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AIR POWER FOR AUSTRALIA'S SECURITY: MORE THAN THE THREE BLOCK WAR

Dr Sanu Kainikara
Group Captain Tony Forestier, OAM

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Michael Wright

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Air Power Development Centre
Level 3
205 Anketell Street
Tuggeranong ACT 2900
Australia

Telephone: + 61 2 6266 1355
Facsimile: + 61 2 6266 1041
E-mail: airpower@defence.gov.au
Website: www.raaf.gov.au/airpower

Preamble

This is the first Chief of Air Force (CAF) Occasional Paper. I intend that CAF Occasional Papers are a forum in which air power matters can be presented to a wider audience than only subject matter experts. Arguments put forward in these papers will endeavour to explain the nuances of strategic military thought around air power, and their repercussions on national security.

My intent is to make interested decision-makers, policy-makers and strategists, along with the interested public, aware of air power issues of importance. Issues that will be discussed in these papers will be restricted to the strategic level and, occasionally, the operational level when that is needed to illustrate a point or extend the argument. However, irrespective of level, my intent is that the argument be illustrated with real-world examples that will add colour, context and understanding for readers.

CAF Occasional Papers will be produced as needed, rather than to a fixed schedule. Comment on the publication and enquiries on air power related matters are welcome and should be forwarded to the Air Power Development Centre.

This paper, *Air Power for Australia's Security: More than the Three Block War*, was written at my direction. The paper brings out strategically salient points regarding the employment of air power, specifically from the perspective of the Royal Australian Air Force, in today's security environment. The paper may have broader application for like-minded smaller air forces. I endorse the views expressed in this paper and commend it to you.

G.D. SHEPHERD, AO
Air Marshal
Chief of Air Force

Air Force Headquarters
April 2007

Acknowledgment

The seed for this paper was planted by a professional studies paper entitled *Taking it to the Streets: Exploding Urban Myths about Australian Aerospace Power*, written by Wing Commander Gareth 'Chuck' Neilson, RAAF, in January 2006. Wing Commander Neilsen's paper was written while he was a student at the United States Air Force Air War College, Montgomery, Alabama. The Chief of Air Force and the Air Power Development Centre acknowledge the intellectual stimulation Wing Commander Neilson's paper provided in producing this paper.

We also acknowledge the input to this CAF Occasional Paper provided by Wing Commander Neilson in the few days he spent at the Air Power Development Centre during the initial stages of its formulation.

Wing Commander Neilson's paper is being published separately by the Air Power Development Centre as a working paper.

Dr Sanu Kainikara
Group Captain Tony Forestier, OAM

Air Power Development Centre
April 2007

CHIEF OF AIR FORCE

AIR POWER FOR AUSTRALIA'S SECURITY: MORE THAN THE THREE BLOCK WAR

Introduction

The idea of the 'Three Block War' (3BW) has become a popular one in recent times because it is a neat metaphor to communicate the increasing complexity of contemporary conflict, at least from the perspective of land operations undertaken in urban environments. The term 3BW, coined by a former Commandant of the United States Marine Corps, General Charles Krulak, describes the situation where conventional armed forces are required to provide humanitarian assistance, carry out peacekeeping and fight a high intensity conflict concurrently, and across three contiguous urban blocks.[1] The 3BW construct poses two major challenges: operations are concurrent in nature and any of the three conflict types could shift across blocks very quickly.

However, the 3BW metaphor was developed primarily for an urban conflict environment and should not be taken too literally in the broader sweep of national security. There is a larger scheme of military and security operations than the 3BW addresses, and one that clearly differentiates the responsibilities of a nation's Navy, Army and Air Force from those of the United State's Marine Corps, a service designed for a narrower purpose than a nation's collective defence and security requirements. The 3BW concept is one that primarily addresses leadership on the ground that has to deal with rapidly changing modes of engagement—a need that warrants a 'strategic corporal'—and does not address the fact that, essentially, the 3BW is not an end in itself, either operationally or strategically. It is a tactical construct that usefully illustrates a point

[1] Krulak, General Charles C., 'The Strategic Corporal: Leadership in the Three Block War', *Marines Magazine*, January 1999.

about modern urban warfare. It would be a mistake to make more of the 3BW metaphor than it warrants.

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The 3BW presents a narrow view of conflict; a land-centric 'boots on the ground' view, where the broader picture of the conflict, the shaping, deterring and response actions that occur around, rather than in, the 3BW are not represented. That is not to say that the 3BW metaphor is not important; it is. It defines one increasingly common and demanding operational interface, where the cooperative command and control (C2) of air and surface forces needs to be inclusive, sophisticated and rapidly responsive to deal with protagonists hiding amongst the people. But, in pursuance of national security, the 3BW concept is far too narrow and the metaphor is stretched for strategic military operations. The necessary action is not just in the three blocks of the 3BW, but also around it. This is particularly true for air forces because their speed of manoeuvre, perspective and reach enables them to create multiple effects concurrently or in rapid succession across an entire theatre of operations.

The necessary action is not just in the three blocks of the 3BW, but also around it.

For Australia's Air Force, an area of operations is almost never only the three contiguous blocks of the 3BW, but also that area around it where the conflict is shaped and deep battles are fought that materially affect the 3BW metaphor. For this paper, the larger fight, the more inclusive conflict space than that defined by the 3BW metaphor, will be called the Three Block War Plus (3BW Plus).

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It is important to understand that theatres of conflict can be, and almost always are, much larger than that offered by the 3BW metaphor. This understanding becomes even more important in current circumstances, when the majority of Australian, allied and coalition operations are being conducted in urban areas in places such as Iraq, East Timor and the Solomon Islands. If the reporting was to be believed at face value, these operations would seem to be only 'boots on the ground', but that would not convey the complete picture. There are many other important activities taking place around what seems to be only a 3BW, which enable and shape surface operations, but those activities do not have a high visibility and hence are not often considered highly newsworthy. This can sometimes lead to hasty conclusions about modern conflict through superficial judgements that will not stand deeper analysis. Such an analyses might also fail to recognise the rapid changes taking place in modern conflict.

Conflict does not neatly follow the 'all are the same as the last' model. Even a quick look at history will reveal that structuring for the last war, or taking a narrow view of conflict, can be strategically

disastrous as clever adversaries adapt away from your force's main strengths to exploit new asymmetries, and new types of adversaries replace the last. The robustness—strategic depth to use the formal military term—needed to deal with emergent threats and clever adversaries comes from forces that are able to deal with the spectrum of conflict, ranging from high-end conventional warfighting across large theatres to localised humanitarian operations. Meeting this breadth of demand is where the flexibility and adaptability of modern air power, working as part of joint and multi-agency teams, come to the fore.

More Than The Three Block War

Undertaking operations in Australia's nearer region presents a range of diverse challenges far beyond those encountered in the typical 3BW. The region is primarily tropical maritime, and not only urban, but also archipelagic, with coral seas and rugged, often impassable, terrain. It is an amalgam of land, littoral and maritime areas that are geographically and demographically very different from the one envisaged in the typical 3BW environment. Although the region contains a number of urban centres that are growing at a fast rate, it is also characterised by a large spread of rural habitation with numerous villages, archipelagic land masses and multiple canopy forests. This geography has profound implications for the nature of military operations that may occur within it, and the structure of military forces needed to cope with and exploit it.

In particular, the archipelagic nature of much of Australia's region presents a complex environment that poses serious manoeuvre challenges to surface forces. In this region, the components of the 3BW may exist as in the Krulak model—that is, contiguous urban blocks. However, that is unlikely to be the full extent of any regional theatre of operations. In reality, the three blocks are likely to be dispersed over separated areas, rather than conjoined unless operations are only urban. Australia's reality is that our area of regional operations will be a continuum of land, littoral and maritime environments that would involve the protection of long sea and air lines of communication and may include a 3BW to boot.

In particular, the archipelagic nature of much of Australia's region presents a complex environment that poses serious manoeuvre challenges to surface forces.

Australia's interpretation of and preparation for the 3BW Plus must be carefully tailored to match the realities of its strategic environment. Australia's preparation for the 3BW Plus must encompass readiness to operate in a land, maritime or littoral environment, often concurrently.

From the Air Force's air power perspective, the 3BW Plus is broad, dynamic and challenging. It demands participation in geographically concentrated or widely spread, urban or rural environment. Air power, by virtue of its reach and penetration, can project force and produce effects over an entire area of operations, encompassing and spreading well beyond the confines of the 3BW metaphor. To dominate across diverse environments in modern conflict, air power must be able to create the precise effects necessary to achieve successful outcomes under ever decreasing time and space constraints. Air power's ability to create such effects will be a significant factor in ensuring success across the spectrum of operations. A 3BW Plus view is critical to ensure proper force development to provide the strategic depth within Air Force necessary to dominate across a theatre of operations.

Australia's reality is that our area of regional operations will be a continuum of land, littoral and maritime environments that would involve the protection of long sea and air lines of communication and may include a 3BW to boot.

Air power can prosecute missions with a high degree of concurrency in and around an area of concentration, providing a flexible and mobile umbrella for surface forces to operate under and also provide a far-reaching operational perspective of the theatre. However, concurrency can be a challenge for smaller air forces such as ours, and will need highly flexible, centralised C2 to ensure that forces are prioritised and allocated to targets 'just in time'. Very rapid phasing, or 'swing-roling'—switching assets between tasks in real time—might be the norm in these situations. Air power is now capable of concurrently shielding friendly surface forces and integrating with them in cooperative engagements. With appropriate C2, modern air power can work alone, and with or for other forces and agencies in joint and integrated campaigns in the 3BW Plus.

Concurrency can be a challenge for smaller air forces and will need highly flexible, centralised C2 to ensure that forces are prioritised and allocated to targets 'just in time'.


HILL

In the past decade, the Australian Defence Force (ADF) has participated in humanitarian assistance and stability operations and is currently involved in four separate theatres in stabilisation operations. However, it would be dangerous to discount the possibility of the 3BW Plus in the context of a state-on-state conflict, even though current military operations are focused on dealing with insurgencies and other activities linked to politically-based terrorism. The recent testing of a nuclear device by North Korea and the subsequent international stand-off, and Iran's defiance of international calls to open its nuclear facilities to inspection, to name some current state-based concerns, highlight the possibility of state-initiated conflict. The ADF must therefore be capable of functioning effectively across the entire spectrum of conflict, from humanitarian assistance to peace operations to high-end conflict and war against conventional and non-conventional adversaries. It should also have the capacity to switch roles and modes dynamically across that spectrum, and across an entire theatre.

Air Force achieves the necessary balance to operate in the 3BW Plus, across the entire spectrum of conflict, by ensuring that it is capable of optimum performance in three key tasks.

- **The capability to understand the characteristics of the operating environment and the ability to know and share the events taking place within it, aspirationally in real time.**
- **The ability to shape, that is, influence and manage the conflict space, where and when necessary and to the desired degree.**
- **The ability to respond with a carefully tailored, proportional and timely application of air power as part of a joint or multi-agency campaign to create the needed effects.**

The ADF must be capable of functioning effectively across the entire spectrum of conflict, from humanitarian assistance to peace operations to high-end conflict and war against conventional and non-conventional adversaries.

Contemporary conflicts are characterised by the fleeting nature of the adversary and the likelihood of the conflict taking place among the population. Such conflicts tend to negate a modern Army's, such as Australia's, inherent advantages of speed, manoeuvre and firepower. However, this constraint is not felt as acutely by air power. Air power is capable of carrying out intelligence, surveillance and reconnaissance (ISR) activities, influencing and responding to emerging threats and fomenting our own threats in all the environmental domains, independently or as part of a military or multi-agency operation, whilst pursing sequential or parallel operations. That is quite a breadth of capabilities, useful in almost all circumstances across the range of possible operations with which Australia may have to deal.

Spectrum of Conflict and Technology

The spectrum of conflict has widened in the past few decades and now encompasses a range of operations from humanitarian assistance through to all-out, high-technology warfare. Further, the nature of conflict at any point on the spectrum is itself changing. Therefore, it is increasingly likely that conflicts of widely varying intensity and tempo could be encountered in the 3BW Plus. From a technology perspective, the gap between conflict at the low and high end has reduced considerably. The availability of highly sophisticated weapon systems to adversaries operating even

at the lower end of the conflict spectrum makes it necessary for conventional forces to possess high-end technology.

Modern conflict has clearly indicated the need for conventional forces to have the capability to prosecute time sensitive targets in a wide variety of environments. Current moral, ethical and legal imperatives demand that this be achieved while ensuring proportionality and discrimination. Technology enables air power to create appropriate effects by providing the necessary accuracy and weapons effect.

Air power operates effectively across the entire spectrum of conflict by adapting high-end capabilities to suit the context of operations, even those of a lower order. The agility, flexibility and versatility of air power makes it well-suited to the dynamics and challenges of Australia's 3BW Plus.

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CHIEF OF AIR FORCE

Air Power and the Three Block War Plus

Air power is a useful tool in a 3BW Plus scenario, often the one of choice for many missions and sometimes a decisive one. It can undertake independent operations or act in conjunction with other Services to create the effects judged necessary. Air power brings three fundamental capabilities to the joint arena. The first is the capability of air assets to create superior situational awareness in the battlespace through ISR and the effective dissemination of information. Second is the ability to influence the battlespace and the adversary's actions by both conventional and unconventional means. The third is one of the most important contributions of air power to the joint battlefield; its ability to respond offensively, rapidly and globally when required.

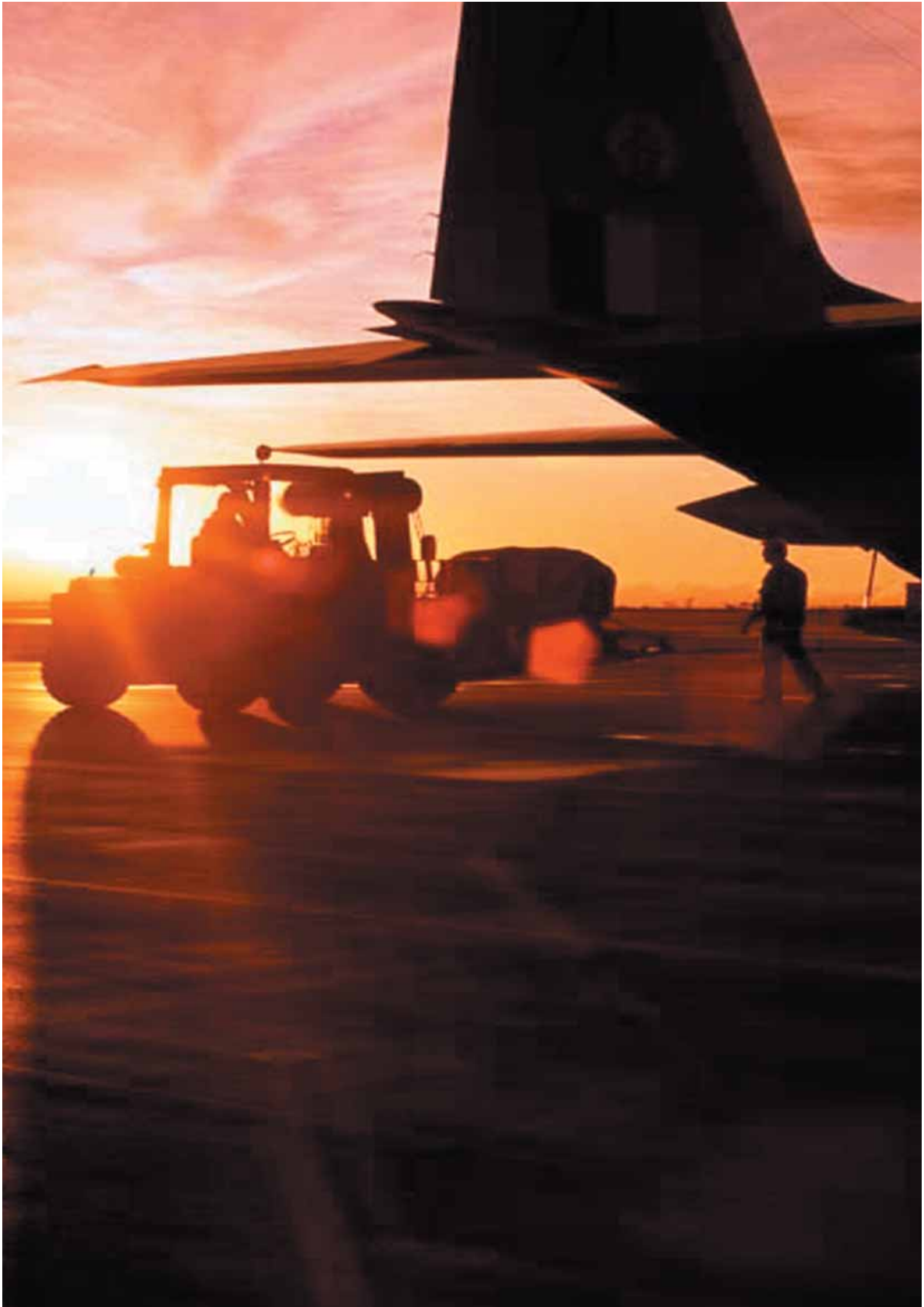
The basic difference between air and land operations is that air power may not be operating in contiguous blocks and could be carrying out the same roles at varying levels of intensity in separated areas concurrently; that is operations in and around a 3BW. However, the common factor is that in any 3BW scenario, a joint force's ability to conduct the breadth of operations needed to assure success will be dependent two critical factors—robust, network-enabled C2 and the capacity to obtain the necessary level of control of the air.

Note from the front:
'Three block wars plus' require joint responses

There could often be instances when one part of the Three Block War is carried out by surface forces while the other two are being addressed by air power. For example, humanitarian aid could be delivered by airlift in one part of the area of operations (AO), while offensive air power is actively prosecuting time sensitive or critical targets in real time in another part of the AO. Concurrently, the surface forces could be undertaking peace enforcement activities in another non-contiguous area of the same AO.

This is an illustrative example of the wider joint dimension of the Three Block War Plus.

The basic difference from surface operations is that air power may not be operating in contiguous blocks and could be carrying out the same roles at varying levels of intensity in separated areas concurrently; operations in and around a 3BW.



Control of the Air

Control of the air is essential if an air force is to conduct surveillance, influence and response operations and protect friendly surface forces from the enemy. ISR activities are critically reliant on high-value air assets for success in the lead-up, during and in the post-conflict phase. The nature of these assets and their value to the conduct of operations make them a vulnerable and an attractive target. In contemporary conflict, as seen in the recent conflict in Lebanon, insurgent groups may have access to sophisticated air defence weapon systems and even Uninhabited Aerial Vehicles (UAVs). Therefore, it is necessary to obtain control of the air at the earliest opportunity across the entire area of operations.

Further, modern conflict in the urban environment is best prosecuted by the physical isolation of the conflict space so that the adversary is denied external assistance. With control of the air, air power can achieve this physical isolation of the battlespace by the careful interdiction of adversary supply chains. The added advantage of such an action is that it is achieved without having to take recourse to permanent presence in enemy or disputed territory. Isolating the conflict space and maintaining control of the air directly supports surface operations and is a fundamental requirement to achieve battlespace dominance.

Control of the air is an essential element of an air force's ability to conduct surveillance, influence and response operations without effective enemy interference.

Control of the air is also a critical necessity for air power to be able to respond in a timely manner to engage pre-planned targets, support surface manoeuvre or operations and neutralise emerging threats in the battlespace.

The many air power tasks that increasingly require a permanent presence under certain circumstances are also heavily dependent on control of the air for their successful conduct. Persistent ISR, on-call engagement options, communications relay and air-to-air refuelling are examples of such requirements. Air power is capable of carrying out these tasks from stand-off ranges that would keep friendly assets outside disputed territories. Through well orchestrated planning, air power can provide enhanced friendly awareness of even distant areas of interest, or create effects that can persist on adversaries far beyond the physical presence of the platforms.

Situational Awareness

Air power's capability to exploit the air environment and synthesise information from a range of sources is crucial to creating superior situational awareness for the entire force. Air Force assets form the backbone of the 'find and inform' capability that is critical to mission success. In turn, the synergy thus developed can have a positive influence on the outcome of the conflict. Recent developments have demonstrated that innovative use of technologically advanced air ISR assets can influence our approach to warfighting. For example, by ensuring adequate revisit times, air power is able to deliver persistent ISR over an area of interest even though its presence is not continuous; a 'virtual' presence. Persistent ISR enables decisions to be made that deliver selective, timely and effective engagement. The ability of these assets to see through smoke, cloud and even sand-storms in both day and night with great accuracy was used

to great advantage by coalition forces in their advance towards Baghdad in the early days of the 2003 Iraq War.

Air power surveillance activities underpin and almost always precede all military activities. The complexity of the conflict environment in the context of the 3BW, and more so in the case of a 3BW Plus scenario, increases the challenges that are faced by ISR assets to provide the necessary fidelity to the gathered information. In an urban environment, finding, identifying and tracking adversaries who shelter amongst the civilian population are formidable challenges. Sophisticated airborne and space-based surveillance and reconnaissance systems, including UAVs such as Predator and Global Hawk, are capable of providing accurate information. This information will enable surface force elements to intercept and neutralise the adversaries.

Air Force assets form the backbone of the 'find and inform' capability that is critical to mission success.

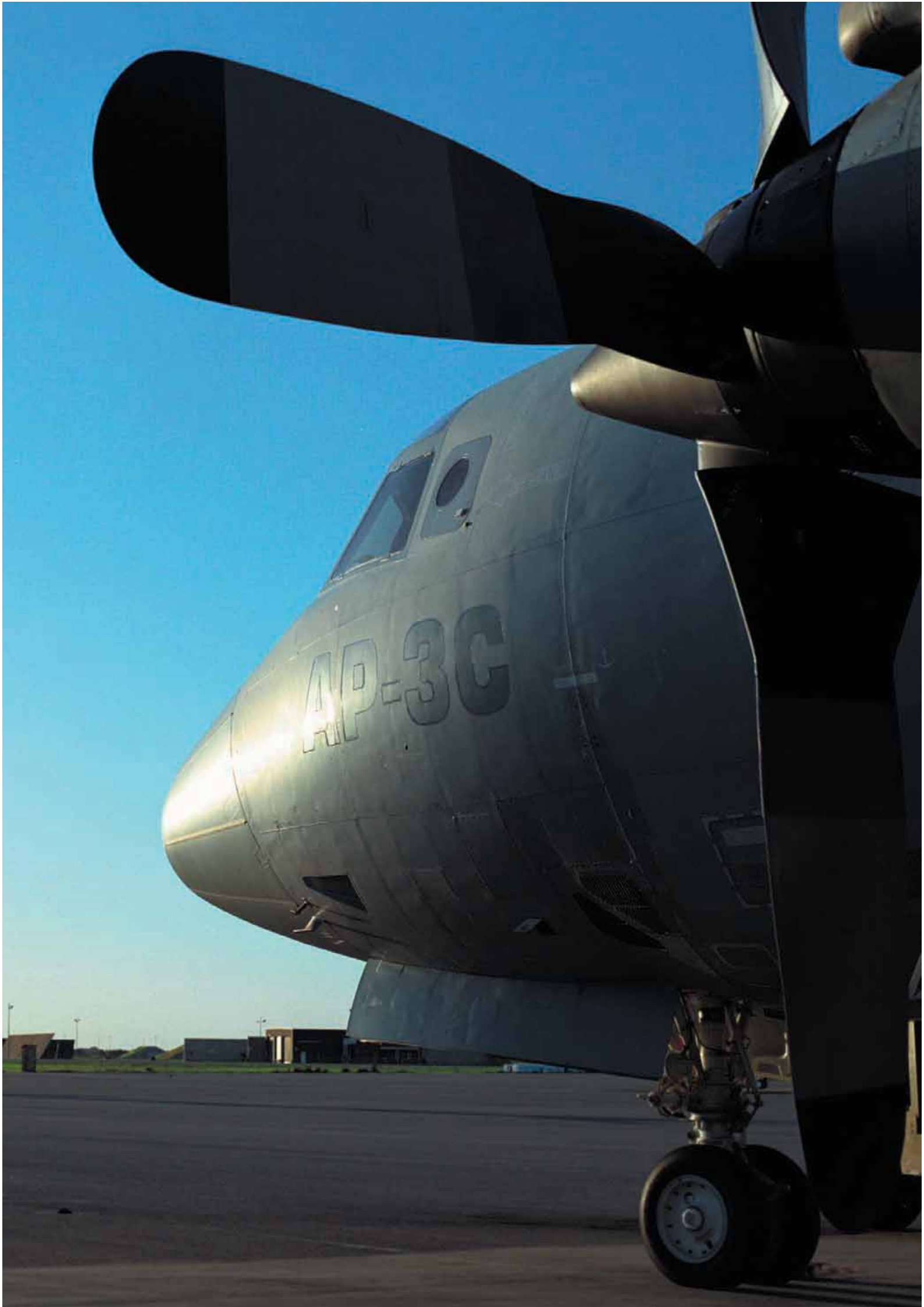
Air power's flexibility and adaptability comes to the fore in the context of ISR, especially in the 3BW Plus. A manifestation of this has been the valuable contribution made by the AP-3C maritime patrol aircraft to joint operations through its land surveillance in addition to its more traditional roles. AP-3C crews in the Middle East theatre have been routinely providing surveillance of designated areas during curfew times and route clearance for surface forces egressing an incident area over land and by sea in the littoral. Clearly, the enhanced situational awareness these activities provide is of vital importance to surface forces engaged in urban conflict.

Note from the front:
On-mission flexibility

In mid-2006 an Australian AP-3C was tasked to conduct an ISR mission in support of a surface forces counter-IED mission. An hour prior to launch the aircraft was urgently re-tasked to provide ISR support over a city where some coalition forces had been killed by an RPG. The local population had rioted and a curfew had been established. The crew rapidly re-planned the mission and arrived on station early. During transit to station, the crew had checked with the carrier-led maritime task force if they needed any assistance. Once on station, the crew located the incident site and provided coalition forces with situational awareness of the area including information regarding movement of people ignoring the curfew.

Towards the end of the on-task period the AP-3C was requested to provide route clearance for coalition forces exiting the area by road. On completing the route clearance, the crew were further tasked to provide route clearance for the coalition command element exiting the area over water. The AP-3C crew provided the necessary surveillance and clearance and also advised the command element of suspicious activity both on the water and on land in the vicinity of their water-craft. After ensuring that the command element had safely reached their destination, the aircraft was again tasked to provide ISR support to coalition surface forces that were under fire in a city about 80 kilometres away. This task was efficiently carried out. On their transit back to base the crew imaged a static maritime rig to ensure that there were no vessels threatening the maritime task force.

Flexibility is a key characteristic of manned ISR assets when the crew is proficient and educated to the wider mission.


AP-3C

By synthesising ISR activities, air power provides information superiority that, in turn, enables decision superiority.

Uninhabited Aerial Vehicles (UAVs)

UAVs have become ubiquitous in modern conflict. Small, man-portable UAVs enhance the organic ISR capability of surface forces, especially in the context of the 3BW. These tactical UAVs are also proving to be effective for the organic fire control role. Because of their limited range and endurance, and their tactical employment, they are typically under the organic control of, and feed information to, tactical surface units, both land and maritime. More sophisticated tactical UAVs also feed information into broader networks. Overall, this has proven to be an effective and practical arrangement that can improve the operational synergy between air and surface forces.

Both tactical and larger UAVs form part of the air power capability of air and surface forces within the battlespace. However, larger UAVs, such as Global Hawk and Predator, with long range and endurance, sophisticated on-board sensors, and broadband communications suites to enable networking, possess an entirely different kind of capability to that of their tactical counterparts. They are also expensive to acquire and operate, and need sophisticated ground support and communications links to be effective. Properly managed, they can persistently monitor large areas in and around the 3BW Plus, and can gather and transmit huge quantities of data. That data contributes to the generation of a common recognised operating picture (CROP). The CROP is part of a joint force's situational awareness at the strategic, operational and tactical levels of command, and for those in-theatre units and platforms that can receive and act on it.

Recently some larger and more sophisticated UAVs have been armed with air-to-surface weapons for responsive land strike. One

such example is Predator. It is likely that in the future similar UAVs will be employed in a wider range of roles than they are today. Perhaps in a decade or so some will even offer an air-to-air combat capability that today they cannot. Whatever role they are employed in, it will be facilitated by their capacity to network at the operational or theatre level of command, rather than at the tactical level, and by their employment of long-range sensors, communications and weapons. Their current and emerging breadth and depth of capability make larger, sophisticated UAVs, like Global Hawk and Predator, strategic assets.

Air forces are committed to controlling airspace to ensure the success of their own and surface operations in the 3BW Plus. The capabilities of larger, sophisticated, UAVs, both in the ISR and response roles, make them key components of the airspace control function. In the ADF, airspace control is an air force function at theatre level that supports the 3BW Plus. Therefore, larger UAVs are best centrally controlled and operated by air forces. Central control is the only way to ensure the efficiency, prioritisation and deconfliction of air operations across a theatre, particularly if employing armed UAVs. In the ADF, central control of theatre, or 3BW Plus, air assets is through the Air Operations Centre within Headquarters Joint Operational Command. This command arrangement accords with the ADF's doctrine of 'centralised control and decentralised execution'.

In the ADF, airspace control is an air force function at theatre level that supports the 3BW Plus. Therefore, larger UAVs are best centrally controlled and operated by air forces.


U.S. AIR FORCE
SOUTHERN CROSS II

Influence

Some Air Force roles directly influence the context and evolution of the operational space on a day-to-day basis and do not change significantly even after the outbreak of hostilities. The ability of air power to influence and manage the battlespace has never been more evident than in recent conflicts. This flows from air power's persistent ISR capabilities and a robust, joint C2 system.

Some Air Force roles directly influence the context and evolution of the operational space on a day-to-day basis and do not change significantly even after the outbreak of hostilities.

The nature of urban conflict indicates that conventional forces will have to overcome a complex and adaptive adversary operating as a non-structured network. To counter such a threat it will be necessary to facilitate effective manoeuvre warfare to influence the battlespace. Like the adversary, one's own manoeuvre will have to be unpredictable to apply joint fires effectively to shape the battlefield and influence the direction of conflict. Persistent ISR is the key to delivering such capabilities.

Apart from influencing the battlespace through the critical contribution to ISR, a combination of air power's characteristics of speed and range with its ability to create both kinetic and non-kinetic effects are valuable contributions in the prosecution of the 3BW Plus. Non-kinetic applications can include the use of presence to stimulate response, as well as the tactic of a 'show of force'. The underlying factor that influences the battlespace is that these actions demonstrate the will to apply force if necessary and are therefore an effective deterrent.

Note from the front:
Show of force shapes an outcome

While air power is routinely employed in response to insurgent activities in Iraq, it also made an effective, offensive contribution to security operations in support of the first round of Iraqi elections. In the run-up to the election and during the actual voting period, strike aircraft were tasked to deter and apply pressure on anti-coalition forces and to reassure the local populace in accordance with a carefully drawn plan. Known insurgent havens and areas known to be sympathetic to insurgent activity were targeted for frequent and aggressive demonstrations of strike aircraft presence. Further, a visible and audible presence was provided in more general voting areas to reassure Iraqi voters that air power was on hand to support the Iraqi security forces if required. This had a salutary effect on the conduct of the elections.

Air power had played its part in shaping the strategic environment.

In a 3BW model, the surface forces are heavily dependent on manoeuvre and firepower for success. In these circumstances there is always the inherent risk of units dangerously overextending the logistic chain. To mitigate this risk the logistic chain must become a rapid reactive supply system. Responsive airlift with adequate reach and payload provides the solution to this battlefield problem and permits surface forces in contact to leverage off their superiority. Further, the Air Force's airlift capability also becomes the bulk-load carrier for continuous resupply of manoeuvring forward elements and can also be operated as a communications node. It effectively creates the environment to mold the surface action in a 3BW into a

cohesive and common combat picture. Extended logistic lines can also be protected by patrols mounted by offensive tactical assets.

Responsive airlift with adequate reach and payload provides the solution to this battlefield problem and permits surface forces in contact to leverage off their superiority.

A key characteristic of the 3BW Plus is the absence of a clearly demarcated battle front and traditional lines of advance. In such a rapidly unfolding and uncertain combat scenario, air power capabilities will be able to influence and manage the battlespace.

Network Enabled Command and Control

Conventional forces involved in a 3BW Plus, irrespective of the positioning of the blocks and the environments involved, will have to ensure that the action follows a cohesive and joint operational plan. To achieve this, surface and air commands as well as the combat elements must be integrated into a robust and seamless command and control and ISR network. Airborne and space-based assets have the ability to view and direct the battlespace as a continuum, free from the typical line-of-sight limitations. This helps to condense the decision cycle, enabling an operational tempo and creating decision superiority that could overwhelm the adversary.

Surface and air commands as well as the combat elements must be integrated into a robust and seamless command and control and ISR network.

In the 3BW Plus, advance knowledge of enemy dispositions and movements, proximity of non-combatants to the battlespace and location of friendly forces will assist in controlling and optimising the manoeuvre of friendly forces. Real time targeting made possible by airborne and space-based ISR assets will be able to bring to bear accurate tactical-level firepower as required.

Note from the front:
Air-land synergy in urban warfare

At night a coalition ground team raids the house of an armed insurgent group. As the ground forces go in through the front door, a pair of fighter aircraft with high resolution, day/night optical sensors, teamed with a signals intelligence gathering aircraft, would be circling nearby. The signals gathering aircraft is capable of monitoring the electromagnetic spectrum for elusive and disguised communications, the analysis of which is then directly fed to the surface forces in contact. The signals gathering aircraft also monitors radio, cell or satellite phone traffic in the area, thereby effectively denying the insurgents any external assistance. The fighters use their sensors to track and then attack any insurgents who try to get away from the house through the back or side.

Close cooperation between air and surface forces creates battlespace dominance.

By networking ISR and other sensors with the C2 system, the versatility and flexibility of modern airborne weapon systems can be effectively employed in the dynamic targeting environment prevalent in a Three Block War Plus.

Real time targeting made possible by airborne and space-based ISR assets will be able to bring to bear accurate tactical-level firepower as required.

Respond

Modern air power has the speed, range, survivability and information support to almost routinely engage targets anywhere in the conflict space. Air power has the inherent capability to respond to emergent combat situations with a variety of options. Such responses can be at long range and against time sensitive and fleeting targets. Modern offensive air power's characteristics of stealth and vastly improved stand-off capability, when used optimally, create their own asymmetry that will eventually compromise the adversary's situational awareness. In combination with real time information superiority, this air power capability can create a tempo of operations that could overwhelm the adversary decision cycle.

Modern air power has the speed, range, survivability and information support to almost routinely engage targets anywhere in the conflict space.

In a typical 3BW, the physical barriers of the urban environment constrain the surface forces to operations that can only achieve a series of sequential objectives. Air power transcends this limitation and can carry out concurrent operations, thus maximising

the effectiveness of finite military forces. The capability for concurrent action is a crucial input for success in the 3BW Plus. In this context, air power's agility and networked information dissemination capability become force multipliers. The inherent multi-tasking capability of modern air power assets can ensure swiftness of response to engage fleeting, time sensitive targets that have become typical of the complex conflict environment.

Note from the front:
Multi-role fighters

The multi-role capabilities of the RAAF's F/A-18 Hornets were demonstrated clearly on 20 March 2003 in Iraq. A pair of Hornets was escorting a high-value aircraft when they were asked to neutralise a ground target. Air planning staff assessed the priority of the task request and also analysed the potential for collateral damage from the strike if prosecuted. The deployed Australian Air Component Commander approved the strike after confirming that the proposed attack was consistent with the Laws of Armed Conflict and the Rules of Engagement. Minutes later the first bomb dropped by an RAAF aircraft in conflict since the Vietnam War was released. The whole process, from re-tasking to engaging the target took less than 30 minutes. RAAF Hornets were re-tasked in a similar manner on a number of occasions.

Swing-roling, that is, changing roles within one sortie, demonstrates the flexibility and adaptability of Australia's modern, multi-role air power when properly commanded and controlled.

Swiftness of response and concurrency of action can create a multiple threat environment for the adversary, denying the time required for effective response. This is fundamental to the success of dispersed forces operating in a non-linear battlespace. The same attributes assume greater significance in a 3BW Plus scenario because, when applied with acumen, they can regain lost initiative, break stalemates and dictate the tempo of further operations.

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Proportionate Discriminatory Effects

In the past decade technology has facilitated greatly improved accuracy and discrimination in precision guided munitions (PGM). They are now the weapons of choice in all actions where undesired collateral damage is a possibility. The 3BW, conducted in urban or populated areas, as it is, does not present any scope to accept collateral damage because of the attendant political fallout. This suggests the necessary use of PGM that provide adequate accuracy and appropriate weapon-to-target match.

Offensive operations in and around the 3BW, that is the 3BW Plus, will also have to carefully tailor their effects to restrict collateral damage. This will require flexible weapon systems with limited yield. The latest air weapon systems, like the Small Diameter Bomb (SDB), improve air power's capability to provide support to surface forces in close proximity to the adversary. Further, their smaller size makes it possible for the same platform to carry larger numbers of weapons and engage multiple targets in the same mission.

Note from the front:
Avoiding collateral damage

At the start of the campaign in Afghanistan in 2001, US intelligence identified Taliban armoured vehicles parked in built-up areas. Even a direct hit on any one of these with a PGM would have killed innocent civilians and given the Taliban a propaganda advantage. To get around the problem, the United States Air Force (USAF) came up with the idea of employing concrete-filled practice bombs with precision guidance against such targets. If the bomb hit the target, the kinetic energy of 2000 pounds of steel and concrete would destroy it. If for some reason the bomb missed the target, it would bury itself deep in the ground with no explosion, thereby avoiding collateral damage. The result was that many such Taliban targets were destroyed with no collateral damage that might have turned the local population against the multinational forces helping them to secure their country.

Air power's precision and discrimination, combined with innovative practice, means that winning the peace is not made more difficult than it has to be.

The capability to create the desired effect is a basic requirement for success in the 3BW Plus. Airborne PGM offer stand-off delivery options with the flexible capability to produce proportional discriminatory effects.


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Joint Fires

While jointness between surface and air forces straddles the entire range of operations, it is in the offensive response phase—generating joint fires—that it becomes critical to success. The surface environment of a 3BW, unlike in a 3BW Plus scenario, is characterised by limited visibility and manoeuvre options. This could lead to the fragmentation of the battle into isolated tactical actions and strategic disorientation in a very short time span.

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Their restricted observation envelope and limited field of fire as well as damage discrimination deny surface forces the advantage of massed fire in a 3BW. This makes the employment of surface-based organic fire support problematic. Offensive air power, harmonised with surface manoeuvre, can effectively overcome all these drawbacks and, when optimally employed, provide the cohesive network required to maintain a common situational awareness.

Airborne platforms can provide accurate, timely and discriminate fire support to surface forces engaged in the 3BW.

Time Sensitive Targeting (TST)

Time sensitive targets require immediate response as they pose, or in the immediate future will pose, a clear and present danger to friendly forces, as well as presenting highly lucrative fleeting targets of opportunity. The physical composition of urban terrain suggests that a majority of critical targets will be time sensitive and must be quickly engaged. Successful TST is the joint product of rapidly networked information distribution and responsive, agile weapons platforms that have the capability to create timely, proportionate and discriminatory effects reliably and accurately.

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Modern airborne weapon systems are capable of responding swiftly to TST demands while retaining the flexibility to be re-tasked at any time in a single mission. In the context of the 3BW Plus a high proportion of offensive air support would be dedicated to real time targeting 'on request' from troops in contact with the enemy and to isolating the battlespace by neutralising enemy reinforcements.

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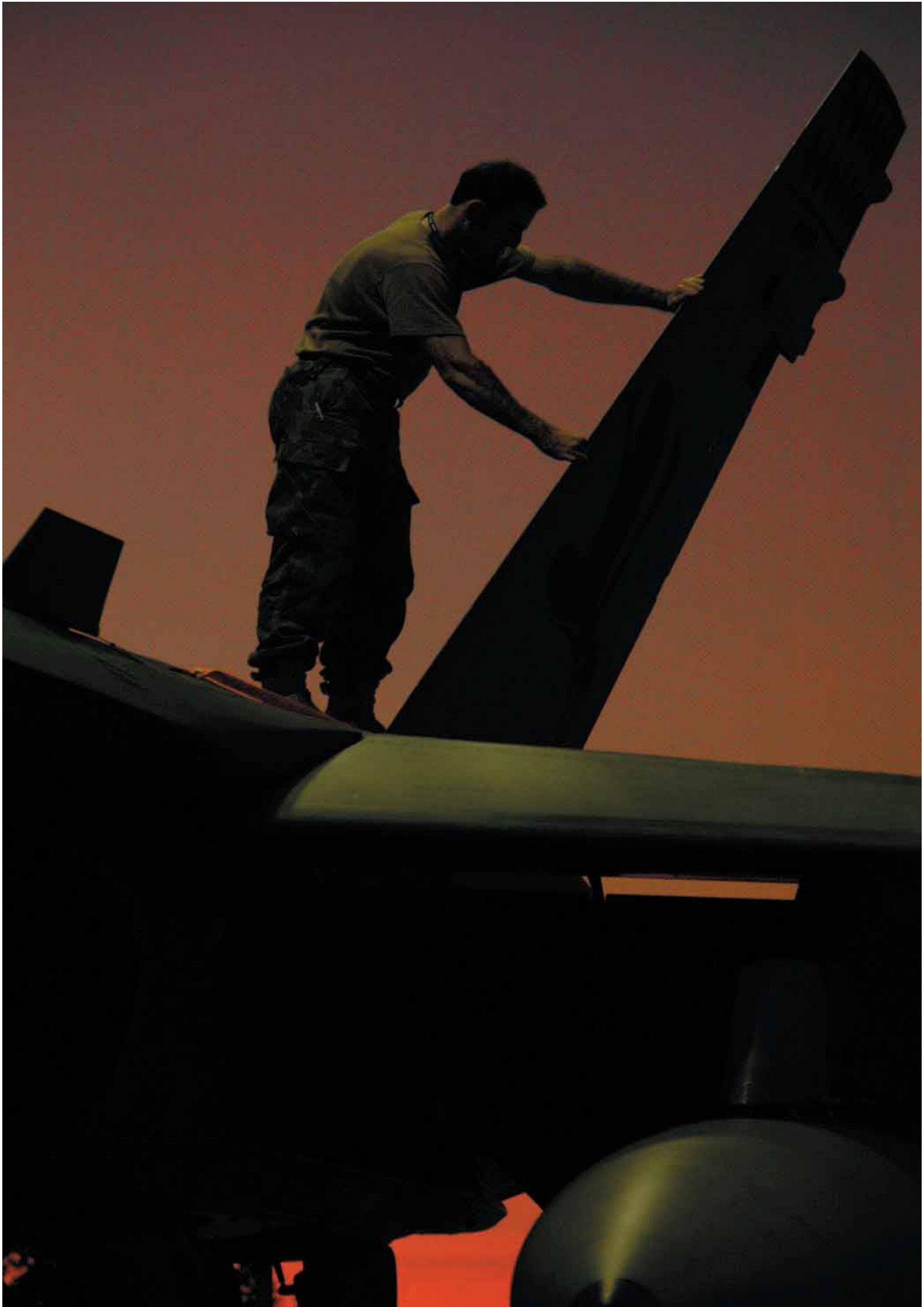
TST through offensive air power provides swift and calculated response to adversary manoeuvre and creates maximum synergy in the employment and application of joint forces.

UAVs provide air power with the increased persistences necessary to handle TST. Armed UAVs with sufficiently robust command and control and ISR capabilities for autonomous weapon release will change the concept of how the battlespace will be dominated. Although autonomous weapon release is still not a reality, it has already changed some of the traditional concepts of urban conflict. In the prosecution of the 3BW Plus, the employment of UAVs, both in the ISR and offensive support role, will deliver increased capabilities that will become war-winning factors.

Offensive employment of UAVs in the complex conflict environment is perhaps the most influential change that has taken place in urban operations in recent times.



Air Force's Operational Tempo and Peacetime Concurrency

Because of the maritime nature of the 'air-sea gap' to Australia's north, and in playing their ongoing part in ensuring Australia's security through border protection, Australia's Navy and Air Force maintain a certain operational tempo on a continuous basis even during times of peace. This facilitates shaping and deterrence activities designed to preclude or precede a conflict situation, and for Air Force, mostly involve the ISR, C2 and airlift elements. This is, in effect, a part of the 3BW Plus continuum.

Air Force's ISR capabilities are crucial to the successful execution of all ADF operations and contribute significantly to other government agencies' activities in the pursuit of national security. Air Force elements form an integral part of Australia's Border Protection Command and also provide search and rescue services across the Australian Maritime Safety Authority's vast area of responsibility. Air Force's C2 and airlift capabilities are at the vanguard of providing aid to the civil power and providing humanitarian assistance domestically, regionally and globally when required.

Air Force's ongoing part in national security operations also means that any further commitment to operations represents activity over and above the peacetime tempo and must be conducted concurrent with it. Overall, Air Force's operational tempo in peacetime is another example of air operations existing well outside the 3BW metaphor, and on a daily basis.

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Australia's Air Force is one of the best smaller air forces in the world today, and has repeatedly demonstrated its effectiveness in demanding situations. Concurrency in operations and size limitations demand efficiency. Therefore, all Air Force's plans, strategies, operational concepts and tactics have to be designed to be efficient to be effective. To ensure efficiency, Australia's Air Force selects systems and air platforms that are multi-mission capable, with the flexibility to switch roles at very short notice to meet emerging and fast-changing demands of operations in the 3BW plus.

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This flexibility is achieved by the professional mastery of Air Force people who are trained and educated to ensure that they can employ Air Force's systems to their full potential. Exploiting carefully nurtured experience is the hallmark of a professional airman who will have to exercise command and control of air assets in complex joint and multi-agency operations.

Conclusion

Australia's security environment is characterised by complex geography, especially in our nearer region, and a dynamic and demanding spectrum of modern conflict. Complex urban and littoral environments constrain surface force situational awareness and manoeuvre. Air power's freedom of action in the third dimension bypasses physical barriers and allows concurrent non-contiguous operations across an entire conflict space, the 3BW Plus, a much larger construct than that described by the 3BW metaphor. Taking the larger view creates a situation where friendly forces have the initiative, can dominate the battlespace and control the tempo of operations.

Globalisation has set the scene for a convergence of interests and a clash of cultures in the world's increasingly populated urban and littoral areas. These areas present the most likely and most demanding conflict spaces because in them even a numerically and materially inferior adversary can effectively challenge a much larger conventional power. The primary characteristics of the 3BW—the limitation of visibility, the physical denial of detection, negation of manoeuvre, the ineffectiveness of organic fire support, the incidence of disproportionate damage and casualties and the resource intensiveness—demand great responsiveness, versatility and control of effects. It also demands superior situational awareness and concurrency of action across the breadth of operations in the 3BW plus.

Australia's Air Force is one of the best smaller air forces in the world today, and has repeatedly demonstrated its effectiveness in demanding situations.

Air power is central to shaping the battlespace and creating situational awareness through the provision of a wide spectrum of high-technology sensors based on versatile platforms that offer persistence and real-time fidelity. The network of C2 and ISR nodes fuse the available data and create a common recognised operating picture that is disseminated to joint force participants, primarily through air and space platforms, to ensure maximum synergy.

Dominating the 3BW Plus battlespace requires the creation of reliable effects within a confined space and time. Urban conflict will present time-sensitive targets that will demand responsiveness and versatility in both targeting and weapon delivery. In addition, the weaponry will need to be precise and with proportional yield. Air power's ability to provide controlled, discriminatory effects with minimal collateral damage is a significant contributor to success in any such conflict.

Air and space power alone cannot win the 3BW Plus but is an essential and unique capability. A combined arms approach to complex environment operations has so far produced impressive results in the tactical, operational and strategic levels of warfare. Air power offers flexible solutions to otherwise intractable problems within the context of a 3BW Plus and demands a symbiotic relationship with surface forces in its prosecution.

CHIEF OF AIR FORCE