations. Avg 180 flyng hrs +/- 10%.

3) On average, how many flying/simulator hours are required for a mobility pilot to be combat ready in your Air Force (all flight training after initial pilot training to include primary weapon system and initial combat unit training)?

Consistent variation among the nations and even different numbers for different aircraft in the same nation.

4) On average, how many total flying/simulator hours in the primary weapon system are required for a mobility pilot to become a pilot in command?

Minor deviations among the nations compared with previous questions:

82% of the nations are in the range of 400–600 hours total time (flying and simulator); 18% of the nations require more than 600 hours.

5) On average, how many flying/simulator hours are required for a mobility pilot to become an Instructor pilot in their primary weapon system?

Almost all nations select IPs from very experienced personnel with a minimum of 300 hours as an aircraft commander and/or 1,500 total flying hours.

6) Is your Air Force sending AT crews to the US AATTC (Advanced Airlift Tactical Training Course)?

YES: Approximately 50% of the responding nations.

7) Is your Air Force aware of the EATT (European Air Transport Tactical Training)?

YES: 95% of the responding nations All European nations are aware of the EATT.

If yes, have you sent or do you intend to send crews?

YES: All the nations who responded 'yes' to the previous question.

8) Is your Air Force aware of the EAATTC (European Advanced Air Transport Tactical Course)?

YES: 95% of the nations.

If yes, have you sent or do you intend to send crews?

YES: All the nations who responded 'yes' to the previous question.

9) Did your Air Force take part in other multinational AT training events?

YES: 70% of the nations.

If yes, specify the name of the training event and the level of your participation.

Some of the mentioned events were not specific AT events (e.g. RED FLAG).

10) Would your Air Force be interested, at some point, in joining a multinational basic pilot training for mobility pilots with the third phase focusing on crew aircraft (similar to the European-NATO-Joint-Jet-Pilot-Training, where the third phase focuses on fighter/attack aircraft)?

YES: 72% of the responding nations but mainly nations with smaller AT fleet.

11) In the future, would your mobility Air Forces be interested in joining a multinational advanced training for mobility pilots (combat readiness and advanced techniques)? YES: Almost all nations (the UK is the only negative answer).

12) Does the current NATO exercise programme sufficiently address AT training and execution for your mobility forces?

YES: 75%

If No, what needs to be added or improved?

In particular, it was mentioned there is a need for an advanced tactical training similar to the TLP programme for fighter pilots.

13) Should the NATO and EDA AT training and exercise programmes remain separate or should they be combined and/or harmonized as much as possible (Comments)?

Almost 100% of the responding nations recommend combining training activities to realize efficiencies.

14) Have your mobility air forces/units experienced any interoperability issues with other NATO Allies pertaining to communications in planning or executing AT missions?

YES: 30% of the responding nations.

If Yes, with which nation(s) and what was the difficulty and what solutions would you propose?

Secure communications, CIS planning and 'execution tools' not interoperable.

PROPOSAL: to develop a common mission planning system/software application.

15) Have your mobility air forces/units experienced any interoperability issues with other NATO Allies pertaining to AT procedures, to include multinational formations or coordinated AT missions?

YES: 34% of the responding nations.

If Yes, with which nation(s) and what was the difficulty and what solutions would you propose?

Differing nation regulations, 'formation concepts', lack of training and different procedures and techniques.

PROPOSAL: Standardization through NATO/EATC/EDA.

16) Have your mobility air forces/units experienced any interoperability issues pertaining to accepting cargo and passengers from other NATO Allies?

YES: 30% of the responding nations.

If Yes, with which nation(s) and what was the difficulty and what solutions would you propose?

The transport of dangerous goods; different regulations.

PROPOSAL: Standardization of the requirements through NATO/EATC/EDA.

17) Have your mobility air forces/units experienced any interoperability issues pertaining to sharing, receiving or using tactical and intelligence information from NATO Allies in order to execute AT missions?

YES: 35% of the responding nations.

If Yes, with which nation(s) and what was the difficulty and what solutions would you propose?

Incompatible IT systems; national security restrictions; problems with complete information sharing even among the EATC member nations.

18) Have your mobility air forces/units experienced any interoperability issues pertaining to command and control of Allied AT forces and missions?

YES: 15% of the responding nations.

If Yes, with which nation(s) and what was the difficulty and what solutions would you propose?

Operating with different communication networks poses the greatest challenge; Most of the problems stem from a missing NATO C2 structure dedicated to AT activities on a standing base. When it is created (as in Afghanistan), interoperability issues are reduced.

19) Have your mobility air forces/units experienced any interoperability issues pertaining to airdropping troops and equipment from other NATO Allies or using DZs controlled by other Allies?

YES: 75% of the responding nations.

If Yes, with which nation(s) and what was the difficulty and what solutions would you propose?

Different national regulations; different certifications.

PROPOSAL: The EATC is working on this issue; the work done by the EATC could be useful to build standard DZ certification and data layout.

20) Have your mobility air forces/units implemented all NATO AT ATPs/STANAGs (ATP 3.3.4 Vol I, ATP 3.3.4.3, ETC)?

YES: 75% of responding nations.

ANNEX C

Training Opportunities Available for the Nations and Relative Participation

	ENJJPT	AATTC ¹	EATT	EAATTC	EATIC	
ALBANIA						
AUSTRIA						
BELGIUM	Х	Х	Х	Х	Х	
BULGARIA			Х	Х	Х	
CANADA	Х	Х				
CROATIA						
CZECH REPUBLIC			Х	Х		
DENMARK	Х	Х				
ESTONIA						
FINLAND						
FRANCE			Х	Х	X	
GERMANY	Х		Х	Х	Х	
GREECE	Х		Х			
HUNGARY						
ICELAND						
ITALY	Х	Х	Х	Х	Х	
LATVIA						
LITHUANIA			Х			
LUXEMBOURG						
NETHERLANDS	Х	Х	Х	Х	Х	
NORWAY	Х	Х	Х			
POLAND						
PORTUGAL	Х	Х	Х			
ROMANIA						
SLOVAKIA						
SLOVENIA						
SPAIN	Х	Х	Х	Х	Х	
SWEDEN		Х	Х			
TURKEY	Х					
UNITED KINGDOM	Х	Х	Х			
UNITED STATES	Х					

1. Nations cleared to attend AATTC (Information current as of Jun. 2015).

ANNEX D

Agencies and Programmes

Membership of Multinational Organizations, Programmes and Initiatives by Country

	NATO	MCCE	EDA	EATF	EAG	EATC	A400M OUG	SAC
ALBANIA	Х							
AUSTRIA	X1	Х	Х	Х				
BELGIUM	Х	Х	Х	Х	Х	Х	Х	
BULGARIA	Х		Х	Х				Х
CANADA	Х	X ²						
CROATIA	Х	X ²	Х					
CZECH REPUBLIC	Х	Х	Х	Х				
DENMARK	Х	Х						
ESTONIA	Х	Х	Х					Х
FINLAND	X1	Х	Х	X				X1
FRANCE	Х	Х	Х	Х	Х	Х	Х	
GERMANY	X	Х	Х	X	Х	Х	Х	
GREECE	X		Х	X				
HUNGARY	Х	Х	Х	X				Х
ICELAND	Х							
ITALY	Х	Х	Х	Х	Х	Х		
LATVIA	Х	Х	Х					
LITHUANIA	Х	Х	Х	Х				Х
LUXEMBOURG	Х	Х	Х	Х		Х	Х	
NETHERLANDS	Х	Х	Х	Х	Х	Х		Х
NORWAY	Х	Х		X				Х
POLAND	Х	Х	Х	X				Х
PORTUGAL	X	X ²	Х	X				
ROMANIA	Х	X ²	Х	Х				Х
SLOVAKIA	Х	Х	Х	Х				
SLOVENIA	Х	Х	Х					Х
SPAIN	Х	Х	Х	Х	Х	Х	Х	
SWEDEN	X1	Х	Х	Х				X ¹
TURKEY	Х	Х						
UNITED KINGDOM	Х	Х	Х		Х		Х	
UNITED STATES	Х	X ²						Х

X = Member Nation

1. Partnership for Peace Nation (Information current as of Jun. 2015).

2. Not in ATARES.





Joint Air Power Competence Centre

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