

THE ROYAL AIR FORCE

AIR POWER Review

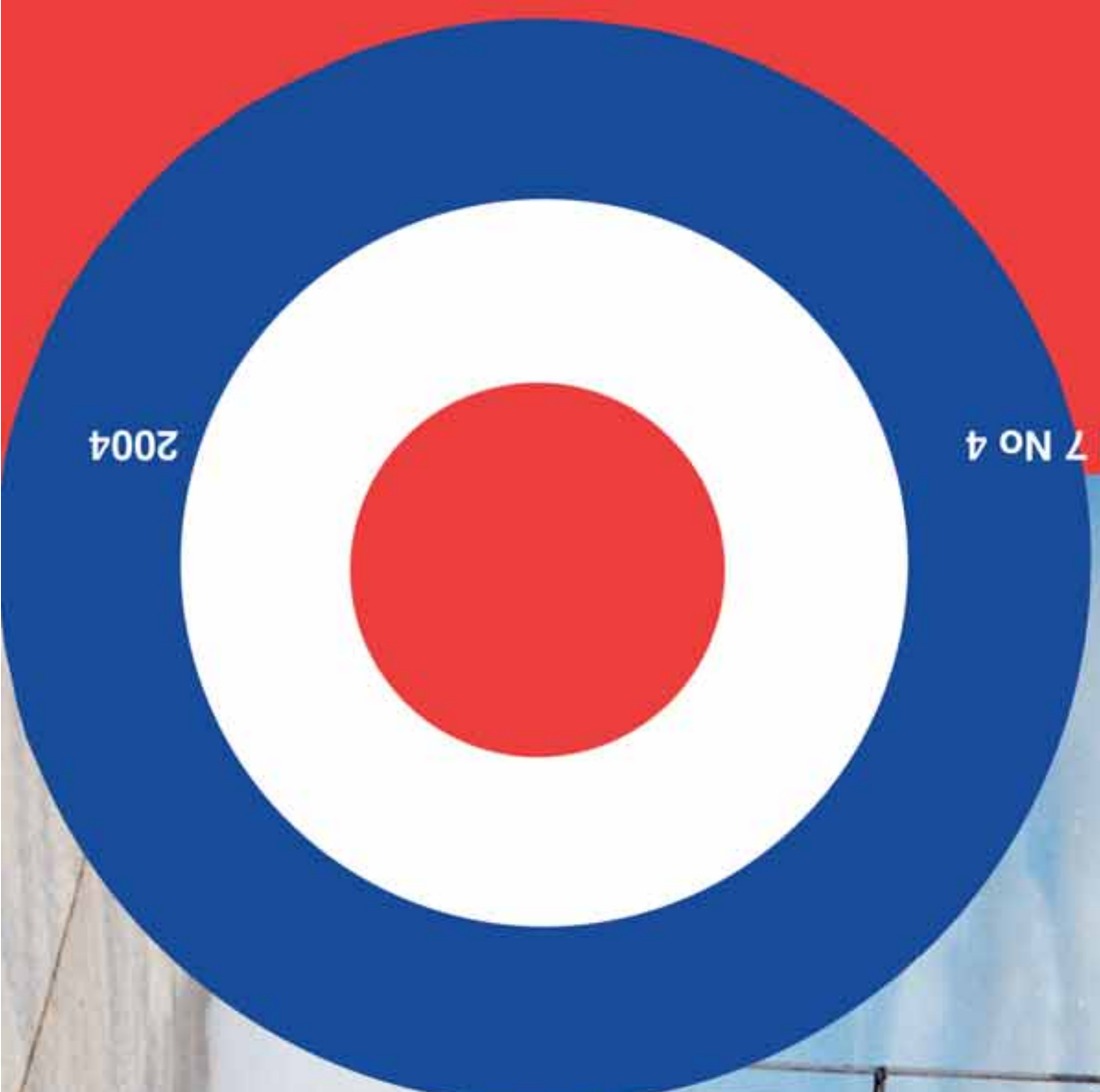
Volume Seven

Number Four

Winter 2004

RAF AIR POWER REVIEW Vol 7 No 4

2004



SEE THE ROYAL AIR FORCE
AIR POWER REVIEW ON-LINE
VISIT: www.raf.mod.uk

Published quarterly, *Air Power Review*
is the professional flagship publication
of the Royal Air Force

Cover picture:
A Douglas Thor Intermediate-Range Ballistic Missile (IRBM) of No 113
Squadron, RAF Bomber Command, being loaded with oxidant during a
practice countdown at RAF Mepal in 1961

Picture AHB (RAF)

CONTRIBUTIONS TO THE ROYAL AIR FORCE AIR POWER REVIEW

The Royal Air Force *Air Power Review* is published quarterly under the auspices of the Director of Defence Studies (RAF) and has the sponsorship of the Assistant Chief of the Air Staff. It is intended to provide an open forum for study which stimulates discussion and thought on air power in its broadest context. This publication is also intended to support the British armed forces in general and the Royal Air Force in particular with respect to the development and application of air power.

Contributions from both Service and civilian authors are sought which will contribute to existing knowledge and understanding of the subject. Any topic will be considered by the air power Review Management Board and a payment of £200 will be made for each article published.

Articles should be original and preferably not previously published, although those of sufficient merit will not be precluded. Between 2,000 and 10,000 words in length, articles should list bibliographical references as end notes, and state a word count. Lengthy articles may be published in instalments. Contributions from serving military personnel should be in accordance with DCI GEN 313 dated 26 November 1999.

Material should be submitted in Microsoft word, on floppy disk, Zip disk or CD and should be accompanied by numbered page copy plus any photographs and illustrations. Digital pictures should be saved as TIFFs or JPEGs @ 300dpi.

Final design format for article presentation on the printed page will be at the discretion of the editor.

Send articles to:

Director of Defence Studies (RAF)
Joint Doctrine and Concepts Centre
Shrivenham
Swindon,
Wiltshire
SN6 8RF
Email: defs-raf@netcomuk.co.uk



FOREWORD

Last year the RAF and the US Air Force were once again side-by-side over the skies of Iraq. During 21 days of combat we demonstrated the power of organized and integrated air and space forces in joint and coalition warfare. We did not do it alone but we contributed more than our fair share to enable the rapid success of ground forces. At the same time we were able to join with our special operations forces—air and land—to keep activity in western Iraq from interfering with the main effort. In close coordination with ground forces, airpower prevented enemy attempts to mount coordinated or coherent resistance. These efforts on the part of coalition Airmen were largely outside the media spotlight and beyond public recognition. But make no mistake, our Airmen were key to the swift and overwhelming military victory.

What made it work and what must we do to get better? We can point to three major leveraging capabilities. First, we must make integration work. Integration is more than being 'net-centric' or a 'common operating picture' or 'information sharing'. It's about the ability of machines to direct the activities of other machines to produce rapid target location and identification. We are far from having this right but we did make tremendous progress during the dust storm in Operation Iraqi Freedom where traditional stand-alone platforms — manned, unmanned and space — were lashed together in a real-time network that located and destroyed Iraqi forces moving to reinforce depleted Republican Guard divisions. Second is our growing ability to predict and persist. We are at the infant stages of prediction but better

tools will produce the 'battlefield forensics' for us to analyze patterns and draw logical conclusions about enemy options. Persistence is a tremendous leveraging capability. The evolution of remotely piloted and unmanned vehicles will give us 24-hour persistence to stare and to study patterns of activity, as well as delivering precise target location and identification to manned aircraft. Our third competitive advantage is our people and our training. Fifty years of NATO interoperability and bilateral advanced training have allowed us to minimize the nagging barriers to communications, terminology and basic airmanship. Fourteen years of contingency operations have kept our skills fresh, our tactics current and mutual respect strong.

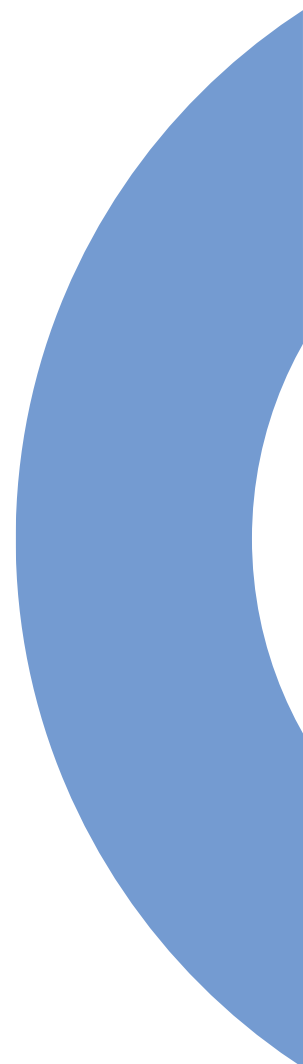
Bonds between the Royal Air Force and the United States Air Force have never been stronger. Especially in the past 14 years we have shared the skies during all major contingency operations. Practice and hard work have built this partnership and we require more practice and hard work to keep it strong.

You will note that the current editions of both RAF *Air Power Review* and *Air and Space Power Journal* contain the same lead articles. These articles are meant to stimulate our thinking, to encourage frank dialogue and to make us all better. Airmen have always accepted the realities of changing conditions with adaptable tactics and flexible doctrine. In our ever increasingly complex and dynamic world we will rely on agile thinking more than ever. With that in mind we commend this publication to you.



A handwritten signature in black ink, which appears to read "John E. Simpson". The signature is written in a cursive, flowing style.

—



AIR POWER Review

Editor

Jay Myers

Production Editor

Harvey Grainger

Studio

John Griffiths

Dave Mitchinson

RAF MAGAZINES

Floor 1, Zone A

St George's Court

2-12 Bloomsbury Way

London WC1A 2SH

Tel: 0207 305 2166

Tel: Mil: 96305 2166

Fax: 0207 305 4145

E-mail: jay.myers420@mod.uk

Those wishing to be placed on the distribution list should write direct to the Defence Storage and Distribution Centre (DSDC) Llangennech with their UIN stating the number of copies required per edition together with the address to which material should be sent.

Recurring Publications Desk

DSDC(L)3a

Mwrwg Road

Llangennech

Llanelli

Wales

SA14 8YP

Other general enquires on magazine distribution may be made to the London address.

The views expressed are those of the authors concerned, not necessarily the MoD.

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form without prior permission in writing from the editor. Unless by prior arrangement, articles and photographs will not normally be returned.

Contents

- 1** The Tale of the C/JFACC: A Long and Winding Road
Dr Stephen O Fought
- 15** Anglo-US Co-operation
Sebastian Cox
- 23** Air Lines: Anglo-American Tactical Air Operations in World War II
Dr Thomas Alexander Hughes
- 41** Anglo-American Strategic Air Power Co-operation in the Cold War and Beyond
Gp Capt Chris Finn and Paul Berg
- 57** British Commonwealth Carrier Operations in the Korean War
Cdr David Hobbs
- 71** Post-Cold War Development of UK Joint Air Command and Control Capability
Wg Cdr Redvers T N Thompson
- 83** Operation IRAQI FREEDOM: Coalition Operations
Sqn Ldr Sophy Gardner
- 97** The British American Forces Dining Club
Col Larry G Carter
- 102** Book Reviews/Notices

Editorial board:

Gp Capt C J Finn, D Def S (RAF), Chairman.

Mr J Myers, Editor, Head of RAF Information Media Training and Technical Publications;

Gp Capt D Blore, MoD; Gp Capt M Doel DRAFJD, JSCSC Watchfield;

Wg Cdr J Spencer, Dep D Def S (RAF); Mr S Cox, Head of AHB (RAF);

Dr C J M Goulter, JSCSC Watchfield; Mr C Hobson, Chief Librarian;

Sqn Ldr J Harvey, TRG OFFR (RAF).





The Tale of the C/JFACC: A Long and Winding Road

By Dr Stephen O Fought

The relationship between the United States and British military forces endures as one of the most visible elements of a long-standing bond between the two countries. Whether this comes from a common heritage, a reasonably common language, or the fact that our two nations have fought alongside each other in all of the major

wars of this and the last century, the net result is a well-developed linkage, forged from a number of shared understandings and based on mutual trust and respect. This article explores that linkage with regard to the air forces of each country, especially as manifested in today's concept of the combined / joint force air component commander (C/JFACC).



The founding of the RAF marked “the first time an Air Force had been created anywhere in the world with the intention of conducting air war without reference or subordination to Army or Navy command”

The question under examination asks how both the British and Americans determined that central command of air was viable and how they made that finding acceptable to associated organizations that possessed air forces. This approach, therefore, looks at problems that arose in managing organizational change during the evolution of service and joint doctrine by focusing on the various pulls and tugs among the players as they sought to bring unity of effort and unity of command to airpower.

Since organizational change serves as the guiding principle of this article, one should briefly discuss that framework. Such change may prove the most difficult task for senior leadership. A mature organization — a bureaucracy with established operational procedures — develops a kind of inertia that causes it to do what it has always done, often without regard to the responsiveness of that behavior to a new situation. A combination of three factors usually precipitates organizational change: (1) looming disaster, especially one accompanied by a shortage of resources (this scenario sometimes forces individuals to set aside organizational [political] differences, albeit only

temporarily); (2) abject failure, if it is recognized and admitted internally (unfortunately, all too often those who could influence change from within the organization do not recognize that failure has occurred); and (3) a powerful outside force, capable of forcing internal change by strength of personality, quantity of resources, or other mechanisms. All of these aspects will play out in the long and winding trail that leads to the modern-day C/JFACC.

World War I and the interwar years

The tale begins by noting that the US Air Force (USAF) and Royal Air Force (RAF) sprang from different roots and matured on opposite sides of the world under different circumstances. The British had the gift of prescience, and the RAF leadership demonstrated its skill in organizational survival. Their foresight is obvious: the founding of the RAF marked “the first time an Air Force had been created anywhere in the world with the intention of conducting air war without reference or subordination to Army or Navy command”.¹ British leadership proved equally impressive: even though the RAF was “created with the aim of the strategic bombing of Germany”, Air

US forces demobilized after the war (as did the British); for the Air Service, this process meant reabsorption into the lower ranks of the Army and the partitioning of air assets among the nine standing Army corps

Marshal Hugh Trenchard, the first RAF chief of staff, brilliantly kept the fledgling service out of an internal squabble with the British Army, holding it tightly to the close air support (CAS) mission while he changed the essence of the organization from a defensive to an offensive force.² Because of Trenchard's genius, the RAF could spend its organizational energies and political capital resolving the problems of operating with other nations' air forces — the US Army Air Corps in particular.

On the US side of the pond, the air element of the armed forces remained embedded in the Army as the US Air Service, which performed briefly but well in World War I alongside its British counterparts. During the war, the Air Service found itself attached to lower-level units — a factor that presented a challenge in terms of unity of effort. In 1918 these air units became groups (I Corps Observation Group in April, the 1st Pursuit Group in May, and then a next-higher level called the American Expeditionary Forces [AEF]). By the end of that year, the AEF had 14 groups, including observation, pursuit, and two new bombardment units. Slowly but surely, unity of effort emerged through unity of command under the AEF.

Had the AEF remained extant after the war ended and had the Air Service redeployed to the States, one might have witnessed the genesis of an air organization along the lines of the RAF (i.e., an independent air arm) and, eventually, a full-fledged, unified/consolidated command and control capability. However, US forces demobilized after the war (as did the British); for the Air Service, this process meant re-absorption into the lower ranks of the Army and the partitioning of air assets among the nine standing Army corps.

For the next 10 years, little changed in terms of unity of command/effort for the Air Service except its name, when the air arm became the Air Corps in 1926. By 1942 a series of gradual changes within the Army effected a restructuring in the War Department to accommodate three Army commands — Ground, Service/Supply, and Air.

At the same time, naval air remained part of the Department of the Navy. The United States entered World War II with this arrangement, and the unity of command/effort issues that surfaced in each theater would frame the debate over airpower for the next 50 years.

World War II: The Pacific theater

In the European theater, the organizational problem took the form of creating a CFACC (i.e., learning to work with air forces of other nations), and in the Pacific, was dominated by the problems of creating a JFACC (i.e., of getting US air to operate in concert). Of the two theaters, the Pacific provides the richer set of cases for describing the difficulties the United States experienced in achieving the same degree of success in terms of organizational design that the British enjoyed from the outset. The Pacific theater, therefore, serves as a useful basis for examining the organizational change that led to an independent Air Force and, eventually, to the watershed Goldwater-Nichols legislation that codified 'jointness'.

The United States entered (and exited) World War II — in particular, the Pacific theater — with its services holding three distinct views of airpower. Considering airpower integral to naval operations, the Navy maintained that air should remain under the purview of the fleet commanders. Further, given the mobility of naval forces, naval air should follow suit (ie, not tied to a particular land campaign or subjugated to a ground commander). The Army's view of airpower mirrored the Navy's: since air supported ground operations, a ground commander should control it. Within the Navy, the Marine Corps had taken exception to the Navy's concept of operations from the outset; indeed, after the experience at Guadalcanal (see below), the Corps would have a dedicated air arm for the foreseeable future. Members of the Air Corps, of course, took a different view — opting for an air arm independent of land and sea forces, with unity of command determining the unity of effort for the air campaign. In addition to these perspectives, three other factors complicated the use of airpower in the Pacific: (1) the division of forces (air forces in particular) between Admiral Chester Nimitz, commander in chief of the US Pacific Fleet and

Pacific Ocean Area, and those of General Douglas MacArthur, commander in chief of the Southwest Pacific Area; (2) the division of air forces between the Navy and Army; and (3) a lack of either training or doctrine from which one could build a learning curve, leaving joint air operations in the realm of the ad hoc.

Stung badly at Pearl Harbor and short on combat resources, Admiral Nimitz marshaled

his forces around the Midway Islands to meet and, hopefully, beat the next wave of Japanese attacks. By coincidence, he controlled two major air organizations — the fleet (at sea) assets under the immediate command of Admiral Frank Jack Fletcher (USS Yorktown and USS Enterprise) and a grab bag of Marine, Navy, and Army air assets ashore at Midway under Capt Cyril T Simard (commanding officer of Naval Air Station

Wildcats cruise over Guadalcanal



Withdrawal of the carriers from Guadalcanal at D+2, leaving marines ashore with no air cover for nearly two weeks, except for the far-distant aircraft based in the New Hebrides, exacerbated the problem. The Marine Corps has never forgotten this. The air forces that would eventually arrive at Guadalcanal were a mix of Marine and Army Air Forces (AAF) fighter- and dive-bombers, eventually known as ComAirCactus

The roles, missions, and budget battles that ensued, especially over aviation assets, would plague US war-fighting efforts for the next 40 years as each service with air assets sought to engrain and protect its own view of airpower

Midway). Most of the robust collection of literature on the Battle for Midway indicates that the two air components (land and sea) could not coordinate their efforts.³ The question of whether or not better organization, planning, and training would have made a difference is moot. The simple fact is that the air assets were in place to achieve some sort of unity of effort, but no mechanism existed for causing the pieces to move together in an orchestrated manner (air and sea-based forces) or even for exploiting relative advantages among the land-based forces. As a result, the three air elements fought as three independent — although deconflicted — forces. On the positive side, deconfliction represented an important first step, and the United States earned a dramatic victory.

In the Solomon Islands, Vice Admiral Robert L. Ghormley commanded three task forces: two afloat and one ashore.⁴ This lash-up, especially with its unfortunate geographical proximity to MacArthur's forces, set out a dual challenge for Ghormley: coordination of his own land- and sea-based air forces and coordination between theater commands. Withdrawal of the carriers from Guadalcanal at D+2, leaving marines ashore with no air cover for nearly two weeks, except for the far-distant aircraft based in the New Hebrides, exacerbated the problem. The Marine Corps has never forgotten this. The air forces that would eventually arrive at Guadalcanal were a mix of Marine and Army Air Forces (AAF) fighter- and dive-bombers, eventually known as ComAirCactus, commanded by General Roy S. Geiger, USMC, with headquarters in the New Hebrides. These forces operated ashore at Guadalcanal, reporting to both Adm. John S. McCain (for air) and Gen. Alexander A. Vandegrift (as a marine in the Solomons). Perhaps surprisingly, it worked reasonably well from the outset and provided partial relief to the crisis situation at Guadalcanal. As the war proceeded, the original ComAirCactus concept managed to adapt its organizational structure and operational approaches.⁵

Although beyond the scope of this article, the story of the Solomons is (as before) worth telling and knowing, especially how ComAirCactus morphed into ComAirSols; how its command alternated among marines, naval aviators, and AAF Airmen; and how the AAF viewed being under the command of Navy or Marine aviation. ComAirSols laid the foundation for resolving unity of command/effort because it established a single commander for air who could direct a considerable level of effort toward the broader (theater) campaign. Further, the position of single air commander was not a function of the service-of-origin but was accepted by the combatant commanders.⁶

Unfortunately, the lessons provided and the framework offered by ComAirSols vanished at the end of the war. When the United States began its traditional demobilization, the armed forces returned to their usual battle over the budget, but this time the United States added a competitor (a new service — the Air Force) at a time when resources were shrinking dramatically.⁷ The roles, missions, and budget battles that ensued, especially over aviation assets, would plague US war-fighting efforts for the next 40 years as each service with air assets sought to engrain and protect its own view of airpower. One can again divide the US side of the story on unity of command/effort for airpower into two parts: the Cold War and a string of 'hot' wars (a couple of them, once again, in the Pacific theater).

Korean War

At the outset of the Korean War, a single commander, Lieutenant General George E. Stratemeyer, USAF, had responsibility for air (since only the USAF was available). However, within a month, naval air (under Vice Admiral C. Turner Joy, as MacArthur's commander of Naval Forces Far East, which included the US Seventh Fleet) entered the fray. Joy resisted incorporation under Stratemeyer, insisting instead upon a separate area for naval air, arguing the possibility that



The F9F Panther was the stalwart of US Navy jet operations during the Korean conflict

Operational necessity dictated that the Navy dispatch an officer to the JOC to coordinate air actions and to select targets for naval aviation (still under Navy control). The Navy officer in the JOC, however, did not have the authority to commit naval assets

other events requiring the use of Navy forces in the Pacific made this arrangement necessary. They reached a degree of compromise, however, by coining the new term *coordination control* and by creating a new organization: the joint operations center (JOC). Unfortunately, the term *coordination* was not compelling, leaving the services free to offer up for 'coordination' whatever excess sorties existed and to accept as 'coordinated' those sorties they wished to fly in the first place. Problems with the arrangements for air were further compounded over differences in the services' approach to CAS and as the Marine Corps (with its memories of Guadalcanal) entered the war (the Marines provided air to the JOC only when the Corps's

assets clearly exceeded Marine requirements). Nonetheless, the JOC matured over time. Initially formed to address the problem of coordinating the efforts of Fifth Air Force and Eighth Army, the JOC would eventually 'manage' (an intentionally vague term) the air assets of each service by giving naval air a choice of targets; the Marines, as mentioned above, offered air to the JOC when it became available. This arrangement allowed each of the services to operate under its concept of the use of air with some modicum of deconfliction — but it clearly fell well short of applying air in an integrated or synergistic manner to the ground campaign or having a single ground commander control it.

The period following Vietnam was punctuated with military and national-security-policy disasters, including the SS Mayaguez . . . Critics circled the Department of Defense (DOD) like vultures, some decrying the Air Force as the problem and claiming that the United States had not won a war since the creation of that service



On 11 May 1975, Cambodian forces boarded and captured the American merchant ship SS Mayaguez. US Marines are seen here in the retaking of the ship

As in the Solomons, necessity and crisis created the opportunity for innovation. Following the massive Chinese assault in late 1950, one would have expected the war-fighting organizations to find a way to put differences aside and work together on the issue of scarce resources (air assets). Such was the case with respect to unity of effort but not unity of command. Indeed, operational necessity dictated that the Navy dispatch an officer to the JOC to coordinate air actions and to select targets for naval aviation (still under Navy control). The Navy officer in the JOC, however, did not have the authority to commit naval assets — only to relay requests back to the fleet for resolution. On the other side of the coin, Marine air (ashore) worked fairly smoothly at the operational level, with Marine air tasked (daily) through an annex to the Fifth Air Force frag order.

Though a reasonable idea, the JOC eventually fell victim to service cultures. Even under the utmost strain, the JOC simply served as a coordinating organization. The most severe difficulties occurred between the Navy and the Air Force, the Navy stubbornly holding to its position that naval air served a higher priority in the theater than the ongoing war and the Air Force (equally stubbornly) arguing that only a single (USAF) air commander could effectively employ air assets during the war effort.

Vietnam War

From 1965 forward, the US effort in Vietnam ramped up sharply. With respect to our themes of unity of effort/command for airpower, the war represents a dismal failure to unite under either banner. Indeed, the war was a conglomeration of internal battles: over CAS and



He instructed his division commanders, “There’s only going to be one guy in charge of the air: [Gen Charles A] Horner. If you want to fight the interservice battles, do it after the war”

rotary-wing aircraft among the Air Force, Army, and Marines; over strategy, target selection, and overall priorities among Military Assistance Command, Vietnam (MACV), Commander in Chief, Pacific (CINCPAC), and the White House; over operational and tactical control between Strategic Air Command (SAC) and Tactical Air Command (TAC) (manifested as a running duel between Seventh Air Force in-theater, charged with prosecuting the air war, and Eighth Air Force in Guam, which exercised control over the B-52s through Headquarters SAC at Offutt AFB, Nebraska, with no control by Seventh Air Force); and over ‘strike’ between the USAF and the Navy. To paraphrase our cartoon friend Pogo, “We had met the enemy, and he was us”.

Compromises allowed each participant to preserve its mode of operation in lieu of creating solutions that better accomplished mission objectives. Along the lines of the Korean War’s coordination control emerged the concept of *mission direction* — a term no better defined than the earlier one. Predictably, the results proved equally poor. At best, the USAF and Navy achieved a modicum of deconfliction through the route-package (route-pack) system. In the end, the war laid open the entire military apparatus for all to examine. The central argument in both cases concerned the combatant commander’s lack of control over combat operations — but in particular the problems associated with having multiple air forces.

The period following Vietnam was punctuated with military and national-security-policy disasters, including the SS Mayaguez, Desert One, the loss of marines in Beirut, and the near-chaos (but mission success) in Grenada. Critics circled the Department of Defense (DOD) like vultures, some decrying the Air Force as the problem and claiming that the United States had not won a war since the creation of that service. Dr Carl Builder, the dean of RAND scholars, noted in his book *The Icarus Syndrome* that the Air Force seemed to have lost its way — and certainly its culture — in the post-Vietnam period. Some, more rational, observers blamed ‘the system’, in that the needs of the combatant commanders could only fall victim to interservice rivalries by virtue of the organizational structure within the DOD itself. In any case, out of these doldrums came a powerful outside force — the Goldwater-Nichols legislation, which forced change upon the DOD (against the will of the services, according to some observers).

Goldwater-Nichols Act

The Goldwater-Nichols Department of Defense Reorganization Act of 1986 gave considerable power to the combatant commander, especially in terms of allowing him or her to organize and employ available forces.⁸ In theory, this gave commanders authority to resolve issues involving unity of command/effort — and it most certainly gave them independence from the service chiefs and, consequently, service rivalries in favor of conducting the joint fight. Furthermore, the act gave the Joint Chiefs of Staff responsibility to develop joint doctrine — a level of thought intended to reside above service doctrine and one that would define the joint war fight.

For the Air Force, Goldwater-Nichols presented a combined threat and opportunity in the same bundle. On the one hand, increasing the power of the combatant commander, traditionally from the Army or Navy (the former a doctrine-oriented service), could have relegated the Air Force to a subservient role. On the other hand, the act invited the Air Force to come up quickly with a new command concept — the JFACC — around which the service could develop its ideas for unity of command/effort on the same tier as naval and ground forces. To the betterment of all, opportunity overcame threat, and the Goldwater-

Nichols legislation moved the US armed services down a path toward jointness.

As US armed forces performed their various organizational minuets, our British colleagues entered a period during which they too appreciated the need for change. Elsewhere in this issue, Wing Commander Redvers T Thompson, RAF, argues that during the Cold War the forces of the United Kingdom (UK) had become too focused on the North Atlantic Treaty Organization (NATO) scenario and, with respect to the RAF, too dependent on main operating bases. Operation Desert Storm generated a full realization of the need for change and caused the term *expeditionary* to re-enter the RAF vocabulary. In turn, UK forces opted for a Permanent Joint Force Headquarters, within which the RAF would opt for a US-like model for command and control (the JFACC); this, in turn, would lead to the RAF’s developing a fully trained battle staff and organizational process — the joint air operations center (JAOC) — to implement the air portion of a joint operation.⁹ In the meantime, we rejoin the story of how the United States managed to orchestrate the changes directed and facilitated by Goldwater-Nichols.

Gulf War of 1991

The first real test of the combatant commanders’ new authority, in terms of resolving airpower disputes, came in Operations Desert Shield and Desert Storm. As Dr Ben Lambeth notes in *The Transformation of American Air Power*:

Desert Storm finally saw a vindication of the ‘single-manager’ concept for the command and control of airpower. The success of the JFACC approach came close to capturing the essence of . . . centralized coordination of all air assets under the control of an autonomous air force command, freed of its dependency on the army. . . All of the services accepted, at least in principle, the need for a single jurisdiction over allied airpower in Desert Storm.¹⁰

Although the concept worked imperfectly, it worked well.¹¹ Perhaps even more importantly, a broad spectrum of the service leadership accepted the idea of unity of command/effort, all with an eye toward meeting the joint force commander’s (JFC) objectives. According to Lambeth:

When General McPeak took down SAC and TAC in one blow, replacing them with Air Combat Command (ACC), he did the Air Force a service and set in concrete an institutional structure that could finally concentrate on warfare in all its dimensions

*“As General [Merrill A] McPeak [chief of staff of the Air Force] was quick to note after the shooting stopped, [General H Norman] Schwarzkopf as the CINC set the cadence of coalition operations, and all of the pieces of the war plan were ‘his concept, including the air piece’ . . . As early as November Schwarzkopf was clear about his blessing of the JFACC concept and who had final authority for making air tasking decisions. He instructed his division commanders, ‘There’s only going to be one guy in charge of the air: [Gen Charles A] Horner. If you want to fight the interservice battles, do it after the war.’”*¹²

Drawing from Williamson Murray’s work *Air War in the Persian Gulf*, Dr Lambeth adds one other extremely important point: “Even army generals like Schwarzkopf and [General Colin] Powell were looking for broader applications of air power than just supporting ‘the ground commander’s scheme of maneuver.’”¹²

Frames of reference

Force application had moved from the days of independent air and ground/naval operations, through a period when deconfliction was the best that one could hope for, and on to a point where integration became possible on a regular basis. In the process, airpower (and space power) began to hold its own and, quite possibly, become the mechanism for true synergy — the shining hope of joint warfare. In order to achieve this level of capability, both the Air Force and the joint community had to create some new frames of reference.

In the joint community, the frame of reference was effects-based operations (EBO). Placing the JFC’s guidance in terms of creating certain effects dramatically changes the dialogue between the JFC and political leaders and between the JFC and subordinate commanders. The change becomes far more significant than taking targeting and weaponeering out of the hands of the politicians (as some people have suggested). Because EBO is a broad statement of intent (rather than a specific choice of method), it actually increases the number of options a JFC might present to the political leadership. Going in the other direction, when a JFC communicates via EBO to subordinate commanders, the participants can debate the air, ground, and naval approaches on a level playing field directly related to the mission (ie, not service

parochialisms). EBO is powerful stuff and probably key to the synergy of joint forces; thus, it is extremely important to the application of airpower.

The second frame of reference entailed the Air Force’s finding a more flexible mechanism for commanding and controlling its forces than the mechanical air tasking order (ATO) process that mindlessly (some say unresponsively) serviced an infinite target list with a finite set of resources. The ‘push CAS’ system developed by General Horner during Desert Storm was certainly a start, as was the ‘Black Hole’, but the more robust, more accessible air operations center (AOC) concept, which developed after the war, fleshed out the process.

Finally, the Air Force had to settle its internal differences between SAC and TAC, a struggle that colored the service’s contributions to more serious dialogue with respect to joint warfare. By the time the Cold War ended, whatever differences that existed between strategic and tactical airpower had vanished: throughout the hot conflicts of the Cold War, strategic aircraft bombed tactical targets, and tactical events had strategic consequences — despite what advocates from each command espoused. When General McPeak took down SAC and TAC in one blow, replacing them with Air Combat Command (ACC), he did the Air Force a service and set in concrete an institutional structure that could finally concentrate on warfare in all its dimensions. Moreover, subsequent USAF leaders could begin to develop an expeditionary air force structure — a design more suited to the needs of a post-Desert Storm world.

In conjunction with the changes just discussed, the United States took the opportunity after Desert Storm to create a new organization. Beginning in 1993 and using the organizational landscape of NATO’s Atlantic Command (a Cold War creation comprised of Navy and Marine Corps forces), assets of the Army (Forces Command) and Air Force (ACC) merged with those of the Navy (Atlantic Fleet) and Marine Corps (Marine Forces Atlantic) under Atlantic Command. Further, the command was charged with training, integrating, and providing forces worldwide — the first US-based force to have that responsibility (a force logically parallel to the United Kingdom’s

new Permanent Joint Headquarters). Atlantic Command became Joint Forces Command (JFCOM) in 1999 — the only unified command with both geographic (closely aligned to NATO) and functional responsibilities, the latter being ‘transformation’ and experimentation.

The loop was now complete: there existed a forged concept of operations (EBO), a mechanism (AOC), and an organizational structure (JFCOM/ACC) through which airpower could merge into the joint fight on an equal footing with land and sea warfare. Perhaps coincidentally (but perhaps not) the two great air powers — the United States and the United Kingdom — reached the same conclusions, albeit via different paths.

Implications and conclusions

At this point, it is reasonable to propose that airpower had run the gamut of attempts at organizational change and had finally become institutionalized. The seeds planted by Billy Mitchell and others at the beginning of the century, which grew so naturally in the United Kingdom under the care of Air Marshal Trenchard, had finally taken root in the United States. They first sprouted in the Solomons, in the face of a looming disaster and shortage of resources, but withered in the drought of demobilization. Over time, culminating in the abject failure of Vietnam, even airpower advocates admitted that something was terribly wrong — with the US military structure and most certainly with airpower. Then a powerful outside force, through the instrument of the Goldwater-Nichols legislation, forced change. The world saw the net result in the joint warfare of Operations Enduring Freedom and Iraqi Freedom — and it was awesome.

In the end, having traveled a long and winding road to achieving unity of command/effort for airpower, the Air Force has three responsibilities on the horizon, three major-league tasks that will prove crucial to institutionalizing these hard-fought changes. First, the mechanical aspects of the C/JAOC have to work. Second, we must populate the C/JAOC with well-trained individuals who are properly organized, trained, and equipped (and attuned) to the JFC’s requirements. Finally, we must share the C/JAOC with our joint/coalition/alliance partners.

Mechanics

If EBO is the framework for synergy at the JFC level and if the AOC (C/JAOC) is the Air Force’s method of achieving unity of command/effort, then assessment is the linchpin that keeps the mechanisms moving together. Otherwise the system comes apart, and the C/JAOC defaults to the earlier ATO system of mindlessly servicing an endless target list with a finite set of resources. The crux is that assessment of EBO is very difficult — wholly different than the traditional problem of conducting battle damage assessment (BDA). BDA is a static measure taken instantaneously (eg, photo recce, etc): either a target is damaged (to a specified degree) or it is not. As a dynamic process, EBO lends itself better to trend analysis (ie, measurement and evaluation over time). Further, it is likely to be multi-dimensional. Unlike observing craters, collapsed areas, or other damage following attack on a revetment or runway, evaluating effects involves a wide range of considerations. The latter include whether or not military operations have succeeded in eliminating (or reducing) an adversary’s ability to maintain the support of the army, the relative cohesion of local political leaders, or even the continuity of the internal power grid. The bottom line is that we must channel much intellectual energy into figuring out how to conduct assessment in order to keep the C/JAOC cycle moving.

Organizing, training, and equipping

If airpower and the JFC’s plan do in fact come together in the C/JAOC, then it is a place for polished professionals — it is not a pickup game. The RAF has wisely recognized and acted upon this fact, and the USAF cannot afford to let it languish, even though taking the proper steps will prove very difficult for a service already feeling the stressful effects of personnel tempo. The ongoing dialogue on reshaping the numbered air forces holds promise, but no matter how many ways one arranges the beans, there are still only so many beans. Counting them isn’t much fun for a bunch of pilots, but at some point they have to do it to see if there are enough to fill the task jars sitting on the shelf.

Sharing the wealth

Finally, if the AOC (C/JAOC) is the key to

commanding and controlling airpower, then will the USAF allow members of another service to command it? In short, does the C/JAOC belong to the JFACC or the commander, Air Force forces (COMAFFOR)? Once again, our British friends seem to have thought this out and arrived at the right answer: their JFACC headquarters, including the JAOC, would be assigned under the Permanent Joint Headquarters. However, as it stands now in the United States, the relationship remains unclear. Certainly, though, when a USAF Airman serves as the JFACC, then he or she commands independent staffs to support COMAFFOR and JFACC duties. But if, say, a marine is designated as the JFACC, would the C/JAOC be brought up for that marine's use? One hopes that is the case, but both joint doctrine and Air Force doctrine need to make that clear.

We now return to the original proposition that the relationship between the British and American armed forces (in particular, that between the RAF and USAF) is special and why this is so. In the case of the air forces, the two nations have faced similar questions with respect to achieving unity of command and unity of effort. The RAF came up with the right answers, and it stuck to its positions. The USAF fought internal battles, some of legionary proportions, eventually arriving at the same answers.

In the post-Cold War era, both face the problem of building expeditionary air forces. Therefore, it should come as no surprise that both nations have reached the conclusion that the C/JFACC concept and the accompanying J/AOC mechanism represent the right way to go. Now, having reached the same conclusion, they have an obligation to make it stick and that means resources. After all, to paraphrase a central point made by Commander Thompson in his article, "A vision without resources is an illusion". The time has come to press the question of resources.

Notes

1 See 13 May 1918, RAF History Timeline: 1780 to 1918 Overview, <http://www.raf.mod.uk/history/line1780.html>.

2 Ibid.

3 One finds many possible reasons for this lack of coordination, including problems with operations security, a lack of training, and a general unfamiliarity with each other's operations.

Whatever the reasons, the land-based air assets launched (on 4 June) in order to survive the Japanese attack; once launched,

aircraft characteristics (range, payload, etc.) determined their operational use. In contrast, the sea-based assets fought a more conventional air-naval battle based on the enemy's known position. Within the land element, Army, Navy, and Marine air fought according to those services' own doctrines, against targets appropriate to their operating procedures.

4 Task Force 61 had three carriers; Task Force 62 consisted of an amphibious force with marines embarked; and Task Force 63 included land-based US Navy, Marine, and Army air forces alongside Royal New Zealand air forces.

5 An axiom of organizational decision making under pressure (crisis) holds that professionals usually find a way to make things work, in spite of the organizational structure. Said another way (more appropriate to combat ops), it's time to put aside pettiness when you're getting your backside shot off. Find time to fight each other later (and they did).

6 A considerable amount of literature covers the air war in the Pacific and the associated command and control issues. The point of reference for the discussions here is James A. Winnefeld and Dana J. Johnson's *Joint Air Operations: Pursuit of Unity in Command and Control, 1942–1991* (Annapolis: Naval Institute Press, 1993).

7 A "powerful outside force" (ie, Congress) generated this change with the Defense Reorganization Act of 1947. However, as with any sort of organizational change, it encountered resistance — at the outset, in terms of the frame of reference (the legislation), and after the legislation passed, in terms of implementation. Even more interesting, a battle ensued within the new Air Force between fighter and bomber advocates. This issue may never see total resolution, but at least it reached a partial one with the creation of Air Combat Command in the early 1990s.

8 In addition to the authority to organize and direct forces, Goldwater-Nichols imbued combatant commanders with a more forceful voice in the resource-allocation process, implemented through the Joint Requirements Oversight Council. Equally important, it implemented a long-term program for joint education (joint professional military education [JPME]) and a structure for adding joint experience (the joint service officer positions), all of which combined to become wickets through which officers had to pass on their way to promotion to general or admiral. Although some services resisted these moves, they institutionalized jointness across the spectrum of service activities.

9 Readers should study Commander Thompson's article in detail, paying particular attention to the RAF's decision to permanently staff and train a JFACC headquarters instead of just a J/AOC. Once again, this issue illustrates the prescience of our British colleagues; we Americans would do well to follow suit.

10 Benjamin S. Lambeth, *The Transformation of American Air Power* (Ithaca, NY: Cornell University Press, 2000), 130.

11 One certainly encountered a number of implementation issues. For instance the daily air tasking order had to be flown out to the fleet since compatible communications did not exist. However, these sorts of issues, although ugly and difficult to manage, do not refute the value of the overall concept of a JFACC and an AOC.

12 Lambeth, *Transformation of American Air Power*, 132–33; and Williamson Murray, *Air War in the Persian Gulf* (Baltimore: Nautical & Aviation Publishing Co of America, 1995).



Although the US Army had two squadrons of Handley-Page night- bombers in training in the UK on 11 November 1918: "Not a single night-bomber manufactured in the United States during World War I reached the front"



Anglo - US Co-operation

By Sebastian Cox,
Head of Air Historical Branch (RAF)

The history of co-operation between airmen of the British and American air services in the First World War falls very broadly into three categories: training and combat operations; theory and doctrine; and production. As latecomers both to the War itself, and to the organisation and operation of air forces on a large scale the Americans were anxious to benefit from the hard won lessons

and experience of their British and French Allies. On entering the War the US had only 130 officers and some 1,000 enlisted men in its aviation service together with 200 aircraft, not one of which could be deemed suitable for combat.¹ By September of 1917 General Pershing was already planning and air service of 260 frontline squadrons by 30 June 1919.²

With an officer less able or less diplomatic than Hoare, national sensibilities and the sometimes prickly independence, which unthinking British officers could all too readily ignite in Dominion nations, might well have created friction and conflict

If the USA was to build an effective air arm of this size it was obvious to American officers that they should seek to obtain the maximum benefit not only from their Allies' first-hand experience of war, but also from their military organisations themselves. In addition, of course, some spirited Americans had entered the service of the Allies before the US declaration of war in April 1917. The most famous of these served with the Lafayette *escadrille* of the French Air Service, but others, as we shall see, had made their way across the Canadian border and found their way into the British Royal Flying Corps.

An organisation of the small size of the US aviation section clearly could not expand using its own resources rapidly enough to produce an air arm of sufficient size to meet US wartime requirements without drawing on the already large and well established resources of its Allies. Furthermore, as the Americans had no aircraft suitable for war they were also going to rely on their Allies to a large degree for materiel, and this gave further impetus to the need to train US personnel not only to fly, but also to maintain, foreign equipment. While Americans made strenuous efforts to develop training programmes and facilities in the continental United States, including co-operative efforts with industry, these were never going to be sufficient to support the rapid expansion and were always hampered by lack of equipment and instructors. In the circumstances US officers turned to their Allies for assistance. In Britain's case, this took various forms, but one of the earliest initiatives came from a remarkable British officer, Lieutenant-Colonel [later Brigadier-General] Cuthbert Hoare. Hoare was at the time commander of the Royal Flying Corps in Canada. Remarkably, Hoare, despite the title of his organisation and its location in Canada, reported, not to the Canadian Government, but to the War Office in London. Hoare did not run a *Canadian* Royal Flying Corps but was, in effect, operating an entirely autonomous British military organisation in another nation, and although the Canadian Government gave him its co-operation and support and was in turn kept abreast of his activities, it did not exercise any real control over these activities. With an officer less able or

less diplomatic than Hoare, national sensibilities and the sometimes prickly independence, which unthinking British officers could all too readily ignite in Dominion nations, might well have created friction and conflict. Hoare's remit was to establish twenty training units in Canada, with their supporting organisation, in order to provide a steady stream of manpower for the British frontline air service. His organisation was to recruit the personnel and give them initial ground training and basic flying instruction. They would then be sent to Britain to complete their training before moving on to combat units.³

As the Canadian Official Historian has commented: "the key to the success or failure of RFC Canada lay in recruiting".⁴ Hoare had always sought to recruit Americans into the RFC even before US entry into the War, but US legislation, notably the Foreign Enlistment Act of 1818, prevented recruitment on US soil, and potential recruits had to be enticed across the Canadian border if they were to join up. More remarkable still, however, were his actions after the US declaration of War. On the face of it the

Brigadier - General C G Hoare



Squier knew his own training organisation was inadequate and thought it better to have Americans trained to fight with the British than not to fight at all

USA's entry into the war threatened to turn off the flow of US recruits for Hoare's scheme, since patriotic Americans might reasonably be expected to enlist in their own nation's air service to fight the war rather than that of an Allied country. Such was not the case, however, and Hoare successfully continued to recruit Americans. The seeds of his success were sown when the US entered the war and the British Ambassador in Washington asked him to meet with US officers and officials to give them the benefit of his experience in military aviation. At this meeting Hoare met Brigadier-General George O Squier, then the Chief Signal Officer of the US Army, but more importantly the man with overall responsibility for the US Army's nascent air service. A number of initiatives flowed from this initial meeting. Subsequently, in May 1917, Squier visited Hoare in Canada and told him that the US Air Board would not object to the British opening a recruiting office in the USA. A British recruiting mission was established in New York, ostensibly to recruit British citizens resident in the US. Hoare went one step further, however, and working with the mission opened an office on Fifth Avenue that actively — if quietly — sought to recruit Americans. Hoare himself was well aware of the tenuous nature of his operation. He told London in September 1917, "The situation is this: the British Recruiting Mission has given a written undertaking not to recruit American subjects; that I can do so is entirely due to personal influence at Washington, and though I think I can carry it through, I cannot possibly give you a definite assurance." Eventually and inevitably his activities drew the attention of others in Washington who were not so well disposed as Squier, and in February 1918 Hoare was forced by the State Department to cease his recruitment activities.⁵ The exact number of recruits enlisted via Hoare's unorthodox activities is unknown, but some 300 airmen are believed to have entered the RFC through enlistment via Canada.⁶ We might legitimately ask why Squier would apparently so readily agree to suitable candidates for his own air service being 'poached' by the British after the American entry into the War. The answer, in all probability, lies in the fact that Squier knew his own training organisation was inadequate and thought it better to have Americans trained

to fight with the British than not to fight at all. He may have calculated that some at least would become available to the American service in due course, and in this he must have been encouraged by the fact that the British agreed to release five experienced US pilots from their own service and transfer them to the US Army where they were promptly appointed as squadron commanders.⁷ Furthermore, through one route or another between 900 and 1,100 Americans ultimately flew with the Royal Flying Corps. These men not only provided a very welcome influx of high quality personnel to the British air service, but ultimately proved of even more value to their homeland, since most of the survivors ultimately transferred to the US service bringing with them a priceless inject of frontline experience.⁸

In addition, Squier did not come away from his meetings with Hoare fortified only by promises, far from it. A more obviously mutually beneficial, and thus more sustainable, agreement was also reached between the two men. Hoare had a problem in that the flying programme at many of his RFC Canada schools in Ontario could expect to be badly affected by the severe Canadian winter. In his visit to Hoare in May 1917 Squier had mentioned that the military flying training schools that were scheduled to open in the States were, unsurprisingly, very short of instructors, and asked whether the RFC in Canada might offer any assistance. The imaginative Hoare immediately saw the possibility of an arrangement that would help both parties with their differing training problems. He told the War Office in London of his plan to train one hundred US cadets during the summer of 1917, in exchange for facilities for a Canadian training Wing [later increased to two Wings] at a southern US training base, complete with machines, during the winter months when the Canadian schools would be all but closed by the weather. Hoare's entrepreneurial spirit did not stop there, however, and he was soon scheming with American officers over cocktails at the Raleigh Hotel in Washington before appearing before the US Aircraft Production Board with a proposal for a far more ambitious Reciprocal Training scheme. Under this scheme the RFC agreed to train three hundred pilots, two thousand

"I am firmly convinced that if tomorrow the vast majority of American Squadrons were to be removed from England the Royal Air Force [in the UK] would be severely crippled"

ground crew and twenty equipment officers, all this in addition to the original one hundred pilots from the first agreement. The trained personnel would then be shipped to the United Kingdom where they would be issued with aircraft and equipment before proceeding to France where they would come under the control of the RFC. The original agreement was to lapse in February, but it was extended to April and the total number to be trained was now to be sufficient for 18 squadrons.⁹

Three US squadrons commenced training in Canada, and transferred with the Canadians to three airfields [Benbrook, Hicks, and Everman Fields] at Camp Taliaferro, near Fort Worth, Texas, in the autumn of 1917. The Canadian cadets occupied Benbrook and Everman fields while the US cadets and the Canadian aerial gunnery school went to Hicks.¹⁰ An outbreak of influenza and associated medical quarantine precautions meant that a proportion of the additional eight US squadrons never arrived before the Canadians left in April. Nevertheless there is little doubt that the scheme was of great benefit to both the American and British Commonwealth air forces. As a result of the Hoare/Squire agreements by April 1918 some 4800 personnel were trained for the US air arm. This total included 408 fully trained US pilots along with a further 50 who had been partially trained. Two and a half thousand ground personnel, officers and men, had been fully trained, with a further 1,600 part way through their training.¹¹ The first American squadron left Texas for England in on 19th December 1917 with its full complement of 25 pilots, and three more followed in each of the next three months, thus completing the original agreement to train ten squadrons. The first squadron (17th Aero Squadron) transferred to France in early February 1918, and was attached by Flights to frontline RFC squadrons to gain combat experience.¹² In addition some 1,500 flight cadets had been trained for the British Commonwealth air services. The new Chief of the United States Air Service informed Hoare that these programmes had "conferred great and practical benefit on the United States Air Service".¹³ The methods used in the Canadian Gunnery School were subsequently in large part adopted by the US Air Service when it opened its own school at Ellington Field, Texas.¹⁴ Although the original agreement provided for

ten fully trained US squadrons to serve with the RFC/RAF in Europe in the event this did not come to pass. Only two US Air Service squadrons, the 17th and 148th Aero Squadrons saw active service with the British, flying with them until November 1918, when they were absorbed in the US Air Service. One other interesting fact is worth noting regarding the Canadian training scheme, and that is that the very first cadets to arrive in Canada for training were from the US Navy and not the Army, and 20 of them completed their entire training in Canada and did not therefore transfer to Fort Worth. Amongst this initial party of US Navy cadets was James Forrestal, later a distinguished Secretary of the Navy and Secretary of Defense.¹⁵

The Hoare/Squier agreements were not the only mechanisms by which US personnel were trained by the British Commonwealth, with both pilots and ground crew being trained in the United Kingdom. The Bolling Commission led by Major Raynall Bolling, was despatched from the US to Europe in June 1917 to discuss US material and equipment needs, and Bolling discussed the training of American mechanics with the British during his visit.¹⁶ The first contingent of 53 men arrived at Liverpool in early September 1917, and others soon followed including some diverted from France and Italy.¹⁷ The 34th Aero Squadron and detachments of 50 men from an initial seven squadrons, followed soon after by a further five flying squadrons all landed on the shores of the UK. Eventually the demand became so great that a more formalised system was put in place, and in December 1917 the British signed a formal Mechanic Training Agreement which laid down that 15,000 US mechanics would be shipped across the Atlantic for training by 1 March 1918. The expectation was that the Americans would be trained more quickly than could be arranged in the United States, and that they would enable a similar number of British mechanics to be released for service with the Royal Flying Corps in France. Once trained in the UK the American mechanics would be released for service in American Expeditionary Force units in France at the same rate that replacement trainees arrived in the UK from the USA. These expectations were never met, largely because the problem of

shipping 15,000 men safely across the Atlantic was never satisfactorily resolved, and by 1 March only some 4,000 had arrived in the UK. Ultimately, however, the UK-based programme trained 22,059 men, of whom very nearly half were sent on to frontline squadrons in France. In the words of one US historian this programme “made an absolutely vital contribution to the development of Air Service, AEF, capability in France”.¹⁸ The programme also proved of great benefit to the British, so much so that when the Americans, faced with a shortage of mechanics in France in May 1918, sought to post personnel from England the British pointed out that under the terms of the agreement this could not be done before replacements had arrived in the pipeline from the USA. An American officer familiar with the workings of the programme wrote:

“I am firmly convinced that if tomorrow the vast majority of American Squadrons were to be removed from England the Royal Air Force [in the UK] would be severely crippled and at certain stations their training would come to a complete standstill.”

Eventually the British agreed to the immediate release of 3,500 mechanics who the US would replace as soon as possible with further drafts from the States.¹⁹ The first five squadrons of trained personnel left the UK for France in June 1918, and there seems little doubt that this could not have been achieved through any purely US-based training programme.

If co-operative schemes with the British Commonwealth forces made a major contribution to the practical training of the US Air Service in the course of the war, the former made an equally important contribution to the intellectual development of the infant US air arm. The then Colonel William ‘Billy’ Mitchell was in the vanguard both in terms of developing US air power thinking and in establishing links with influential practitioners in Europe. Mitchell came to Europe very soon after the US entry into the War, and spent some days with the influential commander of the Royal Flying Corps in France, Sir Hugh Trenchard. When Mitchell sent two papers on air organization back to General

Pershing’s Headquarters he sent with them a copy of a memorandum by Trenchard of September 1916 on the primacy of the offensive in air warfare.²⁰ According to Trenchard’s biographer, Mitchell met with Trenchard on several occasions during the summer of 1918 and even went so far as to ask the Briton to cast his experienced eye over Mitchell’s tactical plan for the St Mihiel offensive. Moreover, Trenchard gladly co-operated more directly in the offensive by acceding to Generalissimo Foch’s request (undoubtedly prompted by Mitchell) to support the Americans with the bombers of his Independent Force.²¹ The Independent Force was also formally tasked with supporting the Americans in the subsequent Meuse-Argonne offensive. In both instances the main target of the British bombers was the rail networks supporting the German front, particular in the area of Metz-Sablon.²²

Whilst the links between Mitchell and Trenchard resulted in some very obvious and direct co-operation and influence there were other examples of British influence on US air power thinking which are generally less well-known but in the longer run perhaps equally important. In particular, and in the light of the shared experience, though divergent doctrines, of the USAAF and the RAF in the Combined Bomber Offensive in the Second World War it is of particular interest to note the way in which American doctrine relating to strategic air war against economic targets, so famously expressed in the Air Corps Tactical School’s inter-war theorising, had its roots in British thinking from the First World War. In particular the influential 1917 expression of American strategic bombardment doctrine expounded by Major [later Colonel] Edgar Gorrell borrowed directly and extensively, though without acknowledgement, from the writings of Lord Tiverton, at the time an officer in the British Air Ministry. Gorrell was appointed as the Chief of the Technical Section of the Air Service, AEF, in August 1917. Gorrell developed a strong interest in the concept of strategic bombardment and in November 1917 submitted a plan to the new Chief of Air Service, Brigadier General Benjamin Foulois. Foulois approved the plan and made Gorrell head of ‘Strategical Aviation, Zone of Advance, AEF’.²³ Gorrell’s work relied so heavily on a similar plan written by Tiverton in early September that

Although the US Army had two squadrons of Handley-Page night- bombers in training in the UK on 11 November 1918: “Not a single night-bomber manufactured in the United States during World War I reached the front”

large parts of it were simply lifted verbatim. As US air power historian Tami Biddle has noted in her thoughtful work on American and British strategic air power this was somewhat ironic, since “What came to be known as the ‘Gorrell Plan’ was later considered paradigmatically American: the ‘earliest’ and ‘clearest’ statement of ‘the American concept of air power’”.²⁴ Gorrell later wrote a further essay entitled ‘The Future Role of American Bombardment Aviation’ which drew not only on Tiverton, but also on a paper written by Trenchard in November 1917. In drawing so readily on these British influences “Gorrell infused American air power thought with Tiverton’s emphasis on analytical planning and systematic implementation, as well as Trenchard’s emphasis on the moral effect of bombing”.²⁵

In the event, neither Gorrell’s plan nor other similar US doctrinal forays into the realm of strategic bombing came to very much during the course of the War. Although this was in part due to the influence of senior Army officers anxious to maintain the focus of the Air Service on tactical support of the Army, it was also in large part due to production difficulties. As we have seen, the US did not enter the war with a single combat-ready aircraft type, and the Americans were perforce compelled to equip their squadrons with proven Allied types. This meant that of 6,364 aircraft delivered to the Air Service in France, 19 were of Italian origin, 258 came from Britain, and 4,874 from France. Only 1,213 were sent from the USA.²⁶ The attempts to produce Allied designs in the USA were not entirely successful. Hampered in part by the rapid developments in design, such that, for example, the De Havilland DH4 which was ordered in large quantities was already obsolete before entering production, and partly by the difficulty of producing highly complex aircraft designed elsewhere, much treasure, effort and heartache were expended for surprisingly little tangible result. The most interesting of these attempts from the perspective of Anglo-American co-operation was the Handley-Page twin-engine long-range night bomber, which went into UK production in July 1917. Although the Italian Caproni heavy bomber appeared to possess better

performance, there appeared to be technical and bureaucratic obstacles to its rapid production in the USA. Thus the War Department plumped for the Handley-Page design powered by American Liberty engines. Aware that no aircraft at that time was capable of flying the Atlantic, the plan was for US companies to build prefabricated parts sufficient to build aircraft to equip 30 bomber squadrons. The prefabricated materials would then be transhipped to the UK, where they would be sent to assembly facilities in disused Lancashire cotton factories. An agreement to this effect was signed in January 1918.²⁷ In fact the British had sent a complete set of drawings for the Handley-Page to the USA as early as August 1917. However, subsequent design changes meant that two further sets of drawings had to be sent, necessitating in some cases the scrapping or re-working of existing parts. As the Handley-Page aircraft had more than 100,000 individual parts this was a major undertaking, and the US sub-contracting companies quickly fell behind schedule.²⁸

Although the assembly facilities and five training airfields in the UK were to be prepared by a small army of labourers sent from the USA, only about 60 per cent of the additional manpower arrived before the Armistice. In addition poor weather, and labour conflicts with the British trade unions, which led to frequent strikes, further delayed the project. By the end of the war only fifty engines and 95 per cent of the parts to complete one hundred aircraft were available in the UK.²⁹ And thus, although the US Army had two squadrons of Handley-Page night- bombers in training in the UK on 11 November 1918: “Not a single night-bomber manufactured in the United States during World War I reached the front.”³⁰ Unfortunately, the one part of the programme that worked smoothly was the transfer of the several thousand men who were intended to maintain the aircraft. These unfortunates waited in vain in the UK for their charges to arrive. The then Colonel Henry ‘Hap’ Arnold was moved to comment that: “the only result was that the American air outfits in France were deprived of their needed services”.³¹

It would nevertheless be wrong to end this very brief and far from comprehensive survey on

a downbeat note. The assistance given by the Royal Air Force and its predecessors in helping to establish American air power on a firm footing were more than re-paid both by the exploits of American airmen flying with the British Commonwealth forces and by the assistance given to the Canadian training programmes. The links that were established during the First World War, though they lay dormant for two decades, were very quickly re-established during the second great conflict a generation later. Large numbers of UK airmen were again trained in Canada, and once again as soon as American entered the War, training facilities were made available in Texas and other Southern States. And yet again free-spirited Americans, convinced that the cause was a just one, sought to join the Royal Air Force and Commonwealth air forces even before the United States entered the Second World War. Thus at least twelve US citizens flew with the RAF during the Battle of Britain, more than a year before Pearl Harbor, and by early 1941 the RAF was able to establish three fighter squadrons whose pilots were almost exclusively American. As with an earlier generation most of these men subsequently transferred to the USAAF, where they were once more able to provide a leavening of experience which was of incalculable benefit to a force going into combat for the first time. These strong links have endured over subsequent generations and conflicts, but their foundations lie in the bonds established in the World's first truly global war of 1914-1918.

Notes

- 1 Tami Davis Biddle, *Rhetoric and Reality in Air Warfare*, (Princeton University Press, Princeton, 2002) p 50.
- 2 Rebecca Hancock Cameron, *Training to Fly – Military Flight Training, 1907-1945* (Air Force History Program, 1999), p 143.
- 3 On Hoare and the establishment of The Royal Flying Corps in Canada see S F Wise, *Canadian Airmen in the First World War — The Official History of the Royal Canadian Air Force*, Volume 1 (Toronto University Press, Toronto, 1980) pp 76-82.
- 4 Wise, p 83.
- 5 Wise, pp 89-91.
- 6 Roger G Miller, "The Tail to Tooth Ratio — Royal Flying Corps and Air Service Co-operation in Maintenance Training During WW1", in *Journal of the Royal Air Force Historical Society*, No 32, p 11.

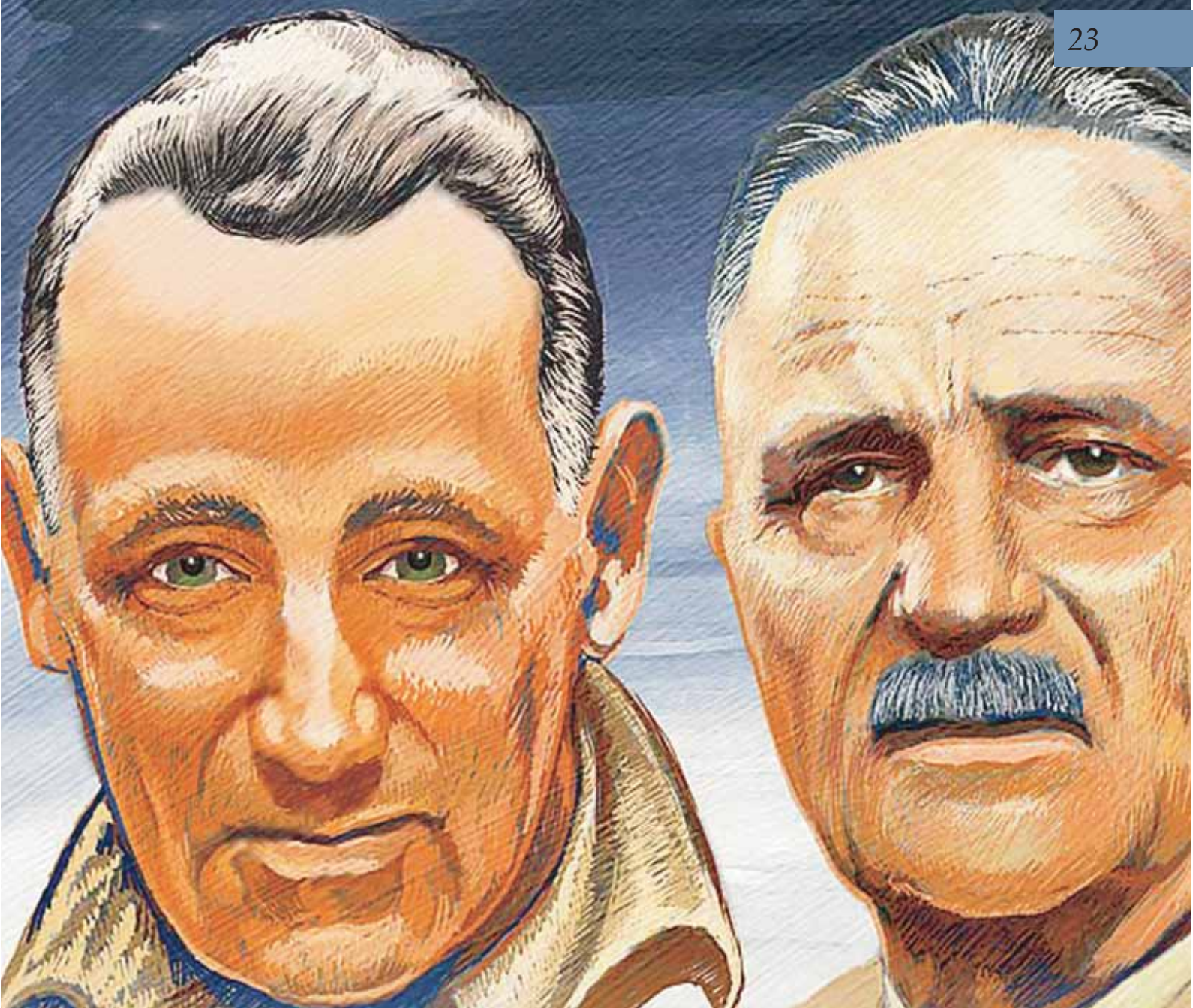
- 7 Wise, p 94 fn.
- 8 Miller, p 11.
- 9 Wise, pp 91-97.
- 10 Wise, p 94
- 11 Cameron, pp 108-110.
- 12 H A Jones, *The War In the Air*, (6 Volumes, Oxford, Clarendon Press, 1935), Volume V, p 466.
- 13 Wise, p 95.
- 14 Cameron, p 130.
- 15 Wise, p 93.
- 16 Miller, p 17.
- 17 Cameron, p 158.
- 18 Miller, pp 18-20.
- 19 Miller, p 19.
- 20 Mitchell's papers are re-produced in Maurer Maurer, *The US Air Service in World War I*, Volume II, *Early Concepts of Military Aviation* (USGPO, Washington DC, 1978) pp 108-111. For a flavour of Trenchard's Memorandum see, Andrew Boyle, *Trenchard*, (Collins, London, 1962) pp 186-188.
- 21 Boyle, p 300, and Jones, Vol VI, pp 148-149. The Independent Force was a force of British bomber squadrons established under separate command arrangements from the rest of the British air forces in France and intended to undertake independent strategic operations against Germany. Trenchard was placed in command of the force and reported back to the Air Ministry in London, rather than the British High Command in France. In fact Trenchard allocated far more of his effort to bombing French railways and German aerodromes than he did to attacking targets in Germany — For more on the Independent Force see Biddle, pp 40-48.
- 22 Jones, p 149, and Maurer, Vol III, pp 5-59.
- 23 Maurer, Vol II, p 141. The plan is reproduced in this Volume pp 141-157.
- 24 Biddle, p 54.
- 25 Biddle, p 55.
- 26 Miller, p 23.
- 27 Miller, p 20
- 28 Miller, p 20 and I B Holley, *Ideas and Weapons* (Yale, Yale University Press, 1953) pp 144-145.
- 29 Miller, p 21.
- 30 Holley, p 145.
- 31 Miller, p 21.



Air Lines: Anglo – American Tactical Air Operations in World War II

Air Marshal Arthur Coningham *left*
and American General Carl Spaatz

Artwork courtesy of ASPJ



By Dr Thomas Alexander Hughes

In the Anglo-American tradition, aviation enthusiasts have championed airpower's inherent 'flexibility and versatility' as one important advantage airmen enjoy over their brethren on the ground and at sea.¹ Soldiers and sailors, the thinking goes, must face war's challenges bound by two-dimensional

geometry and the slow algebra of surface movement. For them, demarcations like army-unit boundaries and naval vanguards not only rationalize the battlespace, but also limit the elasticity of military options. To draw loosely from the great theorist Henri Jomini — to the man with a bayonet or the skipper on the

Airmen have often opted merely to deconflict one air operation from another—and in the process have fragmented their battlespace like their comrades in armies and navies have done

foredeck, strategy is on a map. But flyers fight wars free of such earthly limits. Liberated from the tyranny of terrain and unfettered by maritime matters, pilots retain a capacity to move quickly and freely, complicating the enemy's action and defeating his strategy.

Or so the thinking goes. Undoubtedly more flexible and probably more versatile than other combat arms, airpower is both informed and constrained by the same map that influences ground and sea operations—partly because air forces are often used in joint and combined contexts. Furthermore, airmen themselves have been unwilling to free operations from the boundaries of battle that emerge from ground or sea perspectives. Airpower's flexibility and versatility depend to some extent on a seamless battlespace, yet air leaders have often demonstrated an inclination to draw lines in the sky to codify the airspace, coordinate actions of different units, and manage coalition air operations. In other words, instead of implementing true integration that capitalizes on the wide open sky, airmen have often opted merely to deconflict one air operation from another—and in the process have fragmented their battlespace like their comrades in armies and navies have done.

Anglo-American tactical aviation in World War II serves as a case study in the tantalizing promise of integration and the eventual triumph of deconfliction to orchestrate airpower among services and between nations. Great Britain and the United States began their Allied effort in World War II with a strong common purpose and sufficiently similar views of aviation. In the laboratory of North Africa and Sicily, air leaders moved to amalgamate different air forces and to demarcate the sky along functional, not geographic or national lines. Human, strategic, and political matters, however, made this objective too difficult. By the time of the invasion of Normandy, the Anglo-Americans had settled on strict air boundaries marked not only by national identity but also by army, corps, and division demarcations. This inclination to draw lines in the sky carried forward through the Cold War and beyond, suggesting that despite the rhetoric of airpower's flexibility and versatility, Airmen

themselves sometimes adopt operational concepts that hinder the elasticity of military aviation.²

Tactical aviation before World War II

The United States and Great Britain came to World War II with comparable if not uniform ideas about the proper development and application of airpower. Their respective aerial traditions from the Great War were operationally analogous, even if the British had more experience. In the war's last year, aviators from both countries participated in embryonic bombardment missions that fired the imaginations of airpower enthusiasts and fueled debate about its future on both sides of the Atlantic. In broad terms, flyers advocated inventive, independent bombing missions for aviation while more conservative adherents in ground and sea uniforms envisioned a role for aviation in support of traditional forces. In the interwar period, these points of view became associated with strategic or tactical airpower, respectively. In Great Britain and the United States, notions of strategic aviation grabbed airmen, despite differences in national circumstance and the organizational status of their respective air arms. Over time, airpower thought in Britain and America charted similar courses as pilots championed strategic aviation and situated tactical airpower in an important, though clearly subordinate, role.

A disposition toward strategic aviation led Airmen in both nations to similar assessments of military operations elsewhere. Royal Air Force (RAF) officers denounced the tactical character of air operations during the Spanish Civil War as "a prostitution of the Air Force" and warned that the conflict did not fit expected conventions of general European warfare.³ In America, Brig Gen Henry Arnold added that the fight had seen airpower used "promiscuously and indiscriminately to supplement artillery actions" instead of employing it behind enemy lines, "where it can exert power beyond the influence of your other arms, to influence the general action rather than the specific battle."⁴ Pilots in America and Britain held steadfast to these beliefs, even after German blitzkrieg operations in Poland revealed tactical aviation's potential prowess. Air Marshal Arthur Coningham, the great British practitioner of tactical



The RAF refused to imitate the Luftwaffe's use of the Stuka, despite its status as "the pin up weapon of modern warfare"

operations, recalled how the RAF refused to imitate the Luftwaffe's use of the Stuka, despite its status as "the pin up weapon of modern warfare. . . Our Air Marshals were criticized at times but they knew the Stuka was a most inefficient aircraft of value only as a specialized weapon under selected conditions."⁵

Anglo-American air arms did not entirely ignore aviation's tactical functions. After Britain decided to raise an army capable of campaigning on the Continent, officers there had to work out a system of air support. Pilots and soldiers agreed on air superiority as airpower's first priority before it turned to three other tasks: tactical reconnaissance, air transport, and air attack, including interdiction and close air support (CAS). But air and ground leaders floundered on arrangements for the command and control (C2) of air forces in a tactical role, in part because Airmen held little confidence in a soldier's ability to orchestrate airpower in modern war. In the end, before their baptism of fire in North Africa, the British could muster only an "awkward and complicated" arrangement

whereby both an "air component" under the direct command of a soldier and an "air contingent" under the control of an Airman participated in the battle.⁶ Such fragmentation did not effectively leverage the flexibility of airpower, but at least the tactical use of aviation had attracted some attention in Britain before the war.

In America, where the air arm remained under Army control, tactical aviation remained a standard Air Corps function. Although many airmen championed strategic concepts, ground officers who ran the Army insisted on a force structure and doctrine that enabled tactical airpower. The 3rd Attack Group became the world's first peacetime unit dedicated to CAS, and throughout the interwar period the Army Air Corps's makeup reflected a formal insistence on tactical aviation. In fact, during the two years before Pearl Harbor, heavy bombers constituted less than two percent of the Air Corps' aircraft purchases. As for doctrine, successive iterations of War Department Training Regulation (WDTR) 440-15,

Employment of the Air Forces of the Army, generally identified aviation's primary mission, after air superiority, as destruction of "the most important enemy forces on the surface of the land or sea" (1923 version), and adhered to the age-old dictum that the "land campaign" was "the decisive factor in winning war" (1935 update).⁷

Even as both nations drew closer to tactical aviation with the approach of World War II, they left for the battlefield the difficult and delicate matter of command relationships among ground and air leaders — in many ways the nub of tactical air operations. In Britain teasing out the nuance between 'contingent' and 'component' aviation fueled bickering among air and ground leaders

until Prime Minister Winston Churchill proclaimed the situation 'helpless'. In the end, however, even his forceful persuasion could not broker a solution.⁸ In the United States, disputes over the C2 of air did not reach the White House, but prewar doctrine reflected nearly untenable compromise on the issue: WDTR 440-15 allowed for independent air operations when ground troops were not in close contact with the enemy but made no provision for the detachment of air units from ground control for such missions.⁹ Just how one might conduct independent operations within dependent command arrangements was a matter apparently left for soldiers and flyers to clear up during some future debut in war.

But the fact that armies in the Sahara Desert needed support placed enormous, unanticipated demands on tactical air operations in the war's early going

Supermarine Spitfires over North Africa



Up until they found themselves together in World War II, then, Britain and America had similar enough experiences and ideas about airpower to suggest a reasonable chance of integrating their air forces into one team for the fight. Certainly, variation existed, but both nations came to World War II with doctrinal and cultural expressions of airpower well recognized by the other. Once the war began, not even the Japanese attack on Pearl Harbor dissuaded the Allies from a common strategic cause to defeat Germany first. Side by side politically and strategically, akin in the beliefs and methods of war, and analogous in the orchestration and execution of military aviation, the Anglo-Americans entered the war with high expectations of building an integrated team, knowing only partially the great challenges that attended their journey.

Operations in North Africa and the Mediterranean

No prewar strategist in either Britain or America had thought of the Mediterranean Sea's south coast as a likely place for a clash, despite its awesome history as a battleground between civilizations. This lack of foresight proved especially true of air officers busy developing the ideas and machinery of strategic airpower. The North African sand harbored no large enemy populations to bomb, no vital enemy infrastructure to destroy, and no important enemy capital to level. But the fact that armies in the Sahara Desert needed support placed enormous, unanticipated demands on tactical air operations in the war's early going. Each nation faced a steep learning curve for such tasks.

The British came first to the war and first to Africa, where they encountered Field Marshal Erwin Rommel's famed Afrika Corps. The Desert Fox, as the British called Rommel, schooled the British Army in modern mobile warfare, nearly pushing Commonwealth forces from the continent. In August 1942, Lt Gen Bernard Montgomery inherited command of the dispirited, defeated British Eighth Army and in October brilliantly evened the battle ledger with the Germans at the Second Battle of El Alamein. There then ensued a series of seesaw battles as the British marched from Egypt to Tunisia. Haltingly at first, the drive gained momentum with each passing week until

Axis forces occupied a shrinking piece of African real estate by January 1943. This turn of fortune had many fathers, including a refusal in Berlin to reinforce German troops on the continent. But growing British competence in tactical air operations played a part. One man's contributions in that regard stand to this day as a signal achievement of the war in the west.

Raised in New Zealand on the edge of the empire, Arthur Coningham had in some ways operated on the periphery of the RAF during his prewar career. While students attending courses at RAF Staff College in Andover devised — and officers in the Air Ministry championed — strategic bombing theory, Coningham was busy in the field. "Of all the RAF's senior commanders in the Second World War," wrote Coningham's biographer, "he was unique in that he received no formal, theoretical service education. By the end of the war, he was inordinately proud of the fact that he had neither served in the Air Ministry nor studied at Andover. His entire career was practical."¹⁰ Unencumbered by prewar notions, Air Vice-Marshal Coningham came to North Africa in the summer of 1941 with a relatively open mind, able to counter the challenges of the desert with creative innovation.

The problems were legion, many of them stemming from material shortages or the lack of battle experience — conditions that would right themselves with the passage of time. Others were squarely the product of inter-service cooperation and doctrinal ambiguity. Keenly aware of the tensions in Britain that had attended efforts to develop tactical aviation, Coningham nevertheless believed that these labors had suffered from peacetime malaise and "could only be done on an academic basis" until war came.¹¹ Now, in the thick of the fight, he used the desert tableau as an anvil on which he shaped the machinery of CAS.

Heeding the advice of Air Marshal Arthur Tedder (his immediate superior in the air war) to "get together" with the Army, Coningham swiftly established a joint headquarters with ground commanders in the Western Desert. Looking back after the war, Coningham believed that collocating headquarters "was of fundamental importance and had a direct bearing on the combined fighting of



Early operations produced despair and defeat: the Americans' failure to reach Tunisia before the winter rains and a debacle in air-ground operations at the Battle of Kasserine Pass ensured a long, hard campaign in the spring of 1943

the two Services until the end of the War".¹² From there he fleshed out the mechanisms of tactical airpower. Deficiencies existed in the tactics for air support, techniques in the placement of bomb lines, and procedures in the allocation of targets. As always, the C2 of aircraft underlay all other matters because soldiers wanted to divvy up air units to ground commanders, and pilots insisted on a more unified approach to the conduct of the air war.

With success at El Alamein came recognition for Coningham's ideas, which included a trinity of exhortations to guide air operations: "The strength of air power lies in its flexibility and capacity for rapid concentration; it follows that control must be centralized in an Air Commander and command exercised through Air Force channels; [and] Air forces must be concentrated in use and

not dispersed in penny packets" — the British expression for soldiers' preference to assign specific air units to specific ground commands.¹³ In time, prominent generals such as Montgomery came to parrot Coningham's ideas, and the notions found expression in the widely circulated Air Ministry pamphlet *Air Power in the Land Battle*.¹⁴

British prestige and Coningham's ideas rode high as the Americans experienced their battle debut in Africa. Operation Torch brought US and British forces under the command of Gen Dwight Eisenhower to the continent in November 1942. Like the previous efforts of the British, early operations produced despair and defeat: the Americans' failure to reach Tunisia before the winter rains and a debacle in air-ground operations at the Battle of Kasserine Pass ensured a long, hard campaign in the spring of 1943.

Axis shortages of materiel were so acute that some high-ranking Wehrmacht officers could make their escape only after finding a lone barrel of aviation fuel that had washed in from the sea

Fortunately, by then Montgomery and Coningham had completed their march from Egypt and were south of Tunis, ready to join hands with Eisenhower in an Anglo-American vise to squeeze the last Axis troops from Africa.

This linking required a combined command, to be led by Eisenhower, whom President Franklin Roosevelt and Churchill had agreed upon. As supreme commander, Eisenhower tended to view unity of command from a theater point of view, a position that dovetailed with Coningham's notions of a single Airman leading all air operations within a given theater.¹⁵ A consensus builder by inclination and willing, at first, to look to the more experienced British, Eisenhower also accepted the British concept of dividing air-mission responsibilities by function rather than nationality. Hence, when he created the Mediterranean Air Command and named Tedder its leader, Eisenhower worked to ensure truly combined air organizations. Below Tedder's command sat the Northwest African Air Forces, commanded by the American General Carl Spaatz, who in turn split his force into five subordinate commands: Strategic Air Force, led by the American general James Doolittle; Tactical Air Force, led by Coningham; Coastal Air Force, led by the British Air Vice-Marshal Hugh Lloyd; Training Command, led by the American General Joe Cannon; and a reconnaissance wing commanded by President Roosevelt's son Elliot. Each of these forces, in turn, consisted of units from both nations. By mixing US and British forces up and down the chain of command, the Northwest African Air Forces set a radical precedent in Allied cooperation—one not mirrored in either the ground or naval commands. It was a bold move but one that, in theory anyway, best leveraged the flexibility of airpower. Time alone would tell how well the arrangement worked.

Initial air operations went well. Enough doctrinal similarity existed between US Army Field Manual (FM) 31-35, *Air Ground Operations*, and British Army Training Instruction Number 6 regarding air-support control centers and liaison parties to

ensure smooth procedural operations within and among lower-echelon units.¹⁶ Although some national cleavage developed in Doolittle's Strategic Air Force, integrated air operations existed in both Coningham's Tactical Air Force and in Lloyd's Coastal Air Force. In those units, air assets often took on tasks regardless of nationality and always in close coordination; Coastal Air Force, for example, did not always delineate nationality on its daily operations orders.¹⁷ Late in the campaign, in April and May 1943, the US Twelfth Air Force began to concentrate on support to American troops, but this was an *ad hoc* exception to the emerging, if still newborn, pattern of amalgamated air operations. By early May, Allied troops had cornered the last of the enemy soldiers in the port of Tunis, and on 10 May the remaining Germans surrendered. Air-support operations, especially interdiction missions, played a part in the triumph. In the end, Axis shortages of materiel were so acute that some high-ranking Wehrmacht officers could make their escape only after finding a lone barrel of aviation fuel that had washed in from the sea.¹⁸

Continuing to follow British footsteps, the Americans refined US aviation doctrine, encouraged by their success in the desert. Based in part on British practices, the new doctrine — FM 100-20, *Command and Employment of Air Power* — “acknowledged Coningham's emphasis on the flexibility of air power and the need for centralized control under a knowledgeable air force commander”.¹⁹ It embodied many lessons of desert warfare, especially the importance of joint planning, liaison officers, and adequate communications. Although much of the document's innards reiterated earlier doctrine, FM 100-20 included a novel clarion call for airpower equality in joint warfare: “LAND POWER AND AIR POWER ARE COEQUAL AND INTERDEPENDENT FORCES; NEITHER IS AN AUXILIARY OF THE OTHER” (capitalization in original).²⁰ American pilots, conditioned by the struggle for air autonomy in the interwar years, saw in the document independence for the air force, with one future four-star general calling it the “emancipation proclamation of air power”.²¹

Viewed in the context of its birth, however, the new doctrine was not a scheme to widen the gulf between pilots and soldiers but a move toward better and greater air-ground cooperation, based in part on experiences gained in North Africa.

In the summer of 1943, the Anglo-Americans hastened to chase the Axis powers across the Mediterranean, invading Sicily in July and Italy proper in September. Spaatz's combined

Northwest African Air Forces bore the brunt of air responsibility for these assaults, and air tasks fell into an increasingly familiar categorization for tactical aviation in support of amphibious operations: neutralize the enemy air force, destroy enemy communications, isolate the battlefield, and provide close support to invading ground troops. Consistent with views of airpower's flexibility, plans for the Sicilian invasion called for aviation integration and a

In the summer of 1943, the Anglo-Americans hastened to chase the Axis powers across the Mediterranean, invading Sicily in July and Italy proper in September

Italian soldiers toss the gun bolts of their rifles to the ground after the fall of Sicily



"high degree of coordination" among Spaatz's air forces. This was especially true for Coningham's tactical and Doolittle's strategic air commands, since "depending on the situation, either force might come under control of the other".²² This daring design required respective commanders to work effectively without regard to national insignia on shoulder boards or national boundaries on battlefields. More than anything, the success of combined commands in North Africa fostered beliefs that such a fluid arrangement maximized airpower's versatility and optimism that it could work elsewhere.

But success does not always translate from one circumstance to another. By the summer of 1943, the Americans constituted an increasing share of the Allied force structure. Moreover, having acquired combat experience of their own, they were less likely to accept a role subordinate to that of the British in the wartime partnership. This shift influenced relationships and affected decisions at every level of war, including the matter of air organization in the Mediterranean. Lt Gen George Patton, the senior American field soldier for the Sicilian invasion, believed that British air leadership was now disproportionate to their rank-and-file strength, starting with Spaatz's British superiors in the Mediterranean Air Command: "Tedder controls the air with Spaatz, a straw man, under him," Patton complained to Eisenhower. "Conyngham [sic] commands the tactical air force [while] . . . our close support force is commanded by a colonel." Although Patton was wrong about a colonel controlling American CAS, he forcefully pressed his point home, concluding that "the U.S. is getting gypped."²³

Patton was not alone. Other Americans increasingly believed that the British pushed for integrated air commands in order to retain positions of leadership that their force structure alone could no longer support. This view was at once cynical and somewhat true, challenging even Eisenhower's consistent inclination to find harmony among his subordinates: "The American Air Force and principal commanders," he reported in July, "do not have that prestige that should be theirs" in the current command setup.²⁴

More than prestige was at stake. The international flavor of air commands in North Africa may have heightened airpower's operational elasticity, but it complicated the administrative lines of control that must necessarily pass through national channels. This problem became especially apparent in the Coastal Air Force, where disciplinary action within an assigned American fighter group became entangled in RAF legalities.²⁵ To remedy this deficiency and appease bruised egos, Eisenhower formulated plans to make Spaatz the commanding general of all US Army Air Forces (AAF) units in the Mediterranean and give him responsibility for the administrative oversight of US flyers. Eisenhower felt that doing so gave Spaatz the "strength, prestige, and influence" he deserved and provided for the "absolute continuity of American command of all American units from top to bottom".²⁶

As long as the new arrangement was limited to administrative command prerogatives, it did not violate the animating spirit of the Allied admixture of forces in the operational and tactical conduct of the war. But Spaatz soon set his sights on wider authority. In the middle of July 1943, he moved to ensure his influence over US sorties via a separate, secret communications net known as Redline, telling his principal subordinate US commanders "to have officers in training so that you will have them ready to take over . . . [when] the Americans are in complete control".²⁷ A close examination of Redline suggests it "grew into a swift and effective all-American communications system" used to circumvent Coningham's control of US units in the Tactical Air Force.²⁸ If Redline did not quite constitute a wholesale repudiation of combined air commands, it was at least a rascal's way of undercutting their effectiveness.

National and personal pride motivated Spaatz, but he also acted out of sincere concern for the effective running of the air campaign. He established Redline only after a British practice of bypassing him became clear, especially in messages between Tedder and Coningham. Moreover, Spaatz hoped that Redline would not so much usurp Coningham as encourage him to act more decisively in the employment of his command and in his coordination with Doolittle's

Winston Churchill's belief that fighting without allies was the only thing worse than fighting with them

Strategic Air Force. Operational effectiveness had become a real issue late in the Sicilian campaign, when German troops retreated en masse across the Strait of Messina to Italy. Instead of implementing aggressive action to interdict a fleeing enemy, Coningham moved cautiously and with great reluctance to synchronize his fighter planes with Doolittle's bombers. In a curious rejection of his own ideas of airpower's adaptability, Coningham never thought much of interchanging fighters and bombers when circumstance demanded, and even his sympathetic biographer refused to muster much of a defense for Coningham's failures late in the Sicilian campaign.²⁹

British commanders had always believed that the fusing of the RAF and the AAF had "been a very tricky job" requiring delicate hands and deft politics. Now, in the late summer of 1943, they felt that "nationalism has reared its ugly head".³⁰ Under such conditions, they foresaw a time when national identity trumped function in the organization and employment of airpower. No doubt, Americans would have agreed. That summer represented a signal moment in the history of combined air operations. For a brief time above the North African sand, the promise of integrated coalition air operations lived in an embryonic stage. But it was stillborn over Sicily's rugged terrain, unable to overcome powerful personal and national forces. After the war, Coningham tried to put a happy face on this death, telling audiences that Mediterranean operations had bequeathed to the Anglo-Americans "processes of Allied Command, staff structure, [and a] dove-tailing of the three services of each nation into a team".³¹ In further retrospect, members of the Western Alliance undoubtedly grew in strength and prowess in the years before the invasion of Normandy, but their combined efforts also testified to Winston Churchill's belief that fighting without allies was the only thing worse than fighting with them.

D-Day and Operation Overlord

There was a slight pretense of integrated air operations by the time the Anglo-Americans began planning in earnest for the liberation of France. Many principal commanders from the south, including Eisenhower, Tedder, Spaatz, and

Coningham, came to Britain in the winter before D-day to participate in Operation Overlord. They brought from the Mediterranean their collective competence and great experience. Each amphibious landing in Europe occupied a distinct point on a learning curve for the Anglo-Americans, and Normandy represented the pinnacle of commander expertise. Despite their success, however, these leaders also brought heavy baggage with them to Britain. In Overlord's planning and execution, they failed to shake emergent patterns of organizational and operational conflict in the conduct of air war. Moreover, their scheme of air support for the invasion actually compounded difficulties in the integration of air operations and accented differences among men and nations.

A thin facade of Allied integration shrouded the air setup for Overlord. Reprising his role as supreme commander, Eisenhower again tapped Tedder as his deputy. In the normal fashion, Eisenhower's command had major land, sea, and air components. The British Air Chief Marshal Trafford Leigh-Mallory, one of the few senior leaders in Overlord who had not seen experience in the Mediterranean, commanded the Allied Expeditionary Air Force (AEAF). As had been the practice in the south, his deputy was an American, Maj Gen Hoyt Vandenberg, who had only very limited experience in North Africa. Leigh-Mallory's force consisted of units from both nations organized into two air forces: the US Ninth Air Force and the British Second Tactical Air Force, commanded by Lt Gen Lewis Brereton and Coningham, respectively. In the weeks before and after D-day, Coningham, working directly for Leigh-Mallory, exercised supernumerary authority over both tactical air forces in an effort to maximize coordination across national boundaries.³² In appearance, all this looked like the beginnings of a renewed effort to integrate air operations.

It was not. The Leigh-Mallory/Vandenberg pairing was designed to further delineate operations rather than conjoin national forces. Spaatz — who now led American strategic air forces in the bombing of Germany and who remained the senior administrative air commander throughout Europe — had lobbied for Vandenberg's appointment



computer generated image

On D-day, 1,200 Eighth Air Force bombers blasted Omaha Beach with a faulty plan: the planes dropped undersized bombs, and most bombardiers delayed their bomb drops over the coast anywhere from five to 30 seconds, ensuring that most ordnance fell far inland of aiming points

because Vandenberg could be trusted to safeguard 'the interests of the American component' and protect 'the operational use' of US planes. In Spaatz's scheme, Vandenberg would also become the conduit through which Spaatz might exercise de facto control over Brereton's Ninth Air Force, rendering Leigh-Mallory a nominal commander of American forces.³³ Eisenhower's tacit agreement to this bit of skullduggery eliminated any chance that the AEF could integrate air operations across national lines. After that, air integration became only a red herring, obscuring more realistic hopes of deconflicting air operations, which became

the true purpose of Leigh-Mallory's command. This objective was manifest in his command's internal structure: the US Ninth Air Force would provide support to the Americans landing in France; the British Second Tactical Air Force would concentrate on Commonwealth troops wading ashore; and the two would meet only in extraordinary circumstances. Down the chain of command, air operations were delineated further by linking specific air units to specific ground commands, a procedure that basically repudiated Coningham's ideas and the notions enshrined in FM 100-20.

The role of strategic air forces in support of Overlord complicated the whole matter of air synchronization for the Normandy campaign. Although Spaatz and Air Chief Marshal Sir Arthur Harris, commander of RAF British Bomber Command, recognized their obligations to assist in the invasion, they were deeply committed to strategic bombing and refused to cede command prerogatives to Leigh-Mallory, whom they did not trust to direct bomber forces. Since the bomber forces were attached and not assigned to Eisenhower's command, the supreme commander had to step lightly in efforts to coordinate the various air organizations. Weeks of intense negotiations and a threat to resign bought for Eisenhower an informal scheme of control centered on his deputy. "I will exert direct *supervision* of all air forces— through you", he explained to Tedder, "authorizing you to use headquarters facilities now existing to make your control effective. L. M.'s [Leigh-Mallory's] position would not be changed so far as *assigned forces* are concerned but those *attached* for definite periods or definite jobs would not come under his *command*" (emphasis in original).³⁴

Eisenhower had managed to place the strategic air forces within his orbit yet beyond the reach of Leigh-Mallory — but at a high price since this scheme left Eisenhower without a single air commander. Henceforth, the supreme commander coordinated his air operations through three clearly independent air organizations: US Strategic Air Forces in Europe, RAF Bomber Command, and the AEA. The absence of a single air commander resulted in an air plan that integrated various invasion tasks in an uncertain and tentative manner. A mere week before the invasion, Leigh-Mallory felt obliged to remind Spaatz of the D-day targets "which it is desired you attack", recalling that "you or one of your representatives have agreed" to supply convoy cover and armed reconnaissance for the land forces. Furthermore, Leigh-Mallory understood that Spaatz had "agreed" to participate in deception operations and "weather permitting" had acquiesced to striking railroad centers in the three days prior to D-day.³⁵ Such language resembled treaty negotiations among sovereign entities — not military commands under unified direction.

This command setup sometimes led to ineffective performance. On D-day, 1,200 Eighth Air Force bombers blasted Omaha Beach with a faulty plan: the planes dropped undersized bombs, and most bombardiers delayed their bomb drops over the coast anywhere from five to 30 seconds, ensuring that most ordnance fell far inland of aiming points. Although many people understood that such a plan would render the bombing impotent, Overlord had no airman who could leverage command authority to change it or cancel the bombers' participation. As a result, "the immediate beach areas showed only limited evidence of bombing damage", and the strike failed to impair seriously the first line of German defenders — its professed objective.³⁶

After Allied forces reached the far shore, each nation's tactical air operations worked well as long as sorties conformed to national boundaries. In the weeks after D-day, Coningham used his supernumerary authority over the tactical forces to deconflict missions, and both tactical air forces developed an awesome capacity to assist ground troops. Free from issues of national pride and prejudice, each air force concentrated on increasingly successful battlefield interdiction and CAS operations. By late June, Allied fighter-bomber effectiveness had led to a rare confluence of views at all levels of the German field command: the senior German commander in France, Field Marshal Gerd von Rundstedt, described his rear areas as a "traffic desert"; Rommel, his immediate subordinate, told Berlin "there was simply no answer" to Allied airpower in Normandy; and rank-and-file Wehrmacht soldiers took to calling Allied fighter-bombers the "most terrible weapon".³⁷ To anyone who cared to look, tactical air operations in Normandy gave the lie to the idea that only heavy bombers could exert a strategic influence on the course of the war.

Two young flag officers working along the seams between operational and tactical command made much of this possible. In the British zone, Air Vice-Marshal Harry Broadhurst, who commanded the No 83 Group within Coningham's air force, was instrumental in smoothing air-ground relationships that had soured among Commonwealth commanders. Leigh-Mallory, who

Canadian troops who had marked their positions with red smoke were bombed by American aircraft because in the US scheme, such a signal denoted enemy targets

never gained the confidence of fellow air leaders, felt that Tedder and Coningham often bypassed him in a conspiracy to deny the British Army the air support it deserved. That perception was a stretch, but Overlord's convoluted air setup made it difficult to keep strict faith with the chain of command, even within a national sector. For his part, Montgomery, who now commanded the 21st Army Group, sometimes blamed poor air support for his troops' sluggish pace of advance, eventually concluding that Coningham was "a bad man [and] not genuine and terribly jealous". In Montgomery's view, all this bickering usually came to naught, but not before "several hours a day are wasted in argument with the opposing camps, and in ensuring that the air jealousies do not lose us the battle".³⁸ More often than not, it fell to Broadhurst to smooth over these quarrels. A fighter pilot of great experience, Broadhurst "earned the affection and respect of all" with whom he worked. He was as responsible as anyone for the effective marrying of air and ground operations in the British sector.³⁹

Maj Gen Elwood R. 'Pete' Quesada was Broadhurst's analog along the American front. Like Coningham, he had come to the European fighting with an open mind about airpower's place in war. Once there, he fostered myriad innovations in tactical aviation, including the development of armored-column cover that aided Patton's breathtaking pursuit of retreating Germans in August. Like Broadhurst, Quesada nurtured good relations with ground commanders. Lt Gen Omar Bradley, the senior American ground soldier in Normandy, believed that Quesada was a 'jewel' and others agreed: "Nothing conventional about Quesada", remembered one soldier. "When he talks power, he means everything but the kitchen sink". Three weeks into the Normandy fighting, the consensus within the American Army in Normandy was that "Quesada was a fine unpretentious field soldier who has done more than anyone else to bring air and ground closer together in this operation".⁴⁰

Broadhurst and Quesada were responsible for one of the very few instances of effective air integration in Normandy. In early August 1944, as Patton raced into Brittany, the Germans nearly cut his supply lines at Arromanches. Reacting to the emergency,

Broadhurst and Quesada devised a plan whereby British Typhoons interdicted German armored columns and American P-47s provided close support to US troops suddenly surrounded near the small town of Mortain. Together with dogged determination from the soldiers, Allied fighter-bombers succeeded in safeguarding Patton's communications. Looking back, Coningham believed that the battle constituted one of the war's best examples of tactical aviation: "It proved that a Tactical Air Force may be a decisive battle-winning factor, and it showed the smooth coordination of air effort which could be achieved at short notice by the teamwork which had been perfected between the 9th Air Force and the 2nd [Tactical Air Force]."⁴¹

Yet the battle at Mortain represented an emergency demanding an Allied reaction; in battles of their own choosing, the Anglo-Americans rarely integrated their tactical air forces in Western Europe. This neglect sometimes had disastrous consequences. In the middle of August, the Allies tried to bag a large salient of German forces near Falaise. Tightening the noose around the Germans required Patton's force to swing around and come up against Montgomery's Commonwealth troops, a delicate move that flirted with fratricide on a large scale. Because Anglo-American pilots had worked side by side rather than together, the British and American CAS schemes were different enough to court tragedy as the Allies closed on each other. On 16 August, Canadian troops who had marked their positions with red smoke were bombed by American aircraft because in the US scheme, such a signal denoted enemy targets. Two days later, a British unit reported 40 instances of accidental attacks by American flyers. With no effective integration of air forces, the Allies proved incapable of pressing the air battle into the salient. Partly for this reason, Allied leaders called off attempts to cut retreat routes and capture the Germans. As a result, nearly 100,000 enemy soldiers escaped to fight another day.

Integrated aviation could have mitigated this debacle by blurring the seam between national boundaries. Instead, air operations based on deconfliction made airpower as sensitive to army boundaries as ground combat, and the potential



A USAF Phantom over Vietnam

In Korea and Vietnam, the Air Force, Navy, and Marine Corps divvied airspace among them in a manner that denied airpower's flexibility

for mistaken killing in the air became as great as that from friendly fire across infantry units — in this case, more real. After the war, Coningham deemed it “unfortunate that a national Army Group boundary coincided with the pocket”.⁴² But failure at Falaise was not so much a matter of fortune as design. Air leaders codified their operations along national lines, just as the soldiers had done, in a misguided attempt to provide effective close support. In the process, pilots made airpower more — not less — like ground power, robbing the joint and combined campaign of the synergy that overlapping instruments of war can bring to the battlefield.

The Allies never did fix this problem in World War II. Instances of close cooperation occurred, as during missions supporting Operation Market Garden or during the Battle of the Bulge, when

Montgomery took command of an entire American army and its supporting air forces. But these were either failures or emergencies — sometimes both. As a matter of method and design, the Anglo-Americans hewed to the belief that separating tactical air forces along national lines best leveraged airpower. Throughout the war, the Allies never had a mechanism by which the broad and varied activity of an air campaign was centrally conceived, planned, executed, and assessed. The RAF's official historian believed that the air setup in place demonstrated “the weakness of the committee technique”.⁴³ According to official American chroniclers, the system worked “not so much because of its structure as because of the good sense and proper spirit of top British and American commanders”.⁴⁴

Conclusion

This view is overly sympathetic. Certainly, tactical aviation was important to Allied success in World War II — it is hard to imagine victory without it. Still, air operations in support of ground forces could have been better, especially when circumstances required operating across national boundaries. Perhaps this amounts to quibbling with success, but nations with traditions of military victory must nitpick if they hope to learn from the past.

Unfortunately, in the case of tactical air operations, neither country did so in the years following World War II. The emergent Cold War put a premium on strategic airpower and consigned practitioners of tactical aviation to backwater commands. In Britain the Air Ministry made Coningham head of RAF Flying Training Command, a move that many commentators found curious. Opined the *London News Chronicle*, “One of the greatest air generals Britain has produced is being relegated to a comparatively minor command and will not have a voice on the Air Council” — the RAF’s policy body.⁴⁵ In the United States, Pete Quesada held a succession of gratuitous, dead-end jobs after a brief stint leading Tactical Air Command. He finally resigned his commission in frustration after the newly independent Air Force assigned him the suicidal task of folding the Air National Guard and Air Reserves into one organization.

Throughout much of the Cold War, the air forces in Britain and America hewed fast to the idea of deconfliction in air operations. For the United States, this inclination extended to joint as well as combined operations. In Korea and Vietnam, the Air Force, Navy, and Marine Corps divvied airspace among them in a manner that denied airpower’s flexibility. More recently, technology promises both to enable and deny integrated operations: the digital battlespace potentially makes air operations more malleable by making airspace more seamless, but the technological divide between prospective coalition partners fosters an enduring practice of nation-specific air tasking orders in the manner of World War II’s Redline.

Today, it is commonplace to proclaim airpower’s inherent adaptability in war, and flexibility and versatility are ubiquitous in descriptions of airpower. But the history of tactical air operations in World War II suggests that this elasticity is not intrinsic to airpower — even as it is undeniably one of aviation’s great capacities. Flexibility and versatility do not reside naturally or inherently in air operations. They must be nurtured within sound C2 arrangements, appropriate organizational forms, relevant concepts of operations, and suitable applications of technology. Airpower has great adaptive facility, but it is not innately adaptive. That connection must be made purposefully.

Notes

- 1 Both US Air Force and British Royal Air Force doctrine use these terms. In the American view, flexibility and versatility are fundamental ‘tenets of airpower’; for the British, they are ‘enduring factors’ of military aviation. Air Force Doctrine Document (AFDD) 1, Air Force Basic Doctrine, 17 November 2003, iii; and AP3000, British Air Power Doctrine, 3rd ed, 1999, 1.2.3-1.2.4
- 2 Generally, in this article tactical aviation refers to air operations in support of ground forces, a definition common in the 1930s and 1940s. Specifically, the article concerns itself with close air support and interdiction missions — less so with airborne, troop-transport, air-supply, and reconnaissance operations.
- 3 John Kennedy, *The Business of War: The War Narrative of Major-General Sir John Kennedy*, ed. Bernard Fergusson (London: Hutchinson, 1957), 107; and memorandum for record, 21 November 1939, Air 35/214, Public Record Office, Kew, England (hereafter PRO).
- 4 Arnold cited in Lee Kennett, *Developments to 1939*, in *Case Studies in the Development of Close Air Support*, ed. Benjamin Franklin Cooling (Washington, DC: Office of Air Force History, 1990), 48. The US Army Air Corps also largely ignored the US Marine Corps’s rich and varied experience with air support in Nicaragua during the interwar period.
- 5 Arthur Coningham, *The Development of Tactical Air Forces*, Royal United Services Institute for Defence Studies (RUSI) Journal 91 (1946): 212.
- 6 Will Jacobs, *Air Support for the British Army, 1939-1943*, *Military Affairs*, December 1982, 174.
- 7 Both versions of WDTR 440-15 cited in Frank Futrell, *Ideas, Concepts, Doctrine: Basic Thinking in the United States Air Force*, vol 1, 1907-1960 (Maxwell AFB, AL: Air University Press, 1989), 41, 77. Similarly, the last peacetime version of Field Manual (FM) 1-5, *Employment of Aviation of the Army*, 15 April 1940, stressed

operations designed to “defeat important elements of the enemy armed forces” (quoted in Col Phillip S. Meilinger, USAF, retired, *Airpower: Myths and Facts* [Maxwell AFB, AL: Air University Press, 2003], 19. For a close explication of prewar US Army doctrine relating to aerial operations, see Daniel R. Mortensen, *A Pattern for Joint Operations: World War II Close Air Support, North Africa* (Washington, DC: Office of Air Force History and US Army Center of Military History, 1987).

8 Churchill cited in Will Jacobs, *Air Support for the British Army, 1939-1943*, *Military Affairs*, December 1982, 179.

9 Mortensen, *Pattern for Joint Operations*, 7, 20.

10 Vincent Orange, *Coningham: A Biography of Air Marshal Sir Arthur Coningham* (Washington, DC: Center for Air Force History, 1992), 34.

11 Coningham, *Development of Tactical Air Forces*, 213.

12 *Ibid.*

13 *Ibid.*, 215.

14 Orange, *Coningham*, 134.

15 Mortensen, *Pattern for Joint Operations*, 63.

16 *Ibid.*, 50.

17 Notes on Africa, photo album, box 1722, Hugh Lloyd Papers, RAF Museum, Hendon, England.

18 Thomas Alexander Hughes, *Over Lord: General Pete Quesada and the Triumph of Tactical Air Power in World War II* (New York: Free Press, 1995), 94.

19 Mortensen, *Pattern for Joint Operations*, 78.

20 FM 100-20, *Command and Employment of Air Power*, 21 July 1943, 3.

21 William Momyer, *Air Power in Three Wars* (Washington, DC: Department of the Air Force, 1978), 10.

22 Wesley Frank Craven and James Lea Cate, eds, *The Army Air Forces in World War II*, vol 2, *Europe: Torch to Pointblank*, August 1942 to December 1943 (1949; new imprint, Washington, DC: Office of Air Force History, 1983), 444.

23 Martin Blumenson, *The Patton Papers*, vol 2 (Boston: Houghton Mifflin, 1972-1974), 254.

24 Alfred D. Chandler Jr et al, eds, *The Papers of Dwight David Eisenhower*, vol. 2, *Eisenhower to Marshall*, July 18, 1943 (Baltimore: Johns Hopkins University Press, 1970), 1263-64.

25 Notes on Africa. See also Hughes, *Over Lord*, 87-94; and Minutes of the Air Officer Commanding, Northwest African Coastal Air Force, nd, Air 24/1239, PRO.

26 Chandler et al, eds, *Papers of Dwight David Eisenhower*, vol. 2, *Eisenhower to Marshall*, 1263-64.

27 Spaatz cited in Richard G Davis, Carl A Spaatz and the Air War in Europe (Washington, DC: Smithsonian Institution Press, 1992), 248.

28 *Ibid.*

29 Orange, *Coningham*, 166-68.

30 *Ibid.*, 165.

31 Coningham, *Development of Tactical Air Forces*, 216.

32 Orange, *Coningham*, 187.

33 Davis, Carl A. Spaatz, 355.

34 Alfred D Chandler Jr et al, eds, *Papers of Dwight David Eisenhower*, vol 3, *Eisenhower to Tedder*, 29 February 1944 (Baltimore: Johns Hopkins University Press, 1970), 1755-56.

35 Leigh-Mallory to Spaatz, letter, 1 June 1944, US Air Force Historical Research Agency, Maxwell AFB, AL (hereafter AFHRA), 521.451, June 1944.

36 After-Action Report, Eighth Air Force: Tactical Operations in Support of Allied Landings in Normandy, 2 June-17 June 1944, 9, AFHRA, 521.451, June 1944. This and the preceding three paragraphs are drawn largely from Dr. Thomas Alexander Hughes, *Normandy: A Modern Air Campaign?* *Air and Space Power Journal* 17, no. 4 (Winter 2003): 16-29.

37 Rundstedt cited in POW Interviews, Rundstedt, 20 May 1945, Sheffield Edwards Papers, US Army Military History Institute, Carlisle Barracks, PA; others cited in Hughes, *Over Lord*, 151.

38 Montgomery cited in Nigel Hamilton, *Master of the Battlefield: Monty's War Years, 1942-1944* (New York: McGraw-Hill, 1983), 692-93.

39 Max Hastings, *Overlord: D-Day and the Battle for Normandy*, 1944 (New York: Simon and Schuster, 1984), 271.

40 All cited in Hughes, *Over Lord*, 157.

41 Coningham cited in Orange, *Coningham*, 208.

42 Coningham, *Development of Tactical Air Forces*, 216.

43 Hilary St George Saunders, *The Royal Air Force, 1939-1945*, vol 3, *The Fight Is Won* (London: Her Majesty's Stationery Office, 1954), 82.

44 Wesley Frank Craven and James Lea Cate, eds, *The Army Air Forces in World War II*, vol 3, *Europe: Argument to V-E Day*, January 1944 to May 1945 (1951; new imprint, Washington, DC: Office of Air Force History, 1983), 83.

45 London News Chronicle, 31 July 1945, cited in Orange, *Coningham*, 240.





The UK and US have participated in many joint exercises. Here, an RAF Vulcan flies alongside a US B52 over Edwards AFB.

Anglo-American Strategic Air Power Co-operation in the Cold War and beyond

By Gp Capt Chris Finn & Lt Col Paul Berg

British and American airmen have been co-operating extensively in the field of strategic air power since before World War II when shared endeavours, such as the combined bomber offensive against Nazi Germany set a precedent for close partnership. After World War II, the Cold War framed air power relations between the two countries and the Royal Air Force (RAF) and United States Air Force (USAF) were the key players. The Cold War shaped the relationship until about 1990 but the two services continue to enjoy an exceptionally close affiliation today. Anglo-American air power co-operation serves as an excellent model of successful coalition relations, and reflects the evolution of current concepts such as expeditionary air power and effects-based operations.

The Anglo-American alliance is perhaps the ultimate example of a 'coalition of the willing', but why have British and American airmen had such an enduring propensity to work together? On one level their friendship has reflected the long-term political alliance between their two countries based on shared strategic interests. Within alliances British and American airmen have pooled their resources to oppose common enemies ever since they fought the Central Powers in World War I. The Axis Powers were their common foe during World War II and the Soviet Union filled that role during the Cold War. However, the Anglo-American air power relationship transcends opposition to shared enemies. In today's complex world foes are less clearly defined, yet the two air forces still integrate their operations remarkably



British and American planes fly in supplies to Berlin during the blockade

Today's RAF and USAF doctrines recognize the 1948-1949 Berlin Airlift, a combined Anglo-American operation, as an example of how non-combat air operations can produce strategic effects

closely. Several factors might help account for the ongoing rapport. Simple force of habit is one possible explanation. The services have co-ordinated closely for so long that they have become habituated to working together. Personal friendships may be another contributing factor. Generations of airmen have served together and formed close bonds during exercises and while stationed in each other's countries. Personnel exchange tours have long been a staple of the relationship between the two air forces. A common language has also facilitated friendly relations. Yet none of these explanations really accounts for the depth of the special relationship between British and American airmen. The RAF-USAF partnership has experienced vicissitudes over the years but, like a healthy marriage, has weathered the storms. As both nations seek coalition partners today and in the future their airmen can profit from a retrospective study of their affiliation.

This article will examine Anglo-American strategic airpower relations since World War II by considering the areas of planning and operations; organization and basing — particularly of US units in the UK; equipment — especially aircraft, missiles, and munitions; and finally joint training. However, the term 'strategic air power' requires clarification. During the Cold War the idea that "strategic meant nuclear" was prevalent,¹ but US-UK air power activities have shown the limitation of that notion. The US has indeed often stationed nuclear-capable bombers and missiles at British bases since the 1940s. In a remarkable display of trust, the US even equipped the RAF with bombers and, later, nuclear weapons whilst the UK built its own nuclear capabilities. Today's airmen understand that the term 'strategic' refers not to particular weapon systems, but to the level of effects those systems produce. This article discusses air and space power capable of

producing effects that “influence activities at the strategic level of war and focus on national and multinational military objectives.”² For example, today’s RAF and USAF doctrines recognize the 1948-1949 Berlin Airlift, a combined Anglo-American operation, as an example of how non-combat air operations can produce strategic effects.³ Indeed, non-combat activities such as training and equipment have been central to US-UK airpower cooperation since World War I. As Sebastian Cox explains in his article in this journal,⁴ America provided training bases for the Royal Flying Corps (RFC) (renamed the RAF in April 1917) in return for British equipment and assistance with squadron combat work-ups of US Army Air Service squadrons on the Western Front in 1917 and 1918. First World War cooperation set the precedent for Second World War cooperation, when, for four years, the Royal Air Force and the US Army Air Forces (USAAF) worked together in North Africa, Sicily, Italy and, finally, the invasion of Europe. The so called strategic air forces, Bomber Command and the Eighth Air Force, started working together in 1942 on what came to be called the Combined Bomber Offensive.

Anglo-American airpower activities waned in the immediate aftermath of the war. By the end of 1945 there were 740 military airfields and dispersed operating sites in the United Kingdom, of which 159 were at some time occupied by USAAF units. By the end of 1946 the last USAAF unit departed for the United States, however the Visiting Forces Act of 1942 remained extant. The first significant instance of postwar US-UK airpower cooperation occurred in January 1946 when General Carl Spaatz, Commanding General of the Army Air Force, and the new Chief of the Air Staff (CAS), Marshal of the Royal Air Force (MRAF) the Lord Tedder, were visiting USAF bases in Britain that were about to close. Already worried about the looming Soviet threat, Tedder agreed to Spaatz’s request to have five RAF bases — Marham, Lakenheath, Scampton, Bassingbourne and Mildenhall — prepared for possible use by USAAF B-29s if required. The RAF would use its own funds to do the necessary construction work.⁵ David Campbell, who puts the date of the Spaatz and Tedder visit as June/July 1946, makes the point that the “agreement was struck between

the officials without public discussion or political debate of the momentous issues involved”.⁶ The formation of the United States’ Strategic Air Command (SAC) on 21 March 1946 marked another significant milestone because SAC would soon become a focal point for US-UK nuclear cooperation throughout the Cold War. Coincident with the formation of SAC, a number of Boeing B-29 Super Fortresses and B-17 Flying Fortresses went to RAF Marham to take part in Trial RUBY alongside the Lincolns of the RAF Central Bomber Establishment. Trial RUBY was to lead to the development of the radio-controlled AZON, RAZON and TARZON bombs, the last of which was based upon the 12,000 lb RAF Tallboy bomb casing.⁷ These early precision-guided munitions were subsequently used against bridge and reservoir targets during the Korean War.⁸ The 18 September 1947 establishment of the US Air Force was a momentous event for American airmen, but had little obvious effect on Anglo-American airpower relations.

Spaatz’s and Tedder’s fears about Soviet intentions were vindicated on 1 April 1948 when the Soviets imposed a blockade on Berlin. The Berlin Airlift that followed fostered a dramatic renaissance in Anglo-American airpower relations, but the fact that the two nations flew almost all the airlift missions to Berlin was only the most obvious part of the story. Whilst the story of the Berlin Airlift is generally well known, and was covered in a recent article in *Air Power Review*⁹, what is less well known is the deployment of SAC B-29s to the United Kingdom in a display of Anglo-American resolve.¹⁰ On 17 and 18 July 1948, B-29s of the 29th and 307th Bomb Groups arrived at Marham, Scampton and Waddington, with another Bomb Group arriving at Lakenheath in August. Whilst the B-29s were not nuclear equipped, the Soviets saw them as nuclear capable. The Third Air Division (Provisional) was formed to command these units for what was expected to be only a 30-60 day detachment. However, it soon became apparent that the deployment would be long-lasting so on 23 August 1948 the Provisional title was dropped. The Third Air Division moved into Bushey Park air station on 8 September,¹¹ During the build-up, the British supplied the Americans with airfields and facilities free of charge with



Most American and British airmen viewed the B-29, the plane that had bombed Hiroshima and Nagasaki, as the symbol of strategic airpower during the incipient phase of the Cold War

the proviso that the expenditure should not exceed the normal costs of RAF requirements and standards.¹² On 13 November 1948 the temporary status of USAF units in Britain ended with the agreement between the Air Ministry and the USAF that the long-term American use of stations in Britain should be assumed.¹³ This arrangement was regularised on 4 January 1949 when Major General M W Johnson, Commander, Third Air Division, received the “financial agreement for supplies and services in the United Kingdom” from the Air Ministry.¹⁴ During the same period (on 12 November 1948) the CAS wrote to the Head of Air Force Staff British Joint-Services’ Mission, Washington asking him to investigate the possibility of obtaining some B-29s for the RAF as interim replacements for the Lincoln¹⁵ bomber. The new USAF’s Military Air Transport Service (MATS) and the RAF’s Transport Command bore the brunt of the Berlin Airlift so SAC bomber deployments were relatively ‘small beer’, yet few air operations in history can boast of greater strategic success than the Berlin Airlift. Recognizing that British-American airpower could supply Berlin indefinitely while portraying the Western allies as feeding people the Soviets

were trying to starve into submission, the Soviets ended their blockade in 1949. At about that same time, the US, UK, Canada, and nine other nations established NATO, the military alliance that would form a centrepiece of the Cold War. Indeed, the Berlin Airlift set in motion Anglo-American airpower arrangements that would endure for many years.

Although airlift planes flew the Berlin Airlift, most American and British airmen viewed the B-29, the plane that had bombed Hiroshima and Nagasaki, as the symbol of strategic airpower during the incipient phase of the Cold War. Airmen therefore sought to demonstrate their bombing prowess with the B-29. In May 1948, shortly before the Berlin Airlift began, SAC Deputy Commander Major General Clements McMullen announced the inception of a bombing competition to encourage SAC crews to develop their navigational and weapon aiming accuracies. In June 1948, three crews from each of SACs 10 B-29 groups met at Castle Air Force Base, California, to compete in the command’s first bombing competition. The competition was a very simple one where each crew was required to drop three visual and



On 22 March 1950, the first B-29s to be provided to the RAF under the Mutual Defence Assistance Programme (MDAP) arrived at RAF Marham

three radar-laid bombs from 25,000 feet. The disappointing results, with Groups' Circular Error Averages (CEAs) ranging from 1,065 feet to 2,985 feet, led General Curtis E LeMay, when he took command of SAC in October 1948, to embark on his hard-driving professional reforms to ensure the accurate delivery of nuclear weapons, which was to be the Command's primary role in case of war.¹⁶ The SAC bombing and navigation competition became an annual event, but was a US only affair until 1951 when two RAF Washingtons (B-29s) participated. At the end of 1951, SAC aircraft deployed to Sculthorpe to participate in the Bomber Command bombing competition.¹⁷ Meanwhile, the two air forces conducted combined air exercises, such as Operation DAGGER, the first joint RAF-USAF air defence exercise, which happened in the UK in September 1948.¹⁸

The Korean War punctuated the second half of the Cold War's B-29 era, but a number of British-American airpower events preceded the outbreak of fighting. In October 1949, the ABC Conference in Washington reached a significant decision when the American, British and Canadian representatives agreed that the air defence of Great Britain would be an RAF responsibility, whilst the USAF would increase the number of bomber units operating from UK bases. This decision was made only days after the first Soviet atomic explosion was reported.¹⁹ On 22 March 1950, the first B-

29s to be provided to the RAF under the Mutual Defence Assistance Programme (MDAP) arrived at RAF Marham. The following month, the US Ambassador and the UK Under Secretary of state for Air agreed that, because East Anglian bases were deemed too vulnerable to Soviet air attack, four Midlands bases at Upper Heyford, Greenham Common, Brize Norton and Fairford should be developed for SAC use. Whilst the initial tranche of 70 B-29s was delivered, the second tranche was reduced from 124 to 17 due to the demands of the Korean War, which started in June 1950,²⁰ and the entry into service of the Canberra bomber in 1951. This latter aircraft was to provide a rare example of American licence production of a British aircraft, where as the Martin B-57, it later saw service in Vietnam. On 16 January 1951, six of SACs new B-36 strategic bombers were deployed to the United Kingdom in just 4 days.²¹

The Korean War era coincided with the commencement of strategic reconnaissance operations from the UK, initially using the RB-36D model, which sometimes staged through Mildenhall, Lakenheath and Sculthorpe.²² Aerial reconnaissance of the USSR and Eastern Europe quickly became a perennial Cold War activity that entailed very close Anglo-American cooperation. In May 1954, B-47 reconnaissance operations commenced from Fairford²³ solidifying the pattern of Cold War reconnaissance operations from the



These planes fought a protracted and sometimes deadly war in the shadows to gather information about military developments in Soviet-controlled territory

UK that would continue with aircraft such as the U-2, SR-71, RC-135, and specially modified C-130s. These planes fought a protracted and sometimes deadly war in the shadows to gather information about military developments in Soviet-controlled territory.

The increasing US presence in the United Kingdom was recognised by the inception of the Special Construction Programme in February 1951 and the Visiting Forces Act of 1952. The Special Construction Programme called for an additional

26 USAF bases to be established in the United Kingdom.²⁴ On 20 March 1951 the 7th Air Division (SAC) formed at South Ruislip as a SAC Command in the United Kingdom.²⁵ More importantly, on 1 May 1951 the Third Air Division was upgraded to the Third Air Force and the subsequent 'Joint Transfer Agreement' established the relationship between the United States Air Force in Europe (USAFE) and SAC responsibilities in the United Kingdom.²⁶ As a result of the additional bases programme, and the USAFE-SAC split, Upper Heyford, Greenham Common and Brize Norton's

Things were finally changing for RAF Bomber Command with the 1955 entry into service of the first of the strategic jet bombers or 'V-Bombers'

runways were extended and B-36 deployments to those bases commenced in 1952.²⁷ The Visiting Forces Act of 1952 stemmed from a 1952 Churchill-Truman protocol for joint consultation on the use of British-based US forces. The Act was the British part of the NATO Status of Forces Agreement and remains in effect today.²⁸

The period from 1952-1966 was characterized by nuclear co-operation and the introduction of jet aircraft. The first example was the loan, actually starting in 1951, to the Royal Air Force of four RB-45Cs for what was known as the Special Duties Flight.²⁹ In April 1952 and again two years later this reconnaissance unit performed radar photography over the Soviet zone of Germany and latterly over the Kiev area of the USSR itself, gathering information that would have helped bombers find targets in the event of war. June 1953 saw the first SAC B-47 Wing (306th Bomb Wing) deployed to Fairford marking the end of the B-29 wing rotations. Three months later, a UK-US agreement was signed by the Secretary of State for Air and the US Ambassador, which consolidated previous construction agreements and, perhaps more importantly, established a cost-sharing basis.³⁰ The end of the Korean War in 1953 had little noticeable effect on the USAF's build-up in Europe. American concerns that the aftermath of the Korean War could escalate into a nuclear conflict with both China and the USSR, stimulated by the destruction of two US reconnaissance aircraft by Chinese fighters in the summer of 1954, caused the USAF to be placed on a high alert state. The alert posture generated tensions between the USAF and their British hosts. The intensity of flying and the potential for disastrous outcomes were exemplified when a B-47 crashed 1 1/2 miles from Upper Heyford, leading to considerable protest from local communities.³¹ At the same time, USAF nuclear weapons were brought to the UK for the first time and stored on both USAF and SAC bases.

However, as the American nuclear deterrent became established, Cold War tensions shifted and there were significant changes in the USAF posture between 1955 and 1958. In Britain, the emphasis was much more on the tactical forces of USAF and, as a result of concerns about the vulnerability

of the UK to Soviet attack,³² the 7th Air Division strength was reduced by almost half. In 1955 90-day SAC bomber rotational operations switched to much shorter ones, simulating post-strike recovery to UK bases.³³ One result was Plan 57-3, the 'Big Shuffle', which involved closing 10 bases in a consolidation of both USAF and SAC ops onto main operating bases and returning a myriad of other units to Air Ministry control.³⁴ The final step in this process was the 8 January 1958 commencement of the SAC REFLEX operations at both Greenham Common and Fairford,³⁵ which involved small numbers of aircraft from several wings rather than complete wing deployments. B-47s involved in these deployments took part in two major air defence exercises, BUCK BOARD and GRAB HOOK, in which B-47s flying at 35-40,000 feet approached the UK on realistic threat axes to be intercepted by the Hawker Hunter F6s of Fighter Command.³⁶

Whilst US nuclear weapons were being deployed in the UK and the SAC posture was shifting, things were finally changing for RAF Bomber Command with the 1955 entry into service of the first of the strategic jet bombers or 'V-Bombers', the Valiant, and with the decision in July of the previous year that a UK thermo-nuclear bomb should be produced.³⁷ If the two air forces were to gain maximum advantage from increasing RAF bombing capabilities, they needed closer coordination of their nuclear planning. A September 1955 meeting between the CAS, MRAF Sir William Dixon, and the Chief of Staff USAF (CSAF) General Nathan F Twining, sowed the seeds for integrated Anglo-American nuclear targeting, not least to avoid wasteful duplication of effort. Subsequently, a team of senior USAF officers visited the Air Ministry in London to discuss the provision of American nuclear weapons for the V-Force in the event of war and the co-ordination of nuclear strike plans.³⁸ These offers were finalised in a note from the American Secretary of Defense, Mr Charles Wilson, to his opposite number, Mr Duncan Sandys, which stated:

"I agree that it is appropriate for you to authorize the Chief of the British Air Staff to discuss with the Chief of Staff of the United States Air Force and with General Lauris Norstad (SACEUR) the



In all, 20 IRBM sites, all ex-World War II airfields, which in some cases had for a second time been requisitioned from their owners, were established in the UK

A Douglas Thor Intermediate-Range Ballistic Missile (IRBM) of No 77 Squadron – the first of 20 Thor squadrons to be formed within the RAF Bomber Command – being raised into launch position, RAF Feltwell, February 1960

Picture AHB (RAF)

arrangement for implementing measures:

1. To furnish the Royal Air Force with United States atomic bombs in the event of general war; and
2. To co-ordinate the atomic strike plans of the United States Air Force with the Royal Air Force".³⁹

This offer was then followed up by an exchange of memoranda between CSAF to RAF CAS and more detailed discussions including plans for providing US nuclear weapons for NATO.⁴⁰ As a result of these meetings, a fully integrated nuclear war plan was produced by Bomber Command and SAC

staffs "taking into account Bomber Command's ability to be on target in the first wave several hours in advance of the main SAC force operating from bases in the United States".⁴¹ In this initial plan, which was to be reviewed annually, Bomber Command was allocated 106 targets. However, Anglo-American nuclear planners faced the problem that neither SAC nor Bomber Command was willing, or indeed able, to reveal to its partners the yields of the weapons allocated to specific targets, leading to a comment in 1960 by the Air Officer Commanding in Chief Bomber

Command, Air Marshal Sir Kenneth Cross, that “in this area alone there is a barrier to co-ordination and duplication and wastage is inevitable until American legislation is altered”.⁴² What made this cooperative venture even more remarkable was that it proceeded despite the 1956 Suez Crisis when Britain, France, and Israel intervened in Egypt to prevent Egyptian President Nasser from nationalizing the Suez Canal. American President Eisenhower strongly condemned the venture and, following American diplomatic and financial pressure, the British, French, and Israelis aborted the operation. The Suez Crisis was clearly a rough spot in US-UK relations, but fortunately proved only a temporary problem.

One brighter aspect of weapons co-operation was ‘Project E’, by which US nuclear weapons would be provided for carriage on the Valiant and the Canberra. The Valiant Force of 72 aircraft at Marham, Waddington and Honington was equipped with the US Mk 5 weapon.⁴³ The Mk 7 weapon was also provided for Canberras operating both within Bomber Command and RAF Germany.⁴⁴ This arrangement continued until 1963 for the weapons in Bomber Command and 1969 for those in RAF Germany. However, the weapons had to be under US national custody, which limited the ability of Bomber Command to disperse its assets.⁴⁵ This problem became significant when in response to the October 1962 Cuban missile crisis, the RAF’s tactical bomber force, which then comprised the three SACEUR-assigned Valiant squadrons at RAF Marham, was to be loaded with nuclear weapons. It rapidly became apparent that there were insufficient American custodial officers to maintain control of the weapons. In this case the Commanding General of USAFE allowed the weapons to be handed over to the Station Commander of RAF Marham, an act that exemplified the remarkable trust that had grown up between the two air forces by that time.⁴⁶

Nuclear weapons cooperation extended beyond aircraft systems. In what was perhaps a unique arrangement, the US loaned Britain 60 Thor Intermediate Range Ballistic Missiles (IRBMs) from 1959-1963, as covered in an inter-governmental agreement of 22 February 1958.⁴⁷ In all, 20 IRBM sites, all ex-World War II airfields, which in some

cases had for a second time been requisitioned from their owners, were established in the UK. The agreement provided that the missiles would be manned and operated by RAF units, that the nuclear warheads would again remain in American custody, and that a joint decision by both governments was required to launch the missiles. Whilst the United States would supply the missiles, specialised equipment and training for the RAF personnel, the British would provide the infrastructure at an estimated cost of £10 million.⁴⁸ The agreement was to last for only five years and in effect covered the gap while Britain fielded its own thermo-nuclear weapon. Thor had a range of some 1,500 miles with a nominal 1 megatonne warhead. To demonstrate the missiles’ effectiveness, training firings of missiles from the manufacturer and, later, proving firings of missiles drawn from operational RAF sites were conducted in the United States. A non-nuclear parallel to the Thor Agreement was the US funding of RAF Regiment Rapier short-range air defence squadrons from the mid-70s to the mid-90s to defend USAF main operating bases in the United Kingdom. A year after the Thor Agreement was signed, a further inter-governmental agreement permitted one of the three ballistic missile early warning system (BMEWS) stations to be built at Fylingdales in North Yorkshire.⁴⁹ Paradoxically Fylingdales became operational on 1 September 1963 just as the Thor sites were being deactivated.⁵⁰

Additional changes took place in the airpower realm during the late 1950s and early 1960s. The B-52 bomber had taken over as SAC’s primary nuclear alert aircraft,⁵¹ and the B-47s were now seen, rather like the Valiants, as medium bombers on 15 minute ground alert. The new KC-135 jet-powered aerial refuelling tankers replaced the propeller-driven KC-97 tankers, greatly extending bomber range. The B-52s took part in the SAC bombing competition for the first time in 1956 and after a four-year break the RAF returned in 1957 to compete with both Valiants and Vulcans.⁵² The following year two Valiant teams, each comprising two aircraft and four crews, competed with the B-52s and did particularly well, one placing seventh overall and the other twentieth out of 41 teams.⁵³ However, in 1959 and 1961 RAF Valiants and Vulcans, and then Vulcans only, participated

In July 1965, an order was placed for 158 General Dynamics lightweight terrain following radars for those aircraft, confirming the shift from high altitude to low altitude operations which was to become the hallmark of the RAF nuclear and conventional attack forces for the next 25 years

in Exercises EYE WASHER and SKY SHIELD respectively, these being United States and Canadian air defence exercises. In EYE WASHER, only one of the six RAF aircraft flying over Canada at 42,000 and 48,000 feet was intercepted.⁵⁴ Clearly, American and Canadian airmen had more work to do in the air defence realm.

If Project E and Thor marked the zenith of Anglo-American nuclear weapon co-operation, we now come to the nadir — Skybolt. In 1960 both the British and American nuclear programmes were becoming subject to the same constraints of cost, survivability of static missile sites, particularly in the United Kingdom and Europe, and of the survivability of aircraft at high level due to steadily improving Soviet surface-to-air missiles (SAM) and air defence fighters. A further concern for the British was the maintenance of an independent nuclear capability. To understand the significance of Skybolt, a brief explanation of the status of UK airborne nuclear weapons is necessary. As previously explained, the Valiants of the SACEUR-assigned tactical bomber force were equipped with American nuclear weapons. These aircraft were soon to be withdrawn from service due to airframe fatigue. The other V-bombers, the Vulcans and Victors, were armed with British-built bombs such as Blue Danube and the megaton yield Yellow Sun Mk 2.⁵⁵ Other Vulcan and Victor squadrons were equipped with the air-launched nuclear-tipped Mk 1 Blue Steel stand-off missile. An extended range Blue Steel was cancelled in January 1960,⁵⁶ as the UK did not have sufficient R&D capacity to develop that weapon and bring the Mk 1 Blue Steel into service simultaneously. Four days after the cancellation of extended-range Blue Steel,⁵⁷ the British ballistic missile, Blue Streak, was also cancelled on grounds both of cost and obsolescence. The cancellation of Blue Streak was also influenced by the potential of the American Skybolt design, an airborne-launched

ballistic missile, to provide a nuclear deterrent weapon launched from outside of Soviet fighter and SAM cover from airborne alert aircraft. After talks between the Prime Minister and President Eisenhower on 28-29 March 1960 at Camp David during which the Americans indicated their willingness to provide Britain the Skybolt, and potentially the submarine-launched Polaris missile as well, the British Government confirmed the cancellation of Blue Streak.⁵⁸ Yet little more than two years later, at the Nassau Conference in December 1962, President Kennedy formally notified Prime Minister McMillan of Skybolt's cancellation.⁵⁹ The technical and financial agreement of 27 September 1960 between the UK Ministry of Aviation and the US Department of the Air Force had committed both parties to the co-operative development of the Skybolt missile but interestingly stated that "It is understood that at this time this is purely a research and development programme, no production having been authorised by our authority".⁶⁰ Having burnt their bridges with regards to national alternatives, the British enthusiasm for the Skybolt project is understandable, but the program contained high technological and cost risks. Subsequently in an aide memoire to the UK Minister of Defence, Peter Thornycroft, the US Secretary of Defense, Robert McNamara, explained why the US Government had reached a 'tentative conclusion' that the Skybolt programme should be abandoned. Whilst other options, such as a UK-only Skybolt programme or an Anglo-French collaborative programme, were considered, the project was effectively dead once the Americans had decided to withdraw funding, thus Polaris was the only alternative. The implication for the RAF was that it lost the UK strategic deterrent role on 1 July 1967 when the submarine-launched Polaris missile became operational. Furthermore, because of the very short range of the Mk 1 Blue Steel, only 100 nautical miles from high altitude,⁶¹ it was clear

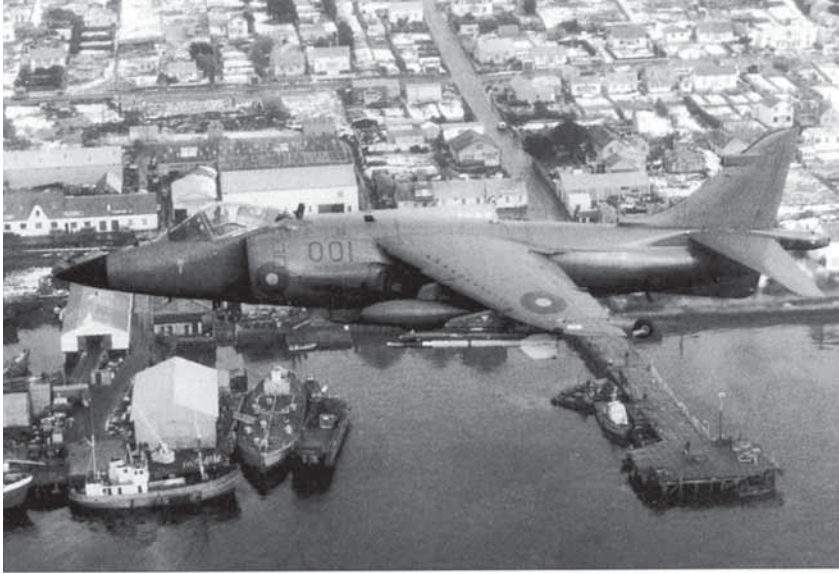
that a British-built bomb suitable for low-altitude delivery would be required for the Vulcans and Victors. Finally, in July 1965, an order was placed for 158 General Dynamics lightweight terrain following radars for those aircraft, confirming the shift from high altitude to low altitude operations which was to become the hallmark of the RAF nuclear and conventional attack forces for the next 25 years.

The early 1960s also saw changes in the planning and organization of nuclear operations, the first of these being the formation in August 1960 of the Joint Strategic Target Planning Staff (JSTPS) at HQ SAC at Offutt Air Force Base. The JSTPS's role was to produce and maintain a national strategic target list and the Single Integrated Operational Plan (SIOP). UK systems were included within this plan.⁶² Furthermore, on 23 May 1963 the RAF V-Force was formally assigned to SACEUR for targeting, planning and co-ordination execution of nuclear missions, in the NATO equivalent of the SIOP. On 1 April 1965 the SAC REFLEX operation detachments in the United Kingdom were terminated.⁶⁴ As a result of this, RAF Brize Norton was returned to RAF control but RAF Upper Heyford was retained for Third Air Force operations. The end of SAC's large-scale operations in the United Kingdom was marked on 30 June 1965 with the disbandment of SAC's 7th Air Division.⁶⁵ However, just before this, on 18 April 1965, for the second successive year, the Campaign for Nuclear Disarmament (CND) Sunday protest march passed the South and West Ruislip USAF bases. These anti-nuclear protests were foretastes of what was to come.

The late 1960s witnessed continued change and turbulence. US basing in the UK became a key issue again on 13 March 1966 when France announced its decision to withdraw from the NATO Integrated Military Structure, which meant all NATO HQ and forces were to leave France by 1 April 1967. Many of the US units displaced from France relocated to UK bases. Meanwhile, RAF Bomber Command merged with Fighter Command to form a new Strike Command on 30 April 1968. That RAF reorganization did not appreciably alter Anglo-American air or space power cooperation, but did foreshadow a

similar USAF reorganization that would occur 24 years later. American involvement in the Vietnam War was unpopular in Britain, yet the Anglo-American airpower relations remained cordial. Adjustments made in the late 1960s established the USAFE basing structure that remained almost unchanged for the final 25 years of the Cold War. One notable change was the June 1972 movement of Third Air Force to Mildenhall, where it remains today. However, the last move of new US forces into the UK would be entirely strategic in nature.

East-West tensions moderated slightly during the early 1970s as President Richard Nixon engaged in a policy of détente and arms control negotiations with the USSR, but the thaw proved temporary. The end of the Vietnam War in 1973 removed a point of US-UK tension. When the USAF began its Red Flag exercises, the RAF was invited to participate for the first time in August 1977, and has continued to do so ever since. That same year Soviet deployment of mobile SS-20 missiles upset the whole nuclear balance in Europe, leading to a NATO decision in 1979 to replace the Pershing Ia nuclear missiles based mostly in West Germany with the far more accurate Pershing II. In addition 464 Ground-launched Cruise Missiles (GLCMs) were to be deployed in a number of NATO nations, including the UK.⁶⁶ The 1979 Soviet invasion of Afghanistan contributed to President Carter's withdrawal from the SALT II negotiations, embargoing of wheat and technology exports and finally, in 1980, commencement of a massive force build up,⁶⁷ spelling the end of détente. The Pershing II and GLCM missile deployments were entirely in accord with the policies of both Presidents Carter and Reagan, who came to office in January 1981. As part of Reagan's policy to force the Soviets into an unwinnable arms race, the planned deployments of GLCM to Greenham Common and Molesworth met with significant protests, in particular the so-called 'peace camps' which were not limited to these two sites. RAF Regiment, RAF Police, Ministry of Defence police and civilian police forces all participated in extensive security operations around Greenham Common in particular, which received its first GLCMs in May 1983. Reagan's strategy eventually succeeded. Following the signing of various



Sea Harrier armed
with AIM-9L
Sidewinder missiles

The 1982 Falklands War between Argentina and Great Britain was a delicate matter for the Americans because it involved two nations that were friendly to the US. However, the US provided the UK with weapons such as the AIM-9L Sidewinder air-to-air missile and the Shrike anti-radiation missile

arms reduction agreements, the GLCMs were withdrawn in 1987, foreshadowing the end of the Cold War.

Anglo-American airpower cooperation continued during the Cold War's final years. The 1982 Falklands War between Argentina and Great Britain was a delicate matter for the Americans because it involved two nations that were friendly to the US. However, the US provided the UK with weapons such as the AIM-9L Sidewinder air-to-air missile and the Shrike anti-radiation missile. They also upgraded the infrastructure at Wideawake Airfield on Ascension Island and provided 12.5 million gallons of jet fuel. They also discretely provided intelligence data.⁶⁸ Finally, they deployed KC-135 tankers to Fairford and Mildenhall to cover the gap in NATO forces left by the UK deployment of Victor tankers to Ascension Island.⁶⁹ The quid-pro-quo came just four years

later on 14 April 1986 when the British supported the US Operation ELDORADO CANYON bombing raid against Libya. A response to a series of Libyan-sponsored terrorist attacks, the operation involved both the USAF and USN and included the deployment of 38 KC-10 and KC 135 tankers under the guise of a NATO exercise. In addition to the tankers, the UK-based attack force comprised 15 F-111s and 3 EF-111s.⁷⁰ The highly successful mission, which lasted over 12 hours, was only mounted after joint consultation and with the express permission of Prime Minister Margaret Thatcher.⁷¹

The end of the Cold War did not dim Anglo-American strategic airpower cooperation, but did change its nature. Nuclear cooperation received less emphasis as attention shifted to handling regional contingencies. American and British airmen seldom flew combat missions together

during the Cold War, but they did during the 1991 First Gulf War to eject Iraq from Kuwait. Here the years of training together, particularly on Exercises like RED FLAG, paid dividends with composite RAF/USAF formations being the norm and RAF aircrew integrating easily into the USAF Air Component HQ in Riyadh. The UK also permitted US bombers and other aircraft to use British facilities in the UK and on the British owned island of Diego Garcia in the Indian Ocean. Then on 1 June 1992, in a move reminiscent of the 1968 merger of RAF Bomber and Fighter Commands, the USAF Strategic Air Command merged with Tactical Air Command to form a new Air Combat Command. Like the 1968 RAF reorganization, that change had little apparent effect on US-UK relations. Although both the USAF and RAF underwent significant force cuts and base closings during the 1990s, close cooperation continued in response to crises in Bosnia and Kosovo.

The decade between the dissolution of the USSR in 1991 and the fateful events of 2001 turned out to be an interwar era that ended with American and British airmen once again confronting a common enemy — this time in the War on Terror. The RAF has continued to fly with US airmen and provide US access to bases in the UK, Cyprus and Diego Garcia during Operations Enduring Freedom in Afghanistan and Iraqi Freedom.

A number of trends emerge from the Anglo-American airpower cooperation track record since World War II. For one thing, the two countries have enjoyed an uncommonly close partnership for a long time. Common strategic interests in opposing foes like the USSR and international terrorists go a long way towards explaining the partnership. Combined planning, personnel exchanges, and training events like bombing competitions and Red Flag war games have honed US-UK coordination to a fine edge. British willingness to host US forces on their territory decade after decade and both nations' willingness to share equipment have reflected the depth of cooperation between the two nations. Only truly close friends share their ballistic missiles, bombers, and nuclear warheads. The weapons were often of American design, but the British Canberra bomber, which served in the USAF as the B-57, was an exception.⁷²

Anglo-American airpower relations have successfully weathered serious political tensions because leaders have focused on strategic goals. Basing US bombers and missiles on British soil certainly made Britain a target in the event of a nuclear war. British voters voiced their concerns so British politicians had to exercise strong leadership to follow through on agreements to host US aircraft and especially GLCMs. The bombers and tankers flew frequently, generating noise and air traffic congestion. Risky American reconnaissance flights flown from British airfields also tested the mettle of British political leaders. The GLCMs were a lightning rod for anti-nuclear protestors. Unfortunate political incidents like the 1956 Suez Crisis and the Skybolt missile cancellation in the 1960s tested relations, yet also proved the durability of the partnership. Other potentially disruptive events such as the establishment of the USAF in 1947, the Vietnam War, formation of Strike Command, and formation of Air Combat Command had minimal effect on US-UK airpower relations. These facts suggest senior US and UK political and military leaders have been focusing on the long-term strategic effects they wish to create in the world and have been able to overcome short-term problems.

The partnership has also reflected changes in the USAF view of expeditionary airpower. The Berlin Airlift included combat units deploying to forward operating locations for short periods. However, as the Cold War became entrenched, forward deployed bomber units transitioned to permanent forward garrisons. Ballistic missiles and longer-range air refuelled bombers heralded another shift in the 1960s when US bomber units redeployed from permanent bases in the UK to permanent bases in the US. Geography determined that most expeditionary aspects of US-UK airpower involved USAF units operating from British territory, but the RAF routinely flew exercises such as RED FLAG from US territory. The War on Terror has featured US air units staging from forward bases, sometimes in British territory, for short periods in a style reminiscent of the Berlin Airlift era. Whether the War on Terror devolves into a protracted Cold War-style affair with the USAF again settling into fixed forward operating bases remains to be seen.

The United States and Great Britain are true friends with continuing mutual interests so the future of their airpower relationship looks bright. The USAF-RAF example is a useful model of international cooperation that illustrates what can happen when two nations and their air forces choose to work together, and may prove instructive to those who seek to build 'coalitions of the willing' composed of airmen from other nations.

Notes

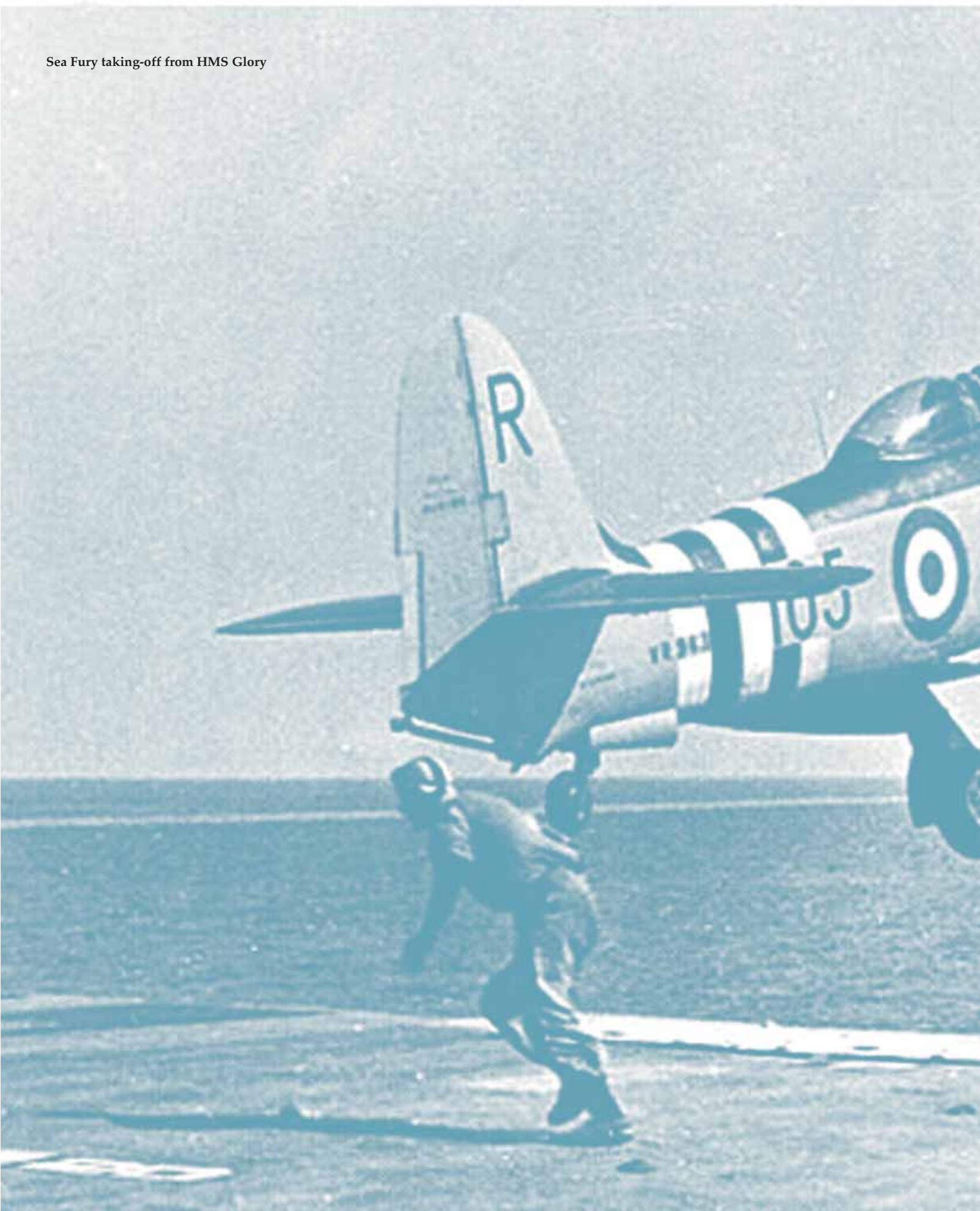
- 1 See Air Force Doctrine Document (AFDD) 2-1.2, Strategic Attack, 30 Sep 2003, p 29.
- 2 United States Joint Forces Glossary, accessed 22 Aug 04 at <http://www.jfcom.mil/about/glossary.htm#S>
- 3 AFDD 2-1.2, Strategic Attack, 30 Sep 2003, pp vii and 6.
- 4 Need citation for Cox article
- 5 Third Air Force Historical Brief, A Short History and Trilogy of the USAF in the United Kingdom, Dr Charles H Hildreth, Historical Division, Office of Information, Third Air Force, May 1967, p 2. Hereafter referred to as Third Air Force Historical Brief.
- 6 D Campbell, The Unsinkable Aircraft Carrier, cited in I Clark and N J Wheeler, The British Origins of Nuclear Strategy 1945-1955, Clarendon Press, Oxford, 1989, p 116.
- 7 Along with the larger 22,000 lb Grand Slam, Tallboy was a World War II penetration weapon for attacks on targets such as German U-boat pens and V2 missile preparation bunkers.
- 8 United States Air Forces in Britain — Its Aircraft, Bases and Strategy Since 1948, R Jackson, Airline Publishing, Shrewsbury, 2000, P 9. Hereinafter referred to as Jackson.
- 9 Britain and the Berlin Airlift, Sebastian Cox, Air Power Review, Spring 2004
- 10 Third Air Force Historical Brief, p 2.
- 11 Third Air Force Historical Brief, p 10.
- 12 Jackson, p 13.
- 13 Third Air Force Historical Brief, p 10.
- 14 Third Air Force Historical Brief, p 11.
- 15 RAF Nuclear Deterrent Forces, H Wynne, HMSO, London, 1994, p 586. Hereafter referred to as Wynne.
- 16 Strategic Air Command Historical Study No 213, Proud Shield, SAC Bombing and Navigation Competition 1948-1986, Drs A J Birtle and R D Brunkow, Office of the Historian, Headquarters Strategic Air Command, Alford Air Force Base, Nebraska, 1987, p 2. Hereafter referred to as SAC Historical Study.
- 17 Jackson, p 70.
- 18 Third Air Force Historical Brief, p 10.
- 19 Third Air Force Historical Brief, p 11.
- 20 Jackson p 21.
- 21 Jackson, p 26.
- 22 Jackson, p 44.
- 23 Jackson, p 45.
- 24 Third Air Force Historical Brief, p 13.
- 25 Third Air Force Historical Brief, p 13.
- 26 Third Air Force Historical Brief, p 13.
- 27 Jackson, p 32.
- 28 See: <http://www.parliament.the-stationery-office.co.uk/pa/cm199900/cmselect/cmdfence/100/9120810.htm>
- 29 Russian photo shoot, Sqn Ldr John Crampton, Air Pictorial, August 1997.
- 30 Third Air Force Historical Brief, p 14.
- 31 Jackson, p 51.
- 32 Wynne p 298.
- 33 Third Air Force Historical Brief, p 5.
- 34 Third Air Force Historical Brief, pp 16-18.
- 35 Third Air Force Historical Brief, p 17.
- 36 Jackson, p 58.
- 37 Wynne, p 598.
- 38 Wynne, pp 254-255.
- 39 Cited in Wynne, p 257.
- 40 Wynne, pp 605-607.
- 41 COS Memorandum, 5 June 1958, cited Wynne, p 275.
- 42 Wynne, p 279.
- 43 Wynne, p 263.
- 44 Jackson, p 272.
- 45 Wynne, p 262. The US had successfully tested an H-bomb in 1952.
- 46 Jackson, p 87.
- 47 Third Air Force Historical Brief, p 17.
- 48 Wynne, p 291.
- 49 Third Air Force Historical Brief, p 19. The other two BMEWS radars were built at Clear, AK and Thule Greenland.
- 50 Third Air Force Historical Brief, p 20.
- 51 Jackson, p 68.
- 52 SAC Historical Study, p 6.
- 53 Wynne, p 308.
- 54 Wynne, p 310.
- 55 Wynne, p 571.
- 56 Wynne, p 613.
- 57 Wynne, p 613.
- 58 Wynne, p 398.
- 59 Wynne, p 403.
- 60 Cited in Wynne, p 412.
- 61 Wynne, p 423.
- 62 Jackson, p 82.
- 63 Wynne, p 622.
- 64 Third Air Force Historical Brief, p 21.
- 65 Third Air Force Historical Brief, p 22.
- 66 Jackson, p117.
- 67 America, Russia and the Cold War, 1945-1996, 8th Edn, Walter LaFeber, Mc Graw-Hill, 1997, 298-299.
- 68 Anglo-American Relations & the Falklands Conflict, Christopher Bluth in International Perspectives on the Falklands Conflict, A Danchev, St Martin's Press, NY, pp 217/8.
- 69 Falklands — the Air War, Burden, Draper, Rough, Smith & Wilson, British Aviation Research Gp, 1986.
- 70 Jackson, p 123.
- 71 The Collins History of the World in the 20th Century, JAS Grenville, London, 1998, p 866.
- 72 The Harrier VSTOL aircraft was another example, but that plane is not considered a 'strategic' asset for the purposes of this article.

A Douglas Thor Intermediate-Range Ballistic Missile (IRBM) of No 113 Squadron, RAF Bomber Command, being loaded with oxidant during a practice countdown at RAF Mepal in 1961

Picture AHB (RAF)



Sea Fury taking-off from HMS Glory





British Commonwealth Carrier Operations in the Korean War

By Cdr David Hobbs MBE Royal Navy

In 1950 the Royal Navy was still recovering from a shortage of manpower following the run-down after World War 2. Few ships had their war complement embarked although those deployed to the Far East were more capable than those on the Home Station. Naval Air Squadrons were short of aircrew and maintainers and were still using up stocks of obsolete wartime aircraft as production of new types moved only slowly. Fortunately, a number of people with war experience had been retained. The Far East Station covered a vast area with significant responsibilities.

The Royal Australian Navy had only formed its Fleet Air Arm in 1948 with a great deal of British help and had only recently taken delivery of its first carrier and embarked air group. Many of its aircrew had wartime experience with the Royal navy or Royal Australian Air Force.

The Royal Canadian Navy had also recently formed a Fleet Air Arm with a light fleet carrier on loan from Britain, but did not deploy it to Korea. A potential plan to embark a Canadian Sea Fury squadron in a British carrier was not acted on.

The North Korean People's Army (NKPA) advanced, almost at will, through the South Korean defences after its surprise attack on 25 June 1950

The outbreak of war

The North Korean People's Army (NKPA) advanced, almost at will, through the South Korean defences after its surprise attack on 25 June 1950. On 27 June, President Syngman Rhee and his Government left Seoul and it must have seemed to the Communist commanders that the war was already won. However, in their plans they had left one factor out of their calculations that was to prove their ruin — sea power. The reaction of the United Nations to this aggression was swift and unambiguous, allowing Allied navies to exert relentless pressure on North Korea.

In the summer of 1950, the British Far East Station was commanded by Admiral Sir Patrick Brind who flew his flag at a shore headquarters in Singapore. Fortuitously, much of the operational fleet was in Japanese waters under the operational control of Rear Admiral Andrewes, Flag Officer Second-in-Command Far East Fleet (FO2 FEF), in the cruiser Belfast. They had recently carried out a number of exercises with USN warships under the command of Vice Admiral C T Joy USN, Commander US Naval Forces Far East (COMNAVFE). The British Task Force included the light fleet carrier Triumph, the cruiser Jamaica and a number of destroyers, frigates and logistic ships including a hospital ship.

On hearing of the invasion, Admiral Andrewes sailed on his own initiative at 0130 on 26 June, giving orders to his force to concentrate in southern Japanese ports. On 27 June the UN Security Council had described the NKPA attack as “a breach of world peace” and authorised member nations to assist the Republic of Korea. The British Government's decision to support the Security Resolution was announced by the Prime Minister, Mr Attlee, in the House of Commons on 27 June. On the next day he announced that British naval forces in Japanese waters were placed at the disposal of US authorities to act on behalf of the UN Security Council. The Canadian Government immediately offered naval support followed on 29 June, by the Governments of Australia and New Zealand. Orders from the Admiralty were sent directing the C-in-C Far East “to place the Royal Navy at present in Japanese waters at the disposal of the US Naval Command”. Admiral Brind had already offered the use of his fleet to Vice Admiral

Joy for ‘any humanitarian mission’ and warned Rear Admiral Andrewes that he might soon be called on for action under the UN Charter.

Commonwealth naval units were rapidly assimilated into the US command structure. COMNAVFE, Vice Admiral Joy placed Rear Admiral Andrewes in command of Task Group 96.8, the West Korean Support Group which comprised mainly Commonwealth and Allied ships. Rear Admiral Higgins USN was placed in command of the mainly USN East Korean Support Group. Triumph joined Task Force 77 of the US Pacific Fleet off Okinawa where Rear Admiral Hoskins USN, Commander carrier Division 3 in USS Valley Forge took tactical command of the force. Planning for a combined strike against targets in North Korea started at once and the Task Force moved to the operating area. American signal procedures were adopted at once and no difficulty was found in working with the USN. Rear Admiral Andrewes later wrote that “it all seemed so familiar as it was just what we had done so often before during the exercises in March with very similar forces”. Also, it was only five years since the US and British Pacific Fleets had worked together so successfully in the final phase of the war against Japan.

The first carrier strike

The first naval air strikes of the war were flown off between 0545 and 0615 on 3 July from USS Valley Forge and HMS Triumph: 8 Corsairs, 16 Skyraiders and 12 jets from Valley Forge attacked Pyongyang and other airfield sites, destroying 15 to 20 aircraft on the ground and 2 in the air; 12 Fireflies and 9 Seafires from Triumph armed with rockets attacked Haeju airfield, damaging hangars and buildings but no aircraft were sighted. All the aircraft returned safely, flak had been negligible but slight damage had been inflicted on some aircraft by small arms fire.

Both navies had been at pains after 1945 to work out common operating procedures and these, enhanced by cross deck operations in the recent exercises, worked well. On 4 July aircraft from Valley Forge attacked two gunboats in the Taedong estuary, destroyed one small railway bridge, damaged another and destroyed 15 railway

locomotives and a significant amount of rolling stock. Aircraft from Triumph attacked the railway between Yonan and Haeju, scoring two hits on a bridge. Targets of opportunity, including a column of marching troops, were attacked. Two American and one British aircraft were damaged by flak.

The choice of targets for the British aircraft was severely limited by the poor radius of action of the early mark of Firefly operated by Triumph's 14th Carrier Air Group (CAG) and the limited strike capability of the Seafire 47 which was primarily an air defence fighter. An unfortunate incident occurred on 28 July 1950 when the Fleet Air Arm

suffered its first casualty of the war. Commissioned Pilot White of 800 Naval Air Squadron was shot down in his Seafire by a USAF B29 "for no very apparent reason". Mr White was picked up, suffering from burns, from his dinghy by a USN destroyer and transferred to Triumph later in the day. Commenting on the incident, COMNAVFE later said that "the calculated risk of damage to friendly forces must be accepted".

Carrier operations

Like all wars in the modern era, this was a maritime war with the United Nations utterly dependent on the sea for the transport of troops, supplies and, to

The first naval air strikes of the war were flown off between 0545 and 0615 on 3 July from USS Valley Forge and HMS Triumph

HMS Triumph



Her squadrons were kept busy flying combat air patrols over inshore forces, strafing mine-laying junks and supporting troops

Firefly landing on HMS Theseus



a very large extent, air support. Control of the sea allowed a firm beachhead around Pusan to be established and maintained. Triumph suffered a leaking stern gland and was replaced in Task Force 77 by USS Philippine Sea, a more potent strike carrier. After repairs, she joined the West Coast Task Force where British and Australian carriers were to operate for much of the remainder of the war. Although less capable than her USN counterparts, Triumph played a key role in the war by being in the right place at the right time and her contribution was, thus, more significant than forces who were too far away.

In September, Triumph played a small part in the covering force during the landings at Inchon that transformed the war. By then her elderly air group had become increasingly difficult to maintain and she was due for replacement.

HMS Theseus relieved her — a sister ship that carried the 17th CAG equipped with squadrons of very capable Sea Fury and Firefly FR5 aircraft. Her squadrons were kept busy flying combat air patrols over inshore forces, strafing mine-laying junks and supporting troops ashore. By November, it seemed that the war was nearly over and

Theseus was allowed to leave the combat zone when UN forces moved close to the Yalu River. She was hastily recalled when Chinese troops infiltrated into Korea and struck hard at UN ground forces.

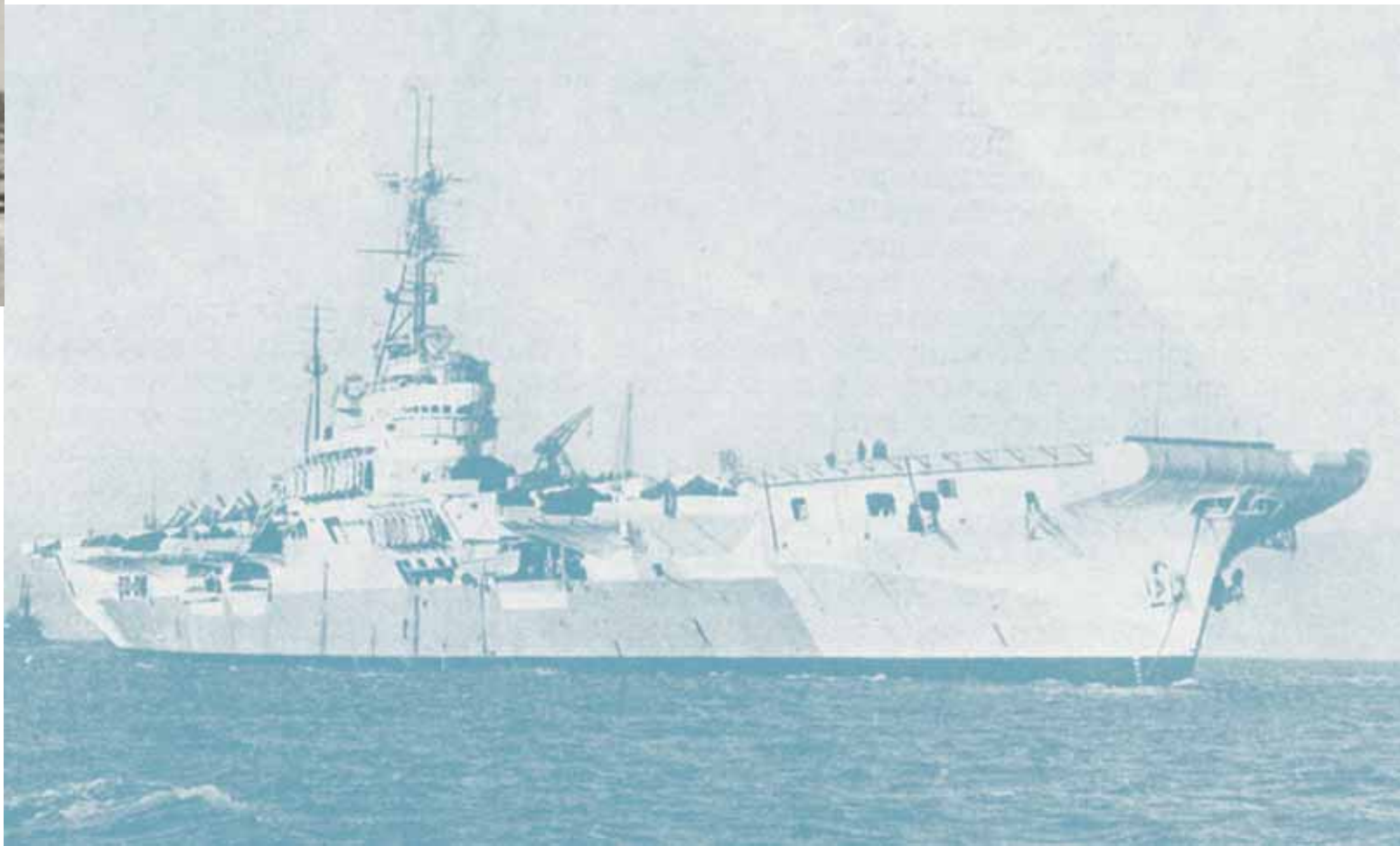
A pattern of operations emerged in which the British carrier off the west coast alternated with a USN light carrier and friendly rivalry led to a constant improvement in both navies' war fighting capability. When not on patrol, the British ship would return to the Commonwealth base port at Sasebo to take on replacement aircraft and ammunition and give leave for the rest and

recreation of the ship's company. A patrol typically comprised ten days at sea with a day refuelling and re-arming at sea in the middle.

Theseus operated throughout the bitterly cold winter of 1950-51 despite gales, hail, snow and poor visibility. In December the air group was only able to fly on 17 days but managed 630 sorties without accident. By February the sortie tally had risen to 1,500, testimony to the ruggedness of the aircraft and the skill of the pilots. 17 CAG was awarded the Boyd Trophy for 1950. This was instituted by Rear Admiral Sir Denis Boyd, the wartime Captain of HMS Illustrious of Taranto

Glory, another of the ubiquitous light fleet carriers, carried the re-formed 14th CAG equipped with Sea Furies and Firefly FR5 which were to be the standard Commonwealth carrier fighter-bombers for the rest of the war

HMS Glory



In September 1951 Glory was relieved by HMAS Sydney, the first Commonwealth carrier to go into action and a great credit to the Royal Australian Navy which had only established its own Fleet Air Arm in 1948

Sea Fury aircraft pass over HMAS Sydney



fame, and is awarded for the most outstanding feat of naval aviation in a given year. Until his death in 1965, Admiral Boyd usually presented the trophy in person.

As spring succeeded winter, less wind and a heavy swell gave deck landing a lively interest but the accident rate remained commendably low. The loan of a USN helicopter for combat SAR duties in place of the obsolete Sea Otter biplane flying boat had an outstanding effect on aircrew morale. Five aircrew were rescued within minutes of ditching in its first few weeks of operation.

This is an appropriate point to mention the maintenance carrier HMS Unicorn, which served throughout the war in support of the operational carriers. She ferried hundreds of replacement

airframes from the main British bases at Singapore and Hong Kong, used her extensive workshops to repair battle damaged aircraft and transported thousands of Commonwealth troops to and from Korea. She even carried out a bombardment of NKPA positions ashore with her four inch guns on one sortie. Despite her largely second line tasking, she had a fully functional flight deck and often gave deck-landing practice to replacement pilots and acted as 'spare deck' for the operational carriers. Replacement aircraft were ferried from the UK to the Far East in the light fleet carrier HMS Warrior.

In April 1951 Theseus was relieved by HMS Glory having carried out 3,500 operational sorties in 86 flying days over seven months. The light fleet carriers were built to an austere specification

By the summer of 1952 the first communist jet, the Mig 15 powered with a copy of the Rolls Royce Nene, appeared. They had a considerable edge in performance over the Sea Fury but, fortunately, their pilots did not

in World War 2 and had many disadvantages including lack of speed, liveliness in rough weather and recurrent trouble with the single catapult. Despite that, they succeeded in operating with an intensity and skill which Rear Admiral Scott-Moncrieff, who had relieved Rear Admiral Andrewes as FO2 FEF on his promotion to Vice Admiral, was able to report to his C-in-C as being praised highly by the USN.

Glory, another of the ubiquitous light fleet carriers, carried the re-formed 14th CAG equipped with Sea Furies and Firefly FR5 which were to be the standard Commonwealth carrier fighter-bombers for the rest of the war. Her first patrol coincided with the Chinese spring offensive in which the 1st Battalion of the Gloucestershire Regiment was almost annihilated defending a position of the Imjin River and the British 27th Brigade and the US 5th Cavalry Regiment fought memorable delaying actions near Kapyong. In the summer, talks about an armistice began and the land war became static, based on lines of trenches reminiscent of the First World War.

In September 1951 Glory was relieved by HMAS Sydney, the first Commonwealth carrier to go into action and a great credit to the Royal Australian Navy which had only established its own Fleet Air Arm in 1948. Her squadrons were equipped with the same type of aircraft as her British sister ships and, indeed, many replacement aircraft came from British Far East reserve stocks, lent to the RAN while Sydney was in the war zone. Aircraft maintained the coastal blockade and kept a watchful eye on the building up of Chinese troops by rail and road. During October, Sydney had to move away from the war zone to avoid Hurricane 'Ruth'. She still encountered storm force seas, which destroyed six aircraft in the deck park.

In four months of operations, while Glory was away refitting in Australia, Sydney's 21st CAG flew 2,366 sorties in 43 operational flying days. Casualties included three pilots killed and 15 aircraft lost. She was relieved, in turn, by Glory who "fell back into the routine as if she had never been away" in January 1952. Flying operations

now included the defence of islands off the west coast occupied by Allied forces as well as interdiction, spotting for shore bombardment, blockade enforcement and close support of the Commonwealth Division. By the end of her second deployment in the war zone, Glory completed nearly 5,000 operational sorties for the loss of nine aircrew and 27 aircraft. Her Sea Furies, armed with two 500 lb bombs, had become deadly accurate dive-bombers using a 45 degree dive technique.

For the remainder of the war, Glory alternated in the operational area with yet another light fleet carrier, HMS Ocean. By the summer of 1952 the first communist jet, the Mig 15 powered with a copy of the Rolls Royce Nene, appeared. They had a considerable edge in performance over the Sea Fury but, fortunately, their pilots did not. Sea Fury sections stayed together, kept their eyes peeled, used the available cloud cover and survived. Some did more than that. A World War 2 veteran pilot, Lieutenant Peter Carmichael, always known as 'Hoagy' and his flight from 802 Naval Air Squadron embarked in Ocean shot down a Mig 15 on 9 August 1952. They 'inconvenienced' several others.

Looking back on the war, Carmichael recalled that ox-carts were one of the main road targets to go for. It was amazing how many of them blew up when you hit them with cannon fire! This was a manifestation of the Allied policy of interdiction in which both heavy bombers of the USAF and the bomb and rocket armed carrier fighter-bombers attempted to halt enemy troop and supply movement. It was not entirely successful and the communist armies were able to launch a large scale offensive in the spring of 1953, as the possibility of a truce became stronger in the hope of making it appear as if the UN was suing for peace in order to avoid defeat. During this final period, Sea Furies and Fireflies covered large areas of country; attacking anything that moved and much that did not. For a time three night-fighter Fireflies were put ashore at the request of the US 5th Air Force to counter night-nuisance raids by Communist propeller driven aircraft. They operated with success from an airstrip south of Seoul.

The downed aircrew helped to keep the encircling enemy troops at bay with their Owen sub machine guns

At last, on 27 July 1953, an armistice was signed at Panmunjon. For some months after the war, light fleet carriers continued to operate close to Korea in case there was a resumption of hostilities. They included a tour by HMS Warrior, returned to operational duties after her time as a ferry carrier and HMAS Sydney, which left Korea for the last time in June 1954.

The Commonwealth carrier that saw most action in the Korean War was HMS Glory. She had equalled a record of 123 sorties in a single day set by HMS Ocean, a feat which involved every pilot including Commander 'Air' flying four sorties and which resulted in the destruction of 7 bridges, 28 buildings and 5 ox-carts. After leaving the UK in May 1951, she steamed 157,000 miles and flew 13,700 sorties of which 9,500 were operational. Her aircraft destroyed 70 bridges, 392 vehicles and 49 railway trucks for the loss of 20 aircrew. Weapon expenditure for this ship alone totalled 278 x 1,000 lb bombs, 7,080 x 500 lb bombs, 24,328 x 3 inch rocket projectiles and 1,441,000 rounds of 20 mm cannon ammunition.

Sorties

These are examples of sorties flown from HMS Glory:



People

Individual accounts of war operations are beyond the scope of this paper but I have selected two as being illustrative of the Commonwealth carrier operations. Sub Lieutenant Neil MacMilland and CPO Hancox of the RAN were shot down in the Firefly near Sariwon north of Haeju. HMAS Sydney had Sea Furies in the air and they were sent to provide cover, as the downed aircraft was well inside enemy territory. The carrier captain found it difficult to make the decision to send the SAR helicopter,

June 1951	Sea Furies flew close air support over the Allied lines. Fireflies used 1,000 lb bombs against bridges and both types spotted for bombardments by frigates.
July 1951	Attacks concentrated on railway trucks, junks and barracks. Several 'moving haystacks' caught fire after being hit.
September 1951	Set a new record of 66 offensive and 18 defensive sorties in a day with 100% serviceability.
February 1952	Operated in defence of allied held island including Chodo and Pengyong do.
March 1952	Lieutenant Fraser's Sea Fury suffered an engine failure 'slotting' to starboard of the carrier and he ditched. He was immediately rescued by the USN planeguard helicopter, which had him on deck in one and half minutes; quicker than he would have been there in his own aircraft!
March 1953	Equalled the record of 123 sorties in a single day set by Ocean.



loaned by the USN with a USN crew, for them because it was doubtful if they could fly the 75 miles and clear enemy territory before nightfall. He approved the sortie and the helicopter set off. Meanwhile Meteor fighters of 77 Squadron RAAF joined the Sea Furies and the downed aircrew helped to keep the encircling enemy troops at bay with their Owen sub machine guns. At 1715 the Meteors had to go but the Sea Furies, flown by Lieutenants Cavanagh and Salthouse, decided to stay despite being low on fuel. At 1725 the helicopter arrived having flown at 120 knots, some 20 knots above the accepted legal maximum, and landed. Its Observer, CPO Gooding jumped out and shot two enemy soldiers who had crept to within 15 yards of the downed aircraft. An hour later, the helicopter, with the two rescued aircrew and still escorted by the Sea Furies, landed at Kimpo airfield, just as darkness fell.

During a patrol by HMS Glory in January 1953 a different form of interdiction was tried. With the rivers and ground both frozen hard, road transport could easily drive round any damage inflicted. It was well known that railway bridges were always quickly repaired and so attacks were

directed at railway lines at inaccessible parts of the routes: 33 cuts were made and, at first, repair activity was slow. On 5 January a Sea Fury piloted by Lieutenant D G 'Pug' Mather was hit by enemy flak after an attack on a railway line north of Chaeryon. It caught fire and he baled out but his section failed to see where he landed. For 90 minutes aircraft searched for him without success and a USAF helicopter, escorted by two Sea Furies, was sent to the scene. Unfortunately it was forced to turn back by bad weather and Mather was taken prisoner by the NKPA. One of the escorting Sea Furies, flown by Sub Lieutenant B E Rayner lost radio contact and was never seen again. Later in the day, a Sea Fury flown by Sub Lieutenant B J Simonds RNVR (Royal Navy Volunteer Reserve) spun from 3,000 feet and exploded on hitting the ground. Lieutenant Foster made a wheels-up landing at Pengyong do after a rough-running engine and electrical failure in his Sea Fury. The next day, a Firefly, flown by Lieutenant W R Heaton was hit by flak and ditched north of Kirin do. He was rescued from his dinghy by a USAF helicopter from Pengyong do.

It was well known that railway bridges were always quickly repaired and so attacks were directed at railway lines at inaccessible parts of the routes



Great importance was placed on operational summaries, known in the US Navy as 'opsums', intended for the benefit of the press. This was something new to the British at the time

Some lessons learned

Photography was used extensively, being particularly useful for harbour reconnaissance in the enforcement of the blockade and for assessing the results of interdiction missions. In mid 1952 a photographic interpretation officer was appointed to the operational carrier. His services were described as invaluable and the hundreds of images when expertly interpreted revealed many ingeniously camouflaged targets.

The value of the helicopter as a combat Search and Rescue vehicle was amply demonstrated on land and at sea. As a 'planeguard' during flying operations it was unrivalled for efficiency by day, but a destroyer operating close to the carrier was still necessary at night. At different times, RN aircrew were rescued by helicopters operating from bombarding cruisers at Wonsan and Inchon, from the LST minesweeping tender, from USAF airfields as well as their own carriers. Their morale value was important but their limitations had to be appreciated. These included a small radius of action, made even smaller by strong headwinds and a reliance on dead-reckoning navigation with its potentially large errors. Instrument flying capability was minimal and the range of their VHF radios was limited. For these reasons the ubiquity of basing was an important factor and some of the aircrew that were rescued would not have been recovered if only the carrier borne helicopters had been available.

HMS Ocean instituted pre-dawn missions and these proved very productive as the aircraft found enemy road transport that was still on the move. Many lorries were destroyed in this way and the experience gained by aircrew from this type of operation was of great value. The enemy was not slow to react, however, and Glory's aircraft soon had difficulty finding targets after the enemy introduced a simple but effective air-raid warning system. This comprised warning fires lit on the ground that appeared from two to three miles ahead of the aircraft. When the pilots looked back, they could see a long line of fires stretching behind them! A low approach was then adopted to deceive the enemy radar, but the foggy season intervened before the effectiveness of this method could be fully gauged.

In general, pilots had not been trained in night deck landing techniques and so night interdiction was not possible throughout the war.

Command and control

It was clear from the outset that the United States would bear the heaviest share of the fighting and, since there was an existing US command structure in Japan, it was natural that the naval contributions from the Commonwealth navies should fit into it. Operational command was the most significant since the British Far East Fleet had its own logistic and type support structure. This was able to support the Australian, Canadian and New Zealand units since they all operated ships and equipment of British manufacture. Personal relations between American and British officers were effective and cordial throughout the war. Misunderstandings and differences of outlook were inevitable but were always overcome. Many arose simply because of the difficulty of arranging verbal contact with the American operational commanders, most of whom exercised their commands afloat. In contrast, the three British Admirals who acted as FO2FEF during the war exercised their command from Sasebo in Japan, only proceeding to the operational area with a small staff on special occasions.

The chief difference between the American and British systems lay in the rigidity of the former. Orders were extremely detailed and direct communication on a junior level with another Service or even task force was frowned upon. All communication was supposed to go back up the chain of command, through the top and down again. 'Information' addressees did not take action until told to 'comply' by the immediately superior authority, even when it was obvious that such action would have to be taken. Practically no discretion was left to the 'man on the spot'. In the British Commonwealth command structure, anticipation and initiative were expected and exercised. USN ships attached to the West Coast Blockade Group very much appreciated the reduced reliance on signals, instructions and demands for situation reports. Later relations between the USN and RN benefited greatly from the perceptions of mutual confidence that grew from these operations.

The enemy was allowed to fight on his own terms and many of the advantages possessed by the Allies were negated

Another difference was a rule in the USN that the officer in tactical command of a carrier task force or group must himself be an aviator. It accepted that less efficient Anti-Aircraft (AA) and Anti-Submarine (AS) screening and co-ordination between forces might result and the RN view was that non-flying factors might suffer in consequence. The fact that none of the British flag officers were aviators made it difficult for the Commander 7th Fleet to understand how they could command a task group that contained two light fleet carriers. At one stage it was suggested that they should be taken out of Task Force 95 and, though continuing to operate in the same area in the Yellow Sea, placed under the command of Task Force 77 — the heavy carriers that usually operated in the Sea of Japan. The British vetoed this.

Communications

The rigidity of the US system of command threw a heavy strain on communications. Operation orders and plans reached prodigious dimensions and contained so much detail that, from a British perspective 'some of the wood could not be seen for the trees'. Time was wasted while orders were passed down the long chains of command and 'Americanisms' such as RFS — Ready for Sea initially caused confusion. On the whole, commonwealth warships had little difficulty in using the US system but had to augment the equipment and manning levels in order cope with the increased signal traffic.

The strain on communications was amplified by the large number of situation reports, reports of intentions, action taken and so on, required from ships at sea by US commanders. Great importance was placed on operational summaries, known in the US Navy as 'opsums', intended for the benefit of the press. This was something new to the British at the time although it was to become familiar to a later generation during the Falklands War.

British perception of the interdiction campaign Complete interdiction of a battlefield has always proved difficult but circumstances in Korea seemed to offer special opportunities. The complete blockade enforced by the overwhelming UN naval forces entirely ruled out supply by sea; the

meagre rail and primitive road communications of North Korea seemed vulnerable to the almost undisputed UN air power. Additionally, important road and rail centres on the east coast were open to naval bombardment. The vulnerability of the railways seemed to be enhanced by the large number of bridges and tunnels forced on them by the mountainous terrain of North Korea. For example, the eastern network, scene of most naval interdiction effort, included 956 bridges and causeways and 231 tunnels in 1140 miles of track.

After the limitation of the Chinese offensive, the main effort of UN air operations was directed at interdiction. This was the primary responsibility of the US 5th Air Force, supported by allied contingents and all available naval and USMC aircraft. The efforts of the USAF and USN were never co-ordinated at theatre level, one result from the lack of a unified joint command. Gradually, it came to be accepted that, broadly speaking, the USN would deal with the east coast railway and highway systems and the USAF dealt with the west coast where it interacted with the Commonwealth carrier efforts. Except when circumstances dictated other temporary employment of aircraft, this policy continued for 20 months. Immense damage was unquestionably inflicted on the enemy communications systems and all movement by rail or road was confined to the hours of darkness but full interdiction of the battlefield was never achieved. Throughout the campaign, the Communists were always able to launch an offensive if they wished to do so.

The causes of this failure in British eyes were primarily due to inhibitions accepted by the UN for political reasons, and partly to tactical and operational conditions. In the former category the ban on sources of supply in Manchuria robbed aircraft of targets which might well have been decisive. The static war, accepted during the protracted armistice negotiations, enabled the Communists to keep their strongly fortified front lines sufficiently supplied in a way they could never have done in a war of movement. The enemy was allowed to fight on his own terms and many of the advantages possessed by the Allies were negated.

When it was initiated in January 1951, the interdiction campaign had the object of impeding the Communist advance and was undoubtedly justified although opposed by Admiral Struble, CTF 77, who felt that his aircraft would be better employed providing close air support for the Army. Its continuation throughout the long armistice negotiations savoured dangerously of trying to win the war by air power alone, while the army and navy were relegated to comparatively static and defensive roles. It is difficult to resist the conclusion that this strategy, which certainly suited the Communists, was continued for too long and that better results would have been obtained by the adoption of a more aggressive strategy implemented by the three Services working together in the closest co-operation in support of each other. With hindsight, the exertion of the mobility and flexibility given to the UN forces by their command of the sea and the air should have been used to force a war of movement that the enemy could not have sustained. This might well have compelled the enemy to accept more satisfactory armistice conditions at an appreciably earlier date.

Summary and comment

At the outset, Rear Admiral Andrewes had stated that it would be wrong to regard a single light fleet carrier as representative of what naval aviation could achieve in any theatre. Even taking into account the conditions under which the war was fought, the endless coastline around a narrow peninsula and the lack of naval and air opposition, the performance of the Commonwealth carriers was, however, remarkable. The intensity of flying, the operational lessons and the length of the war, throughout which the Commonwealth maintained a carrier on station brought many squadrons and their people to a high pitch of professionalism and efficiency matched in few other arms of the British Services. In turn, this produced a corps of experienced aircrew and maintainers who were well equipped to handle the new generation of aircraft, such as the Buccaneer, and to use the new equipment and techniques being developed in the UK that would revolutionise carrier aviation.

The light fleet carriers provided the most conspicuous aspect of Commonwealth operations

in the Korean War. Their performance was admitted on all sides to be outstanding, but was possible only because of the lack of serious naval and air opposition. Had these existed on an appreciable scale, more ships would have been needed and more effort would have been required for fighter defence and escort to the detriment of offensive operations. The results achieved were the result of hard work, much improvisation and the driving of machinery — in some cases beyond the limits for which it was designed.

The signing of an armistice on 27 July 1953 ended hostilities that had lasted 1,128 days and involved naval forces from Australia, Canada, Colombia, France, the Netherlands, New Zealand, the Republic of Korea, Thailand, the United Kingdom and the USA.

The seal of Royal approval was set on the Commonwealth effort two days after the armistice was signed when the following message from Her Majesty the Queen to the Board of Admiralty was signalled to the Fleet:

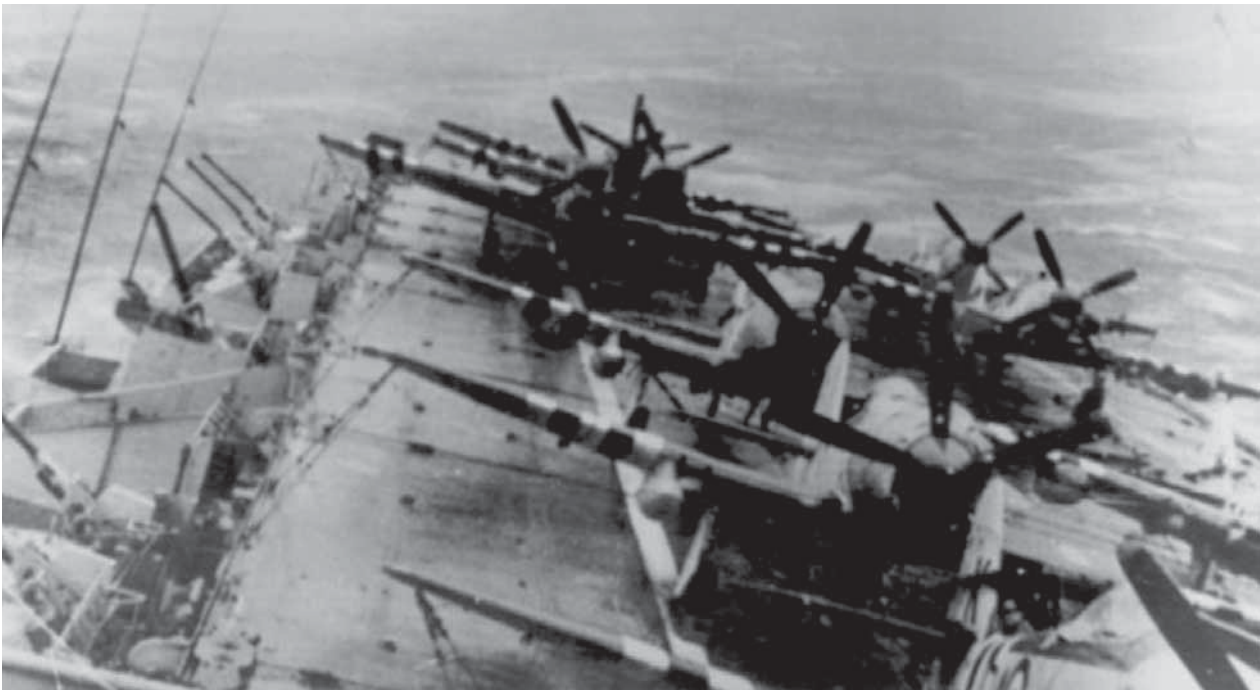
“Please express to all serving in the Commonwealth Fleet my deep appreciation of the splendid service they have given throughout the fighting in Korea.”
(Signed ELIZABETH R)

Statistics

- During the war, 76 ships of the Commonwealth Navies and their fleet auxiliary services served in the combat area for varying periods: 32 warships of the Royal Navy included 5 carriers, 6 cruisers, 7 destroyers and 14 frigates; 9 warships of the Royal Australian Navy included 1 carrier, 4 destroyers and 4 frigates. Their combined casualties totalled 191.
- 17,000 officers and men of the Royal Navy, Royal Marines and Royal Fleet Auxiliary Service served afloat in Korean waters and 4,300 more served ashore in Japan: 165 officers and men were decorated for gallantry and 289 were mentioned in despatches. British warships steamed 2,100,550 miles and used 632,150 tons of fuel. Carrier aircraft dropped 15,200 bombs of various sizes, fired 57,600

rockets and 3,300,000 rounds of 20 mm cannon ammunition in 23,000 operational sorties.

● 4,507 officers and men of the Royal Australian Navy served afloat in the war zone: 57 officers and men were decorated for gallantry. Australian warships steamed over 419,000 miles and carrier aircraft dropped 802 bombs of various sizes, fired 6,359 rockets and 269,249 rounds of 20 mm cannon ammunition in 2,366 operational sorties.



HMAS Sydney, the first Commonwealth carrier to go into action and a great credit to the Royal Australian Navy



Post-Cold War Development of UK Joint Air Command and Control Capability

By Wg Cdr Redvers T N Thompson

Coming out of the Cold War In the mid-1980s, the focus of both the RAF and the rest of the UK's military forces was — as it had been for nearly four decades — almost exclusively on their respective contributions to the defence of NATO's Central Region and the UK mainland. The RAF's aircraft were primarily located and operated from Main Operating Bases (MOBs), with many permanently deployed in Germany where they were expected to train and fight. These MOBs were collocated with both their required support infrastructure and well-defined national and NATO Command and Control (C2) organizations. Then in the late 1980s the political/military status quo changed at an amazing pace. In 1987, Reagan and Gorbachev met

in Washington to sign a nuclear weapons treaty. In December 1988, Gorbachev gave more freedom to the states of Eastern Europe and a month later he withdrew the Soviet military from Afghanistan. By the end of 1988 Gorbachev renounced the use of force in Czechoslovakia, Bulgaria, and Rumania whose communist regimes had fallen. Then, on 9 November 1989, the world watched in amazement as Germans tore down the Berlin Wall. In May 1990, Bush and Gorbachev met in Washington and signed treaties that called for a reduction of nuclear weapons and a ban on chemical weapons. Later that year Gorbachev met with German chancellor Kohl, signed a non-aggression pact and initiated the withdrawal of Soviet troops from Eastern Germany.

At that time as operational, front-line aircrew, the only time the term 'expeditionary' was used, was in the context of a week's walking excursion to the Scottish Highlands

However, through this period of fundamental and rapid change in the grand and military-strategic 'realpolitik',¹ little if anything changed in the UK's military focus. As the RAF entered the 1990's, while remaining honed to an extremely fine edge at the tactical-level of war, at the operational-level of war it was still psychologically wedded to a Central Region 'bunker-mentality' embodied in the fixed operational-level NATO C2 organization, fixed NATO infrastructure and logistic support, fixed MOBs with their hundreds of NBC-proofed Hardened Aircraft Shelters, and fixed 'play-book' war plans. With a Royal Navy focused largely on the Soviet submarine threat, a British Army focused on its defensively-orientated 'heavy metal' armoured divisions, and an RAF dependent on fixed infrastructure and, most pertinent to this article, fixed operational-level NATO C2, it is likely that it was only with Iraq's invasion of Kuwait on 2 August 1990, and the UK's subsequent deployment for, and execution of, the coalition operations of DESERT SHIELD and DESERT STORM (UK's Op GRANBY), did the full realization hit the UK political/military establishment that its extant Cold War posture was in need of change.

OP DESERT STORM — The dawn of realization

And so it was that at some time during or shortly after DESERT STORM did the word 'expeditionary' suddenly drop into the lexicon of the RAF. The author of this article can vouch that at that time as operational, front-line aircrew the only time the term 'expeditionary' was used, was in the context of a week's walking excursion to the Scottish Highlands! However, as a result of the Gulf War and its associated US after-action reports and UK 'lessons learnt' processes, and the subsequent doctrinal stock-taking, UK attention was drawn to some significant problem areas related to the RAF's ability to execute air C2 on a national, expeditionary basis. Firstly, it came into stark focus that the RAF was dependent on a operational-level legacy system of fixed C2 and infrastructure that had very limited adaptability and, therefore in fact possessed no effective, deployable air C2 capability whatsoever. Equally there was an equivalent lack of C2 capability possessed by the other UK Services, and as no UK environment had any national, operational-level C2 capability worthy of note, it is not surprising

that there was no effective doctrine or procedures for operational-level coordination between them. The other word that was not widely prevalent in the UK operational lexicon at this time was 'Joint'. While, following the lessons of the Falklands war, a Joint Force Operations Staff (JFOS) was established and the doctrine for a Joint HQs and Joint Force HQs developed, there was little in the way of single Service doctrine regarding the operational-level planning and integration of air/land/maritime operations. It also became clear that nationally, little was provided by the way of operational-level C2 training: this was especially true in the case of air C2 training, where there was no effective operational training at all for air commanders or their battle staff personnel. Understandably, as the RAF had little need to undertake operational-level planning or C2 outside of a NATO context, it had largely abrogated the responsibility for the training and provision of operational-level air C2 expertise to NATO. The result was that at the time of Op GRANBY, the RAF had little or no air C2 expertise and not surprisingly therefore the UK air input to the US-led air planning and C2 process was marginal. In 1992, taking account of some of the Air C2 lessons from Op GRANBY, the Department of Air Warfare at the RAF College Cranwell re-vamped the Air Battle Management Course (ABMC) and instituted the 'estimate' process as a formal air campaign planning process both on the course and in the new Air Operations Manual (AOM). However, without an identifiable Air HQ neither the ABMC nor the AOM could be targeted at any specific audience.²

Preparing for UK deployed joint operations

In January 1994, the UK Government drove a Ministry of Defence (MoD) Defence Costs Study (DCS) that inter alia identified a r 1996, a Permanent Joint Headquarters (PJHQ) for joint military operations was established at Northwood, in NW London. This HQ brought together, on a permanent basis, intelligence, planning, operations and logistics staffs. The establishment of PJHQ was intended to provide a truly joint force HQs that would remedy the problems of disruption, duplication and the somewhat '*ad hoc*' way in which previous recent operations had been organized. MoD officials described the primary role of PJHQ as:



At the time of Op GRANBY, the RAF had little or no air C2 expertise and not surprisingly therefore the UK air input to the US-led air planning and C2 process was marginal

“Working proactively to anticipate crises and monitoring developments in areas of interest to the UK. The establishment of PJHQ has set in place a proper, clear and unambiguous connection between policy and the strategic direction and conduct of operations. Because it exists on a permanent basis rather than being established for a particular operation, PJHQ is involved from the very start of planning for a possible operation. It will then take responsibility for the subsequent execution of those plans if necessary.”³

Commanded by the Chief of Joint Operations (CJO), the PJHQ's primary role is to be responsible, when directed by the UK Chief of Defence Staff (CDS), for the planning and execution of UK-led

Joint, potentially Joint, combined and multi-national operations. CJO is also responsible for exercising Operational Command of UK Forces assigned to combined and multi-national operations led by others. Commanding at the operational-level, PJHQ is responsible for directing, deploying, sustaining and recovering forces on operations. It was envisioned that the forces employed would be drawn from a Joint Rapid Deployment Force (JRDF) that would become operational on 1 August 1996 and would be designed to be able to fulfill a wide range of combat or non-combat missions, mounted nationally or as part of any contribution to operations mounted by NATO, the European

The catalyst that finally promoted action in the air C2 arena were the tragic events of 14 April 1994, when two US Black Hawk helicopters . . . were engaged and destroyed by two USAF F-15Cs

Union or the United Nations. While it was stated that the JRDF earmarked units would “conduct extensive training on a regular basis, thereby increasing their ability to come together quickly and operate together as an effective and cohesive package at short notice”,⁴ there was no explicit detailing of any facilitating deployable in-theatre C2 capability.

UK combined air operations centre – The First Air C2 Steps

Despite the realizations highlighted above, and the fact that the RAF had been engaged constantly after the Gulf War in support of the air operations Op WARDEN and Op JURAL over northern and southern Iraq respectively, few practical forward steps were made in terms of air C2 by the RAF over this four to five year period that followed Op GRANBY. The catalyst that finally promoted action in the air C2 arena were the tragic events of 14 April 1994, when two US Black Hawk helicopters with 26 personnel onboard and operating in support of Op PROVIDE COMFORT, were engaged and destroyed by two USAF F-15Cs operating from Incirlik AB, Turkey on Op WARDEN. In the aftermath of the analysis of this ‘blue-on-blue’ incident, that overlaid in time the work already on-going as a result of the UK’s DCS mentioned above, and on-going operations in the Balkans, (i.e. Op DELIBERATE FORCE), it was realized by the UK Chiefs of Staff (COS) that if the UK tried to mount a national-only, deployed operation similar to any of those currently on-going, it would need to significantly develop the UK’s own operational-level deployable C2 capability. As a result, *inter alia*, the UK COS directed that the UK should ‘adopt the US JFACC concept’⁵ as the underpinning doctrine for national C2 of deployed operations.

The RAF took this COS direction forward and in 1995 the RAF’s Air Force Board Standing Committee endorsed a paper entitled: Command and Control of STC Assets that reviewed the UK structure for air C2 and recommended the permanent establishment in peacetime of a UK Combined Air Operations Centre (UKCAOC). By April 1997, this new air C2 organization had been implemented in full alongside the RAF’s Strike Command’s (STC) peacetime HQs at RAF

High Wycombe. It subsumed the NATO defensive operations capability that had existed at Sector Operations Centre (SOC) UK, at nearby RAF Bentley Priory, and became responsible for the vigil over UK National and NATO airspace and the monitoring and control of the UK Air Surveillance and Air Control System (ASACS). In addition to the real-world SOC responsibilities, the UKCAOC went on to achieve a capability to plan, task and control offensive, defensive and combat support air operations. Surprisingly however, given the genesis of the decision to form it, the UKCAOC was not initially tasked with, nor equipped for, the conduct of C2 of deployed operations. Notwithstanding a lack of higher HQ guidance, an in-house UKCAOC initiative developed an interim deployable capability that was in place by late 1997; although this was limited to an ability to host the ‘Initial CAOC Capability’ air battle-management system (NATO’s equivalent to CTAPS/TBMCS) on a limited number of deployable laptops.

Strategic defence review pushes forward ‘deployability’ and ‘jointery’

In July 1998, the UK Government announced its Strategic Defence Review (SDR), which it labeled as “a radical review of the UK’s defence requirements, with the aim of modernizing and reshaping the UK’s Armed Forces to meet the challenges of the 21st Century.”⁶ The two central pillars that were to emerge were moves towards more rapidly deployable armed forces and ‘jointery’. SDR identified that, in addition to maintaining extant standing commitments, the UK should also be able to:

- “Respond to a major international crisis. This might require a military effort of a similar scale and duration to the Gulf War.
- Undertake a more extended overseas deployment on a lesser scale while retaining the ability to mount a second substantial deployment if this were made necessary by a second crisis. We would not, however, expect both deployments to involve WF [warfighting] or to maintain them simultaneously for longer than 6 months.
- Rebuild, given much longer notice, a bigger force as part of NATO’s collective.”

SDR also identified that, other than under a warfighting [i.e. significant military] threat to the UK, the RAF would almost certainly deploy overseas and operate from Host Nation airfields or ships in support of national, allied or coalition operations under a range of possible C2 arrangements; this observation manifested itself in the drawdown of RAF squadrons in Germany and reconstitution on the UK mainland.

SDR addressed the fact that NATO was responding to the evolution from static to expeditionary warfare by establishing Reaction Forces with the capability of countering possible short notice threats to its flanks, and stated that the UK had developed its own Joint Rapid Reaction Force (JRRF); a pool of 'highly capable' units from all services that are maintained at high readiness for contingency operations. The establishment of the JRRF was probably the most important Joint initiative in the SDR, and is still central to current UK defence planning. PJHQ's CJO became responsible for the JRRF, although until deployed, OPCOM of units is retained by the single-service CinCs. Units within the JRRF are trained to Joint standards and would be deployed in Joint Force packages, tailored to meet the operational requirement. To command the JRRF in-theatre, a fully resourced Joint Force HQ (JFHQ) was established at Northwood, under PJHQ's command, and is permanently held at 48 hours' notice to move.

Deployable Air C2 — the need is established

To reflect the earlier introduction of the JRDF, AOCinC STC had previously, on 1 April 1998, tasked UKCAOC to provide, at 48 hours' notice (R1), the core air C2 element of a deployable JFACHQ for JRDF operations. However, this significantly enhanced tasking was not matched at the time with any provision of additional personnel, CIS, infrastructure, training resources or budget. Notwithstanding the lack of facilitating resources, a new CONOPS was developed for the UKCAOC and issued in September 1998. In parallel, the development of a CONOPS for this 'deployable JFACHQ' began, and achieved a 1-star circulation by March 1999; this was the genesis of the UK's JFACHQ.

The initial development of this new JFACHQ CONOPS, undertaken by its STC Project Officer (ProjO)⁷ in early 1999, was driven by the SDR that had redefined the RAF's operational C2 responsibilities, requirements and structures and introduced the JRRF. A significant consequence of which was that STC was now required to "be able to deploy, at very short notice, responsive, coherent Composite Air Expeditionary Forces, commanded centrally at the tactical level through a JFACC".⁸ SDR had also identified the need to mount — on a unilateral basis — two concurrent medium-scale operations: one war fighting and one non-war fighting. Moreover, it also stated that the UK was to be able to assume a leadership role in coalition operations with other European forces. SDR therefore drove a requirement "to be able to deploy one fully manned JFACHQ while identifying the core elements of a second HQ",⁹ with the additional 'implied' task that the envisioned JFACHQ had to be able to act as a Combined HQ (i.e. a CFACHQ). While the above defined well the task, the resources for meeting that task were being addressed as part of the RAF's 'STC Structure Beyond 2000 Study'. It became obvious to the JFACHQ ProjO that there was an organizational 'dislocation of expectation', when he discovered that this study assumed that no additional resources were to be made available and had scoped the manning level for the R1 core JFACHQ cadre at just 28 personnel. The number had been derived from the anticipated provision of a Gp Capt (O-6) Director, an EXO and just a core Combat Plans and Combat Ops, i.e. a skeletal AOC. With echoes of the earlier lack of resourcing of the expanded UKCAOC task, the ProjO was given to recall a US saying: 'Vision without funding is hallucination'.

The author believes that it was fortuitous timing (if that can be said of any conflict) that at this point in the RAF's re-structuring, the Balkans erupted once more, in the guise of Kosovo, with the resulting execution of Op ALLIED FORCE. Without addressing the extensive number of lessons that fell from this operation, it is sufficient to state that there were numerous related to the C2 of this primarily air operation, and many lessons were carry-overs from DESERT STORM some nine years earlier. In the context of this article, the

main lesson was the erroneous assumption that a medium-scale air operation could be executed just by the elements of an AOC (ie Combat Plans and Combat Ops). While undertaken with the best military endeavour by all those personnel involved, the consequential expansion of the Vicenza AOC into an operational-level JFACHQ was a case study in ad-hoc, crisis management. Only after the belated formation of a Strategy Division was a form of JAOP developed, and signed off by the CFACC on the 40th day of air operations along with the first Air Operations Directive. Similarly, it was to be another 5-10 days before a 'Guidance, Apportionment, & Targeting' process was established. Across the whole range of HQ staff cells (A1-A9), augmentees were being thrown in together, often without cadre personnel or identified procedures to follow.

As a result of his experiences at Vicenza, the JFACHQ ProjO argued that the SDR remit would only be met with the provision of a core JFACHQ and not just a core AOC. The need for the 'Command' element of C2 of any JRRF air element was highlighted, along with the likely need, given the understandable political realities of delaying decisions to commit forces, of air C2 elements being able to 'hit the ground running'. It was also identified that C2 augmentees require both a core, cadre framework of personnel around which to form and established SOPs to reference. As well as identifying deficiencies, a positive highlight was identified as being that the RAF's ability to provide even a limited number of experienced and trained personnel to the coalition AOC (from Air Warfare Centre, UKCAOC and other RAF elements) had enabled a significant degree of influence to be exercised within the ALLIED FORCE air C2 processes. These 'lessons' manifested themselves in a Nov 99 paper on the proposed structure and establishment of the UKJFACHQ,¹⁰ in which the following main 'lines to take' were identified:

- "UK JFACHQ is absolutely pivotal to STC provision of effective expeditionary air power capability.
- Proposed structure and establishment provide expertise in all essential C2 areas but at skeletal or digital manning levels: any 'thinning' will result in the loss of core expertise and capability.

- National 82-man UKCAOC be replaced by 66-man UK JFACHQ.
- UK JFACHQ should be viewed as STC's C2 'jewel in the crown': requires same priority in manning as other front-line R1 operational units."

In early December 1999, a final STC 'justification' paper¹¹ was submitted and approved. It stated that PJHQ had confirmed that it may be essential for the JFHQ to deploy with a complete JFACHQ and that the JFACHQ should mirror the JFHQ's availability and readiness at R1; the paper supported both these lines, noting that, with so many JRRF air assets at R1, there was a prima facie case for holding a C2 element at the same readiness. The paper went on to state: "The need for an efficient CAOC has also been reinforced by the Kosovo operation" and identified the need to have a "full range of expertise and staff functions A1-7 from the outset". It also drew on common experience from Ops DESERT FOX and ALLIED FORCE that the UK's Defence Crisis Management Organization (UK equivalent of US DoD and Joint Staffs) required significant reinforcement for the operational-level planning stages of an operation; the paper therefore recommended that it should be the JFACHQ A5 (Strategy Div) that supported this and thereby enabling the maintenance of continuity from operational-level planning to tactical-level execution. On 26 January 2000, STC's policy¹² for the introduction of the UK JFACHQ was issued, with the intention of forming the UK JFACHQ at RAF High Wycombe on 3 March 2000.

UK JFACHQ: Air C2 leads the component field

When the UK JFACHQ officially formed in March 2000, its mission spanned a wide range of tasks in peace, crisis and war. Its raison d'être and primary tasks were identified within this still extant mission statement:



"To provide a UK core JFACHQ for the command and control of expeditionary air operations, and to develop, and provide training in, the command and control of joint air operations in order to maximise UK's operational air power capability."

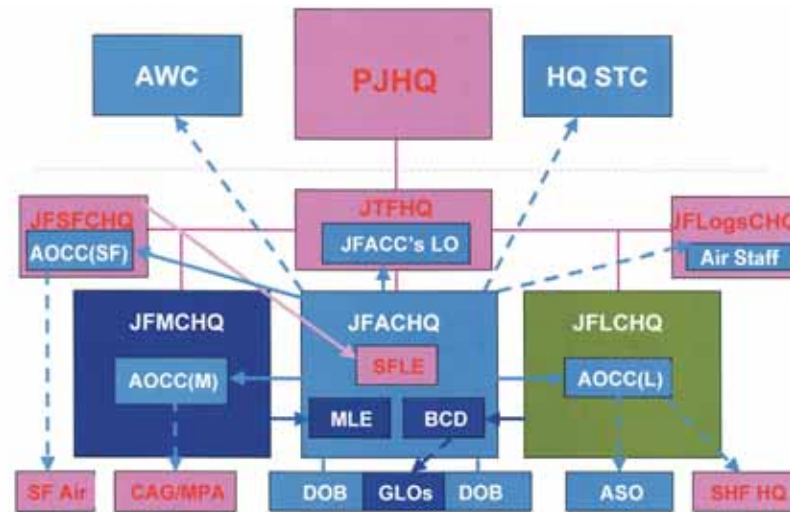


Figure 1

This mission was broken out into three substantive tasks:

- "To develop, exercise and maintain, at RL, a deployable core JFACHQ for the C2 of national or coalition expeditionary air operations in order to maximise the UK's deployable joint air capability.
- To develop and document the UK's operational joint air C2 processes, procedures and CIS in order to maximise UK's air power potential.
- To sponsor, provide, co-ordinate and standardise air C2 training in order to ensure UK has sufficient fully trained JFACCs, core and augmentee air battlegroup, and joint component liaison personnel to meet the JRRF air C2 commitment."

The UK national C2 CONOPS for the deployment of UK forces on joint national operations assumed the appointment of a Joint Commander (Jt Comd), who exercises Operational Command (OPCOM) at the military strategic and operational levels, and a Joint Task Force Commander (JTFC), who normally exercises Operational Control (OPCON) over assigned forces throughout a theatre of operations. The JTFC is responsible for planning and executing the joint campaign and normally direct operations from a Joint Task Force Headquarters (JTFHQ) in theatre.

Within the JTF, Joint Force Component Commanders would normally be appointed; these would include a JFACC. The JFACC is responsible to the JTFC for developing and executing the joint air operations plan to best support the JTFC's overall campaign plan. He is also the JTFC's principal air advisor and responsible to him for the co-ordination of all theatre air operations. It

was intended that the JFACC and his HQ would normally be collocated with the JTFHQ on land or afloat but, if geographically separated, it is to be capable of stand-alone operations — usually at the air component's primary Deployed Operating Base. Although, the other deployment scenarios that were to be enabled were: simultaneous deployment of two JFACHQs in support of a MSWF operation and a non-warfighting operation; single JFACHQ collocated with a JTFHQ afloat; small forward JFACHQ in theatre supported by 'reach-back'; and UK JFACHQ providing framework for a CFACHQ supporting a UK-led European operation.

The UK JFACHQ's situation within the Joint operational structure is shown in Figure 1.

The co-ordination linkages shown in this organizational structure resulted from the UK JFACHQ's initial leadership fully grasping, from the Unit's inception, the vital need for vertical and horizontal operational integration and liaison, and subsequently institutionalized it within its CONOPS and manning documents. Thus, Air Operations Co-ordination Centres (AOCCs), comprising a senior liaison officer (the JFACC's personal representative) and other air operations staffs, were identified as being required for every joint force component HQ; similarly, the need for the reciprocal 'hosting' of other component's liaison elements (e.g. Battlefield Co-ordination Detachment (BCD) and Maritime Liaison Element (MLE)) was codified. The later peacetime implementation of some of these UK JFACHQ co-ordination and liaison elements and their operational debut during Op IRAQI FREEDOM

was but one clear demonstration that the UK JFACHQ was in the van of the development of UK and Coalition Joint and Air C2 processes.¹³

An operational JFACHQ's size would be tailored to the scale of the operation it was supporting and the C2 specializations involved (defensive, offensive, maritime etc) would be matched to the operational tasks. As the JFACHQ was intended to be fully scaleable, dependent upon the size of operation to be supported, its actual size and shape would depend upon a number of criteria, but principally would need to take into account the increased level and detail of planning required for offensive sorties. In particular, there would be additional focus on the requirements for targeting, weaponeering, calculation of collateral damage expectancy, Composite Air Operations (COMAO) packaging, Airspace Management and Combat Support. It was considered that, as a worst case (i.e. most manpower-intensive), during UK MSWF operations on a 24-hour basis, a JFACHQ should be capable of handling approximately 180 offensive/DCA sorties per day plus an equal number of combat support sorties i.e. up to approximately 400 total sorties.

In looking at the generic structure above, one significant point of difference between the US and UK operational-level command structures is worthy of highlighting. This is the absence from within UK doctrine of the concept of single Service commanders of deployed forces. Under US doctrine, deployed USAF elements would have a Commander Air Force Forces (COMAFFOR). The COMAFFOR is the USAF designated Service component commander responsible to the JFC for organizing, training, equipping, sustaining, and when delegated OPCON, for employing USAF forces in support of JFC objectives.¹⁴ This commander may also be nominated the JFACC, but this could be a separate individual altogether. Under UK doctrine, the responsibilities of the

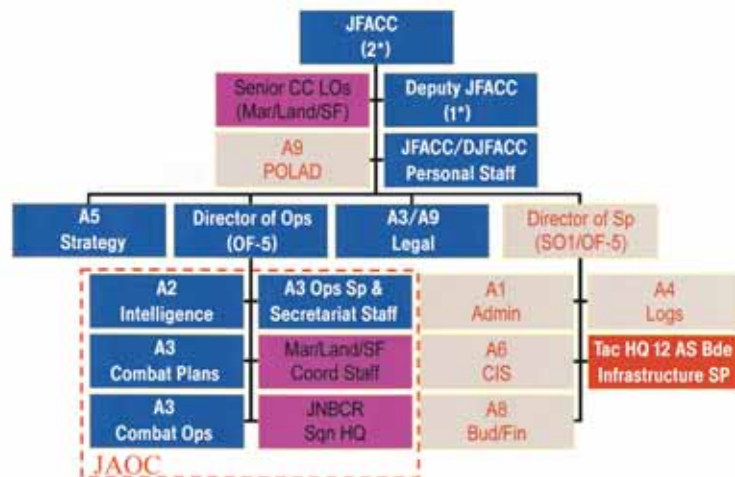


Figure 2

COMAFFOR are broadly shared between the deployed JFACC and AOCinC STC acting as a Supporting Cdr to the operation's Jt Comd (normally CJO). It is to meet the UK JFACC's portion of his AFFOR-type responsibilities that he has a Support Division within his HQs, typically staffing all theatre A1, A4, A6 and A8/9 issues. The permanent peacetime structure of the UK JFACHQ was based directly on the intended operational JFACHQ structure, shown in Figure 2. This HQ would support a nominated JFACC of 'any cloth' (i.e. of any Service) within the above national Joint C2 structure. To achieve its mission, the UK JFACHQ structure was intended to provide the JFACC with a HQ that could plan air operations from the provision of input to the national military-strategic and operational-

The Air Estimate was revisited to allow for the employment of 7 RAF GR7 Harriers and 6 RN FA2 Harriers from the CVS HMS Illustrious



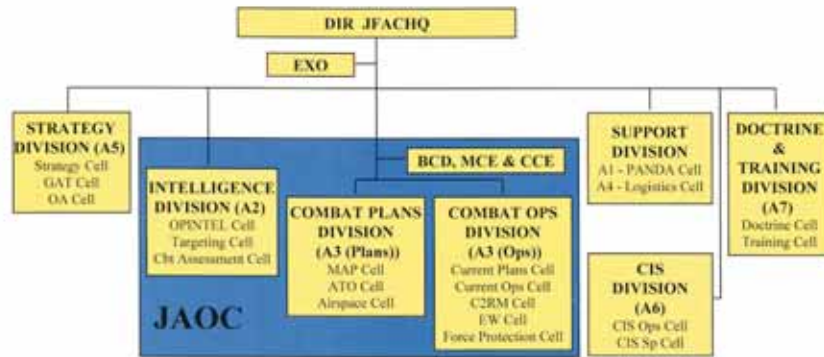


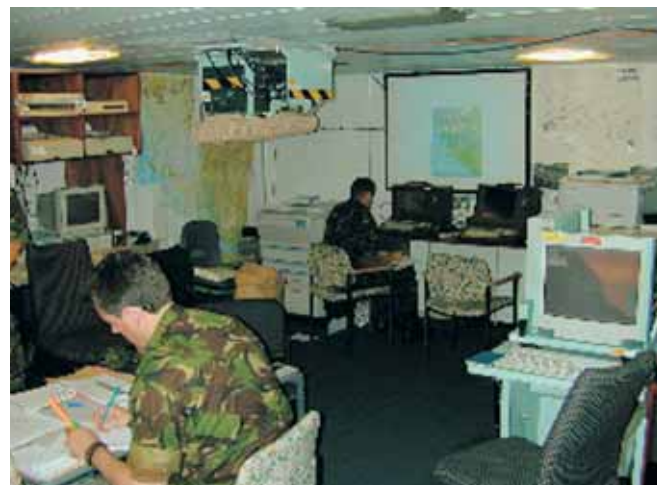
Figure 3

level planning processes, the Joint Air Estimate process, through to JAOP development, and, once in-theatre, the development of Air Operations Directives, Air Tasking Orders, and Airspace Control Orders, through execution and both combat and operational assessment. The cadre UK JFACHQ therefore comprised of the functional areas outlined in Figure 3,¹⁵ with core personnel representing all JFACHQ divisions and cells and, in addition, an A7 Doctrine & Training Division. This cadre UK JFACHQ was configured to enable the immediate provision of a deployable, coherent core of expertise representing the majority of divisions and cells required for a UK JFACHQ conducting MSWF. For operations of a lesser scale, or for multiple small-scale operations, it was planned to draw on cadre JFACHQ personnel to form ad-hoc JFACHQ entities as required by the prevailing scenario. However, it was quite rightly identified that: "... available air C2 CIS equipment, is likely to limit the number of concurrent national operations that can be supported." The significant potential deficiencies in terms of both CIS and support manpower were a major driver toward the intended collocation of the JFACHQ with the JTFHQ. Again, with the intention of keeping the deployed footprint to a minimum, elements of the HQ such as A2 and A4 would employ 'reach-back' to the maximum extent possible. However, despite the potential of some small savings in deployed manpower, deployment planning envisaged that the 66 strong cadre would need to be reinforced by up to 350 augmentee personnel to man a stand-alone JFACHQ to support of a MSWF operation.

Op PALLISER — UK JFACHQ's trial by fire

In the first week of May 2000, after only some eight weeks of existence, the JFACHQ was called on to support Op PALLISER in Sierra Leone; this operation was initially a Non-combatant Evacuation Operation (NEO) that quickly

developed into an Intervention/Peace Support Operation (PSO). Although small in scale, the significant challenge posed by the operation was well met by the embryonic HQs. The tempo of the operation was exhilarating for those involved. The A5 Division was called to support the Strategic Estimate at PJHQ on 5 May and an Air Estimate undertaken on 7 May. Meanwhile, UK 1 Para, having been warned only on 6 May, successfully secured Lungi airfield in Sierra Leone over 7/8 May and began the NEO. On 9 May, the Air Estimate was revisited to allow for the employment of 7 RAF GR7 Harriers and 6 RN FA2 Harriers from the CVS HMS Illustrious, 8 C-130s and a mix of 12 helicopters. On 11 May, as the CVS entered the operating area, the JFACHQ's peacetime Director was nominated as the operation's JFACC and he and 8 other cadre JFACHQ personnel deployed. By 13 May, having visited en-route the JTFC at his HQs in Sierra Leone's capital Freetown, the JFACC and his small HQ had established itself on-board the CVS (pictured below). While the NEO had largely been accomplished and was being scaled down, by 12 May, the nature and scale of the operation developed to meet an increasing threat posed by the rebel forces of the Revolutionary United Front (RUF). On 17 May, fixed wing operations began over Sierra Leone, undertaking three main lines of operation: 1) 'Friendly' or 'Hostile Air Presence



missions in support of the JTFC's Information operation; 2) Tactical Air Recce; and 3) Training and establishing local SOPs for Close Air Support. Over 23-26 May, 42 Cdo conducted a Relief in Place with 1 Para and, with the situation significantly more stable, over 7/8 June the CVS covertly left the JOA and the JFACHQ recovered back to the UK.

The Op PALLISER deployment proved to be a highly successful 'proof of concept' for the JFACHQ at the national-only, small-scale level of operation. It also reinforced many known C2 truisms or already known issues. Most significant among them was the reinforcement that whenever possible, the JFACC along with, if not all his whole HQs then, at least his A5 staff should be collocated with the JTFHQ. In hindsight the positioning of the JFACC and his A5 on the CVS proved to be a mistake for they were never able to 'be in the JTFC's mind' and a full understanding of the JTFC's intent and CONOPS could never be gained. This location issue was compounded by the recurrent issue of a lack of operational-level communications; the CVS had only a tenuous single route for secure communications with the JTFHQ only some 50 NMs away in Freetown.

UK JFACHQ — an air C2 capability that's here to stay?

With the significantly added advantage of its experience and lessons from Op PALLISER 'under its belt', the UK JFACHQ was declared as having an Initial Operating Capability in October 2000. During the course of the next year it continued to train its cadre personnel, procure its CIS and deployable support infrastructure (the main deployable fabricated HQ system is shown opposite). The development of capability continued and was marked with a declaration of Full Operational Capability (FOC) in October 2001.

While this declaration of FOC marked a very significant step in both the RAF's and UK's warfighting capability, the author believes that the continued provision of a robust air C2 capability still has some doctrinal

and organizational fights ahead of it. He would also argue that there are still lingering indications that, even within the RAF, the acceptance of the need for, and the concomitant cost of, providing a national air C2 capability that could effectively execute a UK MSWF air operation is far from ubiquitous or yet fully institutionalized. These indications have included: the 10% manning cut applied to the UK JFACHQ (as part a HQ's staff review) on the same day it was declared as being FOC; the persistent failure of the UK JFACHQ to be designated and treated as an operational force element (as, for example, the USAF does with its Falconer AOCs and Air Operations Groups/Sqns); the Unit's recent re-brigading under a 'training' grouping within the peacetime staff structure of HQSTC; and, that during the course of researching this article, the author was unable to find any reference to the only operational-level C2 entity — the UK JFACHQ — amongst the list of ORBAT and organizations on the RAF's website.¹⁶

However, notwithstanding the concerns raised above, since its FOC declaration, the UK JFACHQ has been a leading and pivotal element in the RAF's contributions to the coalition air C2 organizations that planned and executed Ops ENDURING FREEDOM and IRAQI FREEDOM, and has been involved in nearly all significant UK Joint and US Coalition C2 exercises and training events. Almost from the outset, the capability and performance of the UK's JFACHQ and its cadre personnel have demonstrated that it and they were fully living up to the RAF's vision of being: "An Air Force that strives to be first and person for person remains second to none." In the experience of the author, it is accepted widely at home and in the US, that the RAF's JFACHQ certainly is person for person, second to none in the provision of operational-level component C2. Indeed, the author believes that the UK JFACHQ has already all but achieved the five-year vision he helped draft for it:

So, while it could be argued that the RAF does lead the international field in the provision of rapidly deployable operational-level air C2 expertise, the absolutely essential need to provide an air C2 capability is not yet institutionalized in the RAF as it is within the USAF. To-date advocacy





"To become the UK's recognized centre of excellence for both the development and execution of all aspects of the command and control of joint air operations."

for the effective implementation of an air C2 capability within the RAF has, in the main, been a 'bottom-up' process, while in the USAF air C2 advocacy starts unequivocally at the very top with successive USAF Chiefs of Staff personally directing its development and resourcing. The author's fear is that over time, this vision is in danger of atrophying into hallucination through lack of resourcing as a 'front-line' force capability until a similar situation of 'top-down' advocacy and ubiquitous understanding of operational-level air C2 prevails within the RAF.

Notes

- 1 German for 'politics of reality'; foreign politics based on practical concerns rather than theory or ethics.
- 2 Wg Cdr ABMC 1992-1993.
- 3 The Management of Defence — Permanent Joint HQs; <http://www.armedforces.co.uk/mod/listings/10006.html> (Summary).
- 4 Joint Rapid Deployment Force; <http://www.archive.official-documents.co.uk/document/mod/defence/c1tx4.htm>
- 5 Air Force Board Standing Committee Paper: AFBSC(95)11 — Command and Control of STC Assets, STC/9096/53/1/2/CP.
- 6 <http://www.mod.uk/issues/sdr/intro.htm>
- 7 This ProjO was the Author of this article. He had also been the Sqn Ldr (O-4) ProjO for the introduction of the earlier UKCAOC working as the junior member of a three-man team with a Gp Capt and Wg Cdr.
- 8 UK Joint Force Air Component HQ — Policy Statement, UKCAOC/121/FP dated 17 November 1999.
- 9 Ibid
- 10 UK JFACHQ Proposed Structure and Establishment, JFACHQ/101/1/POL dated 23 November 1999.
- 11 Justification of the Establishment and Infrastructure for a Joint Force Air Component Headquarters (JFACHQ), JFACHQ/101/Pol dated 13 December 1999.
- 12 HQ STC Policy for the Introduction of UK Joint Force Air Component Headquarters, JFACHQ/101/1/Pol dated 26 January 2000.
- 13 The need for significantly enhanced horizontal and vertical integration and liaison during the US planning for OIF was to be one of the first observations of the UK's air liaison team (drawn from UK JFACHQ) when it joined the now Coalition air planning effort at CENTAFHQ. While, as discussed, the need for liaison and co-ordination is well institutionalized in UK air C2 doctrine

and practice, the USAF's Air Co-ordination Element (ACE) concept was only to manifest itself in the immediate run up to OIF's execution.

14 USAF Air Force Forces — Command and Control Concept of Operations, 22 July 2002, page 8, par 4.4.

15 Initial policy document organization charts showed a single 'Combat Service Support' Division, but almost immediately following stand-up that Division was broken out into two separate ones: 'Support' and 'CIS'.

16 <http://www.raf.mod.uk/equipment/strength.html>



Operation IRAQI FREEDOM: Coalition operations

By Sqn Ldr Sophy Gardner, RAF

The overthrow of Saddam Hussein's regime during the combat phase of Operation IRAQI FREEDOM between March and May 2002 marked the culmination of many years of cooperation between US and British forces in the Middle East, brought together for Operation DESERT STORM and remaining for 12 years policing the Northern and Southern No-Fly Zones over Iraq side-by-side. In this article, the author attempts to identify the issues and challenges posed by coalition operations in Iraq as a way of understanding how to maintain and best nurture the close professional military relationship that exists between the USAF and the RAF as we look, collectively, to the future.

It is just 22 months since the US-led coalition entered the final planning phase in the run-up to Operation IRAQI FREEDOM. At the time, the debate was raging about whether the United States was going to be forced to 'go it alone'.¹ In a press briefing on 11 March 2003, Donald Rumsfeld said that the US had alternative plans to invade Iraq if Britain decided not to take part in military actions, adding: "To the extent they [Britain] are not able to participate, there are works around and they would not be involved".² In the UK, the Prime Minister was facing significant opposition from within the Labour Party and from the general public, with demonstrations in London in mid-February 2003 drawing an estimated

In the early 21st century, the untethering of states from their cold war allegiances has brought benefits for some, but uncertainty (economically and politically) for many as well

(and record) one million people. These political problems created a febrile atmosphere in the run-up to a potential operation (and gave US military planners a task that, to say the least, was extremely challenging). Nevertheless, it was widely recognised that the US would attract greater international legitimacy if it could form a coalition, particularly if this could be garnered under UN auspices.³ Also, the UK military contribution on the table, though small in relative numbers, provided some capabilities that were particularly valuable and included key top-up forces in areas where the US was stretched.⁴ Going-it-alone was certainly not the preferred course for the US.⁵

Of course, Operation IRAQI FREEDOM was ultimately conducted as a coalition operation, with troops from the UK and Australia in combat alongside the US military. But no UN mandate was forthcoming. In the aftermath of combat operations, military commentators lined up to analyse the operation, its perceived successes and failures, and the lessons that could be learnt for the future (not least in the context of the operation as a coalition enterprise). As the British Chief of the Defence Staff (CDS) said, "As an example of a coalition operation in modern times, it [the operation in Iraq] has just about everything for the analysts to scrutinise and the arm-chair generals to comment about".⁶ The aim of this analysis is to identify the issues and challenges that coalition operations presented during Operation IRAQI FREEDOM Phase 3 and extrapolate from these the wider lessons which we need to identify if we are to move forward in order to prepare ourselves for future coalition operations. But firstly, five caveats. I intend to concentrate on the UK/US relationship, despite the fact that there was also a considerable Australian presence of around 2,000 personnel, comprising elements such as special forces, commando units, FA/18s, frigates and a diving team, as well as a national headquarters similar to, though smaller than, the UK National Contingent Headquarters (NCHQ) at Camp As Saliyah in Qatar (alongside CENTCOM Forward). The Australians will have their own perspective, although they may well have similar observations on the challenges of participation in this coalition endeavour. Indeed, there were many more layers of complexity to the 'coalition' context of this

operation, given the dozens of other nations that were involved in some way (whether in providing overflight rights, basing rights or logistic support).⁷ Secondly, in order to address the subject holistically, I will look at the operation from the Joint perspective. But, where possible, I will tease out some air-specific issues and examples, and later consider the evolving USAF/RAF relationship in the aftermath of IRAQI FREEDOM. Thirdly, I will focus specifically on lessons from Phase 3 (the combat phase that culminated in the overthrow of Saddam Hussein's regime — 'the conventional combat portion'⁸). At the time of writing, it is plain that Phase 4 — still ongoing — has many further lessons for us, but, nevertheless, there is still much to be gained by analysing Phase 3, and the preparations for it, as a discrete package. Fourthly, it is also important to acknowledge the implications that the refusal of Turkish support had for the UK experience. Apart from the obvious time-critical challenges of the late decision to abandon possible use of Turkey and the necessary redirection of significant quantities of troops and equipment, the demise of the 'Turkey option' took EUCOM out of the C2 equation. Having both CENTCOM and EUCOM in the operation would have added an extra dimension and an already complex situation would have been even more so. Thus the investigation of coalition operations here, by definition, considers coordination and cooperation with only a single US Command HQ. Finally, it is important, to recognise that "what you see depends on where you sit" (here I quote the UK NCC⁹), and my perspective will no doubt be shaped in part by my experience at the NCHQ.

Why is it important for us to understand and progress our thinking on coalition operations? The conflicts we now face, post Cold War and 9/11, are very different to those for which our senior commanders were trained when they began their service. Now, in the early 21st century, the untethering of states from their cold war allegiances has brought benefits for some, but uncertainty (economically and politically) for many as well. 9/11 was the most violent of the shocks which confirmed the arrival of the era of asymmetric conflict: we now live in a world where asymmetric weapons are increasingly effective, have a potentially huge destructive impact, yet



F-14D Tomcats take on fuel from an A-6E Intruder allowing them to remain on station for extended periods, while enforcing the no-fly zone

Planning, operating and living side-by-side for 12 years ensured a level of integration between the USAF and the RAF that was to prove invaluable

are increasingly accessible to non-state aggressors for use worldwide. And we have also entered an era where wars (for potential coalition partners in the West, at least) are increasingly engagements of choice, ideally fought in coalitions of 'willing' participants. From the UK perspective, the likelihood of 'going it alone' for high intensity combat operations is now remote: we envisage fighting in an alliance of coalition partners which, for larger operations, will invariably be alongside the US. In December 2003, the MoD's White Paper stated that: "The most demanding expeditionary operations, including intervention against state adversaries, can only be plausibly conducted if US forces are engaged, either leading a coalition or in NATO".¹⁰ In this context, the cohesion of a coalition, particularly in the asymmetric environment, will be fundamental to the success of an operation, and a competent enemy will recognise that as our potential Centre of Gravity. Even an opposed, but non-hostile, third party can disrupt a prospective operation by attacking potential fault-lines between different coalition members; in 'wars of choice' there are many obstacles facing a coalition even before they reach the enemy. So, the better our understanding of the dynamics and challenges of coalition operations, the better our preparations for the future. From the

perspective of understanding the UK/US military relationship, I would opine that we are at a critical point in our development. Having spent 12 years policing the skies over Iraq, working alongside the US for more than 4,000 days of continuous operations, we now face a period of potentially limited operational contact. Indeed, progress in Iraq may lead to that contact reducing further. Thus we must now identify what work we need to do to prepare for future challenges, particularly as the only certainty is that there will be more.

As just mentioned, the preparation and planning for Operation IRAQI FREEDOM took place against a back-drop of continued coalition enforcement of the Iraqi no-fly zones (mandated under UN Resolution 687) with the USAF and RAF operating alongside each other, both in the Northern and Southern Combined Air Operations Centres (CAOCs) and in the air. Planning, operating and living side-by-side for 12 years ensured a level of integration between the USAF and the RAF that was to prove invaluable. Although UK involvement in planning for a potential Iraqi operation only started in mid 2002, all three services had had staff embedded alongside their US counterparts in US Headquarters since 9/11, and Operation ENDURING FREEDOM had



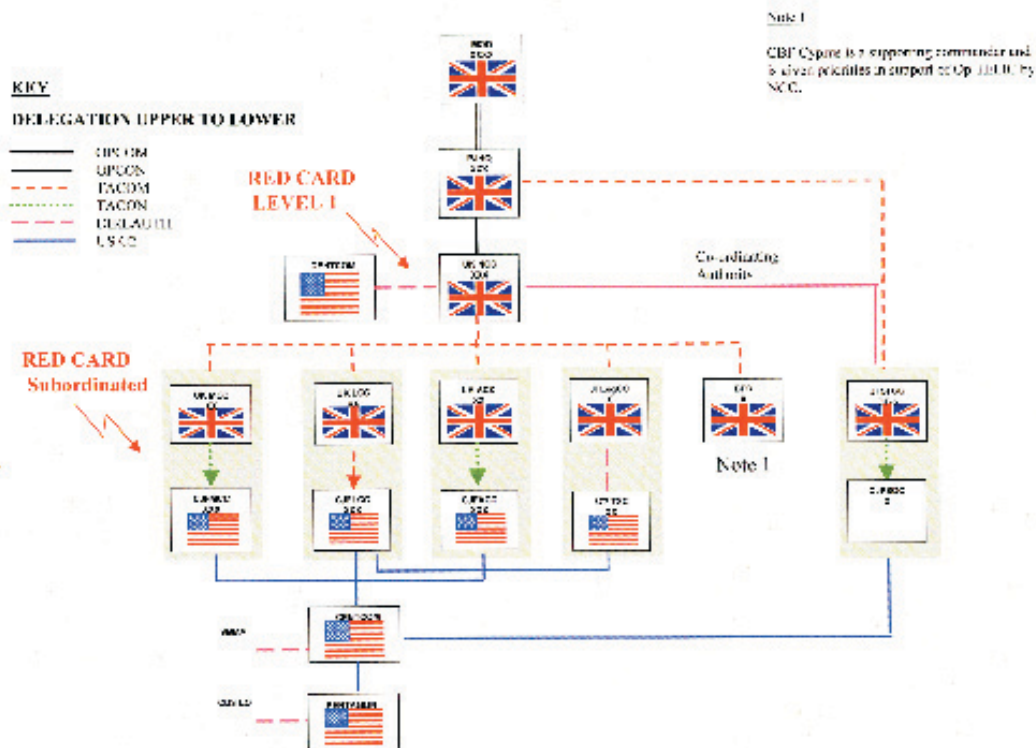
The UK contribution was to consist of over 100 fixed wing aircraft and 120 helicopters, an army division comprising three Brigades and over 100 Challengers, and an Amphibious Task Group, along with mine clearance vessels, TLAM shooters and a hospital ship

UK Challenger

US and UK personnel planning and operating alongside each other from late 2001. The UK staff at CENTCOM, based at Tampa, was lead by a 3-star initially and then by a 2-star from May 2002. In the autumn of 2002, Air Marshal BurrIDGE¹¹ was designated National Contingent Commander (NCC) and began strengthening already established relationships at the highest levels. Below him, the UK Contingent Commanders were also working alongside their counterparts. This early planning work allowed the UK visibility of, and increasing involvement and influence in, US planning, with the UK planning teams (the 'embedded' staff¹²) gaining credibility with their US counterparts and superiors, such that they were later to form the core of the UK embedded staff within the deployed US Headquarters.¹³ As time moved on, personal relationships developed, trust was established and staffs increasingly appreciated the fundamental concept of shared risk in a coalition operation. Of course, with the political difficulties in the UK in late 2002 (and into the new year of 2003), the embedded UK planning staffs faced the challenge of maintaining momentum in the planning process, against a backdrop

of uncertainty about any UK involvement. Established links, through these embedded staff, were essential in keeping UK military planners alongside their counterparts through these difficult times. Widely acknowledged by US and UK commanders as critical to the development of the campaign plans were the exercises and rehearsals that took place in the last few months of preparations. 'Rock drills' and 'chair flies' (depending on the colour of one's cloth), including Exercise INTERNAL LOOK in December 2002, were vital in shaking down planning and C2 issues.

The UK force structure was announced by the Secretary of State in January and February 2003, with the final announcements taking place just a month before the operation eventually began. The UK contribution was to consist of over 100 fixed wing aircraft and 120 helicopters, an army division comprising three Brigades and over 100 Challengers, and an Amphibious Task Group, along with mine clearance vessels, TLAM shooters and a hospital ship. The MoD's First Reflections report stated that "The UK contribution was taken



into the US plan where it could best complement and enhance US capabilities, both political and military".¹⁴ The RAF deployed more than 8,000 personnel with air assets tailored to US requirements (fielding, for example, precision weapons, ISR and C2 platforms, DCA and AR). 'The Plan' had gone through many iterations¹⁵ and as possible conflict drew closer, and with No Fly Zone operations still ongoing, it became apparent that events would have to be synchronised in a number of areas. Here, coalition relationships at the higher military levels were critical, as the commanders tailored and reworked plans to accommodate the shifting realities of the final critical weeks. The prospect of particular enemy actions: use of Western Desert Scuds, potential actions in the Kurdish Autonomous Zone, and the threat of sabotage to the Southern oilfields, coalesced into an imperative to compress the 'shaping' phase to the bare minimum. The integration of the coalition staffs ensured that the coalition moved together 'as one' in these final planning stages.

So, within the context of the coalition, what were the issues and challenges we faced; what worked and what didn't?

First of all, although subject to ongoing debate, I believe coalition military C2 relationships

worked well. This diagram shows how C2 was delegated within the UK military and how that aligned with the US military construct. Within the UK, planning and oversight of the operation was led by MoD and the Permanent Joint Headquarters (PJHQ), which jointly form the Defence Crisis Management Organisation. CDS appointed Chief Joint Operations (CJO) at the PJHQ as the Joint Commander, with OPCOM of deployed forces. With some exceptions (such as special forces), OPCOM of committed forces was delegated by CJO to the NCC, who in turn sub-delegated TACOM to UK Environmental Contingent Commanders (who could then in turn delegate TACOM to their US counterparts).¹⁶ The NCC sat alongside General Franks, CENTCOM Commander, at Camp As-Saliyah in Qatar. At the national and environmental levels in theatre, the UK commanders were responsible for harmonising coalition activity with national political intent and legal requirements, and ensuring the effective employment of UK assets. They also held a national 'red card'. However, the use of that red card was avoided on more than one occasion because the trust that existed at all levels of command allowed informal dialogue to pre-empt any potential formal action. This approach was absolutely pivotal in minimising friction. The way in which the different national contingents integrated into their components was determined

Our willingness to commit to training and planning together, and US trust in placing UK military personnel in key positions within the US organisation, also contributed to our strong stance as we, as a coalition, 'crossed the line' together. It was not long before this was put to the test when a US Patriot battery shot down a UK Tornado GR4

both by the nature of their environments and by their contributions. Both the UK air and maritime elements were fully integrated into their US contingent; indeed for air, the very nature of the environment demands full integration. The Land environment is somewhat different. From early on, the challenges of integrating UK land forces into a US digitised land formation were recognised. Although a surmountable technological problem (just) it would have been testing. However, the change of plan following Turkey's decision not to grant basing rights meant that the UK land contingent plan changed to having a UK division operating with 1st Marine Expeditionary Force within a discrete geographical area in the south of Iraq, reducing reliance on integrated C2 technological capability.

In terms of linkages between the deployed commander and the UK, the NCC worked through CJO to the Defence Staff, with CJO and the PJHQ acting as a buffer between London and the NCC in theatre, allowing the NCC to concentrate on coalition military issues and his relationships with the US military and his national environmental contingent commanders. If CJO, as Joint Commander, had deployed forward, as had been mooted, the combined tasks of CJO and the NCC (looking up to London, across and up to CENTCOM, and looking after national interests at the Command Headquarters level) would all have been vested in a single individual/location; considering the workload required solely for the NCC to stay alongside General Franks and the CENTCOM battle rhythm, it seems certain that other, vital, linkages would have suffered. During the operation, the NCC was reported in the Daily Telegraph as having made 'the surprising revelation' that he had never spoken to the Prime Minister.¹⁷ "I have never spoken to Tony Blair", he said, "I answer to the Chief of the Defence Staff and the Secretary of State."¹⁸ Journalists may have found this surprising, but the NCC, and indeed the Prime Minister, had no need for direct contact, relying instead on the C2 chains which

were already well defined in UK doctrine and with communication routes up the levels of command to the MoD already well-trodden during recent operations. The US military had a different and more fluid construct, with direct communication regularly taking place between CENTCOM and the Defense Department (Donald Rumsfeld and General Franks were in daily direct contact, often via VTC with the NCC alongside General Franks, and the Joint Chiefs of Staff in the Pentagon made direct calls to the US Component Commanders).¹⁹ The differences between the US and UK C2 constructs, particularly the political-military interface aspect, were debated by the House of Commons Defence Select Committee (HCDC) which, in its Third Report, recommended that "... the MOD considers whether the highest levels of British command structures might be made more adaptable so as to be able to operate more closely in parallel with their American counterparts, when UK and US forces are operating together".²⁰ They expanded by saying "it might be argued that the British system should be able to adapt to deal with the more direct political-military interface practised by the Americans".²¹ However, in its response to the HCDC's observations on differing UK/US structures, the government firmly stated: "We do not agree. The Coalition command structures were closely integrated".²² In reality, relationships in-theatre were excellent and the NCC was able to provide comprehensive feedback daily to CJO. It is worth noting that our experience with US C2 during Kosovo was very different, with direction to senior US military commanders in-theatre filtering down a more traditional chain (more similar to the UK construct). These differences are driven as much by the personalities involved as by the mission and environment and it is, therefore, likely that the personalities involved will have a significant bearing on future US command relationships. We cannot, obviously, predict the nature of future US administrations and the characteristics that might pertain during future conflicts (or, indeed, UK government working practices which are, perhaps to a lesser extent but

more so than in the past, also personality driven), but our C2 construct is robust and, whilst clearly defined, has proved itself flexible enough to accommodate such nuances.

The UK view that participating in a coalition operation meant sharing the burden in terms of commitment of troops and assets and sharing the responsibility for the operation and sharing the risk, to our forces and to the outcome, formed the central tenet of mutual understanding between the UK and US commanders. Our willingness to commit to training and planning together, and US trust in placing UK military personnel in key positions within the US organisation, also contributed to our strong stance as we, as a coalition (bearing in mind the Centre of Gravity issue), ‘crossed the line’ together. It was not long before this was put to the test when a US Patriot battery shot down a UK Tornado GR4, with the tragic loss of the crew. Although the ultimate causes of the accident were established later on, it was known almost immediately that a US Patriot had brought down the aircraft. At the National Headquarters in Qatar and in the Air Component Headquarters (ACHQ) in Saudi Arabia, the senior US and UK commanders understood that this incident was an important test of our relationship. Both in the National and Air Headquarters, the US commanders contacted their UK equivalents to offer apologies and condolences. The morning after the shoot-down, at a pre-scheduled interview, the NCC vowed that, following the tragedy, relations with the US were as strong as ever: “A military campaign is probably the most intimate alliance you can implement. We have two nations who share the risks, share the dangers and share the rewards. You develop a bond of trust because you are taking responsibility for each other’s lives’.²³ On the same day, General Franks, in an interview with George Pascoe Watson of *The Sun* was asked about his views on the accident and insisted that any suggestion that friendly-fire incidents would drive the US and the UK apart was misguided, “I disagree in the strongest terms. When there are friendly-fire incidents across coalition boundaries it brings allies closer together’.²⁴ These were not empty words: in private, the commanders expressed identical views.

One of the first hurdles to face us was the synchronisation of the use of information in the campaign, particularly given the multi-faceted nature of the ‘audiences’ that we were communicating with.²⁵ In theatre, the approach of our militaries to the media was a case in point. In the run-up to the operation, coalition staffs worked hard to align our media strategies and define the daily rhythm (with important audiences spread across the world’s time zones), but the different national approaches were more difficult to coordinate. For the ACHQ, journalists were banned from Saudi Arabia and so the focus for journalists following the air campaign turned away from there and dispersed to the press centre and bases in Kuwait. At the National Contingent level, there was a Combined Press Information Centre in Qatar (with a conference ‘set’ described as having “a passing resemblance to the deck of *Starship Enterprise*” and designed by a Hollywood art director²⁶) and the cultural challenges of working side-by-side with our coalition partners and the various media outlets were soon obvious. Even before we ‘stood up’ in Qatar, the stated concept of ‘shock and awe’ had sat uncomfortably with the UK’s emphasis on the future rebuilding of Iraq.²⁷ Although the phrase ‘shock and awe’ was studiously avoided by our US colleagues in theatre²⁸, General Franks’s first news conference after the conflict commenced referred to a campaign ‘characterised by shock’, delivery of ‘decisive precision shock’ and ‘the introduction of shock air forces’ in his initial preamble.²⁹ But this was as much due to a cultural, rather than doctrinal, difference in presentation. As Paul Adams (BBC correspondent) put it: “The tall, imposing, jug-eared Texan seemed just the man to inflict a dose of shock and awe on Iraq, while his shorter, bespectacled British counterpart appeared to embody something a little more nuanced.” While it was tempting to draw distinctions between the two major coalition partners, ‘shock and awe’ and ‘effects-based warfare’ were essentially the same thing. “There are other ways of doing shock and awe than by breaking things,” Burridge said’.³⁰ In any case, as an *Air Force Magazine* article put it: “It was not the job of the Department of Defense [in the context of ‘shock and awe’] to correct expectations generated by others. Indeed, not doing so may



Members of Saddam
Hussein's Republican
Guard

UK government military campaign objectives for the operation cited the prime objective as 'to rid Iraq of its weapons of mass destruction and their associated weapons programmes and means of delivery'. For the US, the prime objective was to 'end the regime of Saddam Hussein'

have been a form of passive disinformation'.³¹ This was, however, the first and only coalition conference in Qatar. While General Franks and his media spokesman, General Brooks, presented to the media, the UK, Australian, Danish and Dutch national commanders stood in attendance on the podium. None was given a speaking part in a conference that lasted well over an hour, and the impression given was not the one that we wanted to project. Nor did it reflect reality, for the NCC had anything but a solely 'walk-on part', and it was decided after this that unilateral media handling was likely to be the better option. No doubt, the differing attitudes of our national press had a great deal to do with the way that we viewed media handling: the US military were certainly surprised at the relatively hostile treatment we received from the UK media³², while the patient

and sometimes supine attitude of the US press to some fairly poor treatment (in comparison to what we knew our UK press would expect) by the US military media handlers was a source of some surprise to us.³³ Perhaps Paul Adams's description of our differences seems harsh, but it also sums up the perceptions of the press with which both militaries were attempting to grapple: "Reporters desperate for facts swarmed every time a clean-cut, polite American military spokesman ventured into the crowded corridors. But the constraints imposed by 'operational security' or, just as often, a reluctance to speak out of turn, meant we always came away disappointed . . . A small team of British media handlers worked hard to fill the void . . . It was an adult way of doing things, and one that the Americans could not, or would not, emulate".³⁴ In terms of information, there was

During IRAQI FREEDOM, the frustration came in translating the trust engendered at the highest levels into sensible information sharing at the lower levels

also an issue of marrying our military objectives for the operation. The published UK government military campaign objectives for the operation cited the prime objective as ‘to rid Iraq of its weapons of mass destruction and their associated weapons programmes and means of delivery’.³⁵ For the US, the prime objective was to ‘end the regime of Saddam Hussein’.³⁶ The US objectives referred to terrorism in their third and fourth objectives, yet the UK referred to terrorism only under ‘wider political objectives in support of the military campaign’.³⁷ The key to marrying these two perspectives under one coalition banner was, of course, our united attitude to Saddam Hussein’s regime. As the UK government articulated it: “The obstacle to Iraq’s compliance with its disarmament obligations under relevant UNSCRs is the current Iraqi regime . . . it is therefore necessary that the current Iraqi regime be removed from power’.³⁸ The two perspectives were as one on that aim, but it still required a careful approach by the US and the UK national commands to ensure that that fact was fully understood.

An early (pre-campaign) issue, which has crystallised into a ‘lesson-learned’ for coalition operations, was that of basing of assets. The UK and the US agreed that the US would lead in negotiating Host Nation (HN) Support for coalition assets. In the early stages of planning this seemed a pragmatic approach, but as time passed and HN views hardened, it became apparent that, at least from the HN’s view, one country’s aspiration for HN Support would be considered in isolation from any others, regardless of how the request had been submitted. This may seem an obvious strategy from the HN with hindsight, but at the time a united coalition approach seemed to be the most appropriate course. As it turned out, it probably did neither the US nor the UK any favours. At short notice, the flipside of the coalition equation came into play, with the US’s assistance and flexibility enabling our deployment by accommodating our changing plans (due to the HN issue) for air and land basing within their own plan.

Another challenge, which benefited from much thought and application before the campaign started, was the issue of national rules of

engagement and delegation given to commanders in theatre. During Kosovo, General Clark had expressed his frustration with laborious coalition approval processes.³⁹ Both the NCC and the ACC agreed after Operation IRAQI FREEDOM that, for this operation, the final delegations were infinitely more flexible and coherence across the coalition in terms of delegations was critical to UK credibility in a high tempo campaign with an air effort so vast that up to 1700 sorties a day were being launched.⁴⁰ Of course, there were occasions when our UK viewpoint on how an ‘effect’ would be interpreted differed from the US viewpoint. In the case of IRAQI FREEDOM, where the UK saw the potential for disagreement over the national acceptability of a particular course of action, resort to ‘Red cards’ was not the preferred option and, at the NCHQ level, differences of opinion were routinely resolved through debate and discussion. In fact, the UK was able to offer — and the US was comfortable being offered — British advice even when the UK was not directly involved. As Air Marshal Burridge said in evidence to the HCDC: ‘Where I believe the interesting bit occurs — and I think this is where we added considerable value — was in saying, yes, okay, this is an American target, American platform, no British involvement, but actually let me just say how this might look viewed in Paris, Berlin or wherever’.⁴¹

The sharing of information and the interoperability of information systems were among the greatest challenges facing the coalition. Thankfully, the limited extent of the IRAQI FREEDOM coalition made information and intelligence sharing easier than it would have been in a larger coalition. However, the sharing of information is at the centre of the relationship of trust that is needed in a coalition and during IRAQI FREEDOM, the frustration came in translating the trust engendered at the highest levels into sensible information sharing at the lower levels. The issue was not one of releasability per se: more that each individual in the chain felt beholden to check the releasability of the information before actioning any requests. The system was therefore slow and cumbersome, rather than responsive and agile. CIS systems were also a problem, with the US operating on their infinitely superior SIPRNET system, which was not releasable to UK eyes

without US supervision, while the UK operated its myriad CIS systems, and had access to CENTRIX; a US CIS system, with AUS/UK access, onto which AUS/UK releasable SIPRNET information could be transferred. However, the process was mandraulic rather than automatic, requiring our US counterparts to find the time (in a high tempo operational environment) to decide on and implement the transfer of information. Again, these challenges tended to be overcome through face-to-face dialogue and the development of good working relationships, although not without costs to efficiency.

So where do our experiences during Phase 3 leave us twenty-two months on? Notwithstanding ongoing events in Iraq, there are some important lessons from IRAQI FREEDOM for the UK and the US, just as there is a recognition that our operational interoperability (both in terms of how we think we fight and how we technically fight) must be maintained or we may suffer for it next time. There are no guarantees, if there is a next time, that we will have as much planning time (even though the political will to allow us to engage in planning, even if future intent is uncertain, can give us crucial influence at the earliest stage possible)⁴² and it is almost a given

Tactical Recce and STORMSHADOW are good examples from the air contingent of capabilities that the UK alone could offer

RAF Tornado equipped with Stormshadow long-range, stand off air-to-ground cruise missile



The technological gap between digitised and analogue contingents will impact severely on the principal advantage of digitisation . . . and in warfighting this could impact to a point where two elements become operationally irreconcilable.”

that we will not have just spent 12 years side-by-side in theatre in the run-up to a large scale operation. In fact, recognition that things will not be the same ‘next time’ is a key lesson in itself.

Importantly, we must offer capabilities which are of utility and influence, and which can fill gaps in and complement US capability. Tactical Recce and STORMSHADOW are good examples from the air contingent of capabilities that the UK alone could offer, while tankers and E-3s are examples of assets that we could offer which were in short supply. If the UK can perform valued tasks that the US requires (and other allies may not be able to field), our influence will be felt: “The significant military contribution the UK is able to make . . . means that we secure an effective place in the political and military decision-making processes”.⁴³ Sharing contentious and dangerous activities, not just those which are ‘niche’ or in short supply, is another vital way that our military contribution can demonstrate commitment and determine the value in which we are held (and the influence which we can bring to bear).

We must also recognise the value that sensible delegations had in the trust that the US put in the UK. These delegations allowed us to participate in some high importance time critical targeting decisions and ensured that we were included fully in decision-making. The marriage of political ends is a similarly critical but extremely sensitive area of coalition cooperation, and we will always need to be alive to the need to ensure that coalition members’ political ends (if different or differently prioritised) are understood, enmeshed and met. These political coalition issues will always be sensitive and challenging to planners, but they are critical to the successful execution of a coalition operation.

Most pressingly important to the UK and the US is the challenge of replacing the operational linkages that already existed (particularly between our Navies and Air Forces) as a result of the 12 years of coalition work leading up to IRAQI FREEDOM. We need to stay alongside each other by training and exercising together, developing doctrinally together and wargaming as a coalition. From the

RAF’s and the USAF’s perspective, this has been a priority since Phase 3 of IRAQI FREEDOM finished. The two forces have established an Engagement Initiative designed as a forum to take forward work on interoperability issues under the RAF Chief of the Air Staff and the USAF Chief to ensure that we are working and training together to prepare for the future. Some of this is practical — ensuring that our exchange programmes develop over time and ensuring that we maximise opportunities to exercise together — and some is technical — and in this area equipment procurement and development is central. As CDS outlined: “Whilst there are real opportunities for interoperability as forces modernise, there is equally the risk that this very modernisation could undermine the unity of effort in any coalition. The technological gap between digitised and analogue contingents will impact severely on the principal advantage of digitisation — that of a force’s ability to rely on tempo as a major ingredient of combat power — and in warfighting this could impact to a point where two elements become operationally irreconcilable.”⁴⁴ In the USAF, ‘Plug and Play’ is becoming (quite understandably) the mantra. Commanders are not interested in new equipment that cannot integrate into the battlespace and, importantly, cannot talk without ‘a man in the loop’ to the next piece of equipment. As Lieutenant General Keys⁴⁵ states: “Whatever is on the inside of your widget or gadget can be proprietary, but what comes out of the little plug in the front or back of it must speak the language of Airmen, and must work with my other equipment or systems without any third party translation or integrators needed. This is the rule for the 21st century USAF and if you can’t abide by it . . . we won’t buy it.”⁴⁶ The RAF has to maximise its presence alongside the USAF as they develop interoperability priorities and policies. It is also recognised by the USAF/RAF initiative that the cultural and intellectual aspects of fighting together are fundamental to progress. As well as interaction at senior levels (in meetings, at conferences, at war games etc), it is important to develop closer links further down the chain of command. There are several initiatives now in their developmental stages that aim — across the ranks — to develop our understanding of each other’s cultural ways

of doing business and grow a new generation of airmen who see their US counterparts as natural and familiar partners.⁴⁷ This approach should compliment our commitment to the policy of embedding UK staff in US Command staff for future operations — a policy that will remain absolutely key to successful cooperation in the future.

We — the US and UK militaries — left the end of Operation IRAQI FREEDOM Phase 3 having worked successfully as a coalition and having faced practical challenges along the way. We can see that these were largely overcome through a combination of fortuitous timing (an extended planning period), strong personal relationships, particularly at the senior levels, mutual dependence and burden-sharing (in terms of the UK providing capabilities which were of unique value to the coalition effort and the recognition, on both sides, that this was a journey we would travel together as a coalition ‘for better or for worse’) and a motivation to find common ground and to engineer solutions to any problems that threatened the coalition’s integrity. Most importantly, trust was established at all levels. For the future, whether we consider mindset, doctrine and culture, or equipment, CONOPS and interoperability, it is mutual cooperation and contact that will provide us with the best chance of staying in step. This will allow us to understand what we can offer each other, how we can best move forward together and in which areas we need to concentrate our efforts in order to maintain momentum.

Most importantly, a strong and close professional relationship will be the key as it was for Operation IRAQI FREEDOM. As the MoD concluded in its First Reflections report: “Working in a coalition brings political, diplomatic and military advantages, including the aggregation of capabilities, flexible war-fighting options and the sharing of intelligence and risk . . . At the operational and tactical levels, the planning and conduct of the operation was facilitated by the close professional relationship that has grown up between the UK and the US.”⁴⁸ We must ensure it is maintained — future coalition operations will depend on it.

Notes

- 1 E MacAskill, R Norton-Taylor and J Borger, US may go it alone as Blair is caught in diplomatic deadlock, *The Guardian*, 12 March 2004.
- 2 US willing to go it alone, <http://www.aljazeeraah.info/Newsarchives>, 12 March 2003.
- 3 Cordesman (2003), pp 487-491. Cordesman, Anthony H (2003), *The Iraq War: strategy, tactics and military lessons*, (Washington DC: Center for Strategic and International Studies)
- 4 Murray and Scales (2003), p 132. Murray, Williamson and Scales, Robert J (2003), *The Iraq War: a military history*, (Cambridge: Harvard University Press)
- 5 General Franks: “I would honestly say to the people of Great Britain, thanks for committing this magnificent UK force to be part of this coalition. It’s powerful, it’s effective and I’m glad to march forward beside the Brits’, George Pascoe Watson, I’m proud to march with Brits says General Tommy Franks”, *The Sun*, 24 March 2003, similar sentiments also witnessed personally in conversation.
- 6 The Military Challenges in Coalition Operations, CDS address to DSEI Conference, 11 September 2003 at www.deso.mod.uk/archive accessed 29 May 2004.
- 7 President Bush confirmed on 18 March that more than 35 countries were supporting the coalition, www.whitehouse.gov/news/releases/2003/03/20030319-17.html, 18 March 2003.
- 8 Dudman (2004), p. 2. Dudman, Robert S. (2004), *The Three-Week War*, *Air Force Magazine*, March 2004, p 2.
- 9 Air Marshal Burridge: “I should preface all my remarks with ‘What you see depends on where you sit’”, Oral Evidence to HCDC, 11 June 2003, Q. 225.
- 10 Delivering Security in a Changing World: Defence White Paper (2003), para 3.5.
- 11 Now Air Chief Marshal, Commander-in-Chief, Strike Command.
- 12 Air Marshal Burridge: “[The UK embedded staff] were members of General Franks’s staff, so instead of an American officer doing a particular job, there would be a British officer. That gave us linkage and connectivity between our two headquarters”, Oral Evidence to HCDC, 11 June 2003, Q. 217.
- 13 “. . . we were able to work closely with the US and influence the campaign from initial planning to execution through high-level political contacts . . . as well as by the presence of a significant number of embedded UK officers in key US headquarters.” *Operations in Iraq: First Reflections* (2003), para 6.2.
- 14 *ibid*, p 19.
- 15 “Too many to list!” as General Moseley commented, General T M Moseley speech to Royal Air Force Air Power Conference, 11 May 04.
- 16 Air Marshal Burridge: “I sat below [CJO] and I had operational control, so I was given the tasks and the forces and then I just had to match them into the American plan. Tactical command, in other words executing the individual tasks, was held by the UK 2* officers who were contingent commanders

- within each environment, air, land, maritime. They handed tactical control to their opposite number who was in all cases a 3* American, who would actually be the person who owned that part of the plan", Oral Evidence to HCDC, 11 June 2003, Q. 220.
- 17 N Tweedie and M Smith, "There's no hiding place, say Allied military chiefs", *The Telegraph*, 15 March 03.
- 18 *id.*
- 19 General T M Moseley speech to Royal Air Force Air Power Conference, 11 May 04.
- 20 Lessons of Iraq — Third Report of Session 2003-04 (2004), para. 84.
- 21 *Ibid.*
- 22 First Special Report: Lessons of Iraq — Government Response to the Committee's Third Report of Session 2003-04 (2004), para 25.
- 23 Witnessed personally during television interviews with the NCC, 23 March 2004; subsequently widely quoted.
- 24 George Pascoe Watson, "I'm proud to march with Brits says General Tommy Franks", *The Sun*, 24 March 2003.
- 25 Not just the UK and the US, but the Arab Street, other nations, the Iraqi people and, of course, the Iraqi regime.
- 26 Iraq War: Franks enters the fray of 'Hollywood' briefing room, *Birmingham Post*, 24 March 2003.
- 27 Harlan K Ullman, principal architect of the 'Shock and Awe' concept said: "The phrase [Shock and Awe] as used by the Pentagon now, has not been helpful — it has created a doomsday approach — the idea of terrorizing everyone. In fact, that's not the approach. The British have a much better phrase for it: effects-based operations", Correll (2003), p 55. Correll, John T. (2003), What happened to Shock and Awe, *Air Force Magazine*, November 2003, pp 52-57.
- 28 "The Department of Defense did not officially or explicitly endorse Shock and Awe, but traces of it could be discerned in statements by top leaders", *ibid.*, p 52.
- 29 CENTCOM Press Briefing at www.centcom.mil/CENTCOMNews/news_release.asp?NewsRelease=20030344.txt, 22 March 2003.
- 30 Adams (2003), pp. 106-8. Adams, Paul (2003), Shock and Awe — an Inevitable Victory, in Potter, S, ed, *The Battle for Iraq: BBC News Correspondents on the War Against Saddam and a New World Agenda*, (London: BBC Worldwide Limited)
- 31 Correll, *op cit*, p 57.
- 32 At a CENTCOM press conference, after another aggressive question from a BBC reporter, General Franks commented "Boy, there's a lot of you BBC guys" (witnessed personally on 23 March 2003).
- 33 Adams, *op cit*, pp 106-8.
- 34 Adams, *op cit*, p110.
- 35 Iraq: the military campaign objectives at <http://www.number-10.gov.uk> 17 March 2003 (visited 30 May 2004).
- 36 CENTCOM Press Briefing at www.centcom.mil/CENTCOMNews/news_release.asp?NewsRelease=20030344.txt, 22 March 2003.
- 37 Iraq: the military campaign objectives at <http://www.number-10.gov.uk> (visited 30 May 2004).
- 38 *id.*
- 39 "A brief assessment of the political-military interactions that took place during Operation Allied Force shows an existing 'delta' between the technologically inspired greater operational speed capabilities that were offered and used by NATO and the tortuously slow political decision-making mechanisms of the North Atlantic Council . . . In consequence, General Clarke was unable to unleash more sophisticated capabilities and thereby obtain a greater degree of operational speed", Young (2003), p 2.
- 40 Air Marshal Torpy, UK Air Contingent Commander: "What was different was that we were given greater delegation on this occasion because we knew that the tempo of the operation would demand decisions to be taken quickly and I could not go right the way back through the process, back to the PJHQ and MOD, which we could do when we had the luxury of time for our southern no-fly zone operations", Oral Evidence to HCDC, 5 November 2003, Q 1256.
- 41 Air Marshal Burrridge, Oral Evidence to HCDC, 11 June 2003, Q. 251.
- 42 "Come early and a nation can influence the plan as we did with CENTCOM albeit with no commitment to military action. Come late, and the plan is in concrete", ACM Burrridge address to DSEI Conference, 11 Sep 03 at www.deso.mod.uk/archive accessed 29 May 2004.
- 43 Delivering Security in a Changing World: Defence White Paper, *op cit*, p 8.
- 44 The Military Challenges in Coalition Operations, CDS address to DSEI Conference, 11 Sep 03 at www.deso.mod.uk/archive accessed 29 May 2004.
- 45 Deputy Chief of Staff, Air and Space Operations, USAF.
- 46 Lieutenant General Keys quote, 23 Jun 2004.
- 47 Cultural visits, mini-exchange tours and an overhaul of the exchange programme are just some of the projects established under USAF/RAF Engagement.
- 48 Operations in Iraq: First Reflections (2003), para 7.



The BAFDC crest, was designed by the College of Heraldry (the British heraldic authority — also known as the College of Arms), and features the American eagle and British lion

The British American Forces Dining Club

By Col Larry G Carter, USAF, Retired

"In war it is not always possible to have everything go exactly as one likes. In working with Allies it sometimes happens that they develop opinions of their own."

(The Hinge of Fate by Sir Winston Churchill)

Sitting in the reviewing stands that overlook the main parade yard inside the ancient walls of the Tower of London, HRH Prince Philip, Duke of Edinburgh, leaned over and explained the maneuvers of a British military marching band to Brig Gen Kurt B. Anderson.¹ Commander of the United States Air Force's 48th Fighter Wing, based at Royal Air Force (RAF) Lakenheath, General Anderson was the senior American officer in attendance that day. Prince Philip's act underscored the very special relationship between

the United States and Britain — the product of a long history between the two countries, conscious decisions, and much nurturing. That day the Duke of Edinburgh, the queen's consort, hosted one of those nurturing institutions — a meeting of the British American Forces Dining Club (BAFDC).

The club began on 1 March 1943, during the dark days of World War II, under the patronage of Gen Dwight D Eisenhower and William Richard Morris, first Viscount Nuffield — an English philanthropist and automobile manufacturer who produced aircraft during the war. General Eisenhower, who had replaced Adm Harold Stark as overall commander of US forces in the European theater in June 1942, assumed responsibility for the



B-17 of the US Eighth Air Force

Marshall's directive ran contrary to the positions of Eisenhower and American generals Henry H Arnold and Carl A Spaatz, who saw the bombing efforts of Eighth Air Force in England and the operations of US forces in North Africa as part of one theater that should remain under a single command

daytime US strategic bombing campaign against Germany just as it began. In close cooperation with the British staff, he also directed initial planning

for the land invasion of occupied Western Europe.² Hailing from "two countries divided by a common language,"³ officers of the combined staff who

planned Operation Overlord found that their different cultures, experiences, and military traditions adversely affected their knowledge of each other's staffing processes and procedures, thus straining relationships and creating distrust. Seeking to reverse those misgivings and this growing animosity, in the latter part of 1942 several senior British and American officers æ some of whom became original members of the BAFDC æ had drinks together, and "after about the fourth round they began to feel much more sympathetic to each other's point of view æ and regular dinners were suggested".⁴



Prime Minister Churchill and General Eisenhower

(Courtesy of the National Archives)

At the time of that first BAFDC dinner in 1943, General Eisenhower and his staff were in Algiers. His combined forces found themselves at an operational turning point in North Africa, and planning proceeded apace for follow-on operations in Sicily and Italy. In November 1942,

the Allies had executed Operation TORCH, the invasion of North Africa, with Eisenhower as the combined-forces commander. Until the Casablanca conference in January 1943, the general had remained commander of all US forces in Europe and in that capacity continued to encourage activities to help build trust and confidence in the combined forces. At that conference, Gen George C Marshall, US Army chief of staff, announced the establishment of a separate European theater of operations in the United Kingdom led by Gen Frank Andrews who attended the first BAFDC dinner as commander of US forces in Europe.⁵ (Marshall's directive ran contrary to the positions of Eisenhower and American generals Henry H Arnold and Carl A Spaatz, who saw the bombing efforts of Eighth Air Force in England and the operations of US forces in North Africa as part of one theater that should remain under a single command.)

Viscount Nuffield was the guest of honor at that initial BAFDC dinner attended by 12 senior British and American officers, including UK representatives Adm Sir Dudley Pound, Field Marshal Sir Alan Francis Brooke, and Air Chief Marshal Sir Charles 'Peter' Portal, as well as Admiral Stark and General Andrews of the United States. The senior British naval officer, Sir Dudley Pound had served as Admiral of the Fleet and First Sea Lord since 1939 and would continue to do so until his death in October 1943. Field Marshal Brooke, chief of the Imperial General Staff (the head of the British Army), was the foremost military advisor to Prime Minister Winston Churchill. Dominating British military leadership by virtue of his intellect and personality, he reportedly was the only senior British officer able to challenge Churchill's sometimes volatile and impetuous military judgments.⁶ The leaders of the Casablanca conference had selected Air Chief Marshal Portal, the senior British Airman, to coordinate the combined bomber offensive against Germany. A strong supporter of daylight precision bombing, he had helped American Airmen convince a skeptical Prime Minister Churchill of its value. Winning Churchill's confidence and establishing friendships with senior Allied leaders allowed Air Chief Marshal Portal to contribute significantly to the war effort. He became Marshal



of the RAF in January 1944. Admiral Stark had served as the eighth chief of naval operations prior to assuming command of US forces in the European theater in April 1942. Replaced by General Eisenhower in June of that year, he became commander of US naval forces in Europe, directing the Navy's build-up and participation in the Normandy invasion. Talented diplomatically, Admiral Stark built and maintained close relationships with all leaders — British civilian and naval as well as those of other Allied powers — a critical trait in coalition leadership, particularly at that time.⁷ The first Airman to head a War Department general-staff division, General Andrews had served as head of Army G-3 (operations) under General Marshall. His decisions and close professional relationship with the chief of staff resulted in virtual autonomy for the Army Air Forces. As theater commander of US forces in the Middle East in 1942, he established Ninth Air Force — the first US tactical air force to taste combat. At the Casablanca conference, General Andrews received overall command of US forces in the European theater of operations, becoming responsible for directing the American strategic bombing campaign against Germany and planning the land invasion of occupied Western Europe. Two months after the initial BAFDC dinner, General Andrews died in a B-24 crash in Iceland — a loss of immense proportions. General Marshall had considered Andrews

Admiral Stark built and maintained close relationships with all leaders — British civilian and naval as well as those of other Allied powers — a critical trait in coalition leadership, particularly at that time

one of the nation's few great captains and later selected General Eisenhower as his successor. In January 1944, Roosevelt and Churchill added to Eisenhower's responsibilities by making him the supreme commander of the Allied Expeditionary Force for the invasion of France.⁸

When Eisenhower returned to England, he continued to support activities that helped build and maintain crucial trust and cooperation among Allies. As did most members of the BAFDC, the general demonstrated outstanding coalition leadership that turned the Allies into an effective fighting force and managed its large-scale operations. Gen Omar N Bradley noted that "[Eisenhower] could work with British and Americans and keep them both fairly happy. If Ike had not had that faculty we might have been fighting each other more than we were. When you get two Allies working as closely as we were with the British, where you were brought up under different systems, there were potential cliques, but Ike kept that to a minimum. That is one of his greatest contributions."⁹ His leadership included investing time and energy in activities such as the BAFDC that broke down barriers and increased trust and cooperation.

During the 50th anniversary of the D-day invasion, Prince Philip noted that "the success of that massive combined multinational operation was due in no small measure to the personal friendships and understanding that developed between the members of the club at a crucial period in the planning of Operation Overlord. It says much for the spirit of the club that, in spite of many dramatic changes in the world since those days, a succession of members has continued to appreciate its value and kept it flourishing for over 50 years."¹⁰ The BAFDC met regularly at the Nuffield Club until it closed in 1975. After dining at various venues, it began a long-term relationship with the Honourable



Operation Overlord commanders at a meeting in January 1944. Left to right: Lt Gen Omar Bradley, Adm Sir Bertram Ramsay, Air Marshal Sir Arthur Tedder, Gen Dwight D. Eisenhower, Field Marshal Bernard Montgomery, Air Marshal Trafford Leigh-Mallory, and Lt Gen Walter Bedell Smith

(Courtesy of the Eisenhower Presidential Library)

Artillery Company (the oldest regiment in the British Army, led by Her Majesty the Queen as its captain general) and its ceremonial sub-unit, the Honourable Company of Pikemen and Musketeers, both of which organizations continue to host the BAFDC dinners. In May 2000, the BAFDC formed a chapter in Washington, DC, to further professional relationships between British and American personnel serving on the western side of the Atlantic.

Having established their value in the wars of the past century, coalitions should become even more important in current and future conflicts. Coalitions are useful not only militarily in fielding superior military power, but also diplomatically in demonstrating the legitimacy of their purpose. The importance of efforts such as the BAFDC to building trust and cooperation between forces that make up those coalitions is well recognized. The observation that Prince Philip made about the club 10 years ago remains appropriate and relevant to similar efforts: "The original purpose of the club may have faded over the years, but there can be no doubt about its continuing significance in this

disturbed world. I very much hope that it will go on making friendships and creating understanding for many years to come."¹¹

Notes

1 Born 10 June 1921, His Royal Highness Prince Philip, Duke of Edinburgh (Philip Battenberg adopted the family name of Mountbatten when he became a naturalized British subject in 1947), is the consort of Queen Elizabeth II of the United Kingdom of Great Britain and Northern Ireland.

2 The Birth of the BAFDC: Our History and Heritage, British Defence Staff (Washington), <http://www.bds.org/bafdc>; and Edgar F Puryear Jr, *Nineteen Stars* (Orange, VA: Green Publishers, 1971), 167.

3 Attributed to George Bernard Shaw.

4 Birth of the BAFDC.

5 DeWitt S Copp, Frank M Andrews: Marshall's Airman (Washington, DC: Air Force History and Museums Program, 2003), 25.

6 Lt Col Michael Lee Lanning, *The Military 100: A Ranking of the Most Influential Military Leaders of All Time* (Secaucus, NJ: Carol Publishing Group, 1996); and Alan Brooke, *NationMaster.com*, <http://www.nationmaster.com/encyclopedia/Alan-Brooke>.

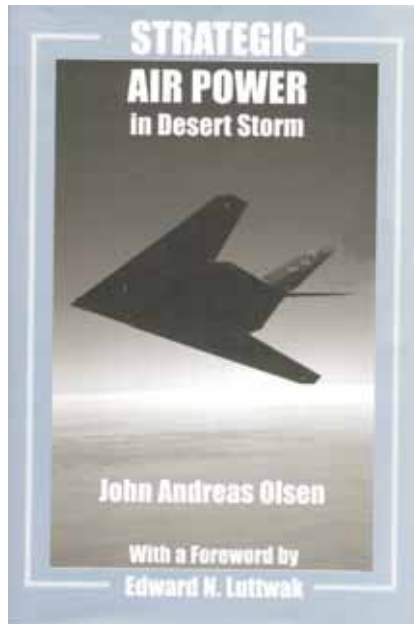
7 Admiral Harold R. Stark, USN (1880–1972) — 8th Chief of Naval Operations, 1 August 1939–26 March 1942, Department of the Navy, Naval Historical Center, <http://www.history.navy.mil/photos/pers-us/uspers-s/h-stark.htm>.

8 Dr. Henry O Malone, *Paving the Way: Remembering Frank Andrews*, *dcmilitary.com*, http://www.dcmilitary.com/airforce/andrews/2_09/local_news/14609-1.html; and Puryear, *Nineteen Stars*, 171.

9 Puryear, *Nineteen Stars*, 170.

10 HRH Prince Philip, *Early Years Recalled*, British Defence Staff (Washington), <http://www.bds.org/bafdc>.

11 *Ibid.*



Strategic Air Power in Desert Storm

By John Andreas Olsen

Publisher: Frank Cass Publishers,
London, 2003

ISBN: 0714651931

Price: £65.00 (256 pages, hardcover)

ISBN: 0714681954

Price: £18.50 (256 pages paperback)

Reviewed by Gp Capt Chris Finn

The debate as to whether offensive air power armed with conventional weapons can, independently of land or maritime operations, achieve strategic effect is as old as the application

of air power itself. The first phase of the debate started with the creation of the RAF's Independent Force in 1918 and culminated in the arguments about the effectiveness of the combined bomber offensive against Germany and the strategic bombing offensive against Japan in World War II. For the next 45 years of the Cold War, strategic was synonymous with nuclear. However, all this was to change in the autumn of 1990 with the Iraqi invasion of Kuwait and the subsequent Operation DESERT STORM in early 1991 to restore Kuwaiti sovereignty. Whilst a number of books have been written on the use of air power in DESERT STORM, not the least being the authoritative *Gulf War Air Power Survey*, all have concentrated on the war or the air campaign as a whole. In addition, all characterised the strategic air campaign as being against the leadership, power generation, fuel and lubricants production, the transportation infrastructure and the Iraqi IADs target sets. What is different about John Olsen's treatment of the subject is that he concentrates only on the genuinely strategic aspects of the air campaign, ie those attacks tended to induce 'strategic paralysis' on the regime and, to a lesser extent, on the counter-SCUD operations.

In Chapter 1, Olsen looks at the political and air power doctrinal background, explaining the primacy of the air/land doctrine within the US Tactical Air Forces. Chapter 2, the Genesis of the Strategic Air Campaign Plan, is also, to some extent, a scene-setter as it covers the philosophical differences between the standpoints of the author of the INSTANT THUNDER plan, Colonel John A Warden, who saw air power as providing a war-winning and indeed regime toppling capability, and General Schwartzkopf, who in August 1990 only wanted a retaliatory option, and his Air Component Commander, General Horner, who saw the forthcoming air war primarily in terms of providing support to the inevitable land battle. Chapter 3 covers the evolution of the strategic air campaign plan, from the production of the INSTANT THUNDER plan in August 1990, through its evolution into Phase 1 of a much broader campaign plan that was finally executed the following year. Olsen also addresses the problems that the Checkmate team had selling their plan both to the theatre

commanders and within Washington, and why in the end only a couple of Checkmate staff, not including Colonel Warden, remained in Riyadh to contribute to the in-theatre planning and execution of the final campaign. As a necessary precursor to Chapter 5, which examines the effectiveness of the strategic air campaign itself, Chapter 4 is a detailed analysis of the Iraqi regime's political power structure. In his analysis of the strategic air campaign itself, Olsen concludes that whilst attacks on leadership and command and control amounted to only 2.4% of the overall effort, and those on SCUDs to a further 4.2%, "the strategic air campaign, in conclusion, contributed strongly in rendering the Iraqi leadership largely ineffective as a strategic entity". He also makes the point that overthrowing the Iraqi regime was not a coalition aim, although one that was certainly in the minds of the Checkmate team when they planned INSTANT THUNDER. His conclusions reiterate the preceding point but suggest that, more importantly, the development of the INSTANT THUNDER campaign plan by

the Checkmate team marked a radical shift in air power doctrinal thinking away from the air/land battle of the central region of NATO to a broader understanding of the potential of air power in post-Cold War expeditionary conflicts.

Olsen's book is both well written and very readable, in particular in his treatment of personal and organizational dynamics. The book also provides, although somewhat implicitly, a good analysis of what has now come to be regarded as the doctrine of 'effects-based operations', particularly in his treatment of the political and psychological aspects of coercive operations at the strategic level. This book, therefore, is highly recommended for those interested in gaining a deeper understanding into both the concepts and practicalities of using conventional air power to achieve strategic coercion; it would be an interesting exercise to apply Olsen's methodology to the 2003 Iraq conflict.



The Iraq War: A Military History

By Williamson Murray and Maj Gen
Robert H Scales Jr.

Publisher: Belknap Press of Harvard
University Press, USA
ISBN: 0674012801
Price: £16.95 (368 pages, hardcover)

Reviewed by Col (sel) Merrick E
Krause, USAF

The Iraq War hit the streets while many of the coalition troops who fought the war were still overseas, patrolling the streets of Baghdad and Basra. A well-documented book including color

Books

photos and maps, it provides analysis of the major combat phases of Operation Iraqi Freedom, the short but successful battle against the armies of Iraqi dictator Saddam Hussein in 2003. Although the study stands as a worthwhile contribution to the field of military history, it is important to examine the book critically in the context of the continuing global war on terrorism.

Initially, I regarded *The Iraq War's* 'lessons learned', written 3,000 miles removed from a battlefield still warm, with some skepticism. I paused several times at unsupported assertions or editorializing that seemed to go beyond historical reporting. But this 'quick look' at the war has some merit. Noted author John Lewis Gaddis describes its value well when he writes that it is "presumptuous" to speculate "so soon after the event, but it's also necessary. For although the accuracy of historical writing diminishes as it approaches the present — because perspectives are shorter and there are fewer sources to work with than in treatments of the more distant past — the relevance of such writing increases" (emphasis in original) (*Surprise, Security, and the American Experience* [Cambridge: Harvard University Press, 2004], 5).

The authors bring credibility to *The Iraq War*. Well known in military history circles, Williamson Murray is a professor at the Army War College. An extensively published historian trained at Yale, he wrote a significant portion of the *Gulf War Air Power Survey* (Washington, DC: Department of the Air Force, 1993) over a decade ago. General Scales, formerly commandant of the Army War College and now retired, headed the US Army's Desert Storm Study Project and authored *Certain Victory: The United States Army in the Gulf War* (Washington, DC: Brassey's, Inc, 1994), the official US Army account of its performance in the Gulf War, originally published by the Office of the Chief of Staff, US Army, 1993. He too is well published and appears frequently on the academic and lecture circuits in Washington, DC.

Among the first of many analyses of Iraqi Freedom, this book provides a strong recounting of what one war fighter I know calls the 'major muscle movements' of the battle. However, it is not a comprehensive examination of an integrated joint

coalition campaign, and it is not in the same league as the Gulf War Air Power Survey, researched by a dedicated analytical team and published in several volumes about a year after Operation Desert Storm — the first Gulf War. In fact, perhaps a more accurate subtitle for *The Iraq War* might have been *A Soldier's Perspective instead of A Military History*.

In the prologue, devoted to Desert Storm, the authors assert that the "aerial assault was an exercise in overkill and lasted far too long" (p 13) — an interesting suggestion for which they provide no evidence. Such a statement illustrates the book's greatest failing: lack of depth and balance regarding joint air and space power. Indeed, the analysis seems very two-dimensional and 'surface-centric'.

As readers move forward to the 2003 conflict in Iraq, they will find that the analysis of the joint air component's planning and execution is thin. According to Murray and Scales, "For all the talk of effects-based operations [EBO] and operational net assessment, the failure to understand the enemy where he lives — his culture, his values, his political system — quickly leads up a dark path where any assumption will do" (pp 182–83). The authors do not seem to weigh Iraqi Freedom as a battle in the greater war on terror or credit the coalition campaign in Iraq with involving allies, several US government agencies other than the Defense Department and, effectively, all of our instruments of national power. They miss an opportunity to delve into the interesting and extensive red teaming and war gaming conducted by US Central Command, by the Air Staff's Checkmate directorate, by the Air Force Studies and Analyses Agency, and by the US Navy and Army — among others — between 1991 and 2004.

The Iraq War also overlooks some tremendous advancements made in warfare since Desert Storm: the progression of air and space power theory, the promulgation of EBO doctrine to the joint community, the rise of new space organizations and capabilities, huge improvements in communications and command and control (C2), and improved mastery of the operational level of war at the combined air and space operations center. The authors do mention C2 and

upgrades to unmanned aerial vehicles, but they pigeonhole them to some extent as air-component improvements rather than assess their effect on the support of surface warriors.

For the Airman or joint officer who studies this book, the lessons learned, outlined in the 'Air Campaign' chapter, testify to some of the common misperceptions about air and space power. Murray and Scales correctly describe the C2 capabilities used by the coalition to tie together sensors and shooters as 'particularly impressive' (p 182), acknowledge the devastating psychological effect of airpower on Iraqi combatants (p 180), and characterize the coalition's limited human-intelligence capability in Iraq as a shortcoming. Certainly, those opinions and observations are balanced and defensible. Unfortunately, by emphasizing isolated details, taken out of context, the authors tend to miss the larger strategic picture (and virtually everything in modern warfare is strategic).

One particular assertion, based on a false assumption, may proceed from a lack of detailed information — understandably difficult to come by a scant few weeks after the war. Specifically, Murray and Scales write that "there is considerable irony here, because most military theorists of the 1920s and 1930s posited that air power was a weapon that should attack exclusively the morale of the enemy" (p 179). That statement, of course, is not exactly true. Giulio Douhet's vision of huge formations of bombers crushing cities (and even using chemical weapons) to create terror and defeat the enemy's morale peaked with Billy Mitchell — and largely faded with him. The rationale was that causing numerous casualties up front would curb the number of deaths in the long run by forcing the adversary to back down. Flaws with Douhet lie in the laws of war, in the moral repugnance toward the idea of killing innocents intentionally, and in anticipating the weakness of a populace under aerial siege. The resolve of the British during the zeppelin raids of World War I and then again during the Battle of Britain serves as an example. US Army Air Corps strategists were watching and learning. By the 1930s the Air Corps Tactical School, located at Maxwell Field, Alabama, began promulgating

strategic bombardment and the industrial-web theory, thus presenting a more nuanced vision of airpower. Daylight precision bombardment became the goal, but the lack of adequate technology made such doctrine difficult and costly to execute effectively, resulting in the firebombing and destruction of cities even though the aiming points for most US bombardment missions in World War II were military or dual-use targets. Obviously, by today's standards the collateral damage may have been unacceptable, but Ploesti and Operation Overlord serve as good examples of industrial-target sets designed to stall military operations — not just kill civilians, as some assert. Others might disagree with US nuclear motives, citing escalation in the Pacific theater, firebombing raids, and nuclear-bomb attacks, but even then, the mass killing of civilians was not the goal of the Army Air Corps — and never has been the Air Force's goal, even in the Cold War.

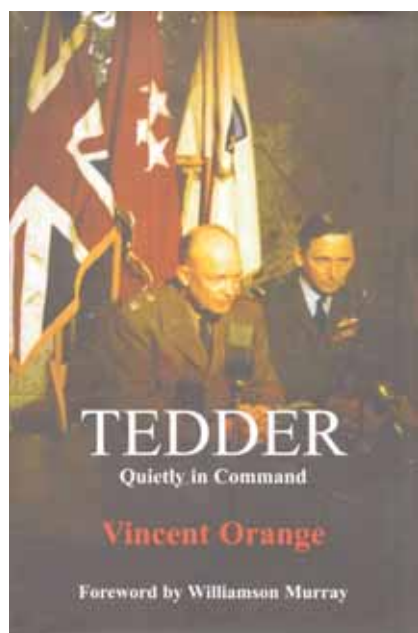
EBO, criticized by the authors, is now a widely embraced joint operational concept. Finally, modern technologies allow joint air and space power to realize the dream of the early Air Corps theorists. Planners apply information-age strategies and strenuously attempt to minimize direct civilian casualties. We even attempt to minimize *inconveniences* for civilians as we try to achieve specific effects that link directly to strategic objectives. There is no 'considerable irony', as the authors suggest, that the coalition did not flatten Baghdad or kill powerless people in a futile attempt to coerce a tyrant (p 179). Although the US military may need to reorganize in the area of postwar planning, campaign planners deliberately selected or spared targets during Iraqi Freedom to set the conditions to win the peace following major combat. An ethical military culture has created a philosophy that exploits precision capabilities and takes advantage of technological and organizational improvements, as well as the revolution in military affairs, to reduce the need for brute force and avoid long-term devastation. This stance is intrinsically linked to post-conflict planning.

The authors also fail to address the fact that our joint air and space capabilities — particularly speed, power, and precision — have redefined mass, a historic principle of warfare, while

retaining the moral high ground. We don't always need tens of thousands of troops to take an airfield, fort, or village; in fact, air and space power, assisted by special forces, was certainly effective in Afghanistan and western Iraq. Airpower planners realize — and smart joint officers recognize — that although technology will never make war antiseptic, collateral damage can and should be reduced as much as practical.

Overall, *The Iraq War* is worth reading. Although well-read Airmen may be troubled by several points, the book is thought provoking and provides a solid background of surface-force movements in Iraqi Freedom — hopefully the last large ground campaign we'll see for a few years. The authors' remark about the implications

of the Iraq war deserves one final comment: "Cultural and geopolitical complexities will make the securing of Iraq far more of a challenge than virtually anyone had foreseen before the conflict began" (p 254). If they believe that the 'securing of Iraq' began in 1990, I might agree. If they refer only to the major combat operation that began in 2003, I have to say, 'Absolutely not true'. I don't know of any planner of any rank — joint, interagency, and air — who said that capturing Saddam and fixing Iraq would be easy. Without a doubt, joint and air planners considered many scenarios that are worse than the reality we face today. Perhaps the latest war in Iraq provides a lesson to planners at all levels that the 'best case' might present significantly different challenges than the 'worst case' we usually anticipate.



Tedder: Quietly in Command

By Vincent Orange

Publisher: Frank Cass Publishers

ISBN: 0714648175

Price: £55.00 (480 pages hardcover)

ISBN: 071464367X

Price: £19.99 (472 pages, softcover)

Reviewed by Sebastian Ritchie

As Eisenhower's deputy and Air Commander during the liberation of Europe between 1943 and 1945, and as Air Officer Commanding (AOC) Middle East from 1941-1943, Marshal of the Royal Air Force Lord Tedder fully earned his reputation as one of the outstanding Allied high commanders of the Second World War. Although an early biography by Roderick Owen was published in 1952, and Tedder's memoirs, *With Prejudice*, appeared in 1966, there has long

been a need for an updated biography drawing on archival sources released since the 1960s and on the enormous volume of research and writing on the war undertaken since that time. Vincent Orange's eagerly awaited study — *Tedder: Quietly in Command* — will therefore be welcomed throughout the military history community, and particularly by students of air power history.

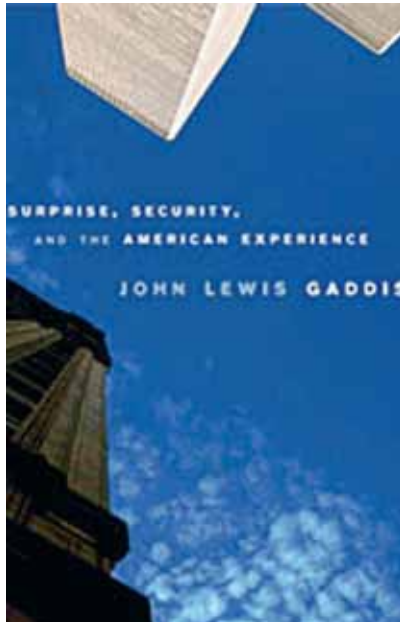
Arthur Tedder was born in 1890 and was educated at Whitgift School and at Cambridge University, where he read history. He was commissioned into the Dorsetshire Regiment in 1915, and joined the Royal Flying Corps in the following year. He was appointed squadron leader in the Royal Air Force in 1919 and then rose steadily through the ranks during the 1920s and early 30s, to reach Air Commodore in 1934, when he became the Air Ministry's Director of Training at the beginning of the first of the pre-World War Two RAF expansion programmes. In 1936 he became AOC Far East, based in Singapore; he was promoted Air Vice-Marshal in 1937, and returned to the Air Ministry in 1938 to become Director General of Research and Development, during which time he helped to initiate such war-winning aircraft as the de Havilland Mosquito, and actively promoted the development and production of Whittle's jet engine. After some difficult months under Beaverbrook in the Ministry of Aircraft Production, he was promoted to the acting rank of Air Marshal and sent to the Middle East as Deputy AOC in November 1940; he was then appointed AOC in June.

Although tipped as a future CAS in the mid-1930s it was to be in the desert war between 1941 and 1943 that Tedder first proved his exceptional qualities as a high commander. Assuming his appointment under immensely difficult operational circumstances, with scarce resources and under constant criticism from the other armed services, Tedder transformed the RAF in the Middle East into a formidable fighting machine — flexible, highly mobile, capable of winning and maintaining control of the air, and of providing ample support to land and maritime forces. Indeed, he proved a master of the joint environment, ultimately winning the backing of his army and navy counterparts to uphold the

fundamental principle of centralised command and control of air assets. Under Eisenhower, first as Deputy Supreme Allied Commander Mediterranean, then as Deputy Supreme Commander Allied Expeditionary Force (in North-West Europe), Tedder would subsequently display a no less exceptional ability to operate in a coalition environment. Indeed, Orange shows that Tedder was in many ways the lynchpin of the Allied high command in Europe between 1943 and 1945. The importance of his role in integrating Allied air power into Operation Overlord, and in resolving inter-service tensions and strained relations within the alliance (which became acute late in 1944) can hardly be exaggerated.

Tedder was promoted Air Chief Marshal in 1942 and became a Marshal of the Royal Air Force in September 1945. In January 1946 he succeeded Portal as Chief of Air Staff and afterwards, in conditions of desperate economic stringency, presided over not only the post-war contraction of the wartime RAF, but also over the beginning of its adaptation to the demands of the Cold War. After his retirement in December 1949 he became a governor of the BBC, Chancellor of Cambridge University, and Chairman of the Standard Motor Company. He died in 1967.

In this very important and highly readable biography, Vincent Orange set himself the difficult task of portraying Tedder the *man* — childhood, character, and private life — as well as Tedder the *commander*. But the result is an eminently balanced narrative which succeeds in its principal objective. It was clearly *not* the author's intention to upset this balance by embarking on a particularly detailed analysis of the command techniques and processes that lay behind Tedder's remarkable accomplishments. For the most part, the reader is left to draw conclusions about how and why Tedder achieved what he did. This book nevertheless adds much to our understanding of the British and Allied high commands in the Second World War, of relations between Allied high commanders, and of the top-level direction of operations, particularly in the desert and broader Mediterranean theatres. The lessons that it contains on joint and coalition warfare remain supremely relevant to today's commanders.



Surprise, Security, and the American Experience

By John Lewis Gaddis

Publisher: Harvard University Press,
USA

ISBN: 0674011740

Price: £12.95 (160 pages, hardcover)

**Reviewed by Col Richard
Szafranski, USAF, Retired**

I wish to make three points about *Surprise, Security, and the American Experience*. First, it is well written and thought provoking. The book fits neatly into a jacket pocket, and one can easily devour it on a flight from, say, Washington, DC, to Los Angeles. Second, it introduces a framework for US security policy that, as asserted by the author, emerged in the wake of the first attack on our homeland in 1814 when the British attacked Washington, setting fire to the White House and Capitol. This framework — pre-emption, unilateralism, and

hegemony — persists today. Understanding it is instructive because Gaddis intends the framework to be both descriptive and predictive, using events following the third assault on our homeland — the unchallenged air attacks on the World Trade Center and Pentagon — to prove its validity. Third, historians — particularly those persuaded by the politics of the Democratic Party — likely will assert that the evidence cited by the author does not support his conclusions.

Let's examine the framework before judging the book. Gaddis's thesis is that "deep roots do not easily disappear" and that America's roots are well established (p. 38). When confronted with rude surprises or unexpected threats to national security—the aforementioned attack of 1814 and the Japanese raid on Pearl Harbor in 1941, the second attack on the homeland — historically, we have expanded rather than retracted our response. In our deep roots reside the historical responses of preemption, unilateralism, and hegemony.

After 1814 preemption took the form of expansion into the territory of derelict or failed states, non-states (pirates and tribes), and states that might fail. Unilateralism followed the precept that the United States cannot rely on the goodwill of others. Our history, as Gaddis deftly shows, does not reflect a tendency toward *isolationism* but an avoidance of *entanglements* — those complications that partners can bring to a mix. Hegemony first took the form of continental (less Canada and all of Mexico) sovereignty; then slavery; then no slavery; and then the expansion into nonwhite territories to restore the economic advantages of slavery.

Given these roots, Gaddis asserts that the president did nothing new after the events of 11 September 2001. Instead, he returned to a set of behaviors that emerged after the attack on Washington in 1814, perhaps without learning all that he could have gleaned from President Franklin Roosevelt's strategic maneuvers, occasioned by the collapse of homeland security in 1941. The genius of Roosevelt, on the one hand, lay in his reasonableness — that "proclaimed interests should not exceed actual capabilities" — and, on the other, in his ability to gain hegemony by *apparently* rejecting pre-emption and unilateralism (p 58). The grand strategic maneuvers embodied in the Marshall Plan and containment stayed the course that Roosevelt set and prevented dangerous

excursions into nuclear-armed preemption. (Gaddis would be pleased to learn about Project Control — Air University's little known sortie into thinking about preventive nuclear war, initiated in 1953. It eventually led to the resignation of the Air University commander.)

The 1814 and 1941 attacks on our homeland saw us dealing "with an identifiable regime led by identifiable leaders operating by identifiable means from an identifiable piece of territory," but the 2001 attack was different (pp 69-70). According to the author, the Clinton administration might have seen it coming. That administration sought engagement rather than the spread of democracy and missed the effects that a revolution in global transportation had on our security by diminishing one of our most important strategic assets: geographical separation from threats.

Gaddis suspects that the Bush administration's difficulty in preserving consent for its anti-terror campaigns is that it brings a nineteenth-century American vision — preemption and unilateralism — to an early 21st century that still appreciates Roosevelt's multilateralism and self-restraint. Even so, the author seems to stand at a higher place than do most of us and, at least when the book appeared, sees a rosier future than we do. This point may be significant. The date that one *reviews* a published book can have just as much importance as the date that one *publishes* it. Martin L van Creveld, for example, lamented that his book *The Transformation of War* was released just as the first untransformed, conventional war with Iraq began. Pre-publication reviewers had a less advantageous position than did those who assessed the book shortly after its publication. Similarly, the people who reviewed *Surprise, Security, and the American Experience* in the euphoric wake of Operation Iraqi Freedom's early successes likely reached different judgments than did the ones who stand hip-deep in the present election year.

Thus, one cannot help being puzzled to read:

"that the United States would then nonetheless — with the help of Great Britain — go ahead and attack Iraq anyway, in the face of the direst warnings about the risks of military resistance, the use of weapons of mass destruction, the eruption of outrage in the Arab world, a new outbreak of terrorism, a huge increase in the price of

oil, and astronomical estimates of the human and material costs of the operation — only to have none of these things happen."

... Finally, that much of the rest of the world would find itself amazed ... over one of the most surprising transformations of an underrated national leader since Prince Hal became Henry V" (pp 81–82).

None seems a word that we should caution ourselves about using, even if we cannot avoid using *transformation*. When the early reviews of *Surprise, Security, and the American Experience* appeared, many individuals in the United States and elsewhere believed that 'mission accomplished' was authoritative if not true, that Iraqi insurgents had not yet used sarin against our troops, that most Arabs did not revile us, that Spain remained in the coalition, that gas wasn't two dollars a gallon, that the price of oil wasn't increasing as production controlled by the Organization of Petroleum Exporting Countries went down, that Abu Ghraib was just a prison, that Fallujah was just a city, and that Gen Eric Shinseki's prescient estimate of the troops required to subdue a postwar Iraq may have been too high. Things change.

So why the author's optimism? A valued, well-educated, and well-traveled academic as well as a fellow of the Hoover Institution from 2000 to 2002 (a designation that includes Richard Allen, Newt Gingrich, Edwin Meese, George Shultz, and Condoleezza Rice, now on leave), Gaddis remains a respected scholar of Cold War history. Appreciating the risk, he published *Surprise, Security, and the American Experience* while the jury of time — the triers of fact — was still empanelled. The framework may perform admirably, and history and time may well prove our ability to escape the strategic situation in which we find ourselves. As the author confesses, "It is ... presumptuous to speculate about those consequences so soon after the event [9/11], but it's also necessary. For although the accuracy of historical writing diminishes as it approaches the present — because perspectives are shorter and there are fewer sources to work with than in treatments of the more distant past — the relevance of such writing increases" (p 5, emphasis in original).

My judgement of this book? It is, to paraphrase the author, relevant.

Notices



14 SQUADRON 90TH ANNIVERSARY CELEBRATIONS

No 14 Squadron will be holding a celebratory weekend, 8-10 April 2005 at RAF Lossiemouth, to mark the 90th anniversary of its formation. A number of activities are planned, and all present and former members of the squadron, whether serving or retired, are invited to attend.

Further details can be obtained from the Project Officer, Flt Lt David Tucker, at 14 Sqn. RAF LOSSIEMOUTH, Morayshire, IV31 1SD, Tel Lossie Mil Extn 7972, or 01343 817972, Fax 01343 817955.

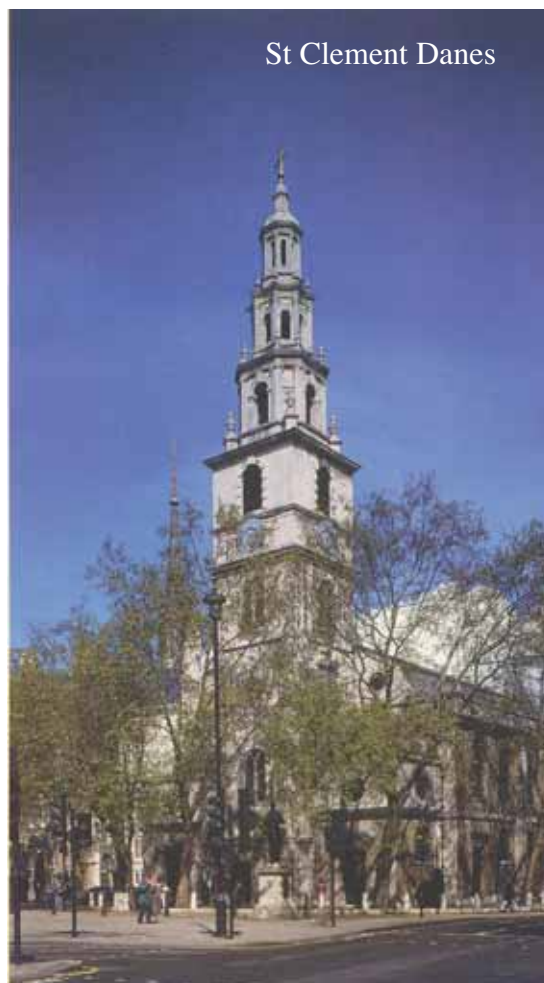
ROYAL AIR FORCE HISTORICAL SOCIETY

Formed in July 1986 to study the history of air power, the RAF Historical Society examines such topics as the Strategic Bomber Offensive of World War II, the V-Force, various air campaigns, and further aspects of modern air power. The Society holds lectures, seminars and discussions, bringing together those involved in RAF activities past and present, at a membership fee of £15 a year.

Please contact:
Dr Jack Dunham, Silverhill House, Coombe,
Wotton under Edge, Glos, GL12 7ND.
Tel: 01453 843362.

ST. CLEMENT DANES, STRAND, LONDON CENTRAL CHURCH OF THE ROYAL AIR FORCE

This beautiful Wren Church, which is also the Royal Air Force Central Church, has a world-wide following and is open daily from 09.00 am – 4.00 pm. There is Choral Eucharist or Matins every Sunday at 11.00 am, sung by the famous choir. Civilians and all members of the Armed Forces are welcome to visit the church and attend the services.



Notes

Notes

Notes

Notes