

armed with two JP233 airfield denial weapons, flew from the air bases at Muharraq, Tabuk and Dhahran to carry out attacks against Iraqi airfields. The aircraft refuelled in the air just south of the Iraqi border, in radio silence, from Victor and VC10K tankers. They then descended to very low level to delay detection by Iraqi radars and engagement by their surface-to-air missiles and guns. The crews were carrying out a role for which they have been well trained, both in Europe and in theatre. Although taken by surprise, the Iraqi ground defences soon recovered and began to engage our aircraft. However, the Tornados, flying low and fast in small packages in total darkness, and assisted by their electronic jamming pods, were able successfully to press home their attacks. Two additional Tornado GR1s, each armed with three ALARM, flew in support, firing their missiles just before the attacking aircraft dropped their JP233 weapons, which dispensed runway cratering bombs and anti-personnel minelets onto their targets. All of our aircraft returned safely. In the morning, a further wave of four Tornado GR1 aircraft from Muharraq, loaded with a total of 32 1000lb bombs, carried out daylight attacks from low level against further Iraqi airfields; one aircraft failed to return from this raid. Later in the day (17 January) four Muharraq-based Jaguars flew successful attacks against a barracks in Kuwait with each aircraft delivering its load of 1000lb bombs despite encountering severe enemy ground fire. And as darkness fell, Tornado GR1s took off on more airfield attack sorties. The Tornado F3s continued to mount defensive air patrols but were not put to the test by the Iraqi Air Force which failed to mount any offensive operations into Saudi air space. Our Nimrod aircraft from Seeb flew maritime surveillance sorties and contributed to the compilation of the surface picture in the Gulf. In the first 24 hours of the air campaign, Royal Air Force aircraft flew 58 offensive, 37 air defence, 19 air-to-air refuelling and 3 maritime surveillance sorties, which set a pattern and rate of flying for the whole campaign. I will now outline the contribution made by each RAF aircraft type to the air campaign.

For the next five days, the Tornado GR1s continued to carry out day and night attacks against Iraqi airfields using JP233, with each package being accompanied by further GR1s armed with 1000lb bombs and ALARM missiles to suppress the enemy defences. However, the GR1's role changed significantly on 23 January. By then it had become apparent that the Iraqis were unlikely to commit their air force in any strength until the ground battle began. A few air defence aircraft had been launched to intercept allied raids but most had been destroyed by allied fighters. There was little point in continuing at that stage to attack airfield operating surfaces with JP233 which had to be delivered from low-level where the primary threat was coming from extensive enemy anti-aircraft gunfire. With the Iraqi surface-to-air missile threat largely negated by allied air action and electronic countermeasures, it was decided to switch the Tornado GR1s to medium level bombing where they could operate above the effective height of nearly all the Iraqi guns. Their targets included radar control centres, ammunition dumps, petroleum storage depots, power stations and Scud Short Range Ballistic Missile sites. To improve the accuracy of medium-level bombing, twelve Buccaneer aircraft from No's 12 and 208 Squadrons, both based at Lossiemouth in Scotland, were deployed to the Gulf to use their Pavespikes laser designation equipment. The attack aircraft launched in mixed formation packages, with the Buccaneer crews designating the target and the Tornado GR1 crews releasing the laser-guided bombs. The first such bombs were dropped on 3 February, initially against bridges being used for the resupply of Iraqi troops in the KTO and, later in the campaign, against petroleum storage sites, hardened aircraft shelters and aircraft operating surfaces. In all, the Buccaneers flew 214 sorties. On 10 February, the Tornado force obtained its own laser designation capability with the arrival at Tabuk of two pre-production TIALD (Thermal Imaging Airborne Laser Designation) pods. The TIALD system, unlike Pavespikes, could be used at night as well as by day, and these pods—known affectionately by the crews as Sandra and Tracey—proved extremely successful. By 14 February, all three of our GR1 bases were conducting precision-guided bombing attacks, and these were sustained until hostilities ended. Throughout the air campaign, the Tornado GR1s flew over 1500 offensive sorties, their crews displaying great skill and courage in pressing home their attacks. In addition to the aircraft shot down during the first daylight Tornado raid, another five Tornado GR1s were lost on operations, five aircrew were killed and seven became prisoners of war. One other Tornado developed serious mechanical problems shortly after take off and the crew ejected safely.

On the night of 18/19 January, the Tornado GR1A—the reconnaissance version of the aircraft—undertook its first operational mission. From then until hostilities ceased, the six Dhahran-based GR1As flew 123 night low-level sorties, often deep into Iraq, using their infra-red linescan equipment with considerable

success. This Tornado variant provided the Coalition with much vitally important intelligence on the enemy's force dispositions, and it was also used in the hunt for Iraqi Scud missile launchers. The firing of Scuds posed little direct military threat but, by targeting them on Jerusalem, Haifa and Tel Aviv, Iraq sought to attempt to provoke Israel into military retaliation in the hope of turning the conflict into a holy war and thereby splitting the Coalition. This risk led the allies to divert considerable air effort onto attacking Scud launchers once they had been located.

From the outset of hostilities, the Jaguar Squadron at Muharraq was allocated a variety of targets in Kuwait including Iraqi barracks, coastal defence positions, surface-to-air missile batteries, supply depots and ammunition dumps. The Jaguars were also used to attack Iraqi naval vessels operating in the northern Gulf. The Jaguars were armed mainly with 1,000lb bombs and CRV7 rockets, they also dropped cluster bombs, from low and medium levels, on to concentrations of armour and artillery positions. On 29 January, a formation of Jaguars was returning from an attack on a Silkworm anti-ship missile site on the Kuwaiti coast when their pilots spotted some Iraqi fast patrol boats. Their location was passed to HMS GLOUCESTER, who instigated successful engagements on these and other enemy craft by naval forces and by further RAF Jaguars. The next day, two Jaguars used rockets and guns to disable a Polnochny class landing ship support vessel. In addition to its offensive role, the Jaguar was used for daylight tactical reconnaissance. Once the land offensive began on 24 February, the Jaguars were tasked on some longer-range interdiction missions into Iraq, which required them to flight refuel en route. Overall, although its attacks were limited to daylight bombing, our Jaguar force was most effective against a wide variety of targets, flying more than 600 operational sorties over enemy territory, often in the face of heavy fire, without loss.

Our Tornado F3 fighters, in common with other Coalition aircraft mounting defensive air patrols, were not involved in any engagement with Iraqi aircraft. The Royal Air Force had procured the F3 to defend the United Kingdom against attacks by long-range bombers. In this conflict, however, the threat was primarily from modern, agile fighter aircraft operating close to their home bases in Iraq, and the few that flew were engaged by American and Saudi F-15 air superiority fighters. However, the potential Iraqi air threat caused us early in the crisis to improve the survivability and performance of the Tornado F3. Modifications already in the pipeline were greatly accelerated as a result of excellent co-operation between the RAF and Industry. The F3's role was to mount combat air patrols by day and night, mainly over Saudi Arabia, but towards the end of the campaign some patrols were flown within Iraqi airspace. The aircraft proved extremely reliable and flew a total of 2,600 sorties during the 7 months deployment. However, while none of the RAF air defence forces—fighter aircraft or Rapier batteries—were involved in action, they nonetheless made a most valuable contribution to the overall air defence screen and undoubtedly helped to deter Iraqi air attacks against Coalition bases and forces.

Our Victor, VC10K and Tristar tankers played a vital role in support of the Coalition air forces, extending the range of offensive aircraft and the endurance of air defence fighters. In the six-week air war, these aircraft flew over 730 sorties and off-loaded 13,000 tonnes of fuel to almost 3,000 aircraft. While most recipients were our own Tornados, Jaguars and Buccaneers, RAF tankers also dispensed fuel to 800 other Coalition aircraft, including Saudi Arabian Tornado ADVs, Canadian CF-18s and USN F-14s and A-6s. Much of the refuelling was conducted at night, and usually in radio silence to deprive the enemy of warning of the timing and direction of attacks.

Just before the air campaign began, the nature of Nimrod operations changed from the search for vessels seeking to break the embargo to the direct support of allied warships operating at the northern end of the Gulf. Together with aircraft from the United States Navy, they provided constant surface surveillance of these waters, and whenever they located a potentially hostile vessel, passed its position so that naval fixed-wing aircraft or helicopters could investigate and, if confirmed hostile, engage. During hostilities, the Nimrods flew 112 sorties over the waters of the northern Gulf, contributing significantly to both offensive and defensive naval operations.

The heavy involvement of our Air Transport Force of Hercules, VC10s and Tristars throughout the build-up phase continued during hostilities. Indeed, the hours flown by the force rose as the urgency for resupply by air increased. By the end of the conflict, the transport fleet had logged over 50,000 flying hours on operation GRANBY, having flown at more than twice their normal peacetime rate. The aircraft had carried 30,000 tonnes of freight and 66,000 passengers, consuming 54 million gallons of fuel on over 12,500 sorties. By any standards, this was a most impressive performance.