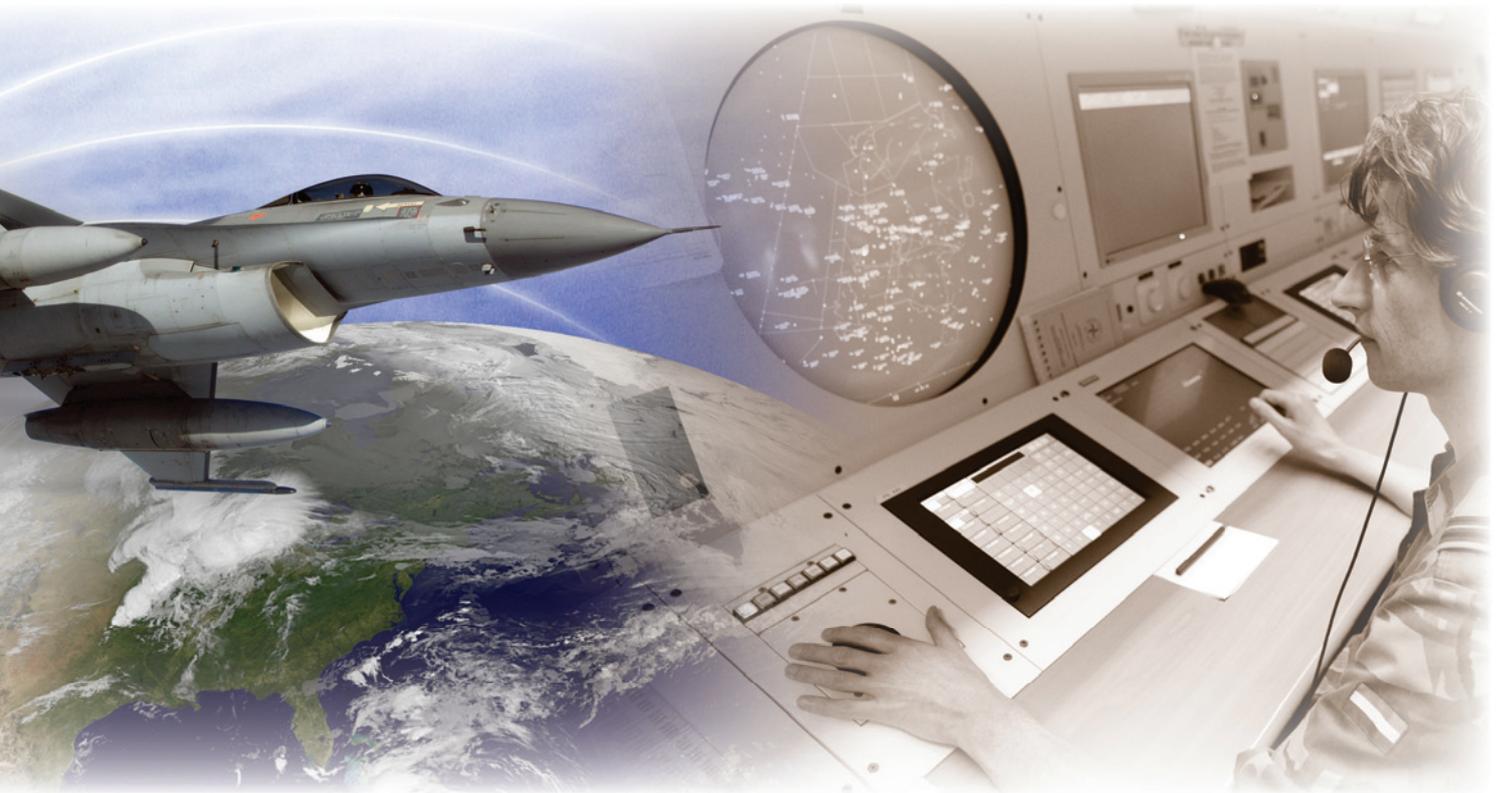September **2010**

Three Air Power Considerations within a Comprehensive Approach

Joint Air Power Competence Centre

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FROM:

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

SUBJECT:

Air Basing Strategy for Expeditionary Operations within the Comprehensive Approach
Governance of NATO Common Air & Space Assets
Assuring a Favourable Air Environment in Operations Short of War

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Last year's JAPCC conference looked reflectively at NATO at sixty years of age and futuristically at some challenges for Air and Space power. One of the common threads which emerged was the Comprehensive Approach. One might argue that, even before this term was coined, NATO conducted much of its business in accordance with its underlying principles. Nowadays the term has entered our common lexicon, even though the debate on how best to implement it rages on. For military airmen and airwomen the landscape has changed and it is no longer sufficient to look at military air power in isolation, rather, we must adopt a far broader perspective and seek greater understanding of the civil dimension. The three papers contained within, highlight three different but complimentary issues surrounding air and the Comprehensive Approach.

The first paper takes a fresh look at how militaries should plan their air basing strategy for expeditionary operations. History is littered with examples of little or no thought being given to this subject. All too often the short-term imperatives have resulted in decisions which have done nothing to support the future requirements of the Host Nation. There are many different factors which must be considered by politicians, strategists, planners and operators and the importance of getting this right within a Comprehensive Approach cannot be over-stated.

In the second paper the author examines the different governance models for NATO common air (and space) assets. Weak governance, in whichever field it is present, fundamentally undermines performance and imposes barriers to the efficient and effective employment of capability. In politics, weak governments are unlikely to survive and if they do they are likely to create problems for the future. The same is true in military circles and many of the models currently employed by NATO have inherent weaknesses which should be addressed.

The final paper takes the concept of a favourable air situation, familiar to all who understand control of the air, and expands it to areas beyond the narrow confines of major combat operations which has previously dominated thinking in this area. It reflects the very different dynamics of contemporary operations and draws on lessons from Iraq and Afghanistan. The areas of air policing, missile defence and force protection are examined, revealing the need for swift and decisive action to resolve current problems. The paper also looks in detail at Airspace Management and the need to integrate all users, it exposes a myriad of legal considerations and touches on the moral and ethical issues surrounding UAS operation.

It is essential that we all develop a deeper understanding of the air aspects of the Comprehensive Approach and although these papers only look at three issues in particular, I commend them to you as an opening salvo in a debate which will continue for some time. The JAPCC encourages wide engagement on all subjects related to Air and Space Power, thus we would welcome your comments and opinions on these papers or any other issues. Please feel free to contact my Assistant Director Transformation, Air Commodore Paddy Teakle on teakle@japcc.de or +49 (0) 2824 90 2200.

Dieter Naskrent

Lieutenant General, DEU AF
Executive Director

TABLE OF CONTENT

CHAPTER III
Assuring a Favourable Air Environment in Operations Short of War

CHAPTER 1

Air Basing Strategy for Expeditionary Operations Within the Comprehensive Approach

1.1 Background

The advantages of a multi-dimensional approach in planning and conducting NATO operations are widely recognised. As a consequence military forces are increasingly required to support the creation of conditions conducive to economic reconstruction and development, whilst simultaneously conducting operations across the full spectrum of conflict. NATO's capability to support economic recovery is a key enabler to achieving the final political end state, and early post-conflict civil air capacity building, is a major catalyst for economic regeneration. However, experience shows that all too often the needs of the nation, post-conflict, are subordinated to the more immediate imperative to successfully prosecute the operation, or they are forgotten altogether. The consequences of this are severe and may result in a lack of civil air capacity because airports have been rendered unusable for civil purposes or because the Host Nation (HN) capability to operate them has been lost. Conversely, experience shows that when appropriate consideration is paid to the post-conflict requirements of a nation's civil aviation sector, the benefits are substantial and the rapid re-establishment of domestic and international commercial air activity is a key indicator of economic well being.

1.1.1 Introduction. This paper explores how the legacy of the air basing strategy affects post-conflict civil and military air activity. It examines the conundrum of reconciling the demands of military operations, with the needs of Humanitarian Aid (HA) agencies, International Organisations (IO) and Non-Governmental Organisations (NGO). Finally, it looks at the contribution made by airport facilities to a nation's development.

1.1.2 Aim. Currently, there is no definitive guidance on the practical application of the Comprehensive Approach (CA), nor is the NATO Command Structure authorised to dedicate funding and personnel to it. Therefore, the aim of this air basing strategy concept paper is to contribute to the CA debate by identifying and articulating those factors which should be considered under a CA approach to planning, establishing and operating airbases in a deployed theatre. It discusses the prioritisation of military operations and the requirements of non-NATO civil actors (NNCA), and proposes ways in which the potentially conflicting needs of all agencies might be reconciled. The overriding principle informing this paper is to ensure that NATO's enduring legacy supports the civil and military contribution to the rehabilitation and reconstruction of the HN air infrastructure and the re-establishment of normal commercial and military activity.

1.1.3 Structure. The paper is structured in two parts. The first examines the initial planning phase and looks at liaison with the International Community (IC)[1] and HN, factors affecting the location of the airbase, funding of airport rehabilitation and reconstruction and adaptation of the NATO Operational Planning Process (OPP). The second part deals with in-theatre cooperation and coordination between NNCA. It examines airport/airbase command structures, coordination of airport development plans with all stakeholders, sharing airport capacity and cooperation with NNCA (IOs, NGOs, Civilian airlines, local authorities and armed forces). It also looks at Force Protection implications, the initiation of a transfer plan to HN authorities, and information sharing and public messaging

1.2 Initial Planning Phase

1.2.1 Liaison with the International Community (IC) and HN. Liaison must occur at all levels but will normally begin at the strategic level with the NAC who will direct the International Staff to establish contact with the IC[2]. At the beginning of an operation a Senior Civilian Representative (SCR) will be appointed with prime responsibility for the coordinating NATO action with that of the IC and the HN in the crisis area.

1.2.1.1 The SCR must establish an appropriate consultation, or even command, structure which includes empowered representation from all stakeholders. This structure will unify effort between all parties under a clearly defined and articulated CA strategy and allow NATO to employ the political, economic and military levers of power in a coordinated and synchronised manner. This, in turn, will allow all stakeholders to complement and mutually reinforce each other's efforts to achieve their end states. The CA is significantly strengthened if it is agreed upon and owned by legitimate HN authorities.

1.2.1.2 Having agreed the CA at the strategic level, it is vital that this be mirrored at the operational level with the in-theatre consultation/command structure between NATO, IC and HN authorities planned prior to deployment, for it is here that the NATO military authorities will interact with civilian actors. This structure might be similar to the Joint Coordination and Monitoring Board (JCMB) established in Afghanistan in 2007 to harmonise political, economic and military activity. Such a body must have wide representation from NATO, the IC and the HN, the aim being to implement the CA through facilitation of a coherent and coordinated approach. It must meet regularly and its representatives must be empowered to make authoritative decisions.

1.2.1.3 Sub-bodies must then be established to oversee action areas, e.g. aviation issues could be handled by a Transport and Civil Aviation Working Group (TCAWG), as in Afghanistan. Finally, the CA approach to planning must translate into coherent and coordinated tactical level activity and bodies such as civilian-military Airport Task Forces (ATF) could be established to act as the airport's consultation/command structure. Such a body would be steered by the TCAWG and empowered by it to take decisions at the tactical level.

1.2.1.4 Air **Civil-Military Cooperation** (CIMIC) teams should be established to liaise with local authorities in areas surrounding the airbase. These will help facilitate military activity on the airport but also, through consultation, minimize the nuisance of military activity on the

local population, e.g. access restrictions environmental and noise pollution, localised price inflation and cultural misunderstanding.

1.2.1.5 The major obstacles to coordination at all levels remain information sharing between partners and secure area access. For the CA to work effectively the NATO office of security should negotiate appropriate security agreements which provide OPSEC but enable essential interaction.

1.2.1.6 Finally, Organisations, such as the International Civil Aviation Organisation (ICAO) play a crucial role in the transfer of an airport from one lead user to another and the World Bank has been a key player in financing airport development. Thus, cooperation with ICAO and the World Bank should be a priority for those NATO staff dealing with an air basing strategy.

1.2.2 Airbase Location and Funding Airport Rehabilitation and Reconstruction. Many factors will influence airbase location. Whilst NATO logistics considerations may be dominant, it is paramount that the scope for future economic development is given sufficient weight.

1.2.2.1 Prior to making a decision planners should look at the entire HN transport infrastructure, including, railways, roads, harbours and ports and should consult widely to ensure that the interests of the various in-theatre actors, including IOs, NGOs, HN and potential private investors, are taken into account. Furthermore, to avoid imbalance the number of in-theatre airbases should be aligned with the estimated future needs of the HN.

1.2.2.2 There are likely to be a number of options, in terms of airbase selection including, using an existing commercial airport or military airfield, expanding an existing facility, or establishing new facilities. Each option must be viewed on its own merits, e.g. deploying to an existing commercial airport may be cost effective but might hamper development of civilian air capacity and economic recovery, whereas establishing a new air facility would likely incur enormous capital outlay and require planners to be mindful of its future utility to the HN.

1.2.2.3 Miscalculations are common and there are many examples where the location of the Airport of Debarkation (APOD) was made in haste and on the sole basis of the operational requirement with little or no consideration of HN or NGO requirements. Such a choice can easily become a long term constraint on development and the location of an APOD should be the result of a comprehensive estimate. Compromise between military and civil considerations is inevitable but it is vital that the both pay due regard to the future needs of the nation.

1.2.2.4 Once an airbase is selected, it is essential that any pre- or post-deployment damage is kept to a minimum. Should it be necessary to deny an airport to an adversary or to evict an adversary from it, the extent and nature of the effects applied should be contained to those required to achieve the immediate objective but not render it unusable in the future. While damage to operating surfaces can normally be rapidly repaired, the reconstruction or replacement of navigation aids, bulk fuel storage facilities and specialist aircraft maintenance and support infrastructure may incur significant cost or delay. While such considerations may appear obvious, their application in real world situations has been at best inconsistent and at worst ignored altogether.

1.2.2.5 Funding the rehabilitation or reconstruction of airports can be provided from a variety of different sources. For example, the World Bank, the Asian Development Bank and other donors have financed airport infrastructure and services projects in Afghanistan. To expedite this process and avoid unnecessary NATO expenditure, donors should be engaged early in the planning process to secure the necessary investment funding. Alternatively, a relaxation of common funding rules and regulations might allow NATO to become more active in the rehabilitation/reconstruction of the civil aviation sector. Changes to NATO common funding protocols would require political consensus and that appears some way off. Consequently, many NATO nations prefer to plan and manage national sponsored aid and development programs; the challenge is to convince them that common NATO aid and development programs would be cheaper and more efficient.

1.2.3 Adapting the NATO Operational Planning Process (OPP). The military strategic end state is one element of the political end state but as an operation enters phase four (rehabilitation/reconstruction) civilian considerations begin to dominate. The NATO OPP must be adapted to reflect this and a more collegiate approach taken, with input from the IC and HN to ensure that non-military means and aspects are incorporated into the comprehensive plan.

1.2.3.1 From the outset of the planning process planners must understand NNCA requirements. Only after due consideration can courses of action and lines of operation be developed. The OPP must consider all of the factors affecting the complex environment, including the different end states of various stakeholders. The temptation might be to focus on the short term but in doing so planners will create more problems than they solve. The greatest chance of mission success comes through adopting a comprehensive long term perspective within which rehabilitation and reconstruction of the civil aviation sector must feature.

1.2.3.2 All aspects of NATO's role and contribution in this area, including airport usage must be captured in the operational plan (OPLAN) and, in particular, in the Air Operations annex. To be meaningful, arrangements and negotiations must occur at the earliest stage of planning and the compromises on all sides agreed. As an operation progresses requirements will alter and emphasis will shift from operational activity to training HN personnel to undertake air related activity e.g. air traffic control, airport management, and fire and crash rescue. This is costly and can be a long term project, therefore it is vital that it be captured in the OPLAN and resourced appropriately.

1.2.3.3 Planning must account for the needs, expectations and perceptions of NNCA; they are shaped by a different environment and apply different procedures and practices. Compared to the military, they are likely to have stronger ties to IOs and NGOs and a more empathetic relationship with the local population. They can be strongly independent and may not

wish to be openly associated with the military which considerably complicates the CA. The military must often make the first move to remove cultural barriers and this is best delivered by means of a detailed and comprehensive Information Operations plan which explains the aims and purposes of the military strategy and its end state. NATO forces and NNCA can learn much from each other's experience and practices; if the CA is to be truly comprehensive representatives from the IOs and NGOs must be integrated within the OPP and the UN Integrated Mission Planning Process and the planning processes of other relevant organisations better aligned.

1.2.3.4 Useful expertise can be drawn from the Senior Civil Emergency Planning Committee's (SCEPC) Planning Boards and Committees (PB&Cs). Based in NATO HQ, SCEPC can support operations through accredited civilian aviation experts who can respond to Requests for Information (RFI) during the OPP and during an operation, e.g. the Civil Aviation Planning Committee (CAPC) can evaluate complex aviation issues against the backdrop of national and international laws and regulations. The categories and allocated positions of civil expertise that resides within CAPC are: senior transport advisors, general air transportation managers, flight operations support, airport operations, aeromedical evacuation, cargo and passenger movement, aviation insurance, support helicopter operations, aircraft/helicopter broker and aviation law. Within the staff are several lawyers and a number of active fixed and rotary wing commercial pilots; all are experts in their respective areas.

1.2.3.5 The OPP currently provides for Minimum Military Requirements (MMR), however, for greater long term utility, the planning of in-theatre airbases should be conducted to comply with ICAO standards. Capturing ICAO standards in the requirements would significantly improve the prospects for an early and straightforward hand- over of airbase facilities. To further enable hand-over civilians should be employed to the maximum extent and NATO common funding should permit airport infrastructure expenditure to comply to ICAO standards and not merely with MMR.

1.3 In-Theatre Cooperation and Coordination

1.3.1 Airport/Airbase Command Structure. Depending on the nature and intensity of the operation, different options exist for appointing the airport commander; for major conflict and war-fighting a NATO military commander is the most appropriate. For less intensive operations and during phase changes, it is conceivable that a hybrid command structure will evolve, with NATO, UN and the HN sharing responsibility. However, unity of command remains a key principle and an overall base/airport commander must be appointed. If a military commander is appointed he must have immediate access to civil advice in order to prepare for the future handover of the airport to the HN. Continuity of command is vital and a major lesson from ISAF has been the inefficiency inherent in the sixth month rotation of command at Kabul Airport.

1.3.1.2 Local authorities should assume full control of the civilian passenger terminal as soon as possible, however, responsibility for other airport facilities and services should progressively move from military to civilian control, possibly with the UN acting as an intermediary. Experience has shown that this can be a lengthy process due primarily to a lack of HN capacity. Many of the skills needed are highly technical and trained local civilians are often tempted by higher salaries and greater security on offer outside the HN, this creates a funding dilemma and distortion of the local labour market.

1.3.2 NATO Airport Development Plans Coordination. Most airport reconstruction and rehabilitation projects are nationally driven, as the current arrangements in ISAF demonstrate. There are many reasons why nations favour this approach including national visibility, ease of management and a lack of confidence in the multi-national approach, however, as NATO command of Kandahar shows, a more coordinated and coherent approach can deliver better cost effectiveness and enhance burden sharing.

1.3.2.1 HN civilian and military aviation strategies are pivotal to airport development[3] and NATO assistance in developing these plans is often greatly appreciated[4].

1.3.2.2 Currently, NATO common funding policy restricts expenditure on airbase infrastructure to those projects which support NATO activity; such funds cannot be used for nation building. However, NATO projects must give due consideration of the future use of the airport and ensure that any project enhances rather than hinders future capability and capacity. Consideration should be given at an early stage to the likelihood of base expansion, developing facilities with surplus capacity may appear expensive, but will be cost effective in the long run.

1.3.2.3 NATO military air infrastructure engineering expertise will be invaluable throughout an operation particularly when dealing with damaged infrastructure, debris clearance, emergency repairs and restoration of utilities, however, the local labour force should be used to carry out the work as this will not only be more cost effective but will aid economic regeneration in the HN. All activity, but particularly disposal of waste, must be in accordance with accepted NATO Environmental Protection norms and care must be taken not to negatively impact the local population through, for example, the contamination of the water supply to neighbouring villages

1.3.3 Sharing Airport Capacity and Cooperating with NNCA. Because airports and airfields are limited resources, it is unlikely that any one user will be given sole access, thus it will be necessary to develop plans which facilitate shared access and use.

1.3.3.1 As the situation in the HN stabilises the number of users will rise and plans must have sufficient flexibility to accommodate this increase in demand. Within NATO, cooperating with NNCA is primarily a political issue, but once agreed it is relatively straightforward to implement sharing arrangements at the tactical level[5]. Experience shows that time slots and ramp space are the most common areas of contention and it would be the responsibility of the aforementioned ATF to deconflict military and civilian activity to ensure the most effective and efficient operation of each. The impartiality of such a body will appeal to those within the IO and NGO community who require a level of disassociation from the military.

1.3.3.2 During the initial phase of a deployment the military may provide logistic support to IOs and NGOs through the Combined Air Terminal Operations (CATO) and the Reception, Staging and Onward Movement (RSOM) of relief goods. This responsibility and other airport services such as air traffic control management, meteorological services, and fire and crash rescue, should be civilianised as soon as practically possible. Not only does this ease transfer of ownership but it also contributes to the economic regeneration of the HN.

1.3.4 Transfer Plan Initiation. The transfer of responsibility to the HN is a lengthy and complex issue, with a great many regulatory and legal issues to be addressed. For example, the HN Civil Aviation Organisation must be ICAO compliant and aviation law must be endorsed by the government. The transfer process will involve substantial training and educational support for HN air specialists. Whilst much of this training burden will fall on NATO it is essential that the process be monitored, and preferably owned, by ICAO, as it is they who will accredit the HN capability. Such training and education is resource intensive and whilst initially it may be military heavy the aspiration must be to reduce military involvement to an advisory and supporting role as soon as possible

1.3.4.1 The handover condition of the airbase must be agreed in advance and any damage or fuel contamination corrected. Adherence to best practice during military operation should avoid the requirement for costly clean-up operations.

1.3.5 Force Protection Issues. Due to their strategic importance, airports are at particular risk of attack and require effective FP. NATO uses a Vulnerability Assessment (VA) system to quantify risk but this is currently only applicable once a base has been established. To reduce the resource bill, such assessments should be conducted against each potential airbase prior to deployment.

1.3.5.1 Determining the Tactical Area of Responsibility (TAOR) or Ground Defence Area (GDA) is a critical element in establishing effective FP around an airbase. Protecting non air related infrastructure within the

TAOR/GDA such as electrical substations, schools, police stations or local government buildings will be the responsibility of the designated commander.

1.3.5.2 Thus FP efforts must be integrated to gain early warning of a threat and achieve the basic principles of defence (defence in depth, mutual support, all round defence and flexibility). The FP capabilities required for an airbase will be determined by a comprehensive estimate and detailed threat assessment, which must be revisited frequently as the threat is likely to change over time.

1.3.5.3 NNCA can enhance threat and situational awareness through their interaction with the local population and they should be encouraged to share intelligence to enhance mutual protection. Additionally, the United Nations Department for Safety and Security (UNDSS) issues intelligence assessments, which should be used as part of this process.

1.3.5.4 The importance of understanding HN culture cannot be overstated and the FP posture must pay due regard to needs and sensitivities of the local population. Those living in the vicinity of an airbase might feel particularly vulnerable and may resent NATO presence, it will be important to reassure and positively engage the local population through proactive CIMIC.

1.3.5.5 Military engineering airfield construction projects must include consideration of FP and safety (fire and rescue) issues. Similarly, selection of airfield Control of Entry (COE) points must weigh FP considerations with the requirements of all airfield users. The involvement of engineers, FP experts, and safety specialists at the earliest stages of planning will help reduce cost overrun and specification changes which inevitably result in delay to project delivery.

1.3.6 Information Sharing/Public Messaging. All stakeholders should share a mutual understanding of the security and developmental needs of the airport; key to this is the creation of shared information environment. This will require a detailed analysis of the information exchange requirements of the JCMB,

who at a minimum should be provided access to NATO Unclassified information. As much activity as possible should be conducted in the unclassified domain and whilst adhering to OPSEC principles, personnel must guard against the tendency to unnecessarily classify information.

1.3.6.1 Regular security briefings by NATO staff to NNCA can alleviate some of the classification issues. NATO is considering concepts such as Civil-military Fusion Centres (CFC) and Civil-Military Overview (CMO) with a view to creating a more open information environment. The aim is to better share, gather, process, organise and disseminate non-classified information among NNCA and the concept has great applicability to the management of airbases.

1.3.6.2 A database on completed and ongoing airport development projects should be created, and a means of sharing air situational awareness provided; NATO will probably provide this capability.

1.3.6.3 NATO use of a HN facility will likely be a sensitive issue for the local population and the HN, therefore the air basing strategy must be supported by a proactive and robust public information campaign. As always, the Information Operations campaign will be integral to the theatre plan and controlled at the highest level, but it is crucial that it contain discreet elements which effectively support air operations and the FP of air assets.

1.4 Conclusion

1.4.1 The economic recovery of a nation will likely be an important element of the NATO political end state and early rehabilitation of a post-conflict civil air capacity is a key catalyst for economic regeneration.

1.4.2 During initial planning, NATO must rapidly establish strong linkages to the IC and the HN. This might be achieved by inviting NNCA to join common coordination and command structures and involving them in a more inclusive NATO OPP which places greater emphasis on coordination between military and civilian actors and their associated means. In the

early stages of air operations planning, great care must be taken with the selection of airbases, including the APOD, and the future utility of airbases must be given sufficient weighting. Consideration should be given to a more flexible use of common funding to enable rehabilitation and reconstruction of HN air capacity as this could deliver a more substantial political end state.

1.4.3 Once deployed every effort must be made to improve cooperation and coordination between the NATO military and NNCA. The respective role of each actor in the airbase structure must be continually adapted to meet changing circumstances. Reconstruction and development plans must be coordinated with all stakeholders and meeting ICAO standards should take precedence over MMR. Airport sharing protocols must be established which enable rather than hamper the respective military and civilian operations. A transfer plan to HN authorities should be initiated early as this is a lengthy and complex undertaking. Throughout, information sharing and public messaging will be key enablers to improving mutual understanding. Force

Protection planning must pay due consideration to local population sensitivities and present and future economic and commercial activities.

1.4.4 NATO's experience in ISAF shows that implementation of the CA is still some way off. To understand the concept, training and education in its principles are required. There is a risk that the CA will provoke cost increases and time delays in the planning and execution of air operations through the requirement to consult and coordinate more closely with NNCA. That said, a true CA will deliver the political end state more rapidly and with greater substance than a fragmented, unsynchronised application of the separate levers of power, and NATO must continue to champion the CA at every opportunity.

1. In the context of this paper, the term IC includes IOs and NGOs, together with individual nations.
2. A list of accredited civilian representatives of the main IOs and NGOs should be permanently available.
3. e.g. The 2006 Afghan National development Strategy (ANDS) which identifies the priority order for airport development.
4. e.g. Pristina, Kosovo and Kabul International Airport, Afghanistan.
5. e.g. Kandahar and Kabul International Airports in Afghanistan.

CHAPTER 11

Governance of NATO Common Air & Space Assets

Executive Summary

Common assets, such as the NATO Airborne Early Warning Force, are military capabilities established by sponsoring nations and pooled under multinational arrangements for the collective benefit of NATO. However, NATO is not always able to use these assets to best effect. This paper examines NATO's many diverse Common Air & Space Assets, identifies governance issues and recommends ways to better leverage capability. A systematic approach was adopted which grouped assets together according to common characteristics such as community of interest, foundation documents, cost sharing and decision making processes. Communities of interest can range from one or two sponsoring nations to all members of the Alliance and this generally dictates the foundation document, under which the grouping will operate. Foundation documents, *inter alia*, define the level of governance for asset establishment and employment. Cost sharing looked at the division of operational and deployment costs among sponsors, while decision making processes examined how deployment and employment decisions are taken. Based on the analysis, this study used five tiers of commonality ranging from NATO funded and operated assets to NATO outsourcing of contracts on operations. Examination of each tier revealed four underlying governance issues: foundation documents, NATO decision making processes, common funding and lack of coordination. From this, conclusions were drawn which if addressed will allow NATO to better leverage common assets in the future:

- Common Air & Space Asset governance is generally more geared towards peacetime regulation than operational deployment.
- NATO common funding and decision making processes hinder, rather than assist, deployment, especially when minor differences between Allies over burden-sharing exist.

- Because common assets have been established on a case by case basis, there is neither strategic oversight nor a NATO wide policy.

Based on these observations, recommendations are offered to improve the governance of the Common Air & Space Assets. A number of recommendations would, if adopted, have far reaching consequences beyond mere improvement in governance and many are contentious. The study contends that such change is necessary if NATO is to optimise the return from and relevance of common assets. The recommendations are:

- Redefine the consensus-based decision making process in NATO to better enable the commitment of common assets to operations.
- Establish a commonly funded NATO operations budget to better support the deployment and employment of Common Air & Space Assets.
- Support the development of niche capabilities using common funding where appropriate.
- Improve oversight of Common Air & Space Assets to deliver better coordination and access.
- Develop NATO policy for establishing and employing common assets.

2.1 Introduction

Although most NATO Air & Space (A&S) forces are maintained under national auspices, a growing number of Alliance assets are pooled through a variety of multinational arrangements. Throughout this paper, these assets are referred to as NATO Common A&S Assets. These assets provide alternative solutions to meet capability gaps, and allow member nations to reduce military expenditure by avoiding capability overlap. These cooperative initiatives not only meet the capability requirements of the individual nations, but also provide Alliance access to enhanced military capability.

2.1.1 Background
There are many NATO common assets and it is worth noting that most are A&S related. NATO Common A&S Assets within the scope of this paper include:

- NATO Air Command and Control System (ACCS)
- NATO Airborne Early Warning (NAEW)
- NATO Alliance Ground Surveillance (AGS)
- European Expeditionary Air Wing (EEAW)
- Movement Coordination Centre Europe (MCCE)
- European Air Transport Command (EATC)
- Strategic Airlift Capability (SAC)
- Strategic Air Lift Interim Solution (SALIS)
- NAMSA Contracts for ISAF

At the top end is ACCS (including (D)CAOC[1], CARS[2] and (D)ARS[3]) which will be fully integrated into the NATO Command Structure (NCS). Elsewhere, there are an impressive array of assets under varying degrees of command, control and governance. Common A&S Assets are established by foundation documents, such as Memoranda of Understanding (MoU), which define the level of governance and cover decision making mechanisms. There are, however, many different governance models which demonstrate such diversity and complexity that bureaucratic inertia results which inevitably hinders operational tempo and output. Furthermore, these diverse models dictate that the NCS must adopt bespoke arrangements for each capability. NATO should examine the various governance models, identify the deployment/employment mechanisms and determine how they might be optimised for the collective benefit. There is clear advantage in developing a contextually responsive, standardised approach, which provides the operational commander with improved access to NATO capability

This paper identifies the most important factors affecting common assets and explores the governance conundrum. Issues are addressed by defining tiers of commonality and grouping assets according to their attributes making it easier to define commonalities, identify problems, formulate requirements and provide recommendations.

2.1.2 Aim. The aim of this paper is to explore how the governance of NATO Common A&S Assets, both present and future, might be improved.

2.1.3 Scope. Only those assets that contribute directly to the conduct of NATO operations are included. MoU organisations such as Centres of Excellence (CoE) are deemed outside the scope of this paper.

2.2 Nato Common A&S Assets

2.2.1 Establishment. The NATO Defence Planning Process determines force requirements and encourages member nations to fill the capability gaps identified in the Defence Requirements Review (DRR). If nations share specific capability requirements, it is often simpler and cheaper to initiate a multinational acquisition programme. This might lead to the establishment of an organisation to collaboratively manage the capability. Many factors influence the decision to establish a common asset; including burden sharing, return on investment and other industrial benefits, if equable it will encourage participation, alternatively any bias, real or perceived, will be a major disincentive. Establishing a common asset can put capability within the reach of nations who cannot afford it unilaterally. However, it is sometimes necessary for one or two of the sponsoring nations to absorb a greater share of the projects costs to allow smaller nations to join the programme. Crucially, participation in a particular programme gives a nation influence over that Common A&S Asset's use; this has positive and negative implications. Strategic trends and pressure on national defence budgets indicate that the number of common assets in NATO may well increase in the future thus it is paramount that governance issues are addressed to ensure common asset availability and employability.

2.2.2 Employment. The acquisition of NATO Common A&S Assets can be a powerful demonstration of solidarity between member states, however, it is too easy for those involved to view the establishment and peacetime operation of a common asset as an end in itself. It is important that the operational rationale behind the acquisition remains at the forefront of the debate. The deployment of a common asset on a NATO operation may require a unanimous decision at North Atlantic Council (NAC) level and if consensus cannot be reached the theatre commander may be denied critical capability. Recently, the cumbersome and lengthy process required to reach consensus on NATO E-3A support to the NATO International Security Assistance Force (ISAF) mission has focused attention on the availability and deployability of common assets.

Under current governance models and decision making processes there are many reasons why negotiations for deployment and employment of a common asset might fail, including cost sharing, host nation agreements, national caveats or diplomatic clearances. It is crucial that any governance model facilitate, rather than complicate the availability and deployability of a common A&S asset.

2.3 TIERS of Commonality

The study methodology groups common assets into tiers of commonality according to the grouping criteria of community of interest, foundation document, cost sharing and decision making. Five tiers were identified.

TIER-I	NATO Owned-Funded Common Assets (ACCS)
TIER-II	Multinationally Sponsored Common NATO Assets (NAEW, AGS)
TIER-III	Focused Support Common Assets (SAC, EEAW, MCCE, EATC)
TIER-IV	Niche Capability Based Common Assets (CZE Chemical, Biological, Radiological and Nuclear)
TIER-V	Contracting/Outsourcing Based Common Assets (NAMSA Contracts, SALIS)

2.3.1 TIER-I/NATO Owned/Funded Common Assets. Tier-I includes assets such as ACCS which were established under NATO Capability Packages. The mission systems are procured and operated by NATO common funding, are part of the NCS, are under the direct control of NATO Commanders and are available to support all NATO operations. These characteristics demonstrate the crucial importance of Tier I assets to the Alliance and as they also conduct combined training and exercises during peacetime they will always have priority in the force generation process. Although Tier-I assets provide NATO with the highest level of governance, member states may apply national caveats on the deployment of their own personnel and equipment assigned to those assets. As Crisis Establishment and Peacetime Establishment differ, any restrictions imposed by national caveat will significantly reduce Tier I utility. As they are established by NATO Capability Packages, Tier-I assets benefit from comprehensive burden sharing as all members contribute to acquisition and maintenance costs. Whilst, NATO could have more flexibility and improved governance over other common assets if they were all established along Tier-I lines, budget constraints will often militate against this approach and alternative approaches must be considered.

2.3.2 TIER-II/Multinationally Sponsored NATO Common Assets. Tier-II groups Common A&S Assets established under multinational MoUs. Mission systems of Tier-II assets are procured and operated by the sponsoring nations and the infrastructure is supported by the commonly funded NATO Security Investment Programme (NSIP). The NAEW Force illustrates how this model works. Established in the 1980s, when Collective Defence was the focus of the Alliance's agenda, all NATO nations were willing to support deployment of common assets across NATO through common funding. Consequently, one NAEW Main Operating Base (MOB) and several Forward Operating Bases (FOB), were established through the NSIP. NAEW currently serves as a template for new common assets on this tier. The NATO AGS project, which is the subject of a fifteen nation MOU, falls into this tier even though the issue of NSIP funding is unresolved. Due to their nature and importance, Tier-II assets must be readily available and easily deployable. This is a critical path to providing a balanced military capability to the in-theatre commander. However, expeditionary infrastructure is often required and currently there is no mechanism to rapidly commit NSIP funds to fund this. Thus, as seen in the proposed NAEW deployment to ISAF, Tier-II assets are likely to be considerably constrained by current funding and decision making processes. The relevance of these assets depends wholly on their availability, deployability and contribution to NATO operations. When placed in the context of the NATO Multiple Futures[4] assessment, there is a clear requirement for assured access to Tier-II assets.

2.3.3 TIER-III/Focused Support Common Assets. Tier-III groups Common A&S Assets such as SAC, EEAW, MCCE and EATC. These entities are established by multinational agreement and can include non-NATO nations. The systems are procured and operated by the sponsoring nations. The SAC programme, for example, provides heavy transport capability to the

participating nations including non-NATO members. A participating nation may allocate some of its flying hours to a non participating nation or organisation. Such flexibility might tempt the wider community of interest to remain outside the programme, however, this risk is offset by the adaptability and agility of the model. The EEAW[5] programme is a multinational co-operation agreement between several NATO members (Belgium, Denmark, Netherlands, Norway and Portugal) to reduce the logistics footprint and improve availability of their common F-16 weapon system. Such agreements improve deployability and sustainability of a common weapon system on operations and also serve as a common asset, which can be extended to support the other NATO nations.

There is a distinction between the assets at Tier-I and Tier-II which provide general support to all members and those at Tier-III which provide direct, but quantifiable support to individual nations, making it easier to support other NATO nations and non-member states.

2.3.4 TIER-IV Niche Capability Based Common Assets. Many newer nations acceded to NATO with no capability to undertake specified NATO missions. The best example is Air Policing which has seen different models emerge to cover these shortfalls (e.g. Baltic Air Policing and Slovenian Air Policing). Given the capacity within the Alliance to conduct Air Policing, it would appear unnecessary to expect those nations without this capability to procure one. Therefore, rather than pursue such aims, these nations should be encouraged to meet NATO's collective needs through the development of niche capabilities. Tier-IV foresees a grouping of common assets based around niche capabilities. These could be developed and procured by a single nation or by the Alliance through common funding and then passed to a nation as custodian of the capability on NATO's behalf. This would be a novel use of common funding but it would create a flexible method to satisfy capability shortfalls whilst simultaneously strengthening some of the smaller, less developed and less wealthy member nations by acknowledging their importance as a provider of much needed capability to the Alliance. Such an approach would enhance the status, visibility and credibility of these nations in both the political and

military arena. In the face of shrinking defence budgets as a result of the global downturn, the Tier IV approach is particularly attractive as it allows those with limited resources to invest in niche capabilities rather than high cost weapon systems. Whilst the details would need to be captured formally, the presumption would be that if a nation provided a niche capability from within its own resources it would retain the right to withhold, if that capability were common-funded an appropriate level of assurance from the capability custodian would be required. The Tier IV approach might also be attractive to those who may have traditionally adopted a low-key military role but who possess advanced technical skill or expertise in another area, e.g. Space.

2.3.5 TIER-V/Contracting/Outsourcing Based Common Assets. Tier-V groups Common A&S Assets which are commercially contracted to support NATO missions, for example, NAMSA facilitated contracts in ISAF which provide support to many members and reduce national logistic footprints. Governance concerns at this Tier centre on perceived or real operational risk, consequently nations may cover this by maintaining some of the core capabilities in support functions. Contracting and outsourcing is more readily available than hitherto. Currently in RC South on ISAF, a commercial company (MDA) under contract to the Canadian Government provides UAS capability to ISAF. When the Canadians withdraw from RC South in the near future this capability will also be withdrawn creating a gap in ISR provision on the theatre main effort. A NATO – MDA vice a Canadian – MDA contract would be a logical next step to ensure continuity of ISR provision. Contracting and outsourcing can allow a small nation to make a significant contribution to a NATO operation which it would otherwise be unable to materially support. The surveillance aircraft[6] contracted by Luxembourg and deployed to the Seychelles in support of EU Counter Piracy Operation Atalanta off Somalia is an excellent example.

2.4 Governance

Because each common asset has discreet features it is difficult to draw general conclusions, nevertheless, the tiers of commonality make identification of under-

lying problems possible and expose a number of issues at each tier. Common assets at Tier-I might provide NATO Commanders with flexibility in terms of governance but not all common assets meet the eligibility criteria to enter this level. Although indispensable for most types of NATO operations, Tier-II common assets may require consensus and common funding for deployment on non-Article V operations, thus rendering assured access questionable. Common assets at Tier-III appear to provide a reasonable balance between governance and availability, but they are most prevalent in the logistics area and applicability in other fields should be examined. The concept of Tier-IV niche capabilities is worthy of further consideration, including the possibility of extending common funding into this area. The military capabilities provided by Tier-V outsourced common assets open new windows of opportunity for both the military and commercial sectors. To improve governance of NATO Common A&S assets, the obstacles to coherent governance must be addressed.

The majority of problems identified relate to foundation documents, consensus based decision making, common funding and lack of coordination.

2.4.1 Foundation documents provide the context under which the assets are established and employed, each is different and the lack of standardisation is acute. Tier-I assets are established through NATO Capability Packages, Tier-II and Tier-III are established under MoU, while Tier-V assets are based on commercial contract. Quite how Tier-IV type niche capabilities would be established remains unclear, but would likely be a MoU type document. These documents cover how common assets will be established, trained and maintained in peacetime, unfortunately the detail in these areas is not matched by similar depth when discussing operational use. Consequently, most foundation documents are geared more towards peacetime than operational use. Notable exceptions are the Helicopter Initiative Programme (HIP) and the EEAW programme, which focus on operational use and provide a useful template which could be adopted by future Tier-III packages. Whatever the Tier, its foundation document must address operational employment in detail if NATO is to have confidence that the common asset will be available for use when required.

2.4.2 Decision making within NATO has been the subject of much debate and unsurprisingly it remains a key factor in the governance of common assets. Due to the intricacies of the decision making process, NATO is often unable to make optimal use of its common assets. Common assets require consensus among sponsoring nations for their employment on NATO operations, however, these nations may have different positions with regard to involvement in a non-Article V crisis. Even if the members agree collectively that action is appropriate, some may decline to contribute to the force generation process; such a decision would likely affect any common asset contribution. Additionally, national constitutions may prevent a member nation's personnel from participating in certain mission sets, thus degrading common asset effectiveness. Although it would not solve the latter issue, relaxing the consensus based decision making process would dramatically improve the deployability and employability of common assets.

2.4.3 Burden sharing of the costs is also the subject of fierce debate.

"For decades, missions have been financed on NATO's established procedures to have each nation pay for all equipment and personnel it deploys abroad. This is encapsulated in the formula 'costs lie where they fall'. But, it can mean that those nations with certain key capabilities will always be asked to deliver – and always be expected to pay"[7].

2.4.4 New procedures for funding NATO operations are needed and the Alliance should also work towards an Alliance mechanism for the acquisition, maintenance, and operation of common assets; "This mechanism should be based on experience gained in creating and managing the various Weapon System Partnerships and the NATO-owned and -operated AWACS programme. Having such a mechanism in place might remove the current need to re-invent the wheel every time a NATO-owned and -operated capability is

established. It could also be used in generating other collaborative assets, such as air-to-air refuelling aircraft and heavy lift helicopters"[8].

Burden sharing is a key issue in consensus building prior to the deployment of common assets. If a solution can be found to the burden sharing issue, its effects would be far reaching, not least in the area of decision making.

2.4.5 Coordination is a lynchpin of Common A&S Asset governance. Most common assets were established on a case-by-case basis with little or no strategic guidance, and the diversity of governance models indicates a lack of NATO policy which greatly exacerbates the problem. Coordination is not only important during the establishment phase, but also during deployment and employment. NATO should develop a policy for the establishment and employment of Common A&S Assets, and assign responsibility for their oversight to a competent and properly resourced HQ.

2.5. Way Ahead for Governance of Common A&S Assets

Common A&S Asset governance could be improved in five specific areas:

2.5.1 Redefine the Consensus Based Decision Making Process in NATO. Consensus building is at the very heart of NATO, however, enlargement and conflicting national interests make this process ever more challenging. Although compromise is to be expected, marginal differences in policies should not prevent NATO from responding to emerging crises effectively.

2.5.1.2 "In order to improve the decision making process, a new system of qualified majority voting, where the nations that participate in or fund programmes have a greater vote on that matter might be considered. NATO could restrict the consensus rule to the North Atlantic Council (NAC) and when voting on funding in budget committees. In addition, more flexibility might be sought by NATO developing better decision making methods; for example, nations could

join consensus in the NAC on an operation but choose not to participate; and in return, they would not participate in decision making for that operation[9]".

2.5.1.3 In essence the suggestion is that any NATO member who consciously declines to contribute to a NATO operation, forfeits the right to be involved in decision making on that particular operation. This might imply that even if a common asset sponsoring nation declined, NATO might still be able to gain access to the capability. These concepts challenge accepted norms but their impact across the Alliance, and in the area of common asset governance, would be truly profound.

2.5.2 Establish a New Budget for Common Funding of NATO Operations. NATO must change the manner in which its operations are funded. NSIP, which provides funding for infrastructure, is currently unable to support deployment of NATO Common A&S Assets. NATO should consider creating a common funded operations budget to cover, *inter alia,* the operating costs of deployed common assets. Such an initiative would ease national concerns over equitable burden sharing, and encourage new common assets ventures. In the light of shrinking defence budgets, it is important to seek out new opportunities and such an initiative might allow some nations to make significant savings in the long term. Common funding remains a cornerstone of burden sharing and solidarity but reluctance to commit funds and the bureaucratic process of releasing capital has an overwhelmingly negative effect on operational output.

2.5.3 Encourage Niche Capabilities by Common Funding. During initial NATO enlargement, new members were encouraged to invest in equipment programmes for the purpose of standardisation and interoperability, however, this approach failed to recognise the financial capacity of the nation to fund such capability. Furthermore, this approach looked myopically at the nation when a more holistic pan-Alliance slant might have yielded better solutions. NATO has learned much during the enlargement process and the opportunity exists to bring new member nations together for acquisition of military capabilities which meet NATO shortfalls. The benefits of such an approach are

manifold but NATO would need to clearly articulate its requirements and assure access within acceptable risk. Not only would such a programme improve the credibility of these nations, but it would also challenge any perception of a "free ride". Were the NATO Defence Planning process able to introduce a commonly funded burden sharing solution for the initial cost of procurement the potential to expand the common asset pool and simultaneously increase NATO operational effectiveness would be considerable.

2.5.4 Assign a NATO HQ for Oversight. Greater oversight of common A&S assets is required to optimise their contribution to operations. Significant improvement in overall governance could be achieved through the simple step of tasking an existing NATO organisation with responsibility for oversight of all Common A&S Assets. This would not necessarily be a command function, as coordination might be sufficient. The recent decision to bring AGS under the command umbrella of NAEWC&FC is a welcome development.

2.5.5 Develop a NATO Policy on Establishing and Employing Common Assets. NATO lacks policy on how common assets are established and employed. This results in an unstructured and piecemeal approach. The policy for common asset governance should give clear direction on, *inter alia,* steps to be taken when initiating a common programme, principles for project management, governance and burden sharing.

2.6   Conclusions and Recommendations

2.6.1 Deployability or employability problems diminish the operational relevance of common assets and if NATO is to make best use of the available resources and investment, it must improve their governance. Governance models must reflect the operational deployment and employment of the asset and not merely peacetime activity. NATO common funding and decision making processes are bureaucratic and lack agility which impacts the usability of common assets. Oversight must be improved and a NATO policy for the establishment and employment of common assets developed.

2.6.2 A number of recommendations flow from this paper, many of which would, if implemented, have far reaching consequences beyond the mere improvement in common asset governance. The paper is provocative and it is accepted that a great many of the recommendations are contentious. JAPCC makes no apology for this approach, the rationale being that if NATO is to optimise the return from common assets and ensure their relevance to contemporary operations such change is necessary. The recommendations are:

- Redefine the consensus based decision making process in NATO to better enable the commitment of common assets to operations.
- Establish a commonly funded NATO operations budget to better support the deployment and employment of Common Air & Space Assets.
- Support the development of niche capabilities using common funding where appropriate.
- Improve oversight of Common Air & Space Assets to deliver better coordination and access.
- Develop NATO policy for establishing and employing common assets.

1. (D)CAOC: Deployable Combined Air Operations Centre.
2. CARS: Designation for the air command & control unit which brings CAOC, ACC, RPC and SFP together.
3. (D)ARS: Deployable CARS.
4. NATO Multiple Futures Project April 2009.
5. European Expeditionary Air Wing (EEAW) agreement was signed by participating nations during NATO's Istanbul Summit in 2004.
6. Seychelles Newspaper "Nation" dated 28 August 2009.
7. 'New Missions, New Means', NATO Sec.Gen., Jaap de Hoop Scheffer lecturing at RUSI on 18 June 2004.
8. Transforming NATO (. . . again) — A Primer for the NATO Summit in Riga 2006, p. 44.
9. Alliance Reborn — An Atlantic Compact for the 21st Century, Daniel Hamilton, February 2009.

CHAPTER III

Assuring a Favourable Air Environment In Operations Short of War

Executive Summary

Problem

Air Warfare continues to evolve, driven both by technical advances and the changing nature of the threat posed by a broad spectrum of adversaries. It is not only the obvious or conventional air threat that must be considered, but the whole gamut of challenges within the battlespace. Any element that can hinder or prevent the optimal use of Air Power needs to be considered in the planning and execution of joint air and space operations.

Territorial Integrity

Integrated Air Defence Systems continue to deliver security for NATO, with Air Policing forming the bedrock of NATO territorial integrity based on mutual protection and assistance for all. Hence the emerging Missile Defence role should be considered in light of the existing NATO Integrated Air Defence System (NATINADS) structure. The challenge will be how to blend Air and Missile Defence to ensure territorial integrity and organisational effectiveness.

NATO aircraft routinely conduct activities in the Air Policing (AP) role, acting in accordance with international law and conventions. Nevertheless, the impact of AP on less friendly States and any consequential pressure on NATO neighbours must also be considered. It is therefore essential that NATO maintain a dialogue and raise AP issues at appropriate multi-lateral forums. The legal aspects of aviation must be fully understood and applied to ensure the safety of all air users. In congested airspace, State aircraft[1] should use all necessary procedures to enhance both military and civil flight safety.

Airman's Three Block War

Whilst Control of the Air and assured access to space remain essential for operational success, the complexity of the air environment in contemporary operations, particularly those short of war, demands a broader perspective. In such circumstances, the Air Cdr faces his own Three Block War: the conduct of military air operations, including those to guarantee air access; integration with other airspace users; and activities to stabilise, rebuild and transition the host nation air sector to civil control. It follows that coordination has become even more essential to the air environment and that all these elements must be taken into account when setting the air exit conditions within the overall campaign exit strategy.

Transition and Air Dimension of Civil Military Cooperation (CIMIC)

The transition from military intervention to a peacetime air sector can be a difficult task requiring planning and consideration amongst a broad community of interested parties. By considering the exit strategy from the earliest stages, the Air Cdr will be able to plan effectively to achieve political aims. Adopting a Comprehensive Approach can add value and enable a smoother transition of the air sector. The Air Dimension of CIMIC must also be considered, requiring bespoke resources and dedication to achieve a speedy and successful outcome.

3.1 Introduction

3.1.1 The boundaries between peace, war, armed conflict, terrorism and crime are increasingly blurred, while the range of operations on which armed forces are deployed grows ever wider. For the purposes of this paper, the term 'short of war' includes NATO territorial integrity in peacetime and expeditionary non-article V activity, termed Crisis Response Operations (CRO). An exemplar 'short of war' is the International Security Assistance Force (ISAF) in Afghanistan, although this Paper has also been considerably influenced by post-conflict experience in Iraq.

3.1.2 The global security environment is changing rapidly. The likely landscape of 2030 will see significant disruptions due to high population density, competition for energy and other scarce resources, shifting alliances, advances in human ingenuity and technology, and global economic interdependence.

These futures present NATO with unprecedented opportunities to positively influence the future environment, and at the same time help ensure that the Alliance is agile and flexible enough to respond to the unpredictable and complex challenges the future will bring.[2]

3.1.3 Set within the context of the Multiple Futures Project and NATO's Future Joint Air & Space Power (NFJASP) NATO Cdrs must achieve operational freedom, as part of the Comprehensive Approach (CA)[3], within and below an Air and Space (A&S) environment which may be complicated by the presence of civil users. Based on political direction and sound planning, the CA should assist the development of effective entry and exit strategies. Such strategies will be shaped by the nature of the military activity and its consequent impact on the civil air sector. However, where restrictions on the civil air sector are necessary, their eventual removal must be the goal of the Cdr holding responsibility as the Airspace Control Authority.

3.1.4 Aim. The aim of this paper is to inform the debate on how NATO can assure a favourable air environment in the complex scenarios that challenge today's air forces. It focuses on potential capability gaps and recommends actions to overcome them. Although no formal definition of a 'favourable air environment' exists, or is offered by this paper, its achievement should ensure sufficient freedom of manoeuvre in the air environment that NATO operations can be conducted without prejudice to their success[4].

3.1.5 Scope. This paper examines Air (and where relevant, Space) Power issues pertaining to CRO and NATO territorial integrity in peacetime. In addition to AP and No Fly Zone activities, the paper considers the 'Air' implications of dealing with irregular adversaries and rogue regimes, as well as stabilisation and rebuilding in ungoverned space. The concepts and arguments take account of the political reasons for NATO military action and the legality of any proposed air activity. The paper is not an exercise in how to achieve 'control of the air' in complicated political and geographic situations, rather, it presents an informed view of the challenges faced by NATO in the air environment; its conclusions and recommendations represent the current JAPCC position, but will require regular reappraisal to ensure that any deductions and assertions remain broadly aligned with actual developments.

3.1.6 Assumptions. Acknowledging that a new Strategic Concept is due to be published in Nov 10, for the purpose of this Paper it is assumed that the Alliance will continue to perform the security tasks set out in the current Concept namely security, consultation, deterrence and defence, crisis management and partnership. As reinforced during the Riga Summit in 2006, it is further assumed that:

• NATO's level of ambition will not change significantly over the foreseeable future[5].
• Collective Defence will remain the core purpose of the Alliance and the character of potential Article V challenges will continue to evolve.
• On a case-by-case basis and by consensus, the Alliance will remain ready to engage actively in crisis management, through non-Article V CRO.

3.2 NATO Future Joint Air & Space Power Context

The NFJASP Paper identifies a number of key themes relating to the future application of A&S power. The following are deemed directly relevant to this work:

3.2.1 Complexity. The complexity of the future strategic environment will require Joint Military Forces capable of operating in concert with political, civil and economic levers to achieve effects across the spectrum of conflict from Article V force on force operations, through Peace Support Operations (PSO) to Humanitarian Relief. The CA should drive planning at the political/military strategic level which should then guide lower level planning in order to determine the objectives to be accomplished by Joint Military Forces to reach the desired end state.

3.2.2 Barriers. It is essential that remaining cultural barriers between sister Components are eradicated through joint training and education and that the efforts of all Components are successfully integrated into a collective effort to accomplish Joint Military Effects. In particular, all Components need to play their part in the planning of Joint operations. The four key A&S Power roles of: Control of A&S; Mobility and lift; Intelligence and situational awareness; and Attack, will continue to play a fundamental and essential part in the future of the Joint Military capability. Control of the Air, the prime responsibility of the Air Component Commander (ACC), may or may not need to be fought for but must be established.

3.2.3 Change and Technology. The future strategic environment will be driven by numerous political, military, economic, social and geopolitical trends, leading to a range of diverse challenges which make change in military operations inevitable. Advances in Remote Control Warfare will increasingly enable some Nations to conduct warfare from a distance. However, the political, ethical and cultural implications of this approach must be addressed. Our adversaries are also likely to exploit the opportunities offered by developments in systems such as Unmanned Aerial Systems (UAS), Cruise and Ballistic Missiles, Satellite and Net-Centric communications links and Internet Protocols.

3.2.4 Military Themes. Operationally, Joint Military Forces are likely to be required to carry out activities, which can usefully be categorized into three broad themes:

- Prevention measures to defuse a potential crisis, including by deterrence or dissuasion.
- Engagement operations to actively apply armed force to counter a threat to stability. This category specifically includes combat operations.[6]
- Rehabilitation operations to re-establish stable conditions. These operations often require military assistance in support of the civilian authorities.

These categories are not mutually exclusive; indeed, combinations of the three, in concert with political and economic activity, will often be the only way to reach a favourable outcome.

3.3 A&S from the Military Perspective

3.3.1 Levels of Coordination. It is axiomatic that Joint operations can only succeed through comprehensive coordination at all levels. The Joint Force Cdr will orchestrate the actions of his Components but it is they who will have to coordinate their activity to deliver operational success.

3.3.2 Joint Partnership. On the basis of recent operational experience (Balkans, Iraq and Afghanistan), there is a grave risk that Control[7] of the Air is taken for granted. Such ease of control is unlikely to always be the case. It is also important to acknowledge that Air will rarely, if ever, be able to accomplish the full spectrum of Military Effects alone. The same is true of Land and Maritime Components. It is therefore imperative that all components work together as partners to integrate their capabilities towards the accomplishment of common objectives.

3.4 Assuring the Air Environment

3.4.1 The Need for Change. It is noticeable that the rise in asymmetric warfare has paralleled NATO, and its partners', recent successes in conventional operations. Hence, the need to use the CA to assure a favourable air environment in its broadest sense. The current challenge in asymmetric, irregular or hybrid warfare is the integration of military capability into a battlespace that it was not primarily designed for, and dealing with an enemy that is either not bound by the constraints of International Law (eg non-State actors) or which chooses to disregard its International obligations.

3.4.2 The Airman's Three Block War. Air Cdrs are faced with their equivalent of a Three Block War[8]. The analogy is used to indicate the challenges posed by the new strategic environment and should not be taken literally as airspace needs to be considered in much larger dimensions than a city block. Nevertheless, the Air Cdr must consider the complexity of activities within his airspace and address the legal, civil, humanitarian and military needs within a framework of changing priorities.

The Air Cdr must:

- Conduct military air operations, including those to guarantee air access.
- Integrate (or integrate with) other Airspace users[9].
- Support the Stabilisation, Rebuilding and Transition to a peacetime civil air sector.

How these factors interplay will be a matter of context; e.g. peacetime operations over NATO territory will most likely only involve the first two categories, whilst the third category is a significant factor in operations such as ISAF.

3.5   Military Air Operations

NATO undertakes three categories of air operations to preserve its ability to take advantage of the skies, namely, Integrated Air Defence, AP and Force Protection (FP).

3.5.1 Integrated Air Defence. NATO has enjoyed sixty years of success supported by NATINADS but must remain vigilant in securing both its own territory and its deployed forces. Whilst the air threat may not be increasing in quantity, the quality and diversity of potential threats pose significant challenges. Against this, NATO has seen an overall reduction in Air Defence (AD) forces. NATO members must develop mechanisms to deal with developing threats to AD such as ballistic/cruise missiles, UASs, low observables etc, all of which have the potential to deliver Weapons of Mass Destruction or Mass Effect. It is therefore appropriate that Missile Defence (MD) has a much enhanced profile, as a result of the Theatre Missile Defence project. This is an area of considerable conceptual development, fuelled by industrial and scientific initiatives, e.g. improvements in radar and identification technology and non-cooperative recognition. Bringing NATINADS and MD together is a natural development but requires a comprehensive review of the upper tiers of the Alliance Air Command Structure to ensure that NATO has the appropriate levels of Command and Control.

3.5.2 Air Policing. AP is defined by NATO as the use of interceptor aircraft, in peacetime, for the purpose of preserving the integrity of a specified airspace[10]. Its

legality is based on the fact that State aircraft may only fly within the national airspace of another State once express permission (diplomatic clearance) has been given. AP remains the cornerstone of NATO territorial defence and is visible evidence of NATO's solidarity. However, in some cases, forces are not allowed to conduct operations beyond their national airspace boundary unless bilateral border-crossing agreements are in place. For AP to be truly effective within NATO, such restrictions must be removed. This could deliver significant resource efficiencies, not just in the provision of QRA(I) aircraft but also the whole ground C2 and surveillance infrastructure. Other issues relating to AP include:

The impact of NATO AP activity on surrounding States must be considered in Alliance planning, e.g. as a result of NATO AP activity in the Baltic States, Russian aircraft now routinely fly much closer to Finland. Dialogue with all parties is essential to maintain security and flight safety.

Under Renegade, every nation has its own legal and ethical factors to consider; consequently dealing with such a situation remains a national responsibility. However, the speed at which a Renegade aircraft can cross Sovereign territory demands close integration with the surveillance and warning functions provided by NATINADS. The issue is complicated by the fact that responsibility for action is often delegated to different Ministries in adjacent NATO Nations. Such responsibilities are often met through the use of NATO QRA aircraft transferred to the command of National Authorities. While this is an efficient use of resources from a national perspective, it should not be used as an argument against rationalisation of QRA across NATO.

3.5.3 Force Protection. FP is increasingly relevant in air operations. NATO understands the activities necessary to preserve the integrity of airfields in peacetime, but recent operations have demonstrated that expeditionary FP is a more complex and challenging activity. It is no longer simply a matter of access control and protection of aircraft and vital installations. Nowadays Air Cdrs will be required to dominate the ground around NATO bases to protect the air approaches but

also to deliver Joint effect. Any large, static target is particularly vulnerable and airfields are clearly in this category thus their protection becomes vital to the successful conduct of joint operations. Belatedly, NATO is developing a common FP doctrine[11] although progress is slow due to the lack of FP specialists. Thus, it is encouraging that some NATO nations are improving their capabilities and building core FP expertise, e.g. the Czech Republic in Chemical, Biological, Radiological and Nuclear defence; the UK and Germany in FP of airfields by specialist Royal Air Force Regiment/German Air Force Force Protection Regiment units; and Romania with airfield guards. The development of these niche capabilities could be an important factor in a modified NATO force structure designed to better meet the challenges articulated in the Multiple Futures Project and NFJASP. Finally, in operations short of war, airpower plays a key FP role for ground forces whose vulnerability might be increased through the requirement to adopt a less aggressive posture than that available in major combat operations.

3.6 Integration with Other Airspace Users

In Block two of the Air Three Block war, the efficacy of military air operations must be ensured while at the same time the needs of other airspace users must be met. Consequently, the ACC must address legal, airspace management and UAS issues before he can achieve the safe and effective integration of all airspace users.

3.6.1 Legal Authority. Establishing the requisite legal authority is an essential precursor to the conduct of operations. The legality of the AP mission is clearly based on the fact that State aircraft may only fly within the national airspace of another State once express permission (diplomatic clearance) has been given. On the other hand, the legality of blockades, No Fly Zones, and exclusion zones or the consequences of their breach may not be so well understood by all actual or potential airspace users. Furthermore, care must be taken to protect the legal rights of adjacent neutral nations. United Nations Security Council Resolutions are likely to provide the legal basis for such actions,

but how good are NATO airmen at understanding the implications of an emerging resolution or are they merely hostages to the detail once operations commence? For NATO, or any coalition, agreeing commonality of interpretation on such issues is a considerable undertaking, with no guarantee of success. There is also a threat from long-running disputes over differences in interpretation which, if not challenged, can lead to a presumption of legal status under Customary Law. It is fair to ask if airmen are being as proactive as they should be in shaping this aspect of the operating envelope.

3.6.2 Legal Redress. The legal dimension of military operations will be open to intense media interest and possible redress. Presently, the mechanism for redress is not clearly understood and wargaming has exposed the limited legal framework available to deal with the consequences of armed conflicts for neighbouring and/or neutral countries.

3.6.3 Legal Inconsistencies. Legal inconsistencies are manifest when multiple missions exist in one theatre of operations. Until recently, the ISAF and Operation Enduring Freedom missions in Afghanistan were such a case. The former is a United Nations Security Council Resolution mandated mission permitting all necessary means (under UN chapter seven) while the latter was the result of the Article five declaration after 9/11. While recent changes to bring these activities under a single cdr should resolve many of the difficulties, the fact remains that the two operations ran in parallel for many years and even today, the various troop contributing Nations set their own ROE and political caveats on the use of force. These issues are not easily understood by the media, who control the narrative of the conflict, nor by the local population whose support is essential for success in a counter insurgency operation. Locals perceive a single combined military force operating in Afghanistan, thus any ambiguity in conduct is difficult to explain and can be self-defeating. The legal implications of Remote Control Warfare over great distances must also be considered, particularly those issues surrounding accountability, jurisdiction and immunity.

3.6.4 Legal Rehearsal and Training. Military Cdrs require more legal rehearsal and training, including table top exercises where the military, legal advisors, foreign affairs representatives, Non Government Organisations (NGOs) and other agencies meet to develop an accepted modus operandi[12].

3.6.5 Airspace Management. Globally, airspace is becoming increasingly congested, demanding ever more flexibility in its management e.g. the Single European Skies initiative, the increasing demand for greater military equipment compatibility with General Air Traffic and the call for limitations to military training airspace. There will be occasions when military needs are paramount, but the ACC will only sustain a favourable air environment if he works to successfully balance the requirements of both the civil and military sectors.

3.6.6 Implications on Neighbours. The implications of air activity during a CRO will be broader than the borders of conflict. NATO must mitigate the impact of Airspace Management, No Fly Zones etc on adjacent States. The Air Cdr must address and accommodate the needs of all air operators in and adjacent to the JOA at the earliest opportunity.

3.6.7 Balance of Responsibility. Achieving the right balance of responsibility between Civil and Military organisations is most difficult during limited operations within a fully functioning civil sector. The overriding factors are safety and legal authority. Where it is not essential for the military to have primacy, the Air Cdr must remain flexible. The limiting factor is coordination: the military cannot take sole responsibility for air traffic management, indeed, it may not have the legal right to interfere with civilian or other traffic. Consequently, the interface between civilian and military parties is critical. This is especially important when one or other entity is dependent on specialist equipment outside of its control, e.g. Airspace Management capabilities will often support both military and civilian needs.

3.6.8 Planning for Airspace Management. Thorough planning is essential for the proper application of Airspace Management in areas of conflict or crisis. In par-

ticular, the complexity of civil interaction must be fully considered when planning the A&S contribution to operations. Planning must account for how the military intends to transfer or share the Airspace Management role with Host Nation (HN) personnel. The transition of airspace from predominantly military battlespace to peaceful air traffic is a major line of development, which the ACC is charged to deliver. Planning and process must be supported by subject matter experts (both Air Traffic Controllers and Air Battlespace Managers).

3.6.9 Agility in Airspace Management. The agility required for military operations within tightly regulated civil airspace can only be achieved through detailed planning and preparation. One of the major Air contributions to the CA will be to ensure that all agencies contributing to solving a problem can use the air sector to optimal effect. The required agility is currently lacking which inhibits the flexible use of air power. Improved dialogue, coordination and planning between the civilian regulatory bodies and military experts are required to overcome the inherent difficulties of sharing limited airspace. There is a balance between civilian regulation and military use of airspace and this will vary depending on the mix of airspace users, mainly military, civil military mix, predominantly civil and any requirement to conduct kinetic air operations. As an operation moves from Battlespace Management to civil Air Traffic Control, it will be the pace of transition that requires planning and management to ensure that all airspace users are suitably accommodated.

3.6.10 Unmanned Aerial System. The proliferation of UAS and growing military dependency on such systems presents further complications for Airspace Management. Mixing manned and unmanned air vehicles is challenging enough in a purely military environment. The problem is greatly exacerbated by the presence of civil airspace users where the risk appetite is very different. The pace of technological development in this area is staggering, delivering ever increasing endurance, more capable sensors and a wider range of weapon loads, thus making UAS suitable for a broader suite of roles/missions across the spectrum of operations. Moreover, the commercial application of UAS is a major growth area and in future

some military UAS tasks could be contractorised[13]. However, the vulnerability of friendly UAS; concerns that technological developments in the production of armed UAS could overtake the ethical and legal implications of operating them; and defence against enemy UAS are a few of the other challenges that must be resolved.

3.7 Stabilisation, Rebuilding and Transition to a Peacetime Air Sector

3.7.1 HN Military Air. Stabilisation activities have been identified as the third Block in pursuit of a favourable air environment. To a large extent, this is dependent on the HN level of ambition. The most obvious activity under this heading is to assist in the building of an indigenous military air capability, thus facilitating the transfer of responsibility for such operations back to the HN. This can take the form of pilot training, through to advice on organisations and doctrine; e.g. the current mentoring role for the Afghan Air Force. Level of ambition is key; joint air/land or air/maritime operations could be achieved by an Air Corp, whilst control of the air would require an AD force; to conduct both activities at the same time, the HN would require a tactical air force. To reach its maximum potential and to deliver all four key Air Power roles, a full air force would be required. The important point to note is that stabilisation is a time and resource consuming process, requiring continuity and patience.

3.7.2 Rebuilding the Civil Air Sector. In fragile, failing or failed States, there may be a need to contribute to the rebuilding of the civil air sector in a coherent and constructive fashion. The ultimate goal is the transition of the air environment back to civilian control, both in terms of physical assets such as airfields and supporting concepts such as airspace design and aviation regulation. Military airmen are unlikely to pursue this alone but the Air Component will inevitably have a role. NATO has already demonstrated its ability to train meteorologists, fire-fighters and air traffic controllers in preparation for the handover of an airfield to a HN.

3.7.3 Air Basing Strategy[14]. A pivotal area in the airman's contribution to stabilisation in a broken or failed State is its Air Basing Strategy. This will have a major impact on how a State's civil and military aviation capabilities recover, and forms an integral part of a force's exit strategy. Air bases are a true legacy of expeditionary operations and Airmen must develop a through campaign plan to ensure coherent and comprehensive delivery. Initial planning should identify: which airfields are destined to be major international airports; where military airfields will be required; and where both activities might be collocated. Given such insights, the Air Cdr can make informed decisions on interim infrastructure and resource allocation in the sure knowledge of contributing to the overall campaign exit strategy.

3.7.4 Third Party Service Provision. Having established air operations in-theatre, the requirements of different agencies must be managed. In addition to airspace management this may extend to the provision of services from one agency to another. While military support to other agencies will likely predominate, military users may find that obtaining services from non-military entities is the most effective solution. This might include air traffic control, freight handling or the provision of aviation fuel, and may extend to fire and crash cover. NATO has considerable experience in the field of contracting for support to military operations, primarily through NAMSA. In all cases, the risk of dependency on third parties will need to be carefully considered.

3.7.5 Dual-Use Facilities. A further area of civil-military coordination that presents both opportunities and risks is 'dual-use' facilities which may be necessary to avoid the duplication of structures. The establishment of such dual-use facilities may act as the foundation for the subsequent, and progressive, handover of responsibility from military to non-military actors, allowing confidence-building and experience to be gained by those who will ultimately assume responsibility for the maintenance of these facilities. In assessing the implications of dual-use facilities, the legal, regulatory, procedural and commercial aspects of the post-crisis air strategy must be assessed. Bodies such as NATO's

Civilian Aviation Planning Committee and the Senior Civil Emergency Planning Committee can be leveraged to provide SME insight and assistance.

3.7.6 Transition. Transition must be comprehensively planned and coordinated to ensure that the Air Environment is understood by the civil authorities. This requires dynamic planning and coordination, based on good situational awareness and close cooperation with civil authorities. The ultimate goal of the Air Cdr is to transition to a stable Civil Air Sector, thus CIMIC has a key role in achieving strategic success.

3.7.7 Air Dimension of CIMIC. The Air dimension of CIMIC must be considered in the planning and execution of operations. CIMIC is an inherently 'Joint' function, but is not always conducted in a coordinated way within the air environment. Against the pragmatic advantages of cooperation, there is a traditional reluctance on the part of NGOs to be perceived as being too close to military forces. The NGOs' valid concern is that such engagement might compromise their neutral status. Conversely, military cdrs are occasionally unwilling to place the humanitarian goals of NGOs above the demands of ongoing military operations, particularly where such operations are a necessary prerequisite for the establishment of security for other agencies to be able to pursue their own aims. Civil use of airspace and coordination with all agencies must be addressed to maximise the use of Airspace and accelerate stability in post conflict and crisis response scenarios. A cell with the responsibility for the 'Air Dimension of CIMIC' should be embedded in existing Component Command structures, manned with air personnel, who have a clear understanding of the issues. The enduring principles are:

- Coordination and liaison among all airspace users (military and civilian) is necessary in order to harmonize the use of airspace.
- CIMIC doctrine should be developed jointly. Separate Air specific CIMIC doctrine is not required, however, air cdrs must provide the right resources to support CIMIC activity in their environment.
- In view of the reach and impact of air, it is essential that the Air Component interact and operate jointly with the other components based on a common

CIMIC understanding of the civil dimension of operations and sharing of relevant CIMIC information. Although CIMIC within ground-heavy operations is primarily the Land Component's responsibility, the Air Component contributes by coordinating its CIMIC assessments and activities in respect of its own ground facilities within and outwith the JOA. Therefore, the Air Component must possess a CIMIC capability capable of; assessing the civil situation, planning interdisciplinary CIMIC-related issues, and operating in synchronisation with the CIMIC functions of the other components. Airbase cdrs routinely act as battlespace owners and the designation of Ground Defence Areas must not result in arbitrary boundaries, ignorant of local CIMIC considerations.

3.7.8 Enduring Air Impacts. Whilst accepting that Reconstruction and Development[15] are the responsibility of the civil sector, there are many positive and enduring air impacts, from infrastructure to training and organisation, which will remain as a legacy of NATO air activity. When the balance moves towards a predominantly civilian air sector, the HN will make use of airfields, storage facilities, and accommodation and organisation structures developed by NATO. These positive impacts, as well as the significant military air contribution to disaster relief operations must be addressed in the battle for the narrative[16]. NATO's communications strategy must bring these positive impacts to the fore when countering a media that is fixated on the destructive effects of air power.

3.7.9 Military or Civil Leadership. Despite the formation of the NRF, the military is rarely first on the scene in disaster relief and humanitarian relief operations. The synergy of military air operations and civil air activity in CRO should be developed to provide mutual support and economic efficiency. International Organisations (IOs) such as the International Committee of the Red Cross (ICRC), Government Organisations (GOs) and NGOs may all be operating in the same area to deliver relief and it may be more appropriate for one of these to lead, with the military in a supporting role. Any perception that military personnel are the only ones capable of providing leadership and capability in such scenarios is fallacious and risks undermining the

humanitarian effort. To that end a closer relationship with ICRC, IO, GO & NGOs is required at the tactical and operational level and is best achieved through inter-agency education, training and, if possible, exercises.

3.8 Conclusions

3.8.1 Air Environment. The Air Cdrs' ultimate goal must be the transition of the air environment back to a peaceful air sector. Asymmetric warfare is in the ascendancy and the ACC must consider the complexity of activities within the air environment and address the legal, civil, humanitarian and military needs within a framework of changing priorities. The Airman's Three Block War encompasses all the traditional challenges of military air operations together with the need to integrate with other users and conduct activities aimed at Air Stabilisation, Rebuilding and Transition to the Peacetime Air Sector. Invariably, these activities will overlap or run in parallel to some extent.

3.8.2 Air Defence. NATO has enjoyed sixty years of success supported by NATINADS, but must remain vigilant in an uncertain future. The surface to surface missile threat is increasing and must be addressed. NATINADS and MD should be brought together, without duplication of the Command Structure.

3.8.3 Air Policing. AP remains the cornerstone of NATO territorial integrity. However, for AP to be truly effective, there must be greater freedom to operate across NATO-State boundaries and a better understanding of the effects of AP activities on neighbouring non-NATO States.

3.8.4 Force Protection. FP is increasingly relevant in contemporary air operations and NATO must be able to dominate the ground around airbases to effectively enable unhindered air operations. NATO is currently fixed at these vulnerable sites without common doctrine and few resources.

3.8.5 Legal. Legal authority in the air environment remains an essential element of military operations. The legality of blockades, No Fly Zones, and exclusion zones must be fully understood and airmen must pro-

actively shape this aspect of the operating envelope. Legal rehearsals and training for conflict scenarios assist cdrs in critical decision making. The legal rights of neutral nations adjacent to air operations must be recognised as must the risk of legal inconsistencies arising from the conduct of multiple missions in one theatre of operations.

3.8.6 Airspace Management. Airspace is becoming increasingly congested, driving demands for better airspace management. Commercial interests will inevitably predominate in peacetime. In conflict, NATO must assess and mitigate the impact of Airspace Management, No Fly Zones and other constraints, both within the operations area and on the airspace of adjacent States. The full segregation of military and civil activities is unlikely to offer the optimum solution in Operations Short of War; increased interoperability and integration will be the way ahead. This demands thorough planning, supported by SMEs, to maintain a delicate balance between civilian regulation and military use of airspace, depending on the mix of airspace users and the extent of military air operations at each stage of the Campaign. The proliferation of UAS and concomitant military dependency presents further complications for Airspace Management. Moreover, the moral and ethical implications of flying UAS remotely and at considerable detachment from the theatre of operations are not well understood.

3.8.7 Basing Strategy. Air Stabilisation, rebuilding and transition to a peacetime air sector forms the basis of the third block of an airman's war; it is a time and resource consuming business. The military will not be the only interested party in the rebuilding of the civil air sector and compromise will be required from all sides. A pivotal area in the airman's contribution to stabilisation is the Air Basing Strategy. The needs of the air component will vary with the movement from purely military operations to shared airspace and ultimately the transition to a predominantly civil air sector. However, the selection of airbases should involve the Air Cdr from the outset.

3.8.8 Planning Transition. Comprehensive early planning to manage the specific requirements of different agencies is required, noting that military users may ob-

tain services from non-military sources and vice versa. The establishment of dual-use facilities also offers the prospect of a progressive handover of responsibility from military to non-military actors. The likelihood of outsourcing services and facilities must be considered, together with the resulting influence on the development of a post-conflict air strategy. Transition must be planned and coordinated to ensure that the air environment is fully understood by the HN authorities.

3.8.9 Air Dimension of CIMIC. The Air Component should interact and operate jointly with the other components based on common CIMIC understanding. However, cdrs must provide the right resources to support CIMIC and consideration should be given to the creation of an organisation to focus on the Air Dimension of CIMIC. This should be an operational pursuit in its own right if the Air Cdr wants to build a favourable and enduring air environment.

3.8.10 Mutual Support. The military are rarely first on scene in disaster relief and humanitarian relief operations. The synergy of military air operations and civil air activity in CRO should be developed to provide mutual support and economic efficiency. Therefore, a closer relationship with ICRC, IO, GO & NGOs is required at the tactical and operational level. This is best achieved through joint education, training and exercises. Beyond CRO support, there are many other positive and enduring impacts that remain as a legacy of NATO air activity. All of these must be addressed in the battle for the narrative.

3.9   Recommendations

The paper recommends consideration of:

3.9.1 The extant and emergent surface to surface missile threat and the benefits of combining NATINADS and MD within a refined command structure.

3.9.2 The AP requirement across NATO territory, its impact on neighbouring States and options to create efficiencies in NATO AP operations including removal of border crossing restrictions and national caveats between NATO States.

3.9.3 The management of the transition from military operations to a peacetime air sector as a significant line of operation for Air Cdrs during Expeditionary Operations.

3.9.4 The immediate requirement for ratified NATO FP doctrine.

3.9.5 Improved legal rehearsals and training for expeditionary cdrs.

3.9.6 The requirement to engage with civil aviation authorities to establish flexible procedures for airspace management during air operations in a shared environment.

3.9.7 The requirement to develop concepts and doctrine for the integration of military UAS into a civil air sector.

3.9.8 The Air Basing Strategy paper.

3.9.9 CIMIC as an air mission.

3.9.10 The positive legacy of air operations in the battle for the narrative.

3.9.11 The requirement to better understand the military relationship with other actors and the promotion of trust and respect through education, training and exercises with ICRC, IO, GO & NGOs.

1. "Aircraft used in military, customs and police services shall be deemed to be State aircraft." (ICAO Chicago Convention DOC 7300/9).
2. ACT Multiple Futures Project findings.
3. Experience from NATO operations, including Afghanistan, has demonstrated that coordination with a wide spectrum of actors from the international community, both military and civilian, is essential to achieving key objectives of lasting stability and security.
4. This builds on the concept of a Favourable Air Situation described in the 2002 version of AJP 3-3 (no longer extant) but also considers interaction with neutral and civil users of the air environment.
5. This position is reinforced by the recent Group of Experts Report for the new Strategic Concept which states "NATO's official Level of Ambition was set out in 2006; there is no need to modify those benchmarks."
6. In turn, these may be usefully further delineated into major war-fighting and other combat operations, thus reflecting the challenges of wars between armies and those between smaller units rather than the intensity of operations to those units involved.
7. In this context, 'Control' does not imply OPCON or TACON of joint assets but should be considered in terms of achieving 'Control of the Air (or Space)'.
8. Air analogy based on Krulak's late 1990s 'Three Block War' where soldiers may be required to conduct full scale military action, peacekeeping operations and humanitarian aid within the space of three contiguous city blocks.
9. Depending on the scenario, lead responsibility for airspace may lie with civil or military authorities.
10. AAP-6, 2009.
11. Study draft 7217 FP doctrine is forecast to be updated and ratified by the end of 2010.
12. In the Nimble Titan experiments and exercise series, this has helped develop a generic CONOPS for global missile defence operations.
13. One well-known UAV Company is already offering 'UAV by the Hour', a concept in which the military defines the ISR requirement, while the company operates the UAV (remotely from a safe distance) to acquire it. The military, of course, pays for the privilege to sustain the operation.
14. A JAPCC Air Basing Strategy paper is included within this publication.
15. Reconstruction and Development is considered by many in the Civil Sector as the preserve of non-military entities.
16. The continuous demands for information will require that the Alliance compete vigorously to communicate effectively and build support for its core mission, purpose and operations – Multiple Futures Project.

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