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PREFACE AND ACKNOWLEDGMENTS

Papers have been printed as provided by the authors, with only minor changes to achieve some consistency in layout, spelling and terminology. The transcripts of the panel discussions that followed the presentation of the papers have been edited for relevance, clarity and brevity. Copies of the edited papers and transcripts were sent to the authors for comment before publication.

My thanks are due to my colleagues at the Air Power Development Centre, in particular Mr Graeme Smith and Ms Sandra Di Guglielmo, for their highly professional editorial assistance.

Keith Brent
Air Power Development Centre, Canberra
January 2009
Notes on Contributors

Air Marshal Geoff Shepherd, AO

Air Marshal Geoff Shepherd was born on 24 January 1952 and attended Brisbane State High School. He commenced his RAAF service with the 1971 RAAF Academy intake and graduated in December 1974 with a Bachelor of Science (Physics) degree from Melbourne University. He was posted to RAAF Williamtown for Mirage III conversion, and in 1977 joined No 3 Squadron at Air Base Butterworth, Malaysia, where he flew on fighter operations until the end of 1979.

On return to Australia, Air Marshal Shepherd flew the F-111 at No 1 Squadron, RAAF Amberley, until late 1981 when he undertook flying instructor training at Central Flying School, East Sale. He instructed at No 1 Flying Training School, Point Cook from 1982 to mid-1984, returning then to the F-111 as Training Flight Commander No 6 Squadron until the end of 1987.

Air Marshal Shepherd served as the Assistant Defence Adviser at the Australian High Commission in Singapore from 1988. He was promoted to Wing Commander and returned to Australia in December 1990 on appointment as Commanding Officer No 6 Squadron.

In July 1993 Air Marshal Shepherd undertook staff training at the Joint Services Staff College and followed this with a posting to Headquarters Australian Defence Force Development Division as Deputy Director – Capabilities Analysis (Air).

He was promoted to Group Captain and posted to the position of Officer Commanding No 82 Wing in December 1995. In December 1998 he was promoted to Air Commodore and posted to Headquarters Air Command as Chief of Staff. He then spent two years as the Director General Operations in the Defence Signals Directorate, followed by a year in Strategic Operations Division as Director General Joint Operations and Plans during the planning for and conduct of Australia’s involvement in Iraq and the Solomon Islands.

Air Marshal Shepherd was appointed a Member of the Order of Australia (AM) in the Australia Day 2000 Honours List. He was recognised for his exceptional service to the Royal Australian Air Force and the Strike Reconnaissance Group in the field of operations during his tenure as Officer Commanding No 82 Wing.

Air Marshal Shepherd was promoted to Air Vice-Marshal in December 2003 and appointed Air Commander Australia with effect 15 December 2003. During his tenure, operational command and control was significantly enhanced with the introduction of the Joint Forces Air Component Commander concept and the development of the Air Operations Centre.

He was promoted to Air Marshal and appointed as Chief of Air Force with effect 4 July 2005. Air Marshal Shepherd has flown around 4500 hours, of which 2500 are on the F-111.

Air Marshal Shepherd was appointed an Officer of the Order of Australia (AO) in the Queen’s Birthday 2006 Honours List for distinguished service to the Australian Defence
Force in senior command and staff appointments. He has also been awarded the Meritorious Service Medal (Military Division) by Singapore and has been appointed a Commander in the United States Legion of Merit.

Air Marshal Shepherd retired on 4 July 2008.

Air Marshal Shepherd is married to Anne and they have two sons, Rohan, born in 1983, and Jarvis, born in 1985. Air Marshal Shepherd’s interests include travelling and understanding other cultures, gardening and rugby league football.

Dr Chris Clark

Dr Chris Clark has been the RAAF Historian since 2004 and heads the Office of Air Force History within the Air Power Development Centre.

In 1987 he became Chief of the Air Staff Historian, while writing a commissioned history of the early RAAF. On completing that project, and a PhD in History from the University of New South Wales, in 1991 he was appointed Historical Fellow at the Air Power Studies Centre (the forerunner of the Air Power Development Centre) while writing a volume of official history covering RAAF operations in the Vietnam War. Between 1993 and 1999 he conducted his own historical consultancy, writing histories on a contract basis.


Group Captain Doug Hurst, MBE (Retd)

During a 33-year RAAF career, Doug Hurst flew as a maritime and transport navigator and navigation instructor for 20 years. He worked in Personnel, Plans and Resource Management, and is a graduate of both the RAAF and Joint Services Staff Colleges.

Air Commodore Mark Lax, CSM

Air Commodore Lax joined the Royal Australian Air Force Academy in January 1974 and graduated dux of his class. After navigator training, he had operational (C-130 and F-111), flight test and instructional tours before completing a staff position in Air Force Headquarters, working on F-111 enhancement projects. In 1991, he was appointed to command RAAF Base East Sale in Victoria, during which time he was awarded the Conspicuous Service Medal (CSM).

After two years, he was posted to the RAAF Air Power Studies Centre, producing air doctrine, examining aerospace trends and conducting long-term planning. It was during this time that he completed his Masters degree with first class honours. Following this, he was selected as Australia’s student to USAF Air War College, graduating with the Commandant’s Prize for Excellence. He was subsequently appointed Base Commander of RAAF Richmond, Australia’s largest and busiest base.

In following years, Air Commodore Lax held appointments at Air Command as both Director Plans and Development, and as Director Military Strategy in Strategic Policy Division. Just prior to promotion to Air Commodore, he served as Australia’s Senior National Representative at US Central Command Headquarters for the War on Terror. He was then posted back to Air Force as Director General Policy and Plans, working to the Deputy Chief. In January 2005, he returned to Strategic Policy Division as Director General Military Strategy, and in 2006 took up a new position—Director General Strategic Policy—responsible for strategic assessments, the strategic plans function and a wide range of high level strategy and long-term planning documents.

Air Commodore Lax retired from the Permanent Air Force in January 2007 and formed his own consultancy business, Strategic Perspectives. He is an active member of the RAAF Reserve Staff Group and, amongst other work, was the Managing Editor of the Australian Defence Force Journal until December 2008.

Air Commodore Lax is a graduate of the RAAF Academy, RAAF School of Air Navigation, RAF GD Aerosystems Course at Cranwell, RAAF Staff College, USAF Air War College and the Kennedy School of Government, Harvard University. He enjoys cricket, reading, writing and publishing on military aviation history.

Dr Alan Stephens, OAM

Dr Alan Stephens is currently a visiting fellow at the School of Humanities and Social Sciences at the University of New South Wales, Australian Defence Force Academy. Dr Stephens has previously been a visiting fellow at the Australian National University; a senior lecturer at the University of New South Wales; a principal research officer in the Australian Federal Parliament; the official historian for the Royal Australian Air Force; and a pilot in the RAAF, where his postings included service in Vietnam and an appointment as the Commanding Officer of No 2 Squadron.

His principle research interests are contemporary strategy and Australian defence policy. He is the author of numerous books and articles on security, military history, doctrine and
air power, and his works have been published in 12 countries. He has lectured extensively on those subjects throughout Australasia, South-East Asia, Europe and North America.

He is a graduate of the RAAF Staff College, and of the University of New England, the Australian National University and the University of New South Wales.

Dr Stephens was awarded the Medal of the Order of Australia (OAM) in the Queen’s Birthday 2008 Honours List in recognition of his service as an historian of the Royal Australian Air Force and a contributor to the development of air power strategy and doctrine.

**Mr Sebastian Cox**

Mr Sebastian Cox is the Head of Air Historical Branch and Chief Historian of the Royal Air Force. He was appointed the Curator of Documents at the Royal Air Force Museum in 1981. He has been with Air Historical Branch since 1984, serving as Research Assistant, Historian and Deputy Head, until his appointment to his current position in 1996.

Mr Cox has written widely on air power history and related topics and has edited two book series on air power subjects—Frank Cass’s *Studies in Air Power* series and the Whitehall History Group’s *RAF Official Histories*. He also sits on the editorial board of the Royal Air Force *Air Power Review* and the *Defence Studies Journal*. He has lectured on many aspects of air power history to Staff Colleges and military and academic audiences in the US, Canada, New Zealand, Germany, France, Norway, and the Czech Republic. As Head of the Air Historical Branch (RAF) in the UK Ministry of Defence, he works directly for the UK Air Staff and is ultimately responsible to the Assistant Chief of the Air Staff. As well as lecturing and publishing on all aspects of RAF history, the Air Historical Society Branch writes internal classified studies of recent RAF operations.

Mr Cox holds a Bachelor of Arts in History from the University of Warwick and Masters of Arts in War Studies from King’s College, London.

**Dr Richard P. Hallion**

Dr Richard Hallion is the 2007–2008 Alfred Verville Fellow, Department of Aeronautics, National Air and Space Museum, Smithsonian Institution, Washington DC.


Dr Hallion has broad experience in science and technology policy, research development, and management analysis, and has served as a consultant to various professional organisations and agencies, including the Office of the Chief Scientist, Headquarters Air Force. He has flown as a mission observer (not pilot) in a wide range of high-performance military and civilian fixed and rotary wing aircraft. Dr Hallion is the author and editor of
numerous books, articles and essays on aerospace technology and military operations, and consults, teaches and lectures widely.

**Dr Sanu Kainikara**

Dr Sanu Kainikara is the Deputy Director–Air Power Strategy at the Air Power Development Centre.

He is a former fighter pilot of the Indian Air Force who retired as a Wing Commander after 21 years of commissioned service. During his service career, he flew over 4800 hours on jet fighters and he was operational on the MiG-21, MiG-23, MiG-25, MiG-27 and MiG-29. In addition, he has also flown the Hunter and Jaguar aircraft. He is a Qualified Flying Instructor (A2) and a graduate of the Fighter Weapons School, the Joint Command and Staff College, as well as the College of Air Warfare. While on active duty he held various appointments, including command of an operational MiG-21bis squadron, Chief Flying Instructor at the Fighter Training Wing and Instructor at the Fighter Weapons School. He is also the recipient of the Indian Air Force equivalent of the Air Force Cross.


Dr Kainikara has Bachelors Degrees in Economics and Human Resources, a Masters Degree in Defence and Strategic Studies from the University of Madras, and a Doctorate in International Politics from the University of Adelaide.

**Air Commodore Stewart Cameron, CSC**

Air Commodore Stewart Cameron enlisted in the RAAF in 1972 and, following recruit training and civil schooling, was commissioned in 1976 and posted to the Maritime Wing in South Australia. In 1979 he was posted as a liaison officer to Bell Helicopter (Australia), remaining there until 1982 when he was posted to Canberra to work on Fighter/Strike projects. In 1986 Air Commodore Cameron was posted to the United States to work with the United States Navy and Canadian Forces on the F/A-18 Hornet program. He and his family remained in the USA until early 1991 when he returned to Australia to attend the RAAF Command and Staff College.

In 1992 he was posted to the Defence Acquisition Organisation where he was appointed as the project manager reviewing software support for the F-111, F/A-18 Hornet and AP-3C Orion weapon systems. In 1994 Air Commodore Cameron was appointed as the Lead-In Fighter project manager (Hawk 127 acquisition) and remained with that program until contract signature in mid-1997. Leaving the acquisition field at that time he attended
the Joint Services Staff College and, on graduation was appointed Base Commander RAAF Amberley.

Air Commodore Cameron remained at Amberley until September 1999 when he deployed to East Timor as the Officer Commanding No 395 Expeditionary Combat Support Wing. In mid-October he was seriously injured in an aircraft incident and was medically evacuated back to Australia for surgery. He subsequently returned to East Timor in December and remained until transition of the international force to the United Nations in late February 2000.

On return from East Timor he was posted back to the Defence Acquisition Organisation, taking up the appointment of Director C-130 Hercules Aircraft Systems Project Office. He was subsequently appointed as the Officer Commanding Air Lift System Program Office in January 2001. He was promoted and posted as Commander Combat Support Group in June 2001. In that appointment he had some 11 air bases and 6000 personnel under command. Elements of his command were on active service in East Timor, Kyrgyzstan during the war on terror in Afghanistan and, more recently, in the Middle East. He also had personnel on peace and humanitarian duties in Bosnia, Bougainville and the Solomon Islands. He took up his appointment as Director General Capability Management in Air Force Headquarters in February 2004. He retired from the Permanent Air Force in December 2004 as a consequence of his injuries sustained in East Timor. Air Commodore Cameron transferred to the Reserve and finished his tour as DGCM-AF in February 2006.

Air Commodore Cameron is a graduate of the Melbourne Business School and both the RAAF Command and Staff College and Joint Services Staff College. He was awarded a Conspicuous Service Cross (CSC) in 1997 for his leadership of the Lead-In Fighter project team and an operational commendation by the Chief of the Defence Force for his service in East Timor. He holds both masters and bachelor degrees in business management and graduate diplomas in a range of disciplines.

Since retirement, Air Commodore Cameron has maintained his interest in aviation as the Chief Executive of the Royal Queensland Aero Club and the Airline Academy of Australia. He is President of the Combat Support Branch of the RAAF Association in Queensland.

**AIR VICE-MARSHAL MARK BIN Skinner, AM**

At the time of the History Conference, Air Vice-Marshal Mark Binskin was the Air Commander Australia (ACAUST). He was promoted to Air Marshal and assumed the appointment of Chief of Air Force with effect 4 July 2008.

Air Vice-Marshal Mark Binskin began his Service career in 1978 when he joined the Royal Australian Navy and, on completion of flying training, was posted to fly A-4G Skyhawk aircraft at Naval Air Station Nowra, NSW. He served in VC724 and VF805 Squadrons. He was subsequently selected as the first RAN pilot to undergo an exchange with the Royal Australian Air Force flying Mirage III aircraft. On completion of this exchange and with the disbanding of the Navy’s fixed-wing capability, he joined the RAAF.
Air Vice-Marshal Binskin’s other flying tours include No 2 Operational Conversion Unit and No 77 Squadron at Williamtown, NSW flying Mirage and F/A-18 Hornet aircraft; with the United States Navy at VFA-125 at Lemoore, California training on F/A-18 aircraft; with the United States Air Force at 314 Tactical Fighter Training Squadron, USAF at Luke AFB Arizona instructing on F-16C aircraft; and No 75 Squadron at Tindal, Northern Territory flying F/A-18 aircraft. He was the Commanding Officer of No 77 Squadron at Williamtown during the period 1998–99 and later Commander of Air Combat Group (F/A-18, F-111, Hawk and PC9-A(F)) in 2004–05.

Air Vice-Marshal Binskin’s flying qualifications include Fighter Combat Instructor and Tactical Reconnaissance Pilot. Additionally, he has served as the RAAF F/A-18 Hornet Demonstration Pilot and in this position represented the RAAF throughout Australia, Indonesia, Malaysia, Singapore and New Zealand. He has over 3500 hours in single-seat fighter aircraft. He was appointed a Member of the Order of Australia (AM) for his performance as a Fighter Combat Instructor and the RAAF F/A-18 Display Pilot. Air Vice-Marshal Binskin has served in various joint and single Service staff positions including Headquarters Australian Defence Force as Deputy Director Airspace Control and as Staff Officer to the Chief of the Defence Force; in the Defence Materiel Organisation as Officer Commanding the Airborne Early Warning and Control System Program Office; and in Air Force Headquarters as Director General Performance Management Audit and Director General Capability Planning.

During Australia’s 2003 contribution to the war in Iraq, Air Vice-Marshal Binskin served as Chief of Staff at Headquarters Australian Theatre. Following this, he served as the first dedicated non-USAF Director of the US Central Air Force Combined Air and Space Operations Centre, where he was responsible for the conduct of all coalition air operations in support of Operation Iraqi Freedom and Operation Enduring Freedom (ADF Operations Catalyst and Slipper). For this service he was awarded a Commendation for Distinguished Service.

Air Vice-Marshal Binskin is a graduate of the Harvard Business School Advanced Management Program, Australian Institute of Company Directors and RAAF Command and Staff Course where he was awarded the Chief of Staff’s Prize for Professional Excellence.

**AIR COMMODORE GEOFF BROWN, AM**

At the time of the History Conference, Air Commodore Geoff Brown was the Director General Capability Planning in Air Force Headquarters. He was promoted to Air Vice-Marshal and assumed the appointment of Deputy Chief of Air Force with effect 30 June 2008.

Air Commodore Brown joined the RAAF in February 1980 after completing an engineering degree. He graduated from No 111 Pilots’ Course in 1981 and was initially posted to No 12 Squadron Amberley to fly Chinooks. After three years at No 12 Squadron he was posted to No 2 Flying Training School (2FTS) at Pearce and spent 18 months as a Flying
Instructor before being posted to Central Flying School (CFS), East Sale in 1986. While at
CFS he was a member of the Roulettes aerobatic team from 1987 to 1989. He led the last
Macchi team before they transitioned to the PC-9.

In 1990, Air Commodore Brown was posted to Williamtown for a Hornet conversion
and then completed a short tour at No 77 Squadron. On promotion to Squadron Leader
in 1991, he was posted to No 77 Squadron, Tindal as a Flight Commander. In 1993
Air Commodore Brown was then posted to No 77 Squadron as Executive Officer. He
completed RAAF Staff College in 1995 and was subsequently posted to Headquarters Air
Command as Staff Officer Operational Evaluation.

From 1997 to 2000, Air Commodore Brown commanded No 3 Squadron. He then
completed an F-111 conversion and assumed the position of Officer Commanding
No 82 Wing in December 2000. In 2003 he commanded all F/A-18 and C-130 operations
in Operation Iraqi Freedom and was appointed as a Member of the Order of Australia (AM)
and awarded a US Legion of Merit (Degree of Legionnaire) for his service in the operation.

Air Commodore Brown was Officer Commanding Airborne Early Warning and Control
Systems Program Office from June 2003 until December 2004 and spent 2005 at the
Centre for Defence and Strategic Studies. He then commanded Air Combat Group from
2006 until taking up his appointment as Director General Capability Planning in Air Force
Headquarters. Air Commodore Brown has over 5000 hours in military aircraft.

**AIR VICE-MARSHAL JOHN BLACKBURN, AO**

At the time of the History Conference, Air Vice-Marshal John Blackburn was the Deputy
Chief of Air Force.

Air Vice-Marshal Blackburn graduated from Melbourne Boys High School in 1972,
obtained his private pilot’s licence in 1973, and joined the RAAF in 1975. As a fighter
pilot he flew the Mirage III aircraft with No 77 Squadron and No 3 Squadron. In 1980 he
graduated from the Empire Test Pilots School (ETPS) at RAF Boscombe Down in the
UK and served as a test pilot with Aircraft Research and Development Unit (ARDU) at
Edinburgh, South Australia.

In 1983 Air Vice-Marshal Blackburn was posted to Washington DC as the test pilot assigned
to the fighter project team, managing the introduction of the new F/A-18 Hornet fighter
aircraft into RAAF service. In 1986 he was assigned to Tulsa, Oklahoma, USA, to oversee
and manage the F/A-18 Hornet simulator project. On return to Australia in 1987 he spent
several years flying F/A-18s operationally with No 77 Squadron, as Flight Commander,
Executive Officer, and returning later as the Commanding Officer.

In 1991 he became the Deputy Director Airspace Control in Canberra, overseeing all
fast-jet, air defence control and air traffic control programs. During his tenure, he initiated
the F/A-18 Hornet Upgrade Program, Air Defence Upgrade Project and the proposal
for the Lead-In Fighter aircraft. In 1996, following his command of No 77 Squadron, he
was appointed to command No 41 Wing, in charge of all military air traffic, radar and
surveillance units.
In 1999 he became the Director General Policy and Plans in Air Force Headquarters, followed by Director General of Military Strategy in 2001, and was appointed Head of Policy Guidance and Analysis Division (HPGA) in 2002. In this latter position he was responsible for the development of ADF strategic policy and led the development of the Defence Joint Vision, the Future Warfighting Concept and the Network Centric Warfare Concept and Roadmap for the ADF. In 2004, Air Vice-Marshal Blackburn was appointed the Commander of the Integrated Area Defence System (IADS) located in Malaysia, commanding a multinational headquarters established to effect the Five Power Defence Arrangements (FPDA). Under these arrangements, he oversaw biannual military exercises over Peninsula Malaysia, Singapore and the South China Sea.

Air Vice-Marshal Blackburn returned to Canberra in 2005, to his position as Deputy Chief of Air Force, where he was responsible for the operation of Air Force Headquarters.

Air Vice-Marshal Blackburn studied at the Australian Joint Services Staff College in 1993 and the Australian College of Defence and Strategic Studies in 1998. He holds a Graduate Diploma of Strategic Studies, a Master of Defence Studies and a Master of Arts in Strategic Studies. In 1989 Air Vice-Marshal Blackburn was appointed a Member of the Order of the Australia, and in 2007 he was promoted to an Officer of the Order of Australia. He is a life member of the Society for Experimental Test Pilots and has accumulated over 3000 flying hours in over 20 aircraft types.
# Abbreviations and Acronyms

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>2 PARA</td>
<td>2nd Battalion, The Parachute Regiment</td>
<td></td>
</tr>
<tr>
<td>2 RAR</td>
<td>2nd Battalion, The Royal Australian Regiment</td>
<td></td>
</tr>
<tr>
<td>AAA</td>
<td>Anti-aircraft Artillery</td>
<td></td>
</tr>
<tr>
<td>ADF</td>
<td>Australian Defence Force</td>
<td></td>
</tr>
<tr>
<td>ALARM</td>
<td>Air-Launched Anti-Radar Missile</td>
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<tr>
<td>AM</td>
<td>Member of the Order of Australia</td>
<td></td>
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<tr>
<td>AMRAAM</td>
<td>Advanced Medium-Range Air-to-Air Missile</td>
<td></td>
</tr>
<tr>
<td>AO</td>
<td>Area of Operations</td>
<td></td>
</tr>
<tr>
<td>AO</td>
<td>Officer of the Order of Australia</td>
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</tr>
<tr>
<td>AOC</td>
<td>Air Officer Commanding</td>
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<tr>
<td>AWACS</td>
<td>Airborne Warning and Control System</td>
<td></td>
</tr>
<tr>
<td>C3I</td>
<td>Command, Control, Communications and Intelligence</td>
<td></td>
</tr>
<tr>
<td>C4ISR</td>
<td>Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance</td>
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<tr>
<td>CALCM</td>
<td>Conventional Air-Launched Cruise Missile</td>
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<tr>
<td>CAS</td>
<td>Close Air Support</td>
<td></td>
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<tr>
<td>CENTAF</td>
<td>[US] Central Command Air Forces</td>
<td></td>
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<tr>
<td>CENTCOM</td>
<td>Central Command</td>
<td></td>
</tr>
<tr>
<td>CINC</td>
<td>Commander-in-Chief</td>
<td></td>
</tr>
<tr>
<td>CO</td>
<td>Commanding Officer</td>
<td></td>
</tr>
<tr>
<td>CSC</td>
<td>Conspicuous Service Cross</td>
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</tr>
<tr>
<td>CSM</td>
<td>Conspicuous Service Medal</td>
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<tr>
<td>CT</td>
<td>Communist Terrorist</td>
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</tr>
<tr>
<td>DFC</td>
<td>Distinguished Flying Cross</td>
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</tr>
<tr>
<td>EATS</td>
<td>Empire Air Training Scheme</td>
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</tr>
<tr>
<td>GBU</td>
<td>Guided Bomb Unit</td>
<td></td>
</tr>
<tr>
<td>GPS</td>
<td>Global Positioning System</td>
<td></td>
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<tr>
<td>HARM</td>
<td>High-Speed Anti-Radar Missile</td>
<td></td>
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<tr>
<td>IFF</td>
<td>Identification Friend or Foe</td>
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<tr>
<td>INTERFET</td>
<td>International Force East Timor</td>
<td></td>
</tr>
<tr>
<td>IOT&amp;E</td>
<td>Initial Operational Test and Evaluation</td>
<td></td>
</tr>
<tr>
<td>IIR</td>
<td>Imaging Infra-red</td>
<td></td>
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<tr>
<td>Acronym</td>
<td>Definition</td>
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<tr>
<td>JDAM</td>
<td>Joint Direct Attack Munition</td>
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<tr>
<td>JOIC</td>
<td>Joint Operations and Intelligence Centre</td>
<td></td>
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<tr>
<td>JSTARS</td>
<td>Joint Surveillance Target Attack Radar System</td>
<td></td>
</tr>
<tr>
<td>KTO</td>
<td>Kuwaiti Theatre of Operations</td>
<td></td>
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<tr>
<td>MAAF</td>
<td>Malayan Auxiliary Air Force</td>
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<tr>
<td>MANPADS</td>
<td>Man Portable Air Defence System</td>
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<tr>
<td>MEAO</td>
<td>Middle East Area of Operations</td>
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<tr>
<td>medevac</td>
<td>Medical Evacuation</td>
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<tr>
<td>MCP</td>
<td>Malayan Communist Party</td>
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<tr>
<td>MPABA</td>
<td>Malayan People's Anti-British Army</td>
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<tr>
<td>MRLA</td>
<td>Malayan Races Liberation Army</td>
<td></td>
</tr>
<tr>
<td>NATO</td>
<td>North Atlantic Treaty Organisation</td>
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<tr>
<td>OAM</td>
<td>Medal of the Order of Australia</td>
<td></td>
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<tr>
<td>OAS</td>
<td>Offensive Air Support</td>
<td></td>
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<tr>
<td>RAAF</td>
<td>Royal Australian Air Force</td>
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<tr>
<td>RAF</td>
<td>Royal Air Force</td>
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</tr>
<tr>
<td>RM</td>
<td>Royal Marines</td>
<td></td>
</tr>
<tr>
<td>RNZAF</td>
<td>Royal New Zealand Air Force</td>
<td></td>
</tr>
<tr>
<td>ROE</td>
<td>Rules of Engagement</td>
<td></td>
</tr>
<tr>
<td>SAM</td>
<td>Surface-to-Air Missile</td>
<td></td>
</tr>
<tr>
<td>SEAD</td>
<td>Suppression of Enemy Air Defences</td>
<td></td>
</tr>
<tr>
<td>SEATO</td>
<td>South-East Asia Treaty Organisation</td>
<td></td>
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<tr>
<td>SHAR</td>
<td>Sea Harrier</td>
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</tr>
<tr>
<td>SOF</td>
<td>Special Operations Forces</td>
<td></td>
</tr>
<tr>
<td>SWPA</td>
<td>South-West Pacific Area</td>
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<tr>
<td>TIALD</td>
<td>Thermal Imaging [or Target Identification] Airborne Laser Designation</td>
<td></td>
</tr>
<tr>
<td>TLAM</td>
<td>Tomahawk [or Tactical] Land Attack Missile</td>
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<td>UAV</td>
<td>Uninhabited [or Unmanned] Aerial Vehicle</td>
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Opening Address
Air Marshal Geoff Shepherd, AO

Distinguished guests, ladies and gentlemen, I would like to extend a very warm welcome to you all to the 2008 RAAF History Conference.

This is the thirteenth such conference since their inception in 1992. I am extremely pleased to be opening this year’s event on such an important subject as Air Expeditionary Operations.

Right now, as I stand here speaking to you today, there are Air Force personnel engaged in expeditionary operations in the Middle East Area of Operations. Over the course of recent years we have been repeatedly called upon to undertake operations in Timor, Bougainville, Solomon Islands, and Indonesia, as well as our ongoing commitments in the Middle East.

No topic could have more relevance or greater value to us than enhancing our understanding of the challenges of Air Expeditionary Operations. The lessons of the air campaigns that will be discussed today, therefore, have a particular relevance for today’s Air Force and our strategic intent of creating an expeditionary Air Force of influence that is capable of securing Australia’s interests well into the future.

Today, papers will be presented by eminent academics and distinguished past and present Air Force officers on the history of air expeditionary operations from World War II until today. I am very much looking forward to the papers and the panel discussions that will follow. I fully expect that this conference will be a productive and enjoyable one.

The ability to conduct Air Expeditionary Operations refers to our capacity to project air power into distant operating areas in order to achieve specific strategic objectives. The vast size Australia’s territory makes even exercises and training expeditionary in nature, and our unique geo-strategic position determines that most ADF operations will be, essentially, expeditionary.

To meet the challenges of our geography, our Air Force must be able to operate at long ranges and for extended periods, both within and close to Australia and outside our country, to secure our national strategic objectives.

To be an air force of influence the RAAF needs to ensure that it maintains and improves its capability to conduct expeditionary operations and deploy forces wherever and whenever necessary, and to sustain operations for a duration and at a tempo of our own choosing.

Such operations may be conducted as independent air operations or as part of a joint, combined or coalition force, whenever required by the Government. The enormous challenges of such operations involve every facet of our Air Force.

The purpose of RAAF History Conferences is to focus our attention on the enduring lessons that can be extracted from the past. Our commitment to professional mastery requires the Air Force to function as a learning organisation to enhance our professional skills and
knowledge in the application of air power. The applied historical analysis of this conference forms an integral part the process of informing contemporary and future operations and commanders.

Colonel T.E Lawrence (better known to most of us as ‘Lawrence of Arabia’) once observed, ‘With 2000 years of examples behind us we have no excuse when fighting, for not fighting well’. While the history of military aviation is considerably shorter than the millennia alluded to by Lawrence, his words, nevertheless, serve to remind us of the importance of understanding the past in informing current and future operations.

To that end, the ideas and discussions generated by the papers we will hear today should focus our attention on the application of the lessons of the past experiences in prolonged deployments to far-distant areas of operations to contemporary and future expeditionary air operations:

- What have been the common features and problems of such operations?
- What have been the enabling factors that contributed to the successful use of air power and what factors have inhibited air expeditionary operations?
- What do we carry forward as observations to ensure our professional mastery remains first-rate?

This conference is designed to explore these questions through over half a century of experience in air expeditionary operations. We will cover the RAAF’s global deployments in World War II through to our more recent air operations in Iraq in 2003.

We are fortunate to have the presentations from Dr Richard Hallion and Mr Sebastian Cox, two of the world’s leading air warfare historians, who have travelled from the United States and United Kingdom respectively to be with us today.

Their presentations, along with that of Dr Sanu Kainikara from the Air Power Development Centre, enables the conference to look beyond the confines of our history and draw upon experiences of other air forces. The presentations on NATO, US and UK air forces in the notable air campaigns in Kosovo, the Falkland Islands and Iraq will allow us to broaden the scope of our investigation and address significant episodes which have not involved the RAAF, but which, nonetheless, provide valuable lessons.

The inclusion of the experiences of other air forces, and the historical case studies involving the RAAF, also amply demonstrate that in nearly all conflicts in which Australia has been involved, the Air Force has taken its place alongside allies and coalition partners as part of a much larger force. The current deployment of RAAF forces in the Middle East continues this trend. The ability to cooperate and integrate our forces with coalition and regional partners is central to the strategic intent of the RAAF.

The analysis of past campaigns can teach us valuable lessons on the consequences and implications of operating as part of a larger coalition force and the impact it has had on achieving national strategic goals.
Before I conclude my opening remarks, I would like to express my gratitude to all of our speakers who have generously given their time and expertise to us, and particularly to those who have travelled considerable distance to be here. My thanks also go to the Air Power Development Centre for organising this event.

This promises to be a great day of thought-provoking papers. I encourage you to participate actively in the panel discussions that will follow each session. The discussions are your opportunity to play an active part in informing contemporary air power practitioners of the experiences and lessons of past conflicts.

All of today’s papers and the following discussion sessions will be recorded for inclusion in the conference proceedings that will published by the Air Power Development Centre.

Ladies and gentlemen, I am very pleased to open the thirteenth RAAF History Conference – Air Expeditionary Operations from World War II until Today.
The operations conducted by the Royal Australian Air Force (RAAF) during World War II were not expeditionary in the sense that the term has generally been used in defence policy, planning and doctrine of recent years. There are, nonetheless, major parallels and similarities which are worth examining when considering what operations of this kind entail. While there were few occasions 60 odd years ago when Australia deployed air contingents for operations that were intentionally short duration or task-specific, the RAAF actually has had a long history of sending elements outside our national territory to work alongside, and in conjunction with, coalition or allied forces—which is the essence of what we currently regard as expeditionary operations. This paper highlights what might be regarded as some of the lessons that the RAAF learnt (or should have learnt) from the experiences of World War II.

Five days after war began on 3 September 1939, the Australian Government received a request from London that it begin preparing an expeditionary force for service in Europe or some other important theatre of operations. There was no surprise in this. Although the RAAF had, from the time of its formation 18 years earlier, derived its raison d'être from providing for the air defence of Australia, it was an equally well-understood tenet of government policy that Australian forces would also be available for defending the British Empire on a wider scale—precisely as had occurred during World War I. This was an idea which occasionally received explicit expression, as during a 1936 conference in London when Britain proposed that the Dominions should allow their air forces to become a reserve manpower pool for the Royal Air Force (RAF) in the event of another major conflict in Europe.1 Although Dominion governments at this time declined to be formally committed, for political reasons, the bonds of empire meant that the principle of contributing to a future British war effort was never really in question in this country.

The Expeditionary Force That Did Not Happen

Following Britain’s request, Australia’s air staff in Melbourne immediately launched into developing plans for an air expeditionary force. By 20 September, the Chief of the Air Staff, Air Vice-Marshal Jim Goble, put a scheme before the War Cabinet which was accepted (Figure 1). It is now well known that Goble’s plan was subsequently consigned to the dustbin of history, after being overtaken by an alternative scheme put forward by London for Dominion participation in a pooled training scheme to provide aircrew for squadrons to

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1 J.M. McCarthy, A Last Call of Empire: Australian Aircrew, Britain and the Empire Air Training Scheme, Australian War Memorial, Canberra, 1988, pp. 13 and 15.
be formed in Britain. Although the Government announced on 31 October that it was only putting the air expeditionary force on hold ‘for the present’, it was this second proposal, for what became the Empire Air Training Scheme (EATS), that became the preferred means for Australian involvement in the air war in Europe and several other theatres, including North Africa and India-Burma. Normally, this is where discussion of the RAAF’s plans for its first expeditionary force ends, but actually there is value in asking why nothing came of the scheme.

PROPOSED RAAF EXPEDITIONARY FORCE
20 SEPTEMBER 1939

<table>
<thead>
<tr>
<th>HQ 1 Fighter Wing</th>
<th>HQ 2 Bomber Wing</th>
<th>HQ 3 Bomber Wing</th>
<th>1 Air Stores Park</th>
<th>1 Medical Receiving Station</th>
<th>HQ Base Area</th>
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<tr>
<td>7SQN</td>
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<td>17SQN</td>
<td>Base Depot</td>
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<td>1SQN</td>
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- 96 aircraft
- 3200 personnel – 550 aircrew, 2425 ground staff (if provided), 225 in reinforcement pool

Figure 1: Proposed RAAF Expeditionary Force, 20 September 1939

The chief factor usually identified was that the RAAF was too small a force to implement effectively both schemes together, even though the Government initially said this was what it desired. It was obvious that most of the RAAF’s strength of 3500 officers and airmen in September 1939 would be needed for the expeditionary force, and whether there would be sufficient trained personnel left behind to expand the training organisation required for EATS, too, was clearly problematic. Added to this was the fact that Australia patently could not spare the aircraft needed for the expeditionary force. The RAAF possessed only 234 operational types and another 82 trainers in September 1939. But it was not merely a matter of numbers. The RAAF simply did not have the modern types of aircraft that would be suitable for the conditions expected to prevail in an air war over Europe. For these reasons, Australia intended to send away just personnel, and leave it to the RAF to fit out the force on arrival.²

It has been argued in another forum\(^3\) that a lack of enthusiasm on the part of British authorities for accommodating a separate national air contingent from Australia was at least understandable. If the RAF would have to equip and train Dominion air units anyway, who could blame the Air Ministry for preferring to accept only personnel under EATS, without the unwanted burden of Dominion commanders and national chain-of-command arrangements. Although Air Marshal Richard Williams, the revered ‘father of the RAAF’, found personal fault with Goble’s choice of commander for the expeditionary force,\(^4\) there is no evidence that the Air Ministry shared these objections. It appears to have been more the case that, because of the close relationship maintained during the inter-war years, the RAF felt that it knew the calibre of senior leaders in Dominion air forces and believed them inadequately prepared, as a group, for a modern large-scale conflict. There were also probably few illusions in the Air Ministry about the warfighting capabilities that a service like the RAAF actually represented in 1939, with mainly obsolescent aircraft and equipment, and no active service experience among any of its units.

It becomes particularly instructive to note which elements of the home-grown RAAF the RAF was willing and prepared to accept. There were squadrons raised in Australia under the EATS during 1941 and sent overseas, but, apart from triggering a bizarre debate about whether they were to be regarded as RAAF or RAF,\(^5\) in all cases except one these units comprised personnel only. Apart from these, there were only three fully formed RAAF units sent from Australia that were employed in the European, North African and Middle East theatres: No 10 Squadron (which happened to be in England taking delivery of new Sunderland flying boats when war began), No 3 Squadron (sent as an Army cooperation squadron to support Australian ground units in the Middle East in July 1940) and No 1 Air Ambulance Unit (also sent to the Middle East at the end of 1941). These were units which each offered niche capabilities that the RAF valued, although in the case of 3 Squadron this still entailed it being re-equipped and converted to a fighter role. Equally relevant, however, was the fact that these were individual units, without the cumbersome status of being part of a national contingent. Although in December 1941 the RAAF formed a headquarters in London headed by a three-star (later two-star) officer, it was significant that this performed a purely administrative function, replacing what had been a liaison office.\(^6\) The Air Officer Commanding Overseas Headquarters never exercised any command authority.

Based on this evidence, it could be reasonably concluded that the first lesson of embarking on expeditionary operations with coalition partners is that an air force wishing to be taken seriously as an ally must first have something credible to offer. The RAAF looked to be good

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\(^5\) ibid, pp. 284–285.

for little else apart from a training organisation in 1939, and it was as a training organisation, not a combat force, that it was primarily valued by the RAF. It was not until late in World War II that the missed opportunity to build up a useful and credible air force was overcome, but by then the RAF and its USAAF ally had gained the upper hand in Europe and had little real need for the products of the EATS—let alone formed RAAF units.

MALAYA AND THE NETHERLANDS EAST INDIES

By the time Japan entered World War II, the RAAF had sent abroad a sizeable force as part of the garrison protecting Britain’s major naval base at Singapore. After failing to persuade Britain to make a sufficient allocation of squadrons in this probable theatre of operations, should Japan launch the strategic offensive it was widely expected to make, in mid-1940 Australia realised that there was no alternative available but to contribute units of its own. For its part, Britain calculated that any effort to bolster defences in the Far East—against what remained merely a possibility of attack—could only be accomplished by robbing other priority areas such as the Middle East. The force that the RAAF deployed to Singapore in July-August 1940 comprised Nos 1 and 8 Squadrons, which were general reconnaissance units equipped with Hudsons, and No 21 Squadron initially operating Wirraways until re-equipped with American-built Brewster Buffalo fighters.7 Joining them in August 1941 was No 453 Squadron, a unit notionally formed as part of EATS but actually raised at Bankstown, Sydney, and dispatched directly from there to Singapore where it also was equipped with Buffaloes.8

![Figure 2: Lockheed Hudson – Nos 1 and 8 Squadrons](image)


Operating as a RAAF Group with headquarters at Sembawang air base, these four squadrons definitely formed a national contingent—even if this lacked much of a task before Japan entered the war in December 1941. A month before Japan attacked, the Australian Officer Commanding, Group Captain John McCauley, actually took command of Sembawang as a RAAF, not a RAF, station. Australia ultimately provided about a quarter of the Allied air strength in Malaya, spread across bases at Kota Bharu and Sungei Pitani as well as Singapore, but its status as a partner in the air defence of Malaya and Singapore was much less than it appeared.

In reality, Australia had little capacity to shape or influence the operational details of the role its air contingent performed, certainly once individual units of its contingent were dispersed. McCauley and the commanders of his Hudson units devised a plan to guard against any Japanese sea moves into the Gulf of Siam and the South China Sea, and this was accepted by RAF Headquarters Far East Command during October. In the event, McCauley was on a liaison visit to the Middle East when the Japanese invasion came on 8 December. Although his plan was activated in his absence, the decision to do so was too late to respond effectively to Japanese moves. By the time he got back to Singapore in mid-December, the Allies had already been forced to abandon their bases in northern Malaya in the face of fierce Japanese attacks.

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11 ibid, pp. 49, 56, 61, 167–168 and 240.
One of McCauley’s first duties on his return was to head a court of inquiry into claims that the evacuation from the northern airfields had been disorderly, with RAAF personnel alleged to have fled in panic in the face of Japanese bombing and without any attempt being made to render the airfields useless to the enemy. The need to engage in such an exercise in the middle of an active campaign was forced on McCauley by Air Vice-Marshal C.W.H. Pulford, the RAF commander in the Far East, following on a complaint by a Royal Navy officer. The court made no adverse findings about the RAAF departure from Kota Bharu, but recommended that the
RAF station commander at Kuantan should be court-martialled. It may cause no surprise that these findings were subsequently lost, and the matter not raised again until 1946 when the Air Ministry asked McCauley to recollect the inquiry as best he could.12

![Image of Group Captain John McCauley]

Figure 6: Group Captain John McCauley

There seems little point to examining the course of the subsequent air operations, involving the withdrawal of surviving air units from Singapore to Sumatra (in what is now Indonesia). It fell to McCauley to assume command of a motley force of six squadrons—only one of which was RAAF—at one of two air bases that had been secretly constructed near Palembang, on the eastern end of the island. From there, McCauley was able to mount some effective attacks using two RAF squadrons of Hurricanes, before being ultimately forced to evacuate the forces under his command yet again. What is notable at this stage was the necessity that he discovered for his intervention to prevent British action to disband unilaterally the much reduced Australian 21 Squadron, pointing out that it was for the Air Board in Melbourne to decide such action and forcing the RAF order to be rescinded on 4 February.13

Although there might appear to be a danger from elevating a relatively minor matter to a ‘lesson’ with universal application, there is nonetheless a case for suggesting that the

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problems McCauley encountered during the Allied fallback in the first months of 1942 do indeed offer a further insight into the nature of expeditionary operations. Stated baldly, if one is prepared to allow a bigger ally to view you as a client or vassal air force, there is really little ground for complaint if you find yourself treated exactly in that fashion. The objective of interoperability may be militarily desirable across the Services when seeking to work within a coalition or alliance, but this means something entirely different to subservience.

Focus on the South-West Pacific

After three months of relentless advance and victories, the front line of Japan’s conquest stabilised into a defensive barrier extending across Australia’s north. The only significant base Australian forces held outside the mainland was at Port Moresby, in the Australian administered territory of Papua. Control of that base was contested by the Japanese by air from March 1942, by sea in May, and by land from July until September. Only after a final air offensive in March 1943 did the Japanese give up on their attempts to neutralise this Allied stronghold, and by then the Allies had secured another, equally important, base at Guadalcanal in the Solomon Islands. It was from these facilities that the Allies were able to launch a campaign to push the Japanese away from New Guinea and pursue them back into the Netherlands East Indies and the Philippines. If not actually ‘expeditionary’ in the way that we now use the term, these fight-back operations at least assumed many of the characteristics of this form of activity.

Figure 7: South-West Pacific Area

Central to the Allied campaign was the question of bases. It was a fundamental truth of the campaign fought in the South-West Pacific Area (SWPA) that the island geography of the theatre meant control of connecting sea lanes and the air space above these was always as important—probably even more so—as defeating Japanese forces on land. The SWPA was, in
essence, a sea and air campaign. The genius behind General Douglas MacArthur’s command, for which he quite possibly has never been accorded his proper due, is that he understood better than to take on the Japanese land forces where he did not have to. Instead, he employed a strategy which largely left the Japanese in their static defensive positions while Allied forces concentrated on rendering them irrelevant. What was paramount to success was the Allies’ capacity to sever Japan’s control over the sea lanes that linked the northern islands, and prevent them from reasserting that control. For this he needed sea and air power.

Such an approach depended on the ability to obtain, build and operate airfields in areas that mattered in terms of furthering strategic aims. Bases were critical not just for ensuring the ability to dominate the air space in a particular area, but for bringing within range the next set of enemy objectives to be targeted in an advance. Ordinarily this is a consideration that brings a range of factors into the mix: strategy, geography, politics, diplomacy, to name a few. Not all of these were relevant in 1943, but the ability to make maximum use of a limited number of airfields certainly was a big issue.

![Figure 8: Airfields in Port Moresby area](image)

At Port Moresby the problem was overcome by establishing a network of dispersed airfields, but at many locations (especially on islands) this option was not available. Having on any one crowded airfield the right mix of squadrons operating aircraft types that were
actually useful in the operations then underway became therefore of crucial importance. Unfortunately, this was an area in which the RAAF often lost out to its US counterpart. Being able to offer units equipped with the Vultee Vengeance, a type which had already been discarded and judged unsuitable for New Guinea conditions, did not ensure that Australia was best placed to secure a share of meaningful operations. It was at worst a recipe for being sidelined, as indeed happened.

![Vultee Vengeance dive-bomber](image)

*Figure 9: Vultee Vengeance dive-bomber*

The reasons why such a situation developed are, of course, explicable, and reflect a case of what was available rather than an acquisition made by choice. By the same token, they also reflect a situation which any self-respecting air force might have sought to avoid. The reality is that RAAF administration was constantly operating on the back foot throughout this period, responding to circumstances thrust upon it rather than seeking to shape unfolding events to its best advantage. To be fair, this also was a situation largely beyond its ability to influence, with political factors the primary consideration. To the extent that it was able, Air Force Headquarters had been attempting to anticipate where the trend of events were taking it, and ensure that the Service had the best equipment that was available, but the fact was this effort was generally too late.

Much of the problem also came down to the issue of mobility. For instance, it was the realisation that the RAAF needed to be capable of staying up with its US allies that prompted it to create No 9 Operational Group in New Guinea in January 1943, followed by a new mobile task force, No 10 Operational Group, in November that same year. A year later, in October 1944, 10 Group was renamed First Tactical Air Force and began to move forward from Noemfoor to Morotai. Each of these groups represented nothing less than expeditionary air forces, both in size and purpose. It is particularly striking that First Tactical Air Force, in addition to attack and fighter wings, included two airfield construction wings totalling four of these engineering squadrons. This demonstrates quite clearly that Australia had the capacity—if not the actual intention—of deploying its air power in formidable
blocks capable of altering the strategic equation in selected areas. That the RAAF was not able to maximise its performance on operations was due, at least in part, to the divided command arrangements under which the RAAF laboured.

The bitter personal feud between the Chief of the Air Staff, Air Vice-Marshal George Jones, and Air Vice-Marshal William Bostock, who commanded RAAF operational elements allotted to Allied Air Forces under the American Lieutenant General George Kenney, took many forms. But the fact that this command schism dragged on into 1944 must be seen as a factor which damaged the RAAF’s standing in the eyes of our allies. For as long as this squabbling went on, the RAAF could not present itself as a professional or competently run outfit, and it was not unreasonable that ultimately the Americans sought to cut its ties and leave the RAAF out of the Philippines campaign. It might be argued that the RAAF was not alone in being marginalised in the latter operations, since the Army was similarly sidetracked into Borneo. But the fact is that MacArthur was happy to have RAN units involved in the Philippines, and non-permanent elements such as air forces would probably have been equally acceptable—except that the RAAF’s command imbroglio made having it participate was more trouble than it was worth.
Conclusions

If we accept that the RAAF obtained a taste of expeditionary operations during World War II, with forces which were self-sustaining in form even if it was not actually intended to use them in a truly expeditionary manner, there are a number of points that might be drawn out as lessons for future reference. These can be distilled down into three major thoughts and observations.

First, if you do not want to be marginalised and forced to play a minor, supporting or peripheral role in operations, if you expect to be respected and treated as a genuine alliance partner, then you need to have capabilities that are relevant to the likely task. This is especially so if you are only a small air force lacking the full range of capabilities, in which case it may well be valued niche capabilities that count.

Next, the capabilities intended to be committed to expeditionary usage need to be already in existence in the force-in-being at the outset of conflict. Experience shows the enormous difficulties in acquiring and absorbing new equipment and capabilities in the midst of emergency. If the problem was bad enough in a conflict lasting six years, what hope can we expect to have in one lasting a matter of months? It was Air Marshal Sir Valston Hancock who declared at the start of a RAAF exercise in the early 1960s: ‘Gentlemen, when you go to war, you go to war with what you’ve got’.\textsuperscript{14} As an experienced veteran of World War II, he was almost certainly thinking in terms of a major regional war, but the observation is no less apt when applied to a conflict requiring an expeditionary response, since these are likely to be of shorter duration and fraught with diplomatic/political considerations affecting supply.

Thirdly, the lines of command organisation and administrative support for any force leaving Australia ought to be settled long before departure, and ideally should have been trained for and practiced within standing arrangements. The failure of RAAF administration and command in the SWPA could have been avoided if the separation of roles between Air Force Headquarters and the operational (expeditionary) commander had been sensibly worked out and resolved early on, allowing the Service as a whole to concentrate on providing the level of support required by the forces operating in the front line.

It might reasonably be assumed that the last-mentioned aspect is one that has been taken up and worked out since 1986, when the head of the RAAF’s Operational Command, Air Vice-Marshal Ted Radford, was retitled as the first Air Commander Australia.\textsuperscript{15} The step of creating a joint force post apart from the Chief of Air Force reflected the intention that any air expeditionary force sent from Australia in future would come under an ADF umbrella. Whether any other of the lessons that emerged from World War II have been taken to heart since 1945 hopefully will be addressed by following speakers.

\textsuperscript{14} Recollections of Air Vice-Marshal E.H. Stephenson, 3 October 2007, interview transcript notes held by Office of Air Force History, Canberra. Hancock was Air Officer Commanding Operational Command 1959–61, before becoming Chief of the Air Staff 1961–65.

No 77 Squadron RAAF in Korea – 1950–53
Group Captain Doug Hurst, MBE (Retd)

Introduction

This paper covers the three years No 77 Squadron spent in the Korean War. It concentrates on operations and the effect that factors like climate, logistics and training had on those operations. Enduring problems associated with being thrown into war at short notice are discussed, along with those met when introducing a new aircraft, with new roles, into an ongoing war on the other side of the world. Information only made available in post-Soviet times is used to reassess the air war, and the Meteor’s performance is re-examined in light of this knowledge.

Figure 1: Map – Korea–Japan
Operational Overview of 77 Squadron’s War

In June 1950, No 77 Squadron was at Iwakuni, Japan, about to go home after a tour with the allied occupation forces. Instead, they went to Korea, flying Mustang fighters as part of a United Nations (UN) force helping South Korea fight the invading Communists from the north.

North Korea achieved almost complete surprise and overwhelmed the weaker South Korean forces. UN ground forces took time to build and for the first weeks of war air power from carriers, bases in Japan and other regional airfields was the main UN weapon.

In just eight weeks North Korea occupied all but the tip of the peninsula surrounding the vital port city of Pusan. Here the UN forces made their stand, halting the enemy at what became known as the ‘Pusan Perimeter’ and turning the tide of war. No 77 Squadron played a major role in this pivotal victory, providing some 30 per cent of the air power at Taegu, the main UN airfield defending the perimeter.

UN forces then dominated, driving the Communists north almost to the Yalu River that marks the border with China. The squadron relocated to the peninsular, first to Pohang in the south-east and then to Hamhung in the north-east. Both airfields were badly damaged by previous fighting and their harsh living conditions were soon made worse by the early onset of winter and severe cold, the like of which the Australians had never before experienced.

Difficult times became dangerous as well when the Chinese entered the war with over 300,000 troops and hundreds of MiG-15 jet fighters. With vastly superior numbers they quickly gained ground despite spirited opposition from UN air and ground forces. Thousands of UN troops were trapped in the frozen mountain areas near the Chosin Reservoir and 77 Squadron and other UN aircraft were eventually forced to relocate south. From there they continued to fight and to prepare for a new aircraft—the twin-jet Meteor—being bought to counter the high-speed MiG-15.

Five Meteors were quickly lost in early battles with MiGs, which unbeknown to UN forces were often flown and controlled by Russian fighter experts deliberately targeting the Meteors for political reasons. Considered outclassed, the Meteors were taken out of ‘MiG Alley’ and became a very effective ground attack, airfield defence and bomber escort squadron.

Targets of all kinds were destroyed in rocket attacks by as many as 16 Meteors at a time. They flew in mountainous country in the half-light of dawn and dusk, during freezing winters and in the haze and storms of summer, taking the fight to the enemy throughout North Korea. The MiGs now encountered were flown by regular Chinese pilots and the squadron downed four of them without loss, to finish the war ‘five all’ against the MiG-15.

After the first year, the war stalemated back near the 38th parallel where it had started, but furious fighting continued. This allowed the enemy to build his defences progressively around important targets, making the squadron’s work more and more dangerous with
time. Although it is commonly believed the war tapered off, this is not true and in the last six months of war the squadron was very busy and suffered its highest casualty rate.

By any measure, flying in Korea was dangerous work. For much of the war pilots posted to the squadron had a one in four chance of being either killed or captured. As it was, in three years of war 77 Squadron flew 19,000 combat sorties and lost 40 men killed and seven captured\(^1\)—a significant effort and a major sacrifice to support a country most Australians knew little or nothing about.

**The ‘Come As You Are’ War**

No 77 Squadron flew its first sorties only a week after the invasion began. With virtually no time for operational training, for them it was a ‘Come as You Are’ war. Fortunately, by peacetime standards they were among the best in the region. Weapons skills were good, they were well led, had a nice blend of experienced World War II pilots and postwar graduates, and were supported by excellent ground crews who had kept the Mustangs in first-class condition.

There were 25 pilots and 26 front-line aircraft backed by at least 12 more in storage and immediately available. An additional 12 experienced pilots from Australia arrived six days after the squadron’s first combat sorties. This meant that two weeks after war began 77 Squadron was, in effect, a squadron and a half, with well-trained pilots and high quality aircraft.

Learning curves were steep, however, as their task was now much more demanding in many areas. In peacetime most sorties were an hour to an hour and a half at most, flown in daylight and reasonably clear weather over familiar country with good maps. This meant that they seldom flew with drop tanks and full weapons load, and some pilots lacked instrument and night flying qualifications on type. Apart from parachutes, little survival gear was carried and Mae Wests (survival vests) were only worn during rare overwater flights.

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\(^1\) Includes RAF officers serving with No 77 Squadron.

**Editor’s Note:** Various authorities give slightly different figures for RAAF casualties in Korea. The Department of Veterans’ Affairs in its booklet, *Out in the Cold: Australia’s Involvement in the Korean War 1950–53*, gives a figure of 41 fatal casualties and seven POWs, noting that five RAF pilots were killed. The same information is also detailed on the Australian National Korean War Memorial. However, the Roll of Honour at the Australian War Memorial lists the names of only 34 RAAF members killed in Korea (33 from No 77 Squadron and one from No 91 Composite Wing)—obviously, RAF members are not included on the Roll of Honour. Robert O’Neill in *Australia in the Korean War 1950–53 – Volume II* gives a figure of 41 RAAF deaths and 6 POWs (again, these figures appear to include RAF members serving with 77 Squadron). Alan Stephens in *Going Solo* states 40 members of the squadron (including five RAF officers) died on service in Korea. However, in his more recent book, *The Australian Centenary History of Defence – Volume II – The Royal Australian Air Force*, Stephens gives a figure of 41 deaths. No 77 Squadron Association figures are 40 killed in the war, including 6 RAF pilots, and one RAAF pilot killed in postwar Korea after hostilities ceased—Doug Hurst’s latest book, *The Forgotten Few*, also uses these figures.
With war, almost everything changed. They now had to fly long sorties of four to six hours, often at night and in bad weather, over unfamiliar country that was poorly mapped—and usually with drop tanks and weapons to slow them down and restrict their manoeuvrability. In addition, they now always wore Mae Wests and carried other survival gear, which reduced cockpit space, added to the heat and sweat of summer sorties, and made a physically demanding job even more so.

Navigation, a simple task during daylight flights over familiar Japan, was now a major problem as the Mustang had no navigation aids and relied on visual navigation and mental arithmetic for time and distance calculations. Three map scales were needed, with three levels of detail—a big area map to get to Korea and back, intermediate area maps used to navigate about Korea and small area, very detailed maps, used to locate specific targets.

Les Reading\(^2\) recalls that there were 32 maps involved, all carried in a special bag made by the safety equipment section. To make things as simple as possible, some flight leaders parcelled out various parts of the problem, but with unexpected changes they still had to fly with one hand while sorting though their map bag for the required map with the other. Bad weather made things worse and navigation remained both a challenge and a problem throughout the war, especially during the Mustang days.

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\(^2\) Les flew a total of 188 sorties in Korea in Mustangs and Meteors.
War also meant that many people on the ground were trying to kill or deter them. This made their main role, ground attack, more difficult than in peacetime and much more dangerous. Less than two weeks into the war the squadron’s well-respected Operations Officer, Graham Strout, was killed attacking a ground target. The reaction of the squadron, Jim Flemming recently recalled, was ‘complete shock … We’d gone practically overnight from our peacetime thinking to a wartime footing. It changed the whole demeanour of the squadron from then on.’

Worse came just weeks later when their charismatic and competent Commanding Officer (CO), Lou Spence, was also killed. The period that followed was later termed ‘dark days’ by one pilot, and the gloom persisted until World War II veteran Dick Cresswell took over as CO, led by example and restored morale within weeks.

Although the CO ran the squadron, he did so as part of a coalition—in this case within the US Fifth Air Force which tasked the squadron. Target allocation was most often done through a Joint Operations Centre that passed them on to airborne controllers. The system worked well but it added to the long list of new things they had to master and the need to understand how the USAF, of which they were now effectively a part, operated.

Life on the ground too changed markedly, usually for the worse. Knowing ground force strengths would take time to build up, UN Commander, General Douglas MacArthur and the Far East Air Forces Commander, Lieutenant General George Stratemeyer (for whom 77 Squadron worked), decided to maximise the use of air power during the critical first weeks. Airfields became crowded as aircraft flooded in and makeshift accommodation, like tents, became the norm for both work and domestic areas, and maintenance was often done in the open, whatever the weather.

Iwakuni, where the Mustangs were based in Japan, was not spared. Just days after the war began they were joined by a USAF squadron of B-26 bombers. Dave Hitchins, then in charge of 77 Squadron’s transport element, later wrote:

There was an immediate move to take over the base. Offices and hangars were commandeered. MPs went into the local village where we had lived for three years and tacked up Off Limits signs on shops and other buildings. They were soon followed by a jeep load of our airmen who pulled the signs down. I did not see it, but I believe there were several punch-ups. Some of our men went into the swimming pool and were told by a guard that it was off limits. They threw him in the pool and then had to pull him out because he couldn’t swim. Lou Spence (the 77 Squadron CO) was arrested trying to return to his home at night – they had imposed a curfew without reference to anyone.

Remarkably, despite this extraordinary start, relations between 77 Squadron and the USAF were soon sorted out, quickly became very good and remained so. And it was just as well

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3 Squadron Leader Graham Strout was the first Australian killed in Korea.
4 Two C-47 Dakotas and two Austers.
they did. With the squadron scheduled to return home, the RAAF supply ‘pipeline’ had been turned off and stocks of items like flying clothing had run out. Pilots were flying in whatever they could beg, borrow or trade and did so for months into the war. By some accounts, extensive illegal trade of things like slouch hats and Australian beer prevented a flying suit crisis and plugged other logistic holes as well.

Maintenance supplies, thankfully, were less affected as stocks in hand were good when resupply from Australia ceased. Also, food and the like could still be bought through local purchase. This meant that operations from Iwakuni were reasonably autonomous, but those from other airfields relied entirely on the USAF for fuel, most rearming, some spares and most domestic items.

**Mustangs in Korea**

This dependence was first demonstrated at Taegu, the closest airfield to the so-called ‘Pusan Perimeter’ where the UN forces were using the Naktong River to help halt the advancing North Koreans. Taegu was close to the action, especially as the North Koreans closed during late-July and August, and the squadron (along with USAF and USN aircraft) began using it in July to cut transit times and increase sortie rates.

Taegu was not without problems, however. To begin, it was not an established base like Iwakuni, but mostly a temporary affair of hastily erected tents and buildings, and pierced steel plating (PSP) runways, taxiways and hardstands. Constantly under attack and insecure at night during July-August, it operated only because of a very impressive air-logistics effort. Fuel in giant bladders, weapons, personnel and most domestic needs, were flown in and out every day in C-119 transports from Pusan. Other transports carried smaller loads as well, and 77 Squadron personnel, spares etc. were flown from and to Iwakuni in RAAF C-47s each day.

Aircraft too were flown out each night and on return next morning the fighters did strafing runs to help clear the airfield perimeters of lurking Communists. The logistics effort required was immense, and a tribute to the USAF people involved, but it was worth it. Taegu operated every day during the defence of the Pusan Perimeter, particularly during late-July and August when things were in the balance.

In these critical times, 77 Squadron provided up to 30 per cent of the combat aircraft each day at Taegu. To do so, four flights of four Mustangs left Iwakuni every day before dawn and often landed back there after dark. At Taegu, they operated as part of a ‘Cab Rank’ system in which UN combat aircraft lined up after refuelling and rearming and formed flights from those at the head of the queue, be they RAAF, USAF, USN or some mixture thereof.

As fighting concentrated on the nearby Naktong River, transit times were very small and pilots operating there flew up to five sorties a day, as well as transits from and to Japan. Others flew further north to hit the enemy before he reached the perimeter or to cut his

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5 The system was dubbed ‘Cab Rank’ because the queued flights resembled a line of taxis waiting for business.
transport and supply lines. It was a frantic and tiring time for air and ground crews and during August 1950 the squadron flew 1745 hours on 812 sorties.

By early September growing UN ground force numbers and the concentrated air effort were clearly taking their toll on the enemy. North Korean forces had traded casualties for speed of advance during the first weeks of war and were now depleted and tired. By mid-September the Pusan Perimeter was secure and UN forces had made a successful amphibious landing at Inchon, west of Seoul, cutting off enemy supplies and opening a second front.

The North Koreans were soon in retreat everywhere. By the end of September Seoul was back in South Korean hands and it looked like the worst of the war was over. At MacArthur’s urging, President Truman and the UN agreed to push north, secure UN territorial gains everywhere and eventually unify Korea. This was no small task, but it was well within the
capacity of the UN forces now available and it looked like many of those forces would be ‘home for Christmas’.

To contribute to the task, on 11 October 77 Squadron became one of three Mustang squadrons in the USAF 35th Fighter Group based at Pohang, in Korea’s south-east. Until recently an enemy base, Pohang had a serviceable strip but UN bombing had left much of the base and local town in ruins. They lived in tents and an early winter had set in, producing mud everywhere and temperatures lower than anything the Australians had ever experienced.

Bare hands stuck to exposed metal on aircraft and tools, and aircraft brakes froze overnight, requiring engine runs or removal of wheels each morning to free them. RAAF issue clothing proved totally inadequate and a crisis was only averted by local purchase of US cold weather outfits, signed for on the spot by Dick Cresswell, the CO. A bad situation was made worse by a fire that killed two men in an Australian issue World War II tent lacking the fire-retardant properties of US tents. Morale suffered and plans to move further north to Hamhung were well received, but proved to be a false dawn.

Hamhung was not only colder than Pohang, but was soon also threatened by overwhelming Communist forces. The UN push north had goaded the Communist Chinese into the war. From October on they had been surreptitiously infiltrating North Korea at night and by clever use of camouflage and smokescreens from brush fires. UN attempts to stop them by bombing the bridges on the Yalu River failed when winter set in early, the river froze and the Chinese walked across it at will.

Various UN intelligence sources detected the infiltration, but their estimates of up to 15 000 were way short of the actual number of 300 000 or more. The Chinese bided their time as UN forces pushed north and finally struck in late November, suddenly appearing in strength to surround UN ground troops near the Chosin Reservoir, in the mountains north-west of Hamhung. Many thousands, mainly US Marines, were trapped.

Along with other UN squadrons, 77 flew a ‘max effort’, often in terrible weather, to support the UN troops who where trying to fight their way out. It was tough going for everyone, with intense cold and snow every night. Ground crews started each day by clearing aircraft of snow and de-frosting them, and air traffic controllers began by driving a jeep along the taxiways and the strip to mark them in the snow. Ice accretion in flight was an ongoing problem and some heavy landings and other problems resulted.

Despite concerted UN efforts many died at Chosin Reservoir and the Chinese continued to gain ground until, in early December, the base at Hamhung was threatened. No 77 Squadron relocated to Pusan, on the peninsula’s southern tip, flying sorties to the Chosin area as they did so and for some weeks thereafter.
By now they faced the additional threat of Russian-built, Chinese MiG-15 jet fighters that had entered the war from 1 November 1950 on. With bases just over the Yalu River—and with UN aircraft restricted to operations within Korea only—the MiGs operated with impunity on their side of the border and swept in and out of North Korea at will. A USAF first-generation jet, an F-80, got the first kill in the first ever all-jet fight, but along with its contemporary, the F-84, the F-80 was outperformed by the second generation, swept-wing MiG-15, especially at height.

The Mustang’s range, endurance and general toughness had served them well, but it was no match for the MiG-15 in air-to-air combat. Australia decided to replace it with a jet and make 77 Squadron a fighter squadron again—rather than the ground attack squadron it had become—and join the air war against the MiG-15s. The RAAF’s first preference was the second generation F-86 Sabre, but the USAF was taking the entire production for the next three years. Australia had to look elsewhere and chose the Gloster Meteor, the best performing and most readily available jet fighter, other than the F-86, it could buy.

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6 The Meteor was actually an interceptor, designed for operations under radar control, and so came without navigation equipment like a radio compass that had to be retrofitted in Iwakuni before operations with the USAF could begin.
Things moved with amazing speed. The RAF gave up manning some of its squadrons with Meteors to make aircraft available and sent four experienced pilots to Iwakuni where the RAAF Meteor training would take place. RAAF ground crews were trained in the UK and two 77 Squadron pilots did jet training with USAF squadrons in Japan. By late February 1951, the first RAAF Meteors were flying at Iwakuni and on 11 April 1951 the first Meteor conversion course began—less than five months after the decision was made to re-equip the squadron with jets.
The course was conducted entirely by experienced 77 Squadron pilots and the four RAF Meteor pilots, with no training assistance at all from Australia. With time, RAAF pilots did jet training in Australia on Vampires before posting to 77 Squadron, but all Meteor training during the war was done in Iwakuni.

This put a huge responsibility on 77 Squadron’s senior men, still being lead by Dick Cresswell. They had to create a course that not only taught how to operate in the new, high speed, high altitude, short endurance world of jets, with its greatly compressed time frames, but also how to fight a jet air-to-air battle—something none of them had done.

Good instrument flying skills at night and in bad weather were now essential. Appropriate training was built into the conversion course, along with knowledge of electronic navigation and let-down procedures using the aircraft’s radio compass and ground-based radars and radio direction-finding. Later conversion courses rushed pilots through, sometimes with inadequate training in these vital areas, but the early courses were well done.

Indeed, with help from the four experienced RAF pilots, basic conversion onto type went quite smoothly and in just a few weeks everyone could fly the Meteor, day and night and in bad weather. The challenge now was to become fighter pilots who could take on the MiG-15 with the Meteor—something no-one had ever done, anywhere.

Realising what they were up against, Dick Cresswell sought and got the loan of an F-86 Sabre and pilot from the Americans for two weeks. He and RAF pilot Max Scannell then flew the Meteor against the Sabre. The trials confirmed, as expected, that the Meteor was generally a match for the Sabre up to 25,000 feet—and so for the similarly performing MiG-15—but above that the swept-wing aircraft enjoyed ever increasing advantage with height.

The decision was made to operate in conjunction with Sabres when possible. Associated procedures were, however, rudimentary at best owing to their limited knowledge and experience. Had fighter expertise been sent up from Australia, or sought from the USAF, better air-to-air tactics for the Meteor could have been derived, but this did not happen. Once more, as with the Mustangs, they could fly their aircraft competently but still had much to learn ‘on the job’ when they went to war.

But it was there the comparison ended. The Mustangs were thrown into war with no time for outside help to prepare them for operations. With the Meteors, there was plenty of time to arrange such help. Failure to do so was entirely due to the fact that no-one of influence in RAAF Headquarters in Melbourne saw the need and arranged the training. This serious failing almost certainly cost lives and aircraft during the first months of Meteor combat.

**Meteors vs MiG-15s**

By late July 1951, No 77 Squadron was based at Kimpo, near Seoul, and beginning operations in ‘MiG Alley’, the area on the Korean side of the Yalu River that marks the border with China. They saw MiG-15s a number of times, but at first the Chinese fighters were tentative, turning towards them until they reached the edge of their sanctuary west of the Yalu, then turning back.
We now know (since the fall of the Soviet Union and access to Russian records) that these MiGs were flown by Russian pilots photographing the Meteors to confirm a non-US jet had entered the war. This was, of course, not then known and the Meteor pilots found the behaviour confusing and frustrating.

The MiGs eventually attacked Meteors, but only when it suited them. Always with a height advantage—they would climb to height on their side of the border and then sweep down in coordinated pairs onto their prey—and invariably with much greater numbers, the MiGs hit the Meteors with damaging effect. Five Meteors were lost for just a few damaged MiGs. (One MiG, damaged by Les Reading, was later confirmed a kill in the post-Soviet era, but again, this was not known at the time.)

We also now know that the Meteors were deliberately targeted for political and strategic reasons, that many of the MiGs were flown by Russians, and that the entire MiG effort was coordinated from above by expert Russian fighter controllers who had learned their craft in World War II. These controllers decided when and how to attack, and never did so without height and numbers on their side.

Although the squadron pilots at the time suspected Russian involvement and some form of overall coordinating element, confirmation of both factors did not emerge until the
1990s. All that was known then was that they were taking a bad beating from an enemy who seemed to hold all the aces. Furthermore, to compound the problem, replacement pilot numbers from Australia were shrinking—the result of peacetime training rates that were still determining graduation numbers.

With the high loss rate and shrinking pilot replacement numbers in mind, the Meteors were taken out of MiG Alley. From then on they no longer went into the enemy’s backyard to provoke him into a fight. They did, however, continue to fight MiGs, albeit in much changed circumstances.

Removed from the air-to-air role, the Meteors were employed to good effect on a number of other tasks. These included B-29 bomber escort (a very effective role in which they flew close in to the bombers within an outer screen of Sabres), on escort for F-84 reconnaissance and bombing flights, on fighter sweeps south of MiG Alley and on airfield protection as airborne or ground-based interceptors (the Meteor’s design role).

The MiGs now encountered were mostly flown by Chinese pilots, not Russians, were usually drawn down to lower altitudes to attack the B-29s and other UN aircraft, and were seldom in the large numbers met in MiG Alley. This much improved the odds in the Meteor’s favour. During the rest of the war they shot down four MiGs without loss, to balance the kill-ledger at five all by war’s end.

**GROUND ATTACK**

B-29 escort flights ended when the Sabres, who formed the essential outer screens, were allocated higher priority air-to-air tasks against increasing MiG numbers and the B-29s adopted night bombing. This left the Meteors mainly employed on necessary but boring and lower priority intercept duties. Morale suffered until Ron Susans took over the squadron and arranged for them also to do ground attack with rockets. This they did, as well as intercept duties, fighter sweeps etc., with very good results until the war ended.

After the first year the war stalemated near the original 38th parallel border, and allied efforts concentrated on limiting Communist ability to penetrate once more over the border and move south. To do so, a vast air effort was mounted. Prime targets were the main supply routes through North Korea to the front line, training camps, headquarters and the like, and MiGs trying to attack UN aircraft.

It was difficult work. Korea is a generally hilly place with large storms and thick haze in summer and freezing temperatures and widespread snow in winter. This environment often made ground and air operations trying, and visual navigation and target identification a challenge. Nevertheless, vast damage was done to North Korean targets by bombing, but huge Communist efforts—a million were employed just to repair damage to railways—kept their troops supplied and the war going flat out until the last few days.

Targets became better and better protected over time and the squadron’s operating procedures were changed a number of times to reflect the increasingly dangerous environment. Transits were flown above the lower level ground fire, well-defended targets were avoided and all targets were attacked only once, usually in close order and as fast as
possible. Despite these measures, the last six months of war saw many aircraft hit by ground fire and cost eight lives, the worst casualty rate 77 Squadron experienced during the war.

**Final Thoughts**

The post-Soviet Russian records have allowed us to put 77 Squadron’s war, particularly the Meteor air-to-air war, into better perspective. When that is done, the squadron’s already fine reputation is further enhanced, as is that of the Meteor which, although an earlier design than the faster MiG-15, more than held its own in fair fights lower down and proved to be a tough and reliable machine in ground attack operations.

When thrown into war, Mustang and Meteor pilots and ground crews performed magnificently, their thorough basic training and high peacetime standards holding them in good stead. The same cannot be said of the RAAF supply system during the Mustang days, or of operational training support from Australia during the Meteor era. Both were much poorer than could, and should, have been the case, and both suggest serious shortcoming with the RAAF Headquarters of the times.

If a full review of supply needs was done at the outbreak of war, there was little to show for it. Items not in store, like flying suits, should have been flown urgently to Japan, and measures taken to provide proper winter clothing, instead of leaving its purchase to busy operational commanders and USAF goodwill. Fortunately there was much USAF goodwill, backed by an excellent logistics system, that allowed the squadron to operate Mustangs from Korean bases with only token RAAF support. Such arrangements are probably inevitable for a minor coalition partner, but in this case too much relied on the initiative of a very busy squadron CO, Dick Cresswell, and American goodwill.

Poor RAAF Headquarters support for Meteor operational training was, at times, an even more serious problem. Again, too much was left to local commanders. Not only was there no equivalent of a fighter OCU (operational conversion unit), but at times Meteor pilots went to war with inadequate instrument and night flying training to cope with the challenging Korean environment and the operational task. Meteor supply and maintenance, on the other hand, in the circumstances seems to have been good throughout — suggesting that elements of RAAF Headquarters were fully aware of 77 Squadron’s needs.

Unfortunately, such awareness was patchy. Korea was a hemisphere away from RAAF Headquarters in Melbourne. At times this remoteness seems to have produced an ‘out of sight, out of mind’ outcome for 77 Squadron. Strong leadership, especially from Dick Cresswell and Ron Susans, got the squadron through some trying times, but at a high cost. Although specific attributions cannot be made, good men died as a result of the shortcomings of RAAF Headquarters staff officers who could not, or did not bother to, always provide the best possible equipment, operational training and flying supervision to men at war.
The War of the Running Dogs: The Malayan Emergency
Air Commodore Mark Lax, CSM

The 16 June 1948 murder of three British plantation owners by Communist terrorists sparked off an insurgency war known as the Malayan Emergency, so called to ensure insurance claims to British and Commonwealth expatriates would be honoured. British and Commonwealth operations against the insurgents were to last 12 years and at their height, occupy over a quarter of a million men. For the Malaysian Armed Forces, a further 29 years of fighting would ensue. The Emergency, or ‘War of the Running Dogs’, became the third postwar overseas deployment undertaken by the RAAF after BCOF (British Commonwealth Occupation Force) and Korea. This expeditionary operation was to last from 1950 to 1960, and remains the longest in our illustrious history. The Emergency left a lasting legacy for the RAAF with the establishment of a permanent presence at Butterworth and regular contributions to exercises and operations.

While the Royal Air Force had deployed fighters and flying boats in 1948, the real build-up to counter the Communists commenced in 1950. The RAAF would eventually provide Lincolns, Dakotas, Sabres and Canberras to the campaign, but the majority of the air power was provided by the RAF (fixed-wing) and Royal Navy (rotary). The Malayan Emergency has over the years had both its detractors and supporters of the utility of air power, but the thrust of this paper will be on the expeditionary nature of the campaign and applicable lessons for today. I would like you to consider the parallels today with the current insurgencies we are fighting. Some things never change.

However, in order to discuss the role of expeditionary air power in this jungle war, I must briefly cover the origins and development of the Malayan Emergency and how politics paid its game. The real origins of the Malayan Emergency can be traced back to 1929 with the formation of the Malayan Communist Party, the MCP, which aimed to overthrow the British Administration and replace it with Communist rule. Its roots were in the Chinese community, but the Communist elements did not have broad support. By 1937, the MCP had gained some hold of the Malay labour force and was thus outlawed by the British Colonial authorities. By early 1941, and given the possibility of the loss of the Malayan Peninsula, the British sought to establish a network of subversive agents who would work for the Allied cause should the country be overrun. The MCP was the only semi-organised group capable of such activity and was thus funded and organised into the Malayan People’s Anti-Japanese Army, or MPAJA, which by 1945 had grown to about 4000 guerrillas and 6000 ancillary personnel.

With the British reoccupation at the end of the war, the MPAJA formally disbanded in December 1945. However, the Communists re-emerged, now as the Malayan People’s Anti-British Army (MPABA) and rekindled the original aim of overthrowing the Colonial Administration. By 1948, their efforts proved more an irritant than effective and they
decided on an escalation of their terrorist activities, culminating in murder, extortion and sabotage. The level of disorder became such that on 18 June 1948, the British enacted emergency powers, calling on the military to assist in restoring law and order. The Malayan Emergency had officially begun.

In an effort to encourage popular indigenous support, the MPABA renamed itself the Malayan Races Liberation Army, or MRLA, and instituted a three-phase plan to achieve their aim. The phases were:

- to cause terror and economic chaos in rural areas by assassination and sabotage,
- to ‘liberate’ selected rural areas and establish local Communist administration, and
- to ‘liberate’ urban areas and declare a Communist republic.

They estimated a period of six months to complete the plan and two years to a fully established Communist state. In the event, they could not complete any phase, but the government authorities, police and military took 12 years to stop them.

The decision to send an expeditionary Australian force to support the British in Malaya was seen by Prime Minister Menzies as crucial to halting the southward march of Communism, so apparent to some at that time. On 21 April 1950, the British formally requested direct Australian support in Malaya. As New Zealand had previously offered Dakota aircraft but financial difficulties had forced the unit’s withdrawal earlier in the month, such a request came as no surprise. A flight of Dakotas from No 38 Squadron, another from No 1 Squadron flying Lincoln bombers and their supporting airmen for on-site maintenance were sought, not just for Malaya, but for the whole Far East theatre. Ground forces would not be sent at the start as the Korean conflict was consuming the few capable Army units remaining after the end of World War II. At this point, I would like to acknowledge that this was primarily a ground campaign and Australian troops would eventually serve from 1955 to 1959, but their actions and those of their British and Malayan allies is beyond the scope of this paper.

What must also be remembered in post-mortems such as this is that the anti-terrorist activities conducted by the security forces were not a military operation but a civil action, carried out by the police with the assistance of the combined military forces. This would eventually require a whole-of-government approach. Consequently, the early air and ground operations were not successful, being uncoordinated and poorly planned. In 1950, the policy was changed. The new strategy was devised by the first Director of Operations, Lieutenant-General Sir Harold Briggs, who held a distinct military/political appointment—a dual-hatted arrangement. The new plan, not surprisingly, was called the Briggs Plan—the idea being not merely to kill the terrorists but to prevent them from regrouping and continuing their activities. The Briggs Plan entailed:

- the reorganisation of the Police Force along the lines of the British ‘Bobby”—a people’s friend rather than perceived oppressor;
- the creation of an effective indigenous intelligence system; and
• the conduct of psychological operations against the Communist terrorists (CTs) and in support of the people.

Figure 1: Sir Harold Briggs

Concomitant with this change of direction was No 1 Squadron’s arrival at Tengah and No 38 Squadron’s arrival at Changi, in July that year.

The Communist terrorist forces had grown steadily from the late 1940s, reaching a peak in 1951 of about 8000. Then due to the action of the security forces, their numbers began to steadily decline to about 600 by 1960. Known as CTs or bandits, they were organised into military and civilian components. The concentrations were in western Malaya, where the main centres of Chinese population lay and, hence, their source of popular support. The civilian component was called the Min Yuen or People’s Movement and consisted of mainly ethnic Chinese who had sided with their Communist kin. Their small numbers, however, were to cause an extremely disproportionate response in containing their activities.

In February 1952, General Sir Gerald Templer took over. He was a redoubtable Englishman of letters and a dominating figure. He further refined the Briggs Plan and set the security forces five tasks to restore order. These were:
• to kill CTs and keep them on the move, thereby increasing the chances of contacts and kills by ground forces;
• to disrupt the CTs' bases and command organisation;
• to lower CT morale;
• to induce the CTs to surrender; and
• to assist food denial to the CTs by crop destruction.

Nevertheless and despite these improvements, the CTs continued to elude the Security Forces, with casualties mounting on both sides. Security Force retaliatory action came in three phases. Initially, a period of defensive action (1948–1951), gave way to one of offensive action (1952–1954). By 1954, the Security Forces had contained the threat and a final phase of consolidation began (1954–1960). The effect on the various groups can be clearly seen in Table 1.
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<tr>
<td>Total</td>
<td></td>
<td>20 727</td>
<td>9 313</td>
<td>4 342</td>
<td>4 628</td>
</tr>
</tbody>
</table>

Table 1 – Incidents by year

By the time Templer handed over duties to the next High Commissioner, Sir Donald MacGillivray, in May 1954, the tide was on the turn and the ‘dual-hatted’ role ceased. Security patrols with the support of air power now had regular contact with the terrorists and sought about their elimination. In addition, thousands of rural Chinese were relocated into cleared or ‘White’ areas which were defended and patrolled, thus removing the CTs’ sources of food, intelligence, funding and popular support. Uncleared or ‘Black’ areas were continually swept and eventually cleared of Communist activity and this succeeded in forcing the CTs deeper into the jungle. The final blow appeared to be the announcement in early 1956 that ‘a constitution providing for full independence and self government for Malaya would be introduced at the earliest possible date’. The CTs’ call for ‘liberation’ from the Imperialist masters became invalidated overnight. Ironically, it was international politics not offensive action that ended the Emergency in 1960.

Now I want to turn to the primary dilemma facing the combined military forces—the vexed issue of command and control of a combined expeditionary force in coalition, operating remote from their homeland.

The World War II British command system had changed only slightly in postwar Malaya, and by June 1951, the command structure was as shown in Figure 3. However, a very close relationship had to develop between the General Officer Commanding (GOC) and Air Officer Commanding (AOC) in order to prosecute the campaign.
Once in Malaya, the RAAF elements came under the authority of Air Headquarters (AHQ), Malaya, initially located in comfortable Singapore, but with the arrival of Air Vice-Marshal Scherger as AOC in 1953, relocated to Kuala Lumpur to be collocated with the land commander. Air Headquarters held prime responsibility for RAF and Commonwealth Air Force operations in the theatre and had three broad roles. In priority order these were as follows:

- The air defence of Malaya, Singapore, British North Borneo and Sarawak (now East Malaysia).
- Cooperation in defence with Army and Navy.
- The anti-terrorist campaign.

At the time of the RAAF’s arrival, the AOC Malaya was an RAF Air Vice-Marshal and RAF Stations were commanded by RAF Group Captains. The RAAF’s link to the RAF command chain was made through Group Captain ‘Paddy’ Heffernan, a prewar RAAF officer with considerable flying experience. Heffernan commanded the newly formed No 90 (Composite) Wing. However, all directives, tasking and reports went through the RAF system, with the RAAF units acting in a subordinate role.
Figure 4: Group Captain ‘Paddy’ Heffernan

This organisation remained extant for the duration of the RAAF’s deployment. Most interestingly for the era, the position of AOC loosely alternated between the RAF and RAAF, with two RAAF officers holding the command appointment from 1953. The arrangement was relatively simple. When an RAF officer was commanding, the RAAF would have the second-in-command and vice versa. This arrangement worked well for operations but was to be the cause of some discontent in a number of areas, most particularly with regards to discipline authority.

When an RAF officer occupied the post, he would also be given the RAF disciplinary warrant. However, when an RAAF officer occupied the post, the RAF gave their warrant to the RAF officer who was second-in-command, and not to the RAAF officer appointed as AOC. In other words, we gave up our statutory rights and safeguards, but the RAF certainly did not. This almost came to boilover in 1957 when the Commanding Officer of No 1 Squadron was court-martialled by the RAF AOC, allegedly for negligence. Fortunately, there was found no case and in true air force style, the Wing Commander was afterwards promoted and awarded a Distinguished Flying Cross—all another story.

In a purely operational sense, the control of operations was not as simple as Figure 3 would indicate. A much more complex command system was in place. Remember it was a police action. In considering the Security Forces as a whole, the Advanced Headquarters Joint
Operations Room in Kuala Lumpur had contact with 15 other military agencies as shown in Table 2.

<table>
<thead>
<tr>
<th>Headquarters</th>
<th>RAF Stations</th>
<th>Army Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headquarters Malaya – Kuala Lumpur</td>
<td>RAF Tengah</td>
<td>1 Malay Inf Bde</td>
</tr>
<tr>
<td>Advanced Air Headquarters</td>
<td>RAF Kuala Lumpur</td>
<td>26 Inf (Gurkha) Bde</td>
</tr>
<tr>
<td>Combined Ops Room – Kuantan</td>
<td>RAF Butterworth</td>
<td>48 Gurkha Inf Bde</td>
</tr>
<tr>
<td>North Malaya Sub District</td>
<td>RAF Changi</td>
<td>63 Gurkha Inf Bde</td>
</tr>
<tr>
<td>GLO from Butterworth</td>
<td>- GL Section</td>
<td>- Seramban</td>
</tr>
<tr>
<td></td>
<td>- 4 Asst. Tentacle</td>
<td>- 7 Asst. Tentacle</td>
</tr>
<tr>
<td></td>
<td>- 1 Asst. Tentacle</td>
<td>- GLO</td>
</tr>
<tr>
<td></td>
<td>RAF Seletar</td>
<td>99 Gurkha Inf Bde</td>
</tr>
<tr>
<td></td>
<td>- FE Transport Wing</td>
<td>- Johore Bharu</td>
</tr>
<tr>
<td></td>
<td>- LO from Tengah</td>
<td>- 9 Asst. Tentacle</td>
</tr>
<tr>
<td></td>
<td>- GLO from Tengah</td>
<td>- GLO</td>
</tr>
<tr>
<td></td>
<td>18 Inf Bde</td>
<td>- Kuala Lumpur</td>
</tr>
<tr>
<td></td>
<td>- GLO from Kuala Lumpur</td>
<td>- GLO</td>
</tr>
</tbody>
</table>

Table 2: Agencies subordinate to Air Headquarters Malaya

These agencies all fed information and task requests to the Joint Operations and Intelligence Centre or JOIC. Generally speaking, the air forces were not involved with the detailed planning of operations, but devised their own plans once the request for air support had arrived. In addition, air support requests from other agencies had to be cleared by local police before sorties could be mounted, thus rendering more in-built delays which often allowed the CTs to escape. From 1950, the overall offensive campaign was planned by the Director of Operations Committee and was executed by local War Executive Committees at the state level. Requests for air support were generated by local army or police commanders, channelled through battalion or district and then to brigade or State Police Headquarters to the JOIC. The JOIC would task the individual air strike, reconnaissance or transport sortie.

What looks simple at first sight was not so when considering inherent problems with this system, particularly the sources of delay within the overall command chain. As operations progressed, however, the command authority and reporting chain became even more cumbersome, causing inevitable backlogs and lengthy delays to requests from and to the lower levels. The ‘mature’ system is illustrated in Figure 5.
By mid-1955, a more responsive and streamlined system was introduced, bypassing some of the levels in an effort to avoid hold-ups. A standard request up the chain would inevitably be subject to over-scrutiny. After consideration by the Commanding Officer of the squadron, requests were passed through the RAF Station Headquarters to the Senior Air Staff Officer (SASO) in the Headquarters in Kuala Lumpur. Some routine and administrative tasks would have been actioned at this level, but more substantial requests and discipline problems would have to be progressed further. I must emphasise the strong political-military interface. If higher level action was required, after consideration by SASO and the AOC Advanced Air Headquarters, the request would have been passed to the AOC. The AOC was subordinate to the General Officer Commanding, the GOC also being the Joint Force Commander, with a similar subordinate Navy, Army and Police component commander. Decisions of international importance or of high political profile were finally referred to the Commissioner General for South-East Asia, who was the British Foreign and Commonwealth Office appointed head of South-East Asian affairs.
These nine levels of command did not include the interface with Australian authorities, military and civil, for matters that had political or wider ramifications for Australia. In one sense, there were few serious issues, if any, that would have drawn political response. Menzies remained pro-British and support for the Commonwealth Strategic Reserve and, later, SEATO remained part of his Government’s platform. Yet, as in the past, the Australians serving under British control effectively had all but their responsibility for postings, promotions, conditions of service and pay transferred to the RAF.

The final change to the command structure in Malaya came with Independence in August 1957. At the request of the new Malaysian Government, British and Commonwealth forces continued to fight the anti-terrorist campaign, but instead of reporting to the High Commissioner or Director of Operations, the Commander-in-Chief Far East Air Forces and AOC Malaya took their orders from and reported to the Federation’s own Director of Emergency Operations, now a Malaysian. Additionally, as the term AOC Malaya conjured up thoughts of past colonial days, it became politically expedient to rename the position AOC Headquarters 224 Group, a term used previously in World War II. By April 1959, with operations petering out, Headquarters 224 Group moved back to Singapore to concentrate on other operations in the Far East.

My next point is about the role of expeditionary air power. At the outset, the capability of air forces fighting this insurgent war would inevitably be limited, given the nature of the target, the terrain and vegetation, and the inherent inaccuracies of aerial reconnaissance and bombing of the time. Air power would definitely be in support. However, air transport and reconnaissance would prove critical to successful operations while air strike was to play an important but lesser role, one of which was vaguely described as ‘to hit, to carry and to reconnoitre’. In retrospect, the main achievement of the bombing campaign was that such bombing kept the enemy on the move. It did not allow the CTs to consolidate gains or establish base camps, nor subjugate the local villagers. Air strike cannot claim great victories in this campaign but without it, the job of the ground forces would have been much more difficult.

The Malayan campaign held one big difference to the RAF and RAAF’s previous operations. There was no air threat, although early in the campaign, the CTs were reported as using Bren guns against low flying aircraft. Certainly no hits were recorded. Even the airfields remained secure. The closest the CTs came to disrupting the air operations was in late-1952 when activity in Johore threatened the Singapore water supply and loaded aircraft would have to take off, fly for a short time, release their bombs and return, all in about 20 minutes. Air supremacy was a given.

What can be stated is that the role of air power increased to meet the need. At the Emergency’s height, operations included transport support, psychological warfare (leaflet dropping and aircraft broadcasting propaganda—known as ‘sky shouting’), reconnaissance, camp spotting, troop insertion/extraction, medical evacuation (medevac) and offensive air support. While most of those air activities would seem usual for jungle operations, the bombing campaign has since come in for much criticism. However, the utility of such offensive air power should also be placed in chronological context as, pre-1952, the Briggs
The War of the Running Dogs—The Malayan Emergency

Plan could not be fully implemented by ground forces alone which opened the proverbial window of opportunity for air action. As the ground forces were in no position to do much before early 1953, air power was virtually the only way of applying pressure to the CTs by destroying camps and keeping them on the move.

After 1954, bombing operations took on lesser importance than had been the case of the previous years. From the low point of mid-1951 when high levels of violence and CT activity appeared to be giving the insurgents the upper hand, the situation steadily improved in favour of the Security Forces. By 1956, Britain had become embroiled in the Suez Crisis and the focus of British policymakers now turned towards the Middle East. The decision to grant Malay independence had also been agreed. Further economy measures thus were taken, with much of the heavy air effort being withdrawn by 1958, including the RAAF.

The Malayan Emergency was declared officially over in July 1960, by which time only about 500 terrorists remained—living mainly in the remote border region between Malaysia and Thailand. In the event, the ideological war continued for a further 29 years when, with the collapse of Communism in the Soviet Union and dwindling support from China, the CTs’ struggle came to an end.

I want to briefly mention the role of the other air forces involved, again as part of the combined force. Under Operation Firedog, as the air campaign was to be known, the RAF, the RNZAF, the Royal Navy Fleet Air Arm and the Malayan Auxiliary Air Force (MAAF) all played a part. I do not want to leave you with the impression that the Australians did everything—they did not. Likewise, we have been conducting combined expeditionary air operations from our Flying Corps days—Timor, the Solomons, Iraq and Afghanistan deployments are not new and many of the same issues apply.

The Royal Air Force provided the mainstay of the air campaign in all roles bar offensive strike. In all, up to 14 RAF Squadrons provided bombing, transport, reconnaissance and communications support. Their senior Service, the Royal Navy, provided helicopters from January 1953. These proved extremely valuable for leaflet dropping, troop lift and insertion/ extraction, and medevac. However, the noise of the beating blades gave their presence away, so their utility as spotting aircraft was lost. The success of the Royal Navy helicopters, particularly for medevac, made quite an impression on the AOC Malaya, Air Vice-Marshal Scherger, and was no doubt instrumental in his pushing to acquire the Iroquois when he became RAAF Chief of the Air Staff some four years later.

While the RNZAF offered Canberras in 1958, their utility was marginal due to speed and small bomb load, as were those of our No 2 Squadron. However, Kiwi Dakotas and Bristol Freighters provided air transport support for most of the Emergency and did sterling service. The MAAF provided a number of Tiger Moths, Harvards Chipmunks and three Spitfires, mainly used for light reconnaissance.

Let me briefly comment on the Australian bombing campaign. The use (or perhaps misuse) of Lincoln bombers in the Malayan Emergency has become the source of intense debate among air power scholars, particularly with regard to their cost-effectiveness. Let me examine the case before I conclude. No 1 Squadron crews commenced operations in
Malaya on 20 July 1950, four days after arrival. Acting in what was termed the ‘close support’ role, operations progressed well after a firm, and effective, plan had been introduced and refined. Despite later commentary that records that the campaign was about killing CTs and, therefore, was a complete waste of resources, in a review of the Squadron’s bombing operations at the end of the deployment some eight years later, the then Commanding Officer, Wing Commander Robertson, noted of the role offensive support that its aims were:

- to kill CTs and keep them on the move, thereby increasing chances of contacts and kills by ground forces;
- to disrupt the CTs’ bases and command organisation;
- to lower CT morale;
- to induce CT surrender; and
- to assist food denial to the CTs by crop destruction.

The Lincoln aircraft proved very effective in achieving, even if only in part, most of these aims.

To sum up, there are no doubt any number of enduring lessons that apply to current expeditionary air operations, but allow me to raise what I think are the main points. First, air power cannot win insurgency wars by itself, but without it, the job becomes virtually impossible and extortionately expensive. Second, air power provided but one arm of the whole-of-government approach necessary to solve this problem—it provided options for the use of both soft and hard power at times when only air power could deliver. Third, the doctrine of centralised control and decentralised execution could not be reinforced any stronger than in the Malayan Emergency experience. Fourth, for the campaign to have any chance of success, the command and control has to be sorted and practised well before real operations commence. Finally, future insurgency wars will undoubtedly present commanders the same problems—locate, contain, neutralise.

Undoubtedly, the debate regarding the effectiveness of air power in insurgencies such as this will continue as analysts and historians cannot say that the outcome rested with air power. That air power made any difference has also been argued but in cases such as this police action, as with today’s peacekeeping operations and our operations in Afghanistan and Iraq, the value of air power lies in its flexibility and its response. The ability to substitute for large numbers of ground forces and the ability to support quickly those who are forward deployed on the land or sea makes the use of air power in theatre a necessity, not a luxury. As I hope I have demonstrated, RAAF operations in Malaya did just that. By the rapid movement of troops and police, the spotting of camps and by harassing and denying the terrorists in their havens, air support operations combined with a relentless ground campaign, anti-Communist propaganda and a strong political will to remain engaged succeeded in disrupting the CT activities long enough for the political solution to take effect.
Observations on an Expeditionary War of Choice: The RAAF in Vietnam 1964–71

Dr Alan Stephens, OAM

The single most telling observation to be made about Australia’s war in Vietnam is that we lost. Given the triumphalism that too often passes for history, or reporting, or commemoration, many Australians might be surprised to learn this. Yet it is a fact that in 1971, long before the war ended, the United States and Australia abandoned their South Vietnamese allies, who then slid inexorably to defeat. Perhaps we can draw some cold comfort from this chastening episode in our history by invoking the axiom that nations learn more from defeat than from victory.

Wars of Choice

The first responsibility of any leader contemplating war is to understand the nature of the proposed conflict, as only then can suitable strategies be identified and campaigns planned. Two characteristics defined the American War in Vietnam from 1962 to 1975. The first was that it was a war of choice, as opposed to a war of necessity. This is an interesting distinction which can quickly give rise to uncomfortable thoughts. Without exception, wars lead to injustice and depravity. They also invariably generate unintended consequences, which may turn out to be worse than the alleged casus belli.

To elaborate briefly, a case can be made that of the many conflicts in which Australians have fought, only World War II was a war of necessity. In other words, it was our free choice to participate in World War I, Malaya, Korea, Vietnam, Afghanistan and Iraq. Sixty thousand Australian deaths from a conflict that was supposed to be won by Christmas 1914 is all that needs to be said about the unintended consequences of the Great War, while it will be years before we understand the full ramifications of the current campaigns against ‘terror’ in the Middle East and Central Asia.

Of the others, some 37 years after the last Australian angry shot was fired, Vietnam remains a powerful work in progress, largely because of the perception that it was, in Gerald Stone’s words from 1966, ‘a war without honour’. As more and more young men, many of whom were conscripts, died; as eight million tonnes of bombs fell on the Third World countries of Vietnam, Laos and Cambodia; as atrocities were watched nightly on television; and as the

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1 Various names are used for this conflict, including the Vietnam War, the Second Vietnam War (which assumes the French occupation as the first war), and the second Indochina War. To the Vietnamese, however, it is known as the American War, a title which accurately locates the fighting in time and context. As far as the war’s duration is concerned, most Australian combat forces had been withdrawn by 1972 but others, notably the RAAF’s C-130 squadrons, continued to operate in the theatre until only days before South Vietnam collapsed in April 1975.

conflict increasingly was recognised as a post-colonial civil war and not part of a monolithic global Communist conspiracy, bitter social upheaval ensued in the United States and Australia. That upheaval prompted massive moratorium movements in both countries and discredited their armed services, to the extent that returning servicemen were reviled.  

Precisely how those kinds of unintended consequences influenced Australian defence strategy and, by association, the Royal Australian Air Force will be a major theme of this paper.

The war’s second defining characteristic was that it was ‘expeditionary’, a model of combat in which armed forces from one or more nations are deployed to the territory of one or more other nations. One man’s expedition is, of course, another man’s invasion. Thus, in this instance, while thousands of Vietnamese (primarily Catholics in the south) welcomed the arrival of the Americans and their allies, thousands did not, regarding the presence of these latest foreign troops as simply another episode in a history of invasions dating back more than 1000 years, and which included the Chinese, Genghis Khan and the French.

The deployment of expeditionary forces immediately alters the dynamics of war. By definition, the land component of those forces will have to fight amongst the people of the invaded country, a circumstance which almost invariably creates profound social, cultural and political tensions. In turn, those tensions may fundamentally affect our definition of ‘victory’. Military operations in themselves rarely provide a satisfactory answer to the often extraordinarily complex sociopolitical issues that they unleash; on the contrary, consistent with the vexed tradition of unintended consequences, they may well make things worse. Vietnam provides a salutary case study.

American expectations of a quick victory underwritten by apparently overwhelmingly superior military power were soon frustrated by the enemy’s remarkable resilience and

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the strong popular support for the Viet Cong throughout South Vietnam. As American and Australian strategists slowly began to gain some vague inkling of the powerful political and cultural forces that were at the heart of the struggle, they launched a massive civil aid program intended to win the hearts and minds of the local population. But the delusion that foreign armies could fight a war amongst the people when more often than not those people and the enemy were one and the same invalidated that program from the outset. Neither senior army officers nor their political masters seemed to comprehend the stunning contradiction inherent in sending soldiers into a village one week to build schools, wells and market places, then several weeks later sending other soldiers into the same village to kill and maim its residents or to destroy their livelihood.

The civil aid program epitomised the Australian leadership's ignorance of the nature of the war in Vietnam. Anxious to garner credit with the American alliance, the Government and its military advisers had rushed into the conflict with an indifference to Vietnamese history that bordered on the depraved. A major actor in this process, incidentally, was the Chairman of the Chiefs of Staff Committee, the RAAF's Air Chief Marshal Sir Frederick Scherger. So eager was Scherger to send Australian forces to Vietnam that during preliminary discussions with the Americans in March 1965 he almost certainly exceeded his authority. Six years later, having been exposed to the realities of an expeditionary war of choice, it was a chastened collection of politicians and senior officers who orchestrated Australia's equally hasty retreat from Indochina.

**Defence Strategy**

The purpose of the preceding discussion has been to establish the strategic context within which Australian forces fought in Vietnam; in turn, that context provides the start point from which an assessment can be made of what, if anything, the RAAF learnt from the experience. I am going to suggest that the Air Force in fact learnt a good deal, and that its leaders subsequently applied that learning to their Service's strategic outlook, operational concepts and force structure. Let me explain.

Since Federation, Australian defence strategy has oscillated between two main forms, expeditionary campaigns and the defence of Australia, with the former being the dominant model. Within that broad framework, the RAAF commonly has been subsumed as a component part of a larger coalition force, a fate which in general has rendered irrelevant any Air Force voice in shaping higher strategy. Moreover, and without denigrating the

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4 The forces Australians fought in Vietnam comprised North Vietnamese troops, formally titled the PAVN (People's Army of North Vietnam), and previously called the Viet Minh; and the National Liberation Front of South Vietnam, popularly known as the Viet Cong.


courage and professionalism of the servicemen and women concerned, frequently that fate has also rendered irrelevant the RAAF’s warfighting efforts. For example, it may be displeasing to hear but it is nevertheless true that in Vietnam, the operations conducted by the RAAF’s in-country flying units, Nos 35, 9 and 2 Squadrons, were of no consequence whatsoever to the war’s ultimate outcome (a judgment which can be applied equally to the Australian Army and the Royal Australian Navy).

This observation warrants elaboration. Within the expeditionary model generally—a category that covers some nine decades—few instances can be found in which the RAAF has played an independent and/or decisive role. Exceptions include the following:

- from World War II, the Empire Air Training Scheme, the Combined Bomber Offensive against Germany and Italy, and No 75 Squadron’s defence of Port Moresby; and
- from Korea, No 77 Squadron’s air-ground campaign at Pusan.

It is noteworthy that three of those four exceptions occurred during World War II, perhaps Australia’s only war of necessity. In the main, however, an inference of political tokenism as the *raison d’être* for our expeditionary campaigns would be justified.

Returning to Vietnam, as the West stumbled towards defeat in the wake of the enemy’s Tet offensive of early 1968, Britain declared its intention to withdraw all of its defence forces from east of Suez, and US President Richard Nixon proclaimed his Guam Doctrine, informing America’s allies that in future they would have to accept greater responsibility for regional security.7 Suddenly it seemed that Australia would have to assume a far more self-reliant defence posture, an impression which was confirmed by America’s retreat from Vietnam in 1971, and by the final collapse of the now-abandoned South Vietnamese Government in April 1975.

As Australian defence planners began the search for answers to this novel challenge it was the RAAF which provided three crucial strategic judgments, one relating to the national defence strategy, another to force disposition, and the third to force structure. In combination, those judgments were to provide the foundation of Australia’s defence posture for the last quarter of the 20th century. That posture was to see a fundamental shift from the inherently offensive nature of the expeditionary campaign which had failed so comprehensively in Vietnam, to the inherently defensive nature of a strategy based on controlling the air-sea gap which surrounds the Australian continent.

Senior ministers responsible for national security in 1973 were alarmed to discover that there had never been an official study into defending continental Australia.8 As it happens,

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the subject had been addressed in 1925 by the RAAF’s first Chief of the Air Staff, Group Captain Richard Williams, who had developed a concept for dominating the air-sea gap with air power. But Williams had been working in an atmosphere hostile to airmen and his plan had been ignored.9 Half a century later, Prime Minister Gough Whitlam (a former wartime RAAF navigator) and his cabinet found themselves confronted by a series of taxing questions. How far did the notion of self-reliance extend? Under what circumstances could Australia rely on the United States? Should Australia adopt a maritime or a continental strategy? Was there a place for radical concepts such as nuclear deterrence and mass civil resistance?

The RAAF’s planning started with the enduring determinants of Australia’s strategic circumstances identified by Williams 50 years previously: geography, population, infrastructure and the economy. Four defence postures were developed: deterrence with conventional weapons, pre-emption, attrition and repulsion. After assessing the relative merits of each, Air Force planners concluded that repulsion, which was based on defending Australia in its surrounding air and sea approaches, was the best.

The concept was, however, incomplete, because repulsion’s essentially defensive posture was contrary to classical air power theory in which the inherently offensive nature of the air weapon is dominant. The missing element was added by the RAAF’s chief of operations, Air Vice-Marshal David Evans, who during a trip to Malaysia in an Orion in July 1977 took the draft paper as his in-flight reading and rewrote it.

While Evans’ thinking also focused on the air-sea gap it did so from a perspective which reflected the full spectrum of air power capabilities. Thus, instead of ‘repulsion’, Evans proposed a strategy he described as ‘anti-lodgement’. In Evans’ judgment, Australia’s meagre defence resources would make it difficult to dislodge an invading force; consequently, the prevention of a lodgement had to assume superseding importance. Specifically, under the anti-lodgement strategy, in the first instance enemies should be defeated in their mounting and staging bases and, failing that, during their transit of the air-sea gap. The strategy flagged the significance of the island chain to Australia’s north-west, as the RAAF believed that any aggressor would probably come through those territories. That assessment was not related to any particular country but to the realities of geography.

The subsequent endorsement of the anti-lodgement strategy by the Chief of the Air Staff, Air Marshal N.P. McNamara, meant that for the first time in its history the RAAF had a formally approved plan for the defence of Australia.10 Vietnam was the catalyst for this seminal development in the national defence posture.

There was a direct correlation between the anti-lodgement strategy and the force structure the RAAF was establishing in the 1970s. Highly capable platforms, such as the F-111C

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bomber, C-130 transport and P-3 maritime patrol aircraft were already in service, and the F/A-18 fighter and Boeing 707 long-range tanker/transport were under consideration. That correlation was reinforced when, because of the importance of surveillance to the new concept, the RAAF supported several significant new capabilities, including the Jindalee over-the-horizon (long-range) radar, airborne early warning and control aircraft, and additional air bases across the continent’s north.

![Image of Australia and the island chain to the north-west](image)

*Figure 2: Australia and the island chain to the north-west*

Before concluding this section, a brief comment on the relationship between technology and strategy is necessary.

If air power strategists salvaged anything from the detritus of Vietnam, it was the superseding importance of precision weapons. The classic case study came from the attacks on the road-rail bridge at Thanh Hoa, 100 kilometres south of Hanoi.\(^\text{11}\) Between 1965 and 1972 about 700 sorties were flown against the bridge at Thanh Hoa with little success. It was the introduction into the United States Air Force (USAF) inventory of 900- and 1400-kilogram electro-optical and laser-guided bombs which turned the tables and enabled the USAF to knock the bridge down in 1972. The use of precision guided munitions for the first time on a widespread basis indicated that, finally, if a target could be identified it could be hit. Technology had enabled (pre-existing) theory.

\(^\text{11}\) See ‘The Tale of Two Bridges’, in *Air War – Vietnam* (with an introduction by Drew Middleton), Arno Press, London, 1978, pp. 1–96. The second bridge was the Long Bien (previously known as the Paul Doumer), against which similar results were achieved.
The lesson was not lost on the RAAF. In 1980 Pave Tack electro-optical targeting pods were bought for the F-111Cs, and were complemented with laser-guided bombs. Once the Harpoon anti-shipping missile was added to the mix on the F-111s, P-3Cs and F/A-18s, the RAAF possessed the most potent maritime strike force in the Asia-Pacific region.

All of the conceptual and capability pieces were brought together in 1987 when the Australian Government published a Defence White Paper which fully addressed the strategic shocks originating from the Vietnam War. The centrepiece of that document, titled *The Defence of Australia, 1987*, was a strategy defined as ‘defence in depth’, which reflected the RAAF’s concept of defending Australia primarily in the air-sea gap.12 Defence Minister Kim Beazley acknowledged the Air Force’s key role in both the planning and operational components of the strategy by stating that air power, ‘defined in the broadest sense’, could provide the strategic and technological solution which Australia’s circumstances demanded.13

**Things We Already Knew: Enabling an Expeditionary Force**

The official endorsement of a new defence strategy was the most significant reaction to Australia’s and the RAAF’s involvement in the Vietnam War. At a more routine level, the Air Force benefited from relearning the mechanics of mounting and sustaining an expeditionary force.

It was not as though the RAAF was inexperienced in the demands of expeditionary operations. On the contrary, since World War II the Air Force had been involved in a series of extended overseas deployments in a diversity of locations, from Japan to the Antarctic, Korea, Singapore, Malaysia, Malta and Thailand. Each of those locations presented distinctive operational challenges, but the essential enabling services remained constant, as they had since the RAAF’s predecessor, the Australian Flying Corps, first sent an expeditionary force to fight in Mesopotamia in 1915.

At the top of any list of enabling facilities is a suitable air base. Guaranteed access to airfields and fuel are prerequisites for expeditionary air campaigns, and the (possibly unanticipated) need for both can cause problems which are usually absent at home.

Air forces fighting as junior partners in coalitions led by the United Kingdom or the United States during the Cold War could be confident that airfields would be available anywhere they went. That was the case in Vietnam, where the RAAF’s two main bases at Vung Tau and Phan Rang came ready-made with most of the essentials, including runways, movement surfaces, fuel supplies and navigation and air traffic services. The convenience of having those facilities readily available cannot be overemphasised; generally their preparation


takes years and large amounts of money. It would be naive to think that the RAAF could have deployed to Vietnam in the strength that it did for as long as it did had those amenities not been provided by the Americans.

Not that the RAAF got a free ride in Vietnam. Vung Tau and Phan Rang were deficient in a number of respects, and it was left to the RAAF’s quiet achievers, its airfield construction squadrons, to rectify matters. High standard domestic and operational facilities were built at both bases and were vital to the effectiveness of the RAAF’s operational squadrons.14

The story of the airfield construction squadrons does not end there. In the years immediately prior to Vietnam, those squadrons made perhaps the single greatest contribution to enabling the national defence posture.

Because Australia is an immense, isolated country with a relatively small defence force, the ability to move troops and equipment quickly to vital areas has always been a central planning consideration; and ever since aircraft replaced ships as the most effective means of rapid deployment, the key to force disposition has been the RAAF’s airfields. Some 10 years before the first Australian unit landed in Vietnam, the RAAF had embarked on a program to build the air power infrastructure demanded by Australia’s strategic geography. Since then the series of bare bases across Australia’s vast northern coastline have been fundamental to every significant overseas operation mounted by the Australian Defence Force. In other words, the legacy of the airfield construction squadrons has underpinned Australian defence strategy.

It was ironic, therefore, that just as Australia was withdrawing from its expeditionary war in Vietnam and moving towards the defence of Australia strategy, the RAAF was in the process of disbanding its airfield construction squadrons. One of the first victims of what in the 1990s was to become the government-mandated policies of ‘commercial support’ and ‘efficiency reviews’, the airfield construction squadrons were progressively paid off, with No 5 Airfield Construction Squadron being the last in late 1974.

Before leaving the topic of bases, the question of airfield defence should be addressed.

Once a base has been established, its people and facilities must be protected. Under joint Service agreements reached in the late-1940s, responsibility for the broad ground defence of RAAF installations rested with the Army.15 However, the Army was never interested in meeting its obligation and eventually the Air Force decided it would have to do the job itself. A new mustering known as Airfield Defence Guard (ADG) was introduced in 1965, with the task of protecting RAAF people and equipment inside and outside base


15 Air Board Agendum 9770, 19-9-49, RAAF Historical Records Section; Chiefs of Staff Committee Memorandum 2/1969, Inter-Service Responsibilities for Ground Defence of Naval Establishments and Air Force Installations, February 1969, CRS A7941, M27, National Archives of Australia.
perimeters.\textsuperscript{16} Like the airfield construction squadrons, ADGs played a significant if largely unheralded part in enabling the RAAF’s deployment to Vietnam.

Gaining access to suitable airfields and being able to protect them is one thing; getting people and equipment from their staging posts in Australia to distant places can be another thing altogether. Vietnam demonstrated yet again the adage that too much airlift is never enough. The mainstay of the RAAF’s long-range logistics effort was its two C-130 squadrons, which constantly shuttled between the rear staging posts in Australia and the front lines in Vietnam. Without that capability the campaign could not have been fought the way it was. Special mention should be made of the C-130 medical evacuation (medevac) flights, which brought seriously wounded soldiers from the battlefields of Phuoc Tuy Province back to Australia in a time frame that could mean the difference between life and death.

RAAF airlifters were supplemented by the extensive use of civil charter flights, most notably Qantas B-707s, which transported almost half of Australia’s soldiers, sailors and airmen to and from the war zone. The importance of fast, long-range airlifters to a nation with Australia’s strategic geography was scarcely news to the Air Force, which had been lobbying for the capability almost from the time aircraft like the B-707 and its British counterpart, the de Havilland Comet, first appeared.\textsuperscript{17} Vietnam made the case incontestable, and B-707s started to appear in the Air Force’s inventory in 1979.

Equally incontestable was the significance of air-to-air refuelling. While the RAAF lacked an air-to-air refuelling capability during the Vietnam years, the lesson of the American experience, especially for long-range strike missions, was obvious. RAAF leaders came away from Vietnam convinced that tankers could make an enormous difference both to expeditionary campaigns and operations from mainland Australia. However, air-to-air refuelling exposed a sharp philosophical difference within the Department of Defence that centred on the Air Force’s strategic posture. Air strike operations provided the context, and the range of the RAAF’s bomber force the point at issue.

A case can be made that air force operations are inherently expeditionary, even when they originate from homeland bases. Early examples include the raids by German airships against England in 1915, the Combined Bomber Offensive in World War II, and the strikes against targets in Borneo and the Netherlands East Indies by Australian-based RAAF B-24 Liberators in 1944–45. In Vietnam, air-to-air refuelling added a new dimension to the model. B-52s, for example, routinely flew 3000-kilometre, transoceanic strikes against North Vietnam from Guam. Recent conflicts indicate a growing preference for this form of expeditionary air power. Operations \textit{Desert Storm} (1991), \textit{Deliberate Force} (1995), \textit{Enduring Freedom} (2001), \textit{Southern Watch} and \textit{Northern Watch} (1991–2003), and \textit{Iraqi Freedom} (2003) all involved the application of coercive power against enemy homelands.


\textsuperscript{17} The Comet’s first commercial flight was in 1952, the B-707’s in 1958.
by aircraft operating from bases in other countries. The Israeli Air Force’s strikes against nuclear reactors in Iraq in 1981 and Syria in 2007 provide another illustration.

Two issues here are pertinent to this conference’s theme. The first is whether or not the label ‘expeditionary’ is misleading when applied to air operations; and perhaps those examples suggest it is. The second concerns Australian defence strategy and the arrival in June 1973 of the RAAF’s long-range F-111C bombers.

Twenty-four F-111s had been ordered by the Menzies Government in 1963 in part because of their ability to attack targets in Indonesia from Darwin and Learmonth. In other words, the F-111s were capable of mounting expeditionary operations from the Australian mainland. But while they had sufficient range to reach many potential targets unrefuelled, others were either on the limits or beyond reach. Air-to-air refuelling was the obvious answer. Yet it was to be almost 30 years before the RAAF finally acquired tankers; and when it did those aircraft (converted B-707s) could only refuel the Air Force’s short-range F/A-18s.

Journalist Frank Cranston described the RAAF’s fight to get in-flight refuelling as ‘one of the unsung sagas of post-war defence planning’, and suggested that the F-111s were deliberately excluded for political reasons.18 According to Cranston, influential Defence bureaucrats feared that the extra reach the F-111s would get from air-to-air refuelling might be perceived by regional states as ‘aggressive’. Once again the issue centred on the RAAF’s place in Australia’s post-Vietnam defence strategy. In this instance, rational strategic thinking was confounded by an immature perception of the nature of air power and expeditionary warfare.

**Personnel**

Vietnam presented some considerable personnel challenges. The deployment of three squadrons was the RAAF’s largest since World War II, and each of those units had to be fully staffed with operationally-ready air and ground crews. Additional pressures arose from the need to staff numerous stand-alone postings with USAF units.19 Complicating the whole process was a posting policy which limited tours of duty to one year, regardless of the state of the war.

The policy contrast with World War II is intriguing. Australians regarded World War II as a war of national survival—as a war of necessity, rather than as one of choice. Consequently, most combat personnel were required to remain on active duty until the Axis was defeated unconditionally, however long that might take. We might therefore infer from the posting policy in Vietnam that Australia’s leaders regarded the eventual outcome there as either guaranteed (as in an American victory) or irrelevant.

Rotating people annually created major recruitment and training problems, which were exacerbated by the simultaneous introduction into the RAAF of a host of new aircraft

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19 These included photographic interpreters, F-4 Phantom pilots and forward air control pilots.
types, each of which intensified the demand for skilled personnel.\textsuperscript{20} The obvious answer was to boost recruitment. Thus, between 1962 and 1970 the Air Force's strength grew from 15,815 to 21,785, an increase of almost 38 per cent.\textsuperscript{21} The strains this placed on an already stretched system were most visible in the disproportionate need for pilots and technical ground staff, whose training was complex, expensive and time consuming.

The number of pilots graduating annually throughout the 1950s had remained fairly constant in the mid-30s. That comfortable routine collapsed in the early 1960s when Vietnam's fixed-duration tours created an insistent demand for more. In January 1964 the required annual graduation rate was raised from 38 to 46; in May to 50; in January 1965 to 54; and in July to 66.\textsuperscript{22} By 1968 it had reached 100.

Simply increasing the number of pilots under training was not the answer. Standards had to be maintained, and expanding the training system—instructors, aircraft, facilities, support services—could not be done overnight. Furthermore, it took at least two years from the time a decision was made to increase the training rate until graduates started to arrive at the front line.\textsuperscript{23}

Consequently, several bandaid fixes were implemented, including withdrawing pilots from ground duties, borrowing qualified flying instructors from the RAF, recruiting experienced pilots from Britain, Canada and New Zealand, and reducing the resignation rate of serving pilots. Standards for granting permanent commissions or renewing short service commissions were 'relaxed to the minimum acceptable level of performance', and extensions of service beyond normal retirement ages were offered.

Simultaneously, substantial changes were made to the pilot training system. Four courses of direct entry students were inducted each year, instead of two or three, and student numbers were boosted. Extra instructors were posted to the flying training schools, and the instructor-to-student ratio at the Advanced Flying Training School was raised from 1:2 to 1:2½ (at the Basic Flying Training School it remained at 1:3). Finally, the Royal Canadian Air Force, USAF and RAF were asked to train RAAF pilots.\textsuperscript{24} When the small number of qualified pilots recruited from other air forces was added, the Air Force was getting close to the 100 it needed annually to resolve its crisis.

\textsuperscript{20} The Vietnam War coincided with the RAAF's biggest re-equipment program since World War II. Aircraft being brought into service included the C-130, SP2H Neptune, Iroquois, Mirage, Caribou, Macchi and Orion; additionally, the F-111 was on order.

\textsuperscript{21} The numbers refer to the Permanent Air Force. See Appendix B, 'Personnel Strength of the RAAF', in Stephens, \textit{Going Solo}, p. 501. The numbers include the RAAF Nursing Service, whose strength grew only slightly from 67 in 1955 to 122 by the end of the 1960s.

\textsuperscript{22} Services Recruiting and Manpower, 17-12-63, CRS A7942/1, R103, National Archives of Australia; Air Board Agendum 13110, 29-6-65, RAAF Historical Records Section.

\textsuperscript{23} Air Board Submission 9/66, 10-2-66, RAAF Historical Records Section.

\textsuperscript{24} Three Year Defence Programme, Air, 21-2-67, CRS A7941/2, D9, National Archives of Australia; Air Board Agendum 13115, 9-7-65; Air Board Submissions 15/66, 18-3-66; 65/67, 27-10-67, RAAF Historical Records Section. Point Cook was the site for the basic flying school, Pearce for the advanced.
In the space of three years the number of new pilots entering the RAAF was trebled, a noteworthy achievement for a small force which was not formally on a wartime footing, even though it was fighting a major war.

A similar pattern unfolded with technical ground staff, for whom the demand also trebled. By 1966 there were some 1800 trainees of varying mustering at the RAAF School of Technical Training at Wagga, compared to an historical average of about 150. Accommodation blocks had to be fitted with double-bunks, and some staff found themselves rostered for 37 lecture periods a week.

The implicit categorisation of Vietnam as a war of choice, with its associated policy of time-limited tours of duty, had compelled the Air Force to ‘surge’ the recruitment and training of its most important resource, pilots and technical ground staff. It is noteworthy that the training associated with that surge was conducted by RAAF units which, in the years since Vietnam, have largely been outsourced. Swept up in the ideologically-motivated Commercial Support Program and Defence Efficiency Review of the 1990s, the RAAF School of Technical Training was outsourced in 1993, and No 1 Flying Training School in 1998. Precisely how the commercialised system would manage a similar surge within existing contractual arrangements has not yet been tested.

**Command and Control**

Command and control of the RAAF in Vietnam involved combined, joint and single Service arrangements; and the experience ranged from routine to contentious.

The arrangements for Nos 2 and 35 Squadrons were relatively uncomplicated. Operational command was retained by the RAAF; and operational control was delegated to the relevant USAF tasking authority, the Seventh Air Force for the bombers and the Airlift Control Centre for the transports. As a very small contributor to massive strike and airlift campaigns, the RAAF had limited influence over tasking, and none over policy. Nevertheless, the excellent reputations quickly earned by both squadrons at least meant that when RAAF commanders did raise concerns about roles and missions their opinions were treated with respect. It was less satisfactory that both squadrons unavoidably became captive to the American approach to warfighting, in which the square-ticking exercises of counting enemy bodies and targets destroyed, or tons of cargo delivered, became a substitute for strategy.

26 RAAF News, September 1966, p. 6; and Air Vice-Marshal R. Noble, Interview, 24 November 1993.
27 There is no evidence that the surge led to a drop in quality; on the contrary, Nos 35, 9 and 2 Squadrons consistently achieved higher standards than comparable American units: see Alan Stephens, The Australian Centenary History of Defence – Volume II – The Royal Australian Air Force, Oxford University Press, South Melbourne, 2001, pp. 262–3, 268 and 272–3.
28 The Australian Task Force at Nui Dat nominally had first call on No 35 Squadron but in practice this authority was exercised infrequently. Coulthard-Clark, The RAAF in Vietnam, pp. 107–8.
No 9 Squadron found itself in a much different environment, one riven by inter-Service politics. Unlike Nos 2 and 35 Squadrons, No 9 Squadron was deployed to Vietnam specifically to support the Australian Army Task Force. Operational control was exercised by the RAAF through the Task Force Air Commander, a group captain located with the Army at Nui Dat, some 20 kilometres north of 9 Squadron's administrative and maintenance centre at Vung Tau.

Tensions surfaced immediately the squadron arrived in June 1966, when Australian Army commanders with little knowledge of air operations unfavourably contrasted No 9 Squadron's apparent caution with the (sometimes reckless) tactics of US Army Iroquois units. The issue was complex and needed understanding and cooperation on both sides. Instead, an atmosphere of mistrust and mutual criticism quickly developed.

This unhappy affair was to leave a bitter legacy for the RAAF. Twenty years later, following a sustained campaign by the Army, the government of the day transferred ownership of the Defence Force's so-called 'battlefield' helicopters from the Air Force to the Army. That story has been told elsewhere and needs no further comment here. What does require comment are the command and control arrangements under which the Australian Services operated in Vietnam, and which made possible this damaging inter-Service dispute.

Under the Defence Act 1903 and the Air Force Act 1923, Australia's Navy, Army and Air Force were commanded separately. Statutory authority was exercised by individual Service boards, which in turn answered individually to a government minister. This was an arrangement that facilitated any predilection for the Services to assert their independence, even, as sometimes happened, at the expense of the common good.

An effort to introduce a system more sympathetic to the imperatives of joint warfare had been made in 1958 with the appointment of a Chairman of the Chiefs of Staff Committee. However, although the incumbent became Australia's most senior military officer, he had no legal command authority. Consequently, if the Service chiefs disagreed over operational matters, as was the case with the Army and the RAAF in Vietnam, they could simply refuse to cooperate.

The dispute over the employment of the RAAF's helicopters was one of a number of unsatisfactory command and control problems which became evident in Vietnam, and which added strength to previous calls for a major overhaul of the entire system. That overhaul came in 1973, when a review conducted by the Secretary of Defence, Sir Arthur

29 During the Vietnam War the US deployed some 11827 helicopters of all types, of which 5086 were destroyed, 3587 to hostile action. See Air Vice-Marshal Tony Mason, *Air Power: A Centennial Appraisal*, Brassey's, London, 1994, p. 188; and 'Helicopter Losses during the Vietnam War', at http://www.vhpa.org/heliloss.pdf, accessed 14 February 2008.

30 For a comprehensive analysis of this affair, see Stephens, *Going Solo*, pp. 289–296.

Tange, formally brought the Services into a unified command structure. \(^{32}\) Since then the Chief of the Defence Force has legally commanded all three Services, an arrangement which gives him the authority to deal decisively with the kind of problem that arose in Vietnam.

Vietnam also exposed some issues within the RAAF’s single Service command system. Since 1953 the RAAF had been organised functionally, with a central policymaking authority (the Department of Air) in Canberra, an operational headquarters (Operational Command) in Glenbrook, and an enabling headquarters (Support Command) in Melbourne. Accusations arose that policy officers in the Department of Air frequently usurped the authority of operational role specialists at Operational Command, the latter being regarded by some as little more than a post office en route between the fighting units in Vietnam and the Department of Air. Precisely what the role of so-called operational level headquarters might be has remained a persistent question since Vietnam.

**Conclusion**

At a strictly professional level the RAAF’s involvement in Vietnam was rewarding. The operational units performed with distinction, and the experience underpinned the Air Force’s professional expertise for the next two decades. At the same time, it needs to be understood the RAAF’s warfighting contribution was irrelevant to the conflict’s final outcome (as were those of the RAN and the Australian Army).

The nature of the war placed distinctive demands on the Air Force. Foremost among these was the requirement to surge personnel recruitment and training, a task that was conducted primarily in-house by units that have since been outsourced. It also placed a premium on airfield availability, preparation and defence, noting again that the first two were provided in Vietnam by capabilities no longer resident in the RAAF. Command and control was another complex challenge, with the RAAF having to deal with a range of combined, joint and single Service issues.

Finally, and most importantly, the disaster of Vietnam was the catalyst for a fundamental shift in defence policy, from expeditionary campaigns to the defence of Australia, a shift which placed a priority on air power. The new policy was, however, to last less than a decade, at which stage the memory of Vietnam apparently faded and the national predilection for joining expeditionary wars of choice began to reassert itself.

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Panel Discussion

Dr Chris Clark

Group Captain Doug Hurst, MBE (Retd)

Air Commodore Mark Lax, CSM

Dr Alan Stephens, OAM

Air Commodore Tim Owen (Moderator): You now have the opportunity, ladies and gentlemen, to put some questions or comment to our four distinguished panellists, who have given presentations this morning. What I would like to do is to reinforce a couple of ideas that have struck me during the morning which might provide you with a bit of a feed and jog your memory as we step through the next half hour. A few of the key points that I picked out this morning were developing and measuring strategy and effect; operational transitions; and a big one for us, the strategic influence of air forces and maybe we can talk a little bit further as we move on to that. I think there were a lot of points made about how we evolved as a very good tactical Air Force with absolutely little or no strategic influence. Other key points were organisational design to generate and sustain and adapt to operations; the nature of the Australian region, which I think is an important one; the huge distances and the maritime and continental side of that; the massive weather variance that we have in our region; also those ‘come as you are’ implications for a small air force, as we are; credible and designed command and control, and a number of the ‘screw ups’ that we have experienced in the last 30 to 40 years; and, finally, the credibility of the force in terms of command, training, materiel and strategy. So, while not trying to lead the discussion, I put these points to you as a memory jogger for you all. Ladies and gentlemen, the floor is open to you.

Air Vice-Marshal Graham Neil (Retd): Could I ask Doug Hurst to expand a little on the ‘Cab Rank’ operation out of Taegu, because I believe that operation is a classic example of interoperability between air forces.

Group Captain Hurst: The ‘Cab Rank’ system was very much as it says. What would happen is that an aircraft would come back off a sortie, the pilot would get out, have a comfort break and a feed, they would refuel and rearm the aircraft and it would join a queue. As they flew missions, they would take the aircraft from the front of the queue. There were three main forces involved: the US Air Force, US Navy and 77 Squadron, and they flew with whichever mix they had at the time. They all had the same weapons, they basically were flying similar sort of aeroplanes and they all had the same understanding of the AO [area of operations] and the operations. It worked really well. On some occasions they actually got airborne and flew racetracks so they would have a faster response but most of them were off the ground. Some of them were very close to the border of the Pusan Perimeter, some of which was defined by the Naktong River which was a very large river, and some of them went way up country to try and hit troops and supplies on the way down. Some of the ‘Cab Rank’ sorties would go for three or four hours, some flew as little as 25 minutes.
Air Commodore Lax: The ‘Cab Rank’ system started in World War II. It was developed initially through the Western Desert Air Forces but predominantly used in Italy and the Second Tactical Air Force over Europe. What would happen is that they would actually have an airborne ‘Cab Rank’ system, whereby the fighters and fighter bombers would hold at some altitude, awaiting call in by the ground controllers. During the post–D Day phase it was called the ‘Roger David’ system after the Army officer who proposed it. So jointness was well used then and continues on today.

Warrant Officer Ian Kuring (Army History Unit): I have a question for Alan Stephens. How do the views you used early in your presentation about the Vietnam War compare with the views you held when you went to serve in Vietnam?

Dr Stephens: I would hope that I have learnt something in 40 years. I think, like the great majority of Australians from my generation, my ignorance of Vietnam was extreme in 1966. I hope that’s not the case any more and, certainly, my thoughts on strategy, and in particular Australian strategic policy, these days are strongly influenced by what I’ve learnt in those 40 years. I’ll add one other thing. I was a Pilot Officer in 1965, so I was allowed to be stupid. I don’t in any way, however, excuse the senior political leaders or military leaders who led us into what was, in my opinion, an unmitigated disaster. There is no excuse for political and military leaders who take us into these kinds of things for not knowing what they’re doing.

Air Vice-Marshal Bob Richardson (Retd): Alan [Dr Stephens], on this ‘Cab Rank’ concept, I wondered whether it might have been one of the earliest examples of airborne ‘cab ranking’, the extraordinary flexibility afforded by the refuelling capability around South-East Asia in the 1960s. In Ubon in 1964–65, they were operating 10-hour missions, where they were taking ten 750-pound bombs into North Vietnam and then sitting off the coast, as I recollect, for hours and hours, tanking and waiting to be called in for all sorts of purposes—air protection, strafing and things like that. I think there were quite a number aircraft, stacked and waiting to be called upon and then they would come home. They would have up to 10-hour missions, as I recall, because they would have a tanker that did nothing else but sit over northern Thailand to act as a diversion capability in case of thunderstorms that would prevent them from coming back to their home base. Those were quite extraordinary capabilities and a flexibility brought in by aerial refuelling that had a deep impression on us in the 1960s. Would you agree?

Dr Stephens: It’s a very good comment. In fact, it occurred to me while you were speaking that there is a great article to be written there about the ‘Cab Rank’ system representing the start of what I’m saying is expeditionary air power, that originates ideally from our homeland, and which gets to its target through tanking. Again, I was thinking as you were talking that you could relate the extraordinarily successful operations mounted by NATO from 1991 to 2003, Northern Watch and Southern Watch, in which expeditionary air power, mounted from bases outside Iraq, exercised air supremacy over two thirds of Iraq and could have extended it to a far greater extent had it been necessary. I think it is intriguing to link the ‘Cab Rank’ system.

Air Commodore Peter McDermott (Director General Reserves – Air Force): The points that you have made are well understood and well accepted, and I did hear in the break someone saying, ‘Oh, we didn’t learn that for Iraq’, and that’s probably true and probably will be true for the future, and it’s important that we have events like this to pass on the messages. But looking to
a wider view, perhaps, from what I’ve gathered from what you’ve said, the messages are, if we are going to be expeditionary in the defence of our own country in our own interests, we need to have an extensive logistics system, we need to have great and powerful friends, and we need to have bases to operate from. Now, if those last two or three items are not available to us or are restricted to us, and leaving to one side force extenders that come with tanking and long-range aircraft, and leaving to one side floating air bases, what sorts of things could we think about in terms of the capacity to engage with those folk who wish to do harm to our interests, from our continent, without significant increases in expenditure?

Dr Clark: I’d make one comment here. I think we need to recognise that when we consider sending an expeditionary force, we are going to have to accept or examine the conditions under which we’re going to be offering that force. That’s slightly different to the things we do to ourselves through neglect or failure to make proper provision. An example of that comes to mind. At the end of my paper I said I was waiting to see whether some of the problems of World War II were picked up and changed, or acted on in later conflicts. One area where we fell down badly in Vietnam was where we sent in the original Transport Flight of six Caribou aircraft and effectively just dumped them administratively. A minimal amount of forethought would have avoided the situation where a CO was so bereft of administrative resources that he was obliged to trade on the black market just to keep his unit afloat. Those sorts of situations are plain ludicrous. I think they are the type of factors we need to take into account in preparing for expeditionary operations.

Air Commodore Lax: Another thing is we have to be prepared for the long haul. We live in a time of instant gratification, of get in and get out quickly, everything’s happy and joy. The Malayan conflict was 10 years in the making—we didn’t know how long it would be, we thought we’d be there a few years. The Korean War could have dragged on. Vietnam certainly did and Iraq potentially will. I mean, we may only be halfway through that now, we don’t know. But when we went there first off, I’ll bet the planners didn’t think we would still be there doing exactly that now. I think that’s another thing, that’s part of the logistics support, the planning and the training. We actually have to be prepared for the long haul.

Group Captain Hurst: Could I just add one thing? The people are really important. They had a rotation in Korea. The average tour was about six months and we ran out of pilots. We had also decided to send people to Malaya at the same time and we had committed aircraft to Malta. We basically ran out of pilots. It took 18 months to two years to train the fighter pilots we needed and the peacetime training rates simply did not create enough pilots to meet the requirements of rotations and casualties, and we had a lot of casualties. We had 47 killed or captured and that was nearly one quarter of all the pilots who served in Korea.

Colonel Roger Hooper (British High Commission): My question is aimed at Dr Stephens. I hadn’t realised before that one of the outcomes of the Vietnam War was the resulting transfer of helicopters from Air Force to Army. Could I ask for your views, some decades later, on whether you think that has been a success or not, or indeed anybody else in the room who would like to comment?

Air Marshal Funnell (Retd): My own contention, Alan, would be that there’s not too much useful that you can say in this context in the time you’ve got available.
Dr Stephens: Thank you, Sir—I always take Air Marshal Funnell’s advice. As an Air Force officer I was attached to the Army in Vietnam and I was sympathetic to their unhappiness in the early months with the RAAF’s performance. I felt they had legitimate grievances. But I continue to believe that, in a Defence Force like ours, it’s just not efficient or effective to run three air forces. I think neither Service really won from the decision.

Wing Commander Bill Evans (Retd): A philosophical question for the panel on the use of the term ‘expeditionary’. That’s the title of the History Conference and, at the risk of sounding heretical, I’m just wondering precisely what is an ‘expedition’. Does it imply a long distance from Australia? As Alan [Dr Stephens] said, one man’s expedition could be another man’s invasion. In the context of modern joint military operations, which we will be part of, is the term ‘expeditionary’ still relevant today? It can have in certain situations rather pejorative connotations, like an ill-fated expedition or a bunch of people leaping together and going off and doing something with a rush of blood sort of thing. Is the term still relevant? I can’t think of another term offhand, it’s just a philosophical question.

Dr Clark: I think the Chief’s opening remarks actually set the parameters for what we are talking about with the term ‘expeditionary’. It is deployments outside Australia, away from our normal home operating bases, for probably a limited duration, with a specific strategic intent and, more likely than not, it will be in conjunction with allies. I think ‘expeditionary’ is as good a term as any to describe those sorts of operations. The fact is though that they will be very similar to other operations—sustained operations, garrison operations, perhaps sometimes in certain circumstances where what is originally a garrison turns into a shooting war. I think there are similarities between expeditionary operations and others that we might undertake.

Dr Stephens: Philosophically, I think airmen generally made a mistake when they jumped on board the slogan when it was dreamt up, I think, by the United States Air Force after the Gulf War when their expeditionary air forces were formed. I think it misrepresents the nature of many air operations and it will misrepresent them even more so as air weapons move into space and acquire even greater range and persistence than is presently the case. I’d delete the description from our vocabulary.

Mr Seb Cox (RAF Chief Historian): I’ve got one observation to make and then a question to Mark Lax. My observation is that I absolutely agree with the comment you made in your paper regarding the crucial issue of collocating the two headquarters. That was indeed a crucial move in the Malayan campaign and, irony of ironies, had we not learned that lesson just a few years before and forgotten it very quickly? In fact, on the capacity to forget that lesson very quickly, the RAF and the Army succeeded in forgetting it between transiting from the Mediterranean Theatre to the North-West Europe Theatre in 1944 because ‘Monty’ [Montgomery], having written a very erudite little pamphlet saying it was essential, then because he couldn’t stand the commander of the Second Tactical Air Force promptly located his headquarters elsewhere. So our capacity to forget things quickly is pretty good too. My question, Mark, relates to your comments about the bombing. Obviously 18 killed is not a particularly impressive number, given the weight of tonnage that was dropped on them, but in the context of your wider understanding of that bombing campaign I wondered
whether there was evidence, particularly from surrendered CTs [Communist terrorists], to
support the case you made that it was, in fact, quite effective in achieving the other aims set
out for it other than simply killing people.

Air Commodore Lax: Good question. For those that have the opportunity, I suggest you
have a look at Chin Peng’s biography (the Communist leader), curiously enough published
in Singapore a few years ago. It actually has a number of paragraphs devoted to the bombing
campaign, specifically mentioning 1 Squadron’s Lincoln bombing and, in fact, one of the raids
almost killed him. He talks about the death of Stalin also was almost the death of him in that
same month. What happened was that they heard the spotter plane, which was a little Army
Cooperation Auster, when it fired smoke into the camp where they were. There was Chin
Peng, two of his deputies and about 10 other regional heads. They knew that would mean that
within literally minutes the bombing would come down and they took off. The bombing raid
actually ended up killing a couple of his henchmen and he got wounded. It convinced him
that he needed to decentralise his whole network and, in many ways, it actually prolonged
the terrorist campaign because, had he maintained a more centralised control and centralised
execution method of command, it might have meant that the ground forces could have
isolated him and prevented him from going further. The book is an interesting read. I think
it was actually 23 terrorists we got in the end, after about ‘11 million tons’ of bombs, give or
take a few. But the point about centralising the air component with the land component, I
just wonder how much of it is driven by personalities and goodwill between mates than it is
a directive from some higher authority, whether it be Government or CDF or someone like
that, because it is will to succeed that we are talking about here not collocation of where they
happen to be sitting, and the Montgomery-Tedder example is a good one.

Air Commodore Tom Trinder (Retd): In relation to expeditionary forces and contracting
out, I just wonder how we are shaped now and for the future with the contracting out that
has gone on. If I can just refer to April–May 1966 with the changeover of the battalion in
Vietnam; I recall that Qantas aircrew went on strike for higher ‘danger’ pay and, in fact,
instead of Qantas changing them over, the Air Force was forced to shuttle four Hercules, I
think it was, for about a month, moving the troops to and from. I think that has significant
implications today and for the future in how we mount expeditionary forces.

Squadron Leader Alberts: With those campaigns that we were talking about there and it was
often not the critical force that we produced for the air campaigns in those theatres, I was
just wondering whether we went into those with a clearly defined military end state—and
you could obviously argue that we didn’t have a clearly defined political end state either—
and whether there are any lessons to draw with our current operations.

Group Captain Hurst: In respect to Korea, it was an instant reaction to the fact that the
North had invaded the South, and the short-term strategy was to stop them taking over
the whole peninsula by maximising air power while the ground forces built up. That was
a short-term aim. After that, once they looked like winning the war, the aim was to unify
Korea, hold elections and create a modern country. Bearing in mind the fact that the place
was just about flattened by then, that was a pretty big challenge. Then the Communist
Chinese came into the war and totally changed it. From then on, for the UN countries—
there were about 21, I think—their aim was to contain the war along the 38th parallel and bring it to a halt. So, no, when it started there was no terminal objective because it was an instant reaction to an invasion and all they were trying to do was stop the invasion and then they kept making up the strategy as the world changed.

Air Commodore Lax: Malaya was a bit different, of course, because it was on the heels of World War II. It looked to the world that Communism was going to have a so-called ‘domino effect’ through South-East Asia. The Vietnam War didn’t really start in the 1960s—it had been going back from the time the French reoccupied and then, of course, Dien Bien Phu in the early 1950s. All these things to our political leadership were the fact that eventually Australia may succumb to the ‘red hordes’, or the ‘yellow hordes’ as they called them back then. So the political aims were specific: to maintain British control and administration in Malaya, and return the rightful government, basically as a police action against what they called ‘bandits’. They were just criminals as far as the government was concerned. The fact is that it took 10 years to resolve, and it was a political solution driven out of the Foreign Office in London and the Department of External Affairs in Australia. So, yes, they had an aim but they didn’t know how long it was going to take them.

Air Commodore Owen: I’m going to take the opportunity to ask the last question, as the chairman can do. Gentlemen, with the gems that you have espoused this morning dating back from World War II to reasonably contemporary history, if you where the team writing the Defence White Paper would you have any views on how you might look at constructing an air force as we move into the future? What might you add or subtract? I don’t want to focus only on the defence capability side of it, but just your views on how we may look to the future.

Dr Stephens: In my opinion, you should start from the belief that, whatever kind of conflict we are involved in the next 20 years, almost certainly there will not be a military solution and you need to structure your force with that in mind.

Group Captain Hurst: I would say that we must have a sustainable logistics chain that can support our people out in the field, no matter where they are in the world. We have relied very, very heavily on our allies for this in the past, particularly the Americans, and it’s worked but we really haven’t pulled our weight in that regard and we very nearly got caught out in Korea—guys didn’t even have suitable clothes to wear!

Air Commodore Lax: I’d say three things: balance, core values and innovation, which is what we have been good at ever since we formed. I think you need to keep those things in mind, in the background if they did not come out in the White Paper. There are a number of other issues we could talk about, maybe off line, but one question I might ask of you, ‘What are we going to do when we run out of aviation fuel?’

Dr Clark: I think all the conflicts we have talked about this morning demonstrate one thing. Often we have gone into a conflict expecting a defined set of situations and found ourselves committed to a conflict of an entirely different sort. The only way I think you can prepare for that is, as Mark [Lax] suggests, aim for balance in your force and keep in mind the unknowable.

Air Commodore Owen: On that note, gentlemen, thank you very much. I’m sure you would all agree that it has been an outstanding morning and we certainly will press on with that same quality this afternoon.
Air Power in the Falklands War of 1982

Mr Sebastian Cox

As you have heard, I am going to be talking about the Falklands War—expeditionary air power in the Falklands War of 1982. Just to remind you all, the conflict stemmed from a surprise Argentinean invasion at the beginning of April of the Falklands Islands and South Georgia, and the subsequent British campaign to recapture them. As all previous studies had concluded, incidentally, that the Islands were indefensible, there were no contingency plans in place for this operation.

You should also bear in mind two powerful underlying factors when thinking about this campaign, which constantly influenced the events I am going to discuss. The first of these was the highly charged political situation surrounding the war. Ambiguous attitudes on behalf of many in the United Nations (UN) and divisions in the US administration, as well as domestic political conditions in both Argentina and the UK, meant that the weeks leading up to the British landings were greatly complicated by political considerations which bedevilled the military planners. The second powerful underlying factor was that the UK had very recently undergone a fundamental Defence Review; one of the principal outcomes of which had been proposals for large-scale reductions in the Royal Navy’s surface fleet. Many in the higher echelons of the Navy thus considered the war an opportunity to demonstrate the fundamental flaws in that review. This outlook pervaded the operation with both positive and negative effects, and there is evidence that the desire for a rethink on the Defence Review led to a preference for a use of purely naval assets to the detriment of operational capability.

From the start, the exact role that air power might play in any operation to retake the Falkland Islands was unclear. Air superiority was accepted from the first as apparently a sine qua non for recapture of the Islands but, with no contingency plan to draw on, no clear idea of what form any conflict might take, plus the political need to deploy forces south as quickly as possible, early planning was necessarily ad hoc and unfocused. In other words, the British armed forces were faced with doing what British armed forces have traditionally done when their Government has landed them at short notice in a war for which they had not prepared, which is to say, ‘skilled improvisation’. Initially, this centred largely on the assembly and dispatch of a task force, but even that was in many quarters surrounded by expectations regarding its diplomatic rather than its military utility. There were differing assessments of Argentine capabilities and it is known that at least one early assessment given to the War Cabinet, and probably emanating from the Naval Staff, concluded that the air threat was only, and I quote, ‘moderate’. ‘The Argentines will need luck on their side if they are to inflict substantial damage on the Task Force.’ Events were to suggest otherwise.

From an air perspective, the most obvious difficulty was basing. Prior to any landing on the Falklands, therefore, the air campaign could only be conducted from the two available Royal Navy (RN) carriers, HMS Hermes and HMS Invincible. Ascension Island in the mid-Atlantic provided the only ‘unsinkable’ airfield available to the Task Force, namely
Wideawake Airfield. Ascension Island is 4020 statute miles (6470 kilometres) from the UK and, perhaps more importantly from our point of view, 3392 statute miles (5459 kilometres) from the Falklands. Although, as we shall see, some combat and support air operations were mounted from Ascension, these were never going to be sufficient to achieve the objectives of any air campaign by themselves. I shall return to Ascension a little later. Suffice it to say at this point that the entire focus for air defence operations and a major part of the offensive support burden would, ipso facto, have to devolve to carrier-borne air power, that is Hermes and Invincible.

Figure 1: HMS Hermes

In 1982, the 28 000-ton HMS Hermes was officially designated by the Royal Navy as a Landing Platform Helicopter (LPH) and was already earmarked for the scrapyard by the Defence Review. HMS Invincible weighed in at 19 000 tons. I should, perhaps, mention just in passing that she had officially been sold to Australia, though I think the money had not yet changed hands. So, really, we were using your assets to fight our war. Plus ça change some might say.
The normal peacetime complement of the Sea Harrier units on the carriers was five aircraft. These were bolstered by reinforcements, and Hermes sailed south with 12 Sea Harriers and Invincible with eight. But the carriers were also important platforms for both anti-submarine warfare (ASW) and assault helicopter squadrons. Thus Hermes carried nine ASW Sea Kings of 826 Squadron and nine transport Sea Kings of 846 Squadron, while Invincible had 11 ASW Sea Kings of 820 Squadron. Thus, initially, a total of 20 fast-jet airframes was available to provide the entire air defence, tactical air reconnaissance and most of the offensive air operations options for the whole operation. These priceless assets were concentrated on two very vulnerable and irreplaceable flat-tops, the loss of either of which to air, surface or submarine attack would compromise the entire operation. Furthermore, there were only 31 Sea Harriers in the whole of the United Kingdom inventory and it was initially expected that attrition, particularly in air combat, might be heavy—perhaps as much as one aircraft per day. Early on, therefore, it was decided to attempt to utilise RAF ground attack Harrier GR3s as attrition replacements by arming them with AIM-9 Sidewinder missiles. We shall return to the Harriers a little later, but here it would probably be helpful to digress slightly from the air operations to discuss the issue of command and control for the operation.
The Task Force was officially designated Task Force 317.0 and was commanded from the UK headquarters of the UK Commander-in-Chief Fleet, Admiral Sir John Fieldhouse, situated at Northwood on the outskirts of London. Air Marshal Sir John Curtiss, the Air Officer Commanding No 18 Maritime Group RAF, also headquartered at Northwood and well used to working with the Admiral, was appointed his Air Commander. Major General Jeremy Moore, RM was appointed the Land Forces Commander for the overall operation. Subordinate to the Task Force Commander were other commanders of Task Groups within the Task Force. Rear Admiral Sandy Woodward, flying his flag in *Hermes*, was officially the Commander of Task Group 317.8, more colloquially the Carrier Battle Group. The most important other group was CTG 317.1, the Amphibious Group under Commodore Mike Clapp, RN, charged with planning and executing the amphibious phase. Co-equal with Clapp was Brigadier Julian Thompson, RM who was the Commander of 3 Commando Brigade, which contained the initial assault land forces. As far as the air was concerned, we need to understand that the most crucial element—that is the Harrier force (both Sea Harriers and later GR3s) together with all the helicopters until the point at which the landings commenced—came under the operational control of Woodward and not Curtiss. Air Marshal Curtiss had control of all RAF assets committed to the operation and operating from Ascension Island or the UK, including Vulcan bombers, air transport forces, Victor tankers and Nimrod maritime reconnaissance assets.

![Figure 3: Operation Corporate Command and Control](Image)

A major weakness of the command and control structure was the lack of air advisers of appropriate rank within it. Thus, the most senior air adviser initially available to Admiral Woodward on *Hermes* from the RAF side was a Squadron Leader, who was outranked by large numbers of naval aviators on the ship, including the Captain of HMS *Hermes*, Captain Middleton. The RAF adviser was, you will not be surprised to learn, largely ignored. Later an experienced Wing Commander was sent south with General Moore, but he did not deploy until May and, as we shall see, he too had problems. As a number of senior RAF officers pointed out after the campaign, it would have been better to have an RAF one-
star available to advise Woodward, but there was no prospect of persuading the Navy to accept even a Group Captain on a ship commanded by a full four-ring naval aviator. It is also true to say that there was much resentment and bitterness at the time towards the RAF amongst the older generation of Fleet Air Arm officers as a result of previous inter-Service squabbles over carrier aviation. In addition, the highly charged diplomatic atmosphere of the early weeks encouraged a belief among many senior figures that a land combat phase would never take place and, thus, the focus would largely be on the air defence of the Task Force—an area in which there was abundant expertise in the Fleet Air Arm.

In essence, the key problems facing the participants in the war were how to mount an amphibious operation 8000 miles (12,874 kilometres) from home against an enemy whose home base was considerably closer and against whom, except in naval forces, one had to pit superior skill and training against superior numbers. Early on it had been concluded that one needed both air and sea superiority. The latter was to be gained by attriting Argentine naval forces, either through air, surface or subsurface action. Although this might cause losses to the Task Force, it was thought that the outcome should prove favourable. In the event, the sinking of the ancient cruiser General Belgrano on 2 May by the nuclear-powered submarine HMS Conqueror effectively achieved sea control because the Argentine Navy instantly withdrew all its major units to its own coastal waters.

Air superiority was always the more problematic issue. In April and early May the amphibious commanders drew up their plans for the operation on the basis of their having air superiority during the landing phase, believing, not unreasonably, that history had taught that attempting an amphibious landing without it was asking for trouble. In the
event, air superiority was not in place at the time of the landings. The Argentine Air Force (Fuerza Aérea Argentina or FAA) was estimated to have some 175 combat capable aircraft, of which some 60 were considered capable of conducting operations from the mainland against the Islands. Add to these some 11 naval Skyhawks and 14 more modern Super Étendards with at least five air-launched Exocet anti-ship missiles. The problem was, of course, that air superiority’s name was easier to articulate than to achieve. There was no prospect of mounting effective attacks on Argentine mainland bases from the carriers. Air superiority, therefore, had to be imposed from the air, but there was no way to achieve this if the Argentines chose not to fight and, following some initial air-to-air clashes early in May, they conserved their fast-jet aircraft, quite sensibly awaiting the inevitable landings to unleash their land-based air power against the Task Force. The landing ships were, effectively, the only bait which would force the Argentine air forces (Argentine Air Force and naval air arm) into action. They reacted initially to early British attacks on the Islands believing that this was the immediate prelude to landings but, when this did not happen, they scaled down operations awaiting the start of the amphibious phase. Woodward could, and did, attrite both in the air and on the ground the air forces the Argentines deployed to the islands themselves but, apart from support helicopters, these largely consisted of turboprop Pucará ground attack aircraft, which posed a threat to surface troops but not a significant threat to ships.1

We have seen how Woodward initially deployed with only 20 Sea Harriers. He was reinforced in early May with a further batch of Sea Harriers and RAF GR3s but, with losses, at no time did he have more than 25 Sea Harriers on Hermes and Invincible, along with a maximum of six RAF GR3s. This exiguous force represented the entire air assets immediately available in the South Atlantic. These 30 odd airframes had to provide night and day air defence for all elements of the Task Force, as well as the offensive attack sorties and photo reconnaissance. The loss of one carrier would reduce this by about 50 per cent at a stroke and make the operation untenable.

To reduce the air and submarine threat, in particular that posed by the Étendard-Exocet combination, the carriers tended to operate from a position 100 or so miles (160 kilometres) to the east of the Falkland Islands. But, by reducing the threat to the Carrier Task Group, Woodward was, conversely, reducing the cover available for other Task Force elements, including both the Amphibious Group, which ipso facto had to operate inshore, and the land forces themselves once they were ashore. The further to the east the carrier force withdrew, the longer the transits and the less time the Sea Harriers had on combat air patrol (CAP) protecting the San Carlos amphibious landing area or the land force area of operations. Woodward’s was an unresolvable dilemma. If he risked his ships to improve attrition of the Argentine air forces he risked suffering unsustainable attrition

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1 The Pucará is an Argentine twin-engined ground attack aircraft manufactured by the Fabrica Militar de Aviones. Many of these aircraft were destroyed on the ground by British forces before taking part in actual combat. The aircraft which did see combat were usually armed with unguided bombs, 70 mm rocket pods or 7.62 mm machine gun pods.
amongst his naval forces without which the campaign could not proceed. In the end, his tendency to err on the side of caution was surely correct.

Although the Argentine forces did react with vigour to the San Carlos landings, their efforts were not sufficient to halt the operation. This was partly luck and partly planning. In respect to the latter, Commodore Clapp, himself a naval aviator, had selected the landing site because it gave protection to his ships against air attack and forced the enemy into flying attack profiles which Clapp knew to be difficult and dangerous. The Argentine pilots therefore acquired their targets very late because they were tucked into San Carlos water and, with only fleeting moments for target selection, they invariably went for the first ship they saw, usually a warship and not the far more vulnerable and valuable merchant shipping carrying the troops and stores. They released their bombs at high speed and low level and thus large numbers of bombs failed to arm because they were not fuzed for this attack profile. Although HMS _Ardent_, _Antelope_ and _Coventry_ were all sunk by bombs which did explode, three of the landing ships were struck by bombs which did not detonate, as were six warships. One, HMS _Plymouth_, surviving hits by no less than four 1000-pounders, any one of which should have sunk her. Once the Argentine forces had been forced into action by the landings, they began to suffer heavy attrition from the Sea Harrier CAP aircraft and the gun and missile defences of the ships and troops, losing 10 fast-jet aircraft on 21 May and 13 more by the end of the month. Added to the seven Daggers\(^2\) and Skyhawks lost before the landings, this was an unsustainable rate of attrition for them and by the end of May the British had air superiority, but not supremacy. The Argentines could still mount individually effective sorties, as they demonstrated when they hit the two logistic ships, _Sir Galahad_ and _Sir Tristram_, at Bluff Cove on 8 June, losing three more Skyhawks, incidentally, in the process. But these were isolated efforts, by that time incapable of changing the course of the campaign.

All in all, the air superiority campaign was a close run thing but, in the end, the Sea Harriers and the Royal Navy’s steadfastness and professionalism under fire prevailed. Had all the Argentine bombs that hit British ships in the days after the landing exploded, it is doubtful if the campaign could have continued. Similarly, had the Argentine Mirage IIIIs, their most capable aircraft, played a larger part in the campaign, they might have tipped the scales. As it was, after an early brush with the Sea Harriers and their AIM-9L Sidewinders in which the Mirage group lost two aircraft, they showed little stomach for the campaign. Had they mounted escort missions to accompany the attack sorties targeting San Carlos, they could have drawn off much of the CAP effort which seldom exceeded four aircraft. This would have significantly reduced the attrition of the attack assets and should have increased British casualties, both in ships and aircraft. In fairness to the Mirage unit, in part this was because for the period from early May to early June they were tasked with defending Argentina itself against possible attacks by Britain or Chile.

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\(^2\) Mirage 5 multi-role fighter aircraft sold to Argentine Air Force as ‘Daggers’—26 aircraft were delivered in 1978 and 13 in 1980.
And this is perhaps an appropriate moment in which to turn my attention to other aspects of the air campaign, principally the part played by the RAF. I shall start with the first combat operation of the war; firstly because it was the opening attack of the campaign to possess the islands and secondly because it has a direct bearing on the Mirage operations I have just discussed. This was the main and first attack mounted by an RAF Vulcan flying the 3400 odd miles (5470 kilometres) from Ascension to deliver 21 1000-pound bombs against the airfield at Port Stanley.

![Figure 5: RAF Vulcan](image)

Consideration had been given to the feasibility of mounting Vulcan sorties either against the Argentine mainland or against Stanley as early as 30 March—that is before the Argentine invasion. These had included a one-way trip against Stanley Airfield, with the crew bailing out near the Task Force, and attacks against airfields or other targets in Argentina. The latter were considered dubious, both legally and politically, and the former, well perhaps we will not say too much about the former. On 11 April, Admiral Woodward requested help from the Ministry of Defence (MOD) in planning Sea Harrier attacks against Stanley Airfield, and this provided an additional impetus to the study of attack options. Over the following period, the concept for the Vulcan gradually evolved as one aircraft, 21 bombs, low or medium-level delivery and significant air-to-air refuelling (AAR) support—there were actually to be 19 separate refuelling ‘prods’ on the first mission. The result of much planning and assessment was an appreciation that one 21-bomb stick would have a 90 per cent chance of a hit on the runway at Stanley and a 78 per cent chance of two hits. There were many, notably the naval aviators with the Task Force, who were sceptical. A debate ensued between Northwood and the Task Force. The clinching argument for the Vulcan raid was the need to conserve the Sea Harriers, but since the only method of post-attack reconnaissance was
to fly Sea Harriers over the airfield, some argued it was pointless. The senior naval aviators with the Task Force, for some of whom I have to say the real enemy appeared to be the RAF, expressed this view forcefully to Woodward, who was a submariner, and he put it in a signal back to the Headquarters. He freely admitted ‘total ignorance of Vulcan capability’, but now suspected the attack was too little too late and preferred the Vulcan to look for the Argentine carrier. As the British official history commented, ‘these concerns indicated the problems caused by Woodward not having his own RAF adviser, who would have been able to brief him on the respective capabilities of Vulcans and Sea Harriers’. As later became apparent, Sea Harriers were not suited to attacking runways and post-attack reconnaissance would be at high altitude—a less hazardous task than low-level attack—but it would still have to be done whether the attack was mounted by Sea Harriers or the Vulcan. The Vulcan also had the capacity to bomb blind, which the Sea Harriers did not. Despite further interventions by high-ranking naval officers in the UK, Woodward was told the Vulcan mission would fly and he was to provide the post-operation reconnaissance.

Code named *Black Buck 1*, it was mounted using one Vulcan, plus one in reserve, 11 Victors and two reserve Victors. In the event, the designated Vulcan did have a problem and the reserve took over, piloted by Flight Lieutenant Martin Withers, an Australian serving with the RAF. Withers ran in at 330 knots at low level, pulled up at 30 nautical miles (56 kilometres) from release, climbed to 10 000 feet and let the bombs go in a single stick. The Sea Harrier reconnaissance showed that one bomb, as predicted, had hit the runway and another the apron. This was probably as much as could be expected and it did, as intended, preclude fast jets from using the runway.

*Figure 6: Postwar photograph of Stanley Airfield showing bomb damage*
A senior Argentine Air Force officer later stated that the raid was instrumental in occasioning the withdrawal of Mirages from South to North Argentina to provide air defence against possible Vulcan attacks against the mainland. An unintended effect, incidentally, was to cause Argentine merchant shipping to flee Stanley Harbour without unloading stores, which included ammunition and material to construct bunkers and defences around Port Stanley. Additionally, another freighter loaded with materials to extend the runway refused to sail from Argentina.

A repeat sortie was flown on 4 May but the Nav/Radar had problems with his radar and with getting the target offsets under the marker, and the bombs missed the runway to the west by just 70 yards.

The last _Black Buck_ bombing sortie was on 12 June, intended to put 21 air burst bombs on the airfield to wreck the facilities. It was marred by crew switching errors. Two other Vulcan sorties used US Shrike anti-radar missiles aimed at taking out the important and powerful Argentine TPS-43 radars, which were used to track air movements, both so that they could warn their own forces, particularly of the location of the Sea Harrier CAP aircraft, and also by tracking the Harriers back to the east to provide approximate target information for Étendard strikes. The first Shrike attack slightly damaged one radar, which was off the air for 24 hours. The second Shrike, according to one well-informed source, destroyed a Skyguard fire control radar but did not effect the TPS-43. The raids did make the Argentines more cautious using their radars, but they functioned right to the end of the campaign.

Why, you might ask, were not more Vulcan raids mounted during the six weeks of combat? After all, the essence of a successful offensive air campaign against an airfield is persistent attack. Well, that was the problem. Ascension, as the single mounting base for all RAF
operations other than the carriers, was heavily overloaded. There was only a single runway and only limited apron space for big aircraft. As each Black Buck required 15 Victor sorties and two Vulcans, that was a major problem, since other operations involving a continuous flow of RAF transport aircraft as well as Nimrod maritime patrol aircraft were also vying for the ramp space. Thus, the Vulcans were withdrawn from Ascension at times simply to make room for others, returning to mount specific operations. Any operations by the Nimrods or the Hercules operating in support of the Task Force in the South Atlantic—and, incidentally, they were both adapted for air-to-air refuelling during the campaign—also required the support of the Victors, and at least one Vulcan sortie was cancelled because it was considered a Nimrod sortie was more important.

Figure 8: Argentine TPS-43 Radar damaged by Shrike missile

Figure 9: Ascension Island parking apron
The Hercules fleet flew nearly 14,000 hours in support of the operation and a high proportion of those sorties passed through Ascension one way or another. Thirty-nine Hercules air drops were also made direct to Task Force ships in the South Atlantic. The Nimrods and occasionally the Victors also flew maritime reconnaissance sorties in support of the Task Force and in support of other operations, including the Black Bucks. These sorties could be of 17 to 20 hours duration and some reconnaissance approached to within 70 miles (113 kilometres) of the Falklands and 120 miles (193 kilometres) of the Argentinean coast. All came out of Wideawake Airfield on Ascension Island. Furthermore, the island itself was small and was now supporting hundreds of additional military personnel which placed a severe strain not only on accommodation, but more crucially water supplies. In addition, the command and control at Ascension also proved highly problematic at times. The essential problem, of course, was that the same very crowded, grossly overloaded piece of real estate was being used simultaneously as a forward naval logistic mounting base—most of the ships stopped off there—an operational airfield for a wide variety of air operations and an air transport hub for both of the above. The naval commander there, Captain McQueen, could only accept one or at most two of the above and like many of his fellow naval officers believed that most of the air operations, other than the air transport force, were out of proportion to the results likely to accrue. McQueen’s invariable greeting for the RAF personnel arriving at Ascension was: ‘Who the [bleep] are you and why the [bleep] are you here?’

If those, briefly, were some of the problems the RAF faced in mounting operations from Ascension, what of the air operations of the Task Force? We have discussed Sea Harriers. I do not really have the time, nor indeed the expertise, to discuss the ASW Sea Kings, but I do want to discuss the operations of the RAF GR3s. Until the first GR3s arrived with the Task Force, Woodward had little option but to use his naval jets for fast attack strikes on Stanley. Attacks were made, therefore, in early May on Stanley, Goose Green and targets on West Falklands, and in the course of these a Sea Harrier and its pilot were lost. Two other Sea Harriers collided in poor weather, losing both pilots and the aircraft, reducing Woodward’s complement to 17 aircraft. The arrival with the Task Force, on the converted container ship Atlantic Conveyor in mid-May, of six Sea Harriers, six GR3s of No 1 Squadron, four RAF Chinook heavy lift helicopters and six Royal Navy Wessex was therefore crucial.
The GR3s provided Woodward with an aircraft optimised for ground attack and reconnaissance, and plainly it made more sense to use them as bombers and not fighters. They should have provided Woodward and the land forces with a capable support asset. In my view, this capability was, sadly, not properly exploited. One reason was the inadequate and tortuous command and control and tasking structure for the GR3s. As we have seen, there was no real RAF representation on Woodward's staff. Wing Commander Peter Squire, Commanding Officer of No 1 Squadron (later Chief of the Air Staff), or indeed any of his flight commanders could have provided advice but he was not consulted by the Admiral's staff and had to work through Hermes' Captain Middleton, who kept very tight personal control of air operations and dictated the air program. He plainly felt that a mere Wing Commander had little to teach him. These personality clashes meant that a further very serious problem went uncorrected and, very probably in naval circles, completely unrecognised. This was simply that the tasking mechanism and indeed the whole apparatus for controlling Harrier attack operations was poor or non-existent. Hermes' Air Operations Room had one Operations Officer who was busy running air defence and helicopter operations, and could not monitor rapidly changing attack tasking. Neither the Admiral's staff nor Hermes' crew were organised for controlling air operations ashore and the RAF aircrew found that, contrary to their initial belief, there was no Tactical Air Coordination Centre (TACC) on Hermes. The ship's air intelligence cell was run by a single Corporal and had no ground or air situation maps. There were no attack planning facilities. There were three sources for tasking the GR3s—the Admiral's staff, the ship's staff and the forces ashore. However, there was no formal allocation of effort between the three, which was thus ad hoc, not to say random. The offensive air support (OAS) tasking chain ashore was similarly broken. During the landing phase, the 3 Commando Brigade Air Liaison Officer (ALO) was part of the Supporting Arms Coordination Centre (SACC) aboard the assault headquarters ship, HMS Fearless. Once ashore, the ALO became part of the Fire Support Coordination Centre (FSCC) in the Brigade Headquarters. Four Tactical Air Control Parties (TACPs) were deployed ashore with the ground forces. An HF Tactical Air Request (TAR) circuit supposedly linked the TACPs, the SACC, the FSCC and the non-existent TACC on Hermes.

In theory, the TACPs would generate air requests, which would be coordinated by the ALO and passed to the TACC. However, aside from the fact that the latter was not there, which was a bit of a problem, the HF communications with Hermes seldom worked and with Fearless never did. The ALO had to resort to Flash signals on the defence communications network. Furthermore, some external task sorties were transmitted to the Task Group (i.e. the Admiral's staff) and not to Hermes, and frequently were not recognised by his non-specialist staff and, as a result, were not flown. Similarly, Hermes did not, at first, know the difference between an Air Request Message and an Air Tasking Message. Air Tasking Messages came to the overloaded Air Operations Officer on Hermes who, first of all, checked with Captain Middleton that he wanted them flown and then merely passed them direct to the aircrew, frequently by the simple expedient of phoning the pilots in their briefing room from where whoever answered the phone wrote the message down on a piece of paper. This seems to me to represent little advance from 1918.
When General Moore arrived in theatre and set up his headquarters ashore, the RAF officer at the SACC was supposed to monitor all the requests for support from the two Brigades ashore on a ‘silence is consent’ basis. However, as the only officer available was Wing Commander Trahern, Major General Moore’s Air Adviser, he found himself trying to monitor this at all times, 24 hours a day, whilst acting as Moore’s Air Adviser and completing other tasks, such as surveying potential forward operating base sites for a Harrier strip.

Given this command and control fiasco, the aircrew did their best, acting as their own planners and intelligence support, but they could only fly the missions they were given. Not surprisingly, there was little in the way of properly planned support. A variety of targets were attacked, sometimes to great effect; notably, the mission to support the 2nd Battalion, The Parachute Regiment (2 PARA) in the later stages of the battle of Goose Green, and probably the most important and effective GR3 strike of the war in my opinion. Mounted against Argentine helicopters operating from an ad hoc forward operating base (FOB) on Mount Kent, two GR3s, using cluster bombs and cannon, destroyed a Chinook and a Puma and damaged a ‘Huey’. This severely compromised the Argentine’s ability to move troops around the island and to support their forward positions. Attacks on Stanley Airfield proved less effective, not least because the RN armourers—no RAF armourers went with the Task Force—did not understand the RAF fuzing instruction ‘Instantaneous’, which you might think is pretty self evident, and set a 40 millisecond delay, for reasons best known to themselves, which meant that the bombs had time to bounce and were not in contact with the runway surface when they exploded. This also explains why the initial Sea Harrier strikes did not crater the runway and makes the Vulcan effort that much more significant.

There were other problems with the Harrier operations. The only laser marker guidance system with the initial brigade was lost at sea when a helicopter crashed with Special Air Service (SAS) members and the RAF forward air controller onboard. The Harriers tried
self-designating but that failed. The RAF, unwisely, had also sent a 50-year-old FAC with 2 PARA, who just could not hack the extremely severe conditions on the Falklands. Two Harriers were lost making second passes, not least because they had been told the troops on the ground were in trouble when in fact they were not. Three aircraft were lost to ground fire and only a timely reinforcement flown out to Hermes using air-to-air refuelling from Ascension enabled 1 Squadron to continue operating until the end of the war. In the end, they did patch together a modus operandi which allowed them by the end of the campaign to become a relatively effective force, but they could have been so much more so with more forethought. There are other aspects I could cover, but I do not have the time. I have not mentioned Harrier reconnaissance, maritime reconnaissance or air transport operations and I would have liked to have discussed some other important aspects of the campaign, notably support helicopter operations which were certainly crucial to its success. Incidentally, the campaign was nearly compromised fatally by the loss of Atlantic Convoyer because three out of the four RAF Chinooks and all six RN Wessex transport helicopters went down with her, along with most of the aluminium matting for the forward operating base and all the Army’s tents.

Overall, my assessment of the campaign is that professionalism and training, allied to the traditional capacity for improvisation in the British forces, were the keys to victory. There were, however, real weaknesses; notably:

- a lack of contingency planning;
- poor inter-Service relations at lower levels of command (which is oddly the reverse of the usual situation);
- an almost total failure of the offensive support tasking chain and a failure even to understand there was a problem on the part of the Admiral and the Captain of Hermes;
- very poor communications;
- a lack of understanding of the air contribution; and
- a lack, generally, of jointness.

Additionally, political factors severely constrained military options and operations at times—a factor which is, I believe, now a permanent feature of military operations in the modern era. The other lessons that come out of this campaign are tankers, tankers and tankers, because without them almost no air operations could have been mounted of any effect at all from Ascension. The other lesson is that carriers, because of their vulnerability, do suffer in a hostile environment from operating in a method which may in itself have a deleterious effect on your own campaign. ‘Unsinkable’ airfields, if you can get them, are just so much better an option.
Expeditionary Air Power in the First Gulf War
Dr Richard P. Hallion

It is now 17 years since the First Gulf War, and the experience and lessons of that conflict have already been overtaken and eclipsed (at least to the popular mind but, as well, to many in the professional military community) by the Second Gulf War, and the divisive occupation that has followed.

This is, I would argue, unfortunate, for the First Gulf War marked a significant milestone for the United States in the use of air power, and, indeed, a milestone that involved as well the entire coalition that went to war against Saddam Hussein in 1991. It is well for us to review the history of that war, how it unfolded, and how it was perceived and lessons used—or not!—in the years that followed.

In the weeks and months that immediately followed the war, a number of distinguished commentators offered up opinions on the conflict. To air power theorist Air Vice-Marshel Tony Mason, ‘the Gulf War marked the apotheosis of twentieth century air power’. To President George H.W. Bush, ‘Gulf Lesson One is the value of airpower’ (a quote that was used, incidentally, as the title of one of the very finest of Gulf War studies, by RAAF Air Commodore Gary Waters¹). To then-Soviet Lieutenant General Anatoliy Malykov, the war ‘provided a textbook example of what air supremacy means’. It is very hard, immediately after a conflict, to find words of lasting value to characterise the long-term significance of what military force has succeeded or failed to achieve. But I think, from a vantage point rapidly approaching a quarter-century, that we would find little, if anything, now in these statements that we would quibble with.

Commentators, think-tank analysts, military spokesmen, and service barons battling for their share of scarce budget dollars all argued issues afterwards that, in retrospect, seem to smack more of medieval scholasticism than relevance: could we use the word ‘air campaign’ to describe what occurred? Was it a ‘revolution in military affairs?’ If so, why? If not, why not? Such may often more obscure than illuminate.

I would say that, looking back at the First Gulf War, we see five related factors that played a key role in determining its final outcome:

- Absorption and application of ‘lessons learned’ from previous conflicts.
- Investment in training and simulation.
- Exploitation of high technology.
- Strategies, doctrine, and command relationships.

Political trust and confidence in the military alliance.

Each of these is worth extensive examination by itself, but I will simply point out a few of the more obvious points.

Comprehending previous experience in air and land warfare was a ‘baseline’ planning necessity. The planners had in mind successful mechanised campaigns of the past, notably the break-out across France, the analysis of Israel’s performance in the 1967 and 1973 wars, and the analysis of the South-East Asian conflict, the 1973 Arab-Israeli War, and the Bekaa Valley experience. Those lessons had also driven the development of training and simulation capabilities within the US military, and the development of appropriate technology, strategy, doctrine, and command relationships.

Particularly important was understanding the causes for failure of air power for much of the war in South-East Asia, and for failure of the Israeli Air Force in 1973 to achieve the kind of decisive dominance that it had displayed just six years previously. The causes, of course, were multifold.

In the case of South-East Asia’s Rolling Thunder air campaign, failure stemmed primarily because of longstanding weaknesses in how the United States had approached air power after the Korean War, astonishingly poor training, and because of a destructive blurring of the lines of command and authority between the civilian and military branches of the American Government. When, in 1972, the hard-learned lessons of combat were applied in Linebacker II with new strategy, a different political-military relationship and strategic posture, rigorous training and new technology, the results were dramatically different.

The Arab-Israeli War of 1973 taught some similar but also some different lessons. One was the extreme danger of emergent integrated air defence networks (IADS) built around surface-to-air missiles (SAMs), fighters, anti-aircraft artillery (AAA), radar, and command, control, communications and intelligence (C3I). Such had been evident in the air war ‘Up North’ in South-East Asia, but Egypt and Syria took it to a new level. In just 19 days of combat, Israel lost 35 per cent of its prewar combat aircraft strength. Recognising what that kind of loss rate could mean to any attempt at a sustained air campaign against Warsaw Pact forces in Northern Europe, the NATO alliance (and the United States in particular) focused on means of attempting both to avoid losses and to crack the IADS challenge.

The key to that was a mix of training and simulation, and, of course, the application of new technologies involving such areas as electronic combat, low observables, anti-radiation missiles (ARMs), and precision guided weapons. Of course, once again these were hardly new areas of investment—rudiments of all of these dated as far back, in some cases, as the Great War—but the mixing of the emergent electronic (specifically computer) revolution, coupled with communications and sensor architectures made multifold increases in efficiency possible.

Training and simulation were of crucial importance. Blessed by its size—an advantage that you, here, share as well—the United States was able to conduct training exercises over areas as great as several European countries. Indeed, it is eerie in some respects how closely some of the American ranges anticipated the kind of distances, locations and scenarios encountered ‘for real’ in the Gulf War. Programs such as ‘Top Gun’ and ‘Red Flag’ honed both individual
and unit skill, and exploitation and familiarisation programs such as ‘Constant Peg’ removed much of the mystique of the MiG-21 Fishbed and MiG-23 Flogger aircraft, and Warsaw Pact-style tactics and training. The US Army’s establishment of a National Training Center at Fort Irwin, inspired by the success of Naval and Air Force simulation and training programs, had a major influence on honing and refining unit skills, and validation of the so-called ‘AirLand Battle’ (FM 100-5) doctrine developed by the Army in response to the threat posed by Warsaw Pact mechanised forces.

The application of appropriate ‘high technology’ directly affected the combat abilities of coalition forces:

- **Electronic combat**, including soft-kill jamming and hard-killing of SAM radars via anti-radiation missiles had advanced markedly from the early days of Wild Weasel operations in South-East Asia, through the advent of the AGM-88 HARM and the British ALARM.

- **Low-observable aircraft design**, or ‘stealth’ had been developed between 1974 and 1983, when the United States fielded its first operational low-observable stealth aircraft, the F-117A Nighthawk. It was made possible by developments in materials technology, computer prediction, and computerised digital fly-by-wire flight control.

- **Intelligence, surveillance and reconnaissance** had advanced markedly as well, particularly the use of specialised collection platforms, such as Rivet Joint, AWACS, JSTARS (in IOT&E form), the EP-3, and space-based systems.

- **Space** had advanced remarkably, furnishing intelligence, warning, weather, communications and, perhaps most remarkably of all, precise navigation, thanks to GPS.

- **Sensors and precision guided munitions** (PGM), such as the TRAM, Pave Tack, the upcoming TIALD, night optics, and weapons such as the Paveway family of laser-guided bombs, the CALCM and TLAM cruise missiles, and the Hellfire and the IIR Maverick, promised to secure near–’one shot, one kill’ effects against targets and to redefine the role of military forces at night, leading to a ‘We Own the Night’ mindset that translated into the notion of the ‘24/7’ war.

- **Air mobility** was an absolute necessity for any of the various scenarios that planners concocted. The combination of the technology of the wide-body fanjet-powered airlifter, the convertible civilian wide-body, and particularly the investment in tanking technology, thanks to a tradition of interest in air refuelling dating to the experiments of Alan Cobham and others as early as the 1930s, generated a series of global intercontinental aerial bridges that ensured rapid delivery of equipment and personnel into the Gulf region.
Strategy, doctrine, and command relationships were the unifying structural bonds that created the circumstances and opportunities for all other factors to come together. Of particular significance were the:

- ‘Assault Breaker’ study effort;
- the development of FM 100-5’s ‘AirLand Battle’ construct;
- the work of Tactical Air Command, Army Training and Doctrine Command, and their mutual Air-Land Forces Application Agency (TAC-TRADOC-ALFA’s so-called ‘31 Initiatives’);
- the issuance of John Warden’s *The Air Campaign*;
- the development of the *Global Reach, Global Power* strategic planning construct of Air Force Secretary Donald Rice in June 1990; and
- the rise of the Joint and Combined Force Air Component Commander (J/CFACC) as the theatre CINC’s ‘go-to guy’ (to use a now-passé expression) for air power application in support of the theatre CINC’s campaign plan.

Finally, political-military trust and mutual confidence were absolute necessities. We had seen how the interjection of politics into military operations had adversely affected combat performance in South-East Asia. The military and political leaders at the time, fortunately, had no desire to repeat that debacle. But there was another factor as well, and that was the necessity of trust among allies and partners, however otherwise unwilling. Thanks to the legacy of goodwill of the Reagan-Thatcher era, that was not so much a problem for the Anglo-American relationship and, of course, Thatcher was there in the early stages of the build-up to war. Where it did constitute a problem, oddly, was in Saudi Arabia, threatened by Saddam’s forces after they seized Kuwait. It was by no means certain that King Fahd would allow coalition forces to operate in and from Saudi Arabia and that, of course, would have changed the entire dynamic of the conflict, likely rendering it impossible to wage.

Iraq, at the time of the Gulf War, possessed the world’s fourth largest army. It had a number of ‘elite’ military formations though, as General Schwarzkopf was careful to point out, ‘Elite is a relative word’. Having said this, however, it was still a force to be reckoned with, including large numbers of combat-tested personnel. If not, say, Hitler’s *Wehrmacht*, it was equally far removed from the standards of the Arab armies that Israel had so swiftly crushed in 1967. Its force structure had grown significantly:

<table>
<thead>
<tr>
<th>Iraq’s Force Structure</th>
<th>1980</th>
<th>1990</th>
</tr>
</thead>
<tbody>
<tr>
<td>Troops</td>
<td>180 000</td>
<td>900 000</td>
</tr>
<tr>
<td>Tanks</td>
<td>2 700</td>
<td>5 700</td>
</tr>
<tr>
<td>Artillery Pieces</td>
<td>2 300</td>
<td>3 700</td>
</tr>
<tr>
<td>Combat Aircraft</td>
<td>332</td>
<td>950</td>
</tr>
</tbody>
</table>

*Table 1: Growth of Iraqi force structure from 1980 to 1990*
Facing $80 billion in debt from the Iran-Iraq War, Saddam Hussein had become increasingly bellicose over 1990, threatening Kuwait and demanding billions of dollars as compensation for alleged Kuwaiti oil overproduction that had hurt Iraq’s own oil industry. As well, he had railed against America’s growing influence in the Gulf region, following the decline of the Soviet Union after the Eastern European collapse. The onset of the Gulf crisis offers no comfort to those who would claim that the presence of high technology sensors and systems gives near-perfect knowledge and awareness: quite simply, they do not and, as a consequence, we are still dependent on sifting multiple sources, looking for multiple clues, and doing so in rapid, repetitive fashion. Overhead imaging systems had indicated the movement of forces towards the Kuwait border starting three days before the invasion, but could not, of course, distinguish whether it was a bluff or a serious preparation for war. On 2 August 1990, Saddam’s forces invaded Kuwait, surprising American and European decision-makers, shocking the Gulf nations themselves, and, certainly for the United States, completely overturning in an instant any expectations of what the post–Cold War world, with its anticipated ‘peace dividend’, would be like.

The American counter-reaction equally confounded Iraqi leader Saddam Hussein, who had been confident that the United States would not respond to his aggression. In retrospect, he simply invaded at the wrong time. Had he waited a mere two to three years, a completely different military environment—not to mention a completely different political leadership—would have been in place in the United States. We would not have had in service, for example, the ageing but very effective F-4G Wild Weasels. There would have been significant reductions in the size of Air Force, Navy, Army and Marine combat forces, and in their capabilities. For his part, he would have had far more robust missile and fighter forces, an even more powerful army, and perhaps deployed chemical/biological and even nuclear weapons. And, of course, with changes coming in the global economy, it is safe to assume that a political leadership more inclined to ‘jaw-jaw’ rather than ‘war-war’ would have held power in Washington and London, and many other nations as well. His error in timing is common to tyrants, as is another; namely failure to anticipate the passions of aroused democracies.

From an air power standpoint, the onset of the crisis offered an immediate opportunity to validate the key underlying assumption of the Global Reach, Global Power strategic planning framework (undertaken with the Secretary of the Air Force’s Staff Group from late 1989 through the summer of 1990): namely, that the strengths of air power—its speed, range of response, flexibility in application, precision effects, and high lethality—made it the natural tool for national response in time of crisis. This had been quite controversial, the framework being seen as essentially ‘unjoint’. Those qualities were called upon very quickly, by the speed of the onset of the crisis.

Response planning began immediately, and but it was not until 6 August that King Fahd agreed to basing. With Saudi approval secured, the Joint Chiefs of Staff immediately ordered US force deployment that same day. On 8 August, the Air Force’s 1st Fighter Wing arrived in the Gulf after a 14-hour flight with seven air refuellings, signalling the beginning of Operation Desert Shield, and on 9 August, the first contingent of British aircraft arrived, a squadron apiece of Tornado F3s and Jaguars, the RAF’s ‘600-knot gunboats’. These were
the first contingent of Operation Granby, 2 which, of course, eventually included Tornado GR-1s and Buccaneers, among other types. Within two hours of their arrival, the F3s were flying combat air patrol (CAP) sorties, coincident with the first CAP sorties of the USAF.

With the Iraqi air threat being negated by the arrival of coalition air defence fighter forces, the Desert Shield ‘Aerial Bridge’ moved into high gear. Airlift subsequently carried 99 per cent of personnel deployed to the Gulf region, with sealift carrying 85 per cent of the heavy equipment (that is, tanks and artillery). The Desert Shield aerial bridge placed an enormous strain on US airlift. Over 90 per cent of Air Force C-5s and three-quarters of all C-141s were used on Gulf support operations, a ‘Total Force’ effort involving Air Force, Air Reserve, and Air Guard airlift squadrons. To further enhance the airlift effort, US Transportation Command activated Stage I of the Civil Reserve Air Fleet (CRAF) in mid-August, adding 38 available civilian airliners and freighters. Later, the CRAF commitment increased further upon the beginning of the coalition offensive, when it went to Stage II, adding a further 116 aircraft. KC-10 and KC-135 tankers augmented the airlift by carrying cargo and personnel when flying into the theatre. Overall, Desert Shield witnessed a peak of 100 strategic airlift missions per day into the Gulf region. Air refuelling capabilities, added after the 1973 Arab-Israeli War, were critical for maintaining both the aerial bridge and the air sustainment effort.

There was by no means an expectation that air power would be the decisive force in the war, except among those of us who were, not without some reason, considered ‘zealots’ by our colleagues (I define an air power zealot as one who spells air power as one word). Saddam Hussein, as Air Chief Marshal Sir Patrick Hine so well put it, ‘had proved to be an obdurate leader who had shown that he was prepared to sustain high casualties and to use chemical weapons. He might not buckle under a heavy weight of air attack, and then the coalition would have to go in with the ground forces available and could face mounting casualties.’ It was this advice that he gave to US General H. Norman Schwarzkopf, the Commander-in-Chief of US Central Command, supporting Schwarzkopf’s desires to see a final air campaign plan that included robust capabilities for battlefield air attack both as preparation and accompaniment to the ground manoeuvre phase of the coming campaign. Among the war college cognoscenti, there was a generally bleak assessment of possibilities, given the high casualties Saddam’s forces had inflicted upon the Iranians in the Iran-Iraq War. These assessments rolled over into the rising national debate over the use of force and the prospects of American victory that were already taking place in public and in the US Congress.

In somewhat shortcut fashion, the planning story began with a call on 8 August from Schwarzkopf to the Air Staff to prepare a strategic air retaliation plan as a hedge against Saddam Hussein committing some follow-on egregious act. Colonel John A. Warden III, the deputy director for warfighting concepts on the Air Staff, had already been designing options for a strategic air campaign, based on the kind of ‘vital centres’ approach he had taken in his influential book, The Air Campaign. Out of this sprang a plan known as Instant

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2 Operation Granby was the name given to British military operations in the First Gulf War in 1991.
Thunder, which, in the absence of the Chief of Staff, was briefed to the Air Force Vice Chief of Staff, General John Michael Loh. Loh had Warden brief the Chairman of the Joint Chiefs, General Colin Powell, and then Schwarzkopf; all embraced the plan. Schwarzkopf had Warden go to the theatre to brief Lieutenant General Charles Horner, the US Central Command (CENTCOM) Joint Force Air Component Commander (JFACC). Alas, the chemistry between the two was anything but harmonious. Warden left the theatre, Horner kept one of Warden's bright assistants (then Lieutenant Colonel David A. Deptula), and Horner had Brigadier General Buster C. Glosson take Instant Thunder, retain its strategic attack portion, add provisions to defeat deployed Iraqi forces, and address how to support coalition forces in a land campaign. The planning team, operating in the so-called 'Black Hole' in Riyadh, rapidly turned it into an actionable Air Tasking Order (ATO). Warden, back in the States, subsequently proved critically important in acting as an intelligence and targeting 'short cut', reviewing raw feed information from theatre, and turning it far faster than conventional intelligence organisations, then obsessed with target lists and not targeting effects, could do so.

The air campaign plan consisted of three phases, and, though initially thought of largely in sequential terms, with at best a ‘ramping up and ramping down’ as one phase succeeded another, in fact, as Desert Shield progressed, planners increasingly thought of the phases as broadly simultaneous, parallel, and nodal; that is, an example of what is now considered ‘effects-based warfare’.

The first phase consisted of strategic air operations against Iraq, consisting, if you will, of ‘legacy Instant Thunder’ style attacks against critical leadership and command and control targets, particularly C3I and air defence targets, including Iraqi Air Force Headquarters. The second phase constituted a broader effort to achieve suppression of enemy air defences (SEAD) across the entire Kuwaiti Theatre of Operations (KTO). Finally, the third phase would involve attacks against fielded enemy forces, via battlefield air interdiction and more classic interdiction attacks at greater distance behind the front. When briefed to the White House in October, the air campaign plan drew favourable comment from senior national security leadership, which certainly helped ensure its acceptance. General Schwarzkopf’s own overall campaign plan, briefed to CENTCOM’s senior commanders in mid-November, makes for an interesting comparison with the earlier product of the airmen. His plan obviously incorporated a great deal of their input, and some similar terminology, though note it had an unequivocal Phase IV ground combat component.

Iraq had surprisingly robust air offensive and defensive force capabilities, as shown in Tables 2 and 3.
Iraqi Air Threat

Theatre Ballistic Missiles
• 600 Scuds and Scud-derivatives; FROG
  - Believed to have CBW warheads

Combat Aircraft
• 950 total, including 750 ‘shooters’
• MiG-21 / 23 / 25 / 27 / 29 and Chinese F-7
• Su-7 / 20 / 22 / 24 / 25
• Tu-16 / 22 and Chinese H-6
• Mirage F-1 (Exocet and AS-30L capable)
• Adnan Iraqi AWACS (2 x Il-76 derivative)

Helicopter Gunships
• 160 total
• Mil-24 Hind most capable

PGM and Special Weapon Capable
• ASMs (including Exocet and AS-30L)
• AAMs (including Magic, R-350, AA-6 and AA-7)

Table 2: Iraqi air threat

Iraqi SAM and AAA Threat

Surface-to-Air Missiles
• 16 000 SAMs, including 7000 radar guided
  - Fixed, mobile and MANPADS
  - SA-2 / 3 / 6 / 7 / 8 / 9 / 13 / 14 / 16
  - Roland
  - I-HAWK (captured from Kuwait)

Anti-aircraft Artillery
• 7000 anti-aircraft guns
• 130 mm, 85 mm and 57 mm radar directed
• Mobile systems, including ZSU 23-4 Shilka
• Profusion of smaller calibres (37 mm or less)

Warsaw Pact IADS Approach
• Netted HQ with SOCs, radars, SAMs, AAA and airborne fighters

Table 3: Iraqi SAM and AAA threat

The ‘bottom line,’ really, is that all this meant that air attackers would have to operate in the most heavily defended air space in military aviation history. It was this daunting challenge that planners had to overcome. The air campaign plan that planners assembled and that Schwarzkopf approved had, ultimately, three phases:

• seizing air supremacy across Iraq and conducting strategic operations against it;
• undertaking theatre-wide destruction of enemy air defences; and
Expeditionary Air Power in the First Gulf War

• destroying deployed enemy forces and denying them supply and manoeuvre,
  and this latter included as well the expectation that, if Iraq did not surrender
during the air campaign itself, that air would shepherd and support the ground
manoeuvre scheme that would follow any so-called ‘G-day’.

The assembled air armada was truly a coalition effort, as shown here in Table 4:

**Coalition Air Strength**

<table>
<thead>
<tr>
<th>Contributed by Eleven Nations</th>
<th>76% US, 13% RSAF, 3% RAF, 2.5% France</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primarily a ‘Dumb Bomb’ Force</td>
<td>But with virtually all available PGM-strikers</td>
</tr>
<tr>
<td></td>
<td>F-117, F-111F, F-15E, A-6E, Tornado GR 1, Buccaneer</td>
</tr>
<tr>
<td>2614 Aircraft in Total</td>
<td>1838 Fighter/Attack (70%)</td>
</tr>
<tr>
<td></td>
<td>312 Tanker</td>
</tr>
<tr>
<td></td>
<td>450 Carrier-based</td>
</tr>
</tbody>
</table>

Table 4: Coalition air strength

Iraq had multiple opportunities to back away from war, but chose not to do so. On
29 November, the United Nations passed Resolution 678, authorising force to eject the
Iraqi forces from Kuwait. For the United States, Secretary of State James Baker journeyed
to see Foreign Minister Tariq ‘Aziz—effectively the last chance for peace. Although
opinion was split on the necessity to do so, President George H.W. Bush chose to support
a Congressional debate on force. It was a risky move, for his party did not, on their own,
have the strength to carry the decision. But as a result, the genuine bipartisanship of the
outcome, in a vote on 12 January—although very narrow, 52 to 47 in the Senate, and a
more comfortable 250 to 183 in the House—ensured that the subsequent progression to
war proceeded with less chance of an enervating Vietnam-style anti-war movement within
the country and its political leadership.

The final weeks of November through January exposed a somewhat nervous state of mind
in key decision-makers. Bush ordered a doubling of American forces in theatre, further
burdening the transport and mobility effort. Planners increasingly saw the phases of the
air campaign plan as fluid, with simultaneous and parallel execution rather than a rigid
linear and sequential progression. Spurred largely by pessimistic computer-driven models,
Schwarzkopf, urged as well by then Secretary of Defense Dick Cheney, began to call—
indeed, virtually insist—for an effective ‘guarantee’ that air attack would attrite fully 50
per cent of Iraqi ground forces, the feeling—unfounded by even the most casual appraisal
of military history—being that anything less than 50 per cent destruction would mean,
especially, that the Iraqi forces were combat-capable.

Coalition forces went to war on the night of 17 January 1991, beginning with several key
strikes: special operations forces penetrated western Iraq to destroy a small radar site that
might detect F-15E strikes against fixed Scud launch sites; F-117 stealth fighters attacked key C3I and air defence targets, and B-52- and naval-launched cruise missiles. A so-called ‘Gorilla Package’ SEAD strike followed, using a mix of drones to cause surviving Iraqi air defenders to bring up the remaining elements of their system, jammers to blind them or force them to even higher power levels, and then HARM and ALARM shooters to kill them. As a result, by morning, Iraq essentially had a shattered air defence system, one individual comparing the subsequent air campaign to ‘shooting a tethered goat’.

In fairness, I think this minimises the efforts that the Iraqis made throughout the conflict to rebuild some air defence capability, as evidenced by aircraft losses through the end of the war. It minimises as well the very hard and difficult challenges facing coalition attackers. The weather in the Gulf region was the worst in many years, the ranges were extreme, the demands for tanking placed special burdens on the tanker force—particularly as aircraft were boom receptacle or probe configured, and that, of course, forced very carefully monitoring lest the ‘wrong’ airplane join on the ‘wrong’ tanker (as happened at least once, fortunately without loss).

Iraq had hoped to shatter the coalition via triggering an Israeli intervention into the war, using its Scuds at a destabilising strategic weapon. The counter-Scud campaign was thus a critically important effort. After the war, there was a great debate over the relative success of the counter-Scud campaign, particularly the effectiveness of the Patriot SAM. Beginning on 17 January, a total of 93 Scuds were launched against Israel and Gulf targets, roughly two per day. Of these, just 48 (52 per cent) reached the target area, thanks to a variety of problems during launch, boost phase, or re-entry. Of these, 47 were engaged by Patriots. One was not engaged because a Patriot radar was down for maintenance and it slipped, so to speak, through the gap. The Scuds killed a total of 42 people, injuring 450 others. However one feels about the Patriot and its alleged performance inadequacies, I think it is worth noting that 28 of these individuals were killed, and not quite a hundred others injured, by a single Scud—the one unengaged missile that got through. So I would argue that Patriot was more useful than its critics would presume.

What is instructive about the Scud campaign was its effect upon the war. The Scud had the potential to shatter the coalition, and from the outset of the war, planners had stressed killing Scud fixed and mobile launchers. But the counter-Scud campaign was a serious disappointment. Scud fixed launchers in Western Iraq were attacked and destroyed, and many fuel trucks and apparent decoy Scud transporters were destroyed, but no record exists of the actual destruction of a mobile launcher with or without a Scud. As Scud launches continued, a ‘Great Scud Hunt’ ensued. It ultimately consumed, 2767 sorties, amounting to less than 3 per cent of coalition air sorties, and just 6 per cent of American sorties—but fully 22 per cent of all the strategic air campaign’s sorties. Yet the intensive 24-hour effort to find and locate Scuds did have one beneficial effect: it complicated Iraqi launch operations, resulted in the destruction of many fuel transport vehicles (some of which erupted so explosively that it was clear they were carrying rocket fuel), and drove down the Scud launch rate, which was nothing like what Iraqi planners had anticipated, given their use of Scuds against Iran by Iraqi forces previously. The peak launch rate fell from 10 missiles a day at the onset of the campaign to an overall average of two missiles per day, and for many
days, none were launched. Israel did not attack, endangering coalition unity, thanks to a combination of multiple factors including shrewdness, the perceived success of the Patriot, and its lack of access to coalition IFF codes. Thus, for both sides, in very different ways, the Scud proved a disappointment.

On 29 January, Iraqi forces crossed the Saudi border, attacking a border town, and triggering what became known as the ‘Battle of Khafji’. This was clearly an attempt to trip up prematurely coalition ground warfare plans, force an engagement, and then establish the kind of punishing killing ground strategy that Iraq had used during the Iran-Iraq war. The attempt failed, thanks to resolute defence by Saudi and Qatari forces and other coalition ground personnel, including US Marines, but primarily from the effects of JSTARS-cued air attacks by coalition strike aircraft. The effectiveness of such attacks reflected the dramatic synergy of responsive ISR thanks to new detection systems such as JSTARS—still officially undergoing operational test and evaluation—and precision weapon technology. One strike, coming a week before the attack, devastated a column approaching the Saudi frontier: an AC-130 and two A-10s destroyed 58 of 71 vehicles.

Precision weapon technology dramatically transformed two traditionally difficult areas of air warfare: attacks on precision targets such as bridges and individual building complexes, and attacks on individual vehicles and smaller ‘point targets’. Denying mobility to enemy forces has always constituted one of the most elusive, and yet most potentially rewarding, forms of attack. In World War II, for example, Erwin Rommel complained after the battle of Alam Halfa that the Royal Air Force ‘had pinned my army to the ground and rendered any smooth deployment or any advance by time-schedule completely impossible ... Anyone who has to fight, even with the most modern weapons, against an enemy in complete command of the air, fights like a savage against modern European troops, under the same handicaps and with the same chances of success.’ In Italy, General Frido von Senger und Etterlin compared himself to a chess player who could make one movement to an enemy’s three, thanks to Allied air attack. Besieged in Normandy in the summer of 1944, Rommel’s diary entries and conversations with fellow commanders echoed his dismal commentary from the desert: ‘The enemy’s air superiority has a very grave effect on our movements. There’s simply no answer to it.’ But if surprisingly effective, as these quotes show, unguided weapons had such poor accuracy as to force extensive target revisiting, and hence high loss rates of attacking aircraft and aircrews. Air campaigns, such as the counter-bridge campaign in Korea and the campaign against the Thanh Hoa and Paul Doumer bridges in North Vietnam, highlighted the frustration and ‘flak trap’ nature of such attacks.

In Iraq, isolating forces from supply and effectively pinning them in place constituted one of the most important of overall campaign objectives. Iraq had a total of 54 bridges; while not all were targeted for destruction (the better to force a channelisation of Iraqi units and traffic), 41 were destroyed, as well as 32 pontoon bridges hastily built to substitute for destroyed bridge structures. These all fell in the first three weeks of the war, thanks to just 450 sorties.

The combination of laser-guided bombs from F-111Fs and F-15Es, together with Maverick missiles using imaging infra-red thermal sensors fired by A-10s and F-16s (more than
4800 overall), were devastating against vehicles, especially deployed tanks, as were laser-guided bombs from British Tornadoes and Buccaneers, and AS-30L laser-guided missiles fired from French Air Force Jaguars. Particularly deadly were F-111F night ‘tank plinking’ strikes using 500 lb GBU-12 laser-guided bombs. On 9 February, for example, in one night of concentrated air attacks, 40 F-111Fs destroyed over 100 armoured vehicles. Overall, the small 66-plane F-111F force was credited with 1500 kills of Iraqi tanks and other mechanised vehicles. Air attacks by F-15Es and Marine A-6Es in the easternmost section of the theatre averaged over 30 artillery pieces or armoured vehicles destroyed per night.

Once attack helicopters attached to surface forces entered battle, they demonstrated that such results were not limited to fixed-wing attackers. At sea, Royal Navy and US Navy helicopters destroyed numerous Iraqi small boats and military craft; fourteen of fifteen British Aerospace Sea Skua anti-shipping missiles launched from Westland Lynx helicopters hit their targets, a hit rate of over 93 per cent. French, British, and American gunships destroyed numerous Iraqi mechanised vehicles. McDonnell AH-64A Apache crews of one US Army aviation brigade destroyed approximately 50 Iraqi tanks in a single encounter. Another Apache unit scored 102 hits for the expenditure of 107 Hellfire missiles, a hit rate of better than 95 per cent. (Overall, Apache gunships destroyed nearly 950 Iraqi tanks, personnel carriers, and miscellaneous vehicles.)

There was, however, a value in one form of ‘dumb-bomb’ attacker, and that was the B-52. In the pre-JDAM, pre–Sensor-Fuzed Munition era, the ‘Buff’ was limited to doing what it had done so well in the South-East Asian conflict: wide-area bombing. Ironically, the B-52Gs bombing system had a logic fault that caused an offset in its bombs by a small but relatively significant degree, so that many dropped long—fortunately, not a problem as it was hardly doing CAS-style missions! Despite this, prisoner interrogation revealed that the B-52 was the single most feared Gulf attacker. A total of 1624 B-52 missions were flown from Britain, America, Spain and Diego Garcia, dropping 25 700 tons of bombs. Coupled with the strong psychological dimensions of air attack—shock, noise, dislocation—the ‘promise’ of B-52 attacks made via leaflet drops and broadcasts, and then the following of those ‘promises’ with actual strikes, and the widespread devastation that followed, caused many Iraqis to seek to defect, to harbour murderous thoughts towards their officers and security services when they could not, and actually to defect whenever an opportunity presented itself.

I would be remiss if I did not mention that there were, finally, special purpose strikes: SOF operations using MC-130 Hercules dropping extremely large bombs for what a later war would term ‘shock and awe’, precision strikes to destroy pumping installations leaking oil into the Gulf (effectively pro-environmental war), and then explicit command and control strikes aimed at preventing Iraqi command authorities for reconstituting damaged networks, or developing workarounds. One of these strikes, on 13 February, sadly went awry when a command and control (C2) bunker, also used (without coalition knowledge) as an air-raid shelter, was hit by an F-117 strike, with the consequent death of several hundred civilians. That air attack had profound consequences, for Baghdad was put off limits to follow-on coalition strikes, and remained so almost to the end of the war, an indication of how very different the air war circumstances of the early 1990s was from a half-century earlier.
It was ironic, of course, because with the greatly increased precision of modern air attack, the kind of collateral damage encountered in previous war was not a factor. For example, in World War II, the average Circular Error Probable (CEP) of a 2000 lb bomb dropped from an Eighth Air Force B-17 was 3300 feet off the aim point. The average CEP for a 2000 lb Paveway laser-guided bomb dropped by an F-117 or F-111F was less than 10 feet. Put another way, in World War II, to guarantee getting a bomb in a relatively large 200 000 square foot target (that is, 400 x 500 ft) required no less than 108 B-17s dropping a total of 648 bombs. In the Gulf War, it took one Tornado with TIALD, or one F-117 or one F-111F with Pave Tack.

On the eve of ‘G-Day,’ the invasion of Iraq, CENTAF planners estimated they had destroyed approximately 40 per cent of enemy tanks, 40 per cent of enemy artillery, and one-third of enemy vehicles in the KTO. In fact, this estimate was extraordinarily accurate: the postwar Gulf War Air Power Survey found that before the ground invasion, Iraq had lost 40 per cent of its tanks (a total of 1388), 47 per cent of its artillery (1152 weapons), and 30 per cent of its armoured personnel carriers (929 APCs). Yet at this point two interrelated controversies erupted. One reflected the traditional approach of intelligence analysis towards targeting: develop lists of targets, and then destroy them, the percentage of targets remaining reflecting the percentage capabilities of enemy strength. Since the planners of the Gulf air campaign had followed a nodal approach to targeting, relatively few targets had been hit in relation to the large number of targets that could have been hit. This now caused some to claim that the air campaign had not, in fact, caused any significant damage to Iraqi military capabilities, and played into the second interrelated controversy, which was likewise a traditional one; namely, the suspicion of ground force commanders regarding the efficacy of their own air force’s air support to them. General Schwarzkopf admirably stressed larger campaign objectives by insisting on a strictly followed targeting process, but a number of his commanders understandably sought to effectively seize control of the process to emphasis targets of particular interest to themselves. Here the increasingly bizarre notion that each individual Iraqi unit had to be blasted to below the 50 per cent combat effective level played serious mischief. Fortunately, Schwarzkopf intervened, remarking that damage assessment guidelines were so stringent that a vehicle would have to be on its back ‘like a dead cockroach’ before analysts would rate it as destroyed. Recognising the need to keep the campaign on track, he emphasised reliance on strike-camera video.

The failure to predict the outset of the war, the intelligence assessment controversy, and the preparation-for-G-Day targeting priorities controversy all reflected badly on the readiness of the national intelligence community of the late 1980s–early 1990s to meet the needs of both statesmen and the warfighting community. A more disturbing example was Hussein’s investment in weapons of mass destruction. Prior to the war, failures in intelligence gathering meant that the Hussein regime had applied an astounding level of effort to developing weapons of mass destruction that was utterly unknown to the international community. Immediately prior to the war, only two nuclear targets had been identified in Iraq, one a uranium mine and the other the massive Al Tuwaitha nuclear complex. During the war, targeteers identified seven other sites subsequently attacked. But after the war, inspectors learned that Iraq had, in fact, no less than 10 major nuclear research facilities;
eight uranium mining, production, processing, and storage sites; 24 uranium enrichment sites; nine weaponisation sites; and 17 other sites devoted to supporting Iraq’s nuclear weapons program. In sum, what had been known had been targeted and much had been destroyed, but there was simply much more that was unknown and, thus, escaped attack.

G-Day opened at 0400 hours local on 24 February 1991, triggering the culminating phase of the Gulf War. By day’s end, over 8000 prisoners were in custody. In the four days of the ground offensive, amid occasionally miserable weather conditions, air attack continued to play a dominant role in the destruction of any remaining Iraqi power projection capabilities. The defeat of Iraq was such that there was no culminating battle—no Stalingrad, no Gettysburg and no El Alamein—where one could point and state that on this particular patch of ground, Iraq had lost the war. There was one, however, that spoke to the power of air attack, a stretch of road between Kuwait City and Basra that became known as the ‘Highway of Death’. There the Iraqi III Corps, fleeing Kuwait City, had come under extensive air attacks cued by JSTARS. Although actual casualties were far lower than the name suggested—indeed, not even at the level of a Mitla Pass or Falaise—the perception of ‘egregious’ violence directed against an increasingly helpless foe led to a rapidly rising climate both in CENTCOM and in Washington, Riyadh and London to bring fighting to a close. The ground campaign General Schwarzkopf had expected would take three weeks took, instead, 100 hours. Offensive operations ceased at midnight on G+4, 28 February.

**Selected Campaign Statistics**

- 109 876 total coalition air sorties (average 2555 / day)
- 44 145 American sorties:
  - 67% by USAF, 19% by USMC, 14% by USN
- US dropped 84 200 tons of bombs
  - 72% by USAF, 28% by USMC/USN
- PGM constituted 9% of all bombs:
  - USAF dropped 90% of PGM (6660 tons)
  - USMC/USN dropped 10% of PGM (740 tons)

*Table 5: Selected campaign statistics*

As intelligence personnel sifted through the 87 000 prisoners finally in hand, and as Iraqis were interrogated as to why they had given up, there was little doubt as to what had caused their surrender. Prisoners, from ordinary soldiers through senior commanders, were uniformly impressed with the shock, power and debilitating effects of air attack. What is to me most interesting about this is how consistent their comments were compared to those of prisoners and enemy leaders from previous conflicts. However, the speed, lethality and effectiveness of air attack had greatly increased—the notion that air commanders were beginning to speak in terms of numbers of targets destroyed per sortie, not numbers of sorties required to destroy a target. The psychological dimension of air attack was particularly powerful. Soldiers confessed that exposure to air attack day after day had caused them to harbour thoughts of murdering their officers. Personnel who witnessed
Expeditionary Air Power in the First Gulf War

B-52 attacks on other units confessed guilt feelings that they were relieved it was not them. One commander developed a belief that he, personally, was targeted by a B-52 circling unseen overhead that would attack him as he made his way to a latrine. Other soldiers were so unhinged by air attack that they committed suicide rather than continue to live with the uncertainty facing them. Soldiers attempted to surrender to UAVs, some did surrender to helicopters (and were picked up), and many trying to leave the battlefield were killed by Iraqi internal security forces.

This latter is a rather important point, I think, and it speaks to the wisdom of channelising air attack. As Air Commodore Andrew P.N. Lambert had shown, the soldier under air attack becomes greatly stressed, and then attempts to cope—the ‘it wasn’t so bad’ mindset. If then exposed to a follow-on attack, the stress increases dramatically, and the recovery time is both longer and less effective. If this is continued, the result is cumulative, and the soldier will tend to break and flee. At this point, if the forces preventing him fleeing are his own, he will turn strongly against the regime, and will desert or surrender at the first opportunity. But if the soldier is also constrained by the opposing forces, and he is not offered some expectation of survival (surrender or escape), then a fatalistic ‘I’ll take as many as I can with me’ mindset predominates. The coalition planners had no desire to build such a fatalistic mindset in the minds of the Iraqi forces. As a result, the Iraqi forces were always given the opportunity to save their lives, via leaflet warnings of B-52 strikes, broadcasts, and the like.

In mid-March, coalition leaders met with their Iraqi opposite numbers, agreed to a ceasefire, and the Gulf War, at least as commonly thought, was over. I included that last comment ‘as commonly thought’ because Desert Storm’s ramifications went far beyond the supposed end date of the conflict. The encouragement of the Marsh Sh’ia and Kurdish rebels to revolt against the Hussein regime triggered rebellions that swiftly gained major strength. But the Safwan agreement of March 1991 contained a fatal provision permitting the Iraqis to fly helicopters, including their surviving force of Hind gunships. The Iraqis were able to redeploy key formations of surviving Republican Guard and internal security forces to counter the Kurds and Sh’ia, and, as a result, both rebellions ended in bloody defeat, the Hussein regime surviving. It is not in the scope of this paper to trace all subsequent events leading to Gulf II in 2003. Suffice it to say, the repression of the Sh’ia and Kurds immediately after the Gulf War, and the surprising tenaciousness of Saddam Hussein himself to continue to work actively against both UN mandate and the will of the major coalition powers led to establishment of the Northern and Southern No-Fly Zones. Thereafter, over the remainder of the decade and into the new century, there were a constant series of incidents, encounters, threats, strikes etc. that persisted right to the onset of Gulf II.

I would argue, therefore, that we cannot strictly limit the story of Desert Storm and its expeditionary air power to just the 1990–1991 years, though, at the time it seemed we could. The Air Force’s evolution of Air Expeditionary Forces by the mid-1990s reflected the continuing need to furnish combat power against the Hussein regime. The evolution of the no-fly zone concept worked so well that it was applied, of course, with success in the Balkans subsequently. I would also suggest that the Gulf II campaign was made immeasurably easier because the two No-Fly Zones had succeeded in seriously constraining the ability of the Iraqi regime to reconstitute its air defence forces. This enabled General Tommy Franks,
Norman Schwarzkopf’s equivalent in the 1990s, to pursue a largely land-centric strategy and get away with it in a way that Schwarzkopf certainly could not have.

I wish to conclude with some aspects of the war I believe should be kept in mind as planners and warfighters alike confront the conflicts we are currently in, and those that are likely to come. The following is by no means an exhaustive list, and certainly there are plenty of you that can come up with ones of equal and even greater importance.

First, air and space power worked. For all the talk of jointness in war, let us not forget that simple fact. In the air and space power era, it is the air and space mediums that are the most critical for the conduct of combat operations.

Precision attack enabled the political community to endorse military operations in urban, densely populated areas that were, at once, precise and effective, offsetting a widespread image before the war of air power as simply massive ‘carpet bombing’.

What the campaign really taught, I would hold, is that there was really a change in the underlying paradigm of war. No longer was victory driven by large and punishing ground war combat. Instead, J.F.C. Fuller’s theory of the ‘weapon of the greatest reach’ had held true, and battle had been decided by reach—the reach of joint service air power forces combined, in the fourth phase, with the reach of battlefield artillery systems, some of which were themselves aerospace in nature. The model of war was thus one largely of air partnered with special operations forces, with large standing forces vital for the post-conflict occupation of territory—something not done after Gulf I. The challenges of occupation are very, very different than the challenges of winning on the battlefield, as the history of the last five years following Gulf II has clearly shown. It is that challenge that the armies of air power nations need to be more concerned about, not revisiting the Clausewitzian slugfests of yore.

Space was a huge contributor to victory in the Gulf War and, in fact, the Gulf War marked the emergence of adult, mature, military space. Space furnished intelligence, warning, cueing, navigation, communication and weather. We have today a great debate emerging over the so-called ‘weaponisation of space’. In many ways I think that from a future perspective we may look back upon it much as we increasingly look back upon debates over the nature of revolutions of military affairs: interesting, certainly, but of more academic than perhaps practical value. When one is using space to furnish GPS positioning information so that a bomber may place a laser-guided bomb on target (as in Gulf I), or when one is using space to furnish positioning information so that a GPS-guided bomber is able to drop a GPS-guided (that is, satellite-guided) bomb on target, the question (certainly in the mind of the bomb’s recipient) is relatively immaterial whether or not space is weaponised. From his perspective it certainly already is, and I would agree. I think, frankly, we have already weaponised space, whether we wish to recognise it or not.

Air power is not a ‘one size fits all’ panacea, and, as we saw in the 1990s, simply slinging cruise missiles off to achieve some sort of effect or intimidation is hardly likely to work. Air power, like land and sea power, works best when it is carefully planned within a genuine campaign plan. Likewise, it is situational but, in the global ranging precision navigation,
precision weapon era, far less so than previously. After the war, some critics suggested that air worked because we were fighting in a desert—the notion that ‘we do deserts, we don’t do forests’. I would suggest that campaigns and activities since that time have largely dispelled that notion, particularly in an era of effects-based warfare where the use of power may be more about preventing an enemy the ability to use his force, rather than actually having to destroy every element of his force.

Desert Storm also gave to us plenty examples of the so-called ‘CNN Effect’, with a journalistic community that now sees itself through a largely ‘citizen of the world’ lens that does not recognise the need for communications and operational security that the rest of us recognise. This was highlighted by the actions of individual reporters, by the questions asked of military personnel—even of senior briefers!—and by the reaction of the media to Iraqi psychological warfare responses after, for example, the Al Firdos bunker attack.

That attack raised a ‘War Crimes’ issue that we have seen repeated subsequently in, for example, the Balkans and the reaction to an F-15E bridge strike that also dropped a train. In World War II that would have been considered a ‘two-fer’, and the aircrew would have received immediate DFCs. In the 1990s it prompted a debate about whether they should be hauled off to the Hague. Today, of course, I think the stakes are extreme, placing even greater responsibilities upon planners and warfighters. The use of legal representation on planning staffs, evident in Desert Storm, is now a commonplace, and the influence of those staff members upon targeting decisions and the conduct of combat operations is great. It reflects, I think, an over-expectation of ‘Clean War’, the idea that ‘if your precision is so good, there should not be any civilian casualties’ and, by implication, very few military ones as well.

Finally, there were many proffered lessons military forces debated after the conflict: the relative value of precision, the relationship of air forces to other military forces, the changing nature of warfare, the role of the theatre CINC and his commanders, the value of various forms of power and certain kinds of weapons, etc. But there was one that generally went unchallenged. *The history of warfare has always seen the smarter, more technologically sophisticated opponent seek to strike at his foe over a distance, to minimise the risk to his own forces and person.* Whenever that advantage has been relinquished, unnecessary casualties have followed. Mature nations having regional responsibilities must always be able to project rapid, responsive and flexible power at great ranges. The nature of that responsive power is, of course, one that must be determined by the collaboration of political and military leaders. In our respective nations, I would hope that we, as airman, succeed in making the case that continued investment in air-and-space-power projection represents the best alternative for us to meet our shared global and regional responsibilities. Doing so is not risk-free; the challenges and costs are great; the temptation merely to extrapolate from contemporary practice and experience is every present. But if we do not, I fear, we will risk not only the success of our future national policies, but our greatest strength: the lives of our young men and women who choose to spend their careers in military service to our nations. The enduring lesson of Desert Storm is simple: expeditionary air and space power worked. Let that not be forgotten.
Even though more than 200 armed conflicts of varying intensity have been fought since the end of World War II, for reasons ranging from national security imperatives to religious extremism, the international community’s propensity to try to resolve political disputes through the use of force has not diminished. There is still a compelling connection between international political and diplomatic manoeuvrings and the employment of military forces. This is an accepted historical paradigm. The conflict in Kosovo in 1999 was no exception; in fact it was a clear demonstration of the concept of the use of the armed forces to achieve political ends. The difference in this case was that the use of military force emanated from the North Atlantic Treaty Organisation (NATO), an alliance that had never, in its almost 50 years of existence, used the formidable force projection capability available to it.

**NATO—Explained Briefly**

NATO is a military alliance of 26 member states and 14 major allies from North America and Europe committed to fulfilling the goals of the North Atlantic Treaty signed on 4 April 1949. The preamble of the Treaty states that the signatories are determined to safeguard the freedom, common heritage and civilisation of their peoples, founded on the principles of democracy, individual liberty and the rule of law and, further, that they seek to promote stability and wellbeing in the North Atlantic region. NATO is committed to defending its member states against aggression or the threat of aggression, based on the principle that an attack against even one member would be considered as an attack against all. However, this does not mean that in the case of an armed attack on one member, the other member states will automatically respond with military action against the aggressor(s). This dichotomy between the intentions of the Treaty and the ground realities has never been amicably resolved and is a weak spot in the overall structure of the organisation.

NATO’s history is one of breached unity that has been patched up, with the cracks coming to light at the most inopportune moments. In 1958, France protested the hegemonic role of the United States in the organisation and subsequently withdrew parts of the French forces from NATO command. Subsequently, in the 1960s France withdrew all its forces from the alliance, rejoining NATO’s Military Committee only in 1995. Its current policies appear to be aimed at further re-integration. During most of the Cold War, although NATO undertook no actual military engagement as an organisation, it served commendably to emphasise the resolve of the Western democracies to stop the spread of Communism in Europe.

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The fall of the Berlin Wall in 1990 and the subsequent collapse of the Soviet Union caused a strategic re-evaluation of NATO’s objectives, role and tasks. In practice, this manifested in a gradual and ongoing expansion to bring the newly independent Soviet states in Eastern Europe within its ambit and the extension of its activities to areas far removed from the original intent. NATO’s first military action took place in 1992, when it enforced the no-fly zone over Bosnia in Operation Deny Flight\(^2\) and again in 1995 when it carried out air strikes during Operation Deliberate Force\(^3\) that brought the war in Bosnia to an end, resulting in the Dayton Agreement. In 1999, NATO undertook its first large-scale military operation when it carried out an 11-week bombing campaign against the Federal Republic of Yugoslavia directed towards, ‘disrupting the violent attacks being committed by the Serb Army and Special Police Forces and weakening their ability to cause further humanitarian catastrophe’.\(^4\) In true NATO style, six of the then 19 member states did not contribute in any way to the operation.

The NATO air campaign in Kosovo, Operation Allied Force, created further divisions in the organisation’s unity. There was intense debate, within and outside NATO, regarding the need for United Nations Security Council approval for it to initiate military actions and this developed into one of the major controversial and contending points. Varied interpretations of legal implications and concern regarding international opinion further complicated the execution of this first major test of NATO’s military resolve. The operation also signalled a major shift from NATO’s traditional role of mutual defence. Despite these challenges and serious concerns regarding the evolution of an offensive approach to NATO’s strategic stance, Operation Allied Force transformed the organisation from one primarily intended for collective defence, into a powerful entity in the field of peace support.

NATO’s collective security clause was provisionally invoked, and subsequently ratified, in the aftermath of the attacks on the World Trade Centre and the Pentagon on 11 September 2001. This resulted in further expansion, in principle, of possible NATO military activities as well as its geographical area of interest. The unanimous acceptance of this dramatically increased responsibility was a show of solidarity in the organisation. However, despite this rare show of solidarity there exists, even today, a certain amount of disunity within the organisation that detracts from its optimum performance. The 2003 veto of the procedure of silent approval by both France and Belgium, and the opposing German support for the process is a case in point. However, currently NATO is in command of the International

\(^2\) Operation Deny Flight enforced the no-fly zone, provided close air support to UN troops and conducted approved air strikes under a ‘dual-key’ command arrangement with the UN. NATO aircraft began monitoring operations in October 1992, in support of UN Security Council Resolution 781, which established a no-fly zone over Bosnia-Herzegovina.

\(^3\) Operation Deliberate Force was a sustained air strike campaign conducted from 29 August through to 14 September 1995. It proved that air power can have a decisive role when pursuing achievable, clear policy objectives and was crucial in bringing the warring parties to the negotiation table at Dayton.

Security Assistance Force (ISAF) in Afghanistan, which marks the first NATO mission outside Europe and the north Atlantic region.

**Peace Support Operations**

Peace support is an amorphous term used by NATO to include conflict prevention, peace enforcement, peacekeeping, peace building and humanitarian aid—all of them complicated. All these operations require military contribution to a lesser or greater degree, which by its involved employment makes the operations extremely complex. However, the global trend indicates an increasing frequency in the conduct of peace support missions. NATO’s acceptance of their involvement in peace support operations has introduced new facets to its military doctrine. From a military perspective, these operations have to address different aspects, like proportionality, transparency of operations and civil-military coordination and cooperation, in a much more nuanced manner as compared to traditional military operations. Military forces engaged in these operations need to emphasise their extreme flexibility, mobility and rapid deployment capabilities to be effective. The complexity of military actions in support of peace support operations makes their effectiveness difficult to measure.

There are a number of aspects to be considered when engaged in peace support operations. A majority of situations involve humanitarian crisis brought about by civil wars and ethnic strife, not by conventional wars. Such conflicts are no longer initiated or conducted by states that feel the requirement to or are strong enough to conquer another state—historically the primary reason for nations to go to war. Contemporary conflict normally takes place within a state that has imploded because it becomes politically unstable and/or economically unviable, leading to a rapid descent into lawlessness because of the disintegration of national institutions of stability, such as the military. Most peace support operations are conducted in these conditions and are somewhat different to the conventional concept of peacekeeping operations. Intervention actions now are very broadly mandated and include disarming belligerents, enforcing the rule of law, civil infrastructure reconstruction, protecting non-governmental organisations involved in providing humanitarian aid, nation building and bringing suspected war criminals to justice. A competent military force is necessary to ensure that these tasks are carried out in comparative safety and without undue risk to the non-military personnel undertaking some of these tasks.

Civilian casualties in peace support operations have been steadily increasing necessitating a more integrated and cooperative civil-military involvement. The military aspect of peace support operations is further complicated by the large number of disparate actors that are normally involved, often pursuing their own agendas with very limited centralised accountability for their actions. The dynamics at work in a peace support operation are difficult to fathom completely at any given time. An integrated civil-military approach to peace support operations is a political as well as operational necessity. The decision to intervene in the matters of another sovereign state, irrespective of the provocation, is political and the military mission that ensues will always reflect the political process. Military support to such interventions must not be confused or construed as anything
other than what it is—a military operation. What has to be clearly understood at every level of national command is that the military is there to create a secure environment for international and non-governmental organisations as well as other elements of national power to carry out their work in relative safety. Asking the military to do the job of these other agencies and thereby setting in mission creep, will almost certainly lead to disastrous consequences.

An analysis of the changing nature of conflicts and the global reactions to humanitarian disasters and crises, both man-made as well as ones caused by natural phenomenon, indicate that a majority of future conflicts will be peace support operations. This will in turn mean that expeditionary coalition operations will become the norm in the democratic world.

**BACKGROUND TO THE KOSOVO CRISIS**

The seeds of the Kosovo crisis can be traced back to the early 1970s when Josip Tito controlled Yugoslavia, overriding both political and ethnic divisions that had dominated the region before, by his charisma and personality. However, in 1974, Tito granted autonomous status to Kosovo along with Vojvodina to give ethnic minorities a greater say and improved status within the nation. At that time Kosovo was one of the poorest regions of Yugoslavia and populated mainly by ethnic Albanians. The Albanians doubled in number between 1961 and 1981, alienating the Serbs who made up only about 13 per cent of the population of the region. In the later part of the 1980s, the Yugoslav Government, under the Serbian nationalist head of the Yugoslav Communist Party, Slobodan Milosevic, decided to intervene to safeguard Serbian interests in the region. In 1989, under military pressure from Yugoslav forces, the Kosovo legislators were forced to vote to revoke its autonomous status.5

Following this, almost the entire political leadership of Kosovo, predominantly ethnic Albanians, was replaced with ethnic Serbs who were then appointed to key positions. A sizeable Yugoslav Army and police force was also stationed in the region. By late-1995, the Kosovo Liberation Army (KLA) had been formed by the ethnic Albanians and had gained sufficient strength to start an armed struggle against the Yugoslav, read Serbian, control over the province. By this time unemployment amongst the ethnic Albanians had risen to nearly 70 per cent and socioeconomic problems had become rampant in the region. Tit for tat raids between the Serb Army and the KLA continued to escalate. From May 1998, the United States and its NATO allies had become involved in trying to arrive at a negotiated settlement for stability and peace, but had very little success. By June 1998, several towns in Kosovo had been destroyed, around 300 people killed and more than 20 000 Albanians had fled Kosovo as refugees, and by September the situation had reached humanitarian crisis proportions, with an estimated 300 000 persons being internally displaced. The international community perceived the actions of the Yugoslav Army as calculated ethnic

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cleansing of the Albanians in Kosovo. The issue was brought before the United Nations and in late September 1998, the UN Security Council passed Resolution 1199 demanding that Yugoslavia cease hostilities in Kosovo.

Peace negotiations, conducted in February 1999 under the aegis of the United States, the European Union and the Russian Federation broke down because Milosevic would not agree to the presence of NATO ground forces in Kosovo to ensure compliance, although the ethnic Albanian delegation signed the agreement. By mid-March 1999 almost half the Yugoslav Army, over 40 000 troops and more than 300 tanks, was massed at the border of Kosovo.

On 24 March 1999, NATO initiated Operation Allied Force against Yugoslavia, conceived as a sharp, short response to Yugoslav intransigence that led to the failure of the long-drawn negotiating process. This was meant to compel Slobodan Milosevic to cease ethnic cleansing in Kosovo and to pull out Serbian forces from the disputed province. Although the expectation was that the campaign would only last a few days, the operation continued for 78 days, until Milosevic agreed to NATO’s terms for a ceasefire which was implemented on 10 June 1999. With this action NATO moved away conclusively from the Cold War-focused approach of mutual defence to one that was more prone to shape new missions around crisis response and management, even outside the geographic NATO Treaty area.

The sequence of major events in Operation Allied Force is well known and is not covered further in this paper. This paper analyses the strategic lessons drawn from this air campaign in the application of air power that have relevance to expeditionary and coalition operations. The focus is the analysis and further study of these lessons as it pertains to current doctrine and strategic concepts of operations. Therefore, the paper does not argue the identification of the lessons drawn, but states them and proceeds direct to their analysis and doctrinal implications.

**Operation Allied Force: Lessons for the Future**

No military operation runs completely to plan. The proverbial fury and friction of war always intervene to make the proceedings take on a life of its own, testing the mettle of commanders and combatants alike. NATO’s Operation Allied Force was no exception. It was also not a traditional military conflict between two massed military forces because, realising the superiority of NATO military capabilities, the Serb leadership resorted to indirect means to achieve their aims. Despite a number of problems that plagued the planning and execution of the operations, the outcome was a resounding victory for NATO.

The moral doubts, coordination problems and legal issues regarding the employment of force in peace support missions are many and slice across the full range of military operations. Although NATO considered Operation Allied Force primarily as a peace support operation, it has to be borne in mind that the air campaign was a military operation conducted to achieve objectives in support of political ends.

The analysis of identified lessons has been done in a two-pronged manner. The first part looks at four overarching strategic level factors which have relevance to all expeditionary
coalition operations, these are political issues, the problems of creating a viable coalition, difficulties in strategic planning and the impact of technology. The second part employs a slightly radical analytical process. The Royal Australian Air Force (RAAF) has opted to mould and synthesise the latest version of its strategic doctrine around the air and space power functions derived from the joint warfighting functions of the ADF. This paper extrapolates identified lessons from Operation Allied Force with the air and space power functions used by the RAAF in its air power doctrine. It is expected that harmonising the lessons along contemporary doctrinal warfighting functions will provide a clear doctrinal and contemporary perspective to the events.

**Strategic Factors**

**Political Issues**

A great deal of diplomatic manoeuvring, which obviously failed to achieve the desired results, took place prior to and during the military action in the Kosovo crisis. Operation Allied Force was the culmination of international efforts to avert a humanitarian disaster being perpetuated in Kosovo. However, the political rhetoric that characterised much of the year-long negotiations was difficult to transform into a military operation with a clear and achievable end-state. The overall strategy that evolved was therefore, incoherent. A salutary lesson that emerged was that a nation or an alliance should not threaten the use of force unless it is backed by the political will and clear intent to employ their forces immediately.

The question of legality of the actions was a stumbling block to unity of purpose within NATO since the operation was initiated without the backing of a UN Security Council Resolution. Some members of NATO felt that international law was being undermined and were uncomfortable operating outside the umbrella of a UN Charter. There was an ambivalent feeling that there were no legal grounds to the US argument that NATO did not need to have UN approval for its actions. Although the operation went ahead and NATO unity did not falter during the 11 weeks of the campaign, there was some amount of political fallout and discomfort even after Milosevic capitulated. The United Nations, never a strong action-oriented organisation, was dealt a body blow by this unilateral action and in certain ways has still not recovered its original status and international standing. While it was not immediately apparent, the sidelining of the UN had long-term rippling effects both in the further development of the US foreign policy and the political alignment of the smaller, but strategically relevant, developed nations of the world. This was the beginning of the US concept of the ‘coalition of the willing’, a display of somewhat irrational urgency for the most powerful nation in the world, in dealing with long-term strategic issues and a barely concealed disdain for the norms of international relationships.

From an operational perspective it became clear that, irrespective of the capabilities of the force and the planning and preparation that has been conducted, the effectiveness of force application is completely dependent on political approval of the strategic targeting plan. In Operation Allied Force, the target list development itself was a complex process and its approval was done at the political level. The speed and tempo of the campaign was,
therefore, governed by the speed of the political decision cycle, which was considerably slow. While the political preoccupation with unintended collateral damage is understandable, in contemporary operations where speed of response is perhaps the most important criterion, this process will not work. Military objectives cannot be achieved if the targeting process has been diluted by political and higher echelon command interference.

Creating a Coalition

Operation *Allied Force* was officially supported by all 19 members of NATO, although only 13 contributed air/military assets to the operation. Accommodating the deliberately consultative process embedded in the coalition, that ensured individual domestic and international popular support, also resulted in a relatively slow air campaign in contrast to the classic high tempo, continuous air operations conducted with overwhelming force. The consensus for military action was fragile at best because none of the coalition members were directly threatened at any stage, either territorially or otherwise. The United States maintained some US-only channels for information gathering and dissemination. They also employed few US-only systems whose capabilities were not transparent to partner nations and which were not readily shared. There was resentment to this open display of the lack of trust between coalition members. However, despite the differences of opinion, NATO proved to be flexible enough to build the necessary consensus to conduct a campaign that succeeded during a challenging time in its history. Political and military consensus building within an alliance of democracies can be a long-drawn process.

Future coalitions are going to be even less homogeneous than NATO member nations. It is more than likely that members will have widely varying capabilities and, therefore, the operational plan will have to accommodate the lowest common denominator. Participation and visible contribution by each member are important to maintaining the cohesiveness of a coalition. In both the planning and execution stages, Operation *Allied Force* suffered from extraordinary interference, at times even by NATO members who did not contribute militarily. There is a high probability that future coalitions may all be built on the premise of a ‘coalition of the willing’, essentially to avoid the same difficulties. However, coalitions built on existing alliances could still face problems of unanimous acceptance of objectives and operational actions. Coalition members must all have a clear understanding of the need for unity of purpose, unity of command and unity of action for any military operation to succeed. Finally, future coalitions must be built on the understanding that the operations could have serious long-term resource commitment implications, especially if the military objectives are not clearly defined and are divergent from the political end-state required.

At the operational level it became apparent fairly quickly that restrictions imposed by a nation on the employment of its force element because of national sensibilities or because of differences in the rules of engagement affect the total force capability. There is no easy way out of this, other than to factor-in such restrictions at the initial planning stage so that elements with severe restrictions can be aligned to ensure that they have only marginal impact and minimal restrictions on the total force capability. This would permit realistic appreciation of the effort available vis-à-vis the tasks ahead. Coalition operational tempo and intensity will be determined by the lowest common denominator, which might not be
sufficient to ensure that the application of force is optimally decisive to achieve the required military objectives.

**Strategic Planning**

Examination of the strategic planning for Operation *Allied Force* highlights a number of important issues. The Kosovo campaign was a classic example of building a plan around a hope; in this case, hope that Milosevic would surrender after a few days of air strikes. Wishful thinking has not yet won any wars. It was fortunate that the alliance had the resources, political backing and an underlying common belief in the mission to continue for the duration required to achieve the desired political outcome. The belief that the campaign would only last a few days could perhaps be attributed to NATO’s naive faith in the concept of short and sharp strikes in aid of simultaneous diplomatic efforts achieving the desired results.

In Operation *Allied Force* there was no clear demarcation where diplomacy was to end and the use of force was to begin. This vague state was further exacerbated by the lack of veracity in the planning assumptions. Even after plans were produced, interference from the highest political levels that paid scant attention to the overall plans, made it difficult to conduct a cohesive campaign. The foundation for the success of expeditionary operations is the critical need for consonance between the political will of a nation and its military strategy to achieve laid down objectives. While it is necessary to have governmental approval of the broader strategic plan, political interference at the operational and tactical level, for whatever reason, can only be detrimental to the smooth conduct of a campaign.

There is a growing trend for ground force deployments to become extraordinarily lengthy as well as complicated and difficult. Combined with the political fear of casualties, the preference is to resort to air strikes to achieve limited objectives. In Operation *Allied Force* ground operations were completely ruled out from the beginning, which constrained strategic planning. By publicly announcing this, NATO inadvertently provided the Yugoslav Army with freedom of movement they would not have otherwise had. It is important for commanders to be allowed to keep all options open when conducting a campaign, without unwarranted external limitations being placed on the planning process.

**Technology**

During Operation *Allied Force* video teleconferencing (VTC) was used extensively as a battlefield synchronisation tool for the first time and shortened decision cycles dramatically. However, two drawbacks to VTC were highlighted. First, as the guidance filters down to lower levels, there is the danger of dilution or misinterpretation of the commander’s strategic intent at the operational and tactical levels and second, the facility provides senior decision-makers the capability to interfere in details that are normally the purview of operators at the tactical level. A great deal of self-discipline and trust in their subordinates is required of senior leaders to ensure that function at the appropriate level of command and engagement.
Information sharing was hampered during Operation Allied Force because of problems with connectivity between NATO and US systems. Interoperability is the cement that holds a coalition together, especially in high tempo operations. In Kosovo the lack of joint, secure digital communications capability was a key shortfall and denied sensors the capability to transmit target data in real-time to platforms poised to rapidly engage fleeting targets of opportunity. This prevented the effective engagement of emerging, time sensitive targets.

Operation Allied Force demonstrated to the world at large, and NATO in particular, the advanced weapon systems and C4ISR capabilities of the US forces as well as their dependence on technology to prosecute a war effectively. More importantly, it clearly brought out the magnitude of the technology gap that exists between the US and even their closest allies and partners in the NATO.

**ANALYSIS AGAINST AIR AND SPACE POWER FUNCTIONS**

**Command and Control**

Air Force command and control (C2) of operations is exercised through the dual air and space power functions of air campaigning and battlespace management. Air campaigning includes planning, execution and targeting to achieve laid down objectives.

**Planning.** Operation Allied Force was initiated with a clear expectation that it would last only for a few days. The planning, done for almost a year according to all reports, did not take into account the intransigent Serbian leadership who refused to act according to NATO plans. Further, NATO was ill prepared for the acceleration of the ethnic cleansing, the prevention of which was the fundamental objective of the original military action. Politically NATO had to conduct a military campaign where international expectations were that friendly casualties would be minimum, if not none at all, and collateral damage was unacceptable, yet one that rapidly halted the ongoing ethnic cleansing. These strategic and operational objectives were at odds with each other, but all three had to be pursued simultaneously throughout the course of the campaign. These multiple objectives and the excessively high risks and military costs associated with the conduct of a ground operation created a lopsided plan, which limited the use of force to air power only. Consequently, the planning process did not even include the provision for a joint air-land operation. Even when the air campaign was planned, it was primarily oriented towards bringing Milosevic to the negotiating table quickly and not on a long-term bombing campaign. Planning an effective campaign with multiple and contradictory objectives is almost impossible.

**Target Selection.** The two underlying principles to the successful application of air power are target selection and freedom of operations. In Operation Allied Force getting target selection approval, from 19 different nations with varying levels of commitment to the campaign and with different notions of rules of engagement, was tedious and led the United States to adopt a parallel US-only tasking process. Freedom of operations was also affected by political interference and instances of the target being vetoed after a mission was airborne, leading to it being aborted. Such cancellations have a negative impact on the commander’s overall strategic plan. It also wastes limited resources that an expeditionary
force may not have the capability to absorb. Correctly identifying the strategic centres of gravity, which when attacked would yield the necessary effect, in this case the capitulation of Milosevic, was also problematic. A clear understanding of the culture and operational ethos of the adversary is necessary to ensure this and will remain a fundamental difficulty in optimising effects-based targeting. At the operational level, target to weapon match, appropriate weight of attack and technical excellence are the basic requirements for success. Air power’s asymmetry can be leveraged by neutralising strategic targets of importance.

**Information Superiority and Support**

Operation *Allied Force* was a coercive operation, the success of which hinged on the availability of relevant, timely and predictive intelligence. The majority view within NATO that a few days of punitive strikes would force Milosevic to capitulate indicates that the campaign was planned from the beginning with no clear knowledge of what action would achieve this aim. The majority was wrong. Adequate analysis of the relative strengths of the adversary vis-à-vis campaign objectives, garnered from intelligence sources, was never carried out. The cultural ethos of the Serb leadership and the need to plan for a long campaign would have otherwise become apparent.

Available intelligence, surveillance and reconnaissance (ISR) assets were effectively employed, but the campaign suffered from a shortage of platforms, which limited the overall capability, especially in providing analysed data. Shortages of trained intelligence analysts and linguists also hampered intelligence support during the entire conflict. This highlighted the need to have theatre level ISR assets and sufficient number of trained personnel to ensure adequacy of ISR support to operations across the full spectrum of conflict. It also emphasised the need for peacetime investment in the procurement of appropriate systems and training of field professionals.

There is a very thin demarcation between operational security and information sharing, one that becomes an extremely fine line to walk in coalition operations. Perceptions of information security vary widely. Therefore, the military forces’ reluctance to share time sensitive operational information, especially in multinational and multi-agency operations, for fear of compromising operational mission security is understandable. This stems from the different information security standards that different agencies have which affect the further dissemination of information. Peace support operations involve a number of agencies, of which the military is only one, and require the sharing of information between all the different agencies. There is a need to have a common base regarding information security to bridge the trust gap between the military and civilian agencies in the operational theatre to ensure that tactical aims are aligned with strategic objectives.

Information operations (IO) are of the utmost importance in expeditionary operations because the force will be operating in another sovereign state, which could bias public opinion against them. In all recent conflicts, unintended collateral damage has been used for negative propaganda against the expeditionary forces. The fact that a majority of expeditionary operations are most likely to be conducted by prosperous nations in the poorer regions of the world exacerbates the impact of such propaganda amongst the civilian
population. Planning must also take into account that potential adversaries will resort to information isolation thus limiting one’s own ability to influence the target population. From a coalition perspective, the planning must have a component that aims, from the earliest stages, to integrate the information operations capability of all the constituents into one well-aligned entity. Future operations must consider developing and exploiting the capability to intrude into the adversary’s propaganda machinery from the outset, while one’s own IO activities must be robust and continuous from the beginning till the end of the peace support operation.

**Air Mobility: Logistics**

Expeditionary operations are completely dependent on the logistic supply chain for success. In Operation Allied Force, as the campaign progressed and collateral damage became almost completely unacceptable, the pre-positioned precision guided munitions (PGM) became insufficient. The demand increased to an extent wherein the supply system became stretched. Future expeditionary operations will demand the same, if not more, discretion in the application of force, exacerbating the demands placed on supply chains. Equally important was the availability of these munitions at home bases in sufficient quantity. It has been reported that if the PGM had continued to be expended at the same rate for another 30 days, the complete US inventory would have been depleted. This is a salutary lesson to carry forward.

In the absence or insufficiency of basing facilities in theatre, expeditionary operations will be reliant on air-to-air refuelling (AAR) and AAR aircraft are vulnerable high-value assets. In the Kosovo operations, AAR aircraft were operated from bases far removed from the theatre of operations and therefore had to fly long distances to support strike packages. This necessitated requisitioning additional tankers to meet the demand. The application of air power to achieve the desired effects in expeditionary operations is underpinned by the effectiveness and quantum provision capability of the logistic supply chain. Air mobility provides the necessary responsiveness to the logistic chain because of its inherent speed and reach.

Availability of adequate transportation infrastructure—air ports, sea ports, railways and roads—is a criterion that cannot be influenced or assured before the expeditionary operation is undertaken. This limits the deployment options and may increase deployment time lines, as was the case in Operation Allied Force. The future hotspots where expeditionary operations may have to be mounted would in all likelihood suffer from a lack of infrastructure, emphasising the need for adequate air mobility capacity.

**Force Protection**

Gaining access to adequate bases is a fundamental requirement for success of expeditionary operations. However, access is always tempered with restrictions, with the host nations almost always retaining a veto option regarding the operations that can be mounted from the bases. In the case of Operation Allied Force, the bases that were available to the US were often far from the theatre of operations, which strained the aircrew, aircraft, planners
and the logistic system. Operation Allied Force brought out the disadvantages of the US having drawn down its overseas basing capability since the end of the Cold War. Further it highlighted the complex diplomatic process required to finalise basing issues with host nations. For expeditionary operations to be mounted in the required time frame, it is necessary to have these negotiations and contingency planning already completed. Contentious issues like entry and exit points, customs, over flight authorisations, blanket diplomatic clearances and facility access agreements should be already clarified in times of relative peace so that they do not become time-consuming negotiations in situations and delay operations where time is of the essence. Quick access to infrastructure, rapid deployment, rapid employment and immediate sustainment of deployed forces are the hallmarks of successful expeditionary operations. While these functions have a certain amount of overlap in their operations, rapid employment and sustainment have unique challenges of needing extensive efforts at support functions and a secondary effect on air mobility and logistics.

**Force Application: Integrated/Strategic Precision Attack**

Air power has proven to be capable of a great deal of destruction that can be achieved with discrimination, proportionality and precision. However, in the larger context of an operation, it is necessary to align the tactical action that neutralises a target with the strategic aim of the campaign. In Operation Allied Force the strategic aim was to make Milosevic negotiate for a settlement and not the destruction of the Yugoslav Army. However, there is also a need to understand and maintain the clear distinction between moral obligations and strategic imperatives at the highest level of planning. In Kosovo the dilemma was the need to stop the ethnic cleansing by the Serb Army while ensuring that Milosevic surrendered. Strategic attacks on the identified Serbian centres of gravity alone may not have been sufficient to achieve these disparate objectives.\(^6\) In fact some of the targets attacked were actually strategic dead-ends of no consequence.

There is also a downside to the extraordinary capability of air strikes. As the international media highlights the effects of collateral damage in larger than life images, the public is becoming more accustomed to bloodless conflicts. The expectation today is that few, if any, friendly forces will be lost and the adversary loss of lives, especially civilians, will be extremely low. It is perhaps the greatest tribute to the professionalism of the US and NATO air forces that there was not one aircrew combat loss after they had flown 38 004 sorties. The point here, however, is not so much the operational perfection of the campaign, but the gradual elevation of the concern with casualties to a friendly centre of gravity. This is not to suggest that there is no casualty-tolerance in a democratic nation. There are strong indications that the public will accept reasonable casualties if they believe in the war or peace support mission and have belief in the leadership. This does not mean that there

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\(^6\) A centre of gravity in air force doctrinal terms is an asset of fundamental strategic, economic or even emotional interest to an adversary, the loss of which would severely undermine the adversary’s will or ability to fight. John A. Tirpak, ‘Washington Watch: Short’s View of the Air Campaign’, *Air Force Magazine*, Vol. 82, No. 9, September 1999, http://www.afa.org/magazine/sept1999/0999_print.html, accessed on 3 March 2008.
should be more casualties, but that there has to be public understanding that in the real-world of wars and conflicts lives will be at risk and there is always the possibility of a certain amount of casualties. There is the real risk that operations like the one in Kosovo might lead political leaders, media, the general public and even military planners to equate casualties with failure. Such thinking will bring about a degradation of operational effectiveness by the enforcement of rules of engagement that minimise risks. Under these conditions, even minimal losses can become politically and strategically vulnerable centres of gravity of great significance that can be exploited by the adversary.

Another factor that will impede the application of force is the diffusion of the centres of gravity in contemporary conflict. In Kosovo, the fielded Yugoslav Army could not be whittled down and the other strategic centres of gravity were, at least in the initial stages of the conflict, kept out of bounds from air attacks by political constraints. Even the most sophisticated air attack capability will not be able to create decisive effects in a situation wherein the centre of gravity is so diffused that it is all but unrecognisable.

In addition to limiting collateral damage, Operation Allied Force highlighted two other major reasons why air power will continue to be employed by national leaders as a force application capability of first choice. The first is the reach and penetration of air power that gives it the capability to strike any given target with the minimum possible time delay, creating the desired effect and potentially avoiding a larger conflict. This also provides the national leadership with the power of deterrence in a number of situations. The second is the long lead-time required, the exorbitant resource implications and the greater chances of suffering casualties in mounting expeditionary ground operations as compared to air operations. In Kosovo it is estimated that a ground campaign would have needed a minimum of 200 000 troops to achieve the objectives efficiently. Further, the inherent asymmetric advantage of air power creates a strategic agility lacking in ground operations, making it the force of choice in crisis response.

**Combat Support: Force Generation and Sustainment**

Operation Allied Force demonstrated the value of planning in conducting expeditionary operations, especially in the rapid deployment of force projection packages. Ideally, the planning, the operational need, and the force generation and sustainment capacity for the length of time required must be evenly matched. The Kosovo campaign demonstrated the discrepancy between the planned and the required effort, the USAF using almost 90 per cent of its total expeditionary assets to support just this single operation conducted from secure, highly advanced, friendly bases. There is a need for realistic calculation of the probable length of the deployment to achieve objectives as well as the amount of expeditionary equipment and other resources needed to create the necessary capabilities for the duration. A number of participants looked at Operation Allied Force as a short-duration operation rather than as a full-fledged campaign, paying scant attention to the need to ensure ongoing availability of forces and material for a protracted campaign. Force generation and sustainment is at the foundation of any expeditionary operation.
In coalition operations, one of the first requirements is to create an integrated total force that is capable of operating as one entity. This is not an easy task. Even with NATO forces alone operating in Operation Allied Force, there were a number of difficulties from the tactical to the strategic that had to be ironed out as they arose. Joint training and interoperability are the obvious answers, but both are still lacking, even in NATO forces which are perhaps the best oriented towards integration. There is a lack of understanding or belief in the amount of joint training needed to ensure trouble-free coalition integration. Interoperability and training consume resources at a very high rate but a long-term view of force generation must ensure that planning of peacetime investment in these two critical areas must err, if at all, on the positive side. The dividends of integrated operations will far outweigh the investments.

**Conclusion**

Nearly a decade after the conclusion of Operation Allied Force, there is no debate regarding its success. However, debate still rages, at least in the military strategic and operational thinking and analysis groups, regarding the efficacy of air power as a war-winning force. Whatever the outcome of such academic discussions, there is no doubt that air power was crucial to the conflict’s successful completion.

First, the NATO bombing created the political climate in Serbia that was necessary to coerce Milosevic to capitulate and accept the concessions that were being demanded. This was because of the public opinion, voiced even by extreme nationalistic Serbs, that demanded these concessions be made in order to stop the air attacks. Second, the growing intensity of the bombing campaign convinced the ruling coterie that the air attacks were causing a magnitude of damage to the infrastructure, economy and political stability that threatened the regime’s survival. The greatest pressure from air attacks was caused by the destruction of ‘dual-use’ fixed targets in Serbia. Third, the perception that NATO was moving on to unconstrained attacks if the terms of the ultimatum were not met made a settlement imperative. Fourth, NATO also ensured that Serbia did not drag its feet during the military-technical negotiations that led to the 10 June ceasefire by intensifying attacks whenever talks bogged down. Fifth, crucial humanitarian aid, provided by air power, eased the humanitarian crisis of refugees until other aid could arrive.

The 1999 crisis in Yugoslavia and Operation Allied Force provide an analyst with a rich horde of observations to distil and draw implications for future expeditionary and coalition operations. An important caveat in such an analysis is that all such operations have their own peculiar political circumstances that produce unique strategic imperatives and operational challenges. However, some of the important issues that arose need to be considered as part of the ongoing efforts to better prepare the military forces for contemporary and future conflicts. This paper has analysed Operation Allied Force against the framework of the contemporary doctrine of the RAAF and drawn examples and lessons that are relevant to contemporary operations. It clearly demonstrates the veracity and relevance of the functional framework and reinforces its utility in developing joint doctrine.
This analysis also brings out the need to keep prevalent doctrine in constant sight while planning the next operation. More importantly, it will ensure that a ‘clean slate approach’ is not adopted every time an operation is planned. This is not to say that the next conflict will duplicate the previous one—it never does. However, the lessons of the previous conflict need to be appreciated within the doctrinal framework for the force to benefit from the experience and avoid the need to relearn hard won lessons.

The analysis also brings out the fact that the RAAF doctrine, around which the analysis was carried out, is a living, breathing entity, cognisant of yesterday’s history, not dormant but dynamic.

The Kosovo conflict highlighted the importance of multinational, multi-agency operations and the challenges they present to political leaders, commanders and operators alike. The future is likely to be characterised by conflicts that require multinational coalition participation, where political imperatives will impinge on strategic necessities of warfighting. They will also be conducted in an increasingly complex environment with a diversity of perceptions regarding the role of the military and sharp differences within the coalition of the costs and benefits of various courses of action.

Future military commanders cannot be purely operational military commanders; they will be at the vanguard of their nation’s security apparatus and will need a multiple skill set to be successful. Long periods of intense training and education are required to develop such professional commanders. It would be prudent for the military establishment to pay heed and act now.

**BIBLIOGRAPHY**


Stephens, Alan, Kosovo, Or the Future of War, Paper No. 77, Air Power Studies Centre, Canberra, August 1999.


When I was first approached by Chris Clark to participate in today’s conference, I was very happy to accept his kind offer to talk to you about the International Force East Timor (INTERFET) intervention in East Timor in 1999.

In keeping with Dr Clark’s direction that I stay focused on enduring lessons, issues and themes, rather than a chronology of events, I have to say that it is necessary to look at some chronology to understand and identify the lessons, issues and themes. My intent is to stay at the operational level; however, it will be necessary to delve down to the tactical level at times to illustrate a point.

Firstly, we need to remind ourselves that our involvement in East Timor back in 1999 was some 28 years after we had been last involved in large-scale operations in Vietnam. Much had changed in that intervening period and Defence had been through a series of reviews designed to save dollars and reallocate more resources to the ‘sharp end’. I suspect that East Timor demonstrated that we had over that period unlearned some valuable lessons. In particular, we went too far by ignoring the need for a robust logistics support capability for
expeditionary air operations. Many believed that such functions could be contracted out. We quickly learnt a number of valuable lessons.

To set the scene we must remember that INTERFET was a coalition operation with a large number of nations contributing ships, aircraft, troops and materiel. However, for Australia there was a very important difference between coalition operations in Vietnam, Borneo and Malaysia, Korea and World War II.

For INTERFET, Australia was the ‘lead nation’ and, as such, shaped the military and political environment in which INTERFET was to operate. Australia also commanded the international force, although not in the way envisaged by the United Nations (UN). The United Nations sought a unified command structure covering all of the contributing nations; a request which I believe resulted from their experience in peacekeeping in Haiti.

The command arrangements put in place by Australia did not meet this requirement in that Major General Cosgrove (Commander INTERFET) merely moved his Deployable Joint Force Headquarters forward to Dili and augmented the ‘in barracks’ structure with a greatly expanded air and naval component. While not integrated formally into the headquarters as national elements, the structure worked well.

For Australia, being the lead nation was the keystone which not only influenced how we conducted the operation but also influenced our force structure after INTERFET had handed over to the United Nations.

The Air Force was a significant player in INTERFET and our involvement across a very wide front contributed directly to the overall success of the mission. The irony is that, apart from a well-researched book by David Wilson, there has been very little written or debated on the role that the Royal Australian Air Force played in making INTERFET, arguably, the most successful peace enforcement and peacekeeping mission undertaken to date.

In a small way I hope to address that imbalance today. With the benefit of hindsight, we need to go back to the beginning to understand why the operation was so successful.

My view is that INTERFET’s success came from the initial, rapid insertion of overwhelming force on D-day in an environment where the political ground had been very well prepared. The lesson is, of course, simply that forces trained for high-end conflict can adapt quickly to a peace enforcement and peacekeeping role; however, the reverse is not true. We were fortunate that Australia went in with well-trained professional forces.

In terms of preparing the ground, I believe that Major General Cosgrove’s pre-emptive visit to Dili on 19 September, where he met with his Indonesian counterpart, was a master stroke and set the scene for the successful outcome of the operation. Prior to that visit, the plan had been to insert the initial lodgement of Special Air Service forces at dawn on 20 September by Blackhawk helicopters flying directly from Darwin. On meeting with Major General Syahnakri, Major General Cosgrove realised that a dawn helicopter insertion could be construed as being overly aggressive. He instead directed that the initial forces be air inserted using C-130 aircraft.
The Air Force quickly rescheduled airlift assets such that, to the outside observer, there was no change to the lodgement plan. The reality was somewhat different but the point I make is that Air Force staff were able to demonstrate great flexibility in modifying a significant element of the plan without impacting on the commander’s intent.

The rapid insertion of Australian forces on D-day was by air and sea, with Comoro Airport and Dili Harbour providing the points of entry for all coalition forces. Follow-up forces arrived by air and sea, with the overall plan to have some 2000 troops and supporting arms in Dili on D-day. Thus began the largest single deployment by Australian forces in a single day since World War II.

The air insertion was made possible by the Air Force Expeditionary Combat Support Squadron providing all the necessary airfield services—no other element of the Australian Defence Force (ADF) or, for that matter, any other national contingent possessed that capability at the time.

The insertion ensured that the potential for armed conflict with rogue elements of the Indonesian military or militia was reduced.

That we did not have to contend with serious armed conflict, other than for a number of small, isolated incidents, which did occur on occasion, allowed us to lodge, build and manoeuvre without hindrance. The devastation caused by the militias was enough to slow our progress.

Going back further in time in respect to the planning for Operation Warden, Major General Cosgrove and his staff at the Deployable Joint Force Headquarters had been fortunate in that the headquarters had conducted an exercise called Rainbow Serpent in 1998, which was based on a peace enforcement operation in a regional country. Participants came from the United States, the United Kingdom, Canada and New Zealand. Interestingly, all of these countries were major contributors to INTERFET. The lesson here, of course, is that exercising with major allies across a range of scenarios is of the utmost importance.

Turning to the unfolding events following on from the vote for independence, planning and preparation for Operation Spitfire, which was to be a services assisted evacuation, was undertaken but subsequently overtaken by events resulting in Operation Warden, as INTERFET was known by the Australian’s involved.

The Air Force was an early participant in the planning process at Deployable Joint Force Headquarters for the operation. As it turned out, the presence of the then Commander Air Lift Group, Air Commodore Roxley McLennan, was particularly important.

There had been considerable discussion on who would control which assets in theatre. Air Commodore McLennan was able to convince Major General Cosgrove that all air assets in theatre should be assigned to the Air Component Commander. This was agreed, although there had been some who believed that the operational control of the Army’s Blackhawks should remain with the Army. This change in the management of air assets was to have a major positive impact on the way in which the Air Component could task scarce air assets in theatre.
How then was the Air Component structured and what lessons can we draw?

As mentioned above, the Air Component Commander had control of all air assets in theatre. Initially, this consisted of Blackhawks from Army’s 5th Aviation Regiment and Kiowa light observation helicopters; however, the latter were quickly assigned to Army for tactical reasons.

Fixed-wing air assets were added to the Air Component Commander with the arrival of Caribou aircraft in the October time frame.

Of interest, however, was the fact that the Air Component Commander did not control the Combined Air Wing based in Darwin nor did the Air Component Commander control any of the other air assets assigned in support. This led to the interesting situation where all the air tasking orders were raised in Headquarters INTERFET but the actual assets being tasked were not under direct control.

Apart from the air assets assigned, the Air Component also controlled the Air Force Combat Support Squadrons running Comoro and Baucau Airfields and the Airfield Defence Squadron assigned to protect Comoro. Arguably, in terms of expeditionary air operations in East Timor, these Air Force ground units had a major impact on the overall success of the operation.

From the outset, Major General Cosgrove had made it very clear that he wanted to work with the Indonesian forces in location and return East Timor to as much a normal state as quickly as possible.
No 381 Expeditionary Combat Support Squadron and No 2 Airfield Defence Squadron based at Comoro Airfield played a major role in meeting Major General Cosgrove’s intent.

When our forces arrived in Dili on 20 September they were confronted with a scene of total devastation. The exception was Comoro Airport and Dili Harbour, which were being used by the Indonesian forces as points of embarkation. However, while the buildings were intact, there were no functioning airport services of any great value. Comoro Airport was a lifeline for INTERFET in the early stages and, as such, it was a centre of gravity for the INTERFET operation.

Combat Support Group (CSG) had only recently been formed and, while a number of executives and airmen and women had participated in one or two base activation exercises, most were going to have their first experience of bare base activation at RAAF Scherger as part of Exercise Crocodile 99.¹

As events in East Timor and New York unfolded, it became apparent that there was the distinct possibility that the combat support units assembling at Townsville for Crocodile 99 would be used for any Australian intervention in East Timor. However, because of compartmentalisation of operational planning, only a very few executives were aware of the developing plan. This meant that there was very little time for the units to prepare. This had an adverse impact on the logistics support required to sustain Air Force units inserted on D-day.

Logistic support was the greatest challenge for the combat support units. Initial arrangements, with support provided by the 3rd Brigade’s Land Component Support Group, were frustrated by the logistic staff’s lack of familiarity and experience with Army procedures and a higher than realistic expectation of the priority that should be accorded to their own supply demands. Some of the Air Force demands were not regarded as combat items, or at least not to the Land Component Support Group staff who did not understand the importance of some key airfield equipment and the unique fuel or oils required.

Some three weeks after the initial deployment, when logistic responsibilities and all outstanding demands transferred to the much larger Force Logistic Support Group, based on the Army’s 10th Force Support Battalion, the failure of Air Force’s deployable demand system and an unfamiliar interim system used by the Force Logistic Support Group required some careful management.

Despite the eventual placement of a small logistic staff in the Force Logistic Support Group, the enforcement of ‘unit entitlements’, a system long abandoned by the Air Force under cutbacks to its supply organisation in 1990s, and the Army’s lack of familiarity with the

¹ The author is indebted to the work of Group Captain Graham O’Brien in his writing of the unofficial history of Combat Support Group (CSG), as part of the Group’s Tenth Anniversary Celebrations, for providing detailed information on the role of CSG in East Timor.
Air Force’s ‘Aircraft Operationally Grounded’ (AOG) priority demand system for urgent supplies, further frustrated and slowed the Air Force logistics pipeline.²

Planning was another factor which affected logistic support. The combat support planning was conducted in cooperation with the Land Component (3rd Brigade) in Townsville, but there was no Combat Support Group awareness of or input to the Force level logistic support plan, which was developed at the operational level, then at Headquarters Australian Theatre, and released some time after No 381 Expeditionary Combat Support Squadron and No 2 Airfield Defence Squadron arrived at Comoro.

The build-up of Combat Support Group forces in the weeks following the initial deployment was controlled by the combat support staff in the Air Component of Headquarters INTERFET.

Each additional piece of equipment, such as the Airfield Defence Squadron armed vehicles and the steady build-up of 381 Expeditionary Combat Support Squadron personnel and equipment had to be argued and agreed separately, by the operations (C3) and logistic (C4) staffs within Headquarters INTERFET. Approvals—none were refused—were placed on the following day’s load schedules by the Combined Movement Coordination Centre and relayed to a small Combat Support Group staff positioned in Darwin.³

Many of the logistic shortfalls arose because of the short notice of the deployment, the rapid build-up of forces and the ill-prepared state of the ADF’s logistic forces for such a major commitment. Logistics had rarely featured as a training objective on joint exercises and personnel at all levels, including those in Combat Support Group units, had unrealistic expectations of the standard of support that could be provided.

An enduring lesson for the Air Force was the inexperience in joint operations of the support units deployed, due almost entirely to the very early stage of development of Combat Support Group. Most of the key personnel in Nos 381 and 382 Expeditionary Combat Support Squadrons were on their first deployment in a base support capacity, save a short duration Combat Support Group only exercise, where all logistic aspects were arranged for them.

Few, if any, had deployed on a joint exercise as an air base executive and few had any experience with Army units or joint procedures for logistic support in the field. Few of

² Although No 1 Combat Logistics Squadron had trialled deployable SDSS (Standard Defence Supply System) on exercise, it did not work in East Timor. The interim system used by 10th Force Support Battalion, which formed the initial Force Logistic Support Group, was the Lotus Notes Interim Distribution System (LNIDS). Enforcement of ‘unit entitlement’ required written justification by way of a ‘staff demand’ for spares support to much of Combat Support Group’s equipment, not an impossible process but one that frustrated Expeditionary Combat Support Squadron staff.

³ Staffing of the movement requests in Headquarters INTERFET—none of which were refused but all of which required a clear case and careful staff work—was by the author. Some forward movement, such as the 381 Expeditionary Combat Support Squadron Catering Section by D+21, was to INTERFET time lines.
the executive staff had learnt through experience that initiative and personal contact is frequently the only method to achieve success when deployed, but they quickly would.

Expectations and previous training aside, under the circumstances the level of support provided by the joint logistic units and by the Expeditionary Combat Support Squadrons was exceptional.

Command is another aspect of the INTERFET deployment that deserves some discussion. Air base command at Comoro was split after a few weeks and flowed along separate lines for security and air base operations.

Although the Commanding Officer of No 381 Expeditionary Combat Support Squadron was nominally the Base Commander, the Commanding Officer of No 2 Airfield Defence Squadron reported, under tactical control, directly to the New Zealand-led Dili Command, the local INTERFET intermediary command established for security of the Dili area. The Commanding Officer of No 381 Expeditionary Combat Support Squadron, on the other hand, reported to the Air Component within Headquarters INTERFET.

There were some sound reasons for the split, not least of which was the broadening of the 2 Airfield Defence Squadron initial area of operations, 'AO Coventry', to an area way outside the bounds of the Comoro airfield. Another reason was that that 2 Airfield Defence Squadron was effectively being employed as another Infantry company from an INTERFET perspective, although their primary focus was always airfield security.

Command links through the Expeditionary Combat Support Squadron would have mattered little to Dili Command but responsibilities beyond the airfield would have been a major distraction to the Commanding Officer of 381 Expeditionary Combat Support Squadron as the air base commander. Nonetheless, coordination across the air base involving several commanders at different levels would have been difficult had security around Comoro degraded. Perhaps the improved security at Comoro was another reason supporting the dual command, although the split was never intended.

The split in command occurred with the transfer of responsibility for AO Coventry from 2nd Battalion, The Royal Australian Regiment (2 RAR) to 2 Airfield Defence Squadron in late September. This also necessitated a request for an additional flight of Airfield Defence Guards and a team of military working dogs for the squadron. This saw the first deployment of Reservists on active service as a formed body, as the additional Rifle Flight was drawn from No 3 Airfield Defence Squadron, a Reserve unit based in Adelaide.

Command support, by the way of a specialist staff for the Combined Air Component Commander in Headquarters INTERFET, was somewhat of an afterthought and No 395 Expeditionary Combat Support Wing Headquarters was added by direction from Air Command at the last minute.

While 395 Expeditionary Combat Support Wing was officially on the INTERFET order of battle, it was quite correctly absorbed into the Headquarters staff of the Air Component where it performed a vital function, particularly in the early days when the shape and footprint of the Combat Support Group forces were still being determined.
While only a few members of the 395 Expeditionary Combat Support Wing Headquarters staff actually deployed, the broader issue at stake, perhaps unknowingly at the time, was the role of the Wing Headquarters in operations. Many considered it simply to be a planning role with no involvement in operations. The higher command of combat support units though, like all other units, requires the detailed specialist knowledge only available in the Wing Headquarters as much on operational deployments as in peacetime. For Combat Support Group and its Expeditionary Wings, which will always have forces remaining at home and often follow-on forces or concurrent deployments, the need is in both places; a lesson learned by Air Force in East Timor and implemented through expanded headquarters in later years.

Operating under Chapter VII of the UN Charter, meaning the use of armed force was authorised to restore peace to East Timor, security was the principal concern of INTERFET. The Airfield Defence Squadron initially shared responsibility for the security of Comoro with 2 RAR and conducted tarmac security, static perimeter defence and patrolling. From early October, when the Air Component accepted full responsibility for airfield security, patrolling expanded significantly as the squadron’s area of responsibility grew.

Standing patrols in the form of shopfronts established among the villages were successfully employed by Squadron Leader John Leo, the Commanding Officer of the squadron, to promote a security presence and develop relationships with the villagers. This was an outstanding initiative by a squadron commander at the tactical level. Apart from gaining significant intelligence at the local level, the initiative also assisted in controlling some of the more aggressive East Timorese by placing the village leaders in the decision loop.

In December, the squadron also assumed responsibility for security of the Dili heliport, the original site of Headquarters INTERFET and now the base for Army’s 5th Aviation Regiment and the Special Forces response force. There was some irony in having Army’s Special Forces element and 5th Aviation Regiment under protection of an Air Force ground unit. In fact, a strong bond grew between the groups culminating in a request by Army that a Rifle Flight from the Airfield Defence Squadron be assigned for force protection after the withdrawal of INTERFET.

In a closing address to the squadron, when it was in the process of returning to Australia, Major General Cosgrove made the point most forcefully that it was very appropriate that Air Force had such a capability as that provided by the squadron. He went on to say that the security of Comoro Airport, which was a vital lifeline for INTERFET, was never an issue to him while the Airfield Defence Squadron was on task.

Security incidents varied, often involving ex-militia or suspected ex-militia members among the crowds of displaced persons as they returned to their ravaged homes in Dili, crowd control and the suspect use of premises. Disarming and a proactive approach, with a firm but friendly presence helped by the presence of military working dogs, contributed to some outstanding results for the squadron, although the role became more one of policing than ground defence as operations progressed.
Security responsibilities were also shared with the TNI-AU (Indonesian Air Force), though diplomacy and significant differences in capabilities restricted the Indonesians to static checkpoints at Comoro and occasional airfield inspections with the 381 Expeditionary Combat Support Squadron air traffic controllers.

Indonesia had ‘invited’ the UN-backed intervention and agreed to cooperate with INTERFET but, under the circumstances in East Timor, relationships could easily have become strained and deteriorated quickly at a local level.

Two unauthorised discharges of weapons by the Indonesian Air Force at Comoro in early October, one a short burst of gunfire across the airfield, could easily have undone Relationships, particularly at such an early stage when trust was still developing.

The Air Component of INTERFET, through both the Airfield Defence Squadron and the Expeditionary Combat Support Squadron, established a sound working relationship with the Indonesians at Comoro, minimising the potential long-term damage between the two Air Forces. The relationship, emphasised strongly by Air Commodore McLennan, seemed to be much better maintained at a local level by the Air Component than the other components.

Unauthorised discharges also occurred on the Australian side, usually during weapon cleaning, but the rate was no higher in the Combat Support Group units than any of the other units in East Timor. Indeed, they were considerably lower than some units which routinely adopted a higher weapon readiness.

Airfield movements were the core tasks for the Expeditionary Combat Support Squadron in East Timor, both ground handling by the air load teams and air traffic control. Initially, Australian and New Zealand C-130s of the International Coalition Air Wing made up the bulk of movements—up to 19 per day and 16 on average by the International Wing C-130s in the first month—with a growing number of differing types of aircraft from varying countries as operations progressed.

Australian Army and a variety of other international rotary wing and fixed-wing, outsized and wide-bodied aircraft among them, made Comoro a very busy airfield with daily aircraft movements frequently passing 300 during October.

Apart from aircraft availability and flight times for the Coalition Air Wing based at Darwin, tarmac space at Comoro was the limiting factor. Tarmac and associated taxiway maintenance by the airfield engineers early in the deployment improved parking and the entry/exit procedures, as did the helicopter landing zone they built, but it was still congested by a multiple of aircraft types.

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4 TNI-AU is the abbreviated form of Tentara Nasional Indonesia - Angkatan Udara, meaning Indonesian Air Force.

5 The initial weapon readiness state of ‘Action’ applied to all units and was changed to ‘Load’ after a few days, but some units continued at the ‘Action’ for several weeks.
Comoro was limited in that there was only one short taxiway leading to a relatively small parking and holding area. In the early days the strategic placement of Indonesian aircraft compounded the problem of aircraft parking.

Figure 3: Comoro Airfield

Undoubtedly, some of the hardest working members of INTERFET were among the air load teams. Apart from the almost continual movement of aircraft requiring unloading, some outsized cargo aircraft by hand and with equipment designed for the relatively much smaller C-130s, they were frequently harassed by units about cargo or by the combined movements organisation about the onward distribution of cargo after it had been unloaded, a task outside of their role and one for which they are neither equipped nor manned.

The second Expeditionary Combat Support Squadron (No 382) deployed to Baucau (Cakung) to the east of Dili from 11 October, having begun to position in Darwin from Townsville the previous day.⁶ Some pressure had been applied by rear headquarters (not part of INTERFET) to the deployed Air Component for an earlier deployment, as it had been for a more rapid build-up of forces at Comoro generally. The challenge in East Timor though was to manage carefully the build-up of forces and not deploy units until

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they were needed, minimising the logistic support bill until the support force was properly established.

Cakung offered a longer runway and larger tarmac than Comoro and was far better suited to the larger aircraft that were being planned for the return of displaced persons and some international force insertions.

The squadron's task at Cakung was principally to handle United Nations and other non-government flights returning displaced persons and inserting national contingents.

Baucau was initially secured by a Company of 2 RAR in an airmobile operation on 22 September and was subsequently allocated, for security, to the Philippines infantry and then to a Thai Infantry Brigade a few days after the Expeditionary Combat Support Squadron arrived.

The issues at Baucau were similar to Dili, perhaps to a lesser scale as security was generally more benign and the steady-state activity rate was less, although security concerns were never absent and workloads peaked at fairly high levels with the frequent arrival of wide-bodied aircraft.

There was no Airfield Defence Squadron assigned and the command arrangement with the Thai infantry commander was mutually cooperative rather than formally established.

The airport buildings, as in Dili, were badly trashed and required considerable effort to bring them to a habitable standard. Hygiene and building improvements were the second tier priorities to aircraft handling and security, and support to the Caribou detachment of No 38 Squadron that arrived from Dili on 29 October.7

Perhaps the greatest challenge for the squadron until they left Baucau at the end of December, apart from the frequent unknowns of aircraft timings and types, was the large number of displaced persons returning home. The sizeable welcoming crowds to greet them and the uncertain security environment that created caused some issues for the squadron.

The presence of former militia or their sympathisers among the crowds could easily and quite quickly have erupted into an unpleasant situation but for some quiet professionalism and diplomacy by the Commanding Officer and senior staff of the squadron.

The support required at the home bases in Australia for the INTERFET deployment, particularly at the northern bases of Tindal, Townsville and Darwin, was enormous. The Air Force's insistence during the preceding Defence Reform Program negotiations on maintaining command of its bases proved justified. Any other command arrangement at Townsville or Darwin would likely have been disastrous for ongoing support to operations in East Timor. In a similar manner, the contracting out concept showed considerable weakness at these two mounting bases—the private resources were just not available.

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Planning for the eventual handover of Comoro to the United Nations started in late 1999, though there were few countries able to offer a capability similar to Combat Support Group and few had any experience in handling the range of aircraft types and variety of tasks encountered at Comoro. Portugal was keen and, after a fact-finding mission, two Portuguese companies were awarded United Nations contracts to maintain the airfield but it would take them well over a year to be ready.

Meanwhile, 381 Expeditionary Combat Support Squadron was labelled the Comoro Air Support Group in mid-January 2000, to prepare for the eventual withdrawal of INTERFET and transition to the United Nations, which occurred on 23 February 2000.

To recap, I have addressed a number of issues and identified themes and lessons which the professionals amongst you will see as being as relevant today as they were when Grant campaigned against the Confederacy or when the Allies landed at Normandy.

That said, in my mind the one issue that stood out in East Timor was the enduring character of the Australian serviceman and woman. That we were able to persevere and overcome many of the challenges which confronted us, under very trying conditions, resulted from the calibre of the men and women who make up the Australian Defence Force.

I was fortunate in that I worked very closely with Navy, Army and Air Force personnel who consistently displayed a devotion to duty and strength of compassion for the people of East Timor which is unsurpassed. Their professionalism, dedication and endurance was truly inspirational.
In closing, I believe an external perspective is in order. Writing some time after INTERFET, Dr Alan Ryan, in a study paper on the INTERFET operation written for the Army’s Land Warfare Studies Centre, emphasised the importance of viewing INTERFET as a joint operation in the Australian context.8 He noted that ‘the challenging task of commencing airfield operations from a standing start was only made possible because the Royal Australian Air Force had a readily deployable Combat Support Group’.9

He concluded that ‘the tenuous nature of the force’s [INTERFET] initial foothold in East Timor and the need to establish an airhead for continuous air operations reinforced the need for the Air Force to maintain the capabilities inherent in the Combat Support Group’.10

The last lesson then is that we should not forget the lessons of operating as a lead nation in our region. For the past seven years we have operated under a constant operational tempo as part of a wider coalition providing small packets of high-end warfighting capability. We need to be careful not to forget the lessons of east Timor.

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9 ibid, p. 78.

10 ibid.
Air Commodore Brown

It has actually been a fairly interesting day for me as we have gone through some of the lessons and, for quite a few of them, I have thought, ‘Well we haven’t learnt some of those lessons.’ We have split this presentation in two. I am going to cover the F/A-18 aspects of the operations and Air Vice-Marshall Binskin will cover the C-130 and P-3 operations, which made extremely valuable contributions during the initial phases and have continued for the next five years.

Doug Hurst, your vent on 77 Squadron really rang true to me because flying suits were still a problem 50 years later and actually caused me a fair bit of heartache but we eventually solved it. I am glad nobody took any photos to send back to Woman’s Weekly of our initial two weeks over there. It was a pretty motley lot.

I will start off with what we actually deployed and, again, it was a fairly small contribution in the overall scheme of things with Iraqi Freedom. Figure 1 shows the elements we deployed. These were as follows:

- fourteen F/A-18s from 75 Squadron with an Expeditionary Combat Support element;
- two C-130s, initially, and we ramped that up with a third one at various stages, and again the C-130 detachment had a Combat Support Squadron;
- two P-3s, also with a Combat Support Squadron;
- six Imagery Analysts (I will talk more about them at a later stage); and
- we also deployed about 42 people to the Combined Air Operations Centre (CAOC)—just to give you a feel, the CAOC at that stage had about 1700 people, so there were only 42 of us operating in that space.

Basing was an issue. When we did the initial planning, I thought, ‘Basing? Well the US will sort all that out for you.’ Well I soon got straightened out on that. Each country had to sort our its own basing and that was a particular issue, and for our Chief of Air Force at the time I think he probably made two or three trips to the Middle East just sorting out the basing. Once we had done that, I thought, ‘Well, we’re right from here on in,’ but if you actually want to fly in somebody else’s country that requires another set of negotiations—we learned a lot from that. So there were a lot of elements in the basing. Luckily for us, the Government deployed us probably about four or five weeks before the operation started. So we actually deployed in the middle of February and I am very glad of that because it took
us probably about two weeks to make sure we had communications links and everything working properly.

Figure 1: RAAF Force Elements, Middle East Area of Operations

Initial operations on the F/A-18 side were defensive counter air. We did this for about nine days in total. The United States Air Force (USAF) was very good to us and actually gave us the centre combat air patrol (CAP) in the middle of the day—I thought if anything was going to happen we might have got some action but, as it turned out, it did not happen. I think there are some real lessons for us here, as we go through force structure reviews, on the number of fighters that it actually took to maintain these three CAPs. In the initial planning the USAF wanted to have about four CAPs, but we were tanker limited, so we ended up just having the three CAPs. We had six aircraft there—the tankers were back in Saudi Arabia—and what happened was we normally had a counter-rotating cap of two aircraft and two aircraft would be on the tanker at any one particular time. Just to maintain that over an eight-hour period—which we did—took 12 of our 14 aircraft. So, over that nine days, we had to keep 12 of the 14 F/A-18s serviceable. That was a challenge as the
The logistic system did not work quite as well as I would have liked, and, as I sat there for 30 days wondering when the first spare part was going to arrive in theatre, I got a little nervous. The big lesson out of this is that, if you are going to conduct defensive counter air operations—and you are always going to do some sort of defensive counter air—it requires numbers of fighters. This operation actually took 155 fighters to do. So if anybody mentions boutique capabilities of 30 or 40 fighters, you really do not have a capability.

After about four days it was pretty obvious that the Iraqi Air Force was not going to fly and we actually created a bit of a problem here in the CAOC at one stage when we downloaded one set of AMRAAMs and put a GBU-12 on, with the thought that we would CAP with some bombs on just in case there was some action in time sensitive targets. It actually did occur. They did call us off CAP at one stage for a leadership target. What I did not realise was the collateral issue that caused within the CAOC. The US Navy and the Marines decided this was a really good idea and wanted to do the same thing with their Hornets, but the US Air Force was not quite convinced. However, I think we actually won the day by about day six and everybody who could fly with bombs was flying with bombs on CAP—just a little innovation. We have done it since about 1992.

The big effort was maintenance. The environment was not all that great at certain times and we were flying about 90 hours a day, which was five times our normal peacetime rate. Also, there was not a lot of ramp space for the armament engineers who had to work there. We had the aircraft parked wingtip to wingtip with 2000-pound bombs—a nice little risk.
management problem there. The maintenance guys did an outstanding job. They had to have 12 of those 14 aircraft serviceable. Most the time they had 13, often 14, serviceable and we never missed a mission.

There was a lot of tanking involved with the operations, and we had a few damaged probes courtesy of the ‘iron maid’ on the KC-135. As you know, the USAF uses boom refuelling. If you put a basket on it, it is actually a rather nasty piece of kit that does not like poor technique; so we had a few issues there occasionally.

After about nine days we transitioned basically into strike operations—close air support and ‘kill box’ interdiction. The only bombs we had that we could launch off F/A-18s were GBU-10s (2000 lb) and GBU-12s (500 lb). We used the GBU-10s for fixed strikes on targets like buildings. It quite surprised me when we got the bomb damage assessment (BDA) back just how much damage two GBU-10s can do to a particular building. I think the significant issue here was that these were the first bombs that the RAAF had dropped in 32 years, and they were all precision guided weapons. We worked a lot with the Marines and if you ask me in the question period later I can probably elaborate a little bit more on that. The actual targets varied from military barracks to missile launchers.

![Figure 3: GBU-10 loaded on F/A-18](image)
Lessons

So, what were the lessons out of it?

- **Combined Air Operations Centre (CAOC).** The CAOC was absolutely the focal point of air power operations. Other speakers have talked about that and I will leave any further discussion on it to Air Vice-Marshal Binskin.

- **Targeting Issues.** We had never had a targeting directive. I think most of us who were involved in the planning had never really heard about collateral damage estimation—we learnt that pretty quickly in the planning stages. What was good from my point of view at the strategic level was that there was a lot of discussion between the strategic, operational and tactical levels to work out the rules of engagement (ROE) and the targeting directive so they were quite usable to the guys in the cockpit. I think if you ask any of the guys who flew in the missions over Iraq, they were pretty happy with the ROE that they had and they were pretty happy with the targeting directive. I believe that that was a very mature approach by everybody who was involved in the chain. In the CAOC, I also had exactly the same sort of collateral damage criteria as the Combined Forces Air Component Commander (CFACC) and, again, that made it easier to operate in terms of coalition operations.

- **Interoperability Issues.** What were the interoperability issues? Actually, there were no major issues with F/A-18s, C-130s or P-3s. I would argue that this was because this Air Force over the last 10 or 15 years has had a good capability development process that has actually continued to improve the aircraft. The F/A-18s we bought in 1985 are very different to the F/A-18s we fly today. We had just started on the Hornet Upgrade Program, and Have Quick radios¹ and the IFF Mode 4 interrogator were actually very critical to the roles that we undertook in Iraqi Freedom. In lots of ways our Hornets were equal to or better than the US Hornets. I could guarantee that all our Hornets had Mode 4 interrogators. The US Navy and Marines could not do that, so that is why we were preferred in that defensive counter air posture.

- **Training.** RAAF training was validated and ‘hats off’ to all the retired members here. It was 50 years since the last fighter operation and the fact that we fitted into the operation seamlessly I think had a lot to do with the training regimes that we have had over the last 50 years. In his talk earlier today, Doug Hurst mentioned Dick Cresswell, who set up the Fighter Combat Instructor (FCI) Course and I think that was absolutely critical to us having a credible capability.

- **Exchange Officers.** The other issue was exchange officers. Again, there are always rub points on cultural issues between different Services. We had a couple of exchange officers in 75 Squadron and some of the guys in the US squadrons,

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¹ Have Quick is a frequency-hopping system used to protect military UHF radio traffic.
in the F-15 squadrons, had recently completed tours in Australia. They were invaluable at doing that sort of translation that you need.

- **Flexibility and Adaptability.** Air Commodore Stew Cameron said it; we have an incredible, flexible, adaptable workforce that will solve most problems no matter what comes up.

- **Intelligence, Surveillance and Reconnaissance (ISR).** ISR is the key enabler. I spoke about the CAP posture before. That was backed up with three AWACS orbits, a number of JSTARS orbits, EA-6s; there is a whole package that makes this work. Probably more important than just the platforms is the communication networks that make this work, as well as somebody that can actually analyse what is going on. At the beginning, I mentioned the six Imagery Analysts that we deployed. An interesting fact: the USAF had kind of got out of the wet film business, but the U-2 aircraft still used a fair bit of wet film. Those six Imagery Analysts actually doubled their capacity for analysing that U-2 ISR footage. So, again, sometimes a small contribution can make a big difference in a campaign.

- **SEAD/DEAD Capability.** Capabilities for the suppression of enemy air defences (SEAD) and the destruction of enemy air defences (DEAD) were absolutely critical. The enemy still had 60 odd surface-to-air missiles (SAMs) but, because we had a SEAD/DEAD capability, they basically were forced to move them every four hours. They also were forced not to operate their radars, so a lot of the anti-aircraft artillery (AAA) and a lot of the SAMs came up unguided. Again, these sorts of capabilities are invaluable in most operations.

- **Small Special Forces (SF) Teams and Air Power.** The other lesson that I will bring out is small SF teams and air power. A little known fact of this particular conflict is that the SF teams of the Western Desert actually worked for the CFACC. Their role was to try and hunt out Scud launchers and I do not think I ever saw an SF team call up for air and it took any more than 10 minutes to have bombs raining down where they wanted, and that was really great to see. It showed great synergy, which has continued to be worked on.

- **Data Links.** Lastly, data links are important overall.

**Hornet Issues**

What were the Hornet issues?

- We knew the NITE Hawk pod\(^2\) was not a particularly good capability and probably of all the components of the aircraft that was the one that gave me the most heartache over the five weeks. It was unreliable and it did not have enough magnification.

\(^2\) Lockheed NITE Hawk forward looking infra-red (FLIR) targeting system.
• We did not have an all-weather precision guided munitions (PGM) capability, such as JDAM.
• Lack of night vision goggles.
• Our electronic warfare (EW) suite was poor.
• We did not have a great variety of weapons types and no stand-off weapons capability.

This was a list I put up in 2003 and, if you look at these issues now, you will see that action has been taken in all areas. We are now fitted with the LITENING 2 pod\(^3\)—it is probably the best pod in the world at the moment. We do have an all-weather JDAM capability across our fleet. We do have night vision goggles and the new EW suite goes into the first aircraft in the next two weeks. We do have a greater variety of weapons, and we are fitting a stand-off weapon to the Hornet. So, sometimes, air forces do learn lessons. Now a lot of these things were in train anyway, but there was certainly a lot more emphasis on the replacement of the targeting pod.

Conclusion

My overall impression is that we do have a very flexible and adaptable workforce. The coalition with whom we worked and the USAF, in particular, were incredibly accommodating. The USAF allowed us to do pretty much what we asked them. I do not think I was ever knocked back on any particular request. If we had logistics problems, like the flying suits, they seemed to manage to produce them for us. If you are going to work with anybody, you cannot pick a better partner. We also had the RAF there and, again, they were incredibly generous to us. I did not have a communications aircraft to get from where I was to the other bases, but the two-star there gave me a pretty free rein in his HS-125. So, great cooperation that really made the difference.

I will now hand over to Air Vice-Marshal Binskin.

\(^3\) Northrop Grumman LITENING AT target designation system.
AIR VICE-MARSHAL BINSKIN

What is my view? I did see the air operations for *Falconer* and *Bastille* from an Australian Theatre perspective back here in Australia and then about eight months later went across into the CAOC Director position and saw operations for about three or four months over there from a CENTAF view, working in the US command and control structure. So what I want to do is build on Geoff Brown's brief and then talk about the follow on operations, *Catalyst* and *Slipper*. But first of all I will talk about *Iraqi Freedom* and *Enduring Freedom*, the US terms for the operations, and then roll in where we fitted into that and then look at some overall lessons out of it all.

First, a CAOC Director's perspective. I worked in the CAOC over there as the Director. It was a CAOC of about 300 people and operated 24/7. It would have grown a little bit when then Air Commodore John Quaife was there about a year later, I think, because of the operations that were going on. The CAOC was supported by 650 air staff in location at the base. The lesson that we have not learnt yet is that about 120 of those were information technology (IT) experts, on call 24/7 to come in hands-on and fix IT issues because, as you can imagine, information superiority requires that you have got the systems up and running all the time.

What set the whole tone for my three and a half or four months were two events on the day I took over, 22 November 2003. In the morning a DHL cargo aircraft was hit by a surface-to-air missile shortly after take off from Baghdad (Figure 4):

![Airbus A300 cargo aircraft hit by surface-to-air missile, 22 Nov 2003](image)

This was quite significant because it was how we were resupplying Baghdad. It did not stop us doing it, but it affected the way we were doing operations and it put pressure on us from an air perspective to hunt down some of the man portable air defence system (MANPADS) shooters.

Of more significance for two minor coalition nations was an event in the afternoon (Figure 5). In the afternoon, English rugby union player, Johnny Wilkinson, came along and kicked so many field goals that he put a lot of tension on the UK-Australian relationship out there, but we managed to work through all that:
The CAOC was predominantly US but there was one Australian in there, myself, and there was one British officer down in the ‘crow’s nest’, running operations. Of the personnel that were outside that building, a lot of them were coalition, headquarters and support staff as well. OK, so what did I step into?

In Iraq it had been quiet after the major operations finished in April and it remained quiet until about the September-October time frame when a couple of events occurred. One was the bombings of the Italian military police headquarters down in Nasiriyah and shortly thereafter there were a couple of MANPADS shots against Army helicopters. In particular, a CH-47 was shot down and a little-known town called Fallujah (65 kilometres west of Baghdad) started to flare. Up until then not many people had known where that town was but it started to play a significant part in what was going on.
North of a line below Baghdad was US V Corps predominantly and to the south of that line the Multinational Division—very coalition-based but all reporting up into the Baghdad area. The US forces were conducting about 1200 patrols a day. They were mainly small patrols but they did have the advantage of being supported by attack helicopters as well as air, and they also had armour and ground-based quick reaction forces to support them. What became apparent in this whole area during the next couple of months was that it began to be not one-off attacks, but it started to look like it was coordinated and people started to whisper the dreaded word ‘insurgency’. That was about the December-January time frame at the end of 2003 and early 2004. It was obvious that they were starting to tie together attacks and people were starting to look for the doctrine to counter those insurgent operations.
In Afghanistan, it was a different story. We were into nation building, or rebuilding as the case may be. It was the time of the Loya Jirga and the new Afghan Constitution. They had just finished this ring-road that went Kandahar-Ghazni-Kabul and around to the west, hoping that that would unite the nation. It was relatively stable in the north and the west, more because of the war lords who controlled the areas and the power they had over their people. Some of those war lords did a fantastic job with education, security and everything for their people. Predominant operations were around the eastern and southern border area with Pakistan, with the Taliban and al-Qaeda transiting backwards and forwards in some of the areas. Although we did not touch it a lot, we knew that we were going to have a problem.

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4 Loya Jirga (Grand Council) is a national council of notables, tribal chiefs and religious leaders that may be called to assemble in order to address a major issue or reform considered important to the nation.
at Deh Rawood\(^5\) in Oruzgan\(^6\) province, where we are currently operating. But that had been relatively quiet during the time.

So we had two totally different areas of operations for one air component to support. I do not want to get too much into it, but I want to look at the areas in contrast. It was not just where we were in these operations, it was how the joint forces handled it at the time. Combined Joint Task Force 7 (CJTF-7) was the command at the time in Iraq. It was a very land-centric headquarters. It was not effects-based or effects-educated in the way it looked at business. In fact, its definition of effects operations would be like telling a tank commander where to park his tank, which way to point the barrel and when to pull the trigger. The headquarters did not look at effects, it looked at assets. It would task assets not letting us know exactly what it wanted to do. It was a very, very interesting environment because CJTF-7 was not coordinating well with the Coalition Provisional Authority and there was not this whole-of-force approach going on at the time in Iraq.

Conversely, in Afghanistan CJTF-180 was the remnants of an SF-based headquarters. It had learnt from Operation *Anaconda* previously and it was very much into effects-based operations. While we probably only had about a third of the amount of air assets over in Afghanistan, we probably got more effect out of that third of the force than we did in Iraq, simply because they were effects-based operations and, importantly, the headquarters integrated air into its planning right from the get-go, whereas over in Iraq we were always fighting to put the air into the plan.

The types of operations that we did were many and varied. We would be doing infrastructure patrols. We would be doing counter IED operations. We were doing support to SF. There was on-call close air support. There was ISR and there was non-traditional ISR. You name it, air was doing it. Now, importantly, in all this in both areas (and I will look at more of the combat air side of it now) the combat assets were launching with five or six separate missions to do. The day of the CAS stack was dead. We were not just launching aircraft to sit them somewhere waiting on call to fulfil their contract with the land forces. We would have a contract that within a certain time we would have fast jet there to provide air support but they were not just orbiting doing nothing. For example, in Iraq the aircraft would come in and do a route patrol looking for any suspicious activity. If they saw something on their way in, they would radio that in through the Air Support Operations Centre (ASOC) in Baghdad, who would contact the ground forces and get them out to have a look at it or warn them that something had happened in that area. The aircraft would go and they might do five or six targets from an intelligence deck to get non-traditional ISR shots using their FLIR pods. They would do a route patrol looking for anyone that was attacking the powerlines, the gas lines or the fuel lines at the time. They were doing similar things in Afghanistan although, obviously, there was not as much infrastructure around there, but similar things, route patrols and flying cover for a lot of

\(^5\) Also spelt Dah Rawood.
\(^6\) Also spelt Uruzgan.
the troops that were moving. In some areas the troops would not move unless they had air overhead. One other important thing that was going on in Iraq at the time was that V Corps was doing a relief in place with III Corps, who were coming in, and they were driving pretty much the whole length of the country to move in and out. The ground forces were quite worried about that and they would not move unless they had air overhead. I would be interested to know how that improved over time because, as I was leaving, III Corps were coming in and were effects-based in their thinking, or at least that is the way it looked to us at the time. So there were changes going on in Iraq and operations in Afghanistan were going fairly steadily. But the big lesson out of that was the integration of air and effects.

If you look at how we did it. We basically had a small force and I will not put up all the statistics, but the way we did it was tying it in and apportioning against priorities across the whole area of operations (AO). There were about 300–350 sorties a day and of that 20–25 per cent were combat sorties and the rest were combat related—ISR, tanker and air lift. So there were a fair few sorties moving around. We had two bases at the time operating in each country. One was Bagram (north of Kabul in Afghanistan) and the other was Kirkuk (north of Baghdad). Both were operating A-10 squadrons predominantly in a ground attack role—not a multi-role aircraft but very good in the ground attack role—and Predators operated out of each of those areas as well. They were supported by a carrier sitting in the Gulf. During my time, the carrier spent most her time in the Arabian Gulf, but later on they did move down for a sustained operation back into Afghanistan.

It was interesting working with the US Navy. You treat them like another coalition ‘nation’, in some ways, because they do work a little bit differently, but they provide a fantastic capability. However, it comes with some management issues. They run a 90-minute deck cycle and they run their whole operation around that, which was OK unless, of course, the troops in contact occurred up north and the Hornets, which were providing a great service, were required to do it towards the end of a deck cycle. The issue there was do you then have to find a tanker to get them through the next 90-minute deck cycle or will the captain of the ship allow them to recover in between a deck cycle—just little things like that to work in there. But, again, they provided a great capability. The other issue was the fact that we were only getting about 15 or 20 per cent of the sorties that the carrier would launch each day because a lot of their sorties were flown just to protect themselves or just doing training, so that was a negotiation throughout the whole operation.

Land-based aircraft were swung backwards and forwards between Iraq and Afghanistan. When we had the carrier available, we made sure they primarily stayed on Iraq and then we would swing the land-based aircraft either way depending on the targets, priority of the operation and apportionment process that the CAOC carried out. If they were heading up into Iraq they were about six-hour missions, heading around Afghanistan they were about nine-hour missions and if they were B-1s coming out of Diego Garcia in the Indian Ocean they had 18 or 19-hour missions. Again, the whole aim was to have combat air over each of the countries 24/7 on a ‘contract’, and we achieved that most of the days. I have got to tell you though, the poor old B-1s if you extended them by an hour or two they started to get a bit tired, but they did a good job, more so for their non-kinetic effect than their kinetic
effect. There is nothing like a B-1 coming over the top of some Taliban fighters at night, low level, supersonic and in afterburner to get an effect, I have got to tell you. Again what this showed was that we could swing air depending on the priorities or the apportionment requirements of the day. What it also showed was that a tanker is a king in this and so is ISR, because if you know the picture then you can focus your effect a lot better and not waste the assets.

I would now like to talk from the Australian perspective in all this. We have put a meaningful contribution into it. I will start up front with the Australian Army training team—Air Force, I think, make up about 30 per cent of that team. We have had them over there for pretty much the whole time since the end of major hostilities, helping to train the Iraqi forces. We have had people in the CAOC at the Director level and Battle Director level, we have had an air traffic liaison officer in there since April 2003 and we have had a few other personnel go through there in embedded positions. We had air traffic controllers from April 2003 right through to the end of 2005 in Baghdad International Airport (BIAP) as well as Balad (north of Baghdad). The C-130 force has been in the whole time and, obviously, we have had the P-3s. The latest capability to be deployed is a Control and Reporting Centre (CRC) which have just gone into Kandahar Airfield and doing a fantastic job there, and we had a part of the medical detachments at Balad. So, Air Force has made a relatively large commitment.

If you look at what we have had over there in that time, there have been 6191 individual rotations in and out of the Middle East Area of Operations (MEAO). Now, that is not 6000 people because some people have gone back two or three times, and some even for their fourth time. Still that is a fair few rotations in and out of the MEAO since the beginning of the operations. Now that is the front part of the operation but some would say the more important of the operation is what has been going on in support. We have deployed a lot of support personnel. We have had aeromedical evacuation (AME) teams and, obviously, we have had medical personnel at each of the detachments in the Middle East. We have provided a lot of people on the logistics side, with air load teams spread around the Middle East pretty much since when we first deployed at the beginning of 2003. Importantly, we have had the force protection guys in each of those deployments as well, playing a very important role.

The photograph on the bottom right of Figure 9 shows the control tower at Baghdad Airport. It is the highest point within about say ‘a thousand miles’ and I have got to tell you, if you are looking for a good aimpoint if you are sending mortars or rockets in from 10, 20 or 30 miles away, that is it. I spent time with the guys in the tower when I was over and I have got to say they are the guys I took my hat off to, because they sat there and watched the rocket launchers coming of a night-time. I asked them one night, ‘How did you know that it was going to miss?’ They said, ‘We don’t until we get crossing rate’, which sometimes happened very late, but they never shut down operations. They did a great job. That area was also where all the support personnel lived as well, so they were the aimpoint for a lot of the insurgent activities and they did a fantastic job in the middle of all that.
Figure 8: A meaningful contribution

Figure 9: Support – A meaningful contribution
OK, what are the lessons out of all this? I will keep these at the higher level.

I put this up (Figure 10) because some lessons are enduring and we have actually learnt them, although Regulation 21 we have to enforce with 75 Squadron on a fairly regular basis. Some of the other lessons I am about to put up you would think we would have learnt as well, but we have not.

<table>
<thead>
<tr>
<th>Regulations For Operation Of Aircraft – Commencing January 1920</th>
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<tbody>
<tr>
<td>1. Don’t take the machine into the air unless you are satisfied it will fly.</td>
</tr>
<tr>
<td>2. Never leave the ground with the motor leaking.</td>
</tr>
<tr>
<td>3. Don’t turn sharply when taxiing. Instead of turning sharp, have someone lift the tail around.</td>
</tr>
<tr>
<td>4. In taking off, look at the ground and the air.</td>
</tr>
<tr>
<td>5. Never get out of the machine with the motor running until the pilot relieving you can reach the motor controls.</td>
</tr>
<tr>
<td>6. Pilots should carry hankies in a handy place to wipe off goggles.</td>
</tr>
<tr>
<td>7. Riding on the wing, steps or rail of the machine is prohibited!</td>
</tr>
<tr>
<td>8. In case the engine fails on takeoff, land straight ahead regardless of obstacles.</td>
</tr>
<tr>
<td>9. No machine must taxi faster than a man can walk.</td>
</tr>
<tr>
<td>10. Never run motor so that blast will blow on other machines.</td>
</tr>
<tr>
<td>11. Learn to gauge altitude, especially on landing. (Good advice!)</td>
</tr>
<tr>
<td>12. If you see another machine near you, get out of the way.</td>
</tr>
<tr>
<td>13. No two cadets should ever ride together in the same machine.</td>
</tr>
<tr>
<td>14. Do not trust altitude instruments.</td>
</tr>
<tr>
<td>15. Before you begin a landing glide, see that no machines are under you.</td>
</tr>
<tr>
<td>16. Hedge-hopping will not be tolerated.</td>
</tr>
<tr>
<td>17. No spins on back or tail sides will be indulged in as they unnecessarily strain the machines.</td>
</tr>
<tr>
<td>18. If flying against the wind and you wish to fly with the wind, don’t make a sharp turn near the ground. You may crash.</td>
</tr>
<tr>
<td>19. Motors have been known to stop during a long glide. If pilot wishes to use motor for landing, he should open the throttle.</td>
</tr>
<tr>
<td>20. Don’t attempt to force the machine onto the ground with more than flying speed. The result is bounding and ricocheting.</td>
</tr>
<tr>
<td>21. Pilots will not wear spurs while flying.</td>
</tr>
<tr>
<td>22. Do not use aeronautical gasoline in cars or motorcycles.</td>
</tr>
<tr>
<td>23. You must not take off or land closer than 50 feet to the hanger.</td>
</tr>
<tr>
<td>24. Never take a machine into the air until you are familiar with its controls and instruments.</td>
</tr>
<tr>
<td>25. If an emergency occurs while flying, land as soon as possible.</td>
</tr>
</tbody>
</table>

Figure 10: Regulations for Operation of Aircraft, January 1920

First of all, air superiority cannot be assumed. In Iraq, if you think about it, the comment was made before that we have been fighting for air superiority since the 1991 Gulf War and, even with that, there was still a fairly substantial air force parked on the ground in Iraq when operations started in 2003. That had to be suppressed and that was suppressed with intent and a highly capable force of which we were part. In Afghanistan, it was less so because the Afghani Air Force had died ages ago. But if you think about where Iran is, and you think about Syria and a few of the other nations around there, you cannot take air superiority as guaranteed. Regardless of the withdrawal of ground forces from those two particular
countries, you are going to have to have a level of air superiority, whether it is assumed to be available to operate there or physically flying in the countries, to keep the other countries at bay.

Joint planning is essential. You cannot integrate air as an afterthought. It is not the right way to do it and I have heard people talk that ISAF is currently falling into that trap. I haven’t been over there but that is what people have said to me. You cannot integrate it as an afterthought. It is got to be right there up front from the beginning.

Air power provides all of the following:

- reach, precision and concurrency;
- responsiveness and flexibility;
- situational awareness;
- targeting processes and expertise; and
- indirect and direct fire support.

Now, it provides all of these things listed above through the processes provided by the CAOC. I think it was in *The Future Air and Space Operating Concept*: ‘the right effects through precise control’, and the CAOC provides this. It does not have to be that large. It does for the operations in the Middle East but, for smaller operations in our region, you can run a smaller Air Operations Centre. Important to the joint arena are the targeting processes and expertise that the CAOC brings. It is a great targeting cycle that the CAOC goes through and it is starting to be adopted more and more around the joint arena. A big factor in all this was indirect and direct fire support.

We take lessons out of Iraq but we probably need to look at Afghanistan as well for our lessons as a defence force. In Afghanistan they were small forces deployed on operations. A lot of the times they were outside their range of their attack helicopters or, if the attack helicopters could get there, they were too high for them to be effective, and artillery could not targeted effectively into where they were operating, even if you could move it around down in the flats. Their direct and indirect fire support was fixed wing combat air. An important part of that is you have got to make sure you have got the communications with those guys and this is where it is really important that you integrate your planning right up front so you know what they are doing, they know what you can give and you have got a contract with them that you can keep.

You must manage your footprint. There is normally limited ramp space when you participate today in coalition operations. You have got to manage your footprint because of that limited ramp space, but also you have got to minimise your logistics support requirements. You have got to make sure that you have got the force protection there and a lot of the times that leads to multi-role platforms. I think, and Geoff Brown can give us the figure later on, the pure air defence F-15s were pulled out pretty much after about the first week or so because they needed the ramp space for multi-role aircraft. I am not saying you should always go low in single-role, but high in multi-role is what you need to do to get the most out of your force. Probably the greatest impact I had when I was the CAOC Director of not having
a multi-role aircraft available at the time was when we had just opened airspace again to civil operations in Iraq and we started to have problems with unidentified airliners coming through. One day, in particular, all I had available to do the intercept was an A-10 and a VC-10, so we set the A-10 up as a barrier cap and did the intercept with the VC-10, believe it or not, to identify the airliner. Now, that is not the best way to use air, but it does demonstrate the flexibility side I was just talking about!

Air power provides a timely and selectable response, whether it is humanitarian operations right through to high-end combat, or it is non-kinetic right through to kinetic—even in the kinetic side air power allows you, with the right weapons fit and the right aircraft, to have a ‘dialable’ response. You can sit air power overhead and, from just being threatening through to taking out the target entirely, you can select the required effect or action.

**Air Force Vision**

To be a balanced expeditionary Air Force capable of achieving the Government’s objectives through the swift and decisive application of air and space power in joint operations or as a part of a larger coalition force.

*Figure 11: Air Force Vision*

Now I am going to give you a quick lecture. Figure 11 shows the Air Force Vision. This was developed back in 2002, before we deployed to Iraq, where a wide group across Air Force sat down and wanted an enduring vision, and I put it to you that it is pretty enduring. If you look at it there are some key words in there: ‘balanced’ and ‘expeditionary’. I will not get into the expeditionary aspect, that has been harped on all day, but the ‘balance’ side is something on which we need to keep focused—that is a balanced force to be able to do all the things that air needs to do. It is also affordable, so you can afford to procure it and afford to support it. Other key words are ‘the swift and decisive application of air and space power’; that is from kinetic back through to non-kinetic and humanitarian right through to combat operations, it is still swift and it must be decisive. Another point that I will stress here is when we talk about ‘joint operations or as a part of a larger coalition’, that is not necessarily always in support. It does not mean you cannot do independent operations as an air force, or you can be the supported commander from an air perspective. If I was to look across the Middle East operations, I would say that we did demonstrate that we were a balanced and expeditionary Air Force, we did have swift and decisive application of air and space power and I think we continue to do it. What I also would say is, if you look at where Chris Clark started today, we have come a long way and I put it to you that we have learnt a lot of lessons over that time. I would also put it to you that as a Defence Force there are still a lot of lessons to learn, and a lesson is only learnt when you do not repeat the mistake—only time will tell.
Panel Discussion
Mr Sebastian Cox
Dr Richard P. Hallion
Dr Sanu Kainikara
Air Commodore Stewart Cameron, CSC
Air Vice-Marshal Mark Binskin, AM
Air Commodore Geoff Brown, AM

Air Commodore Tim Owen (Moderator): I’m not going to summarise this afternoon because we only have about 15 minutes to talk to the panel, so I will open the floor, ladies and gentlemen, to any questions you would like to ask.

Squadron Leader Craig Stallard (Air Force Headquarters): Air Commodore Brown, notwithstanding the accomplishments of the F/A-18 during that initial Bastille and Falconer time, I would just like your view as the Air Component Commander on how the C-130 was employed and performed during that time.

Air Commodore Brown: In my 15 minutes I really did just concentrate on the F/A-18 operations but, in many respects, the C-130 operations were sometimes more useful to the coalition. There is a difference in the way the USAF use their C-130s to us. We actually load ours up to about 35 000 pounds, whereas they have got a 20 000 pound limit. I will not go into the reasons for that, but that allowed our C-130s actually to take some fuel tankers right across the AO [area of operations] at different times and relieve C-17 missions for higher ones. The point I’ll make is that your front-end capabilities, like Special Forces and F/A-18s, allow you to highlight the support ones. If you just throw C-130s and P-3s and things like that into the fight, you don’t tend to get the same seat at the table and it does not get noticed quite as much. Our F/A-18s were only flying 14 within 600 strike sorties and in lots of ways I think the C-130s made a more significant contribution. At one stage we had only three per cent of the C-130s in theatre and they were lifting 15 per cent of the cargo. You have got to make that sort of balance.

Squadron Leader Lee De Winton (Air Force Headquarters): Just to go with what I saw as the theme throughout today and that is interoperability. Interoperability with respect to rules of engagement, targeting, status of forces agreements, technology, intelligence sharing, communications, which is a pretty big concern due to our continued participation in alliances and coalitions of the willing. My question is, do we suffer from a lack of global strategic outlook or will to actually change this and as we profess to be an air force of influence what in these things can we actually influence before we lose more corporate knowledge? We’ve said that we demonstrated interoperability in the MEAO but, really, in Baghdad the US Army and the US Air Force couldn’t even speak to each other, without us trying to communicate with them in the IT aspect—and I’m sure that wasn’t the only thing. So with all these issues as we continue to work with the US, and then we get more
political pressure from above, how do we work this on a coalition level? What can we do to influence how we better operate?

Air Commodore Brown: I read something the other day about how we’d done this big study on interoperability and we were red in all these areas, and I looked at it and I said, ‘Well, yes, maybe’. Interoperability is all about a willingness to work together. People of goodwill put in the same boat with the same aim will work through a lot of the technical issues, in my view, so most of the time it’s not bad. I think with the US forces you’ve actually got to realise that they’re big institutions. When I was there, joint warfare was defined as actually getting all the three Air Forces to work together. The next step was working with the Army and Marines. The reality is, I don’t think it’s that bad. You always go into a conflict with issues because of your collective training. It gets better as it goes on.

Squadron Leader De Winton: To follow up, Sir, would you extend that to ROE and basing and targeting and the legal issues we still have between coalition partners?

Air Vice-Marshal Binskin: I’ll take that one. You’re always going to have targeting differences and you’re going to have ROE differences. What you have to do is accept that that’s the case and make sure you understand that when you’re working it. I didn’t throw up a picture, but maybe I should have, and it’s a picture of the ‘Welcome Board’ at Bagram air base in Afghanistan, and there are probably about 25 flags on that board. One thing we had to get across as an air component in the CAOC was we had to understand the differences in the different ROEs when you are employing air. That wasn’t just from a land force. From the air perspective, if you had three or four different air components operating, you had to understand that they were going to come with different rules of engagement. They were going to come with different targeting directives. They were going to come with different national command chains and links, and different responsiveness. You’ve got to accept it. You’re never going to get it to be the same, nor would you want it to be, because no nation’s going to give up their sovereign right in those targeting or ROE issues. You just have to accept it and figure out a way of working around it.

Mr Cox: I would absolutely agree with that. People get obsessed with the kit, but interoperability is actually a state of mind. The second thing to say is, if you go back to Chris Clark’s presentation this morning, where he was being critical of the amount of political control that the Australian Air Force had given up, you are almost getting back to a state where you say you want to surrender your political power over your own forces. You don’t want to do that. You really don’t want to do that. On ROE, I’ll just tell you a story from 1991 when the RAF made that first deployment in what we called Operation Granby in the 1991 Gulf War and the Tornado F3s and the Jaguars were out in theatre and it hadn’t started, fortunately, to be a hot war yet. In theatre, the RAF commander was having a problem with the USAF over ROEs and they really couldn’t understand it because Washington and London kept telling them that they had an agreement. Yet, when they looked at what they were looking at in theatre, they couldn’t see how they had an agreement because they plainly appeared to have different ROE and the USAF commander actually threatened at one point to ground the RAF aircraft. What it turned out was that London and Washington thought they were talking about the same ROE but they weren’t, so the problem was actually not in
theatre at all. The problem was between London and Washington, who'd managed to get
themselves in a complete tangle, thought they had an agreement and actually were talking
about different documents. Brilliant!

Dr Hallion: In every air war that's ever been fought, I think we've always had interoperability
issues and I think we just have to recognise that, in the crises and conflicts that we foresee
ourselves playing in the future, we'll continue to have that. But the encouragement, I'd say,
comes from taking a look at the experience of people in theatre who work these things out.
Typically, they come up with an adhocracy, almost informal workaround-type process. Now
back at the headquarters level, back in the national capital levels, when you have sometimes
a media component or a political component come on top of that you can have these things
elevated to the point where they become huge doctrinal fights and battles amongst Services,
and battles among coalition partners. We saw this in spades in the Korean War, if you take
a look at the close air support debate and relations with other Services and things like
this. But people do work around them. The example I'd give recently where you have two
nations that were moving in different directions, but nevertheless aligned on the same issue,
was in Operation Northern Watch. In Northern Watch, if you took a look at the Royal Air
Force and you took a look at the United States Air Force, the participation of both Services
was working together very well; nevertheless if you took a look at what was underlying
that participation there were two very different drives. For the Royal Air Force it was the
protection of the Kurds and for the USAF it was to keep Saddam [Hussein] in the box and
there were points of disagreement. There were things that the British air commander, a
very sharp fellow named Andy Lambert, recognised that he couldn't sign onto on occasion
and there were differences that the American air commander, Dave Deptula, recognised
that he wasn't quite on board with. But that aside, the alignment of the two worked very,
very powerfully to achieve some very strong effects there and neither gave up the national
sovereignty issues. So it can be worked around.

Group Captain David Millar (Air Force Headquarters): I'll address my question to Air
Commodore Cameron. I'd be interested in your thoughts on the tension between being a
garrison force and an expeditionary force, and further tensions on logistic support. Another
given is that, as we move into the future, we are more reliant on information operations
and all that entails. You made a few veiled points there about the need for Combat Support
Group and having those people. We've got a new government and we've got a leadership that
is leaning more towards CIO Group [Chief Information Officer Group] and DSG [Defence
Support Group], and I'd be interested to know if there are any CIO or DSG members in the
audience. What risk do you see on our reliance on that and our lack of control, since we've
literally outsourced those support capabilities and information operations?

Air Commodore Cameron: Really, none to be honest. We've got to be pragmatic about this.
At the end of the day, we've got a finance resource in which to operate. The Chief doesn't
have the ability to go across to Government and say I want more money. We operate within
a constrained environment; that has always been the case. I think the beauty for us is that
we've been able to actually always come out on top. Whether it be DSG running a base into
the future or whether it be a Navy unit running an Air Force base, it really doesn't matter.
The real issue is the effect that you want to achieve from that environment. I come back
to Timor. I looked at some of the issues there in great detail, but, at the end of the day, the thing that really impressed me was the fact that we just got on and got the job done, and I suspect in the future that’s the way we will operate. I pick up on the point by the other speakers here in response to the question about coalition operations. There will always be tension. That’s the nature of coalition operations. But put the tensions aside because we’re all there doing the same job for the same reason and common sense will come to the fore. We will always work around it; that’s the beauty of working with a coalition partner.
Well in true nature, I am not actually going to sum up the conference. I am going to say what I think and what we need to think about as a result of this conference. I think sometimes that Air Power Conferences and Air Force History Conferences often are the converted speaking to the convinced, so the question for us is: What do we draw from today? Should we do something about some of the things we are hearing? What, perhaps, might be the topic for future conferences? Now the Air Power Development Centre, when they were looking at the things for this conference, identified three broad themes. First, the geo-strategic realities that define our position have made expeditionary air operations and the challenges they present a persistent theme—that is pretty straight forward. Noted that throughout military history we have usually gone towards the part of a larger alliance and, as Dr Clark said this morning, if you are going to do that and you are going to taken seriously as an ally, you had better have something credible to offer. So the challenge for us is: How do we maintain our credibility and how do we continue to address those challenges as we change very rapidly over the next decade, particularly as we aspire to become this networked force? It is important that if we are going to do that then we certainly learn the lessons of history and take the analysis to shape both our contemporary and future operations capabilities, and our professional development and our organisational design. In listening to a lot of the lessons here and these folks speak today, a lot of those lessons we have taken on board and we have done something about them, albeit far slower than we would like to. But there are a lot of lessons there that we do not seem to have adopted and I think the important thing to us is to ask why.

I got briefed this week by a team about the latest operational analysis done on our current Middle East operations and there are a lot of good lessons coming out of those, some of which are blindingly obvious and you say: ‘Why haven’t we fixed it?’ I think when we look at why we are unable to address some of these lessons, it is because of the way we work at the strategic level. It is not the operational level, it is not the practitioners, but the problems we have had in trying to implement those lessons and adapt is largely how we interact and operate at the strategic level. I think, apart from some conversations or discussions about the personality interactions that Dr Clark mentioned this morning—in fact, it was quite a topic of discussion with Seb Cox when I was in the UK last week, talking about the Battle of Britain—there are some things that happen at the strategic level that either can succeed, or help us succeed, or can actually impede our ability to operate effectively. So the first thing I would say is that what I find missing in some of these conferences and discussions is the history of how we function at the strategic level, because it is how we shape and build our force that ensures operational success, not the other way around. And I think there is an opportunity for us to learn from that. There is a huge group of people, particularly in the front here, who have had an incredible amount of experience through Force Structure Reviews and Defence Efficiency Reviews, and we have got to a stage now.
where it is politically acceptable for us to say that we did a lot of damage to ourselves during those processes. They were well intentioned but there was damage.

If we looked at the historical analysis and thought about the lessons from those organisational changes and how we have functioned, might it be of assistance to us in our present times. Our recent budget pressures have required us in Air Force to cut 18 exchange positions, and I am pretty sure Navy and Army are in a similar position. That was not a decision we took, that was basically a mandated change as a part of a ‘salami slice’. Yet Geoff Brown rightly pointed out that exchange officers are absolutely critical to our relationships in a complex coalition, and they will always be, because it is that human relationship that will overcome the technical process and political issues and, as has been said by many people here, you cannot solve those problems, you have to work them at the time. We are now about to face another series of very interesting challenges and, some would say, opportunities. The White Paper process this year could have a fundamental effect on what we do, but coming out of that, as has been noted in the papers recently, is that the plus three per cent budget is clearly not adequate to build the force to which we aspire. It is in that process over the next year or two that some fundamental decisions will be made and some changes to our organisation which could assist or, in some ways, cause us damage. I am sure the US, having been through the QDR’s [Quadrennial Defense Review’s] multiple processes, has a lot of interesting lessons learned and, having talked to Dave Deptula in the past, I think there are some lessons that we could draw from the QDR process. But we are about to embark on this process with a lack of corporate knowledge, particularly as the organisations change over, and perhaps I do not think we have garnered enough from the experience from a lot of the senior people who have been through the strategic level changes in the past. I would suggest that coming out of this there has been a lot of good lessons in terms of operations, but we need to add to that some lessons learned for air forces from the strategic level to ensure that we can address our future challenges and changes as effectively at the strategic level as we do at the operational level.

So, why all that? Well, I am doing a bit of a sales pitch here for something else. The Chief stood up at the Singapore Air Conference recently and talked about wanting to become a ‘strategic’ Air Force. Now, we are not getting carried away about having strategic bombers here. What we are talking about is moving beyond being a very effective tactical-level Air Force to be able to be a strategic Air Force, which is able to shape and influence our environment and argue effectively at that level to ensure operational success. The reason I am putting that up is that the paper the Air Power Development Centre has just put out based upon the Chief’s speech [Strategic Air Forces: Choosing a Framework for the Future Air Force] will be on the Air Force intranet website tomorrow. It will be on our public Air Force website on the internet over the next week or two. I would ask you to read it and have a think about what that means for us because in this paper it talks about taking a fundamental step and a change in a different direction, not diminishing what we do tactically or operationally but what do we, as Air Force people, need to do and to think about in order to take our Air Force as a part of the ADF forward to be a far more effective Air Force capability in the future. We cannot do that by just learning the lessons and operating tactically. We have to understand the strategic level and that depends upon people in blue here working as a
part of that team. So, as a summation out of that, I think there are some excellent lessons coming out of this. Perhaps, the theme next year is that you cannot have operational success without strategic success, and what are the lessons from history from a lot of the people in this room here that we should be applying now.
Distinguished guests, ladies and gentlemen, it falls to me now to wrap up the day and what a great day it has been—a great day of discussion and a great day of talking about air power.

I would like to pick up the theme that the Deputy had there. It is very true that our history for many decades has been an operational and tactical one. We need to start thinking very much beyond that. In discussing expeditionary operations, I think it has raised as many questions as it solved. Whilst we conduct these operations, and ‘expeditionary’ is a nice little box (you can define it in lots of ways but it is something we do a long way over there), back at home we are running a peacetime Air Force, a peacetime Army and a peacetime Navy, and no bases are closing down while we are at operational stretch. We are not stopping doing things; we are not even flying extra flying hours. It is all coming out of our peacetime garrison hide. How do we touch upon that and learn those real strategic lessons that the Deputy spoke about. I think there is a whole area of a fertile thought and fertile lessons to be learned in that regard.

As Air Vice-Marshal Blackburn said, our strategic aim is to build an Air Force of influence, one that is ever more capable of conducting expeditionary operations, or whatever operations the Government requires, to secure our national interests. The papers we have heard today have clearly demonstrated the fundamental importance of all that through our military history. Securing Australia’s national interests has consistently involved the ability of our Air Force to project military power far from our shores and often for extended periods of time.

Few other smaller air forces, and not even most larger ones, have been so repeatedly called upon to meet the considerable challenges involved in such operations as have we here in Australia, especially in the last 10 or so years. Our Air Force has frequently and consistently been called upon to be part of regional and global expeditionary ADF responses, be it for warfighting, peacekeeping, peacemaking or humanitarian assistance.

I would also like to reiterate strongly the importance of applied history and the questions I posed in my opening address:

- What have been the common features and problems of air expeditionary operations?
- What have been the enabling factors that contributed to the successful use of air power and what factors have inhibited such operations?
- What do we carry forward as observations to ensure our professional mastery remains first-rate?

This Conference has provided us all with considerable food for thought. Determining and applying the answers to these questions must form part of the foundation of our planning for the future.
It might disappoint you, but at the Strategic Command Group, where we the Service Chiefs and the other three-star or civilian equivalents sit down to advise CDF on ‘grand military strategy’, we do not sit down and discuss history. We try to apply lessons learned, but we do not sit there and say, ‘Right we’re going to do an activity here, let’s think back to Korea, let’s think back to Vietnam’. So how do we get these lessons at a practical level? I talked about the strategic lessons we can all learn, but not all of you work at the strategic level. How can we take some of the lessons we have picked up from today and put them into practical reality? It comes down to that question of professional mastery. Whatever job you do, wherever you do it—be it within the Air Force or within the ‘purple’ environment—you must take the lessons from today and apply them to your daily work and opportunities will arise to broaden your thinking to come up with a better outcome. It is also incumbent upon our Army and Navy friends to understand our capabilities so that they can use air more effectively in their joint work. It is also equally incumbent upon us to understand naval and land capabilities so we can work that true joint force. At the end of the day, it is everyone putting a little brick to build a big wall, not worrying so much about doing it in one fell swoop. Working it bit by bit and putting the pieces together to make the great whole. So, while this conference is at an end, the task is to continue to build an ever more capable Air Force—an Air Force of strategic influence, both within the Australian environment and without—to shape our environment and to make sure that we can conduct operations such as these expeditionary ones we have heard about today. The applied historical analysis in which we have all participated today will stand us in good stead in pursuing these goals.

As I mentioned this morning, a copy of the proceedings will be published by the Air Power Development Centre and will be distributed to you all. Please share them around so that the people who were not able to attend can benefit from everything that we have heard today.

Our moderator, Air Commodore Tim Owen, Air Force’s Director General Strategy and Planning, also deserves a special note of thanks for his excellent job in directing the day. That the presentations and discussions have all run smoothly and on schedule is due in no small part to his efforts.

The Conference would not have been possible without the speakers who presented papers today—very informative, great lessons from history, very good lessons that we can take forward and very entertaining. To all of the presenters, thank you very much, especially those that have come from long distances. We very much appreciate the effort you have made to be here in support of our RAAF History Conference.

Of course, no conference could be considered complete without the contributions from you, the audience. The discussion sessions have been most productive and I wish to thank you for attending and contributing so much to this event. This is the largest attendance we have had at a History Conference; there were over 300 people here this morning. We hope we will build on this success again in two years time.

I would like to thank Group Captain Tony Forestier and the staff at the Air Power Development Centre for organising the Conference. An event such as this requires a great deal of planning and preparation. In this he was ably assisted by Dr Chris Clark, the Air
Force Historian, and Ms Sandra Di Guglielmo, who has been a fundamental part of the whole organisation of these sort of activities for many years. Their efforts have delivered another fantastic event.

Thanks are also due to the members of No 28 Squadron and the RAAF Police and Security personnel, and other support staff who have been quietly working away in the background throughout the Conference. You have all done a great job.

The next RAAF History Conference will be held in two years time. I will be sitting down the front with long hair and an earring; I look forward to that. We have not set a theme for that conference as yet so I would encourage you all to pass on any suggestions you may have to Dr Chris Clark and the staff in the Office of Air Force History. Any theme you might offer should connect historical analysis to contemporary and future air campaigning.

Applied history is a powerful learning tool when well used; it is a tool for building the professional masters of air power that we all need to be to make our Air Force one of top quality. It is an Air Force of which I am very proud, and I am sure you are too.

Ladies and gentleman, thank you for your participation.

Cooee