

An enterprise-wide continuous process improvement framework makes it possible for various cross-functional efforts linked together through a governance structure to create synergy.

contemporary issues

ACS: A Royal Australian Air Force Perspective
AFSO21: A Case Study in Process Improvement
DLA Forward Stocking: An Economic Analysis

Contemporary Issues in this edition presents three articles: “ACS: A Royal Australian Air Force Perspective,” “AFSO21: A Case Study in Process Improvement,” and “DLA Forward Stocking: An Economic Analysis.”

In “ACS: A Royal Australian Air Force Perspective” Wing Commander Scott Winchester, RAAF, makes the case that continuing to further improve ACS interoperability between the USAF and RAAF is in the interest of both air forces, with ACS being a fundamental enabler of air operations. The more interoperable ACS capabilities are regardless of whether the USAF or RAAF is the lead or contributing air force in a coalition, the more responsive and agile the combat support arrangements available to support the warfighter. The USAF and RAAF share a high level of commonality regarding ACS principles, with flexibility, adaptability, and scalability being critical factors of how we provide combat support.

Master Sergeant Kimberly A Fiato, USAF, in “AFSO21: A Case Study in Process Improvement” provides a comparative analysis of AFSO21 with private sector continuous process improvement (CPI) concepts. The article begins with an external environment analysis which provides a foundation

from which to identify external forces driving Air Force transformation and continuous improvement efforts. Next, a content review of Air Force doctrine and CPI case studies provides a frame of reference for a comparative analysis. Finally, the article concludes by summarizing the CPI similarities and differences among various private sector industries.

Previous research has investigated the feasibility of forward stocking relatively expensive, Air Force-managed parts and concluded that forward stocking was not economical. Currently, DLA only forward stocks an item if it has four-or-more demands in a year. The criteria’s intent is to ensure only high-use items are stored in-theater. In “DLA Forward Stocking: An Economic Analysis” the authors expand on previous efforts by considering the feasibility of forward stocking inexpensive, DLA-managed parts according to current DLA criteria, and additional criteria developed through the research. A general methodology is presented to model and evaluate the performance of forward stocking. Although the methodology is applicable to any potential theater, only United States Air Force Central Command with storage at Defense Distribution Depot Kuwait, is considered in detail.



ACS: A Royal Australian Air Force Perspective

Wing Commander Scott Winchester, RAAF

Introduction

The United States Air Force (USAF) and the Royal Australian Air Force (RAAF) share a long and proud history of cooperation and professional interaction since the Second World War. Our respective Services have been fighting side by side for many decades, from the Pacific theatre when our respective aircrews flew combat missions together over New Guinea in the dark days of 1942, to the Korean conflict, Vietnam, and the current Middle-East area of operations. Our nations are extremely close allies and friends, sharing a bond forged closer as a result of the Global War on Terror.

The fluid strategic environment since the Cold War has resulted in USAF and RAAF becoming agile and expeditionary-focused air forces capable of providing a wide range of rapid response options. The effective provision of Agile Combat Support (ACS)¹ to protect and sustain Air Force elements is fundamental to generating airpower and is a significant enabler for a balanced, expeditionary Air Force. The USAF ACS Concept of Operations (CONOPS) is one of seven Air Force CONOPS and is the foundational combat support CONOPS of that Air Force.² The level of combat support must be consistent with the operational requirement, and needs to be flexible and responsive. Furthermore, the likelihood of coalition operations is very high, with close cooperation and interoperability between coalition forces vital to generate and sustain airpower. ACS capabilities must be able to incorporate Joint and coalition elements into a USAF, RAAF, or other coalition member-led force.

The USAF and RAAF could expect to join a coalition as either the lead air force or as a contributor. Coalition partnerships prosper when there is a sound understanding of each others capabilities, with different air forces

bringing important specialist capabilities to the fight. Hearing another perspective on ACS also expands our own understanding of this important force enabler; what aspects are shared, and what aspects are done differently.

The aim of this article is two-fold: first, outlining how ACS is provided at the tactical level by RAAF, providing a smaller Air Force perspective on ACS and second, outlining ACS interoperability issues between the RAAF and USAF.³ The article initially outlines the broad principles regarding Australian Defence Force (ADF) airbase doctrine, providing a brief outline of how RAAF is structured to deliver airpower, describing the role and structure of the Combat Support Group (CSG), and outlining the expeditionary combat support capabilities RAAF can bring to the fight. The article then outlines the key points of RAAF tactical level ACS, before detailing recent RAAF operational experience, and the exercise and training hierarchy. The RAAF ACS capability management structure is then briefly explained. Finally, this article details ACS interoperability issues between RAAF and USAF, and outlines the writer's own reflections from working with USAF.



Discussion

Airbase Doctrine

Australian Defence Force Publication 3.15 (ADDP 3.15), *Airbase Operations* (provisional release) provides the doctrinal framework regarding airbase operations for the ADF, detailing the roles and functions of an airbase, its infrastructure, and force protection requirements to generate airpower and sustain operations.⁴ ADDP 3.15 emphasizes airbases are:

- Weapons systems to generate, operate, and sustain airpower missions,
- Pivotal Joint capability that can support a range of operations from special operations; surveillance and reconnaissance; entry, exit, and sustainment points for land operations; and evacuation points. An airbase may need to support one or any combination of operations concurrently.

An airbase needs to be a safe, secure, and effective platform to conduct air operations. With airbase support being operational in nature, it should not be confused with *support* as defined under logistics or other military doctrine.

Delivery of RAAF Airpower

First, let me provide some perspective. The RAAF's permanent force (active duty equivalent) is 13,500 personnel, with approximately 2,500 reservists.⁵ Air Command is the RAAF warfighter major command equivalent, responsible for raising, training, and sustaining Air Force capabilities provided to a Joint

Force Commander. Air Command is organized into six force element groups (FEGs).⁶

- Air Combat Group operates F/A-18 fighter, F-111 strike, and Hawk jet training aircraft. F/A-18F Block II Super Hornet aircraft will replace the F-111 fleet after 2010. Australia is a Joint Strike Fighter (JSF) project partner.
- Air Lift Group operates the C-17, C-130, B-707, Caribou, and the VIP aircraft fleet, and is receiving KC-30B refueller/strategic airlifters in the future to replace the B-707.
- Surveillance and Response Group (SRG) operates maritime P3C aircraft, and commands the air defence and air traffic control elements, and will receive airborne early warning and control aircraft in the next few years.
- Air Force Training Group is responsible for air and ground training.
- Aerospace Operations Support Group is the research and development FEG.
- CSG is the designated FEG providing ACS for RAAF, commanding the airbases, providing airbase combat support services, and Air Force expeditionary combat support capability in either a Joint or coalition environment.⁷

Combat Support Group

CSG's mission is to provide the ADF with a secure, fully functioning expeditionary airbase capability in either a Joint or coalition environment. CSG provides a range of flexible combat support (FCS)⁸ capabilities to meet these requirements, including the provision of services on fixed airbases within Australia. FCS is a fundamental enabler for ADF and RAAF air operations, similar in nature to the way ACS provides the foundation for USAF operations. CSG has 3,300 personnel (25 percent of RAAF uniformed manpower), operates 13 airbases, 3 bare bases, 15 air weapons ranges, and is organized into 3 wings and has 22 squadrons. Refer to Figure 1.

CSG is commanded by a one star officer, with headquarters staff being responsible for the raise, train, and sustain functions of the group. The Combat Support Coordination Centre is the single point of contact for higher headquarters regarding the group's combat support planning and coordinates taskings and activities for the commander. CSG units are organized into 3 wings; 395 and 396 Expeditionary Combat Support wings (ECSW) and Health Support Wing (HSW), each commanded by an O-6. HSW provides the RAAF's medical, dental, environmental health and aeromedical evacuation (AME) capabilities. 395ECSW controls the southern Australian airbases and specialized airfield defence squadrons. The northern airbases, the combat support element located at Butterworth airbase in Malaysia, and the specialist combat support units (combat communication squadron and airfield operational support squadron) are controlled by 396ECSW.

Expeditionary combat support squadrons (ECSS) form the cornerstone of RAAF expeditionary airbase activation and sustainment capability. ECSSs have a dual role, providing ACS at home base and providing an expeditionary combat support capability. Personnel from the specialist combat support units are usually attached to a deploying ECSS or a combat support element to provide an expeditionary airbase ACS capability. The skill sets and professional competencies of ECSS and specialist unit personnel are developed and maintained at home base and

Article Acronyms

ACS – Agile Combat Support
ADDP – Australian Defence Doctrine Publication
ADF – Australian Defence Force
AEG – Air Expeditionary Group
AME – Aero Medical Evaluation
AOR – Area of Responsibility
ASNR – Air Senior National Representatives
BIAP – Baghdad International Airport
CONOPS – Concept of Operations
CSG – Combat Support Group
CRG – Contingency Response Group
C2 – Command and Control
CSSG – Combat Support Sub-Group
ECSS – Expeditionary Combat Support Squadrons
ECSW – Expeditionary Combat Support Wing
FCS – Flexible Combat Support
FEG – Force Element Groups
HSW – Health Support Wing
HQ CSG – Headquarters Combat Support Group
ITV – In-Transit Visibility
PACAF – Pacific Air Forces
RAAF – Royal Australian Air Force
RFID – Radio Frequency Identification
SRG – Surveillance and Response Group
TAV – Total Asset Visibility
TU – Task Unit
TTP – Tactics, Techniques, and Procedures
USAF – United States Air Force
WSP – Weapon System Plan

then used in the expeditionary environment. By way of comparison, generically and on a smaller scale, an ECSS combines the role and function of a USAF contingency response group (CRG) and air expeditionary group (AEG).

RAAF ACS Capabilities

The CSG CONOPS emphasizes flexibility, adaptability and scalability, with CSG ACS functional capabilities structured into nine *capability bricks* which can be combined and tailored, depending on the circumstances, to provide a flexible and scalable combat support package to meet a wide variety of tasks. The ACS capability bricks are:⁹

- Command and control (C2) including command of the airbase and emergency response capabilities, providing support to wing operation centre and joint force air component commander elements, coordinating allocation of airbase facilities and estate, liaising with local and civil authorities, and coordinating air and ground safety.
- Airbase operations support consisting of air traffic control (personnel provided by SRG), airfield navigation and landing aids, foreign object damage control, communications and information systems, ground support equipment, and evacuee handling.
- Airbase force protection involving airbase security, access control, and patrolling agreed tactical area of responsibility.
- Airbase logistics support covering air terminal services, storage and distribution of all classes of supply, vehicles, inventory management, catering, and messing.
- Airfield engineering including maintaining airfield movement surfaces and lighting, base utilities, facility maintenance, airfield surveys, and passive defence works.
- Health and safety, providing health care, casualty evacuation, AME, environmental health, aviation medicine, dental, and psychology services.
- Emergency response and recovery including airfield emergency, rescue and fire fighting, explosive ordnance disposal and improvised explosive device response, and post-attack recovery.
- Administration and coordination covering personnel and welfare services, chaplaincy, physical training, legal, disciplinary, postal, and conditions of service.
- Force Preparation involving preparing air component elements for deployment.

CSG ACS capabilities are wide ranging from activating, protecting and sustaining an expeditionary airbase to providing specialist ACS capabilities that can *plug and play* with other ADF elements or coalition forces. Each expeditionary task is usually different, and CSG tailors a combat support package to support each specific mission. Important determinates for the capability

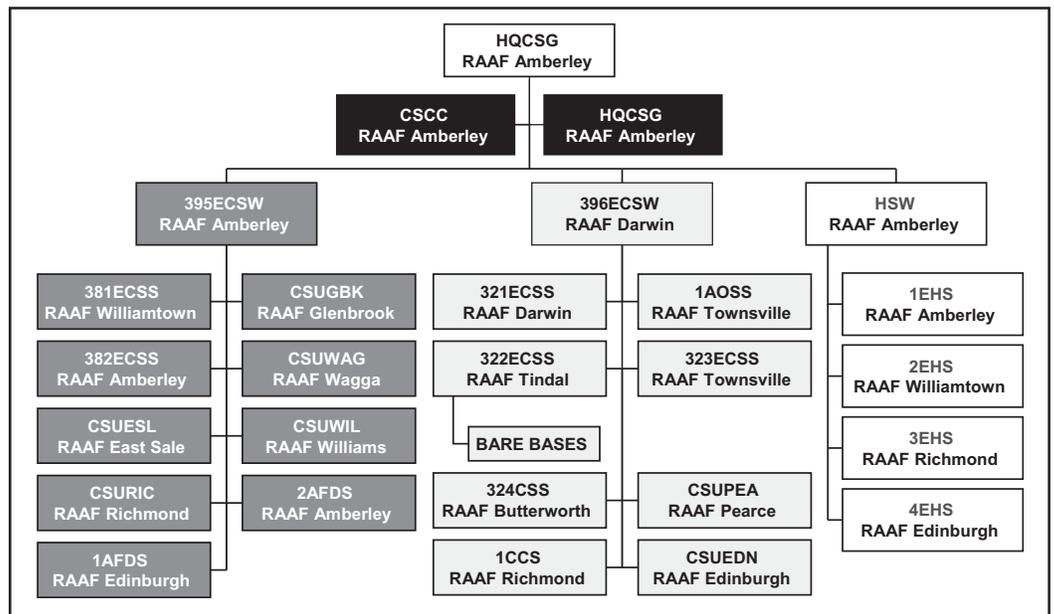


Figure 1. RAAF CSG Organization

and size of the combat support element include the operational task that can vary from activating an airbase to providing a specialist capability, location of the mission, available infrastructure, coalition and host nation support, unique mission requirements, threat level and environmental factors, expected mission duration and sustainment considerations, and higher level constraints (for example, resource cap).

Key Points of RAAF ACS

CSG is a significant enabler to RAAF as a balanced expeditionary air force capable of achieving the Australian government's objectives. ACS principles form the cornerstone of how CSG conducts business, with the group having to be flexible and adaptable to quickly respond to a wide range of Joint and coalition operational tasks. The following key points detail how RAAF provides combat support:

- A specific organization, Combat Support Group, providing airbase combat support at RAAF fixed airbases, and primary responsibility for providing expeditionary airbase ACS capability in either a Joint or coalition environment.
- Appointing a base commander with responsibility for *fighting the airbase*, ensuring effective delivery of combat support to all airbase activities. The base commander is charged with providing a safe, secure, and effective airbase by commanding the airbase including the provision of infrastructure and support services, controlling airbase services, and commanding airbase force protection and emergency response. In an expeditionary environment, the deployed ECSS commanding officer or senior ECSS officer would be appointed the base commander, and may not be (and usually is not) the senior officer on the airbase.
- One airbase may support many users ranging from air combat, mobility, surveillance, evacuee handling, special operations, to land and maritime forces. Therefore, an airbase may need to support a full range of capabilities.
- ACS functions divided into a *capability brick* construct providing tailorable response options to meet specific mission needs.

- Possessing ACS capabilities able of performing a wide range of airfield services to providing specialist capabilities that can plug and play into other ADF and coalition forces.
- Expeditionary ACS units employing a rotational online concept to respond to *short notice to move* taskings.

CSG Operational Taskings

CSG has maintained a very steady operational tempo since formation in 1998. For example, CSG elements have:

- Deployed to East Timor and the Solomon Islands to activate airfields in support of peacekeeping operations
- Activated a bare base to support P3C Orion aircraft surveillance operations to counter illegal immigration into Australia
- Supported fighter, airlift, surveillance, air traffic control, medical, and training missions in the Middle-East area of responsibility (AOR)
- Provided humanitarian assistance after the Asian tsunami and Pakistan earthquake.

These operations have indeed ranged from activating airfields, supporting ADF task groups forming part of a larger coalition force, to providing specialist ACS capabilities in support of humanitarian assistance.

CSG ACS Training

In addition to operational commitments, CSG has frequent exercise and scheduled training requirements. Intra-unit-level training focuses on individual and career field specific professional competencies, and collective unit exercises concentrate on ensuring personnel and equipment are ready to meet online preparedness requirements and improving expeditionary related competencies. Wing level exercises validate tactics, techniques, and procedures (TTP), measure compliance to wing standard operating procedures, and consolidate individual and collective expeditionary related skills. The emphasis of ADF level and multinational exercises such as Exercises Pitch Black and Talisman Sabre is joint and combined cooperation and interoperability.

ACS Capability Management

RAAF has a formal mechanism to manage and enhance its ACS capability. The FCS Capability Plan is one of four Air Force capability plans, and is the strategic level ACS related capability master plan outlining RAAF current combat support capabilities and what future capabilities are required. Headquarters CSG manages the *CSG Weapon System Plan* (WSP) providing the group's road map for new and enhanced combat support and airbase capability at the operational level. The WSP outlines existing and future capability requirements and reflects the commander's capability priorities. Each functional lead staff officer within HQ CSG (force protection, engineering, logistics, and so forth) are capability functional managers, each maintaining their own WSP subplans, providing a more detailed list of ACS related capability requirements. Subplan requirements are fed into the CSG WSP. The wings and squadrons within CSG are the ACS capability providers, and can raise submissions to identify and assist in overcoming ACS capability deficiencies. Accordingly, ACS capability enhancement can be driven both

ways, from the top down by RAAF Headquarters or HQ CSG, or bottom up by the ACS capability providers.

Coalition ACS Interoperability

Modern military operations usually involve air forces working as part of a Joint or coalition force. The ADF may lead coalition operations in Australia's region, or may be a junior coalition partner in operations further afield. Therefore, interoperability is a key component of ensuring coalition forces gain maximum benefit from each contributor and ensuring the collective combat power of coalition forces is effectively utilized. Interoperability needs to occur across a range of areas including people; equipment; terminology; and TTPs. Interoperability needs to work both ways, between senior and junior coalition partners, and is always a challenge being easier said than done. Additionally, the writer appreciates USAF, as the world's most powerful air force and usually the lead contributor to a large coalition force, has to look at interoperability across the full spectrum of allies and coalition partners.

So in what aspects of ACS is interoperability important? The following subparagraphs outline ACS related interoperability issues the writer believes are critical in a coalition environment:

- **C2.** All coalition partners need to plug into the airbase or headquarter C2 network to ensure situational awareness and maintaining a common operating picture, to coordinate and control mission assets, force protection and emergency response components of an airbase. C2 links may be formal or informal depending on the situation. USAF commanders also need to be aware that, in addition to any coalition joint task force C2 linkages, RAAF commanders will also have an Australian national command line.
- **Communications.** To work together effectively coalition partners need access to the appropriate communications networks, whether it be information technology systems (unclassified and classified), radio net, headline, and so forth. Communication systems should be placed in respective work areas to ensure instant connectivity, or if not practical to do so, in a location readily accessible to users. Therefore, coalition requirements need to be factored into airbase and headquarters communication system plans.
- **Information Sharing.** Access to classified information and systems may cause problems, particularly if a coalition consists of numerous partners. Although RAAF is usually given privileged access to classified *need to know* information, the lowest common denominator is sometimes applied to coalition partners, restricting the smooth flow of information. Coalition partners also need to uphold their own responsibilities by ensuring their personnel possess the appropriate security clearances and necessary documentary proof to allow the cross-flow of classified information. Sharing of information works both ways.
- **ACS Equipment.** A good proportion of RAAF inventory is US-sourced, making equipment interoperability more straightforward; however, as ACS covers such a wide range of items, there is no guarantee of similar type equipment seamlessly interfacing. For example, a relatively simple matter (such as differing power voltages) may cause initial connectivity problems. ACS equipment interoperability issues, such as single fuel initiatives are important developments in the Joint and coalition environment.

Additionally, coalition partners need to have established procedures to facilitate the loan of equipment to other nations if advantageous to do so.

- **In-Transit Visibility.** In-transit visibility (ITV) and the larger concept of total asset visibility has been, and continues to be, a problem faced by all military services, let alone an issue that has been resolved at the Joint and coalition level. ITV is a key component of the logistics interface, as it is usually a combined coalition effort to transport and distribute supplies to, and within, an AOR. Traceability and accountability of items is important to air forces, with RAAF and USAF each being in the process of introducing radio frequency identification (RFID) systems to improve ITV. Therefore, it is not by accident the ADF RFID system being introduced has copied the architecture of United States and United Kingdom military systems. How different RFID systems can interface will be an ongoing issue for both air forces, with RAAF and USAF currently undertaking a trial to assess traceability of items through each other's distribution system using RFID technology.
- **Integrated ACS capability.** RAAF and USAF senior leadership are eager to continue to strengthen coalition interoperability with close allies. While the primary focus for Air Force interoperability is related to flying operations, opportunities to improve ACS capability interoperability are

spoken and use similar ACS language and terminology. Both RAAF and USAF are expeditionary focused air forces, emphasizing agility and responsiveness.

- **Equipment Compatibility.** Possessing similar type or compatible equipment capable of interfacing easily and effectively greatly assists coalition partners to function together from the very beginning. Having North Atlantic Treaty Organization standards and forums such as Air and Space Interoperability Council assists with the equipment interface issue.
- **Forums.** The Air Senior National Representatives (ASNR) forum has a combat support subgroup (CSSG) charged with providing an implementation plan and roadmap to improve combat support related interoperability between RAAF and USAF. The Pacific Air Forces (PACAF) Logistics, Installations and Mission Support community provides USAF representation on the CSSG. The ASNR long-term objective is an air force element from one nation (either US or Australia) being able to fully integrate into a deployed force from the other nation.
- **Exchange and Liaison Officers.** Both air forces have had for many years a network of exchange and liaison officers providing an excellent opportunity to learn from each other, providing another perspective, and maintaining close working

Modern military operations usually involve air forces working as part of a Joint or coalition force. The ADF may lead coalition operations in Australia's region, or may be a junior coalition partner in operations further afield. Therefore, interoperability is a key component of ensuring coalition forces gain maximum benefit from each contributor and ensuring the collective combat power of coalition forces is effectively utilized.

being pursued. The RAAF and USAF ACS communities need to practice similarly to how the flying community has been interacting and practicing together for many decades. Both RAAF and USAF need to have ACS capabilities capable of *plugging and playing* into a combat support element led and largely provided by the other air force. The litmus test of whether RAAF and USAF has achieved true ACS interoperability is the ability to quickly form combined combat support elements as required, consisting of RAAF and USAF ACS specialists, and successfully completing designated missions.

Interoperability Mechanisms

The good news is that mechanisms are currently in place to assist with further improving ACS interoperability between RAAF and USAF. ACS interoperability is being achieved by

- **ACS Doctrine.** Although there are some nuances between RAAF FCS and USAF ACS doctrine, essentially both air forces

relationships between our air forces. Exchange and liaison officer positions need to remain relevant, ensuring both air forces gain mutual benefit from the positions, and focused on improving interoperability. Establishing short-term (3 to 4 months) work experience positions in ACS related units could also be beneficial to both RAAF and USAF. RAAF has such arrangements with the Royal Air Force and Royal New Zealand Air Force. For example, a RAAF junior officer or senior enlisted airman could gain work experience in a USAF unit to gain valuable hands-on professional knowledge. USAF personnel could do likewise in an RAAF ACS related unit.

- **Exercises and Training.** RAAF and USAF have exercised together for many decades. While the primary focus is understandably on flying operations, opportunities need to be taken within the current exercise program to improve ACS interoperability. To operate rapidly and effectively in an AOR requires a strong commitment to train and exercise together, otherwise the ASNR objective stated above remains a pipe

dream. Accordingly, Pacific Air Forces logistics staff has observed recent RAAF base activations supporting flying exercises in northern Australia, commenting favorably on the potential to exercise combat support related capabilities. Senior RAAF ACS leadership have also observed USAF Silver Flag and Eagle Flag exercises, noting the potential benefit to RAAF of participating on future exercises. Both air forces now need to go beyond observer status, committing resources on a frequent basis to participate on each others exercise and training activities, forging a path to closer ACS interoperability. Currently, RAAF leadership is actively pursuing USAF ACS related exercise and training opportunities.

- **Operational Experience.** RAAF and USAF continue to operate side by side in the Middle-East AOR, gaining valuable experience from working closely together. There are clear benefits from working together to support coalition military operations, gaining exposure to each others way of doing business and providing an opportunity to cement professional relationships and understanding.

Personal Observations

The writer now offers some personal observations regarding how USAF and RAAF provide combat support and operate together, and some of the issues faced by both air forces, having had the privilege of working with USAF in the AOR and currently being an exchange officer in the Directorate of Logistics Readiness, (AF/A4R) Headquarters USAF.

The first experience relates to the writer's experience as commander of the RAAF Task Unit (TU) at Baghdad International Airport (BIAP) providing air traffic control services and associated combat support services to support the mission. A close working relationship was developed between the deployed RAAF TU and USAF 447th Air Expeditionary Group (AEG) at Camp Sather, BIAP. This relationship permeated all rank levels and across the spectrum of combat support functions. For example, the 447th AEG provided some necessary communication networks to RAAF allowing direct connectivity to US military elements, which contributed to providing safe airspace and improving RAAF TU situation awareness of the airfield. Working relationships were developed at all levels, covering C2, airfield operations and emergency response, intelligence reporting, force protection, civil engineering, vehicles and fuel. These strong working relationships were developed and maintained through close and frequent liaison, building a level of trust and professional respect. However, these relationships were not based on all work and no play. Relationship building was cemented over a *near-beer* while eating a burger at frequent social functions. This close interaction was mutually beneficial to RAAF and USAF, with relationship building being a crucial part of maintaining a close coalition.

The second experience relates to the writer's current position as an exchange officer working in AF/A4R at the Pentagon. My highest professional respect for the men and women of the USAF has been reinforced by my Air Staff experience, with many USAF initiatives focused on ways to be more agile, scalable, and expeditionary focused. Program Budget Decision 720 cuts resulting in USAF personnel reductions are a key driving force behind doing the same (or more) with less. For example, the USAF logistics readiness career fields are being reduced during the next few years, while still expected to support a similar number of

combat coded units. Although RAAF is much smaller compared to USAF, ADF initiatives and personnel reductions during the 1990s made RAAF a more expeditionary, combat focused force. Amalgamation of career fields, multi-skilling personnel, and outsourcing noncombat related functions assisted RAAF to meet its personnel target, while not reducing combat capability. In fact, the writer may be so bold as to suggest these reductions, combined with an increase of operational tempo, sharpened RAAF combat focus. This is not to say there was, and continues to be, many challenges regarding the provision of ACS across RAAF. Accordingly, the writer sees many similarities with the issues currently being faced by USAF and the steps RAAF had (or was forced) to take to trim manpower while supporting the same, or in some cases a growing aircraft fleet, and increasing operational commitment. RAAF is now undergoing a reshaping initiative (with a minor increase in overall personnel numbers); ensuring the right workforce mix is struck to operate and sustain our new and future capabilities, while still maintaining a steady operational tempo.

Conclusion

Continuing to further improve ACS interoperability between USAF and RAAF is in both our respective air force interests, with ACS being a fundamental enabler of air operations. The more interoperable our ACS capabilities are regardless of whether USAF or RAAF is the lead or contributing air force in a coalition, the more responsive and agile the combat support arrangements available to support the warfighter. USAF and RAAF share a high level of commonality regarding ACS principles, with flexibility, adaptability, and scalability being critical factors of how we provide combat support.

Largely because of smaller size and organizational construct, the majority of RAAF tactical level ACS is provided under the single umbrella of CSG, operating and commanding the permanent airbases and providing the air force expeditionary combat support capability in either a Joint or coalition environment. RAAF ACS functional capabilities are structured into *building blocks*, providing tailorable response options from activating an expeditionary airbase to providing specialist ACS capabilities that can plug and play into a Joint or coalition force. CSG ECSS form the cornerstone of RAAF expeditionary airbase activation and sustainment capability. Conceptually and on a smaller scale, an ECSS combines the role and function of a USAF CRG and AEG.

RAAF possesses recent operational experience, ranging from being a junior coalition partner to being lead contributor in a coalition force. CSG elements have, as part of a Joint task force, activated airfields in support of peacekeeping operations, and supported a range of combat operations and humanitarian relief missions in the Middle-East and Asia-Pacific regions. In addition to these operations, CSG units undertake scheduled training and exercises, ranging from unit and wing level activities to Joint and coalition level exercises.

RAAF ACS capability is developed and managed via the Flexible Combat Support Capability Plan and Combat Support Group Weapon System Plan. These plans provide the roadmap for new and enhanced combat support and airbase capability. ACS related capability submissions can either be raised from the

top level by either HQ USAF or HQ CSG, or from the bottom up by the units, the ACS capability providers.

USAF and RAAF are both working hard on continuing to improve interoperability in the air and on the ground, taking a multifaceted approach to further improving ways we operate together. ACS interoperability mechanisms are established and becoming more robust, with further ACS related training and exercise opportunities being actively pursued, and allowing the transfer of information and ideas. Interoperability between coalition partners is a two-way street, involving an open exchange of information and concepts, implementing best practice, having a sound understanding of each coalition partner's capabilities and using them to best effect, and training and refining the practical application of interoperability.

Based on my personal observations of working with USAF, I have the highest respect for the professionalism and dedication of the members of the most powerful air force in the world. Both USAF and RAAF are expeditionary focused air forces, striving for ways of improving the flexibility and responsiveness of ACS to support the warfighter.

End Notes

1. The RAAF uses the term Flexible Combat Support (FCS) in lieu of ACS. For consistency, ACS is used throughout this article. RAAF FCS is the mix of functions required to support the desired level of airpower

2. Air Force Deputy Chief of Staff for Installations and Logistics, *USAF Agile Combat Support Concept of Operations*, 15 July 2003, 3.
3. The ACS interoperability issues raised in the article are based on my own experiences working with the USAF in the Middle-East area of operations and on exchange posting on the Air Staff, and from information I have solicited from other RAAF officers.
4. Australian Defence Force, Australian Defence Doctrine Publication 3.15, *Airbase Operations (provisional)*, 1 September 2006. ADDP 3.15 provides the application level doctrine for development, maintenance, and command of ADF airbases. Airbases can range from main operating bases, forward operating bases, bare bases, captured enemy airfields, austere airfields, and civilian airports.
5. Australia has no National Guard equivalent.
6. RAAF is structured into groups, wings, and squadrons or units.
7. Combat support is a recognised output or capability as with air combat or airlift.
8. Refer to Note 1 defining RAAF FCS.
9. RAAF Combat Support Group, *Combat Support Group Concept of Operations (CSG CONOPS)*, unclassified version, 2003.

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Knowledge - Technology - Innovation

Lots of organizations have catchy mottoes. Likewise, many have catchy vision statements. We do, too. But there's a big difference—we deliver on what we promise. *Generating Transformation Solutions Today; Focusing the Logistics Enterprise of the Future* aren't just words to us; they're our organizational culture. We use a broad range of functional, analytical, and scientific expertise to produce innovative solutions to problems and design new or improved concepts, methods, systems, or policies that improve peacetime readiness and build war-winning logistics capabilities. Our key strength is our people. They're all professionals from logistics functions, operational analysis sections, and computer programming shops. Virtually all of them have advanced degrees. But more important, virtually all of them have recent field experience. They've been there and done that. They have the kind of experience that lets us blend innovation and new technology with real-world common sense and moxie. It's also the kind of training and experience you won't find with our competitors. Our special blend of problem-solving capabilities is available to every logistician in the Air Force.

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