

The RAF in Operation TELIC: Offensive Air Power, March- April 2003

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By Dr Sebastian Ritchie

Operation TELIC, the UK contribution to coalition operations against Iraq launched in March 2003, was the culmination of some thirteen years of almost continuous UK air operations in the Persian Gulf, in response to a succession of challenges and threats posed by Saddam Hussein's regime. The initial UK air plan was based on a potential RAF contribution comprising 88 fast jets and 38 support platforms – more aircraft than the RAF had deployed on a single operation since the First Gulf War and more, in all probability, than it will ever deploy again. This article provides a brief summary of the Air Historical Branch narratives on Operation TELIC, and includes consideration of some of the broader lessons that might be identified from the RAF's experiences. Historically, the operation will always be viewed as a milestone along the road to improved air-land integration (ALI), and ALI was certainly a prominent issue, where the exercise of combat air power was concerned. But it is important to ensure that other aspects of the TELIC air power story are not forgotten.

Introduction

The Royal Air Force's involvement in Operation TELIC followed on from some thirteen years of almost continuous UK air operations in the Persian Gulf. In 1990, in response to Iraq's invasion of Kuwait and the initiation of Operation GRANBY, a force of more than 120 fixed-wing aircraft and 36 helicopters was sent to the Gulf as part of the US-led coalition that ultimately liberated Kuwait in the following February. September 1991 witnessed the commencement of coalition air patrols over the Northern No-Fly Zone (NFZ – Operation NORTHERN WATCH), designed to protect Iraq's Kurdish minority, while the RAF based a detachment of six Tornado GR1s at Dhahran in Saudi Arabia in August 1992 to contribute to the maintenance of the Southern NFZ – Operation SOUTHERN WATCH. This detachment was later moved to Prince Sultan Air Base, Al Kharj (PSAB).

During the so-called UNSCOM (United Nations Special Commission) crisis, beginning in late 1997, this force was augmented by a detachment of carrier-borne Harrier GR7s and more GR1s were deployed to Ali Al Salem air base, Kuwait, from where twelve aircraft eventually participated in Operation DESERT FOX in December 1998. Soon afterwards, the Saudi commitment was taken over by Tornado F3s and, at the beginning of 2000, the GR1 detachment in Kuwait was reduced to eight aircraft. This remained the UK posture in the Gulf in 2002, when the build-up to TELIC began.

What follows is a brief summary of the Air Historical Branch narratives on Operation TELIC, and includes consideration of some of the broader lessons that might be identified from the RAF's experiences during the campaign to overthrow Saddam Hussein's regime. Historically, the operation will always be viewed as a milestone along the road to improved air-land integration (ALI), and ALI was certainly a prominent issue, where the exercise of combat air power was concerned. But it is important to ensure that other aspects of the TELIC air power story are not forgotten.

The Build-Up to Operation TELIC

The first documented intimations of UK involvement in the operation that became TELIC can be traced to March 2002. In May, the Chief of the Defence Staff (CDS) was advised of a potential RAF contribution to a future operation in Iraq comprising 88 fast jets and 38 support platforms – more aircraft than the RAF had deployed on a single operation since the First Gulf War and more, in all probability, than it will ever deploy again. It was envisaged that such a force could be generated in a period of three or four months, while other UK contingents would require slightly longer. A concept for the operation was briefed to the President of the United States in June 2002, and UK planners were present in the US from July onwards.

UK participation in a coalition with the US was based on a strategic end state in which Iraq became 'a stable, united and law-abiding state, within its present borders, co-operating with the international community, no longer posing a threat to its neighbours or to international security, abiding by all its international obligations and providing effective government for its

own people.' By contrast, the end state envisaged by Washington more openly embraced the concept of regime change: the American aim was to put 'an acceptable provisional/permanent government in place.'

A formal operation plan emerged in August numbered OPLAN 1003V. This would ultimately form the basis of the operation that the Americans named Iraqi Freedom – the UK Operation TELIC. The plan was designed 'to overwhelm the Iraqi regime through a co-ordinated multiplicity of threats applied across a number of lines of operation.' These were defined as operational fires, operational manoeuvre, Special Forces (SF) operations, unconventional operations/support to other governments, influence operations, humanitarian assistance and political-military engagement. Coalition forces would attack Iraq from three directions simultaneously – the North, the South and the West, where a largely separate mission was planned to prevent Iraq from launching theatre ballistic missiles (TBMs) at neighbouring countries. During the First Gulf War, Israel had repeatedly been targeted by Iraqi Scud launches from this area. Otherwise, by mounting simultaneous attacks from different directions, the plan aimed to destroy Iraqi cohesion and prevent Saddam Hussein's forces from concentrating against the primary – southern – axis of advance.

In support of these broad objectives, the air plan had five basic components. The Counter-Air mission would eradicate any threat from the Iraqi Air Force, while Counter-TBM operations were designed to locate and destroy Scuds and Scud-related equipment in the western Iraqi desert. Counter-Land would provide direct and indirect support to coalition ground forces and SF support would also feature prominently. A strategic element was included in the air plan, involving multiple strikes against regime targets famously designed to achieve 'shock and awe'.

The UK would establish an Air Contingent Headquarters in theatre and RAF personnel would also be 'embedded' within the Combined Air Operations Centre (CAOC), securing visibility of, and influence within, the air command and control process and providing highly valued air planning expertise. The RAF would contribute offensive air assets in the form of Tornado GR4s and Harrier GR7s, and further key capabilities designed to add value to the US air campaign – notably intelligence, surveillance and reconnaissance (ISR), air-to-air refuelling (AAR) and air transport platforms. As UK ground forces were expected to enter Iraq from Turkey, on the northern axis, it was originally planned that a substantial proportion of the RAF's offensive resources would operate in the same area to support their advance. The RAF was also to establish a so-called Air Point of Departure (APOD) in Turkey through which the UK Land Contingent would deploy.

On the basis of this plan, the RAF originally envisaged the use of two Turkish airbases. The Jaguars already based at Incirlik for Operation NORTHERN WATCH would be joined by 18 Tornado GR4s, 3 E3Ds, 2 Tristar tankers and a Nimrod R1; 18 Harrier GR7s were to operate from Diyarbakir. By contrast, the RAF's presence south of Iraq was to consist of just 12 GR4s, 6 F3s, 2 Tristars and 2 Nimrod MR2s. More westerly basing was planned for a further 4 Nimrod MR2s

and 2 Canberra PR9s, and 8 VC10s were to operate from RAF Akrotiri. Fixed and rotary-wing air transport would also deploy on a substantial scale, and the UK Air Contingent was expected to number approximately 6,700 RAF personnel.

The original American concept was that operations would commence towards the end of 2002, possibly via the graduated escalation of NORTHERN and SOUTHERN WATCH. But the Bush government was sufficiently realistic to accept that a coalition operation was essential; the US could not act in isolation. With the UK inevitably viewed as the main partner in such a coalition, some compromise had to be accepted to accommodate British political sensitivities. Effectively, it would be necessary to seek United Nations authority for military action against Iraq, on the basis of her alleged failure to implement UN resolutions prohibiting the manufacture or possession of weapons of mass destruction (WMD). But pursuing the 'UN route' (as it was termed) inevitably involved delays and uncertainty, and pushed back the start of Operation TELIC into 2003.

For the RAF, there were two dominant issues in this period. The first was the collapse of the northern, Turkey-based plan, and its consequences; the second was the transition from NORTHERN and SOUTHERN WATCH to TELIC. As we have noted, UK forces were originally to operate on the northern axis of advance, using Turkey as a springboard. However, in Ankara there were deep misgivings about the prospect of coalition operations being launched from Turkish soil, and it became clear in December that the plan to attack Iraq from the north was in jeopardy. Contingency planning began, and alternative air basing arrangements were finalised in January. It was envisaged that UK forces would deploy between the end of January and mid-March.

The revised basing plan left only the 8 Jaguars in Turkey; they were grounded by the Turkish authorities on the outbreak of hostilities and played no part in Operation TELIC. All other fixed and rotary-wing detachments were otherwise concentrated to the South and West, the main fast jet presence being at Ali Al Salem and Al Jaber in Kuwait (GR4s and GR7s respectively), Al Udeid in Qatar (GR4s), and Prince Sultan Air Base in Saudi Arabia (F3s). The Tristars would all base at Muharraq, in Bahrain, E3Ds and Nimrod MR2s would also operate from PSAB, and there would be a further MR2 presence at Seeb, in Oman. The larger detachments each comprised elements of different squadrons, which were effectively merged into wings. The GR4 detachment at Ali Al Salem became known as the Combat Air Wing, while the Harriers at Al Jaber assumed the name 'Harrier Force South'. The Al Udeid GR4 detachment was simply christened the Al Udeid Wing.

The basing plan was revised at minimal notice; it involved more than 100 aircraft, thousands of personnel and multiple deployed operating bases across the theatre of operations. To many of those committed to the UK Air Contingent, experiencing the process on a day-to-day basis, it certainly must have seemed that the deployment was beset by every imaginable problem. Yet it was successfully completed in a period of 4-6 weeks – an achievement probably without

precedent in the history of RAF overseas operations, and a reflection of the substantial efforts expended on developing expeditionary capabilities during the previous decade. Thereafter, UK air power could play almost exactly the role envisaged for it under the original operation plan. The RAF proved itself to be a far more mobile force in 2003 than in 1990, but benefited from certain advantages beyond the American support that was, in any case, a feature of both Gulf Wars. There was more lead time in 2003, and the RAF was already operating from several bases in the Gulf in support of Operation SOUTHERN WATCH; relations with potential host nations were, as a result, very well established.

The second issue, the transition from NORTHERN and SOUTHERN WATCH to TELIC, assumed particularly challenging proportions as it became clear that ground operations against Iraq were unlikely to be preceded by an extensive preliminary air campaign, as they had been in 1991. The USAF Combined Forces Air Component Commander (CFACC) concluded that he would, in these circumstances, have little opportunity to degrade the Iraqi Integrated Air Defence System (IADS), unless such shaping operations were conducted under the cover of NFZ enforcement. He therefore secured such authority as was necessary to extend the parameters of SOUTHERN WATCH. However, the UK targeting directive imposed tight restrictions on RAF participation in any activity extending beyond the basic NFZ tasks.

This placed the UK Air Contingent Commander (UKACC), Air Vice-Marshal (later Air Chief Marshal Sir) Glen Torpy, in an awkward position, and he eventually felt constrained to ask for his targeting directive and ROE to be relaxed. His perspective is easy to understand, but the problem was viewed rather differently in London, predictably enough: the suggested changes in the directives would have been difficult to reconcile with the government's declared position that no decision had as yet been taken to go to war. Although very seriously considered, therefore, the request was rejected. However, there was rather more flexibility where ISTAR activity was concerned, and the targeting directive was altered to permit strikes against Iraqi forces deemed to be threatening the coalition build-up in the Gulf.

On 3 March, authority was received for aircraft deployed on Operation TELIC to participate in Southern Watch; on the 19th, the UKACC adopted the Operation TELIC ROE, at the same time as the Americans switched to the ROE for Operation IRAQI FREEDOM. Thereafter, the friction occasioned by this complex issue largely disappeared. Ministers and legal advisers accepted that a high degree of control from London was unrealistic, given the realities of high-tempo, high-manoeuve warfare, and extensive targeting delegations were issued to the UKACC, marking a significant and welcome change from earlier operations.

Offensive Air Operations and the Fall of Baghdad

The original TELIC air campaign plan envisaged the initiation of air operations to shape the Iraqi battlespace 16 days before the ground campaign began. These preparatory air strikes were to include the targeting associated with 'shock and awe'. Once ground operations started, it was broadly anticipated that offensive air power would fulfil a variety of roles, encompassing

attack, interdiction and close air support (CAS). In December 2002, the time allowed for the preliminary air campaign was cut to five days, but this did not result in a significant change in expectations. Consequently, the main RAF GR4 and GR7 detachments deployed to the Gulf foreseeing a period of attack and interdiction tasking, followed by CAS in support of the Land Component, and their preparations for Operation TELIC reflected this expectation.

However, much uncertainty still surrounded the precise circumstances in which operations would commence and, when the initial air campaign was compressed still further, it became clear that an earlier shift towards CAS was in prospect. 'A-Day' (the start of the air campaign) and 'G-Day' (the launch of the ground campaign) were then merged before, finally, the Combined Forces Commander (CFC), who exercised overall command of all committed coalition forces, decided that G-Day should actually precede A-Day; no time would be allocated for preparatory shaping operations. Against this background, the air plans were repeatedly revised, and numerous missions scheduled for the opening stages of TELIC were cancelled altogether. Much of the targeting associated with 'shock and awe' was abandoned. The ground offensive began on 20 March, while the air campaign was initiated 24 hours later.

The CFC was motivated by a number of concerns. A preliminary air campaign would warn the Iraqis that a ground assault was imminent. Tactical surprise would be lost, the Iraqis might well begin setting fire to their oil wells and Iraqi missile attacks might target the coalition's small and crowded assembly areas in Kuwait. There were also concerns that 'shock and awe' could be accompanied by collateral damage, bringing international condemnation and jeopardizing regional – Arab – support for the coalition. All of these arguments carried some weight. Nevertheless, it is clear that the CFC also wanted the forthcoming operation to provide a potent demonstration of the capabilities of the Land Component, air power having been assigned lead role in the First Gulf War, the No-Fly Zones, Bosnia-Herzegovina, Kosovo and Afghanistan.

The implications for the RAF GR4 and GR7 detachments were profound. Instead of being allocated a mix of attack and interdiction tasking as well as CAS, they received, at most, 2-3 days of pre-planned missions. During this period, in addition to more conventional tasking with Paveway laser-guided bombs (LGBs), the GR4s mounted the first Storm Shadow missile attacks, which chiefly targeted key nodes within the Iraqi Integrated Air Defence System (IADS). It was also during this phase of the air campaign – on 22 March – that the UK Air Contingent tragically sustained its only battle casualties of the operation, when a 9 Squadron GR4 returning to Ali Al Salem was shot down by a US Patriot missile battery, having been misidentified by the battery crew as a hostile incoming anti-radiation missile. The pilot, Flight Lieutenant Kevin Main, and navigator, Flight Lieutenant Dave Williams, were both sadly killed.

By 23 March, the GR4s and GR7s were largely being switched to CAS or, to be more precise, KI/CAS – standing for Kill-box Interdiction/Close Air Support. KI/CAS was a US Marine Corps (USMC) concept, which was adopted by the CFACC for the operation. The whole of Iraq was

divided into kill-boxes. Outside a Fire Support Co-Ordination Line (FSCL), some distance beyond the Forward Line of Own Troops (FLOT), aircraft were cleared to attack any targets they could find in their assigned kill-boxes, assuming they had been declared 'open'. If they were 'closed', aircraft could only attack under positive direct control, normally from a Forward Air Controller (FAC).

Inside the FSCL, kill-boxes were automatically closed unless opened with the agreement of the Combined Forces Land Component Commander (CFLCC). In the absence of such agreement, they were subject to three types of CAS, all of which necessitated positive direct control of the aircraft. Type 1 required the terminal controller to have sight of both the aircraft and the target – a rare occurrence during the campaign; Type 2 required the terminal controller to have sight of either the aircraft or the target, while Type 3 enabled air strikes to take place when the terminal controller could see neither aircraft nor target.* Ultimately, KI/CAS accounted for 75 per cent of GR4 and GR7 tasking.

For the RAF detachments, KI/CAS was accompanied by many difficulties. First, neither of the two deployed platforms was particularly well-adapted for CAS, the Tornado GR having been designed as an attack platform, while the Harrier had only really been envisaged as a *low-level* CAS asset before the general shift towards medium-level flying during the 1990s. On many occasions, the TIALD pod, which provided laser designation for both aircraft, did not give a sufficiently clear picture of the ground to allow small, tactical targets to be positively identified unless aircraft descended to lower altitudes, where there was a greater threat from ground-based air defences.

Second, as there had been no requirement for air support from the British Army since the Falklands War, none of the aircrew had any 'live' experience of CAS, and all were accustomed to extensive mission planning and pre-briefing on their targets, as well as target folders containing up-to-date photographs, intelligence and other mission-specific information. By contrast, in the KI/CAS role, aircraft were simply dispatched to a kill-box to await any tasking that became available; detailed targeting information normally only emerged during transit to the target area. After that, aircrew had still to locate the target, positively identify it, apply their targeting directive and select appropriate weaponry – a considerable challenge. Complicating matters still further, in due course, would be the requirement to conduct KI/CAS in urban environments, where the collateral damage risks were particularly high. Third, some of the Land Component's air support machinery was very far from perfect: the US Army's V Corps lacked 1 Marine Expeditionary Force (1 MEF)'s familiarity with the KI/CAS system, devised, as it was, by the USMC. For all of these reasons, a high proportion of the aircraft tasked with KI/CAS returned to base without releasing weapons.

Among the factors that influenced the outcome of KI/CAS missions, the ability of offensive aircraft to hold in the target area was particularly important, as was the availability of targeting

* For example, when forward troops were reporting the location of a target to a terminal controller in radio contact but not visual contact with both the troops and the attack aircraft.

intelligence. In the early stages of Operation TELIC, the residual air defence threat in Southern Iraq was such that larger, more vulnerable aircraft, notably AAR and ISR platforms, were kept well to the south of the Iraqi border for their own protection. This compelled the fast jets to withdraw from Iraqi airspace in order to refuel, and denied the coalition much important target information. However, once the majority of air defence threats in southern Iraq had been eliminated, it was possible to move AAR and ISTAR tracks forward to the Saudi-Iraqi border without undue risk. This improved the on-station time and intelligence supply for KI/CAS assets, increasing their chances of locating and attacking the Iraqi military.

Beyond this, Harrier Force South and the USMC Tactical Air Control Centre, which was also located at Al Jaber, collaborated closely to improve the effectiveness of KI/CAS missions involving the RAF GR7s, and a system of 'alternate targets' was introduced, in recognition of the fact that some Iraqi units and military installations had been bypassed by the rapid ground offensive and remained a potential threat. Aircraft returning to base with unexpended ordnance after KI/CAS missions in support of V Corps and 1 MEF regularly attacked these targets during the second week of the campaign.

In the initial coalition offensive, V Corps drove north-west along the western bank of the Euphrates river, while 1 MEF and 1 UK Armoured Division concentrated on securing southern areas of Iraq, including the port of Umm Qasr, the Rumaylah oilfields, the Al Faw Peninsula and Basra. Responsibility for this area then passed to 1 UK Armoured Division, freeing the bulk of 1 MEF to follow V Corps as far as Nasiriyah, where they crossed the Euphrates and advanced north. The campaign then developed into a headlong rush for Baghdad.

For the air component, this created further challenges, given the limited opportunities previously available to target the Iraqi IADS. The threat from Iraqi air defences over Baghdad was far greater than in the south. To ensure that there was no diminution in the provision of air support to V Corps and 1 MEF, the IADS had to be degraded further, so the CFACC launched a series of operations under the banner of DEAD – the Destruction of Enemy Air Defences, and not merely their suppression. Central to the entire concept was the USAF RQ4-A Global Hawk UAV, with its capacity to provide commanders with near-real-time high-resolution reconnaissance imagery, allowing coalition aircraft to be launched against enemy targets within minutes of their location. DEAD made steady progress and there was clear evidence by the 28th that Iraqi electronic warfare and surface-to-air missile capabilities were in terminal decline; on the 31st, no fewer than 38 air defence weapons or radars were destroyed. RAF platforms were not involved in these operations, but they certainly benefited from their success.

On the ground, progress slowed after 25 March. The CFC subsequently felt that the two US formations had focused too much on seizing ground rather than destroying enemy forces. It became clear that V Corps and 1 MEF's extended lines of communication were vulnerable to attack, and that measures had to be taken to ensure their security. Iraq's best Republican Guard

divisions were also known to be defending the southern approaches to Baghdad; it would have been unwise of the CFLCC to launch a major ground assault against them while his supply lines were threatened, and neither corps was at first strong enough to do so. The weather also turned against the coalition, central and southern Iraq being hit by violent and prolonged sandstorms between 24 and 26 March. By the 28th, a more-or-less formal pause in the ground offensive had been called. Plans to move against the Republican Guard divisions were postponed from the 29th to 2 April to allow V Corps and 1 MEF to marshal their resources for the forthcoming 'Battle of Baghdad'.

This unexpected pause gave the air component the opportunity to mount extensive attacks on the Republican Guard divisions deployed along the main coalition axes of advance. By the time the ground offensive resumed, it was estimated that the Baghdad Division retained a combat effectiveness of just 10 per cent. Comparable figures for the other five divisions were:

Republican Guard Division	Per cent combat effective
Medina	25
Adnan	55
Hammurabi	55
Nebuchadnezzar	70
Al Nida	70

The divisions that suffered least apparently reduced their vulnerability to air attack by employing such far-reaching dispersal and concealment measures that their combat capability was also substantially reduced. Hence, V Corps and 1 MEF encountered only the most limited and ineffective opposition when their offensive resumed. As one British observer put it on 3 April, 'Question is, where has the enemy gone? It is not certain if they have withdrawn, been destroyed or deserted. Probably a combination of all three.' The anticipated pitched land battle for Baghdad never materialised; on 9 April, the Iraqi capital passed decisively into coalition hands.

Counter-TBM Operations

Beyond supporting the coalition offensive in Southern Iraq, the RAF's chief contribution to Operation TELIC involved Counter-TBM operations in the western Iraqi desert. The Counter-TBM task was of exceptionally high strategic importance. The Iraqis had launched Scuds against Israel in 1991 in a transparent attempt to precipitate Israeli retaliation. An Israeli attack on Iraq might well have united Arab opinion against the West, resulting in the withdrawal of Arab nations from the coalition. The same countries might also have denied other coalition members permission to operate from their soil in these circumstances. In the event, through sustained diplomatic efforts and a mammoth *ad hoc* diversion of resources, including air power, SF and Patriot missiles, Israel was dissuaded from intervention.

In 2002, as the prospect of further conflict with Iraq became increasingly real, US and UK planners had to address the possibility that Saddam Hussein would pursue exactly the same strategy, possibly using missiles equipped with chemical or biological warheads. Although many Scuds had been destroyed after Operation GRANBY, no satisfactory inventory of missiles had ever been produced by the Iraqi government; on the basis of UNSCOM investigations in the 1990s, it was believed that a few had been retained at hidden locations and Iraq was also suspected of holding Scud components that might have been used to make more missiles. Naturally, the Israelis were also deeply concerned that they would again come under attack in the event of a Second Gulf War. Unless a concerted effort was mounted by the coalition to address the Scud threat, there was always a danger that Israel might initiate action against Iraq unilaterally.

In July 2002, the US Air Combat Command was tasked to devise a Counter-TBM concept of operations (CONOPS), involving a range of reconnaissance and offensive support aircraft, as well as ground elements. This was the genesis of an operation that would become a major commitment for the RAF in due course. Alongside the USAF contingents, the RAF deployed more GR7s as well as Canberra PR9s, C-130s and Chinook helicopters, and the Nimrod MR2 and E-3D detachments based at PSAB were also assigned to Counter-TBM. In addition, provision was made to exploit the GR4's excellent low-altitude capability when adverse weather inhibited medium-level surveillance or bombing, and both VC10s and Tristars provided vital AAR. In all, some 32 RAF aircraft were permanently assigned to the mission, along with the GR4s and tankers.

The basic Counter-TBM CONOPS that emerged during the later months of 2002 was based on close collaboration between offensive air power, airborne ISR and coalition SF drawn from the Combined Joint Special Operations Task Force-West (CJSOTF-W). Operations in Afghanistan in 2001 had witnessed an unprecedented level of Air-SF collaboration; the CONOPS sought to build on this experience. The primary aim was to deter Iraq from attempting to launch any Scuds by maintaining a significant air presence over Western Iraq and a limited but very potent and highly mobile ground presence. The second objective was to find and destroy any remaining Scuds or Scud-related equipment. This involved the observation of some 6,000 possible hide sites located chiefly along the few main supply routes that ran across the desert towards Syria and Jordan. The sites were to be monitored partly by airborne ISTAR and partly by combat aircraft functioning in the Non-Traditional ISR (NTISR) role. On the ground, hide sites would also be inspected to achieve so-called 'area sanitisation', when it was firmly established that none of the sites in a particular area were being used.

The CFACC was appointed as supported commander for the Counter-TBM mission, while the role of supporting commander was assigned to the Combined Forces Special Operations Component Commander (CFSOCC) and Operational Control (OPCON) was exercised by the commander of CJSOTF-W. Operations were planned by a Counter-TBM Strategy Chief, who headed a dedicated team at the CAOC, and he provided guidance to a Mission Commander

with day-to-day responsibility for all airborne Counter-TBM operations and assets. Beneath him, mission planning cells functioned at base level, while continuous tactical command and control functions for airborne assets were executed by the RAF E-3Ds.

In the first Gulf War, the Iraqi Scud launches had caught the coalition off guard; in 2002, it seemed clear that the Scud would only be defeated if extensive preparations preceded the outbreak of hostilities. Iraqi launch doctrine and the tactics employed during 1991 were carefully scrutinised. There was close liaison between key US and UK personnel, and several exercises were organised in the US and in theatre to test the CONOPS, which was transformed into a clear and detailed 'playbook' for all participants, defining all the agreed Counter-TBM tactics, techniques and procedures. Many (though by no means all) the air and ground force elements committed to Counter-TBM had the opportunity to conduct at least some training together before the onset of hostilities.

The Counter-TBM mission was launched on 19 March 2003 – the day before G-Day – and focused at first on more westerly and southern areas, before moving north towards the Syrian border. The operation went largely according to plan, rewarding all the meticulous preparations of the preceding months, but no Scuds were located and there were no launches. Their whereabouts have since been the subject of much conjecture and may never be definitively established. As the number of Scud launches would probably have been very small, in any case, it might be contended that the Counter-TBM mission needlessly tied up resources that could more profitably have been employed elsewhere.

Yet this would be wrong for three reasons. First and foremost, the mission was essential to dissuade the Israelis from intervening and jeopardising Arab support for the coalition. As there was no overt Israeli action against Iraq, this objective was achieved. Second, however small the residual threat from the Iraqis may have been, one single successful Scud launch against Israel could have exercised a wholly disproportionate strategic effect, with disastrous consequences. Third, even if Scuds were not launched initially, there was always a possibility that they might be deployed later on, perhaps in a final act of defiance as coalition troops reached Baghdad. It was for this reason that the CFC continued to attach top priority to Counter-TBM and insisted on maintaining the hide-site checks throughout Operation TELIC. Once it was established that coalition air power could monitor the majority of sites independently, it was, in fact, possible to transfer at least some CJSOTF-W units to other high-priority tasks.

Ultimately, the coalition forces assigned to Counter-TBM opened what was virtually a third front in Western Iraq, additional to the main southern front and the northern front created by American airborne forces at the end of March. In so doing, they contributed to a process whereby coalition operations destroyed the cohesion of the Iraqi regime and its security infrastructure by exposing it to multiple simultaneous threats. Of particular importance were operations in the Haditha Dam area, in support of an American ground unit, Task Force 20. The dam, on the upper Euphrates River, became a focus of coalition attention when intelligence

suggested that the Iraqis might destroy it to flood the lower Euphrates valley and impede the advance towards Baghdad. Such a measure would also deny vital hydro-electric power to any post-Saddam regime.

Task Force 20 was therefore deployed to secure the dam, but they were soon attacked by a substantial Iraqi formation, which included tanks, self-propelled guns and artillery. Without heavy weapons of their own, Task Force 20 would have faced insuperable odds had abundant air power not been available on call. Over a period of several days, USAF F-16s and RAF GR7s mounted frequent strikes against the Iraqis, while airborne command and control was provided by the E-3Ds. The GR7 strikes targeted tanks, artillery, mortars, military vehicles, buildings, and patrol boats on the reservoir. Their intervention ensured that Task Force 20 retained their hold on the dam until relief arrived on 7 April.

Offensive Air Operations: Assessment

Coalition dominance in the air was a decisive factor in the rapid overthrow of Saddam Hussein's regime. The Iraqis proved completely unable to assemble large or remotely capable ground formations to block the coalition advance and did not launch a single counter-attack against the main V Corps or 1 MEF spearheads; the most they could achieve amounted to small-scale, piecemeal raids on the extended American supply lines. Under relentless pressure from the air, the Iraqi divisions guarding the southern approaches to Baghdad largely melted away, leaving the city only lightly defended. Shattered command and control and intense demoralisation were amply demonstrated by the disintegration or surrender of many units.

The Combat Air Wing's contribution to this successful outcome, from 20 March to 15 April 2003, consisted of some 498 planned sorties from Ali Al Salem, 476 of which actually became airborne. Of the 498 planned sorties, 324 were classed as offensive support and there were 121 reconnaissance sorties employing the GR4's RAPTOR pod. Other tasking encompassed Counter-TBM in Western Iraq, Storm Shadow launches and Suppression of Enemy Air Defences (SEAD), using the ALARM anti-radiation munition. In the same period, the Al Udeid Wing planned 278 sorties, 268 of which flew.

Both wings predominantly discharged the offensive support task using TIALD and laser-guided Paveway 2 bombs. The GPS-guided Enhanced Paveway 2 (EPW 2) was also employed. However, during KI/CAS missions, crews had to exercise extreme caution when using GPS-guided munitions: in the heat of battle, it was by no means unusual for ground units to supply inaccurate target co-ordinates. The target list extended right across the military spectrum, but particularly featured tanks, other armoured fighting vehicles and miscellaneous military vehicles, artillery, radars, fielded forces, military buildings, command and communications nodes and supply depots and bunkers. A significantly higher proportion of offensive support sorties flown from Ali Al Salem resulted in the release of weapons, compared with Al Udeid. Flying over far longer distances to reach the target area, the Al Udeid GR4s were unable to

hold for so long awaiting tasking without AAR, which was by no means always available. The Combat Air Wing was also allocated a somewhat higher proportion of fixed targets than the Al Udeid Wing, which was overwhelmingly assigned to KI/CAS.

Of the other GR4 capabilities, the RAPTOR pod's stand-off performance and the high quality of its imagery drew very favourable comment throughout the operation, although the system was found to require intensive maintenance to remain serviceable in an environment characterised by high ambient temperatures. As for Storm Shadow, the missile's performance has to be viewed in context. Operation TELIC was essentially used as an opportunity to test Storm Shadow in a live operational environment and many of the deployed munitions were 'development' missiles rather than the finished article. The trial proved extremely valuable: Storm Shadow demonstrated exceptional accuracy, and several important lessons were identified to help improve its performance still further in future operations.

From 21 March to 14 April (inclusive), Harrier Force South flew 190 operational missions for 389 sorties. In all, 367 offensive sorties were flown, the overwhelming majority of which involved KI/CAS. The detachment also mounted 22 reconnaissance sorties with the Joint Reconnaissance Pod (JRP). During Operation TELIC, the Al Jaber GR7s released 117 munitions, chiefly against fielded Iraqi forces; other targets included aircraft, surface-to-air missiles, radars and minelaying vessels in Basrah harbour. The GR7s assigned to Counter-TBM flew 142 missions for 290 sorties. Some 32 sorties released weapons and 73 munitions were dropped in all. The contrasting strike rates partly reflect the fundamental difference between the two detachments' respective tasks; 3 Squadron were dispatched each day to perform both the NTISR and attack roles, but a large part of the NTISR task was focused on one specific object – the Scud missile – which was not, in fact, deployed in the western desert. By contrast, the Harrier Force South reconnaissance role was entirely separate from their attack role, and offensive missions were tasked to destroy virtually any legitimate Iraqi target that could be found. They were also allocated some pre-planned and alternate targets, whereas 3 Squadron was not.

As in earlier operations, the GR7 proved itself to be an extremely robust platform, and boasted an excellent serviceability record; it also demonstrated great flexibility across the tactical spectrum. Again, the TIALD pod functioned as a critical enabler, despite its limitations: TIALD and Paveway provided a vital combination of precision and firepower, and Paveway II bombs guided by TIALD accounted for 49 per cent of weapons used by Harrier Force South. However, due to the over-riding priority assigned to Counter-TBM, only a limited number of pods and TIALD-capable GR7s were initially allocated to Harrier Force South, and heroic efforts were required from the wing engineers to ensure that virtually every GR7 mission included at least one TIALD-equipped aircraft. Other weapons employed by the GR7 detachments included the EPW 2, the Maverick infrared-guided missile, and a small number of unguided 1,000lb and 540lb bombs and RBL 755 cluster bombs. Of these, EPW 2 and a modified electro-optical version of Maverick proved the most effective.

Across the detachments, there was a significant improvement in the accuracy of bombing over the standards achieved in earlier large-scale operations. This reflected a marked increase in the ratio of precision-guided to non-precision-guided weapons, as well as greater aircrew experience with TIALD and Paveway and better training. Nevertheless, the operation demonstrated that improved targeting pods were required, together with smaller precision-guided munitions, to allow tactical targets to be engaged from medium altitude with the absolute minimum of collateral damage risk. There was a particularly pressing need for a new anti-armour weapon to replace RBL 755. The installation of tactical data-links across the various aircraft fleets was also strongly recommended.

However, the key air lessons stemmed directly from the many and varied challenges associated with KI/CAS. Both the UK Air and Land Contingents periodically found themselves struggling with the KI/CAS system, and the operation clearly demonstrated that it was essential for the RAF and the Army to conduct far more regular and intensive CAS training than had generally been undertaken during the preceding decade. Given the subsequent preponderance of CAS tasking in Operation TELIC and HERRICK, this lesson has tended to fade from view, and it is important, now that British ground troops have been withdrawn from Iraq and Afghanistan, that there is no return to the situation that prevailed before 2003.

In the aftermath of Operation TELIC, OPLAN 1003V was widely proclaimed to be a model for future intervention operations, the assumption being that a preliminary air campaign to shape the battlespace was no longer necessary. In future, Land would lead and Air would follow, chiefly through the provision of CAS and reconnaissance. Yet this assessment may be challenged on a number of counts. With so many aircraft being left untasked to return to base with their weapons, the experience of KI/CAS during the operation raised far-reaching questions about such elementary principles of war as economy of effort and, in the longer term, sustainability. Furthermore, it would have been impossible to dispense with preparatory shaping activity and provide comparable support to the Land Component if Iraq had boasted a more capable IADS. In March 2003, G-Day could precede A-Day only because of the progressive degradation of Iraq's air defences since the First Gulf War and a certain amount of shaping activity carried out by the Americans during the closing stages of Operation SOUTHERN WATCH.

More broadly, TELIC marked a clear break from the air-centric strategies that had predominated since the end of the Cold War. Initially, the case for 'boots on the ground' in Iraq was apparently underlined by the ease with which the immediate campaign goals were achieved, and yet this only served to deceive coalition governments when they were confronted by the infinitely more difficult task of post-war reconstruction. The price of over-optimism was a protracted and costly insurgency, which was only defeated through the commitment of still more ground troops. But the effect was purely temporary. Security and stability did not survive for long after coalition forces finally withdrew; the rise of ISIS may be traced directly back to the events of March and April 2003. Iraq's troubled history since the fall of Saddam Hussein suggests that

there is a strong case for reconsidering the air-based strategy of containment, as pursued via the Southern and Northern NFZs, in the decade following the first Gulf War. In 2003, it was argued in some quarters that containment had failed, but it could hardly be maintained that boots on the ground have fulfilled the aspirations of western governments more successfully since then.

As for the Counter-TBM mission, by creating, in effect, an entirely separate battle front, the Air-SF combination central to the CONOPS pointed towards an alternative approach to military intervention that was high on capability and effect but low on footprint. It proved itself to be extremely dynamic and responsive, and it demonstrated considerable scope for further development. Yet a number of episodes served to underline the fact that even the most effective air support providing continuous firepower, ISTAR and mobility, could not entirely offset the limitations of the SF – notably, their relatively small numbers and their lack of heavy weaponry. Furthermore, while Counter-TBM may have written a new chapter in the convoluted history of air-land integration, it did, to an extent, lock up the air assets involved, raising questions about how, or even whether, the inherent flexibility of air power can be retained if similar missions are conducted in future.

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