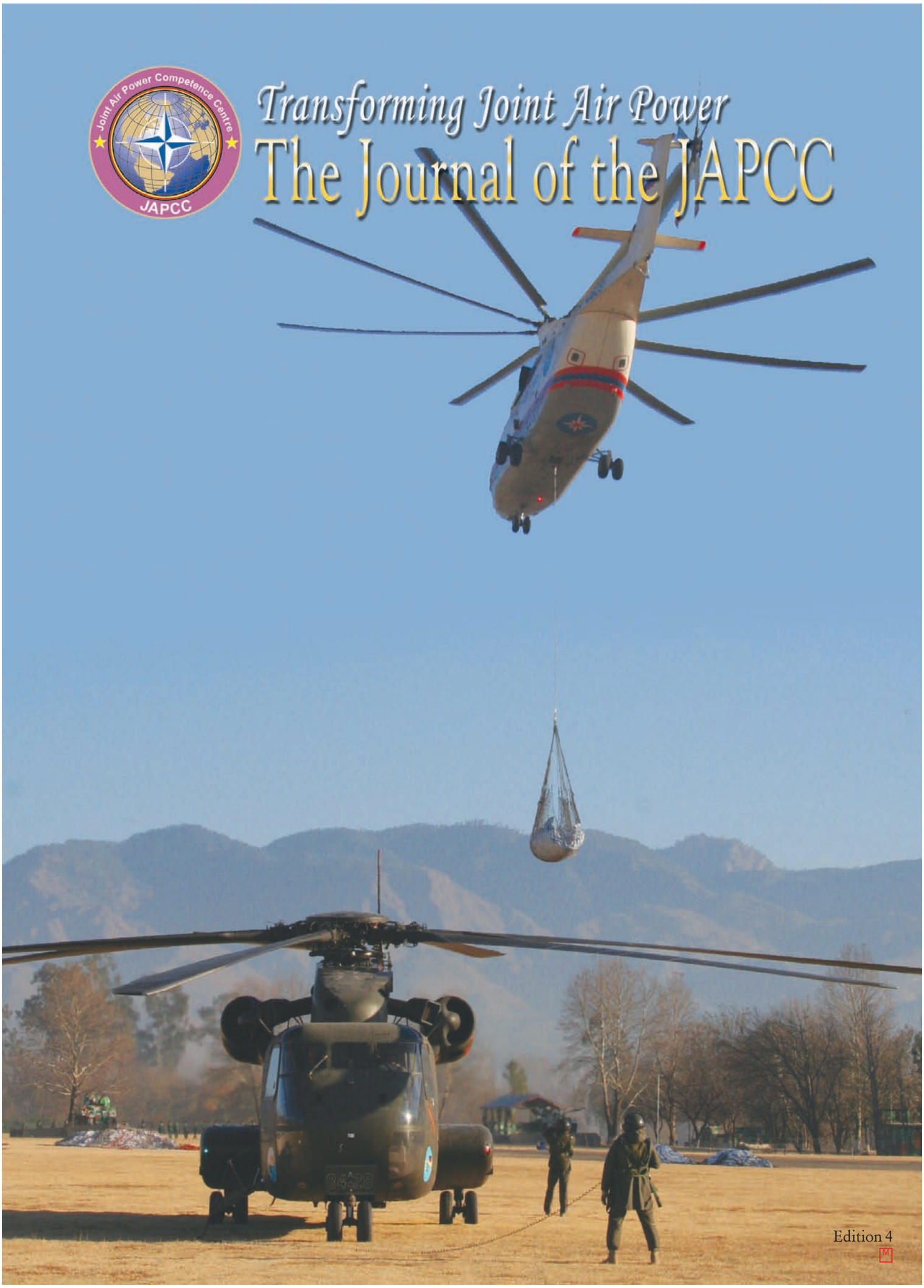


# Transforming Joint Air Power
# The Journal of the JAPCC

Edition 4

# *Editorial*

The Journal of the JAPCC welcomes unsolicited manuscripts of 1500 words in length. Please e-mail your manuscript as an electronic file in either MS Word or WordPerfect to: journalads@japcc.de

We encourage comments on the articles in order to promote discussion concerning Air and Space Power inside NATO's Joint Air community. All comments should be sent to journalads@japcc.de

The Journal of the JAPCC,
Roemerstrasse 140, D-47546 Kalkar Germany

*My logisticians are a humourless lot ... they know if my campaign fails, they are the first ones I will slay.*

Alexander the Great

While NATO's approach to logistics may not be as direct as Alexander's, achieving effective and efficient joint deployment and sustainment is one of Allied Command Transformation's 3 transformational goals. To airmen logistics might not be as 'sexy' as achieving coherent effects or as apparently progressive as achieving decision superiority, the other 2 transformation goals, but air power's contribution to, and reliance on, joint deployment and sustainment are of critical importance. The air power perspective of achieving joint deployment and sustainment is the theme of this, the fourth edition, of the Journal of the Joint Air Power Competence Centre.

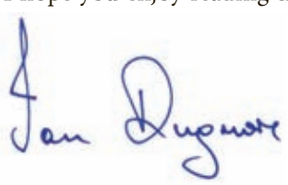
The improvement of NATO's strategic airlift was a Prague Capabilities Commitment. Lt Col Mike Carter considers NATO's requirement for strategic airlift and, from the other side of the world, Sqn Ldr Timothy Anderson provides a RAAF perspective. Brig Gen Cazeméa provides a recent practical experience of NATO airlift from the Pakistan Earthquake relief effort.

Winston Churchill said that 'Strange as it may seem, the Air Force, except in the air, is the least mobile of all the Services. A squadron can reach its destination in a few hours, but its establishment, depots, fuel, spare parts, and workshops take many weeks, and even months, to develop'. Maj Patrick Piana introduces the fundamental issues to be considered in the transformation of Allied Air Logistics. One option for the efficient use of resources is for NATO to exploit contractor support, as examined by Professor Tore Listou of the Norwegian Defence College.

A critical capability is the ability to activate airfields. Lt Col Spaulding contrasts US, NATO, and EAG work in this area, and Gp Capt David Blore explains the EAG's concept. Equally important is the protection of the force. Brig Gen Mehmet Çetin, Director of the Joint Allied Lessons Learned Centre, identifies the force protection lessons learned in NATO operations in Afghanistan. Gp Capt John Alexander examines a proposed NATO doctrinal approach to force protection risk management and Col René Arns explains the operational risk management model adopted by the Netherlands.

I am grateful to the new German Chief of Air Staff for his views on the future of the German Air Force. Finally our 'out of the box' feature looks ahead to the next edition of the Journal on the multi-dimensional theme of C4ISTAR.

I hope you enjoy reading this edition of the JAPCC Journal.



Assistant Director Transformation
Joint Air Power Competence Centre

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**The Journal of the JAPCC**

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Transforming Joint Air Power
The Journal of the JAPCC

## Transformation & Capabilities



Photo US DoD

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Photo NATO

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M Denotes images digitally manipulated.

# NATO Lessons in Force Protection

by Brig Gen Mehmet Çetin, TUR A


Pakistani earthquake victims crowd around a U.S. Army Chinook helicopter delivering disaster relief supplies.

## Where's The Threat?

When NATO was formed at the outset of the Cold War, its purpose was to provide peace and stability to its members. Although that objective hasn't changed, NATO recognized the need at the end of the Cold War to extend its peace and stability commitments to other nations. Today, NATO membership includes 26 countries dedicated to the same principles of the original Alliance, 20 partner nations under the Partnership for Peace process, and an additional 7 partners under the Mediterranean Dialog. Commensurate with its expansion, the greatest and most visible change in NATO's activities in recent years has been its involvement in ending conflict, restoring peace and building stability in crisis regions. These conflicts have included the intervention in Bosnia and Herzegovina in 1995. During this NATO-led operation, more than 500,000 servicemen and women from 43 nations participated.

More recently, NATO deployed its newly established NATO Response Force to Pakistan in October 2005 to assist in disaster relief following a devastating earthquake, delivering supplies, providing medical aid and engineering support. The most complex undertaking has been NATO's contribution to the people of Afghanistan by providing the Internal Security Assistance Force (ISAF). This was NATO's first mission outside the Euro-Atlantic area and although initially limited to Kabul, ISAF forces now play a much wider role in support of the Government of Afghanistan. Today ISAF provides security assistance in about 50% of the country, with plans for further expansion. In total, approximately 9,000 troops from 35 NATO and non-NATO countries are currently involved in the operation.

So, what has NATO learned about Force Protection during some of these operations? Let's first look at doctrine, traditionally one of NATO's strengths. Doctrine defines the way we train, equip, and employ our forces. NATO's doctrine for Force Protection has always been to conserve the fighting potential of deployed forces by countering the wider threat to all elements. The principles have included comprehensive and accurate assessment of the threat, and continuous management of the risks associated with it. Another very important principle, though, and one that has emerged from recent operations, is the necessity to think of Force Protection from a Joint and Multi-national perspective. During the Cold War, Force Protection was viewed largely as a national responsibility. That concept was based on a number of factors, one being the way we organized our forces.

What we have learned, and what we have put into practice, is that the responsibility for Force Protection must be shared. To levy the responsibility of Force Protection on each nation for its own forces is both impractical and inefficient. This change in doctrine calling for shared responsibility, to consider the Joint and Multinational concept of military operations, has emerged from recent operations – and I'm convinced that it applies in a similar way to the civil sector in today's war on terrorism.

Another important lesson we've learned regards the traditional cycle of conflict. Traditionally, NATO operated under the concept that this cycle would advance from peace, to crisis, to conflict, and finally transition back to peace. Of course, the objective was to avoid war, if possible – but we planned for operations to be conducted in phases. For Force Protection, we had well-defined considerations for each phase. With that traditional view, Force Protection requirements were considerably less in peace operations than in conflict. What we've learned since NATO's deployment to Bosnia and Herzegovina in 1995, though, is that Force Protection today is a fulltime requirement.

*"...the responsibility for Force Protection must be shared."*

In Afghanistan, for example, the operation spans all spectrums. Our objective, of course, is to maintain a peaceful environment, but the threat forces us to be ready – at a minute's notice – for any and all phases. Force Protection cannot be held in reserve - it needs to be present and fully prepared from the outset, and it needs to remain for the duration of the operation.

Overall, the transformation of NATO with regard to Force Protection has been successful, but the lessons we have learned in recent operations have highlighted areas needing attention. Generally, the requirements fall into 4 areas – better protection of our forces, improved situational awareness, more sophisticated planning tools, and improvements to training. Before addressing them in more detail, though, I need to make a point that cuts across all requirements – and it ties back to the discussion about NATO membership and the complexity of NATO operations today. If you're a company building military capabilities, or if you're a nation providing them, these capabilities need to be developed to common standards, designed to interoperate, and made available to all forces. It

**"Force Protection cannot be held in reserve - it needs to be present and fully prepared from the outset, and it needs to remain for the duration of the operation."**

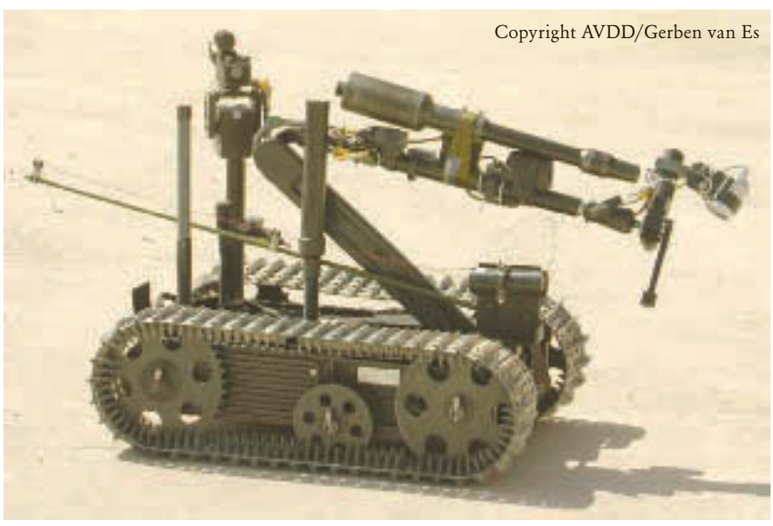

Force protection is essential to maintain a peaceful environment.

is absolutely essential to NATO's operations today, and it is essential to our ability to maintain peace and regional stability, that new capabilities be developed with those factors in mind.

## Protection of Forces

Our greatest need for the protection of our forces continues to be the detection of Improvised Explosive Devices, or (IEDs), and the protection of forces when they detonate. What we've learned about these devices is that they are increasing in number, in lethality, and in sophistication. These increases are a result of the natural evolution of military tactics – to put emphasis and resources against what works best. So, there are no real surprises here. But we do need help – in both funding and technology – to deal with them.

We also need improved protection for domestic and technical areas. These include the places people live when not on duty, maintenance and recovery areas, and office environments. In the more traditional type of military operation, these environments were usually situated behind the line of battle, so to speak. In modern operations, though, there is no battle line. Commanders need to protect all environments all of the time. We need improved capabilities to deal with the threat of explosives that someone may try to carry into these environments, and we need improved capabilities to deal with mortars, rockets, and Man-Portable Air Defence Systems (MANPADS). Ideally, we need to detect these devices. If we fail to detect them, though, we need to reduce their effects.




The greatest need for the protection of our forces is the detection of IEDs.

Finally, we need to improve our ability to identify friendly forces and potential hostiles. Tied closely to this requirement is a better capability for citizens of the host nation to identify NATO forces – to know who is friendly, and who may not be friendly.

## Situational Awareness

One of NATO's greatest advantages in any operation is situational awareness. We've worked on this for many years, and our technology is second to none – but we still have a long way to go. One of our most significant needs today is the ability to know the exact location and status of Blue Forces – OUR forces – at all times. And along with a highly capable force tracking system, we need a composite intelligence picture extended to platoon-level. Collectively, the intelligence capabilities of the Western World are awesome. Where we continue to fail, though, is that we don't provide the information we have to the platoon leader who needs it. He doesn't need to know everything, but he needs to know what is applicable to his situation. We've made some significant strides in this, but we can do better – we must do better.

Also, recognizing that we typically operate alongside other organizations, we need to bring them into our sphere of situational awareness – not intelligence data about them, but a cooperative venture that would exchange relative information about where everyone is, and what everyone is doing. I mentioned the notion of a composite intelligence picture. A fully composite – or integrated – situational picture at the tactical level would show relevant information about Blue Forces, other friendly organizations in the area, enemy forces, and potential threats. The technique for portraying this information in a meaningful way to a platoon leader may still be in the minds of some bright students in our universities. Wherever it is, we need to find it and incorporate it into the set of tools for future deployments.

## Planning Tools

We've seen some excellent improvements in planning tools, and more improvements are on the horizon. But there's an emerging requirement for a capability that hasn't been planned. We have a unique situation in NATO operations called national caveats. In NATO operations, nations often place caveats on how forces can – or cannot – be used. Essentially, to the theatre commander, these caveats must be factored into the equation as capabilities – or the lack of capabilities – of forces. As the force structure has grown exponentially complex, the task of piecing together individual tasks of an operation has grown exponentially complex. We need theatre-level planning tools to help commanders factor force capabilities, and force limitations, into the planning process.

Winning hearts and minds.

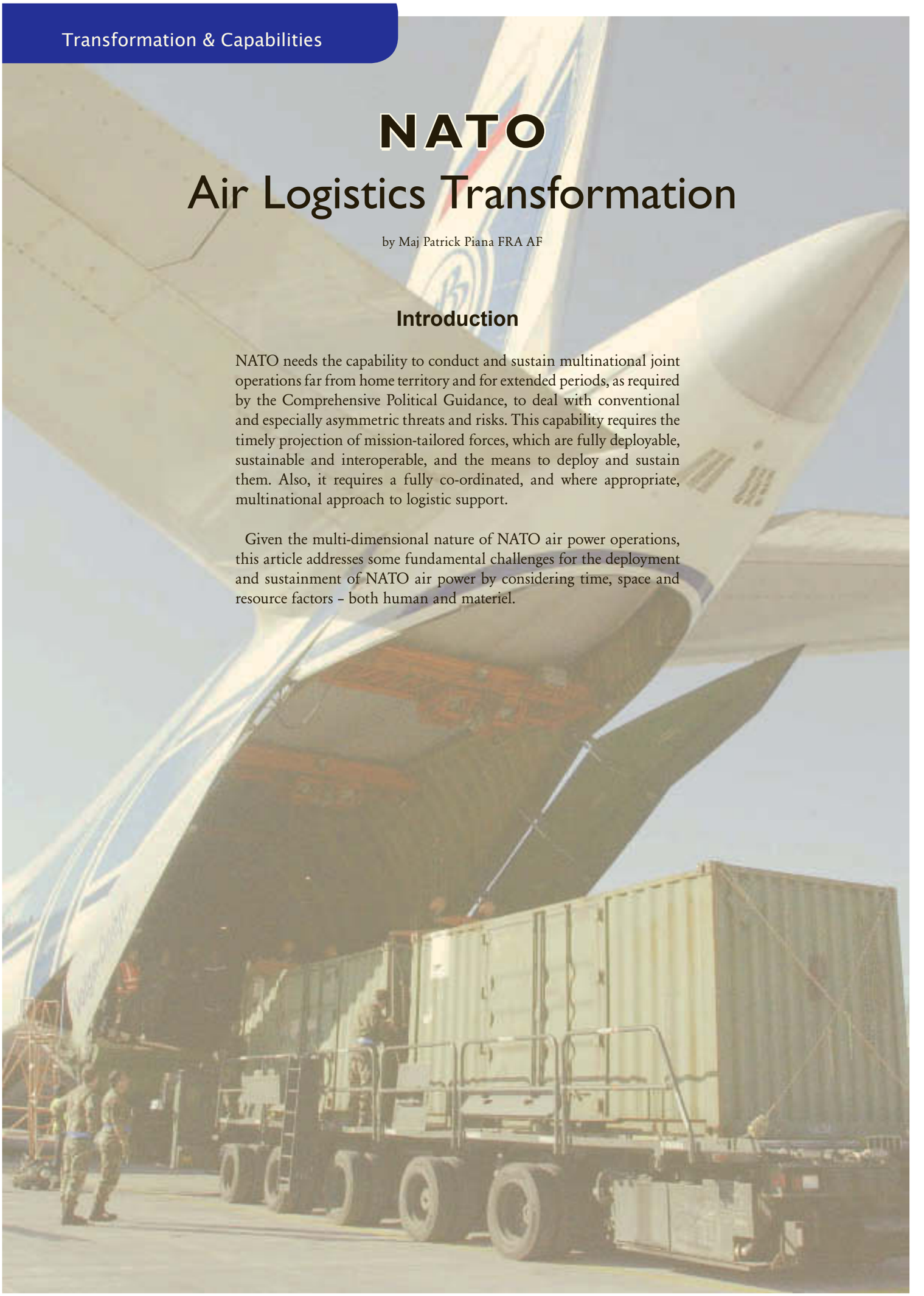
## Training

Finally, I need to stress training. Training is also something that NATO does very well – but, our Force Protection training needs to be improved, and it needs to be standardized. The threats facing our forces are common, but our Force Protection training is bogged down in Cold War mentality – each nation training to its own set of procedures and its own understanding of the threats. We need standardized training, designed to current threats, and made available to all forces - and we need to have the means and processes to rapidly infuse new training into ongoing operations.

Current NATO operations – and NATO operations for the foreseeable future – are multi-national, with theatre forces working side-by-side with other organizations toward common causes of regional stability and security – exactly in line with the North Atlantic Treaty signed 57 years ago. As NATO continues in its transformation, the lessons learned from these operations will continue to play an important role in identifying the way ahead with regard to doctrine, procedures, and capabilities. The transformation of NATO Force Protection capabilities will continue to be a high priority at all levels. ■

# NATO
# Air Logistics Transformation

by Maj Patrick Piana FRA AF



## Introduction

NATO needs the capability to conduct and sustain multinational joint operations far from home territory and for extended periods, as required by the Comprehensive Political Guidance, to deal with conventional and especially asymmetric threats and risks. This capability requires the timely projection of mission-tailored forces, which are fully deployable, sustainable and interoperable, and the means to deploy and sustain them. Also, it requires a fully co-ordinated, and where appropriate, multinational approach to logistic support.

Given the multi-dimensional nature of NATO air power operations, this article addresses some fundamental challenges for the deployment and sustainment of NATO air power by considering time, space and resource factors – both human and materiel.

## Time

A strength of air power lies in its ability to deploy and operate at very short notice. The timely projection of forces is a fundamental aspect of an effects-based approach to operations. It is a powerful political tool that enhances the effectiveness of the Alliance's political and diplomatic processes at the strategic level, and it is a tool for the manoeuvrist approach. In some crises a graduated and deliberate deployment will demonstrate the Alliance's resolve and allow for political and diplomatic processes to take effect, in others an immediate military deployment might be the most effective option.

The Concept for Alliance Future Joint Operations (CAFJO) outlines several critical lines of development, related to the time factor, to improve NATO's ability to project force. One is the importance of synchronisation to ensure the appropriate balance of forces is deployed in a co-ordinated manner. A well-synchronised flow of forces hastens the build-up of mission-capability, and avoids the saturation of nodes such as ports of debarkation (PODs) and lines of communication (LOCs). Another is achieving synergy by integrating the actions of multinational air, land and sea forces to enable the projection of focused capabilities – and this integration must include logistics. Other lines of development include reducing strategic lift requirements and, most important, unifying operations and logistics functions, underpinned by education and training.

The management of this time dimension is therefore critical for air logisticians. Air Logistic processes have to be optimised to be much more responsive and anticipatory than ever before. It is of paramount importance for logisticians to be involved in the operational planning processes, at Headquarters at all levels and from the outset of an operation in order to ensure the required speed and quality of decision-making. Logistic related information is a critical information requirement for planners.


Department of National Defence Canada

Logisticians must be an integral part of the mission planning team.

Conceptual work to develop further the ability to project forces includes joint sea-borne deployment and sustainment, deployable air, land and seaports of debarkation, and air-bridge operations. Further, the more material or assets we have to deploy, the more time we need. One option to reduce the need for strategic lift and to reduce deployment timelines is for NATO to consider setting up pre-positioned sea or land based support bases, close to likely operational areas, stocked with common equipment, in order to reduce the distribution time. Finally, multinational logistic information technology is absolutely critical to logistic, and therefore operational, situational awareness to enable timely decision-making. Examples include asset and supply chain management technology.

## Space

One of the principal challenges NATO air power must address is the ability to operate over extended

Photo SHAPE

The strategic airlift resources of NATO nations are scarce.

lines of communications and in austere environments, rather than in well known locations relatively close to the home base.

Air movement offers fast and direct deployment with relatively limited infrastructure support. Also, air movement reduces the reliance on sea and land lines of communication, reducing risk or transit clearance requirements. However reliance on air movement exclusively is expensive and limited by the airlift available.

There are several possible mitigating and often overlapping solutions. The first is more strategic lift. The second is to reduce as much as possible the deployed footprint. Total asset visibility across all levels and components, including logistics flowing in and out of theatres, may allow a leaner approach to logistics. Distribution-based logistics using a broad network for common items, replacing linear supply chains and allowing units to resupply each other, may be a solution. Distribution-based logistics will reduce vulnerabilities of critical logistic nodes such as PODs and LOCs. The third is to exploit host nation support. Logistic planners look closely to the support that host nations can provide and most NATO operations rely on at least a basic level of host nation support. And of course there is the option to use contractor support.

## Resources

NATO logistics resources are assets that are provided by nations in commitments made during the force generation process. Each nation providing its own logistic support leads to duplication, inefficiencies and an unnecessarily large deployed footprint. Transforming NATO for expeditionary operations generates the need for synchronized, seamless, joint, adaptive and multinational logistic capabilities where appropriate. Synchronised multinational and joint logistics requires capabilities such as specially trained operators, mobility assets, network architectures and embedded logistic information systems for situational awareness.

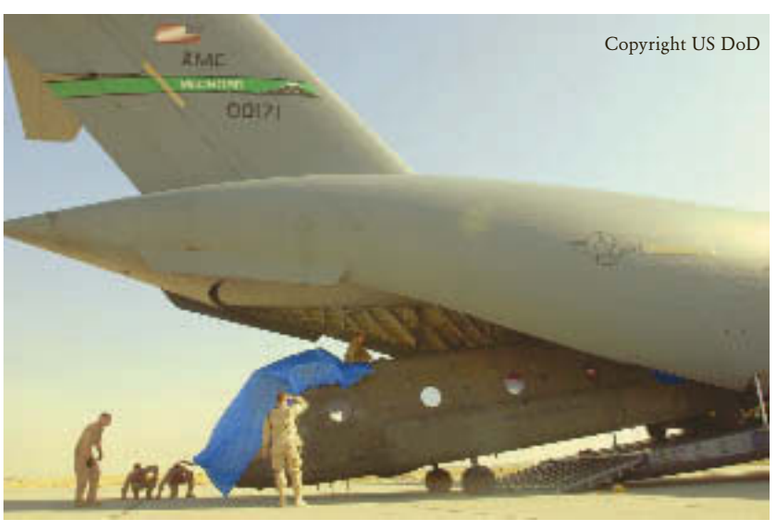
The utility of contractors is discussed in detail elsewhere in this Journal. Contractors are generally cost effective. Contractors possess either the resources or the competencies that the military rely on to meet their requirements. Contracts can be let in advance and refining measures can be managed on a contingency basis.

A disadvantage is that reliance on contractors during operations may prevent the military community from training with the logistic support it will use on operations. For air logistics this is a particular issue in areas like air to ground precision munitions, or high technology equipment that need a high degree of skill for repairs or maintenance. However contractor support is well able to provide for basic support capabilities like the provision of laundry, housing etc. Also, there is the challenge of responsibility for protecting civilian contractors in a hostile operational environment.

## Conclusion

As for every concept, air power logistics needs to adapt itself to a rapidly evolving environment. It must change from a fixed and linear pattern, strictly oriented towards the mission, to a networked, multi-dimensional model shaping the mission as another effect. Most logistic concepts used for air power are not specific; they are joint in function because logistics is fundamentally joint, but air specific logistic processes need to be optimised in a joint environment in order to improve the air operation efficiency. ■

"NATO must create numerous 'ready to move' capabilities."

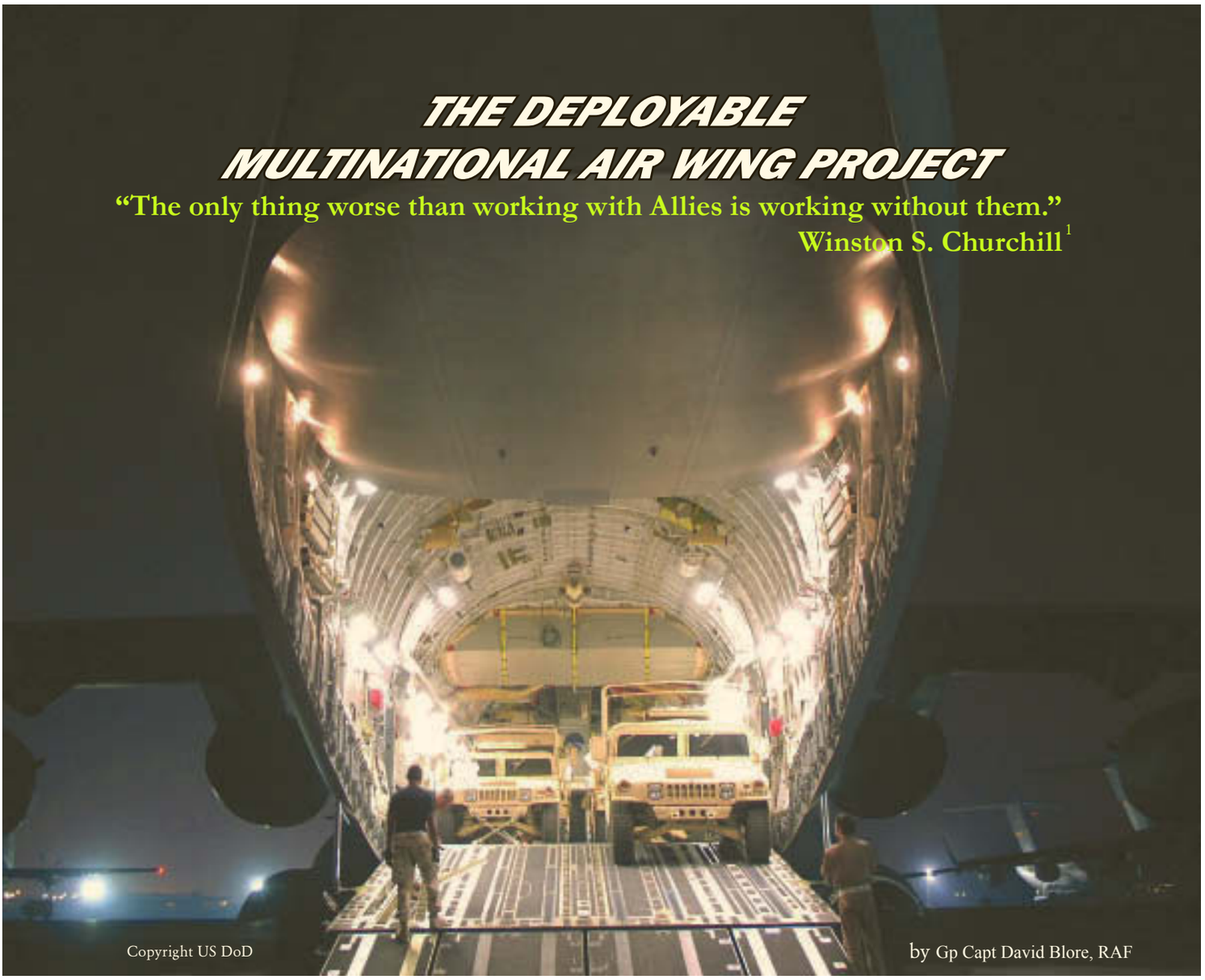





The need to move resources into theatre quickly.

# THE DEPLOYABLE MULTINATIONAL AIR WING PROJECT

**"The only thing worse than working with Allies is working without them."**
**Winston S. Churchill**[1]



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by Gp Capt David Blore, RAF

## The Reality

In today's world, it is highly unlikely that any NATO or EU nation will operate in a coalition of one. The question then is, how do we bring capabilities together so a coalition is able to operate together effectively and efficiently? Combined Air Operations (COMAO) and their associated documentation, such as the Air Tasking Order, Air Coordination Order et al, are well-tried and tested entities. However, the support areas are not so well catered for. It is only very recently that NATO doctrine for logistics changed from one of national responsibility to a collective responsibility, but that change has yet to be adopted practically. At the moment, certainly at the tactical level of operations, our air forces have met and continue to meet the challenges of deployment preparation, base activation, logistic and other areas on an individual national basis. The consequences are, quite simply, a duplication of effort that ultimately costs more for everyone in time, personnel, equipment and straightforward cash. If we can find ways to combine individual national efforts we can: smooth and simplify the multinational planning process; minimize the requirement for scarce strategic lift; reduce the deployed footprint as a total and for each contributing nation; reduce the overall sustainment effort and make best use of the deployed forces.

This is the philosophy that underpins the European Air Group's (EAG) Deployable Multinational Air Wing (DMAW) Project[2]. Just to set minds at rest, the Project will not produce a new capability, nor is it about establishing a standing force. Rather it is about establishing a methodology, procedures, processes and legal and financial frameworks for air forces to operate together effectively and efficiently at the tactical level. The DMAW Project is complementary to NATO's Deployable Airfield Activation Wing concept; the latter specifies what is required to establish a Deployed Operating Base (DOB) whilst the former provides the mechanisms and procedures for meeting that requirement with a multinational force.

## Coalition Building

The role of the EAG is to improve the operational capabilities of its member air forces to carry out operations in pursuit of shared interest, primarily through mechanisms that enhance interoperability. Building on this tenet, the EAG staff has been tasked to develop, validate and implement planning support tools and framework arrangements to enable the standing-up, deploying, employing and recovery of a DMAW, comprising assets from two or more EAG nations operating in support of NATO, UN, EU or a coalition of nations. A DMAW is defined as an entity, tailored to the requirements of a specific operation, integrating single or multiple weapon platforms and including combat service support and base support elements. This definition was deliberately designed so as not to prescribe the contributions a nation may make and it allows for a nation to contribute in specific areas such as medical support, force protection, logistic and CIS without necessarily deploying aircraft.

## DMAW Technical Arrangments

The DMAW Project aims to provide a 'toolbox' for the national air operations planners that contains flexible support tools and formal framework documents that have been tested and validated. The contents of the 'toolbox' were defined by the nations and encompass the full range of activities that you could expect to find at a DOB. A few of the products reflect flying activity but the majority address the combat support and combat service support functions, such as interoperability manuals covering CIS (SATCOM, crypto equipment etc) and ground and aviation fuels, technical arrangements (TA) addressing, among many others, the establishment and operation of a Combined Air Terminal Operation (CATO) and Medical Support, and standard operating procedures, for example, for force protection activities and a multinational logistic cell (MNLC).[3] How many of these tools will be needed depends on the number of nations involved in any given operation and the specific circumstances of the situation and mission.

Over half of the 25 products have been delivered to the nations, including validation through practical trials, albeit a number, such as the interoperability manuals and capability catalogues, will require periodic updates as new capabilities are introduced by the nations. Importantly, the 7 EAG Chiefs of Air Staff signed the high level DMAW TA in June 2006. This TA represents the high level commitment to work together in the future establishing the rationale for a DMAW and defines, in general terms, conditions and responsibilities for employment, command and control, legal aspects and financing a DMAW. It does not set out in detail the planning process and its myriad considerations, nor does it state how the DMAW should be employed. These issues will be addressed by subsidiary implementing arrangements, which will be supported by a detailed planning guide.

The products have to be validated as 'fit for purpose' before they can be handed over to the nations. Validation is achieved through the EAG's annual training event, VOLCANEX, or through specifically tailored trials. During the development of the CIS Equipment Interoperability Manual the EAG sponsored trials proved the link between the GBR deployable radar capability and the FRA deployable JFACC as part of the work up for NRF5/6. During Exercise SPRING FLAG/ VOLCANEX-06 this year, a CATO was established to handle all deployments and redeployments to and from Decimomannu (a simulated DOB) by all modes of transport. This trial was a major success and the procedures for the establishment of a CATO and the SOPs for its use are now available for 'real world operations'. A first, in a practical sense, was the establishment of a MNLC to control (but not command) all logistic activity within the DOB. The concept is sound but there were sufficient lessons to cause us to re-evaluate the procedures for validation next year.

## Operational Harmony

All the products of the DMAW Project must have utility in the real world. If they are not used by nations but merely gather dust on a shelf, then we will have failed to meet our goal of 'Operating Together'. The products developed under the DMAW Project are not only for the use of EAG nations but are also available to all air forces, because at some time, as recognised by the European Assistant Air Chiefs in their 2005 Conference, 'we must all ensure our national participation in combined activity.' Greater detail on the range of DMAW products and other EAG activities, including the potential to support operations can be found at www.euroairgroup.org. ■

1. An adaptation of a quote from Winston Churchill, the former Prime Minister of the United Kingdom.
2. A multinational air organisation established by Inter-Governmental Agreement signed by BEL, DEU, ESP, FRA, GBR, ITA and NLD.
3. The more experienced will equate the CATO to the International Airlift Control Element.


# A Commitment to Strategic Airlift

by Lt Col Michael Carter, USA AF

"Rapid Reaction Forces demand an ever increasing ability to deploy..."

## Airlift Initiatives

The international community is rapidly recognizing the need for strategic airlift. Nations and international military organizations across the globe are heavily involved with acquiring or strengthening their strategic airlift capabilities. Both NATO's maturing Response Force and the European Union's emerging Rapid Reaction Force demand an ever increasing ability to deploy land forces from home bases to contingency operations much further afield than traditional European boundaries. Accompanying these forces are armour and mechanized vehicles, heavyweight helicopters and large combat service support packages, and outsize payloads required for mission accomplishment. There are a multitude of airlift initiatives currently aimed at increasing the capability to transport this cargo, and the troops it sustains, across large distances. These initiatives seek to add strategic aircraft to military inventories, leverage the vast transport capacity of commercial aviation, or make more efficient use of current carrying capacity through centralized command and control. To supplement these efforts, this essay addresses fundamental features of strategic airlift aimed at increasing strategic throughput. Its intent is to serve as a focusing tool, in order to maintain national and alliance commitments to increasing strategic airlift capacity.

*"Indeed what is written often results in more confusion than clarification."*

It is most important to recognize that strategic airlift is a unique mission type, quite different than tactical airlift. The two vary not only in distances to be travelled, but also in cargo carrying ability, command and control structures and en-route

support. Unfortunately, within NATO, Allied Joint Publications offer limited insight into this distinction. Indeed what is written often results in more confusion than clarification. Non-standard terminology is at the crux of much of this confusion. Where many documents refer to strategic airlift as inter-theatre airlift, others simply label it strategic airlift. Lost in the translation is the essence of the requirement, namely the ability to lift outsize cargo across great distances. Focus must remain on this requirement. Tactical airlift, on the other hand, is concerned with moving cargo and passengers quickly, within defined borders of an area of operations. Tactical aircraft must be capable of operating in austere locations, locations with minimum on-ground support and in many areas, unprepared runway and taxi surfaces. For strategic airlift this is a bonus. The bottom line is that it is possible to increase capability in one mission while not substantially affecting the other. This distinction is quite important. While current tactical airlift commitments enhance our effectiveness at fulfilling tactical requests, strategic capabilities remain unchanged.

The A400M will provide strategic airlift for numerous nations.

## Increased Flexibility

Further blending the roles of strategic and tactical airlift, and thus masking the strategic airlift deficit, is the increased flexibility of today's aircraft. In the past, aircraft have been identified as either tactical or strategic. With aircraft such as the Boeing C-17 and the emerging A400M, this delineation has become somewhat cloudy and the distinction less beneficial. More importantly, it creates a few challenges to defence planners, first of which is the impulse to reduce both tactical and strategic requirements with a single aircraft. While able to operate in both roles, fundamentally, an aircraft can only be married against a single requirement. Either it operates to meet strategic transport requirements, or it meets tactical requirements, not both. The temptation to 'double-tap' is dangerous, for it results in inflated strategic lift capabilities. In addition to improved transport aircraft, there appears to be a move towards employing dual-role tanker-transports, similar to the McDonnell Douglas KC-10. The Airbus Multi-Role Tanker Transport airframes, the Boeing 767 and the proposed Northrop Grumman KC-30 provide exceptional flexibility to air forces by expanding transport capability while simultaneously developing in-flight refuelling fleets. There are some challenges though. Configuration changes take time and require en-route locations equipped with standardized conversion kits and adequately trained personnel. Once again, efficient use of these aircraft satisfies only one requirement at a time, either transport or air-refuelling. If air-refuelling, strategic airlift capability is not increased.

Strategic lift offers increased flexibility.

Strategic airlift provides users the ability to transport outsize cargo great distances.

## Assured Capability

As previously mentioned, strategic airlift provides users the ability to transport outsize cargo great distances. But what is outsize cargo? NATO publications define outsize cargo as 'material that exceeds the dimensions or weight limitations of an un-stretched C-130 or similar aircraft but does not exceed dimensions or weight limitations of larger transport aircraft.' Today, the list of aircraft capable of transporting outsize cargo is growing. Militarily, the international proliferation of the C-17 offers increased cargo capacity and the A400M promises to further increase NATO's strategic lift. But increased pallet positions don't necessarily translate into increased carrying capacity. Nations possessing these aircraft must be willing to dedicate them to reaction force line-ups and remain committed to actually allow their use during military intervention. Additionally, national leaders must be ready to give priority to NATO tasks, as occurred during the earthquake relief operations in the mountainous regions of northern Pakistan. Commercially, the civil aviation market is flooded with aircraft capable of greatly assisting military leaders in getting their forces and gear to the fight. Aircraft such as the AN-124 and Boeing 747 represent tremendous outsize cargo carrying capability. The challenge with commercial aircraft is assured access. Assured access equals increased capacity. Without assured access to these commercial aircraft, strategic airlift capacity is not increased. Once again, initiatives are underway to tap this extensive source of strategic airlift. Future arrangements, similar to the US Civil Reserve Aviation Fleet,

Commercial airlift offers military planners options.


The C-17 along with the C-5 are the workhorses of strategic airlift in the US Air Force.

could more effectively place these cargo jets at NATO's disposal. While many European nations lack strategic military aircraft, most oversee vibrant civil aviation systems. Incorporating these civil aircraft into defence planning would substantially increase strategic airlift capability.

## Rapid Deployment

Arguably the largest payoff for increasing strategic airlift is the ability to rapidly deploy military forces across the globe to meet the full spectrum of military activity. The size of these forces is quite considerable: NATO is committed to moving a 20,000-plus strong response force, while the European Union Rapid Reaction Force numbers as large as 60,000. Again, though much of this force will deploy via sealift, a significant portion must be flown into theatre at the leading edge of the contingency. These large formations are nothing more than a combination of national contributions. To move these forces, neither NATO nor the EU possesses organic strategic airlift fleets. Individual nations are required to provide strategic airlift for their force contributions. In all cases, political levels of ambition stipulate the deployment timeline for these forces. Effective strategic airlift thus entails a time component; forces and cargo must reach their deployment locations on time. This element is critical to defence planners. Operating tactical aircraft over strategic distances may succeed in delivering cargo and troops, but multiple en-route stops for fuel and crew changes could push the timeline too far to the right. Similarly, commercial assistance, without assured access, could jeopardize mission success. Increasing strategic airlift must be done with timeliness in mind.

*"To move these forces, neither NATO nor the EU possesses organic strategic airlift fleets."*

Strategic airlift will continue to increase in importance as NATO and EU military operations expand beyond European borders. As the international community wrestles with increasing its strategic cargo and troop carrying capabilities, the fundamental aspects of strategic airlift must underpin all efforts. On this foundation, all initiatives and acquisitions must stand the test of the overriding question: does this effort actually increase our strategic airlift capability? This, to be sure, is the only way to advance strategic airlift capability. ■

# Force Protection Risk Management

by Gp Capt John Alexander GBR AF



**"The key principles proposed are prioritisation, interoperability, and flexibility."**

Security is a principle of war and protecting the cohesion of the force is a key function at the operational level. In air forces force protection may be viewed as a specialist function, alongside air operations and logistics. This article's thesis is the key to achieving force protection for a deployed combined joint force, including for its air component, is risk management.

NATO's draft Allied Joint Doctrine for Force Protection (AJP-3.14) sets out to describe the fundamental doctrinal and operational aspects of force protection in a joint operation and to provide guidance on the planning and conduct of force protection at the operational level, fully integrated and co-ordinated with the operational planning process from the outset.[1] The key principles proposed are prioritisation, interoperability, and flexibility. Prioritisation includes the need for force protection measures to balance the need to preserve force capability, while maximising operational freedom of manoeuvre; for a measured, intelligence-led threat assessment to be the basis of force protection measures, and for force protection to be based on risk management, not risk elimination.

These principles reflect NATO's agreed definition of force protection as 'all measures and means to minimize the vulnerability of personnel, facilities, equipment and operations to any threat and in all situations, to preserve freedom of action and the operational effectiveness of the force'.[2] The inclusion of the need to balance force protection with mission effectiveness and to preserve mission effectiveness is in the author's view an improvement on narrower definitions describing force protection as an end in itself, such as the former UK definition to 'conserve the fighting potential of the deployed force by countering the wider threat to all its elements from adversary, natural and human hazards, and fratricide'.[3] The NATO definition requires a very broad range of force protection threats and measures to be considered, as in the proposed notional list of force protection capabilities at Figure 1.

To achieve the aim of force protection and to apply the principle of prioritisation requires a risk management process that allows the commander and his staff to plan force protection and also to respond to incidents, attacks, or any other change in the situation. Planning must include analysing the mission and assessing criticalities, threat, vulnerabilities

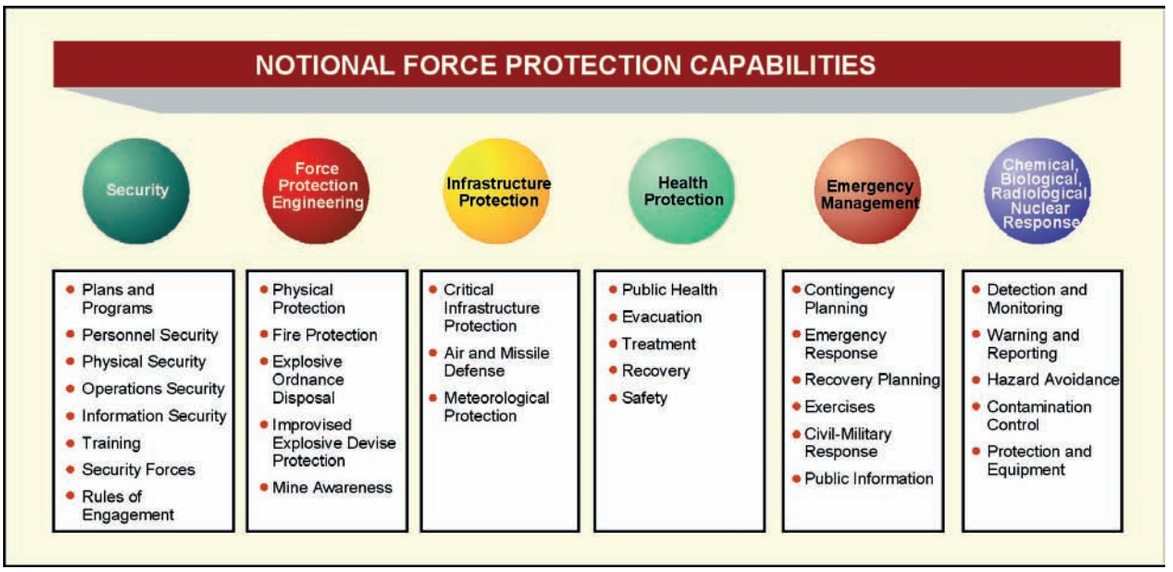


Figure 1 – AJP-3.14 Third Study Draft Notional Force Protection Capabilities.

and risk, and the appropriate response to the incident and also its consequences for the mission. Colonel Arns article in this Journal, outlines the Netherlands' operational risk management process. The force protection risk management model proposed for AJP-3.14 is shown at Figure 2.

Application of the model presents the commander and his staff with a number of challenges. While force protection staff effort at the operational level should be J2 fed and J3 led, the span of potential force protection capabilities (as shown at Figure 1) require co-ordination from J1 to J9.

To be effective risk management must be applied coherently across the range of threats and responses – for example following the commander's direction on risk, balancing risk, avoiding risk averse or high risk stovepipes, and ensuring the risk reduction measures in one area do not increase risk in another.

Another example might be one element of the force applying national peacetime health and safety regulations, while another is taking warlike levels of risk. The principle of interoperability is critical for force protection in a multinational force. Doctrine is the bedrock of NATO interoperability. NATO force protection doctrine, when ratified and subsequently promulgated, will help training, and equipment interoperability. Also important is an interoperable, combined and joint approach to risk. Force protection has often been described as a national responsibility, and certainly many aspects such as equipment and pre-deployment training are the responsibility of troop contributing nations. However, the NATO joint force commander has to be able to 'operationalize' combined and joint force protection measures in order to be able to preserve the force's freedom of action. But the commander's freedom of action to conduct operations necessary to achieve force protection may be restricted. A recent International

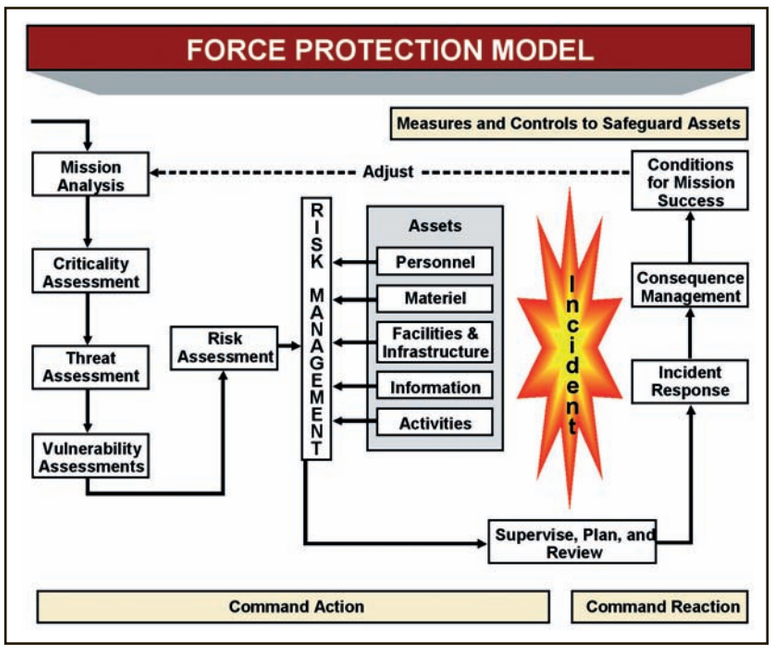


Figure 2 – AJP-3.14 Third Study Draft Force Protection Model.

Force protection is an essential requirement of deployed air operations.

Security Assistance Force (ISAF) DCOM Ops noted, 'member states have different tolerances to "risk", based on national political will, military capabilities and experience, national law; and level of interest and leverage.'[4]

Also interoperability allows a multinational force to use integrated logistic support. Integrated multinational logistics would discourage each nation having its own national logistics and support element, therefore minimising the size of the deployed footprint of Airports of Debarkation (APOD) and logistic centres requiring protection.

So what about air power? NATO air power has a contribution to make to the protection of the force across the spectrum of conflict. For example the UK MOD's Future Air and Space Concept recognises that 'given the trend away from classic force-on-force confrontations to asymmetric engagements, our counter-air capability must be more responsive, more discriminatory and more ubiquitous in order to protect the Joint Force. Such protection will be realised through wider, more persistent surveillance and improved threat identification and recognition.'[5] This applies to operations in direct support of land stability and security operations as well as to counter-air.

Air power capabilities on the ground offer unique vulnerabilities and therefore unique force protection requirements. Air operations are likely to be mounted from Deployed Operating Bases within the JOA, and APODs are critical to the joint force deployment and sustainment. Such bases are typically physically large, have large signatures, are static, difficult to conceal and contain high value assets, including concentrations of personnel. They make attractive targets for the enemy and their aircraft are vulnerable when on the ground but also when taking off and landing. Effective risk management must be used to minimize the deployed footprint and avoid the often-leveled accusation that air forces deploy 'heavy'. NATO air component doctrine should be evolved from the Allied Command Europe (ACE) Forces Standard Survive to Operate concept to reflect this. Finally, there is the need to balance the requirement for airmen to be trades specialists and be able to protect themselves. As Churchill noted in 1941 after the fall of Maleme airfield in Crete, 'every airfield should be a stronghold of fighting air-groundmen, and not the abode of uniformed civilians in the prime of life protected by detachments of soldiers.'[6] ■

1. AJP-3.14 Allied Joint Doctrine for Force Protection (Third Study Draft).
2. AAP-6(2006). http://www.nato.int/docu/stanag/aap006/AAP-6-2006.pdf
3. UK Joint Doctrine Pamphlet Force Protection in Joint Operations.
4. Maj Gen Roger Lane and Emma Sky, The Role of Provincial Reconstruction Teams in Stabilization, The Journal of the Royal United Services Institute, (2006) pp 47-51 (p.48).
5. http://www.raf.mod.uk/downloads/documents/fasoc.pdf
6. Winston Churchill, The Second World War, vol 3, The Grand Alliance (Boston: Houghton Mifflin Co., 1950), 776-77.

# Interview with Lt Gen Stieglitz DEU CoAS

conducted by Wg Cdr York, GBR AF and Lt Col Litzenberger, DEU AF

**Sir, as Chief of Air Staff, what are the key challenges facing the Luftwaffe in the near and medium term?**

The key challenges facing the Luftwaffe are to enhance the overall operational effectiveness of the Bundeswehr[1] by closing existing capability gaps in the field of Strategic and Operational Mobility, Airborne Surveillance & Reconnaissance, Air Command & Control (C2), Effective Engagement and Force Protection. For the near term we need to fully integrate and exploit the Eurofighter as well as our recently introduced precision engagement capabilities. We will significantly improve our Air Defence posture by upgrading our Patriot systems, especially in Theatre Ballistic Missile Defence to counter emerging risks and threats.

We have to plan the integration of new systems such as the NH90 helicopter and A400M, alongside the A310's multi-role transport and air-to-air refuelling (AAR) capabilities. Sensor-equipped Unmanned Aerial Vehicles (UAV) will be introduced into the Luftwaffe, adding a new dimension to the exploitation of Air Power. The major challenge is to maintain momentum of all our transformational activities in order to better prepare for the most likely missions.

**What do you see as your priorities?**

The critical factor is people, the way they think and are taught to react. My top priority, therefore, is to provide well prepared and equipped airmen and women for ongoing operations as well as for the more likely future challenges, having their best personal protection well in mind. We will continue to make significant contributions to the NATO Response Force (NRF) and other deployable capabilities such as EU Battle Groups.

We will preserve the sovereignty of national airspace by providing national Command & Control and Quick Reaction Alert (Interceptor) (QRA(I)) assets, on a 24/7 basis.

Last but definitely not least, it is of utmost importance to modernize our Air Power assets as scheduled, in order to balance the significant cost reductions we have to shoulder during this decade and beyond!

**Transformation is a long journey, are you seeing results along the way?**

The Luftwaffe is determined to take its part in the overall transformation efforts of the


Photo courtesy of MOD Bonn

Force Protection is an essential transformational goal.

Bundeswehr. To streamline and organize the Luftwaffe's transformation activities, I have issued a Flight Plan for the transformation within the Luftwaffe at the beginning of this year.

The Transformation Flight Plan focuses on 6 specific capability areas, derived from National strategic transformation goals. These are Doctrine/Operational Concepts, Methods, Personnel/ Career, Training/Exercises, Materiel/Equipment and Organization/Structures.

Parallel examination of these six areas helps to identify synergistic effects for a given capability. All affected areas are harmonized in a much faster and better way, and, above all, they are implemented in a holistic networked system.

In this process, communication of transformation activities provides transparency, forms the basis for information exchange, and thus is a fundamental precondition for effective knowledge management. An adaptive and successful communication strategy will be a core element of efficient mission accomplishment in the future. The Flight Plan is one of our key elements to this.

We have established a national Luftmachtzentrum (Air Power Competence Centre), which is responsible for the transformation of Air Power and it will play a vital role in structuring, coordinating and communicating all related transformation issues within the Luftwaffe.

**In the answers you have given above, you have placed great emphasis on deployability and flexibility. Where do you see Eurofighter fitting in?**

There is a need for all Armed Forces to be ready to face the unexpected, in that our first operational priority is to defend our home country. The Luftwaffe needs a balanced and flexible force to react to the unexpected and to contribute to the whole spectrum of Air Power capabilities. At present, Germany has troops on the ground in Afghanistan, The Balkans and we are about to deploy to Africa. However, we currently have no combat aircraft engaged in operations outside national boundaries.

Eurofighter only has an air-to-air capability at present and it will be used primarily in the Air Defence (AD) role to replace our ageing F4F fleet. Eurofighter's multi-role capability will be available by the end of the decade, when it will partially replace our Tornados and become part of a deployable package.

**Recent successful attacks on Coalition aircraft in operational theatres have brought focus onto Force Protection (FP) both in the air and on the ground. How is the Luftwaffe approaching the topic of improving FP to deal with this threat?**

In today's military context FP is an essential transformational goal. In the past, we talked about 'acceptable levels of attrition' to our forces. The only acceptable level of attrition in today's context is ZERO attrition. We enjoy peace in Germany and, if I am asked to deploy my people on operations in support of others around the world, I want them back safely. Alliance and Coalition troops are able to move around on the ground only because Air Power is providing for their safety from the air. For example, German vehicles can only drive through the streets of Kabul because air cover is provided by other nations. Moreover, the safest means of moving around any hostile environment will always be by air. In a nutshell, Air Power is crucial to the Joint operation, past, present and future.

We have recently introduced a new Ground Combat Support Regiment comprising infantry, aircraft and airfield Battle Damage Repair (BDR) and Chemical Biological Nuclear Radiological (CBNR) units. This regiment will be available for FP duties at home and abroad and, indeed, has already been practiced on AD duties in Kabul.

**Germany plans to introduce the Eurohawk by 2010 and the Globalhawk within NATO's Alliance Ground Surveillance (AGS) initiative by 2013. How does the UAV fit into your vision of Air Power?**

UAVs will play an important role across the entire spectrum of foreseen scenarios by advancing the Luftwaffe's flexibility, effectiveness, interoperability, deployability and endurance.

High Altitude Long Endurance (HALE) UAVs, based on the US Globalhawk platform, will replace the current Signals Intellgince (SIGINT) platform. The SIGINT sensors will be nationally developed. We expect to receive the first systems in 2009 and to reach IOC soon thereafter.

In parallel, we plan to introduce a Medium Altitude Long Endurance (MALE) Imagery Intelligence (IMINT) UAV to complement our reconnaissance Tornado.

Experiences drawn from the current military conflicts, be it in Afghanistan or in preparation for our mission in the Congo, have identified a MALE UAV as a sound and most valuable answer to provide an all-weather reconnaissance capability and by this not only improving the relevant operational picture for the political and military leader but also improving the security and protection of our men and women in the field.

Germany also plans to contribute to the development and procurement of NATO's AGS system.

In addition to UAVs' existing ISTAR applications, we see much potential in the future for Unmanned Combat Aerial Vehicles (UCAV) for effective air-to-surface engagement.

**Air and Space Power have close ties, but also fundamental differences. What do you envision as Germany's approach towards exploiting this 'last frontier?'**

Space holds enormous potential for the future development of military capabilities. Germany will soon begin fielding its first military space satellites, SatComBw 2 (communications) and Search and Rescue (SAR)-Lupe (surveillance). However, space operations are expensive and they test restricted budgets. Therefore, the Luftwaffe and the Bundeswehr and, indeed, Germany as a whole will only be one part of this upcoming task.

**Strategic airlift within NATO remains a challenge. Do you think that a NATO common-funded force is the answer, similar to the NATO E-3A Component that you commanded?**

NATO has been working on options to close the existing strategic airlift gap for several years. The Luftwaffe will fill its airlift capability gap within the multinational Strategic Airlift



Germany will procure 60 A400M aircraft.


HALE UAVs will replace the current SIGINT platform.

Interim Solution (SALIS) initiative under German functional leadership and the procurement of 60 A400M aircraft.

The European Airlift Centre (EAC) in Eindhoven is working well and may be the best option to coordinate and prioritize these strategic airlift capabilities.

As you probably know, Germany and France signed in April this year the Letter of Intent (LoI) European Air Transport Command (EATC). I consider the signature of the LoI as a 'milestone' in the development of the EATC. In June Belgium joined the 'EATC-Club' with a Note of Accession to the LoI. Other nations showed serious interest.

We are still aiming for an Initial Operational Capability in 2008, which is of utmost importance for the Germany intent to transform our national Air Transport Command into the EATC.

The operational benefit of developing such a multinational body will be the enhancement of shared use of scarce air transport assets. We will gain significant flexibility and can expect synergetic effects by pooling these multinational assets under one common roof.

**It was suggested in a past JAPCC journal article that national JFACCs should increasingly take responsibility for providing the complete ACC, air forces and support to NRF Air Forces. What is your solution to the NATO NRF Air requirement?**

Although limited in size and tailored to specific missions, the NRF is a highly cohesive, combined and joint force, built upon the best available national capabilities that are required for a potential NATO operation. These national capabilities vary widely and the support also needs to be directly tailored to the effects-based force requirements of the NRF operation, which clearly leads towards single nation support.

On the other hand, I strongly support the lead nation principle, in which one nation provides the nucleus of NRF air component C2 arrangements and contributes a significant share of the required force assets. However, further, perhaps specialist support from other nations will always be needed.

In developing the Luftwaffe's C2 capabilities, we have in mind a deployable national JFACC similar to French and British arrangements. We are finding, though, that there is much more to a JFACC than providing a few intelligent staff officers with a tent and laptop computers! C2 doctrine, interconnectivity, reachback, bandwidth and life support are but some of the major challenges we have encountered. We are, nevertheless, making steady progress with this initiative.

**Sir, thank you for your thoughts and your valuable time.** ■

1. The Bundeswehr is the German word used to describe the German Federal Armed Forces.

# Airbase Opening in Force Generation

by Lt Col James Spaulding USAF
(corrected version)



**"Military capability is the crucial underpinning of our safety and security. It directly translates into political credibility. As Kofi Annan once said, you can do a lot with diplomacy, but you can do a lot more with diplomacy backed up by the threat of force. Indeed, in the real world, the more right military capabilities you have, the less you may need to use them."[1]**

Former NATO Secretary General, Lord Robertson
'The World in 2015 - Predicting the Unpredictable'
Keynote Speech: Defense Industry Conference 2002.

## Responding to Crises

The future security environment offers a broad spectrum of threats no longer confined to State actors. Agile capabilities, agile information, and agile mobility are inextricably linked as states, regions, and security structures transform to respond to this uncertain threat environment.

In response to relevant crises, NATO alliance or EU member forces may potentially deploy to expeditionary locations to commence operations. National personnel and equipment are normally made available for these operations through processes of mobilization and deployment generally known as Force Generation. These processes are sometimes lengthy and inefficient due to the unavailability of trained and ready forces and the capabilities to rapidly employ them. Improved force deployment processes with transformed forces and capabilities imply more effective and efficient responses to crises and faster resolution of those crises.

*"In the longer term, the EU should develop, standardize, and train base opening and initial operations procedures across all thirteen EU Battle groups with regard to NATO standards."*

## Contingency Response Groups (CRG)

During early Global War on Terror (GWOT) operations throughout Central Asia, many challenges arose while trying to stand up airbases to support overall theatre efforts.[2] Consequently, seven[3] US Air Force CRGs were developed to provide an early Airman's perspective and speed the transition from seized battlefield to airfield, regardless

of the follow-on mission.[4] The CRGs are on call 24 hours a day /7 days a week and deploy within 12 hours of notification to assess, secure, open and initially operate airbases and 'bridge the gap between seizure forces and follow-on combat / expeditionary combat support forces.'[5] They have the ability to operate in a variety of basing and threat environments to support the entire range of Air Force Concept of Operations (CONOPS).[6]

## Deployable Airfield Activation Wing

In a brief to Headquarters Supreme Allied Commander Transformation, the case for a NATO capability, similar to the US CRG, was logically presented by the JAPCC and supported by the following arguments:

- Timely deployment of forces requires airlift, so deployment airfields must be identified and enabled.
- While relatively few nations possess these airfield enabler experts, the burden of cost and recurring use resides with nations that possess the capability.
- The force generation process takes too long, is largely inefficient, and can inflate the overall deployed logistic footprint.
- A lack of NATO airbase opening doctrine compounds the above issues.[7]

These arguments spoke for a NATO common-use airbase assessment and airbase opening capability, known as the Deployable Airfield Activation Wing (DAAW), and were highlighted in a 2005 Journal of the JAPCC Centre article.[8]

Arguably, NATO will remain in the prominent role as transatlantic security provider, but the EU may also benefit from a DAAW-like capability, as its own security requirements mature.

## European Union Airbase Opening

Even as nations perceive the world through their own lens of national experiences, strategies, and ambitions, it follows that the EU views security threats differently from either NATO or the US – similarly at times, in lock step at times, but potentially diametrically opposed at other times. For these cases, the EU must have capability to act effectively in concert with other actors, as well as autonomously. Furthermore, if the EU desires the capability to act alone, it must posses the enabling capability to rapidly assess and open airbases for expeditionary operations.

The US has long viewed European Security Defence Policy (ESDP) with cautious optimism for additional European defence burden sharing, as long as ESDP doesn't diminish NATO's role, duplicate its capabilities, or discriminate against non-EU NATO members – the so-called 3-Ds.[9] However, some degree of duplication already exists between the 19 member states common to both NATO and the EU, and greater capabilities could benefit both EU and NATO. Cooperative efforts, building mutual strengths, and working in concert toward common goals, while keeping/ enhancing interoperability will empower both the EU and NATO with multiple approaches to address uncertain future threats.

In their article A New Military Framework for NATO, Hans Binnendijk, David Gompert, and Richard Kugler proposed a pyramid-like structure (Fig. 1) for

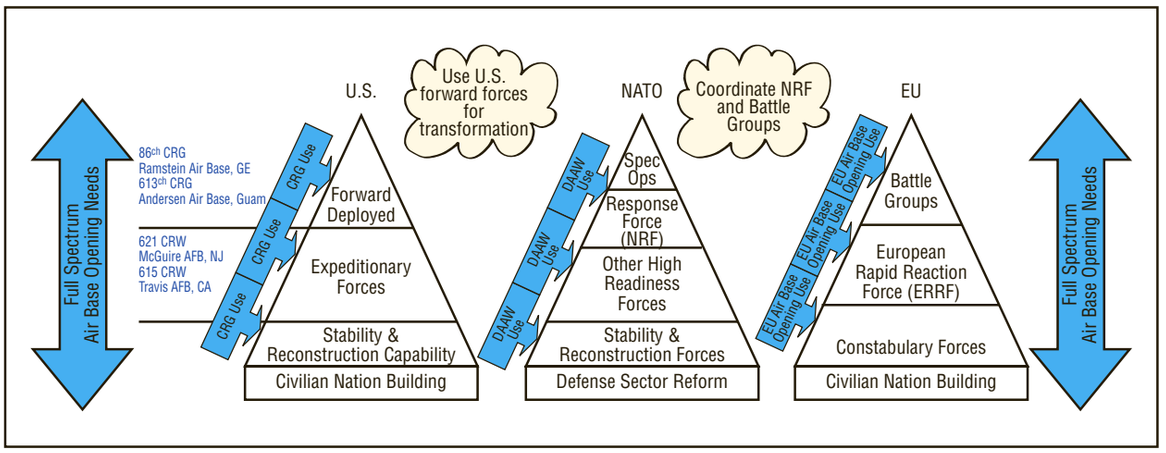


Figure 1: Three-Pyramid Architecture for Transatlantic Defense Collaboration with Base Opening Capabilities.[10]

future NATO force and capabilities in five areas: 'a new NATO Special Operations Force, the NATO Response Force, high-readiness combat forces, stabilization and reconstructions (S&R) forces, and assets for defense sector development.' [10]

The author suggests in Figure 2 that greater inter-cooperation and mutual capacity building could be achieved through the continued development of the US CRGs, the NATO DAAW, and a comparable EU Base Opening capability. By developing specific capabilities to assess and open bases and initiate operations, the EU could also continue to develop capacity for a range of ESDP activities.


Airlifting fuel into an austere airbase.

## Conclusions

In the near term, the EU should consider using NATO or US airbase opening capabilities. SACEUR could offer the NATO DAAW following development and Initial Operating Capability under Berlin Plus agreements, or national capabilities under a similar agreement. By doctrine, the USAF CRGs can open any installation from which operations will be conducted for 'the USAF, another Service, or even a coalition partner."[11] Elements of the 86th CRG (USAFE) already figure in the DAAW operational concept, and while Chain of Command lines might be complex, this could allow minimal reliance on NATO/US forces as autonomous EU capability is developed.

EU forces should also conduct training on US CRG deployments, providing motivation for continued transformation, while strengthening relationships. As Alexander Wathen, noted in his article, Contingency Response Group: Time to Expand the Box and Think 'Coalition', many partners already possess capabilities and skills necessary for CRGs, and we must integrate them for our mutual benefit.[12]

In the longer term, the EU should develop, standardize, and train base opening and initial operations procedures across all thirteen EU Battle groups with regard to NATO standards. As suggested in Figure 2, many required enablers are embedded within the EU Battle groups, but the potential implications of deploying an EU force to a crisis area mandate advanced assessments and the rapid introduction of enablers prior to the Battle group.

| Spearhead Rapid Reaction Forces For Airbase Opening | AMC CRGs | USAFE CRG | PACAF CRG | NATO DAAW (Concept in Development) Currently dependent on national capability | EU Airbase Opening Force (Non-existant) Currently dependent on national capability in each EU Battlegroup |
|---|---|---|---|---|---|
| Characteristics/Capabilities | | | | | |
| Airfield Seizure | No | No | No | Proposed DAAW: No | Performed by Battlegroups? |
| Arrives in advance of Base Forces? | Yes | Yes | Yes | Proposed DAAW: Yes | Part of Battlegroup? |
| Readiness to deploy | 24 hs/7 days-wk 12 hr response | 24 hs/7 days-wk 12 hr response | 24 hs/7 days-wk 12 hr response | Currently lengthy forces generation; proposed DAAW: 24/7 | Depends on national capability and will; Battlegroup to arrive in 15 days? |
| Reception/Beddown of Follow-on Forces | Yes | Yes | Yes | Proposed DAAW: Yes | Performed by Battlegroups? |
| Size | 113 +/– (scalable) | | | 1400 +/– (scalable) | Part of Battlegroup? |
| Scalable, dependent on:<br>• Deployed airfield facilities available<br>• Levels of threat in theatre<br>• Type and volume of airlift flow each day<br>• Host Nation Support | Yes | Yes | Yes | Proposed DAAW: Yes DAAW as planned has robust capability in many areas below–CRG core (113) may only have 1 or 2 personnel in some areas | Relies on Battlegroup to deploy and then assess? |
| Airdrop Capable | Proposed | Yes | No | No | Part of Battlegroup? |
| Initial Airfield Assessment | Yes | Yes | Yes | Proposed DAAW: Yes | Proposed EU Base Opening Force: Yes |
| Air Traffic Control | Yes | Yes | Yes | Proposed DAAW: Yes | Performed by Battlegroups? |
| Airfield Operations | Yes | Yes | Yes | Proposed DAAW: Yes | Performed by Battlegroups? |
| Communications | Yes | Yes | Yes | Proposed DAAW: Yes | Performed by Battlegroups? |
| Force Protection/Airfield Security | Yes | Yes | Yes | Proposed DAAW: Yes | Performed by Battlegroups? |
| Command and Control | Yes | Yes | Yes | Proposed DAAW: Yes | Performed by Battlegroups? |
| Logistics (Supply, Fuels, Cargo/Pax Handling, Ground Transportation) | Yes | Yes | Yes | Proposed DAAW: Yes | Performed by Battlegroups? |
| Self-Sustaining | 7 days | 7 days | 7 days | Proposed DAAW: 7 days | N/A |
| Follow on forces needed in | 30 days | | | 60 days | N/A |
| Logistics Costs | Reimbursed Contingency Fund | Reimbursed Contingency Fund | Reimbursed Contingency Fund | National "as they fall"; Proposed shared | National "as they fall" in Battlegroups |
| Typical Follow-on Force | Air Expeditionary Wing/Group/Squadron | | | NRF | Battlegroup? |

Figure 2: Comparisons of CRG, DAAW and EU Airbase Opening Capabilities.

As Christopher Bennett, editor of the NATO Review wrote, 'When both organizations work together with a common aim, as they did in the Former Yugoslav Republic of Macedonia in 2001, they can be a powerful force both for conflict prevention and crisis management.'[13] However, the range of power that the EU and NATO can offer, from war fighting, humanitarian, and stabilization activities, will be increased by their ability to rapidly deploy, assess airfields, and commence operations. ■

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2 Lieutenant Colonel Kevin W Kreps, Chief, Mobility C2 Operations Branch, AMC Office of History interview at Scott AFB, Illinois, 11 June 2003, pp. 4-7, in Global War on Terror (GWOT) Study: Lessons Learned and the Need to Fix the Air Mobility System, David K. Barrett, (Washington DC: Synergy Inc., 15 June 2004) p. 4-12, <https://private.amc.af.mil/A5/A55/publications.htm > (18 February 2006).
3 The USAF established two Contingency Response Wings (CRWs), each consisting of three Contingency Response Groups (CRGs) to replace the existing deployable Air Mobility Operations Groups (AMOGs) at Travis AFB, California and McGuire AFB, New Jersey. The CRGs were modeled after the first Air Force CRG established in February, 1999 at Ramstein Air Base, Germany, as an initiative by then Commander, U.S. Air Forces in Europe (USAFE) General John Jumper. With USAFE's CRG at Ramstein, and a Pacific Air Force's (PACAF) CRG at Guam, Air Mobility Command's six CRG's brings the total U.S. Air Force number to eight.
4 Colonel Gregory P. Cook, "From Battlefields to Airfields—The Role of AMC Assessment Teams in Operation Iraqi Freedom," Airlift/Tanker Quarterly 11, no. 4 (Fall 2003):26, <http://www.atalink.org/atq/ATQ_Fall_2003.pdf > (19 August 2005).
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11 Air Force Doctrine Center, Air Force Doctrine Document 2-6, 1 March 2006, 61 < http://www.e-publishing.af.mil/pubfiles/af/dd/afdd2-6/afdd2-6.pdf > (25 April 2006).
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13 Christopher Bennett, ed., "NATO's Strategic Partnerships: Building Effective Partners," NATO Review, Autumn 2003 < http://www.nato.int/docu/review/2003/issue3/english/art1.html > (20 September 2005).

# Responsive Global Airlift . . .

by Sqn Ldr Timothy Anderson RAAF

## Introduction

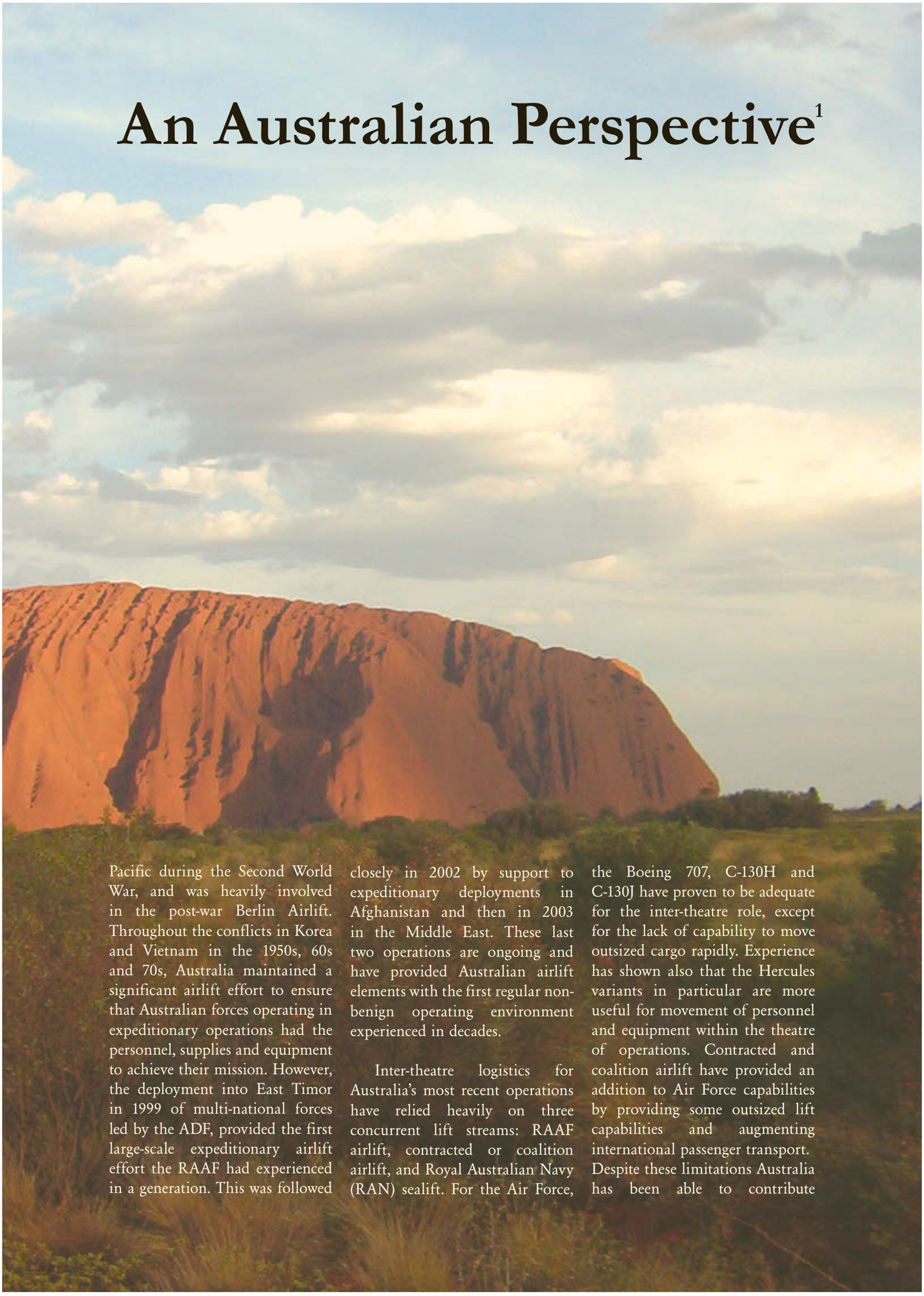
Australia's unique geographical location makes long-range airlift an essential element of most Australian Defence Force (ADF) undertakings for both indigenous and any offshore operations. Considering that the distance east-west from one Australian coast to the other is in excess of 3300km, even exercises and training within Australian territory take on an expeditionary nature. Furthermore, recent experience of the challenges of maintaining a number of coincident expeditionary forces around the world has caused a significant reappraisal in Australia of the nature of airlift and its future employment in securing Australia's national interests.

This paper will look briefly at how a small air force, in this case the Royal Australian Air Force (RAAF)[2], approaches the support of expeditionary operations through the concept of Responsive Global Airlift (RGA). RGA seeks to deliver a balanced airlift capability across the spectrum of operations by matching the specific capabilities of individual airlift platforms with the explicit needs of stakeholders for the achievement of Joint outcomes. This is essential for a small air force that can only afford to operate a limited number of airlift platforms, and requires that those platforms provide significant flexibility and responsiveness in the capability that they deliver.

## Recent History

Australia has a long history of supporting expeditionary operations through intra-theatre airlift. The RAAF supported forward operations throughout the

# An Australian Perspective[1]



Pacific during the Second World War, and was heavily involved in the post-war Berlin Airlift. Throughout the conflicts in Korea and Vietnam in the 1950s, 60s and 70s, Australia maintained a significant airlift effort to ensure that Australian forces operating in expeditionary operations had the personnel, supplies and equipment to achieve their mission. However, the deployment into East Timor in 1999 of multi-national forces led by the ADF, provided the first large-scale expeditionary airlift effort the RAAF had experienced in a generation. This was followed closely in 2002 by support to expeditionary deployments in Afghanistan and then in 2003 in the Middle East. These last two operations are ongoing and have provided Australian airlift elements with the first regular non-benign operating environment experienced in decades.

Inter-theatre logistics for Australia's most recent operations have relied heavily on three concurrent lift streams: RAAF airlift, contracted or coalition airlift, and Royal Australian Navy (RAN) sealift. For the Air Force, the Boeing 707, C-130H and C-130J have proven to be adequate for the inter-theatre role, except for the lack of capability to move outsized cargo rapidly. Experience has shown also that the Hercules variants in particular are more useful for movement of personnel and equipment within the theatre of operations. Contracted and coalition airlift have provided an addition to Air Force capabilities by providing some outsized lift capabilities and augmenting international passenger transport. Despite these limitations Australia has been able to contribute

No 1 Air Terminal Squadron Detachment, RAAF Base Richmond.

significant airlift capability to recent coalition expeditionary operations – regularly providing a greater in-theatre lift-to-platform ratio than larger partners. However, the delivery of two key new capabilities over the next five years will significantly change the nature and breadth of airlift provided by this nation, and will provide a quantum increase in the responsiveness and effectiveness of Australian lift capability for expeditionary operations.

## Immediate Future

Between now and 2010 the RAAF will take delivery of four C-17 Globemaster III heavy airlifters, and five A330 Multi-Role Tanker Transport (MRTT) aircraft. This will both enhance and complement the existing airlift force of RAAF C-130J and C-130H Hercules, CC08 Caribou and the Australian Army's fleet of CH-47 Chinook, UH-60A Blackhawk and, in the near future, MRH-90 helicopters. Employing this fleet in a balanced and efficient manner will be effected through the RGA concept.

Within the wider logistics environment RGA is a key component of Joint effects-based operations. The RGA system relies heavily on an understanding of the desired Joint outcome to determine enabling logistics payloads, and to match payloads to optimum delivery methods. RGA seeks to match the unique capabilities of different airlift platforms – range, payload, speed, self-protection, short field performance and reliability – to the exact requirements of the payload in terms of size, weight, distance, priority, time constraints, airfield limitations and threat environment. While RGA incorporates the traditional 'hub and spoke' logistics delivery model, it is not constrained by it. RGA seeks to provide balance to the responsiveness of the airlift force as a whole by not restricting movement only between hubs and spokes but also allowing direct access to and from all points within the system where it will produce more effective outcomes. RGA is a vital concept for a small air force like the RAAF, which must rely on efficiency to achieve effectiveness.

Within the RGA model, inter-theatre airlift will generally still deliver its loads from a fixed hub base to deployed nodes, from which medium and light transport can distribute payloads to other in-theatre points for distribution to stakeholders. However, this need not only be a linear process, but can be run in parallel with different platforms delivering complementary capabilities. As an example, C-17 and A330 can operate in tandem from a home-based hub to deliver both stores and personnel to a deployed node. C-17 and C-130 can then move both personnel and equipment further into theatre, both having the capacity to operate within a non-benign environment. At smaller deployed nodes, both fixed and rotary wing aircraft can transfer stores and personnel to the points they are required. Alternatively, C-17 will have the capability to move bulk and oversize cargo over intercontinental distances directly to relatively rudimentary airfields. In many cases this will bypass the intra-theatre lift requirement for major deployments and redeployments.

The increased size of loads provided by oversize airlifters such as C-17 also reduces the number of aircraft in the expeditionary battlespace, making coordination of air traffic control, hardstand and load/unload significantly easier. This was a particularly relevant lesson identified in the wake of the 2005 Tsunami where Australia deployed ATC and load teams to Indonesia in a highly dynamic and complex airspace management environment. RGA seeks to mitigate this by both reducing the number of aircraft in the air or on the ground, and by dispersing delivery nodes to the most appropriate level.

## A Broader Framework

An effective RGA framework offers Australia significantly more than just the capability to move large quantities of personnel and cargo over large distances. The ability to react responsively to produce outcomes at short notice

provides significant strategic shaping effects. This was proven by recent expeditionary operations to provide support in the wake of the 2005 Boxing Day Tsunami and the Bali terrorist attacks. These missions have shown that where a responsive airlift system is in place, not only can humanitarian and medical assistance be provided at short notice to save lives, but also national effects that contribute to perceptions of security can be generated. For example, RGA operations can demonstrate, strategic posture, can be used to shape perceptions, and can signal status, competence and intent both regionally and internationally. Strategic effects can be further enhanced by the inherent responsiveness and capacity of the RGA capability, allowing earlier intervention with greater impact in regional crises. The ability of a single C-17 to deliver, for example, a troop of light-armoured vehicles and their crews into austere airstrips in the region within hours, offers different force application nuances than are currently available with existing, lighter, airlift assets.

Within the broader framework, inter-theatre platforms like C-17 and A330 that can potentially be supported by air-to-air refuelling (AAR), can deliver payloads to expeditionary operations around the globe without intermediate stops. This reduces significantly the requirement for negotiating landing and other international clearances in complex political environments. Given Australia's geographic isolation this is a significant factor in the expeditionary deployment of air power.

The RGA capability will also become an integrated component of the RAAF's future operating concept for 2020 and beyond. Aspects of RGA operations will eventually be networked and responsive to adaptive command and control, allowing for agile mission adjustment and re-tasking. As a node in the network, airlift assets also offer the potential to act as a network relay to other units operating at the geographical extremity of the network and to add the information gained by their sensors to enhance battlespace awareness. In this way both inter-theatre and intra-theatre airlifters will provide expanded support to force application beyond the considerable support to the force provided by lift alone.

## Conclusion

Both by nature and intent the ADF is an expeditionary organisation that requires high tempo airlift support across the spectrum of operations. The RGA capability aims to deliver Australia's expeditionary requirements by delivering a balanced system of airlift that matches optimum platform capability to the requirements of the Joint stakeholder from home to frontline. Importantly, the RGA framework is not simply a more efficient way of tasking airlift assets, but is part of a coordinated effects-based approach to the delivery of expeditionary air power. ■

1 The preparation of this paper was undertaken in consultation with the ADF's Director Heavy Lift Capability, Group Captain Gary Martin, and with the RAAF's Deputy Director Airlift and Training, Wg Cdr Mark Holland, both of whom have delivered significantly to the body of this document.

2 For a detailed description of the Australian approach to airpower, see the Royal Australian Air Force capstone philosophical doctrine, AAP1000 The Fundamentals of Australian Aerospace Power, which can be found at: http://www.raaf.gov.au/airpower/html/doctrine/main.asp



C-130J aircraft used in both the inter and intra theatre transport role.

# A Risk Management Process to Maximize Combat Capability

by Col René Arns NLD AF

Sustainment is the ability to continue an activity over an extended period of time at the required intensity level. This is a particularly difficult challenge in the case of performing expeditionary operations at great distances, such as the present operation in Afghanistan. The focus to ensure the highest sustainment possible is usually on logistics and supply management. These aspects are driven by the 'consumption' of resources (human and materiel).

Resource consumption during operations, be it real-time deployments or peacetime exercises, is not only driven by regular activities, but also by losses. These have more than just a supply and demand effect; losses influence morale and are, especially in the case of casualties, very hard to replace. The conclusion is, the more losses that can be avoided, the better it is for the operation in more than one way.

## Common Sense

But how can this be done in an effective way? This is what Operational Risk Management (ORM) is all about. The basic tenet of ORM is to identify hazards that could affect the operation and take measures to eliminate, reduce or control the associated risk. You might react by saying that we are doing that all the time, so what's new? The answer is twofold. Firstly, indeed it is nothing new. It's like crossing a street with busy traffic; you watch very carefully and make it to the other side, because you dealt with the hazards and risks involved in a proper way. However, the funny thing is that when complicated operations are planned, we sometimes carry out the tasks without applying the basic rules and procedures developed for them, much like looking both ways before crossing a street, in our haste to complete the tasks. So what we need to do is to ensure we deal with risks in a structured way during planning and the execution of operations. Secondly, military planners usually associate hazards and risks as being connected to the threat of opposing forces. Therefore, in operational orders much attention is given to threat analysis. However the hazards that affect operations are numerous and sometimes so obvious people forget about them or take them for granted with very unpleasant results. An example was the deployment to Iraq, where attention was given to the opposing threat, and where planners did not initially take the environmental issues into account. The military threat could have an effect on operators, however

the environmental characteristics, like the intense heat and the sand flies to name two, did have guaranteed effects on everybody involved 24/7 and therefore needed serious attention.

## The ORM Process

ORM is based on the principles identified by James Reason in the early nineties.[1] Reason conducted research in the field of accident investigation. He established that all accidents and incidents were the result of a chain of events that involved all levels in the organisation from the top to the bottom. Failures or mistakes were introduced in the design of equipment, the system and the planning process of an organisation and by individual mistakes, and were allowed to develop into accidents and incidents because they were not detected in time. Reason accepted the fact that humans are fallible and that there is nothing wrong with that. In fact, it is the best way for people to learn. He therefore developed a system that took this into account and named these, latent (system) and active (human error) failures. One could picture the levels in an organisation as slices of Swiss cheese, with the holes representing failures (see Figure 1). The failures do not cause accidents; however, when the holes line up an accident will occur. Prevention of accidents could be achieved by a good defence system that would recognize failures at each stage of the process. This is the aim of ORM: minimize losses by proper countermeasures.

The four basic principles of ORM are:

1. Accept no unnecessary risk
2. Accept risks only if the benefit outweighs the cost
3. Make risk decisions at the proper level
4. ORM is important in every phase of an operation

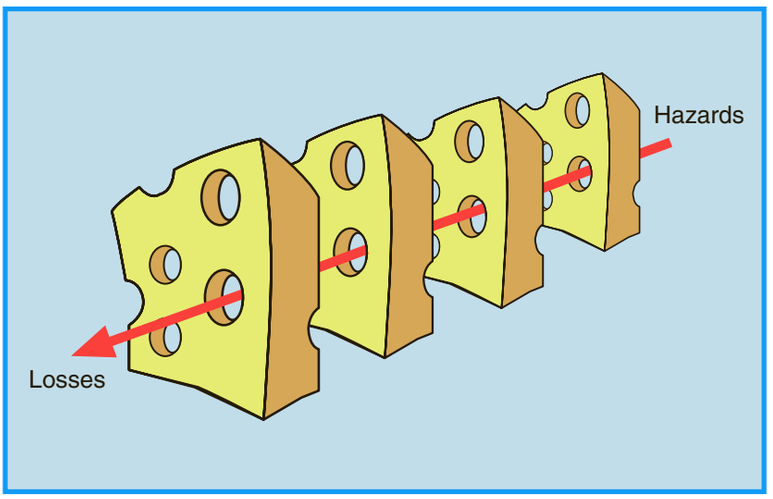


Figure 1.

These principles are straight forward and common sense. Especially the principle that decisions should be taken at the appropiate level. However, this is not common practice in a lot of organisations. ORM helps to make this principle clearer and also supports the decision maker to come to a well-founded decision. The ORM process has six steps:

1. Identify the Hazard
2. Assess the risk
3. Analyse risk control measures
4. Make control decisions
5. Implement risk control measures
6. Supervise and review: This is the most important step in the process. Proper supervision is essential to make sure the control measure is implemented as intended. And the golden question at the end of the process should always be: did it solve the problem or have the intended effect? If not, the process starts again.

## ORM in the RNLAF

The Royal Netherlands Air Force (RNLAF) has used ORM since 2002. It started as a process used for the planning and execution

Mission preparation during a sandstorm.

of Crisis Response Operations. Scenario brainstorming about these future operations proved to be a very effective way to identify the hazards and risks involved, and was an eye-opening experience for all involved. This led to a broader adoption of the ORM process in the RNLAF. It has been more widely adopted for day-to-day staff work. For instance, it is now fully integrated in the Standard Operating Procedure of the RNLAF Operations Centre and it is also used at unit level to prepare for and execute deployments. It has resulted in a better understanding of the hazards and risks of future operations, the requirement for increased and earlier involvement of all the relevant experts and different levels in the process and enhanced preparation of the people and equipment to be involved. ORM is also used during the execution of the operation on a daily basis, where a time critical, shorter, version is used. The RNLAF developed an ORM handbook and an ORM database that supports all phases of the process. ORM worksheets guarantee proper documentation of all the risk assessment and decision activities and also ensure the proper level is involved in the decision making process. These worksheets are at present attached as an annex to the operations order of the operation, so that all personnel involved have access to them. This results in better understanding by the personnel of what has been done to minimize the risks involved and who took the decisions with regard to the remaining risk-residue. It also gives more insight into the quality and thoroughness of the planning and decision making process. Education is done by including ORM in staff-school programs, and through organising workshops with the line-managers.


Department of National Defence Canada

Environmental characteristics impact operations.

## Major Challenge

Sustainment of expeditionary operations is, and will remain, a major challenge. The first step in meeting that challenge is always, proper planning. Planning however is managing uncertainty and how do you plan for the unexpected?

The ORM process presents a structured way to do this and it has proven to be of immense value. The prevention or mitigation of losses conserves personnel and resources and results in the maximization of combat capability. After all that is what it's all about! ■

1 James Reason, Human Error (Cambridge: Cambridge University Press, 1990).

# Sustainability Through Exploiting Resource Interdependencies

Copyright NATO

by Assistant Professor Tore Listou

## Multinational Cooperation

This article will present a theoretical foundation for outsourcing. Outsourcing, in its different shades (e.g. multinational cooperation and Public Private Partnership (PPP)), is on the agenda for public sectors, including the defence sector, in several countries. Outsourcing support activities may have profound effects on sustainability in expeditionary warfare. There are numerous theories trying to explain why outsourcing occurs, and how to make outsourcing successful. In this article, an alternative view is presented; outsourcing as an integral part of networking and network dynamics.

Depending on the type of operation, sustainability relies on how Research and Development, procurement, logistics, and maintenance has been organised prior to a campaign. Sustainability is not only a result of organic resources, but also of resources that can be brought in from external sources, and to what extent access to these resources has been properly planned and handled beforehand.

As in most NATO countries, the Royal Norwegian Ministry of Defence (MOD) is constantly transforming. New tasks, political priorities, and budgetary restrictions mean the MOD needs to find creative ways of financing those tasks regarded as essential.

For the next long-term plan, due to be presented next year, the MOD in collaboration with the Chief of the Defence (CHOD) has developed some guidelines for the work (MFU03[1] , FS 07[2]). To ensure timely access to external resources in a cost effective manner, other strategies for resource access, other than ordinary procurement, will be emphasised, including PPP. When suitable, the MOD will engage civilian contractors to deliver goods and services, and to operate and maintain equipment at all stages in the life cycle.

Further, multinational cooperation is regarded as a prerequisite for funding new capacities. Cooperating with other small countries will provide access to resources the Norwegian MOD alone would not be able to procure or operate. This calls for interoperability between the Norwegian MOD and allied forces. Central elements will have as much common material as possible, to foster cooperative logistics, standardised competence and learning processes, common purchasing, and a common operation and maintenance plan for the equipment.

In the directives for the next long-term plan, it is emphasised that multinational cooperation could be applied for procurement, training, operations, and logistics. Great emphasis will be placed on identifying areas for potential multinational cooperation.

Further, PPP should be considered for all areas where the MOD does not have to perform the activities itself. These evaluations should

have an international aspect, that is, cooperation with civilian actors should not be limited to national actors only.

Thus, the sustainability for all kinds of operations, including air operations, is not a matter of internal efficiency and effectiveness; external factors and resources must also be taken into account.

## The Aim of Cooperation

As hinted in the introduction, due to limited budgetary means, cost increases related to new weapon systems, and political priorities, access to external resources is a central aspect to ensure sustainability. MODs of smaller nations will not be able to own or control all necessary resources themselves. Thus, cooperation is not only a political question of building alliances, but also a question of getting the most out of the resources each country or contributor possesses.

The aim of cooperation is to create some sort of value that the participants cannot create alone[3]. To be truly effective, collaboration needs to have all actors, their priorities, and current resources, in sight. Too many strategies, within both the commercial and defence sectors, are based on a one-sided evaluation of the pros and cons of cooperation; focus is usually on the MOD as either a customer or a supplier to other actors, concluding that the MOD should cooperate to save money. However, even though saving money is an important aspect of cooperation, outsourcing and partnership is not only about one actor saving money. The true value adding potential, and hence cost saving potential lies in how actors cooperate, and why they do so.

## The Aspects of Interdependency

Actors cooperate to gain access to resources which are possessed or controlled by other actors. The central actor needs access to these resources to be able to perform its own activities. Thus, there will always be a network of interconnected dependencies between actors, resources, and activities[4]. Because of this interconnectivity, no actor is independent; the network constitutes the interdependence between actors.

Different forms of interdependence can be identified[5]; pooled interdependence means that two activities are related to a third activity or a common resource, and thus indirectly are dependent on each other. That is, they share resources. By exploiting shared resources, one can obtain economy of scale (e.g. pooling of maintenance resources, or sharing air lift capacity). Sequential interdependence means that outcome from one activity is an input to another activity. Thus, by coordinating these activities there might be some economy of integration, e.g. when streamlining activities in the maintenance supply chain.

Reciprocal interdependence means there is a mutual exchange of input and output between actors, e.g. when suppliers and the MOD are working in a coordinated manner in R&D projects.

Pooled interdependence is the crudest form of interdependence and it can exist without any of the other two types of interdependency. A condition for sequential (or serial) interdependence, however, is that there also is some pooled interdependence between the activities, and reciprocal interdependence cannot exist if there are no sequential and pooled interdependencies. This can be depicted as shown in Figure 1 opposite.

## Exploiting Interdependencies

A requirement for adding value within a network is that resources at different places in the network are adapted to each other. Resources in networks are heterogeneous, if not, there would be no incentive for the actors to cooperate. Another central characteristic of resources is that their value depends upon how they are utilised and combined with other resources. This also means that in order to obtain added value through outsourcing, one has to consider how this will affect the

Collaboration on exploiting interdepencies at all levels.

Civilian sector support to military operations is common place.

remaining internal resource base. By adapting internal resources to external resources, one accepts that there will be not only dependence, but also interdependence between the MOD and the partners within the network. The true value adding potential can be found when trying to exploit these interdependencies e.g. at the most basic level, standardisation of maintenance procedures on the one hand make these tasks a candidate for outsourcing (to obtain economies of scale), but on the other hand increases the MOD's dependence on the actor to perform these activities, and at the same time increases this actor's dependence on the MOD to obtain the volume necessary to gain the scale effects. Coordination and adaptation e.g. within the maintenance supply chain increases the mutual dependency between the MOD and its suppliers, which potentially would be of crucial importance for sustainability.

## The Way Ahead

The defence sectors in most NATO countries need to work differently in order to gain access to resources necessary to acquire and maintain sustainability.

Different targets have to be balanced against one another; on one hand spending should be reduced, and on the other hand military capacity, not only to defend the homeland, but also to engage in expeditionary operations should be maintained. To save money and gain access to resources, outsourcing, partnership, multinational cooperation, and PPP have become familiar concepts. To achieve these effects, one needs to know what kind of funding will be possible, and hence, at what level and with whom to cooperate.

Outsourcing maintenance to obtain economies of scale might lead to effects other than economies of integration. That is, when considering different kinds of cooperation agreements with external (civilian and military) actors, one needs to know how these agreements influence the interdependencies within the network of actors performing different activities and controlling different resources.

Research on relationships between actors tends to focus on how a focal actor, e.g. the Norwegian MOD, can obtain economies of scale by either exploiting its power over some other actors, or reducing dependence on other actors. In a network perspective, it is realised that all actors within the network are connected and that this leads to interdependencies between the actors.

Deliberately exploiting these interdependencies, through economies of scale, integration or innovation, is an important aspect of sustainability. ■

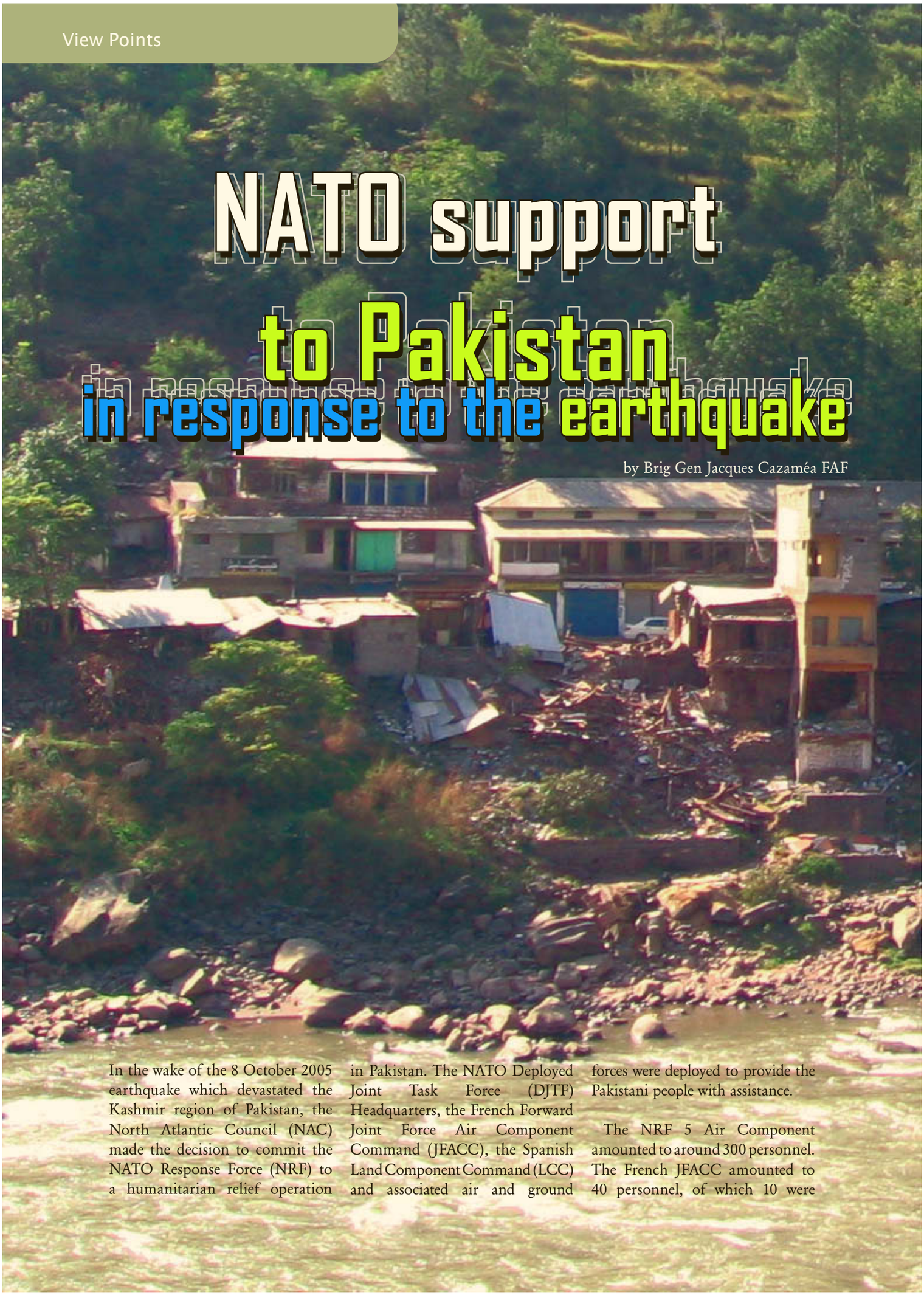
| *Type of Economy* | *Interdependency* | *Management Focus* | *Type of Relationship* |
|---|---|---|---|
| Economies of scale and scope | Pooled interdependencies | Standardisation, similarity and specialisation | Mediating (connecting to others) relationship |
| Economies of integration | Serial interdependencies | Coordination and adaptation | Linked (streamlined) relationship |
| Economies of innovation and agility | Reciprocal interdependencies | Confrontation and learning | Problem-solving relationship |

Figure 1. The degree of outsourcing, that is, the depth of the relationship, is determined by what kind of economy one wants to obtain[6].

1 MFU; Militærfaglig Utredning 2003, the MOD's proposition to the long-term plan for the period 2005 - 2008
2 Forsvarsstudie 2007; The Chief of Defence's analysis for next MFU
3 Forsström, B., Value Co-creation in Industrial Buyer-Seller Partnerships, Åbo Akademi University Press, 2005
4 Gadde, L-E. & H. Hakanson, Supply Network Strategies, Wiley, 2001
5 Thomson, J.D., Organisations in Action, Mac Graw Hill, 1967
6 Persson, G. & H.Hakanson, Supplier segmentation – when supplier relationships matter, NOFOMA conference proceedings, 2006

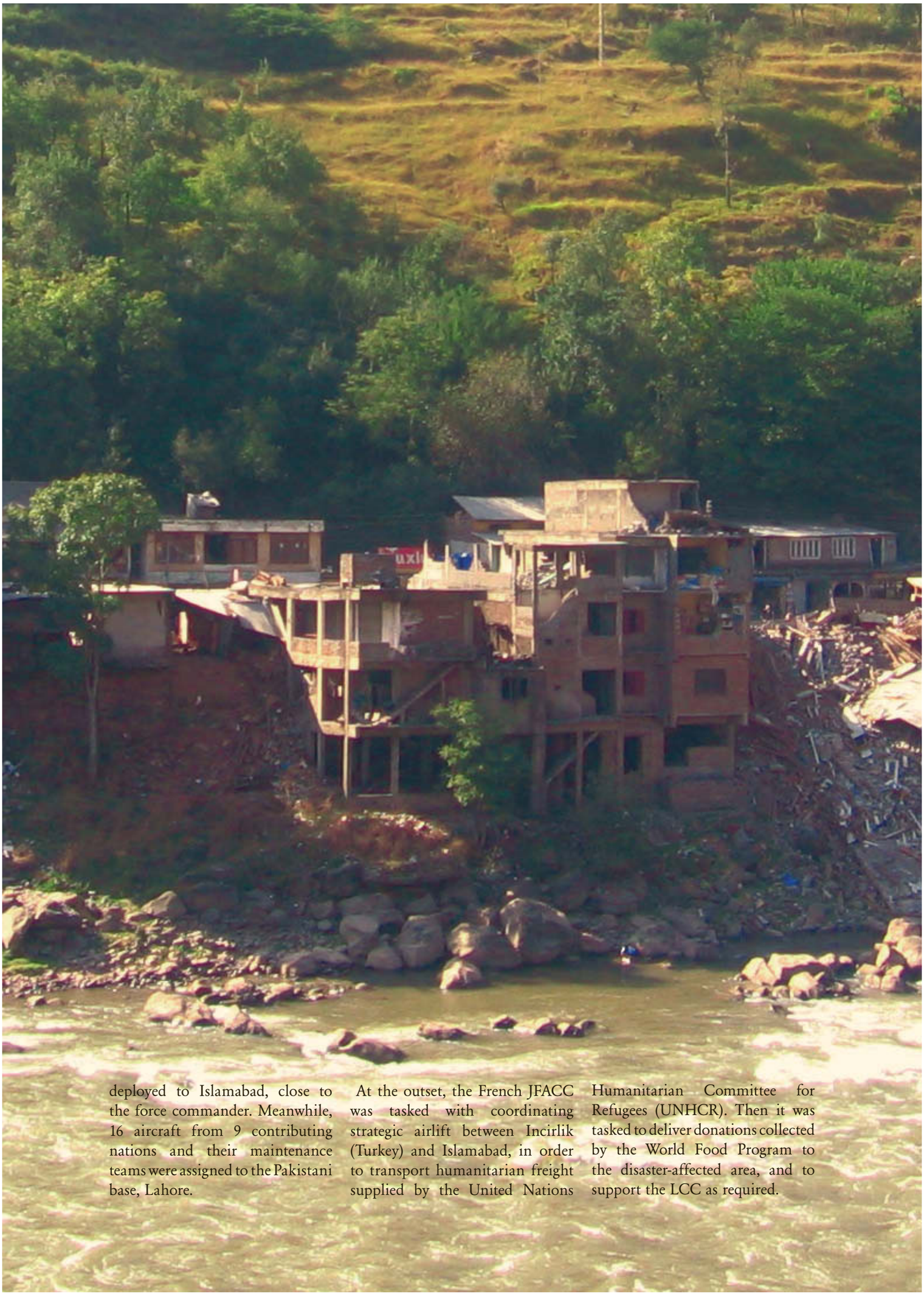
# NATO support to Pakistan in response to the earthquake

by Brig Gen Jacques Cazaméa FAF



In the wake of the 8 October 2005 earthquake which devastated the Kashmir region of Pakistan, the North Atlantic Council (NAC) made the decision to commit the NATO Response Force (NRF) to a humanitarian relief operation in Pakistan. The NATO Deployed Joint Task Force (DJTF) Headquarters, the French Forward Joint Force Air Component Command (JFACC), the Spanish Land Component Command (LCC) and associated air and ground forces were deployed to provide the Pakistani people with assistance.

The NRF 5 Air Component amounted to around 300 personnel. The French JFACC amounted to 40 personnel, of which 10 were



deployed to Islamabad, close to the force commander. Meanwhile, 16 aircraft from 9 contributing nations and their maintenance teams were assigned to the Pakistani base, Lahore.

At the outset, the French JFACC was tasked with coordinating strategic airlift between Incirlik (Turkey) and Islamabad, in order to transport humanitarian freight supplied by the United Nations Humanitarian Committee for Refugees (UNHCR). Then it was tasked to deliver donations collected by the World Food Program to the disaster-affected area, and to support the LCC as required.

## Rapidly Deployed

The Air Component C2 Structure under the command of Colonel Jacques Cazaméa, which had been tested during Exercise ALLIED ACTION 05, was rapidly deployed.

The JFACC Rear at Taverny comprised 30 personnel (of which 25 were French and 5 British) was placed under the command of Colonel Jean-Christophe Zimmermann. The JFACC Rear planned the airlift. From 18 October to 24 November 2005, 11 C-130 Hercules tactical airlift aircraft (3 British, 2 French, 2 Italian, 1 Danish, 1 German and 2 Turkish) brought over 1100 tons of humanitarian aid (tents, stoves and blankets) to the affected population, flying a total of 2000 hours. Moreover, in the same period, 500 tons of freight were transported by sea. This operation showed up NATO European countries' shortage of strategic airlift one more time. Additionally, most nations provided slow military assets, which were under-sized and costly, rather than civil strategic assets, which may have been faster and up to four-times less expensive.

The 10 personnel comprising the JFACC Forward established their HQ at the French Embassy in Islamabad, close to the DJTF headquarters, which was operating from the British Embassy nearby. This proximity enabled a sound understanding of the operational level intent and reliable communications down to the tactical level.

The JFACC Forward's first task was to integrate 4 German CH 53 helicopters and 1 Explorer HD900 from Luxemburg into the large pool of helicopters provided by the UN, non-governmental organisations (NGO), the USA, UK, Japan and Pakistan. In theatre, the helicopters moved more than 1000 tons of food and water, 500 tons of equipment and 6400 people. Tasking included airdrops, under-slung loads, Casevac, Medevac and rapid deployment of medical services in testing mountainous terrain.

## Deployed Operating Base

Even though a deployed operating base (DOB) was not deemed necessary and the Pakistani authorities were not fully in agreement with the prospect, the strategic level directed the ACC to set up a DOB in Lahore. Therefore, the JFACC Forward team had some rough negotiations with the Pakistani authorities to convince them to adhere to the plan. It was finally decided to build up a Ground Handling Facility (GHF) instead of a DOB, with manning reduced to a minimum. Nevertheless, this structure proved to be over-sized because some of the Antonov/ Ilyushin strategic transport aircraft tasked by the Spanish were unloaded by a civilian company after the Pakistani authorities made it a point of honour to facilitate the aircraft unloading.

Pakistani soldiers pile boxes of food and other relief supplies as they unload a US Army Chinook.

In addition, hesitations about the DOB structure and difficulties in the projection resulted in a delayed deployment, which did not make the Spanish arrival easier.

In response to a UN request, the JFACC Forward team also implemented a Fuel Farm in Abbotabad. Both its deployment and setting up were rapidly carried out but the refuelling process could not start immediately due to the delayed arrival of the tanker trucks. The site also handled most UN and Red Cross helicopters, as well as becoming a significant forward depot for humanitarian agencies. With a storage capacity of several hundreds of cubic metres, the Fuel Farm made it possible to increase the number of flights significantly by enabling helicopters to refuel as close as possible to the affected area. It was highly successful.

For the second time since its creation, the NRF has been committed to real operations. The simple 'Support to Katrina' humanitarian operation had tested the NRF's effectiveness, both deployment and commitment of assets, at the political and military levels. The 'Support to Pakistan' operation was an opportunity to test the deployment of NRF assets to a non-permissive theatre of operations. The efficiency of the JFACC was noteworthy. It responded effectively to joint level challenges and British and French personnel experienced a wonderful 'entente cordiale' in both air C2 structures at Taverny and Islamabad.

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Medic delivers medical aid to Pakistani child.


Cooperative support to the Pakistan earthquake relief effort.

The NRF 5 Support to Pakistan was a challenge for the French Air Force as Lead Air Nation and for the International Community as a whole. It enabled French airmen to show to the international community, in particular to Europe, their capability to plan and execute an operational objective with a strategic dimension. Moreover, the operation clearly demonstrated the strengths of pre-planned international cooperation and interoperability. We must now learn from this operation and enhance operational capability, in order to provide an effective military response to the new challenges posed to NATO, the European Union or any other coalition under official international mandate. ■

# The Challenges of Medical Support

by Col Dr Roland Kauschmann DEU AF

## The Future

Three major developments determine present-day and future provision of medical support for NATO's forces and demand new solutions.

With the collapse of the Soviet Union and its Warsaw Pact, a major military conflict within the NATO area is not envisioned, with a subsequent reduction in the size of our forces and the resilient structures to support them. The end of war, predicted by some, has not come, with other crises broadening the employment of NATO's military forces. The scope of tasks to be prepared for ranges now from Consequence Management (CBRN events or humanitarian crisis situations), Crisis Response Operations (peace-enforcing, non-combatant evacuation, peacekeeping, nation-building), Counter-Terrorism to high-intensity combat. These tasks for the military are likely to happen further away, to be accomplished by an expeditionary force with long support lines and in a hostile environment.

*"There is no longer the obligatory handling of each patient through the medical support chain from echelon 1 to echelon 3 or 4."*

The second major factor defining what medical support has to be provided today is a result of a long-standing development in western societies since the end of WWII. The appreciated value of the individual life and the right to health has become nearly absolute. The days when armies could lose a thousand soldiers a day over extended periods of time without public outcry are long gone. Now nations note single losses; avoidable losses are no longer acceptable to the public and could result in court action. These are sensitive issues for politicians, the media and commanders alike. As a consequence, the military must provide a standard of medical care to achieve outcomes of treatment equating to the best medical practice.

The third factor is the legal requirement. Whilst all military personnel have to comply with military laws, regulations and orders, other legal provisions further bind medical commanders and personnel. These range from

Military field hospital in operation.

specific rights and duties laid down by the Geneva Conventions, through ethical and national legal requirements of their own clinical profession to an ever growing number of national or international regulations, defining procedures and quality standards in all fields. The prerequisite for reaching these politically and legally imposed goals is the provision of a substantial and modern equipped medical service in your armed forces, which means a costly service.

To support expeditionary forces effectively, the medical support must be prepared, trained, deployable, usable and available, and as cohesive, flexible and agile as the force to be supported. Effective medical support must prevent diseases, provide treatment to ill, injured or wounded personnel and provide this treatment in a timely, adequate, continuous and progressive manner until repatriation or a return to duty. Long support distances, a hostile environment, no host nation support or no 'in-country' resources have to be anticipated.

Only a limited number of nations have a military medical service capable of deploying the full range of services from Medical Force Protection, including food and water hygiene, Veterinary Services, through Primary Care including Dental Service to Emergency Medicine, Surgical Capabilities and Evacuation. Very few nations are able to provide such support to different operations in different theatres at the same time.

Medical resources are expensive, rare and in demand. Nations are often reluctant to commit scarce medical resources to standby forces like the NRF, with resulting gaps in the Combined Joint Statement of Readiness in areas such as Role 2+ and higher medical units and dedicated Medical Evacuation aircraft, until the last moment or even beyond until the activation of an operation.

## Joint Medical Plan

The strain on the nations is reduced through current medical mission planning principles and criteria. As soon as planning for a specific operation starts and mission details become known, the medical planners at SHAPE and the Joint Force HQ will develop a joint and combined medical support plan, taking into consideration, in consultation with other branches, factors such as climate, terrain, distances, airfields, host nation resources, own forces planned courses of action, casualty estimates, local population health situation, endemic diseases, flora and fauna, food and water hygiene etc.

The medical support plan will be targeted to provide a sufficiency of support for the expected daily number of sick, injured and wounded, plus a surge capability to meet peak rates. It will factor in the flexible use of appropriate medical treatment facilities (MTF). There is no longer the obligatory handling of each patient through the medical support chain from echelon 1 to echelon 3 or 4. Modern military medicine today thinks in capabilities and roles and makes use of scientific and technological advances in trauma and life support medicine.


Canadian medical officer treats an Afghan civilian.

Performing complex surgical procedures while deployed.

Role 1 medical support, including general medical treatment, emergency medicine and evacuation assets, is an integral part of the assigned force and is the responsibility of the troop contributing nation (TCN). Above that, treatment will occur in a role 2 or 3 MTF, providing primary surgery and stabilization or direct definitive treatment. From there Air Medical Evacuation back home will follow – if necessary – as soon as the patient's condition allows and means are available.

The resulting mission-tailored medical support plan will be truly joint and combined, allowing for a smaller footprint in the area of operation and better efficiency and economy through common use of resources and avoidance of duplicated efforts. So one way to alleviate limited national resources could be by pooling capabilities through multinational integrated medical support established for an operation. National assets would need to be offered for common use in MTFs, in accordance with the lead nation concept.

But in the end this plan has to be agreed by the TCN. Joint medical support is accepted without problem, whereas combined medical support requires careful consideration by the TCNs for good reason.

## Whose Responsibility?

This hesitancy starts with the ambiguity of the responsibility. Although the exponents of multinational organizations and multinational staffs never tire of pointing out the responsibility of the commander of a multinational force (MNF) for the health and provision of medical care of his troops, all relevant documents speak of 'shared' or 'collective' responsibility for medical support as for all logistic support – upon transfer of authority (TOA), and this can only be done if responsibility can be divided.

At all times, nations retain their legal duty to provide medical care as the employer of the military. Ultimately, nations remain responsible and liable, and this restricts the MNF Commander and his staff – even after TOA – to a co-ordinating role.

Questions remain about nations' legal duty of care. How can a nation be sure that the care provided in another nation's MTF fulfils its own professional and legal standards? Certainly not through something like NATO's force certification process, which is worlds apart

from the tedious national quality assurance and certification process for medical facilities. Individual nations are probably not aware of their Allies' capabilities. The legal restraints reach beyond these performance questions into many other details of medicine; e.g. is the medication used by one nation accredited in another, or what blood safety procedures are applied? Beyond this there are sometimes astonishing differences – even in such a rather homogenous group of countries in the NATO or the EU – in attitudes to or expectations of patients, in the status of professions, e.g. nurses, and in medical methods applied following the teaching of the different medical schools.

Basically, a nation can build up the necessary knowledge, confidence and trust in other nations' medical services only over time through exchange of information about personnel, professional training, equipment, professional procedures and standards and the real-life experience gained in operations. In the expeditionary operations conducted in the last 20 years, a lot of this necessary trust for handing over soldiers into another country's MTF has developed, but also the knowledge of when not to do it.

A step further is to try to put various national contributions together in a Multinational Integrated Medical Facility (MIMU). You may mix up the personnel totally or each nation may take responsibility for an element like an intensive care ward, surgical theatre, laboratory, blood bank etc. Lots of questions have to be solved: what common language is to be used, forms have to be agreed, what documentation to use, what clinical records at the end are handed over to whom for archiving, how many years etc? Lots of effort was put into this approach, steering groups worked from the MIMU itself up to the MOD level of the contributing countries. The liability questions were never solved. This approach was abandoned, as these additional efforts never identified a real dividend in economy and effectiveness.

*"Medical resources are limited and nations may struggle to meet the demands of continuous expeditionary operations."*

## The Regulations

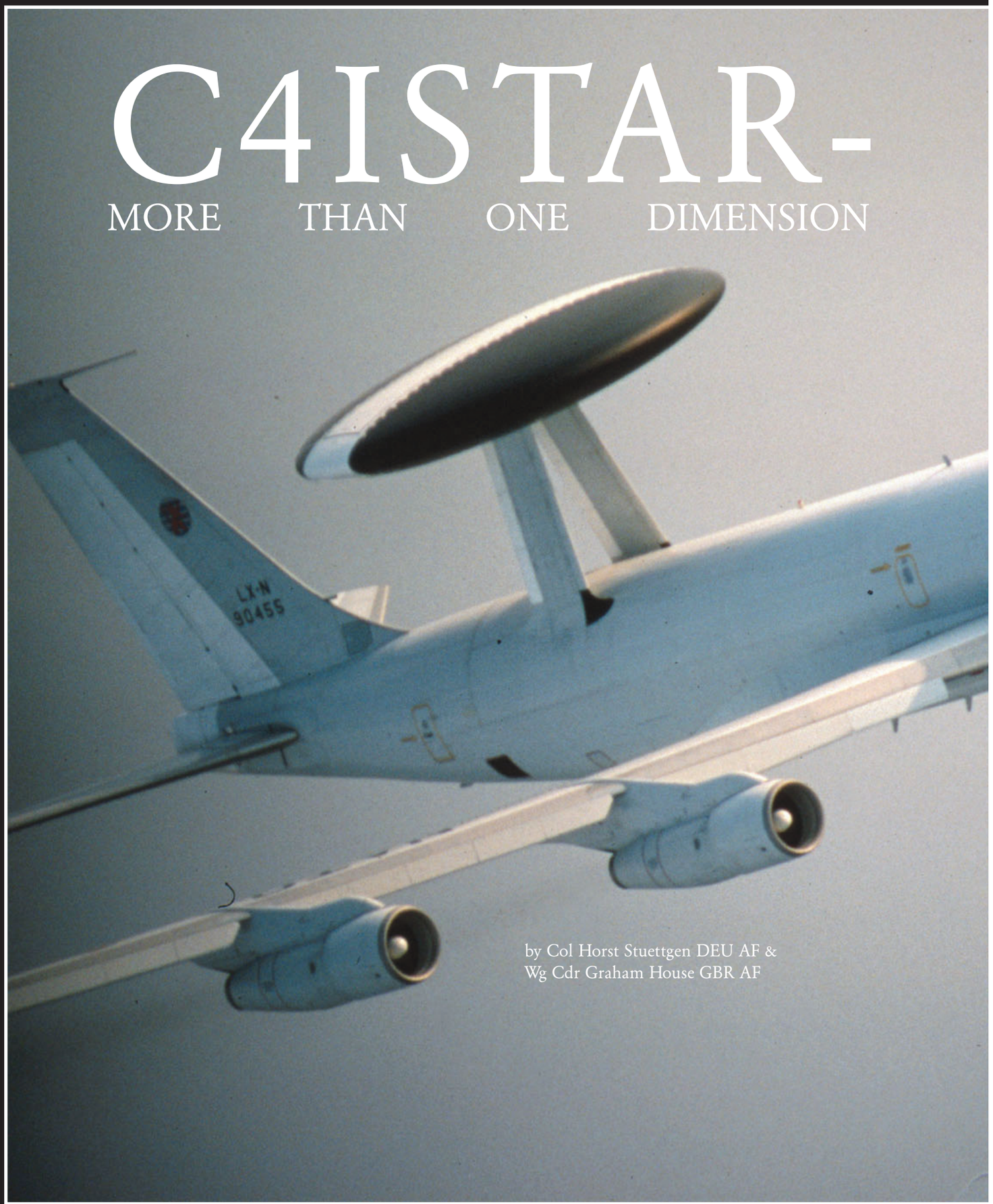
The preferred approach after lessons learnt is now to run a MTF with all rules and regulations by one nation and integrate personnel from other nations under the given set of regulations. Liability is through the Lead Nation only. The Lead Nation is helped, as the provision of professional personnel is the real bottleneck for providing high quality medical care in expeditionary operations over long periods, and the other nations contribute their due share.

Other areas requiring improved interoperability include tools such as meaningful medical situation reports, near-real time epidemiological/CBRN/ Environmental and Industrial Hazard surveillance data-collection and reporting systems, and patient tracking systems.

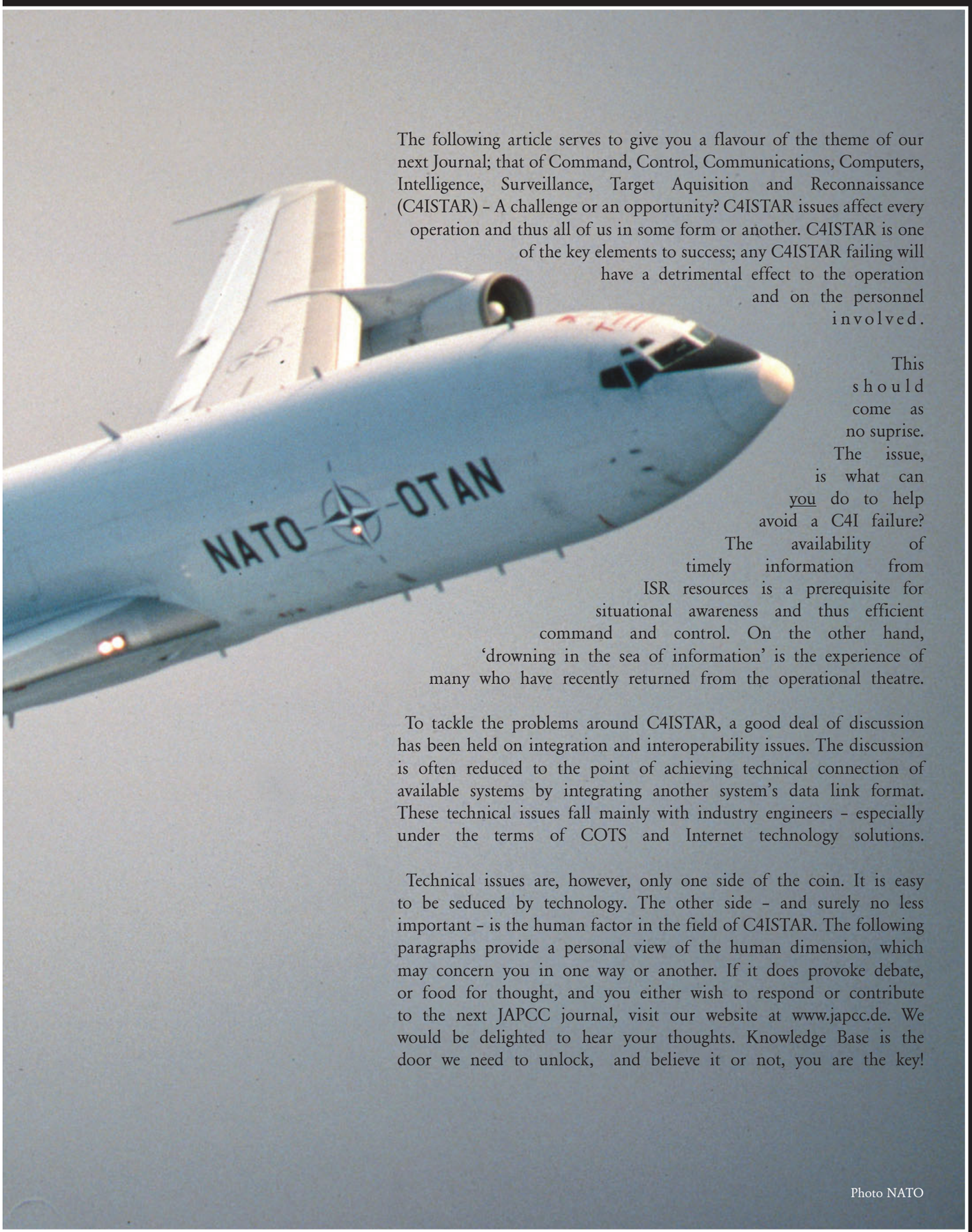
In summary, medical support to expeditionary operations is a joint and limited combined activity. Medical resources are limited and nations may struggle to meet the demands of continuous expeditionary operations. So international sharing of resources allowing a smaller footprint in theatre and better economy is proposed in the medical support plan for every operation. Nations follow this proposal only after critical consideration due to their legal restrictions and consequences, and the delicacy of the matter. With increasing knowledge of each other's performance and a growing need this option will be followed more and more in future operations. ■

Delivering medical support to the local population.

# C4ISTAR-
## MORE THAN ONE DIMENSION




by Col Horst Stuettgen DEU AF &
Wg Cdr Graham House GBR AF




The following article serves to give you a flavour of the theme of our next Journal; that of Command, Control, Communications, Computers, Intelligence, Surveillance, Target Aquisition and Reconnaissance (C4ISTAR) – A challenge or an opportunity? C4ISTAR issues affect every operation and thus all of us in some form or another. C4ISTAR is one of the key elements to success; any C4ISTAR failing will have a detrimental effect to the operation and on the personnel involved.

This should come as no suprise. The issue, is what can you do to help avoid a C4I failure? The availability of timely information from ISR resources is a prerequisite for situational awareness and thus efficient command and control. On the other hand, 'drowning in the sea of information' is the experience of many who have recently returned from the operational theatre.

To tackle the problems around C4ISTAR, a good deal of discussion has been held on integration and interoperability issues. The discussion is often reduced to the point of achieving technical connection of available systems by integrating another system's data link format. These technical issues fall mainly with industry engineers – especially under the terms of COTS and Internet technology solutions.

Technical issues are, however, only one side of the coin. It is easy to be seduced by technology. The other side – and surely no less important – is the human factor in the field of C4ISTAR. The following paragraphs provide a personal view of the human dimension, which may concern you in one way or another. If it does provoke debate, or food for thought, and you either wish to respond or contribute to the next JAPCC journal, visit our website at www.japcc.de. We would be delighted to hear your thoughts. Knowledge Base is the door we need to unlock, and believe it or not, you are the key!

Photo NATO

## C4ISTAR - The Human Dimension

So what have you done to resolve the C4ISTAR dilemma? Yes, you. No use running away from the spotlight anymore; are you part of the solution or part of the problem?

We all share similar concerns, be they associated with Interoperability or Integration. Indeed such areas of need are the focal point of much concerted effort today. The terms themselves are scattered around 'ad lib' at many a C4I-related Conference. But the question remains, 'What are we doing about it?' Or perhaps more importantly, 'What are we doing about it collectively?'

To attempt to tackle the C4ISTAR dilemma is no easy task. To give ourselves a fighting chance, firstly, we need to rise above our own service loyalties. Any genuinely 'Joint Officer' worth his salt should be able to do this. Furthermore, one then needs to rise above our own national loyalties in order to better serve the needs of NATO vice NATO serving the needs of your nation. Such a desire, ultimately the desire for NATO to succeed in order to meet the challenges of tomorrow, is in accord with the views of Lord Robertson: 'NATO must modernize or be marginalized.' There is a key ingredient, however, that we often overlook. We can invest additional funding in an effort to address the Interoperability issues. We can exercise routinely in an effort to integrate both new and legacy. But the area that we really need to focus our effort upon is actually people.

So I will now take you back to the question posed earlier, namely, 'What have you done to resolve the C4ISTAR dilemma?' Regardless of your background, civilian, military, soldier, sailor or airman, we all have our part to play. I would suggest to you that there are 4 critical areas to ensure that you perform toward the professional standard required. It is worthwhile reflecting on our own output on occasion to ensure it is actually contributing in a positive fashion to the greater good.

Let me deal with leadership first and foremost. Regardless of rank, you are responsible for driving forward the transformation of NATO. General Smith is simply the Boss - you are the main player. The days of the 'NATO Happy Hour' approach should be behind us. If you are one of the dinosaurs who maintain the attitude that NATO owes you a living, then now is the time to exit stage right. You may no longer be relevant to a NATO that is conducting operations in, for example, Afghanistan. Therefore, lead by example and modernize yourself. Without you, NATO would cease to exist so ensure your leadership is attuned to the challenges of today and deliver the goods. Stage right is not an option by the way; you are highly skilled,

Department of National Defence Canada

A NATO AWACS crew conducting a mission.

Photo NATO

C-130 Hercules aircraft configured to perform tactical C3 and countermeasures.

well trained, and hopefully agile hence difficult to replace these days.

## Your Priorities

Attitude is perhaps your next area to review. When did you last enter your office with the view to structuring your priorities? Indeed, are you even aware what the priorities of your department are? Are you contributing to them or do you continue to work in splendid isolation behind your PC? In essence, before we discuss IT connectivity and issues of Integration, are you even integrated with your colleagues? Remember, as Mozart would once have had us believe, just because you are in the minority does not mean that you are wrong. Therefore, challenge existing process with a view to improvement. 'We've always done it that way' is no longer a valid argument. Don't kill creativity, embrace it.

Enthusiasm! Are you really up for the fight? For example, when did you last deploy, for instance or are you even aware of current NATO operational commitments? When did you last speak to someone who has recent experience of an operational deployment? Can you really appreciate the intense frustration of arriving in theatre with all the kit but no compatibility? The old style of simply jumping through hoops to tackle the needs of the day is not going to improve compatibility


and a greater understanding of the operational issues is a good start if you are to be part of the solution. The Warfighter element is everything and there are plenty of lessons learnt which we could act upon but enthusiasm is the name of the game here. You don't need to work harder, just smarter, and meetings don't have to take all day. There is much to do. The role of the chairman is to facilitate in order to execute the meeting to good effect, not take all day about it. The world of today will have moved on a pace whilst you're still deliberating the issue. Are you up for the fight? I am sure that the JAPCC readership is, but again, worth a few minutes to reflect upon your contribution today.

Teamwork – last but not least. In the expanding world of NATO, the needs of the team will increasingly outweigh those of your own. This should come as no surprise. There will be cultural differences and personal differences to name but two. Indeed one could argue that there is no right answer and often there isn't. However, effective debate should deliver the best available answer. The best available will demand a degree of compromise from all so expect that during your routine day. Make teamwork routine and we've a chance. Continue with your agenda as routine and we've no chance.

To summarize the C4ISTAR dilemma, no change means no chance. This is your role. The stage is set, you have the leading part. ■

# NEWS

## Overview

In the coming weeks, the JAPCC will hold its second annual air power conference in Kleve, Germany during the period 17-19 October 2006. The theme of the conference is 'Transformation of Joint Air and Space Power – the Exploitation of Unmanned Aerospace Capabilities (UAC) in the Alliance'. The conference aims to address essential transformational aspects from the combined and joint military domain with focus on the military application of UAC and associated sensors and effectors in combined and joint operations. Bridging the gap between strategy and capabilities will be one of the major topics for discussion, including the refinement of doctrine and concepts as well as co-operative research, development and procurement, and future possibilities for role specialisation in the Alliance.

The conference will provide an excellent forum to discuss the selected theme under the Chatham House Rule. The theme is expected to attract a large number of general/flag officers from all NATO Nations as well as top-level representatives from academia and the defence industry, and subject matter experts from all domains.

## NRF Minimum Air C2 Requirements

As the NRF approaches the declaration of Full Operational Capability (FOC) later this year, JAPCC is engaged with the wider NATO community in a discussion and analysis of the NRF Minimum Air C2 Requirements. The main effort is to derive substantiated findings and conceptual recommendations for the NRF Air Operational Planning Process (AOPP) with focus on the Partially Deployed Air Operations Centre.

By taking the effects-based approach, the project aims to substantiate the mission-tailored requirements for deployed air operations and the derived functions and structure of a deployed Air Operations Centre (AOC). MC 477 and concepts of the NATO Air Component Commands (ACC) serve as the principal guidance.

It has been assessed that the first 72 hours of operations after the deployed bed-down are mission-critical and that a pre-planned set of joint standing air directives and air tasks will most likely be required to 'hit the ground running'. However, it is essential that advance liaison and reconnaissance experts in close collaboration with local authorities in the deployed area have prepared the ground.

Copyright US DoD

## Network-centric Air Operations Simulation Trial

The Network-centric Air Operations (NCAO) Simulation Trial assesses the effects of NCAO on the decision-making performance of NATO aircrews in notional effects-based combat situations. It is widely accepted that speed and quality of the decision-making process are significantly infuenced by the availability of meaningful (timely and relevant) information, or even better by explicit knowledge. This is particularly true for highly dynamic air operations when there is no second chance to reconsider a decision and revert to the previous course of action.

A number of studies and trials have manifested this assessment, albeit not in a network-enabled, multi-national operational scenario. JAPCC is investigating the possibility of filling this gap by developing and leading an industry-supported simulation trial. Key variants of control methods will be examined, beginning with a demanding air superiority mission scenario.

## Unmanned Air Refuelling Requirements

JAPCC efforts in the Unmanned Aerial Vehicles (UAV) arena have led to research of the UAV with respect to the Air-to-Air Refuelling (AAR) capabilities in NATO. The research represents a non-scientific transformational scope of options. Contemporary requirements, substantial financial and force commitments for AAR demand the optimisation of technological capabilities to be more efficient by all measurable criteria. Automation seems to offer a low technology-risk 'quick win' and could also enable the employment of UAV as tanker and/or receiver platforms.

## Application of Evolving Aerospace Technology

Evolving aerospace technology has led to research into potential effects-based capabilities of innovative developments and the assessment of their operational scope of application. The number of operationally exploitable quantum leaps appears to be less than expected in the process of transformation. The traditional way of approaching future-orientated concepts and technologically enabled capabilities is characterised by the generic fear of failure supported by timid risk assessment. In the JAPCC's think-tank function, we try hard to escape this brain-blocking mental straightjacket. In the recent past, we have identified some highly promising areas of special military interest such as: (1) Applications for micro-size air vehicles and their associated hardware and software technology; (2) Possibilities to replenish future sources of energy in flight without physical contact of receiver and provider; (3) Feasibility of airborne replenishment of ordnance; (4) Applications for new flight control concepts; (5) Applications for systems operating in the near-space altitude band; and (6) Intelligence, Information and Knowledge Management concepts.

We invite industry and academia to share their thoughts and visions with us in a spirit of free academic collaboration.

## C4ISTAR

In parallel with the ongoing work to develop a Joint ISR (JISR) concept, JAPCC has embarked on a new project to develop a NATO C4ISR Roadmap. This document will provide planners and decision makers with a vision and framework to guide acquisition of future capabilities. It will also serve to identify obstacles to interoperability that need continuous effort to overcome. Look for more on the C4ISR Roadmap in the next issue of the JAPCC Journal that will focus on the broad topic of C4ISTAR.

## Combat Support

In early November 2006 the JAPCC will host the NATO Search and Rescue (SAR) panel. The NATO SAR panel is presently in the process of rewriting and ratifying all NATO publications regarding Personnel Recovery (PR). PR focuses on recovery missions in the full spectrum of operations ranging from Combat CSAR missions to SAR missions in peacetime. The old ATP 62 (CSAR) and ATP 10 (SAR) have been rewritten and are in the ratification process as the AJP 3.3.9.1 and the AJP 3.3.9.2. Two new documents are in development, the AJP 3.3.9. as the overarching PR document and the TTP 3.3.9.X, a document that aims to standardise PR missions in Joint and/or Combined operations. Furthermore the focus of the SAR panel is to standardise Survival, Escape, Resist and Evade (SERE) training and equipment. The intention in the near future is to rename the panel the Joint Personnel Recovery Panel. The name would then better align with the broad spectrum of issues on which the panel is working.

## Look Forward

At the time of writing this edition of the Journal, the JAPCC is reviewing its project priorities for the remainder of 2006 and for 2007. The overarching theme will continue to be the transformation of Allied air power and the intention is for the JAPCC to develop a visionary paper on the development of air power in the transformational era. Work will continue on major projects such as unmanned air systems and Air Defence 2020. As our out of the box article explains, a central theme for future work is the C4ISR Roadmap. Another work strand will be how air supports predominantly land-based expeditionary stability and security operations. Air support to such operations is, of course, of immediate and ongoing concern to NATO given operations in Afghanistan. This subject will be the theme of our 2007 Conference and our second Journal edition of 2007. The JAPCC is supporting a range of work in this area including pressing for the development of air component force protection doctrine, the air contribution to counter-improvised explosive device operations, and close air support in urban operations.

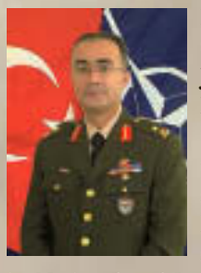
# Biographies

**Major Patrick Piana** joined the French Air Force in 1986. He has commanded the DAMS 11.004 (Nuclear Weapons Maintenance and Storage Unit) located at Istres AB. He was assigned to the FAF HQ (Weapons Systems Department – Nuclear Weapons Division) in Paris in 1999. He left Paris for Cambrai AB in 2002 where he was the deputy chief of logistic support. He had his first contacts with NATO in 2004 while acting as French NRF JFACC HQ deputy A4. In 2005 he was posted to JAPCC in the Combat Service Support Branch – Logistics.

**Group Captain David Blore** joined the Royal Air Force in 1978. He read Nuclear Engineering at Manchester University graduating with 1st Class Honours. He has served in the Falkland Islands as OC Air Movements Flight, in HQ British Forces Middle East during the first Gulf War and as OC United Kingdom Mobile Air Movements Squadron. He has held a variety of staff positions including in HQ Defence Logistics Organisation, London. He was Assistant Director International in Directorate of Air Staff prior to his appointment as Chief of Staff, European Air Group in September 2004. Group Captain Blore holds a Masters Degree in Transportation Studies from the Cranfield Institute of Technology. He is a graduate of the RAF Staff College, where he received the British Aerospace Prize. He has also attended the Royal College of Defence Studies. He is a member of the editorial board for the RAF's Air Power Review and a member of the Royal Aeronautical Society's Air Power Group.

**Lieutenant Colonel Mike Carter** is a member of the JAPCC Combat Support Branch. He received his commission from the United States Air Force Academy in 1990 and earned his pilot wings the following year. He began his flying career in the KC-135 tanker and later cross-flowed into the Boeing C-17. From 2003 to 2005, Lt Col Carter was assigned to Fort Leavenworth, Kansas, where he attended the US Army Command and General Staff College and the School of Advanced Military Studies. He arrived in Kalkar in the summer of 2005 and serves as the JAPCC subject matter expert on all military airlift matters.

**Group Captain John Alexander** is JAPCC Branch Head Combat Service Support. Commissioned in the RAF Regiment, he served with RAF Rapier units in Germany, Belize and the Falkland Islands; USAF Rapier in the UK; on secondment in Oman; as Adjutant of a Light Armoured Wing in the Gulf 1990-91; in staff appointments at the Central Tactics and Trials Organization, in MOD operational requirements, at the Air Warfare Centre, in the MOD on Iraq WMD counter-proliferation policy and in PJHQ(UK) J3; on operations to disarm Iraq in 2003 and in HQ MNF-I to support the January 2005 Iraqi elections. He has commanded 37 Squadron RAF Regiment and the Joint Rapier Training Unit. He is a graduate of Newcastle University (BA(Hons) Geography), the Open University (MBA and Postgraduate Diploma in History), the Royal School of Artillery Gunnery Staff Course and the Air Battle Staff Course, and has taught on the Advanced and Higher Command and Staff Courses.



**Brigadier General Mehmet Çetin, Turkish Army, Director JALLC** attended the Turkish Military Academy graduating in 1976. He completed his artillery training in 1977 and commanded at the platoon, battery and company levels from 1977 to 1984. He has served in a variety of staff positions in National and International HQs, including Chief of National Strategy branch at the Turkish General Staff and as a project officer in the International Military Staff, Defence and Force Planning Branch in NATO HQ. He has commanded a commando battalion, an artillery regiment and the 172nd Armoured Brigade. Brigadier General Çetin is a graduate of the Turkish Armed Forces War College and the UK Army Command and Staff College. He holds a degree in business and management from the University of Maryland and has been awarded the UN medal for service with UNPROFOR.

# Biographies

**Luftwaffe Chief of Air Staff Lieutenant General Klaus-Peter Stieglitz** was born 3rd October 1947 in Lutherstadt Eisleben, Germany. He joined the Luftwaffe in 1968. After basic officer and pilot training, he served from 1973 for almost 8 years as a fighter pilot. Following the German Armed Forces Command and Staff College, he served as a Squadron Commander, Branch Chief and General Staff Officer OPS-Division in HQ SHAPE. Lt Gen Stieglitz has commanded OPS Group Fighter Wing 74, Fighter Bomber Wing 35 and Fighter Wing 73 "Steinhoff". Promoted to Brigadier General in 1998, he concurrently became NAEW Component Commander. Prior to his current position as Chief of Staff Luftwaffe, he served as Director of Federal Armed Forces Flight Safety, Commander 3rd Air Force Division and Deputy Commander AIRNORTH.

**Lieutenant Colonel James Spaulding** graduated from the United States Air Force Academy and holds three Masters degrees. He is also a recent graduate of the Program of Advance Security Studies and the Program of Terrorism Security Studies from the George C. Marshall European Center for Security Studies. Lieutenant Colonel Spaulding was a C-141B navigator and an Air Mobility Squadron Commander and Tanker Airlift Control Element Commander. During Operation Enduring Freedom and Operation Iraqi Freedom he deployed to Uzbekistan, Afghanistan, and Iraq for airbase opening and mobility operations. Prior to his Fellowship at the Marshall Center, he was the Deputy Chief, Doctrine, Strategy and Planning Division, Directorate of Plans and Programs, Headquarters Air Mobility Command, Scott Air Force Base, Illinois.

**Squadron Leader Timothy Anderson** is a Ground Defence Officer in the Royal Australian Air Force (RAAF). He has had a number of postings in operational, staff and training positions across the Air Force, recently completing a lengthy stint in the Air Force International Engagement branch. He is currently a Chief of Air Force Fellow at the RAAF's Air Power Development Centre, focusing on emergent technology drivers for the future application of air power. Squadron Leader Anderson is a graduate of the Royal Military College of Australia (Duntroon). He holds a Bachelor of Arts Degree from the University of Adelaide with Honours in classical military historiography.

**Colonel René Arns** is head of the Policy, Concepts and Coordination Branch at the JAPCC. He has a large and diverse operational background. He has flown 3500 hours on F-104G, RAF Jaguar and F-16 (OCU and MLU) aircraft. He commanded the 311 FBS at Volkel AB, and was also the Deputy Base Commander. He then commanded the Tactical Helicopter Group (THG) and was also Base Commander of Gilze Rijen AB, responsible for the introduction of the Apache, Chinook and Cougar helicopters. Simultaneously, units of the THG were deployed continuously for Crisis Response Operations in the Balkans and the Horn of Africa. His last assignment before joining the JAPCC was Head of the Flight Safety and Quality Department in the Staff of the Commander in Chief of the Royal Netherlands Air Force (RNLAF), where he was responsible for the Flight and Ground safety management and Quality Management in the RNLAF. He is a graduate of the Netherlands Advanced Staff Course.

**Tore Listou** is the Assistant Professor Logistics at the Norwegian Defence Staff and Command College. He holds a MSc in business administration, specialising in logistics from the Norwegian School of Management (BI), and a Candidate Mercantile, focussing on strategy, organisation theory and organisational psychology from the Norwegian School of Business and Economics (NHH). Professor Listou is currently working on a PhD, focussing on the supply side of military logistics.

# Biographies

**Brigadier General (Air) Jacques Cazaméa** gained his wings in December 1980. He was posted to the 2/10 Fighter Squadron in Creil and later to Dijon as Flight Commander. Following a personnel staff tour, he commanded the 2/12 Squadron in Cambrai and then moved to St. Dizier as Commander of the 7th Wing. In 1995-96, he attended the Air Staff Course in Madrid before taking responsibility for Exercises and Planning at the Air Defence and Air Operations Command (CDAOA). He then returned to Madrid as the French Air Attaché. Now he is Deputy Chief of Staff in Taverny at the CDAOA, responsible for Air Policing, Air Doctrine and International Operational Co-operation. He was JFAC Commander for Operation Katrina in Oct 2005 and for 'Support to Pakistan' in Islamabad in Nov-Dec 2005.

**Colonel Doctor Roland Kauschmann** fulfils two functions as the Command Surgeon of German Air Force Air Operations Command (GAFAOC), and as the JAPCC Medical Advisor, as a member of the Combat Service Support branch. After graduating from the University of Frankfurt Faculty of Medicine and his first clinical years he joined the Luftwaffe in 1975. He served initially in the troop clinic at FWS 50 Fuerstenfeldbruck. In 1978 he started the US/DEU Undergraduate Pilot Training Programme at Sheppard AFB, graduating in 1979, followed by lead-in fighter training at Holloman AFB and air-to-ground training at Fuerstenfeldbruck. From 1980 on he served in FBW 43 as a flight surgeon and pilot in the ASFOA role, flying 1800 hours. Upon German reunification, he headed the integration of medical service of the former East German Air Force into the Bundeswehr. Following this, he served as Division Surgeon and Command Surgeon. In 2000 he was assigned as the SFOR Theatre Surgeon in Sarajevo.

**Lieutenant Colonel Karl (Charly) Litzenberger** joined the Luftwaffe in 1971, graduated from the German Air Force Academy and completed his fighter pilot training in 1977. He flew on Fighter Bomber Wing 36 from 1977 to 1995. He has accumulated 2900 hours on F-4F aircraft. He occupied a staff officer position at Brunssum from 1996-2002. From 2002 he has been located at Kalkar, first in the RFAS Plans Section and since the establishment of the JAPCC in the Future Capabilities Branch.

**Colonel Horst Stuettgen** is the JAPCC C4ISTAR Branch Head. He joined the German Air Force in 1971 and trained as a Fighter Controller. In 1982 he transferred and trained as an Air Defence systems programmer followed by a posting to the NATO Programming Centre Glons/BE. He served as head of the GAF programmer course and unit commander of the training squadron, section head at GAF Air Material Office responsible for the GAF CCIS and desk officer at IT Staff, German MOD. He joined the JAPCC in July 2006 following a tour as Commanding Officer GAF Air Defence Programming Centre. Lieutenant Colonel Stuettgen holds a degree in Economics from the Armed Forces University.

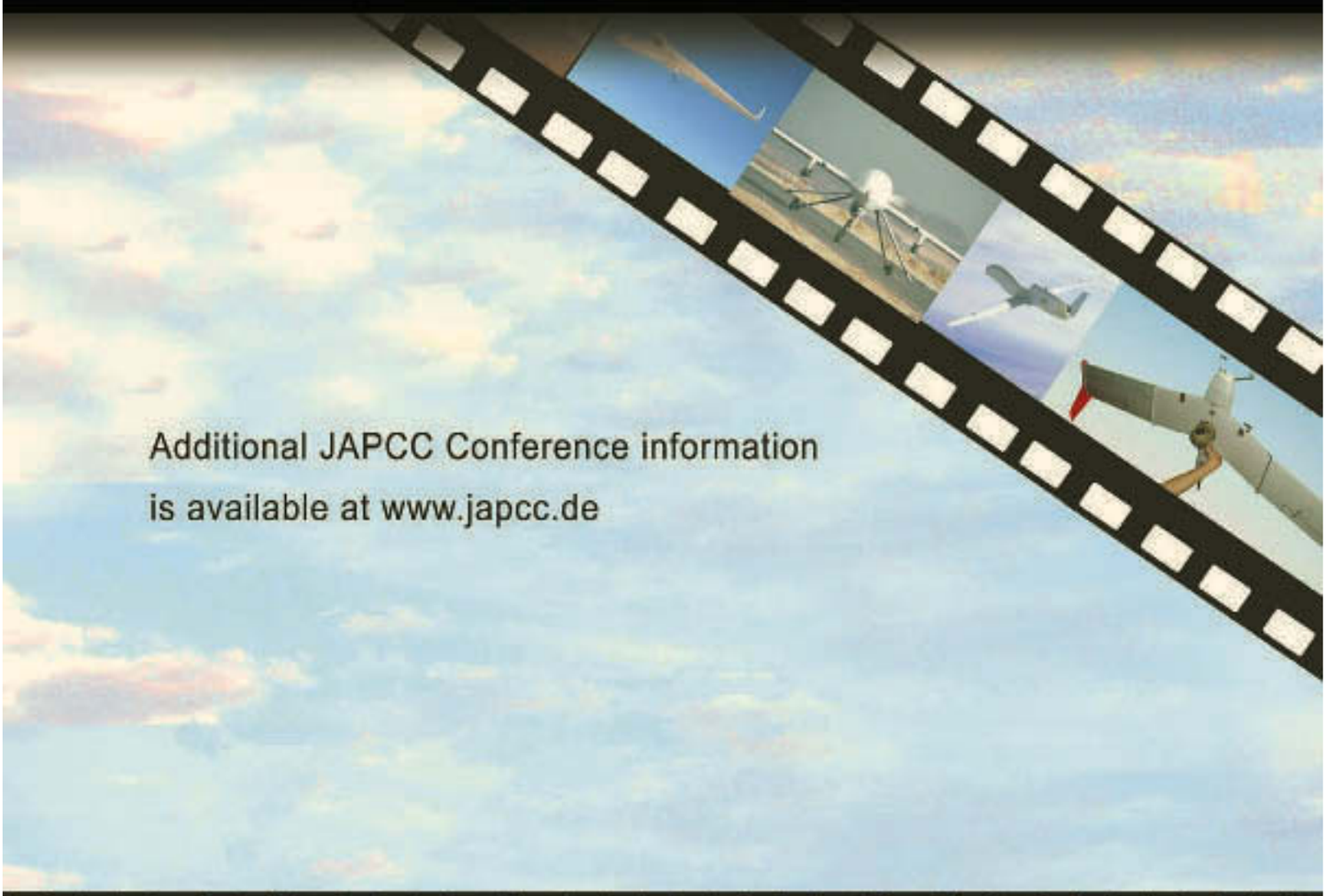
**Wing Commander Graham House** joined the JAPCC C4ISTAR Branch in 2006. After a tour in Air Traffic Control, he was selected for pilot training and gained his wings in 1992. His first operational flying tour was on the Nimrod MR2 at RAF Kinloss. As an aircraft captain during this tour, much of his flying was in the ASUW/ASW roles during the Cold War transition. He then enjoyed a brief instructional tour, teaching leadership. On his return to flying the Nimrod, he served in Operations OEF and OIF. He has accumulated 4000 flying hours and his most recent staff appointment was as the Personal Staff Officer to AOC 3 Gp.

**Wing Commander Pete York** is a VIP transport navigator who arrived at JAPCC in 2005 from CC-Air Izmir, Turkey where he was the Director of Staff. Prior to that, he was CC-Air Izmir's CJFACC Planning Chief and responsible for the implementation of NATO's CJFACC and NRF Concepts. He has experience in planning and execution of the flying schedules for RAF AT, AAR and VIP transport fleets during peacetime routine and crisis operations. He has also been a tutor in the Muharraq Al-Abdullah Command and Staff College in Kuwait.

# JAPCC Conference

17-19 October 2006

"The Transformation of Joint Air and Space Power -
The Exploitation of Unmanned Aerospace Capabilities
(UAC) in the Alliance"



Additional JAPCC Conference information
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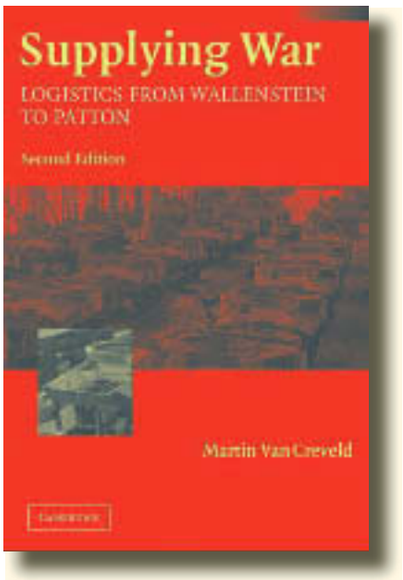
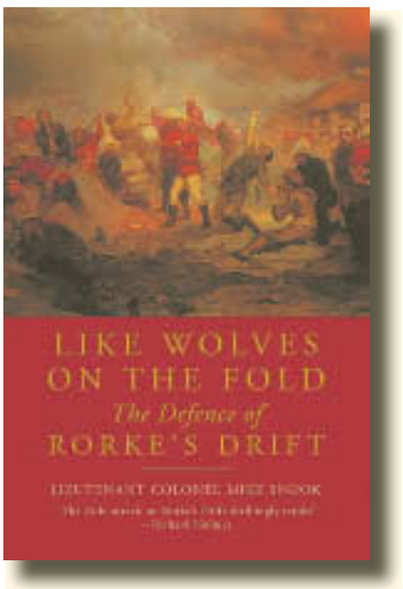
# Book Review




**Supplying War: Logistics from Wallenstein to Patton (2nd Edition) by Martin Van Creveld**
**Cover illustration courtesy of Cambridge University Press**

Martin Van Creveld, a professor at the Hebrew University Jerusalem, is the author of several important works on military history and strategy, including Fighting Power and Command in War. First published in 1977, Supplying War examines the influence of logistics on military campaigns. Van Creveld case studies the impact of logistics on campaigns ranging from the 'living-off the land' of Wallenstein's period to the German armies overstretching their logistics in Russia and North Africa, including the impact in Africa of Allied interdiction, and the limiting effect of logistics on the Allied offensive in the North West Europe in 1944. The second edition includes a postscript on the increased complexity of logistic support requirements and a brief look at the 1991 Gulf War. In the view of the many Staff Colleges and institutions that have it on their reading lists, the book remains a standard text on 'supplying war'.

**Review by John Alexander, Group Captain, Royal Air Force**

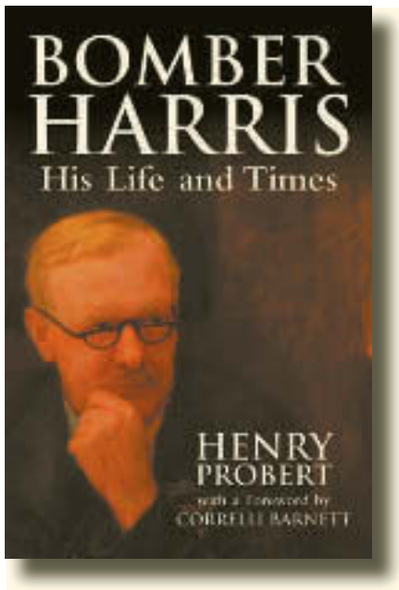



**Like Wolves on the Fold: 'The Defence of Rorke's Drift' by Lieutenant Colonel Mike Snook**
**Cover illustration courtesy of Greenhill Books**

The tale of Rorke's Drift is written in the same concise and explanatory manner as its predecessor by the same author 'How Can a Man Die Better'. The reader is immediately drawn into the plight of the defenders who, up until that moment, had been enjoying a leisurely, if somewhat boring day at the mission. When news first reaches them, there is disbelief and then a growing realization that, if they are to survive, something needs to be done. The real-life accounts of all 11 VC winners on the day readily identify the practical issues of Force Protection and Sustainment. This tale is particularly appropriate to remember on the 150th anniversary of the VC. The battle is described in such a way that one can follow the ebb and flow of the Zulu attack and the decisive manner in which it was repelled with varying degrees of success. If you thought you knew the battle of Rorke's Drift, then he narrative will enthral and surprise you. Included also is a very useful guide to visiting the battlefields, where to go, what to see, as well as some general safety tips for visiting the area. If you are just interested in Rorke's Drift, you will not find a better description of the events of the battle. Well recommended.

**Review by Graham House, Wing Commander, Royal Air Force**

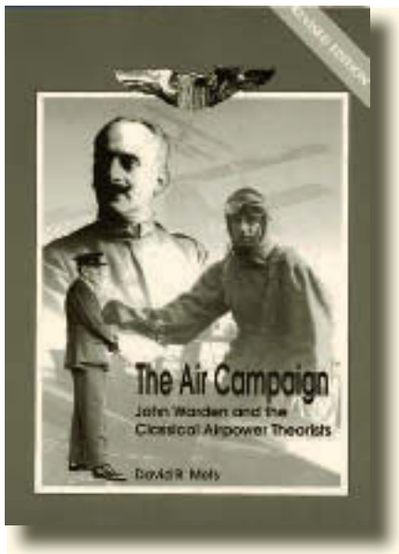
**Bomber Harris - His Life and Times**
**by Henry Probert**
**Cover illustration courtesy of Cambridge University Press**




This book, written by a master of the art, provides excellent insight into a controversial figure. The book touches on Harris' previous military experience before the outbreak of WW2 and partly explains the composition and decision process behind the man. Additionally, it captures a unique political perspective, which may well influence the reader to reassess his or her pre conceived ideas about Harris. The desired end state will always be a political concern; the role of the military is not simply to execute, but also to influence, as this book identifies. Nevertheless, some of the reasons provided, especially for the bombing campaign in the latter stage of the war, remain questionable. Tactically, the issues of jointness, limited resources, trained manpower, offensive sustainment and subordinates welfare in an ever-changing strategic environment demonstrate that little has changed. Airpower will play an important role conducting operations, but as demonstrated in the recent Israel-Hezbollah conflict, it is only one pillar required to reach the desired endstate.

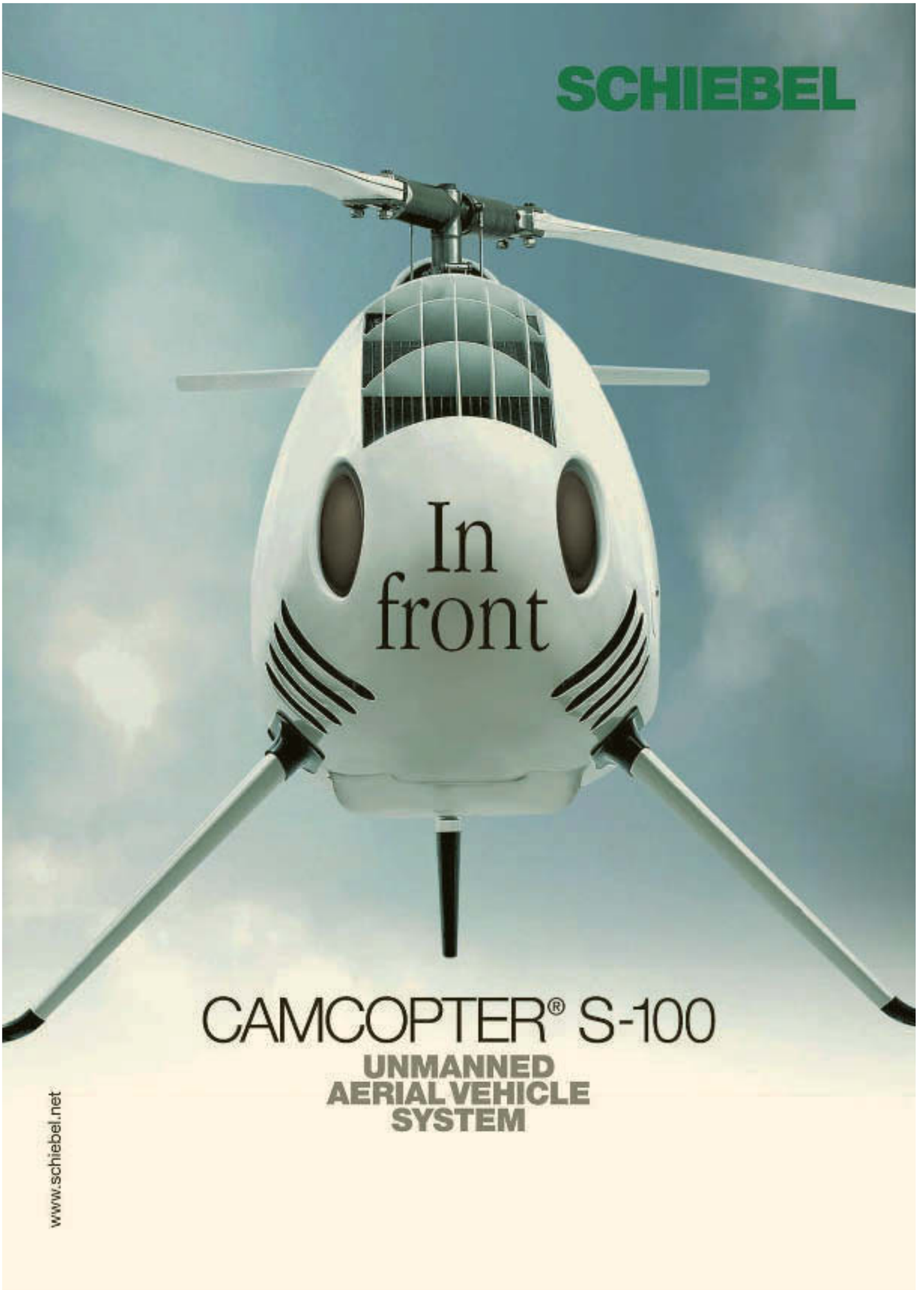
**Review by Ralf Korus, Lieutenant Colonel, German Army**

**The Air Campaign: John Warden and the Classical Airpower Theorists (Revised Edition)**
**by David R. Mets**
**Cover illustration courtesy of Air University Press**




Professor David Mets (PhD) writes an easy-to-read summary of four great airpower thinkers. His goal is to take the early first 3 classical thinkers and compare them to John Warden, a relatively later thinker on airpower. Giulio Douhet, Hugh Trenchard and William 'Billy' Mitchell are the three classical thinkers of the 1920s. They had much in common, like the belief that airpower needed to be independent from the army or navy, and that airpower was best used offensively. John Warden came 60 years later and he shared many of the same beliefs as his predecessors. The book is a good quick review of some great thinkers in airpower. The author believes all of the thinkers are worth reading about more in-depth, and that John Warden's book The Air Campaign: Planning for Combat is also worth reading. Professor Mets gives a fair review of the great thinkers as he points out strong areas and shortfalls in the thinking of each of the four.

**Review by Daniel Lewandowski, Colonel, United States Air Force**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