The commanding officer of No 17 Sqn, Wg Cdr J E Houghton, briefs an officer of the Luftwaffe unit with which the squadron was then 'twinned' – the second Staffel of JBG 34 – Prior to a joint sortie from RAF Brüggen in April 1981 (AHB RAF)

The Fall and Rise of the Luftwaffe:

The role of the Royal Air Force in the reformation of the Luftwaffe in 1955 — implications for the Cold War and beyond

By Air Marshal Stu Peach

Introduction

There are many books, articles and stories about the role of air power, air warfare and air forces during the Cold War. But, gaps remain. One is the role played by the Royal Air Force in the re-birth of the Luftwaffe in 1955. The Cold War seems a long time ago to many serving airmen. Many more would probably say that the Cold War has little to tell us about contemporary air operations in the Persian Gulf and Afghanistan. Maybe, maybe not; NATO air forces continue to operate – either within a form of NATO air command and control or independently in coalitions of the willing – in 'ways' which are shaped by history. Not just the history of nations and the strategic choices of those responsible for their armed forces, but in so many other ways – training, standards, culture, doctrine, tactics: all conflate to describe the way they operate now. Thus this little known story in air power history originating in the ruins of Germany in 1945 had important consequences throughout the Cold War and beyond. That is the theme of this paper.

In addition, in this paper I will challenge the orthodoxy of the view that the contemporary – and unparalleled – intimacy between the Royal Air Force and the United States Air Force is the dominant theme of the current 'way' in air war; born as a direct result of common tactics and common belief following World War Two.[1] This is only partly true. In fact, following the creation of an independent United States Air Force in 1947, there were tactical and operational points of difference on the employment of air power which were to play out as the Cold War developed. Furthermore, the deployment of large air force elements of 'occupation' into the German zones of the wartime victors was not itself self-evident in the summer of 1945. As those airmen both sides of the Atlantic who were 'staying on' took stock of what had happened to air power and warfare waged from the air between 1936 and 1945, their heads were full of new designs for large bombers – those 'in the know' - including the idea that the development of nuclear weapons made air warfare the war winning weapon. But even as early as July and August 1945, it became clear to the delegations at the Potsdam Conference that there would be no easy peace between the former WWII allies.

Despite the grand strategy being played by Stalin with his new partners Truman and Attlee at Potsdam, the high command of the United States Army Air Force were very focused on finishing the war with Japan with the first use of nuclear weapons[2], 'bringing the boys home' and, in the aftermath of the strategic shock of Hiroshima and Nagasaki, Arnold, Eaker and Spaatz were confident of the culmination of the long-awaited formal independence of the air arm of the US Army into the United States Air Force. The reduction of US air power based in Germany, the IX Air Force under Maj Gen Pete Quesada, was very rapid indeed. Brand new tactical aircraft bound for the European theatre of operations were tipped into the sea. There was no plan for an occupation air force.[3]

In the British sector, the situation was different. Royal Air Force elements of the British-led Second Tactical Air Force(2TAF) played an extremely sensitive role in the dismantling of the Luftwaffe in 1945-46 – a mission carried out with great sensitivity and distinction

under the inspired leadership of Air Marshal Sir Philip Wigglesworth.[4] The label RAF in front of 2TAF was also misleading. When hostilities ceased, 2TAF consisted of 5 French, 3 Czech, 6 Polish, 2 Dutch, 2 Belgian, 2 Norwegian, 2 Australian, 3 New Zealand and 19 Canadian Squadrons. We talk today about coalition tension. At the end of hostilities in 1945, the aircrews and groundcrews of 2TAF just wanted to go home. But, 2TAF was the tactical air force in being in the British Sector. Therefore they simply had to get on with the job of dismembering the Luftwaffe and coping with unfriendly Soviet Air Force 'neighbours'. This was not a good time for morale. When Air Chief Marshal Tedder (Eisenhower's wartime deputy and post war British Chief of Air Staff) visited Germany following (false) rumours in London of mutinous behaviour, he viewed the effects of the Strategic Bomber Offensive, realised there was still a mission to be achieved and set the conditions for a British Air Force of Occupation that was more attuned to the needs of the situation in Germany.

In the years that followed, the Royal Air Force in Germany gradually rebuilt several former Luftwaffe airfields, which were to form the backbone of the front line in the Cold War. Despite the conflicting demands of demobilisation, dismemberment and maintaining airspace integrity through air policing, BAFO performed well. Strong leadership and a sense of purpose kept stability in the critical years 1945-1950. This stability achieved two significant effects for the future. The first was to provide the nucleus for a tactical air force following the formation of the North Atlantic Treaty Organisation in 1949. The second was to act as a friendly 'bridge' to the Luftwaffe when German rearmament became a reality in the early 1950s. The Royal Air Force therefore played a formative political and military role in the reformation of the Luftwaffe in 1955.[5] After 1955, the partnership between the Royal Air Force and the Luftwaffe in the British-commanded Second Allied Tactical Air Force (TWOATAF) was a major factor in the tactical development of both forces.[6] In order to justify that statement it is necessary to compare and contrast the structural development of the RAF and the German Air Force until 1945 to explain how different the two forces were.

One of the conditions of unconditional surrender in 1945 by Germany was the destruction of the remnants of the Luftwaffe. The commonly held view is that the British and German 'way' in the waging of air warfare born in the Second World War was fundamentally different. There are many historians who comment on the differences between the Luftwaffe and the Royal Air Force 'way' in air war during the Second World War.[7] This school of 'difference' tends to focus on the supposition that the Luftwaffe was a largely tactical force focused almost exclusively on the needs of the Army.[8] This school has it that strategic bombing, maritime operations and other independent air power roles and missions were neglected in air power thinking and doctrine in Germany compared to the teaching and thinking in Britain and the USA.[9]

There is another view. In the late 1930s, the Luftwaffe was trying hard to develop a fleet of four-engined bombers, colloquially known in the German Air Force as 'Die Ural Bomber'. Recent research into the Luftwaffe has suggested as early as 1938 Hitler wanted

to develop a bomber to attack New York.[10] German designers ran into three problems: operational capacity, technical capability and doctrine. The operational problem was that the Luftwaffe was engaged in continuous operations from 1936, the year of its birth as a modern air force. As operations and preparations continued relentlessly, there was little time to take stock, learn lessons and modify equipment. The latter point in particular meant that German designs of 1933 to 1936 tended to remain in production for many years. For instance many of the types that served in the Condor Legion in Spain remained in service in 1945. Of course weapons were developed, tactics changed to meet the changing threat, but the German 'way' of air warfare that was developed on a small scale in Spain to become the supporting element of Blitzkrieg, became the way of air war for Germany until the end; there was no respite to take stock and develop new concepts.[11]

Procurement process and practice were also very different. The aircraft industry in Germany was very different to that in the UK. There were far fewer large concerns mass-producing similar designs; they were integrated operations – the concept of a prime systems integrator would have been very familiar to the 'Brahmins' of the German aircraft industry. In the UK, the aircraft industry had grown up in 'cottage industry' fashion with small, short term contracts let by the Air Ministry, which led to a bewildering variety in aircraft types, coupled with a legacy of mixed fleets often in the same squadron, making for a logistical nightmare. The Germans had no legacy procurements, they were starting from scratch. They did, however, have an Achilles heel: aircraft engines. There were very few aircraft engine manufacturers. The steady orthogonal development of engine, propellor and gearbox technology in the UK leading to robust, flexible designs such as Merlin was more difficult in Germany. For example, during flight trials of the competing designs of the German four-engined bombers, one version in particular (Heinkel He 177) saw the engines constantly overheating or even catching fire. That said, German engineers caught up quickly, developing fuel injection and advanced propellor technology – and arguably overtaking the UK in some areas of engine design before the start of the war.

A third problem that beset the Germans was the competing egos of the high command. Tactical doctrine verged on dogma. In the late 1930s, the German General in charge of aircraft development was General Ernst Udet. Like Goering, a World War one fighter ace, Udet was obsessed with dive-bombing. He was totally convinced that all offensive aircraft had to deliver their weapons through steep dive attack in order to improve the accuracy of weapon delivery. The Luftwaffe's first four-engined bomber was given over two hundred modifications to make it a successful dive-bomber. This did not work; the lumbering Messerschmitt might have been made to work as a four-engined bomber delivering bombs from medium altitudes in level flight, but was never going to be a successful dive bomber.[12]

The combination of these factors rather than a misunderstanding of the principles of air power lay behind the continuance with designs set in the early 1930s and the focus on a medium scale force geared to support the Army.

This was the war the Luftwaffe were forced to fight, rather than the war they wanted. In short, at the strategic level, in the late 1930s the Luftwaffe was simply not ready for prolonged and sustained operations across multiple theatres of operations; it was focused on the tactical requirements of the German Army. This focus was to shock, paralyse and defeat the land and air components of Western Europe in 1939-41. The integration of air and land power to generate what we would now term joint manoeuvre by the Luftwaffe, was impressive. This did not happen by accident, nor overnight.

A Gotha Go145 military training aircraft in civilian markings during the mid-1930s

The Luftwaffe had been proscribed as an organisation under the Treaty of Versailles. This did not stop former Reichswehr Air Service officers from flying light aircraft, gliders and – crucially - conducting operational evaluations working alongside the Soviet Air Force under conditions of great secrecy at Lippetsk in the Soviet Union. These force on force experiments led to the development of the air/land elements of Blitzkrieg in what we would now term air manoeuvre. By 1929, when in theory the Luftwaffe did not exist, advanced close air support, air interdiction, airborne force operations, gliders – all were tested and evaluated in the vast spaces of the Soviet hinterland between the most unlikely of allies: Weimar Germany and the Soviet Union.[13] All this was unknown to British intelligence. In Britain, the Armoured Force experiments on Salisbury Plain conducted by the British Army in the late 1920s continued in isolation from the Royal Air Force. Main effort in the Royal Air Force was survival as a separate Service and the development of distinct roles for air power, particularly bombing. On deployed operations, air power (largely World War One vintage equipment) was employed in the air-policing role around the Empire. Research and Development effort focused on speed for fighters, the development of flying boats for maritime support operations (primarily for colonial duties) and bombing with large, slow bombers.[14] Thus, at the time when Germany and the Soviet Union were developing advanced, fully integrated air/land operations with a focus on weapon delivery accuracy and weapon development, air/land operations were being largely ignored in Britain, except for a few zealous officers who were determined to pursue army cooperation despite possible risk to their careers.[15]

At the tactical level, the performance of the Luftwaffe exceeded the expectations set for it – particularly in the campaign against France in May 1940. This was to set the conditions for German over-confidence. When war followed against Great Britain itself, the Royal Air Force was mightily under-estimated by German intelligence. Good and brave commanders, resilient, adaptable people drawn from a wide cross-section of British and Commonwealth societies, the fruits of its fragmented aircraft industry and the latent organisational strength laid by Trenchard and Dowding in

the structures, education and training within the Service. Above all, it was the advanced network-enabled system for the air defence of Great Britain and the moral courage of Dowding as a commander to conserve his force that set the conditions for victory.[16] Again the cinematic and media view is of 'The Few' flying machines often developed privately by passionate designers and enlightened manufacturers who saved the day in the face of official lethargy. Although the quality of the machine and the bravery of the 'few' gave critical advantage as the Battle of Britain reached culminating point, it was the resilience within the 'system' that prevailed.[17] Indeed, anyone beginning the quest for decisive advantage in modern warfare through networked enabled capability would do well to study all the elements of the air defence network of the UK. For the UK in 1940, this network represented a culmination of almost two decades of hard work across all the lines of development.

As the war progressed, the systemic and structural cracks in the Luftwaffe widened. Blitzkrieg did not gain the necessary momentum on the Eastern Front. Range and re-supply became decisive factors. Despite the superiority of German machine guns, cannons, bombs, fuzes and aircraft cameras, the competence of the basic designs, the overcoming of many of the problems with aircraft engines and the existence of much innovation within the German aircraft industry, there was a failure to adapt to total industrial war. [18] Instead Hitler and Goering, increasingly relied on exhortation and excessive demands from an increasingly exhausted force doing their tactical best against difficult odds.[19] Many Luftwaffe-inspired designs and advanced production engineering were wasted. In addition, from 1943 on, the Allied bombing offensive placed the German aircraft industry under intolerable strain[20]. By 1945, the Luftwaffe was a spent force. With the odd exception such as the Messerschmitt 262, tactically destroyed by trying to turn a revolutionary fighter into a bomber, the Luftwaffe was finished.

That said, as a Service committed to innovation in aeronautics, aircraft and weapon development, the Luftwaffe had developed air and, what was to become aerospace power, in unconventional ways: the first helicopter, swept wing jet fighter, precision guided munitions, cruise missile and exo-atmospheric rocket, were all advanced German designs. In 1945, however, as in 1919, Germany was denied an air force. In the years 1945 to 1948 there was another priority in Germany: survival. In the short term, British, American, Russian and French specialists dismantled and carted off the German aircraft industry. All involved in this scavenging effort were shocked at how far ahead Germany was in thinking and conceptual development in aeronautics; although few were prepared to say so at the time. Many of the mainstays of the Cold War in air and space – and on both sides – were developed from captured German ideas or even developed by German scientists. The well-known example is Doktor Werner von Braun, but there were many others. In Germany itself following the cessation of hostilities, the problem of how to dispose of the rump of the Luftwaffe loomed large in 1945 and 1946.[21]

The occupation mission, however soon gave way to something much more serious for the British Air Force of Occupation (BAFO). Run down

from eighty to ten squadrons in six months, BAFO struggled to cope with the air policing role as the Soviet Air Force element in the Soviet Zone of Occupation increasingly challenged the British in the air. The Cold War became warm with steadily increasing numbers of air-to-air incidents along the boundaries between the allied and Soviet sectors. Friction increased during the hard winter of 1947/48 as the Soviet Air Force increasingly challenged Allied air access to Berlin.[22] The Berlin Airlift followed, the strategic and decisive use of air power to demonstrate Allied resolve. The crisis had a strategic effect on the European situation. The slow manoeuvring towards some form of European defence arrangement accelerated. The British Government was feeling the effect of strategic overstretch. British attitudes to the deteriorating situation in Germany could be summarised by: "a firm and immediate promise of a token force".[23]

Nonetheless, despite British retrenchment to the strategic status quo ante, the need for 'something to be done' about the Soviet Union's belligerence brought to the fore by the Berlin crisis, helped to set the conditions for the formation of the North Atlantic Treaty Organisation in April 1949 in Washington. The wishful thinkers that wanted several years to determine how NATO might develop as a military organisation were in for a further shock caused by events. The Korean War unexpectedly broke out in 1950. The Royal Air Force did not deploy en masse to Korea[24], there were simply too many crises around the British Empire: Malaya, Cyprus, Egypt: the thorny issue of self-determination in the troublesome British Empire kept the force in being busy; much of the equipment and manpower for these 'out of area' peace enforcement commitments were drawn from Germany. For the remaining Royal Air Force personnel in Germany in 1950-51, life was difficult and busy. Air policing along the border with the Soviet Zone and protecting access to Berlin was a dangerous business. Several British aircraft were lost, probably shot down.[25] Re-equipment to match the growing strength of the Soviet Forces was at last underway, but proceeded slowly. The refurbishment of former Luftwaffe airfields began in earnest in 1950. Between 1950 and 1955 eight former Luftwaffe airfields were rebuilt and made ready for the jet age by the British. These bases were to form the backbone of the basing structure of the newly-formed Luftwaffe. [26]

As a result of the spurt caused by the Korean War, the military component of NATO began to develop coherent force structures that might have to actually go to war. The question of the rearmament of Germany could not be ignored. At the Lisbon Conference of 1952, a force goal of NATO air force strength of ten thousand tactical aircraft was set. Of course those at the tactical level were busy coping with the situation they were in: making do with rapidly ageing World War Two-vintage equipment ranged against an increasingly belligerent and well-armed Soviet foe.[27] Economic realities and the weak nature of European aerospace industry would slow the process of rearmament down; many promises of early delivery of new equipment were broken. Despite the strategic generosity of Marshall aid (provided the purchase was from the US) many early NATO jet fighters and fighter bombers were very late in delivery. Airmen serving in Germany in the early 1950s were

frustrated. Clearly fighter squadrons could not pit piston-engined Tempests (good as they were) against MiGs – the RAF bought Canadian-manufactured Sabres as a stop-gap. The popular mood was captured by the quest to break the sound barrier and develop new aircraft and weapons; the reality of procurement funding, production and delivery was painfully slow. At least, though, we could re-organise.

In 1949, BAFO had been re-badged as Second Tactical Air Force, its wartime name, as a three star Royal Air Force command. In 1952, the role became international with the creation of the Second Allied Tactical Air Force (TWOATAF), headquartered in the new Joint Headquarters at Rheindahlen in Germany. This formation included assigned tactical air force elements from Belgium, France, Netherlands and the UK. Air was fully collocated and integrated with land – the lesson of WWII had been heeded. Those serving in the purpose-built joint headquarters knew that it was only a question of time before some form of German air force element would join them.[28] At the strategic level, the UK supported the policy to: 'bind Germany irrevocably into the mainstream of European institutions'.[29] This British foreign policy objective translated into a willingness within the force elements of Royal Air Force Germany into an enthusiasm to set the conditions for the integration of German Armed Forces into NATO. From 1953 to 1954, as the political machinations played out at the strategic level, the UK military played a leading role in setting the conditions for the reformation of the German Army and Luftwaffe.[30]

Of course this was more than altruism. UK forces were globally stretched, as the retreat from Empire required the deployment of force elements in all continents. As suggested above, new equipment arrived much more slowly than promised and the cost of Cold War rearmament came at a time when the British economy was not recovering as planned.[31] At the operational level, British commanders and staff officers alike in Royal Air Force Germany (not to mention those serving within NATO) worked tirelessly throughout 1954 and early 1955 to set the conditions for the reformation of the Luftwaffe. The ambitious plan for the re-born force called for a force strength of 40000 people, 1000 aircraft and 1300 pilots from scratch in less than two years. This required rapid and sustained action. Bases refurbished by the Royal Air Force were handed over to the new force. In addition, pilot, engineer and support training was conducted by the Royal Air Force (and the Royal Navy) in the UK and Germany, cementing links and forming enduring friendships.[32] The tone was set by the Commander-in-Chief of the Second Tactical Air Force at the time, Air Marshal (later Air Chief Marshal Sir) Robert Forster. He made it very clear to all his staff in the Second Allied Tactical Air Force that German officers were to be integrated into the staff quickly and at all levels. Ultimately a German officer was to become Chief of Staff of TWOATAF in the rank of Major General.[33]

The Luftwaffe was reformed in September 1955. [34] The strategic context of the time was very different to that of 1945. The United States Air Force (USAF) was the dominant strategic, operational and tactical air power force. At that time, NATO's nuclear response

was entirely in the hands of air forces. Given NATO reliance on air-delivered nuclear weapons within the 'Tripwire' strategy, there was no more important role. Thus, the expansion of the nuclear 'club' to include many other nations in the nuclear delivery mission was a strategic imperative. In most European nations, the nuclear question had intense political connotations. None more so than in West Germany. The ruling Christian Democratic Union favoured West German membership of the 'nuclear' club, the opposition Social Democratic Party did not.[35] As the fledgling Luftwaffe struggled to meet its targets for growth, the nuclear issue threatened to develop into a full-blown international row. That this did not happen is again testimony to the wisdom and judgement of those senior officers in the Luftwaffe and the Royal Air Force who worked harmoniously on the readiness and capability of the tactical force elements – leading by example: moral courage, instinct, knowing what is right, not by following political diktat.

As the 1950s ended, NATO tactical air forces had achieved a great deal – air forces were in place, trained and ready. But, as the threat developed, what to do about it took different forms – particularly between the RAF and the USAF.[36] On the surface, the relationship between the two was closer than any coalition parallel in the history of warfare. But, when we examine this legacy in a little more detail, the cracks in the relationship were starting to show. As Robin Niellands in 'The Bomber War" has clearly demonstrated, there were divergent views on how to "bomb to win": day or night, precision or area, fighter protection or self-protection; all tactical debates which continued.

Although wartime secrecy prevented early debate, from the official histories of the 1960s onwards, the friction on policy, doctrine, tactics, targeting and – especially – command and control has been steadily revealed. There were two separate elements at work. The first element was to exert maximum influence over air strategy. By 1945, although some very senior Royal Air Force officers were reluctant to accept it, the United States Army Air Force was dominant. When the long campaign for independence succeeded in 1947, the United States Air Force leadership was reluctant to undertake garrison duties in Germany, the main effort was the development of large fleets of jet bombers with strategic reach and nuclear weapons, based in continental USA with global reach. Leadership in the Royal Air Force was similarly minded to focus research and development on air-dropped nuclear weapons and bombers to carry them.[37] Even if this was the dominant influence, Britain's continental commitment to forward defence in West Germany, later enshrined in NATO doctrine kept alive the need for tactical air power integrated into and in support of army operations.[38] This absolute focus on tactical air operations in support of the land component with independent command exercised by a British commander[39] in the strategic setting of the 'front line' forward defence of NATO led to the development of a distinct 'way' in air warfare – a 'way' largely adopted by the Luftwaffe and challenged by the US.

The debate centred on how to mitigate the increasingly dense threat environment to be (potentially) faced by those based in the Central Region of NATO. The 'new' UK view was to fly as low and as fast as possible. Many

British aircraft, avionic and weapon designs ended up being used in this manner: Canberra, Swift, Hunter, Javelin and Lightning were all to see service in West Germany flying at low level in all tactical roles. Despite the 1957 UK 'Sandys' Defence Review, the RAF retained sixteen tactical squadrons in Germany – still a sizeable force. The British 3 star commander at Rheindahlen saw himself very much as the guardian of the soul of the wartime Second Tactical Air Force.[40]

Turning to the USAF, arguably the pendulum in the relationship between the RAF and USAAF had swung towards the USAAF (never to swing back) as the Allies landed in Sicily in late 1943. As the war continued, the USAAF quest for full and final independence from the clutches of the United States Army became a complicating rather than a complimenting factor in the relationship. Henry Probert's recent biography on Harris does not downplay the Anglo-American friction from 1944 into 1945 especially over bombing strategy.[41] Following victory, discussion and disagreement on what the bombing had or had not achieved continued and accelerated. The USAAF was very quick off the mark to instigate what was to become an enormous effort: the American Strategic Bombing Survey. This fitted USAAF main effort: to gather overwhelming evidence on the effect of strategic bombing in order to accelerate the creation of a separate USAF. British efforts were much more cautious. As Noble Frankland has demonstrated in his autobiography, 'History at War', the issue of how to write the history of the air war against Germany became a politically sensitive issue.[42] The effect of unrestricted bombing on the infrastructure and people of Germany and its erstwhile Allies was having a profound (and long lasting) impact on the young servicemen within the occupying forces as they surveyed the devastation.[43]

Throughout the 1950s and early 1960s, NATO planners relied on the strategic reach of air power – jet bombers, tankers and nuclear weapons – to deter the existential threat posed by the Soviet Union. The strategy of mutually assured destruction (MAD) in the event of all out nuclear war was backed up by tactical air forces based forward in Germany (and elsewhere) in order to prevent the rapid occupation of Western Europe. As early as 1951, the rapid advance of Communist forces across the Korean peninsular required a rethink on forward basing in Germany. Military planners realised that bases too far forward could be overrun as the correlation of forces began to switch to the Warsaw Pact.[44] During the late 1950s and early 1960s, a veritable redoubt of semi-hardened fighter and fighter-bomber bases were created along the Rhine. NATO summits invariably led to declarations of unity of purpose and common cause amongst all member states with ringing declarations of national will to meet NATO force goals. The reality was somewhat different. Conventional force levels rarely increased in line with declarations of political intent. NATO strategy was, in reality, dominated by reliance on nuclear weapons. It was not until 1967 - following the Harmel Report - that NATO moved towards a strategy of Flexible Response, which meant a much greater reliance on conventional weapons and air power[45]. By the early 1970s, following a further re-equipment programme with F-4 Phantom, Buccaneer and Jaguar (later Tornado),

the UK settled on a force structure of twelve fighter, attack and reconnaissance squadrons based in West Germany.[46]

The 1967 Arab-Israeli war shocked NATO. The rapid destruction of aircraft on exposed airfields led to a NATO-led programme of fully hardened and dispersed airfields in order to protect vital tactical air assets. Ironically, by the

Luftwaffe F-4F Phantom

time the NATO airfield programme was complete in the early 1990s, UK and US aircraft were 'plinking' hardened aircraft shelters in Iraq with Precision Guided Weapons – in an environment of near-absolute air superiority shelters proved to be no palliative. The Luftwaffe embarked on a similar re-equipment programme with Tornado replacing F-104 in the strike/attack and tactical reconnaissance roles and updated F-4 Phantoms in the air defence role. Thus, by the mid 1980s both the RAF and the Luftwaffe had re-equipped in the strike/attack and reconnaissance roles with aircraft specialised for low level penetration of Soviet air defences. As the density of Soviet air defences increased, so western tactics, techniques and procedures developed at a pace in the 1980s faster than in the previous three decades. Tactical developments were honed by series of exercises and evaluations within a multinational command and control structure.

The camaraderie developed in 1955 between the Luftwaffe and the Royal Air Force continued to grow throughout the Cold War. Annual exercises, tactical flying competitions in weapon and reconnaissance proficiency, squadron exchanges, individual exchanges of aircrew: all helped to develop a close tactical relationship that was to span the decades. There was a genuine 'front line' spirit. Even if equipment differed as the Luftwaffe increasingly purchased US aircraft types such as the F-84 Thunderstreak, F-104 Starfighter and F-4 Phantom, the tactics were the same.[47]

Intelligence assessments, however, continued to paint a remorseless picture of growth in the Soviet threat with the relentless exploitation of western military technology through fair means or foul coupled with traditional Soviet strengths of radar and rocket technology. In addition, the Soviet military-industrial complex poured scarce resource into defence spending leading to the mass production of weapons, radars and, increasingly – missiles.

The USAF, however, following their experience in Vietnam, switched to medium level tactics with an emphasis on electronic jamming of both Soviet communications and radars with large aircraft and the suppression of enemy air defences with dedicated tactical aircraft. These were all tactics, techniques and procedures developed and refined during the Vietnam war. The two doctrines were not compatible. The choreography required by the USAF 'way' in tactical air war on the Central Region of NATO grew ever more

complex with composite air operations of many different types of electronic and air defence support aircraft required to protect the 'bombers' so that they could penetrate to the target. There were many echoes of the differences of view between the RAF and USAAF during the Second World War. From good-natured debates in the crewrooms of the Tactical Leadership Programme to sharp disagreements over doctrine in the air force headquarters of the Central Region of NATO, dissension mounted. From the mid 1970s, the debate continued until 1989. The USAF view was that aircraft losses in Vietnam to Soviet-supplied, radar-directed anti-aircraft artillery fire (AAA) became a decisive point in US air operations, tipping the balance against low level tactics. US aircraft such as F-15 and F-16, could operate at low level (less than 500 feet above ground), but were optimised for medium level (above 15,000 feet). The culmination of the debate on tactics concluded in a restructuring of NATO air forces in the Central Region of NATO in 1974. A new 'coordinating' air headquarters: Allied Air Forces Central Europe was created at Ramstein. The commander, a USAF four star, would in the event of hostilities allocate effort between TWO and FOURATAF. Although compliant with the air power dictum of centralised control, decentralised execution, the new headquarters did little for the integrated nature of air/land operations, which had been the byword of TWOATAF from 1952 until 1975.[48]

As the Cold War ended unexpectedly following the 'velvet' revolutions of 1989, both the UK and the USAF way in air war was to face a serious challenge in the Middle East. At the time of the first Gulf War, the entire RAF tactical front line was optimised for the predicted low-level conflict with the Soviet Air Force. The Tornado (both variants) and specialised weapons such as the JP233 airfield denial weapon represent this tactical legacy. In the 1991 Gulf War, human flexibility and ingenuity won out, and a combination of UK tactics and US might prevailed. The daring and determined British low level attacks employing the combination of Tornado and JP233 set the conditions to allow unrestricted USAF medium level operations. NATO integrated training paid off; TACEVALS and the Tactical Leadership Programme ensured a common language and a cadre of tactical leaders. In addition, NATO doctrine and procedures – especially for deconfliction – were vindicated. Total air synergy through unified air effort was achieved.

Since the end of the Cold War, the RAF, the USAF and the Luftwaffe have continued to adapt to changing strategic, operational and tactical requirements. Tornados and Transalls have seen operational service in places, roles and missions that their designers could have not imagined. Recent historiography of operations in the Balkans highlights the orchestration and harmony that is needed to make combined air operations work.[49] This coordination and unity of purpose is something we must not take for granted. A new generation of airmen see air component command as the natural way of things. Maybe. As this short note largely based on Anglo-German air cooperation (hopefully) makes clear, the creation of integrated air operations in support of the defined joint campaign main effort is consistent with warfare through the ages. The spat over tactical doctrine between two tactical air forces in West Germany during the Cold War may seem irrelevant. It is not.

Contemporary complex operations in the Middle East, the Balkans and Afghanistan demonstrate the need for agility and adaptability. What we have to learn now from the founding fathers of the tactical air forces of the 1950s is the need to listen to each other. The degree of intimacy, understanding and interoperability between armies and air forces was hard won. The Luftwaffe played an equally vital role in the development of tactical air power during the Cold War.

Recent operations offer lessons unique to their strategic context, operational setting and tactical situation. Therefore, lessons must be treated with care for their generic application to future conflict. But they do offer a few constants and more than a little food for thought. Throughout the Cold War, the Luftwaffe and the Royal Air Force were 'joined at the hip' with their Army counterparts: NORTHAG/ TWOATAF. All senior airmen saw their war appointment at the shoulder of their land counterpart. This was another hard-won lesson of WWII – a lesson learned by Germany and the UK. Strategic nuclear planning saw this operational level integration drift apart. Technology offered the prospect of geographical separation with close co-ordination through advanced command, control and computing systems. This became common practice from the 1990s and is now received wisdom. But is this enough? Remember the shock of the BEF in France - fighting the war they had not prepared for – as subsequently happened to the Luftwaffe against the RAF. Now again we face the unexpected – and we may again need to challenge the status quo of command and control structures.

At the tactical level, aircrew of all Central Region NATO nations understood that close air support for their army colleagues was their most important, difficult and dangerous mission. That is why close air support training was conducted every day. Thus the 'instinctive' integration of air/land operations was the legacy of that bond created in 1955 on the reformation of the Luftwaffe. Nor should we forget the magnanimity demonstrated by those serving with the Royal Air Force in Germany towards the development of the Luftwaffe. The context is different to that of Iraq of 2003 and beyond, but there is something we can learn from both the sensitivity and constraint showed by BAFO in the post WWII period. The current way in air war requires tactical commanders able to operate comfortably in a dual role: integrated within a US-led structure, yet with the strategic awareness and moral courage to influence command decisions, courses of action and mission analysis. As we enter an era of a revolution in strategic affairs, continual operations by some or all elements of national air forces are the one constant. The tempo will shift: persistent surveillance, humanitarian support, patrol operations, focused intervention and air mobility may be the modern mantras for staff colleges in both the UK and Germany.

But we must not disregard traditional air fighting. Control of the air must not be taken for granted. Close air support missions in Afghanistan would be entirely familiar in difficulty, violence and ferocity to World War Two Luftwaffe, Royal Air Force, Soviet and USAAF veterans. All generations of airmen need to study the past and grasp the present in order to understand the

future. The co-history of the RAF and the Luftwaffe during the Cold War as brothers in arms provides a very useful pointer of what can be achieved by unity of purpose.

Notes

1 See Terraine. J, The Right of the Line, Hodder, London, 1985 for the most closely argued account of the Royal Air Force in World War Two.
2 A decision taken by Truman during the Potsdam Conference held in the Cecilienhof Palace at Potsdam of the Crown Prince of Germany and relayed by special telephone.
3 A History of the United Sates Air Force in Europe, Office of Air Force History, Ramstein, Germany, 1996.
4 See C.F Shores, '2TAF', Osprey, London, 1970.
5 See Taylor. W, Royal Air Force Germany since 1945, Midland, Hinkley, 2003, for a fully detailed account of how close the cooperation became in the crucial early years.
6 See 'Royal Air Force in Germany, 1945-1993', RAF Historical Society, 1999.
7 See Mason R.A., 'Air Power, A Centennial Appraisal', Brasseys, 1994, Terraine, Op Cit for the view that the RAF applied strategic principles to air warfare and air power and the Luftwaffe was essentially a tactical force.
8 See Murray W, 'The Luftwaffe- A Strategy for Defeat' , John Murray
9 For an outstanding single volume account of the development of air power thinking, see Meilinger, P, 'The Paths of Heaven : The Evolution of Airpower Theory', Air University Press, Maxwell, Alabama, 1997.
10 TV Documentary, 'Luftwaffe Wonder Weapons', Discovery Channel, Nov 05.
11 General (later Field Marshal) Lothar von Richtofen was the ardent exponent of this type of warfare. He remained influential in the development of the Luftwaffe. As losses mounted in 1941 onwards more junior officers such as Galland challenged the orthodoxy; some such as Kammhuber in the defence of the Reich were successful; many were not. As WWII ground on the demands of Ober Kommando das Luftwaffe (OKL) became ever more detached from the tactical reality. See Murray, Op Cit.
12 See Der Lexicon des Luftwaffe, Berlin 1981.
13 Corum, J, 'Luftwaffe and the Development of Operational Art, KUP, Kansas, 1996 offers a fascinating insight into just how crucial were the experiments at Lippetsk in the Soviet Union.
14 Omissi, D, 'Air Power and Colonial Control', MUP, Manchester, 1981 offers a compelling account of just how focused the Royal Air Force became between the wars on imperial support operations.
15 The notable exception was Air Marshal Sir Arthur Barratt, the Royal Air Force Air Component Commander during the Battle for France, later the Commander-in-Chief Army Cooperation Command.
16 In the UK and Germany there is much talk of network enabled or network centric warfare. Any visit to the Command Bunker at RAF Uxbridge or the Sector Operations Centre at RAF Digby would demonstrate the strength, flexibility and resilience built into the UK Air Defence Network – which had steadily evolved from the original concept developed to defend London during the First World War.
17 See Wykeham.P, Fighter Command, A Study of Air Defence, 1914-1960, Putnam, London, 1960, for a definitive account of how the air defence network of Great Britain was developed.
18 An excellent contemporary view on the Luftwaffe can be found in 'The Rise and Fall of the German Air Force', Air Ministry Pamphlet 248, HMSO, London, 1948.
19 See, Steinhoff, J. 'Straits of Messina', Fontana, 1981 for a fascinating account of Squadron life in the Luftwaffe from 1942 to the end of the war.
20 Overy, Richard, 'Why the Allies Won', Jonathan Cape, London, p 122-133.