



# The JAPCC Conference 2010

## Read Ahead Material for the JAPCC Conference

### *PURPOSE*

Each year, the JAPCC conference attracts some of the foremost thinkers in NATO Air and Space Power from across military, academic and aerospace industry spheres. In the few short days of the Conference, delegates will engage in panel discussions on four important topics:

- 1) Air and Space (A&S) Power in Expeditionary Operations,
- 2) Air C2 in a Network Enabled Environment,
- 3) Air Surface Integration

and

- 4) Joint Integrated Air & Missile Defence.

In order to focus these discussions, this paper gives initial ideas on the panel topics. These include some of the areas that JAPCC project teams have concerned themselves with over the past seven months. It also develops ideas from articles in the 2010 editions of JAPCC Journal.

However, the purpose of this paper is not to confine the conference discussions. On the contrary, the discussions should be as free-flowing as possible and will, hopefully, explore areas and ideas outside those laid down here. Instead, this paper attempts to give delegates 'food for thought' and to suggest some of the key questions that the Conference will want to address.

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## *PANEL 1 – AIR AND SPACE POWER IN EXPEDITIONARY OPERATIONS*

This panel will explore a range of issues exemplifying the contribution made by Air and Space Power in EO. It will consider the contemporary operating environment and the requirement for Alliance Air and Space Power to be increasingly agile, joint and expeditionary. To achieve this it must be enabled, deployed and sustained quickly, and be capable of supporting other components in the same way. While war-fighting will remain the basic *raison d'être* for Air and Space Power, it must also be capable of conducting operations across the spectrum of mission types and, in particular, will need to interact with civil authorities, NGOs and other agencies. Many challenges exist and the panel will consider how these challenges are addressed within the context of contemporary operations and against the anticipated future strategic landscape.

### *1. LOGISTICS – OPTIMISING OUR FOOTPRINT WITHOUT COMPROMISING OUR OPERATIONAL EFFECT*

Optimising the logistics footprint during Expeditionary Operations (EO) offers the prospect of agile, responsive support structures which impose the smallest possible sustainment, support and force protection burden. In common with all other deployed assets, the provision of combat service support capability must be kept under constant review to ensure that the force balance remains consistent with evolving strategic and operational imperatives. Whilst steady-state and cyclical logistic demand can be predicted and included in operational planning, the dynamic nature of EO requires the ability to surge, and commanders must therefore determine the correct balance between in-theatre capability and that which can be accessed from elsewhere; mass and velocity thus represent key factors in delivering optimal support.

Whilst NATO recognises the benefits and efficiencies of coordinated multinational logistics support, the processes and policies for achieving this are currently lacking, with support to NATO operations conducted primarily on a national basis. This risks the uncoordinated duplication of national capabilities and the provision of unnecessary additional resources, contributing to a sub-optimal deployed footprint.

Key questions include:

- How does NATO overcome the lack of visibility and, more challengingly, authority that currently limit commanders' freedom of manoeuvre to influence logistic operations?
- What are the key constraints on commanders' ability to synchronize, prioritize, direct, redirect, integrate and coordinate common-user and cross-nation logistics commodities and functions?
- What contribution could, respectively, role specialisation, burden sharing, improved interoperability, better cooperation, enhanced trust, Lead nation status and common funding make to the optimisation of the deployed logistic footprint?
- What contribution could sea-basing make in supporting EO?
- What are the implications for an optimised logistics footprint of outsourcing combat service support capabilities, including through synchronised contractor logistics support arrangements, host nation support and NATO agencies?



- What effect would the provision of a multinational capability to manage the flow of logistics resources into, within and out of theatre via a theatre distribution network, have on the deployed logistic footprint?

## *2. BATTLESPACE OWNERSHIP – DELIVERING MORE THAN JUST AIR EFFECT*

Air commanders should be familiar with many of the demands of airspace management but how prepared are they to 'own' portions of the land battlespace? Yet this is precisely the scenario that is faced by NATO Airbase Commanders in Afghanistan as they seek to defend their strategic assets from IDF and SAFIRE, whilst simultaneously delivering COIN effect within their AO. The need to improve levels of force protection (FP) has led to the creation of Ground Defence Areas (GDA), but should this go hand-in-hand with the entire transfer of battlespace responsibility or is FP best conducted through coordination with a separate Land battlespace owner? Activities 'inside the wire' may have a significant effect on the local environment, not least in view of the almost inevitable need to contract-out a range of support activities, often to the local population.

A key aspect here is the importance of not creating the impression that 'we know best' and ensuring that a comprehensive approach (CA) is really that – the host nation (HN) must be engaged and consulted at all stages and at every level from central government to village elder, their views taken into account and a process put in place from the outset whereby the HN assumes control as quickly as possible. We repeatedly forget that it is us, not insurgents from Pakistan, who are the 'foreign fighters' and we often create an appearance of paternalistic arrogance which does nothing to serve our purpose.

Issues that merit further consideration include:

- Within the GDA, who has responsibility for what? With greater responsibility (e.g. CIMIC) goes increased importance that boundaries are drawn to reflect cultural factors such as tribal or village spheres of influence rather than purely tactical FP considerations.
- What is the long-term plan to transition the airbase to National control? At what stage can civil ac movements (perhaps building from NGO freight to local passengers) be accommodated? What are the legal implications of operating a mix of civil and military traffic – to what extent do the activities need to be segregated or integrated?
- What is the most appropriate response to attacks against the base?
- On-base security: vetting LEP; control of access; bribery, corruption and theft.
- Is there enough feedback from current operations to inform NRF pre-deployment training at the JWC? Perhaps more importantly, how are all the non-NRF personnel trained by individual contributing nations?



### *3. AIRSPACE – HOW DO WE BEST CONTROL AND USE SHARED OPERATIONAL/CIVIL AIRSPACE?*

If Land operations today are characterised by 'war amongst the people', the same is undoubtedly true in the skies overhead where there is a growing requirement for military activities to be integrated with civil airspace users. For a particular operation, primacy in the air domain could range across the full spectrum from civil to military control and is likely to change over time as a campaign progresses. Assuring the required level of control of the air may still, perhaps, necessitate a kinetic battle but could equally hinge on matters such as diplomatic clearances to ensure air access and civil-military interoperability.

The civil aviation industry is often a significant source of State income and prestige; maintaining or re-establishing this sector of the economy may command a high priority. Other factors that could impact air planning include:

- The pre-conflict/crisis civil aviation structure and infrastructure. To what extent is this still functioning? Who wants/needs access to airspace (military, civil commercial, NGOs)? Over-flight or also take-off/landing?
- What is the legal mandate for military activities, to what extent does airspace need to be closed to civil traffic? How is this promulgated/enforced and what is the impact on neighbouring countries?
- Is the State's Aeronautical Information Publication still valid or has it been suspended? Can coalition Civil Aviation Agency staff contribute as part of a CA?
- What are the comms, navigation and surveillance capabilities of deploying friendly forces, to what extent do they need to interface with civil systems? Does the infrastructure exist to support Positive Control or must airspace be managed procedurally?
- Who is responsible for the provision of aeronautical information? To what extent do security/classification issues preclude data sharing (e.g. Iraq 2009, airspace used by civil aviation on a daily basis but military danger areas not reflected on civil charts).
- To what extent can deployed military personnel provide an Air Traffic Service to civil aircraft (e.g. national caveats), what additional training is required?
- Can civil systems (e.g. ATC radar) contribute to the military mission? How complete is the Recognised Air Picture and what is the threat from 'unknown' air activity (hostile action, illegal e.g. smuggling, gun running etc, friendly black ops)?

### *4. MOBILITY – FINDING THE BEST INTER-THEATRE VS INTRA-THEATRE AIRLIFT MIX*

ISAF in Afghanistan has demonstrated the absolute importance that airlift plays in today's changing global security environment. NATO airlift will continue to play an increasingly important role into the future as NATO engages in more expeditionary operations outside of the European community. Given the current shortage of NATO airlift capability, finding the best mix of inter-theatre (strategic) and intra-theatre (tactical) airlift for a particular operation is not an easy question to answer.



Part of the answer will depend on the availability of airlift assets and their capability, the security and threat level at airfields, the number of airfields and associated base infrastructure, the size of the operation and number of forces involved, the availability of ground and sea supply lines of communication, and the willingness of NATO nations to commit their airlift assets.

Ultimately it is the requirements of the forces in-theatre that will determine the amount of airlift support needed. Inter-theatre airlift (also known as strategic airlift) can be a vital lifeline for sustained operations as well as the key to timely intervention. At the same time intra-theatre airlift (also known as tactical airlift) is also vital for forward deployed forces and short notice requirements in-theatre. Some aircraft today, for example the C-17, can perform both roles simultaneously thereby further increasing airlift capability, but also increasing operating complexity. So the question raised is how can NATO airlift best meet the requirements of the forces that are in-theatre?

Several items to consider are:

- What can be learned from Afghanistan airlift operations?
- How can we improve the current airlift operating procedures in Afghanistan?
- What kind of risk are nations going to accept in order to deploy airlift assets in-theatre?
- What impact has the C-17 Strategic Airlift Capability/Heavy Airlift Wing at Papa Hungary had on current NATO operations?
- Is this a 'model' solution to the shortage of NATO strategic airlift?
- What are other potential solutions to the shortage of NATO strategic airlift capability?

## *5. ROTARY: ORGANIC OR THEATRE ASSETS?*

Primarily as a result of operations in ISAF, NATO has identified a shortage of helicopters available for operations. Added to this, a number of interoperability issues and the inability to use National Rotary assets across the multinational support requirement has also become a limiting factor in flexible operational support across NATO. This issue has been on the agenda of several NATO and ministerial summits for some time and is a focus project within NATO HQ. However, current NATO thinking is concentrating on technical or logistic solutions without considering a review of the Concept of Employment of NATO helicopters; a review that may be long overdue.

It has become clear that the conceptual thinking on helicopter operations, as laid out in ATP-49(E) Helicopters in Land Operations, is still, largely, "Cold War" oriented. It is clear, therefore, that an update of these concepts is overdue. Once this is addressed, revised doctrine and TTPs can be considered and produced.

In light of the current situation in theatre, but also considering possible future scenarios of power projection, these key issues could constitute a good solid starting point for a discussion.

Key Questions include:

- How do we manage to solve the evident lack of rotary wing asset?



- Training is the key to success in every field of military life, but good training comes at a financial cost. Should initiatives like the 'Helicopter fund' (set up by UK and France and managed by EDA, to 'sponsor' joint and combined training opportunities) gain wider support?
- In Air Power doctrine, helicopters have been always considered as "sons of a lesser god". Afghanistan proves that this is not true. Would better C2 of rotary assets ensure that this remains the case?
- What areas should any new doctrine for Helicopter use in land Ops concentrate on?
- Is now the time to create a new Joint Helicopter Centre of Excellence?
- The increased use of Civilian Helicopters in theatre may be one solution to the current shortfall. What are the risks of this stop-gap measure?



## PANEL 2 – AIR C2 IN A NETWORK ENABLED ENVIRONMENT

*“...the C2 of the future is Command and Feedback...”*

*Gen James N. Mattis, Former Commander SACT*

On 24 July 1943 the RAF launched around 750 bombers against Germany as part of Operation “Gomorra”. The planning was done by a few key leaders in a small bunker near London, coordination and assembly of aircraft was achieved by using the “be there at this time” method and the final approach towards Hamburg was carried out using air routes in order to avoid German air defences and early warning stations. Bomb release above Hamburg was initiated by pathfinder crews who steered their aircraft through and ahead of the formation during the night transit.

To do this mission today would require a substantial Air Tasking Order, an extensive Air Coordination Order, a myriad of Special Instructions and at least one Air C2 Platform, all supported by a robust and reliable communications system – have we really progressed? Equally, was this Mission Command (MC) in its purest form and have we now lost this ability due to our insatiable need to see and control everything?

Admittedly, during the Hamburg raid, twelve aircraft were lost. For a raid of this period, the 1.5% loss rate was considered to be very low. It is unlikely that any 21st Century campaign would share this appetite for risk and does go some way to explain the extra measures taken today to ensure deconfliction, provide for personnel recovery etc. etc.

Shaped by the necessity to deconflict and/or support valuable assets, the Air Planning Process (APP) is now seen by many non-aviators as slow, inflexible and its effects as, largely, kinetic in nature. It is also perceived as failing to contribute to the ‘influence operation campaign’ by its irresponsiveness to soft targeting requirements as and when they are required. Recent Operations in Afghanistan have started to change this perception and increased flexibility and responsiveness from the air component has been noted, at least in the case of Close Air Support. However, many would claim that the APP cycle is still too long and cumbersome. Can modern technology provide a solution to this? Fifth generation aircraft, e.g. the F-35, are designed to exploit full Network Enabled Connectivity (NEC), but will we be ready to use them to their full extent?

With continuing improvements in NATO NEC (NNEC) and Shared Situational Awareness (SSA) there is an opportunity to change the way NATO will carry out Air Planning in the future, refining it to meet the needs not only of the current conflicts, but also of any future conflict. Clearly, this could be a positive move forward, but will it mean we merely ‘spin’ the APP cycle more quickly or is there a new and better way to do business? With better NNEC and SSA do we still require an Air Command element forward? Surely, improved connectivity will facilitate keeping the air element at the rear of the fight, alongside the Joint Commander. This could improve true ‘Joint Command’ and provide one all-seeing, all commanding ‘Joint Air’ commander; but who do we choose to do this and what training will they require to be able to conduct such a role?

Notwithstanding any improvements that are made, the APP will rely upon the assured availability of networks and secure connectivity. These are currently assumed within NNEC, but are we foolish to be so confident? Our Command and Control mechanism will be an obvious potential vulnerability; will ours have the sufficient resilience and redundancy? If not, how would



we conduct operations when the network became degraded? Can our personnel work without the current technology? And could our new leaders lead without that technology?

One final consideration is that of the third dimension in its entirety. Currently, and largely because of a lack of Shared Situational Awareness (SSA), the CAOC only controls assets operating above a pre-defined Coordination Level (CL). Below this level, tactical assets (Rotary, tactical UAS, Joint fires, etc) are the responsibility of the Land Component Commander (LCC) and are, invariably, regional in nature. There is little, if any, oversight of these assets or their movements at the CAOC as their tasking is at the behest of the LCC with inherited freedom to move around below the CL. With direct tasking authority, the planning and tasking cycle can be shorter than the ATO as Rotary assets (for instance) are relatively self-sufficient and do not need strategic support assets (AAR, AEW) to operate. The respective LCC is responsible for deconfliction of his assets but this can have implications in bordering regions, commanders and operators may be oblivious to each other's activity. While this example draws from current operations, it is likely that the same coordination issue may exist when Air cooperates with the Maritime component.

In addition to military assets below the CL, the lack of visibility and coordination of non-military air activity remains an issue. It is clear that the integration of all assets using the third dimension must be addressed in any future Air C2 structure and process.



## *PANEL 2 QUESTIONS*

1. What is missing from our training?
2. Is technology more important than leadership?
3. What is Mission Command in the Air Environment?
4. Does 'no network' mean no fly? Have we become too reliant on technology and are today's airmen and women able to operate without it? – what is the Plan B?.
5. Does Shared Situational Awareness/Collaboration mean the death of the planning/ACO/ATO Cycle (Control)?
6. What about cultural and mindset interoperability in multinational alliances and coalitions?
7. Do we trust each other enough to share information, speed up the decision process and provide decision superiority in the battlefield?



## *PANEL 3 – AIR SURFACE INTEGRATION*

### *AIR SURFACE INTEGRATION INTRODUCTION*

This panel will cover a wide range of topics dealing with how air power coordinates and integrates with surface power and vice versa. This supports a current JAPCC project concerned with the integration of air, sea, and land forces. The project attempts to identify seams and leverage points to improve the process of integration at the inter-component level. In particular, this panel will focus on two areas:

- Air-Land Integration – To identify ways in which land and air components can work together better to meet national as well as international objectives.
- A&S Power Contribution to Counter-Piracy Operations – A&S assets can make a massive contribution to counter-piracy (CP) operations. How assets might be used and how they integrate with surface forces should be a major area of discussion. This panel will use current CP operations as the basis for exploring Air-Maritime integration in the round.

Many recent changes in NATO can be attributed to lessons identified in Afghanistan and, in a limited way, in the waters off Somalia and it is appropriate to use these as examples. The risk, however, is that components will often start an argument with the statement “... but in Afghanistan, we...”, thereby looking at a single operation, limited in its scope to counter insurgency/counter terrorist. Whilst it is necessary to learn lessons from current Ops, we need to be careful not to focus too acutely on the here and now at the expense of the future.

The following, deliberately provocative, statement and question are intended to initiate discussion and be the glue that ties the panel together:

### *AIR – SURFACE INTEGRATION ONLY FUNCTIONS AT THE TACTICAL LEVEL.*

What needs to change for all components to work jointly and effectively in a coordinated way at all levels?

#### *1. AIR-LAND INTEGRATION*

The JAPCC project proposes a NATO definition of Air-Land Integration. It looks at doctrine and TTPs, examines the current planning process, reviews current and future command issues, and studies Education, Training, Exercise and Evaluation (ETEE) principles and issues. From these elements, and informed by an Air Forum held at the JAPCC in May 2010, a number of questions have emerged, some of which are set out below.



### 1.1. WHAT IS AIR-LAND INTEGRATION?

There is no NATO definition for Air-Land Integration; as the result of an Air Forum on ALI held at the JAPCC in May 2010, the following is proposed:

Air Land Integration (ALI) is the focussed orchestration and application of the full range of Air and Land capabilities within a joint force to realise effects. ALI considers all elements in a given battle space, regardless of the component to which they belong, operating together to achieve a common aim.

Latest UK doctrine states that *“the integration of air, land and maritime power is ripe for further exploitation through the development of a better understanding of the ways in which air power can be used to provide influence, particularly in irregular and hybrid warfare. The real advantage of surface capability enhanced by air power – and vice versa – is more profound than a simplistic supported or supporting relationship; for example, in conventional warfare, land forces can manoeuvre – enabled by control of the air – to find and fix the enemy for subsequent destruction by air attack, while in irregular warfare, air power can provide critical capabilities including persistent over-watch, and security and force protection for land forces over large areas, where friendly or indigenous force ratios are low.”*

### 1.2. DOCTRINE AND TTP

In recent history there has been much doctrinal debate between Armies and Air Forces on the latter's independence and its relationship with land forces. The focus of air operations can shift between totally independent operations and those fully in support of the land battle. Since different categories of air operations exist and each category has its own specifics with regard to its integration in the Joint campaign and to the level of coordination required, the concept of supported versus supporting emerged. Various air power theorists have contributed to NATO doctrine. Within Joint NATO doctrine does exist, but may not always have been read and understood by all involved. Although doctrine should be managed by components, it should also be coordinated at the Joint level.

### 1.3. THE PLANNING PROCESS

The NATO operational planning process (OPP) is the main reference used for Joint planning. The Campaign and Targeting Synchronisation element of planning is very important. By the nature of their operations, the different services have established independent targeting cycles; however, a Joint targeting cycle has also been established. The latter should be founded on an effects-based operations mindset. Due to the need to de-conflict and coordinate assets, the Air Planning Process is longer and is often seen by the other components as long, slow and inflexible and its effects are largely perceived as kinetic – all this is fallacy.

### 1.4. COMMAND STRUCTURES

The way of operating also drives the C2 structure which can be scaled and tailored to the mission; however Air C2 processes must be revised to reflect the new operating environment.



The role of Liaison Officers (LOs) will remain crucial to the integration and effectiveness of Joint (Air) Operations.

### *1.5. EDUCATION, TRAINING, EXERCISES AND EVALUATION (ETEE)*

Education and training is a key aspect of integration. It can produce the mutual understanding needed and ensure that Joint doctrine is used with trust and respect. Dedicated courses, such as the ALI course established as part of the Tactical Leadership Programme (TLP), serve this purpose and JWC training provides similar opportunities at the Operational level.

#### *QUESTIONS*

1. Is current NATO Joint doctrine adequate and flexible enough?
2. How can we better educate future leaders and commanders in the Joint planning process?

### *2. UAS INTEGRATION*

Information collection and sharing, especially with (near) real time results and effects, is crucial in all contemporary operations and the value of direct and indirect access to information cannot be overly emphasized. At the tactical level, mini-UAS can help the group/platoon commander in building SA on the local situation, whereas larger UAS can contribute to Shared Situational Awareness at company level and higher, C2 centres and Higher HQs. The same is true for sharing information in the maritime environment, where mainly the larger UAS and possibly space based systems can enhance the overall SA and integrated effort. The overall contribution of UAS to the Air-Surface Integration issue is far reaching. UAS therefore play an important role in the coordinated effort of multiple components that needs to be understood by all components.

### *3. MARITIME AIR-SURFACE INTEGRATION*

#### *3.1. FRAMING THE DISCUSSION*

No discussion on Air-Surface Integration would be complete without looking at Air-Maritime Integration. A current counter-piracy (CP) operation is used to illustrate aspects of this.

#### *3.2. COUNTERING PIRACY*

Piracy off the HoA is a problem affecting many Nations and one that has continued to worsen despite CP efforts. Figures vary depending on the source, but all show a dramatic rise in piracy of between 60% and 95% from 2008 to 2009, causing economic losses with estimates ranging from 1 billion up to 16 billion USD per year. According to NATO Operation Ocean Shield



statistics, as of June 2010, attacks and hijackings in 2010 have already surpassed or are projected to surpass 2009 statistics.

The rapid escalation of armed attacks off the HoA has prompted unprecedented counter-piracy action by the international community. Currently, the main actors in the CP arena are:

- **SNMG 1** (Standing NATO Maritime Group 1) – a multinational, integrated maritime force - made up of vessels from various allied nations, training and operating together as a single team. SNMG 1 is permanently available to NATO to perform a wide range of tasks and, since March 2010, has been engaged in CP Operation OCEAN SHIELD.
- **EUNAVFOR** – European Naval Force (TF 465) has been conducting Operation ATALANTA since December 2008. It contributes to the protection of vessels of the World Food Programme (WFP) and other vulnerable vessels, including the deterrence, prevention and repression of acts of piracy and armed robbery off the Somali coast.
- **CMF** – Combined Maritime Forces (from the United States, the United Kingdom, Canada, Denmark, France, Germany, Greece, Italy, the Netherlands, Pakistan, Saudi Arabia, Spain, South Korea, Turkey and Yemen, among others) operating with TF 151, since January 2009, with the sole mission of conducting anti-piracy operations in the Gulf of Aden and the waters off the Somali coast in the Indian Ocean.
- Other Navies 'national escort' operations, carried out by China, Russia, India, Pakistan, Saudi Arabia, Iran and others (not considered in detail in the discussion).

### 3.3. AIR - SURFACE INTEGRATION IN CP OPERATIONS

CP off the HoA provides an excellent case study for ASI. It is a real-world example of NATO air and maritime forces interacting in the maritime domain. It is also a highly complex operation because of the simultaneous efforts made by non-NATO friendly forces, with whom NATO has to engage, cooperate and interrelate. Thus, integration between Air and Surface becomes a highly challenging objective. The integration issue can be identified and better examined in three main areas.

- **Integration within NATO Air and Surface Forces.** NATO operational experience suggests that ASI is achieved through the high level of coordination between Air and Maritime assets reached in years of training and operations within NATO, based on common language and doctrinal background. However, it is also true that, currently, no air assets are dedicated to operation OCEAN SHIELD other than sea-based helicopters organic to the ships. As a general consideration however, the key factor to assure integration is the liaison between Air and Surface Commands. Putting the right people in the right places, providing them with the right liaison tools (i.e. communication systems), and empowering them with mutual trust and proper relevance directly affects integration between Air and Surface assets.
- **Integration between NATO and non-NATO Air and Surface Forces.** The three main actors in CP operations (SNMG1, EUNAVFOR and CMF) operate under different chains of command and must cope with difficult integration issues due to shortfalls in common language, different backgrounds, procedures and C2 structures. How do NATO surface vessels integrate with non-NATO UAS and Space assets, such as those being operated by CMF? These integration issues also directly challenge the



Centralised-Control/Decentralised-Execution Model that the Air Component is accustomed to, making integration hard to achieve. Therefore, on a larger scale, the Air Surface integration issue is difficult to achieve and in many ways Air Maritime Coordination may be the best we can hope for. Many coordination efforts have been made in the CP community: establishing tailored liaison such as the Air Coordination Element (ACE) which provides linkages and deconfliction between all involved air assets; establishing common language and information sharing tools such as MERCURY (an unclassified internet based “virtual information centre”); and establishing cooperative meetings such as the Shared Awareness and Deconfliction (SHADE) meeting which provides a round table assembly for all CP actors.

- **A&S Power contribution to Counter Piracy Operations.** Patrolling a 1.1 Billion square mile open sea area is an impossible goal, even for a very large fleet, especially considering the pirates’ modus operandi (small skiffs, supported by medium size mother ships that look like fishing vessels, attacking merchant vessels as far as 1,000 NM off the coast line). The contribution of A&S Power to CP Operations is the only means to guarantee a reasonable percentage of success in locating the threat, disrupting the piracy acts and, possibly freeing the hijacked ships. The use of air assets will contribute to increased Situational Awareness, provide increased speed of response, and have the benefits of pervasiveness and elevation. Nonetheless, air assets will add less than optimal value if they are not integrated with the surface fleet.

### *3.4. CONCLUSION AND KEY MARITIME QUESTION*

The integration issue in CP is quite a recent problem and the military is in an early stage of identifying the real issues and finding the possible solutions concerning integration of different forces, countries, languages, etc. Moreover, the intrinsic difficulty in locating the threat in an extremely wide area and the simultaneous actions by different actors make ASI in CP operations a highly challenging ambition. The process needs time, effort and will by all involved actors and complete integration, at the moment, seems unlikely. As such, what level of Air Surface Integration is achievable in CP Operations, and how is it best achieved?



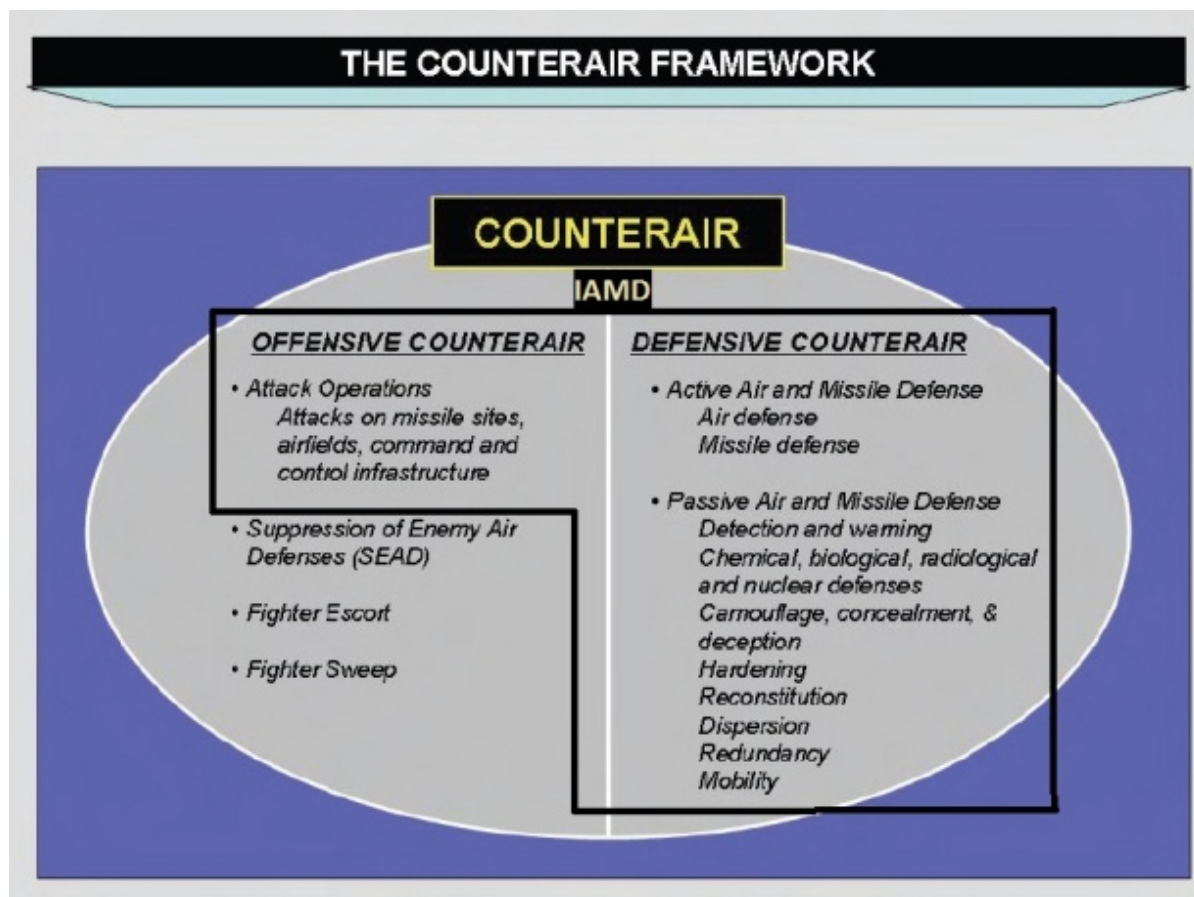
## PANEL 4 – JOINT INTEGRATED AIR & MISSILE DEFENCE (JIAMDS)

### 1. Introduction

**Joint Integrated Air and Missile Defence (JIAMD) – a definition:**

*JIAMD is the integration of the capabilities and overlapping operations of all services in order to: defend NATO's European territory<sup>1</sup> and interests, protect deployed NATO forces and ensure freedom of action by negating an adversary's ability to achieve adverse effects from their air, space and missile capabilities.*

JIAMD is directly tied to the Counter-air Framework (shown below) and demands a holistic approach to integrating offensive and defensive activities within and among military commands. The counter-air mission seeks to gain and maintain the level of control of the air needed by the joint force commander to conduct effective operations.



**NATO Air Defence.** The NATO Integrated Air Defence System (NATINADS) comprises the Air Surveillance and Control System (ASACS) and Air Defence weapon systems. Since its inception, NATINADS has been a cornerstone of the defensive posture of the Alliance. It has

<sup>1</sup> The United States and Canada provide for the defence of North American airspace through the North American Aerospace Defence Command (NORAD)



safeguarded the integrity of NATO's European airspace and clearly demonstrated and contributed to NATO's political and military cohesiveness.

The role of NATINADS during peacetime, crisis or times of conflict is to provide a continuous responsive posture that contributes to the preservation of the integrity of NATO airspace and any airspace area where NATO may conduct operations. It must also provide freedom of action to conduct the full spectrum of Counter Air operations.

At the core of NATINADS are "Integration" and "interoperability". Integration means the welding of existing National Air Defence systems into one unified system within NATO, (as opposed to National, Operational C2 organisations), effective in peace and war. Within this integrated system, nations provide interoperable forces which are placed under the command of SACEUR, for use in peacetime, crisis and conflict.

NATINADS uses common procedures, standards and a common language, which enables operators to coordinate and exchange information quickly and unambiguously. A joint, unified C2 structure provides a clear distinction of responsibilities and facilitates rapid decision making.

Despite its success, NATINADS is under increasing pressure to change. The changing security environment, the economic crisis, and the expansion of NATO are all drivers for this.

The changing security environment has led NATO to review and update its Strategic Concept. Although this process is not yet complete, the contours of a new Strategic Concept are visible. The Group of Experts on a New Strategic Concept for NATO in their NATO 2020 report stated that NATO's military missions should be:

- Deter, prevent and defend against any threat of aggression in order to ensure the political independence and territorial integrity of every NATO member in accordance with Article 5 of the North Atlantic Treaty
- Cooperate with partners and civilian institutions to protect the treaty area against a full range of unconventional security challenges.
- Deploy and sustain expeditionary capabilities for military operations beyond the treaty area when required to prevent an attack on the treaty area or to protect the legal rights and other vital interests of Alliance members
- Help to shape a more stable and peaceful international security environment by enhancing partner interoperability, providing military and police training, coordinating military assistance, and cooperating with the governments of key countries.

NATO 2020 also makes the following recommendation on Ballistic missile defence:

- NATO should recognise territorial missile defence as an essential mission of the Alliance. To that end, NATO should agree to expand its Active Layered Theatre Ballistic Missile defence System to provide the core command and control capability of a NATO territorial missile Defence system.

Two particular points of interest for NATINADS from NATO 2020 are:

- A recommendation to strengthen NATO's role in fighting terrorism: NATO's Defence against Terrorism Programme should expand from its current focus on technology-related work to include, amongst other subjects, collaborative research on investigative techniques, deterrence, and social networking.
- Recommendation on Cyber warfare: NATO should recognise that cyber attacks are a growing threat to the security of the Alliance and its members.



## 2. MISSILE DEFENCE AND AIR POLICING

The impact of the new Strategic Concept on NATINADS is yet to be determined, but is likely to include challenges for NATO Missile Defence and for NATO's Air Policing mission.

### MISSILE DEFENCE CHALLENGES

**Organisation.** Unlike Air Defence against the Air threat posed by aircraft, helicopters, UAS and shorter range 'tactical' ballistic missiles, defence against longer range ballistic missiles is a politically sensitive issue with potentially far reaching consequences for international relations. The complexity of the issues impacts directly on the military defence design process. How should the planning deal with the consequences of a successful missile interception or how should the plan deal with the relationship with other parties not in a defensive organisation like NATO? These issues must be thought through well in advance. Taking into account the complexity and the unique nature of the issue, this is best done in a recognised, existing political / military organisation which has the mandate to take urgent decisions in a timely fashion. NATO currently lacks an organisation at the political/strategic level to implement all the actions necessary to ensure effective defence against the longer range ballistic missile threat, and also lacks a military forum where all coalition and/or alliance partners as well as potentially affected countries can sit together and develop the defence design for missile defence.

**Non disclosure.** The second challenge for NATO with Missile Defence lies within what is called the *Quandary of Shared Information*. At best, the military shares plans only with close allies. The release of information to allies or coalition partners with whom they do not have such close relations, let alone to non-coalition countries, is often a time-consuming, bureaucratic process, involving many civil and military agencies and even governments. Practical experience suggests that one effect of this is that information becomes available at too late a stage for it to be used effectively. This leads to sub-optimal results, both for those who possess the information and for those who need it.

In current operations nations routinely resort to so-called three/four/five eyes disclosure policy, indicating the number and identity of those nations to whom information can be disclosed. Can decisions be made on Missile Defence when essential information may be withheld? And is there sufficient time to let bureaucratic information release processes run their course when the flight time of an ICBM is not longer than 33 minutes?

**Availability of Hardware.** The third challenge is that suitable equipment and trained people are required to carry out collective missions in NATO. Success depends on the availability of a well trained, fully-manned organisation equipped with state of the art, interoperable weapon systems and equipment. This is equally true of the uniquely demanding Global/Regional Missile Defence mission.

In these times of economic turbulence, investment in new programmes will reduce, and those programmes already running will be subject to delays or "re-profiling". Furthermore, there is a tendency for some nations to withhold capabilities from collective missions and to retain them for national tasking. Examples of this include the difficulties experienced by NATO when trying to fill the Air Defence/ Theatre Missile Defence slots for the NATO Response Force pool.

**Dependency on Space.** The fourth challenge is the growing dependence on Space. As discussed at last year's conference, the JAPCC published a Space Operations Assessment in 2009, which describes the increasing dependence of military operations on Space. One of the recommendations made is for a more effective approach to Space system vulnerability.



In Air & Missile Defence, Space-based systems are used to provide missile warning, communications, ISR, Precision, Navigation and Timing, meteorological information, Friendly Force Tracking and many more. In particular, Space based systems are crucial in providing intelligence over otherwise denied areas. Space based systems are a critical enabler of Integrated Air & Missile Defence, and provide the necessary decision superiority within the critically short time lines needed for precision engagement. The unrestricted use of Space cannot be assumed and remains a key vulnerability.

The threat to Space is recognised and several nations are developing Anti Satellite capability. Moreover, the effects from a High-altitude Electro Magnetic Pulse on electronic equipment Space based systems, whether caused deliberately or initiated by a mid course interception of a nuclear warhead should also be considered. There are also concerns associated with NATO's Missile Defence studies and the US Phased Adaptive Approach to midcourse intercept systems such as SM-3 and GBI, not least because of the serious implications of a sudden increase in Space debris from any kinetic event occurring in orbit.

The introduction of Missile Defence in NATO provides another Space dependency challenge. To ensure an effective Integrated Air Defence, NATO must accelerate the development of a Space policy and think about how to react to the increasing dependency on Space and the vulnerability of its systems.

### *NATO MISSILE DEFENCE QUESTIONS*

- 1) Should NATO establish a Missile Defence planning organisation with contributions from non-NATO nations?
- 2) How does NATO overcome disclosure issues?
- 3) What options exist to procure adequate capabilities for Missile Defence and incorporate them in NATINADS?
  - a) Are nations willing to assign their national capabilities early?
  - b) Is there room for more task specialisation?
  - c) Should NATO possess its own full scale Missile Defence Capability as part of NATINADS?
- 4) How should NATO cope with its increasing dependency on Space and the vulnerability of its Air & Missile Defence related systems?



## NATO'S AIR POLICING MISSION CHALLENGES

**Introduction.** During the Cold War, fighter-interceptor aircraft stood ready to repel a Soviet attack from the air. These fighter-interceptors were the first line of defence against Russian bombers and attack aircraft staging a conventional or tactical nuclear strike. Ultimately, air policing ensured the sovereignty of NATO members' airspace.

The new strategic environment merited a review of the NATO Air Policing (AP) mission from both a policy and implementation perspective in order to ensure that the task was conducted as efficiently and effectively as possible. The review acknowledged the many valuable roles outside the normal NATO AP mission that QRA(I) aircraft performed - including assisting airmen in distress, contributing to search and rescue operations and intercepting aircraft that were in violation of civil airspace directives. It also noted that airspace violations continue, especially at the borders with Russian airspace and recommended that AP must continue. However, AP comes at a cost; do all NATO nations still share this viewpoint?

AP is an essential part of the JIAMS, but will be looked at separately, since its mission is essentially executed in peacetime. The most important requirements for air policing are:

- **Detection/track:** Ability to detect an object in the air and track it.
- **Identification:** Ability to determine if that object is friendly or not, e.g. IFF squawk, track behaviour, visual identification.
- **C2 system:** How the CRC/CAOC works with the interceptors.
- **Laws** that allow action to be taken.
- **Intercept/Weapon system:** The ability to take action, within reasonable time.

Not all of these requirements are available to individual NATO States. The detection and tracking system has been well developed under NATINADS and has been extended to new nations, but weapon systems and fighters may be lacking and may have to be provided from other nations.

**NATO expansion.** The accession of new members to the Alliance, some of whom did not possess all the necessary indigenous means mentioned above, required a new approach to ensure SACEUR could perform the NATO AP mission successfully.

The Baltic States established a Baltic Joint Airspace Surveillance Network (BALNET) in 1998 to enhance their own airspace command and control capabilities. BALNET still exists and has been improved since then.

Neither Albania nor Slovenia possessed a fighter force or AD system. This brought new challenges to the AP mission. However, due to their proximity to existing NATO nations, it was possible for those nations to perform the air policing mission for them. This does not, however, solve all the problems as Renegade<sup>2</sup> remains a national issue. It also brings significant challenges in case of a real shoot-down and its consequence management.

AP could also be performed by partner nations. Finland and Sweden have made considerable efforts to train to NATO standards and equip their armed forces with NATO interoperable materiel. They have joined the NATO TACEVAL program and successfully completed their

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<sup>2</sup> Under current NATO policy, NATO defines the use of a civilian aircraft as a weapon to perpetrate a terrorist attack as a "Renegade". This definition is mentioned in Suplan D, but is not in AAP-6



evaluations. Practically, it would be possible to have a Finnish F-18 conduct AP over the Baltic States. They are within range and radar coverage is assured via the Air Situation Data Exchange (ASDE).

**A Single European Sky?** Although one might think that an Air Policing Area can be used in its entirety by all NATO nations and that NATO would lead the civil sector in establishing a Single European Sky, this is not the case. For example, only Polish fighters can operate over Poland and they must remain in the Polish FIR. Some bilateral agreements exist between other nations, but not yet over the whole NATO airspace. This makes the job of the Air Defence Commander extremely challenging.

### *NATO'S AIR POLICING MISSION QUESTIONS*

1. Is there still a role for Air Policing in the new strategic concept?
2. How does Air Policing influence NATO-Russia relations?
3. What are the consequence management considerations in a Renegade scenario? Can NATO play a role?