A HISTORY OF
IV (Army Co-operation) Squadron

1912 - 2009

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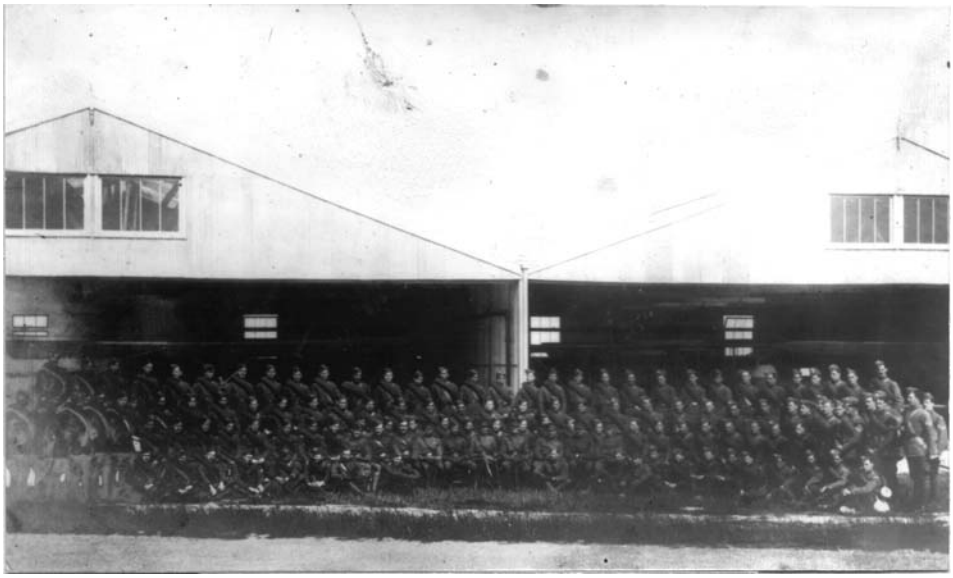
MOTTO

IV(AC) Squadron

The motto "In Futurum Videre" (To see into the future, or forward looking) refers to the Squadron's reconnaissance role.

The badge: 'A sun in splendour divided by a flash of lightning' was approved by HRH King Edward VIII in May 1936. The red and black segmented sun suggests "round the clock" operations while the lightning flash indicates speed and is also a reference to the unit's early use of wireless telephony for artillery co-operation.



Squadron Personnel 1914

Squadron Personnel 2009

FOREWORD

By OC IV(AC) Squadron
Wg Cdr H Smyth

'…the man who looks back at history, goes forward with one eye blind; he who looks only to the future, goes forward blind in both eyes.' (Russian Proverb)

On the 16th September 2007, No IV(Army Co-operation) Squadron celebrated its 95th Anniversary. The 4th oldest and the 3rd most senior squadron in the Royal Air Force, IV(AC) Squadron has enjoyed a varied history since it was first formed as part of the Army's Royal Flying Corps back in 1912. As we on the Squadron today go about our business of preparing, and when called to do so actually delivering war-winning air power with our Harriers, it is important to know something of our history and how past events and individuals influenced where we are today.

Although our motto emphasises the importance of looking to the future, history can be surprisingly revealing. Hopefully you will enjoy reading about events such as how the Sqn CO won a VC in 1933, the Squadron's deployment on HMS ARK ROYAL and the subsequent operations as part of the British Expeditionary Force in Turkey in 1922, which bear uncanny similarity to events in recent years. Equally, the Squadron's enduring support of Land Forces bears testament to why we are proud of our Army Co-operation status and our affiliation with 4 Regiment Army Air Corps and 1st The Queens Dragoon Guards. Examples of our support to Land Forces can be found in the narratives which have been brought right up to date. The fact that, for nearly five years (from 2004-2009), the Squadron provided forward observation and Close Air Support for troops on the ground in contemporary operating environments such as Afghanistan, just as our forebears did in World War I, is proof of the enduring nature of the roles of airpower and attestation that we should all aim to learn the lessons that history provides.

On 1st April 2010, IV(AC) Squadron becomes IV(Reserve) Squadron as the Harrier Operational Conversion Unit at RAF Wittering. We can certainly all take pride and inspiration from IV(AC) Squadron's past achievements, the unstinting desire to deliver air power of the highest quality and the sacrifices and feats of heroism of past members who have served on the Squadron. The history is a good read - I hope you enjoy it.

THE FORMATIVE YEARS

4 Squadron

The Royal Flying Corps was formed on 13 May 1912 from the Air Battalion of the Royal Engineers. The new Corps consisted of a Military Wing, a Naval Wing and a Central Flying School. The old Companies were renamed Squadrons and it was planned to expand the Military Wing to seven Squadrons (sqns).

In the meantime, No 4 Sqn was formed at Farnborough from B Flt of No 2 Sqn on 16 Sep 1912. The Sqn's first CO was Major George Hebden Raleigh, an Australian who had served in the Essex Regt. Raleigh had been attached to the Air Battalion of the Royal Engineers and had served with No 2 Sqn. He now faced the unenviable task of commanding a front line flying sqn, with only three other people in the world with greater experience than he! Nevertheless he set about this task with remarkable gusto and in short order had the Sqn prepared for duty.

By the end of 1912 the Sqn was fully equipped with 5 Breguets and a Cody Military-but was partially equipped later on with BE-2s and Maurice Farmans. The Breguets, commonly nicknamed "Coffee Pots", were strange aircraft. Control was not by the usual method of separate movable ailerons, but by a method of wing warping and spring loaded variable incidence. Air Marshal Sir Patrick Playfair KBE, CB, CVO and MC was a Lieutenant at the time…

"*I was posted to No 4 Squadron when it was formed by throwing off a flight from No 2 Squadron, which latter squadron I joined on being seconded to the RFC from the Royal Field Artillery in August, 1912. The unit was then equipped with BE.2As and Breguets - the latter a strange aircraft, which to the best of my recollection, had three marked eccentricities: wheel steering; a very flexible warping wing, so that while taking off there was no control until flying speed was reached; and a 100 hp Monosoupape engine, In which the intake was through the crankshaft and up through the piston heads. To follow its later career, it went to the bad completely after it was fitted with a stationary engine; in fact I think I am right in saying that hardly one escaped crashing on the delivery flight to Farnborough.*" Playfair was in fact badly injured in the crash of one of these machines, flown by Lt Chinnery.

The BE2s became the mainstay of the Sqn and the RFC as a whole for the next four years. Although slow (at 70 mph) and unable to fly above 10,000 ft it was a very steady machine and served the Sqn well.

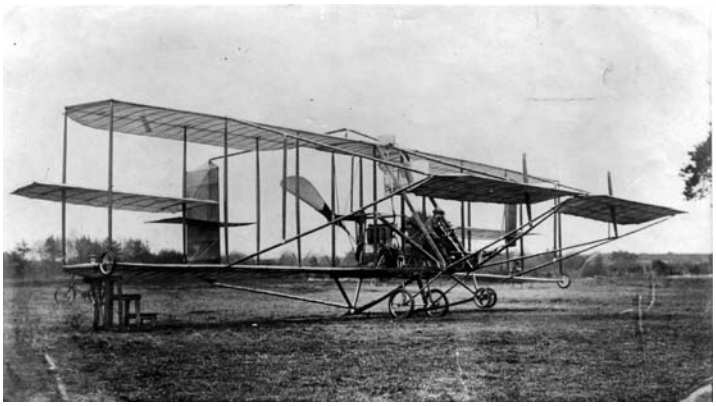
In June 1913 the Sqn moved to Netheravon, sharing the station with No 3 Sqn and practising flights in the reconnaissance and artillery co-operation roles-during the course of the year over 50,000 thousand miles were flown.

Much of the Sqn's work was experimental, including working out how to find the landing field at night. Capt GS Shepard of the Royal Fusiliers discovered that if a flare was released at 1,500ft and another at 800ft the aircraft could descend faster than the flares and hence have the advantage of light coming from above. So successful were these trials that the methods developed by the Sqn were adopted as standard procedure by the RFC, remaining unmodified throughout the First World War. Additionally Lts DS Lewis and BT James of the Royal Engineers so successfully demonstrated the potential in the use of wireless sets for artillery co-operation that a separate Wireless Flight was formed,

comprising these two officers and Lt SCW Smith of the East Surrey Rgt.

In June 1914 the entire Military Wing assembled at Netheravon for combined training and co-operation with ground troops. During this time Lt Gilbert Mapplebeck joined the Sqn and proved one of the leading lights during the early war years, despite being hauled over the coals by Maj Raleigh for illegal aerobatics and low flying at the mass parade at the end of the June exercise!

Shortly afterwards the Sqn moved to Eastchurch to commence home defence patrols against German Zeppelins as the UK ramped up to go to war. Although not realised at the time, the ceiling of the German airships was about twice that of the BE2s, so an encounter was unlikely!



THE FIRST WORLD WAR

4 Squadron

The Sqn deployed to France in August 1914. The ground crew sailed from Southampton and the aircraft were flown to Amiens from Eastchurch. In an inauspicious start to the war, the Sqn found itself scattered all over northern France due to the unreliability of its machines and the unfamiliarity of the pilots in long distance cross-country flying. As Lt Playfair testified:

"I can remember being with the aircraft that followed Captain Cogan down to his forced landing in France, and I can still remember the roughness of the field he was unlucky enough to choose. I also remember that after refuelling and resuming the flight I was not above landing again to ask a passing pedestrian the way to Amiens, though this is an episode I have kept a dark secret until today."

However there were no casualties and the sqn was established and in good order the following day. The entire RFC striking force then moved to Maubeuge, near Charleroi in Belgium. It was from here that the first reconnaissance mission was flown on 19 August by the RFC. It was a joint mission by Nos 3 and 4 Sqns and was intended to provide a general view of the tactical situation in the area. Lt Mapplebeck flew for 4 Sqn and Capt PB Joubert de la Ferte, (later ACM Sir Phillip Joubert de la Ferte KCB CMG DSO) provided the 3 Sqn contribution. Although the mission was long (both pilots getting frequently lost!), few enemy troops were seen and both pilots returned to base safely. Aerial reconnaissance revealed large enemy troop formations heading towards Mons on 22 August and also on that day the first German reconnaissance flight was seen over the airfield. Several RFC aircraft took off in pursuit, but the German had too great a head start and was able to escape.

Over the next 2 weeks the Sqn occupied ten different airfields as the Germans thrust through Belgium into France. Most of the missions were spent supporting Nos 3 and 5 Sqn using wireless equipment and it was at this time that the experiments flown by Lts Lewis and James bore real dividends. The duo were constantly in the air, eliciting praise from General Sir Horace Smith-Dorrien:

"Today I watched for a long time, an aeroplane observing for the six-inch howitzers from the 3rd Division. It was, at times, smothered with hostile anti-aircraft fire, but, nothing daunted, it continued for hours, through a wireless installation, to observe the fire and, indeed, to control the battery with most satisfactory results."

During the remainder of the year the Sqn continued to carry out reconnaissance missions as the German offensive stalled and settled into trench warfare. On 26 October the Sqn lost its first aircrew when Capt Crean and Lt Hoskins failed to return.

1915 started badly for the Sqn as four pilots were lost due to flying accidents, including the CO, Maj Raleigh. Command passed temporarily to Capt Holt, who along with Capt Mills and Lt Morgan forced down a bomber over Dunkerque on 22 January. As the battle of Neuve Chapelle raged during March, 4 Sqn was ordered to bomb the railway junction at Lille. Carrying 2 x 100lb bombs, the three raiders took off, target bound. Capt Barton crashed soon after take-off, probably due to engine failure, and Lt Mapplebeck had to land

due to the same. Lt Warrand continued and although he crossed the front lines, he was never seen again. It later transpired that AAA shot him down. Mapplebeck set off after having his engine repaired, but he also failed to return. Happily however, he survived the crash, and seeking assistance from friendly Frenchmen, including M Jacquet - the Mayor of Lille - Mapplebeck made his way to Holland and then back to England. Unfortunately, the Germans charged M. Jacquet, the Mayor, with espionage, concealing French and British soldiers and helping them to escape. M. Jacquet was executed on 22 September 1915. Mapplebeck, however, received a bar to his DSO and returned to flying duties.

The Sqn took on an interesting sideline in the latter half of 1915 when techniques were tested to covertly insert agents by air into enemy territory. 2nd Lt JW Woodhouse of No 4 Sqn made the first successful insertion of an agent. The official report reads:

"*Lt Woodhouse left the Baisieux landing-place yesterday evening at 4.30pm accompanied by an agent. The agent was dressed in French uniform with plain clothes underneath and took with him two baskets of pigeons; one of these was carried on his lap and one on the plane outside the fuselage. Lt Woodhouse climbed to 6,000ft and few to the area SW of Serain (10 miles SE of Cambrai) at which point the agent had reported a good landing-place. On coming down to 1,000ft, however, Lt Woodhouse was fired on from Serain and saw some carts moving on the road to the SE of the village. He therefore decided to try one of the other areas recommended by the agent, and as the latter had appeared very reluctant to go anywhere farther south, he turned NW to Bantouzelle (eight miles S of Cambrai), landing at the SE corner of the wood to the S of this name at about 5.30, just as dusk was falling - a ground mist assisted to conceal the operation.*

"The agent was very quick in getting clear with his pigeons into the wood, but owing to the steep glide-in landing, the forward cylinders got too much oil, with the result that they cut out and the engine stopped. The throttle had been set so that the engine would just run with all cylinders firing.

"The agent had meanwhile reached the wood, but seeing that Lt Woodhouse was in difficulties started to return. Woodhouse, however, sent him back to the cover of the wood, and after putting his gloves into the air intake pipes, sucked in petrol, and started the engine himself, getting into the aeroplane as she moved off. The tail skid had previously been prepared so as to hold onto the ground as much as possible. On getting up to about 100ft, Lt Woodhouse found that his engine was missing badly due to over-oiling; he therefore landed again, and by dint of running the engine all out on the ground for short bursts, used up the surplus oil. At about 5.40pm he started again and returned to our lines in the direction of Albert. It was, however, very dark, and in the neighbourhood of Maricourt he lost his bearings and eventually landed in the dark at about 6.40pm, about 16 miles E of Amiens. He landed safely, but broke his propeller; how this breakage occurred he could not say….

I consider that Lt Woodhouse deserves very high commendations for his coolness and determination, particularly in refusing the assistance of the agent when his engine stopped, as he thereby very much increased the agent's chances of escape."

The report is dated October 4th and signed "W.S. Brancker, Lt Col, commdg. 3rd Wing".

During the September battle of Loos, the Sqn was involved in what we today would call Air Interdiction (AI) missions, attacking rail stations and trains with 100lb and 20lb bombs. Although little damage was done, the actions of the wing prompted Sir John French, commander of the BEF, to write "*This wing…(*i.e. 3 wing)*….performed valuable work by undertaking distant flights behind enemy lines, and by successfully blowing up railways, wrecking trains and damaging stations on his lines of communications by the means of bomb attacks*."

The remainder of 1915 was spent taking part in more AI missions, with up to twenty aircraft participating as part of a single package. However the generally poor weather meant that results were poor with most pilots dropping their bombs through cloud or bringing them home. Fortunately losses remained low for the Sqn, possibly due to the tactic of using 11 Sqn to provide a fighter escort, although a few pilots had close calls.

The early months of 1916 saw little flying due to poor weather, but 4 Sqn lost another CO, Maj Barrington-Kennet, who was killed whilst in pursuit of an enemy aircraft on March 13th. Additionally, atrocious weather in April allowed the RFC time to get men back to England for some well-deserved leave.

In June, the Sqn began carrying out reconnaissance sorties over German lines as part of the preparations for the British Army's Somme offensive. Mirroring heavy losses in the infantry, the RFC took a pounding as the German Air Force stubbornly resisted. Although sterling work was done in support of the Somme offensive, between 6th-8th July No 4 Sqn had lost 6 men. The pace of operations did not ease up, and whilst the Sqn was replenished with new men and machines, the real demand was for equipment that could take on the Germans with at least a chance of success. However, being a Corps unit, 4 Sqn was far down the list of priorities.

The battle of the Somme cost the RFC 308 killed, wounded or missing of the 426 pilots available to the Corps on 1st July. In addition, 728 aircraft were either shot down or written-off. No 4 Sqn alone lost more than a dozen aircrew. One reason for such losses was the method by which artillery co-operation took place. The on-board wireless set used was heavy and bulky, reducing the poor performance of the aircraft still further. The aerial was a 120 foot length of steel cable with a 2.5lb lead weight at its end. This had to be wound out by hand after the spotting machine was in position. For the best reception by the ground station, the aerial had to be kept straight and parallel to the ground, so the best method of achieving this was to fly a slow figure of eight course in the general area of the target. Sudden changes of course had to be avoided otherwise communications with the ground were lost and there was the possibility of doing severe damage to the airframe. Therefore aircraft involved in this task were extremely vulnerable to both AAA and German aircraft.

The stalemate on the Western Front continued into 1917, although the Germans retreated under pressure to the Hindenburg Line during March. The Sqn's losses continued to climb, mostly as a result of the BE.2 being virtually obsolete, both as a recce aircraft and as a bomber. During "Bloody April" the RFC lost 316 men and 224 aircraft as the Germans made a determined effort to wrestle control of the

Skies from the RFC. Despite these losses the RFC was able to hang on and the German success was only temporary.

In May, the Sqn was finally re-equipped with a new aircraft, the RE.8. Unfortunately, this was just an enlarged version of the BE.2 and equally vulnerable. The Sqn moved again, this time to Abeele, in time for the Messines attack and the slug-fest that was the Third Ypres. It was during this battle that the Sqn became more involved in AI work, bombing troop concentrations and airfields. The crews also gained a grudging respect for the strength of their aircraft, as shown when 2nd Lt DR Starley and his observer, Lt ECR Grimwood, were hit by AAA. Their aircraft had two longerons, a main spar, two wing struts, a cabane strut and an aileron cable cut through, Grimwood was injured and the wireless set destroyed. Despite this, Grimwood wrote out a report, dropped it at Divisional HQ and the pair returned to Abeele where Starley managed to land safely. the Portuguese until April when it was relieved throughout the year, attacking troop concentrations, artillery spotting and even attacking enemy aircraft, as Lts HN Loch and EA Garrison attempted on 3rd October. They were engaged in a long-range artillery shoot when they noticed an RE.8 of 53 Sqn being

At the start of 1918, the Sqn lost "A" Flt, detached to aid the Portuguese. It became known as 4A Flt and although the union was not always a happy one the Flt remained with attacked by 6 Fokkers. They went to its assistance, but the attack looked set to be a failure when the pilot's gun jammed. Garrison, the observer, kept up a steady stream of fire despite being badly wounded in the stomach. Eventually he was hit in the wrist by an explosive bullet and forced to cease fire, but by that time the enemy aircraft had been driven off. Their aircraft was so badly damaged that it was written off on return to base. Happily the RE.8 crew survived.

On 11th November the Armistice was signed and World War 1 was over. However, it was two days too late for Lt JG Leckenby, who was killed whilst on patrol, becoming the last 4 Sqn casualty of the war. The Sqn then settled down to routine training and a well-deserved break over Christmas before the inevitable return to England.

The following Log Book entries by Capt Carthew give some idea of flying operations during World War 1.

1st Jun - *New camp ground, took dog in machine.*

6th Jun - *Reconnaissance, chased Hun machine down.*

15th Jun - *Aerodrome-Engine failure.*

26th Jun - *Attacked by Hun, made him land in field.*

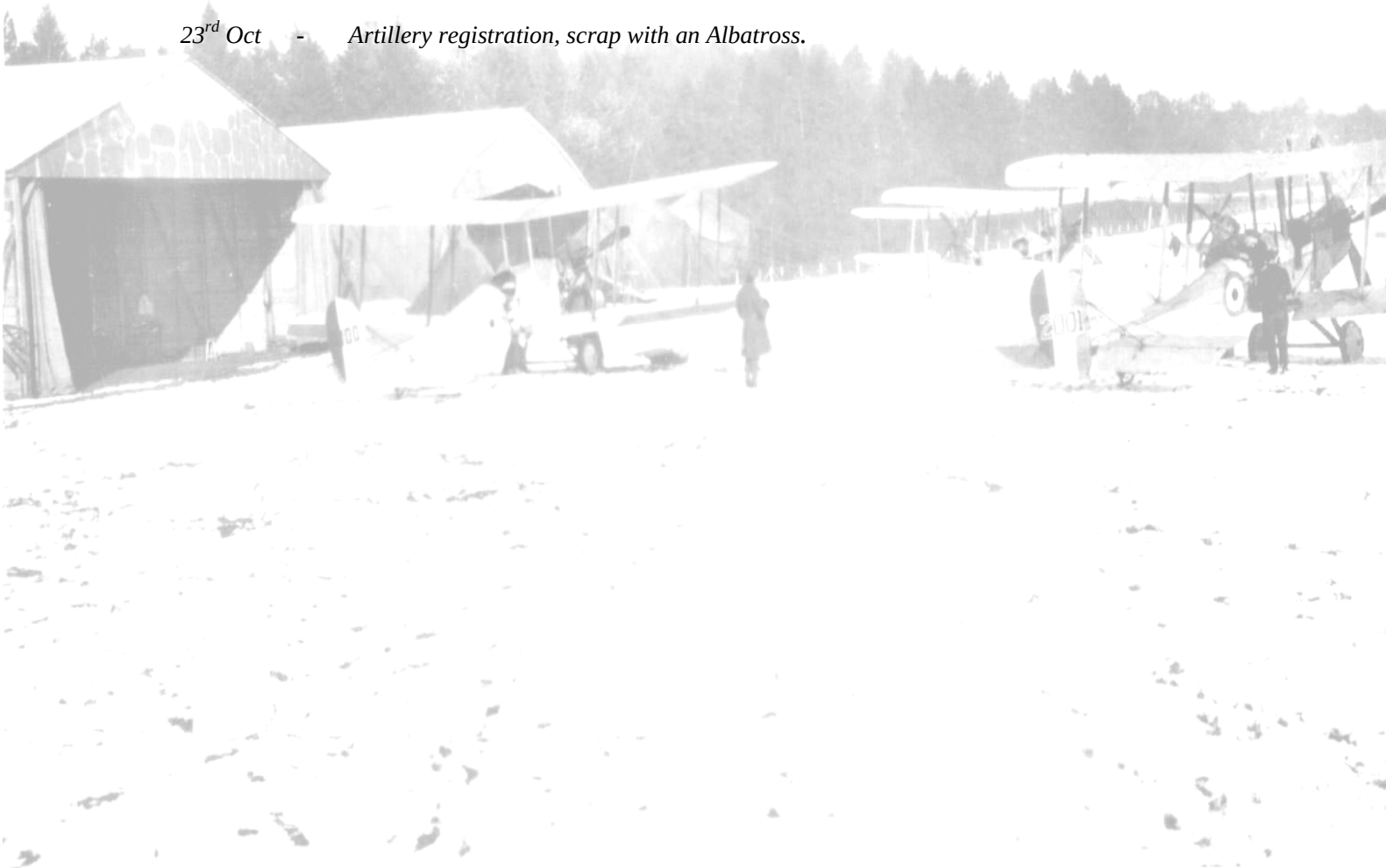
14th Jul - *Engine failure.*

3rd Oct - *3 entries of engine trouble.*

11th Oct - *Met twin nacelled Hun. Drove him down.*

12th Oct - *Cylinder burst.*

23rd Oct - *Artillery registration, scrap with an Albatross.*



THE INTER-WAR YEARS

4 Squadron

In January 1919 the Sqn moved back to England and by February had been reduced to a cadre (minimum numbers of personnel and no aircraft) at Northolt. On 20th September, with personnel consisting of the CO, Maj HB Prior, an adjutant and some administrative types and no aircraft attached, the Sqn was disbanded. This was not uncommon throughout the RAF, which had gone from a strength of two hundred sqns in RFC guise at the end of WWI to only twenty-nine in the RAF, seven of which were of cadre status by 1st March 1920.

A modest expansion was subsequently allowed, and Sqn Ldr CHB Blount MC oversaw the reformation of No 4 Sqn at Farnborough in April 1920. The Sqn found itself re-equipped with Bristol F.2b fighters, aircraft that were not designed for the Army co-operation role, but which proved remarkably adept at being converted to many more roles than originally intended.

After the Irish civil war erupted in 1920, "A" Flt of 4 Sqn was despatched to Aldergrove airfield to aid in communications duties as the roads were very vulnerable to ambush. The Flt remained in Ireland for two years and was finally withdrawn from Baldonnel, outside Dublin, on 18th January 1922.

The remainder of the Sqn had not been idle and at summer camp at Stonehenge had developed, along with the other Army co-operation sqns, a new technique of picking up written messages without landing. This involved snagging a rope held between two poles on the ground with a rigid hook trailed from the aircraft. Messages could now be received from small units in the field and relayed to the Corps HQ without the need to equip each section with an expensive and bulky wireless set. This technique was practised constantly and shown off at the Hendon Pageant, which was the RAF's annual flag waving event.

THE CHANAK CRISIS – 1922

After the dismemberment of the Ottoman Empire, the Turks found a new sense of nationalist feeling under their leader, Kemal Pasha, the Turkish commander during the Gallipoli operation. To this end they attacked a Greek garrison that was stationed near Gallipoli. Routing the Greeks, Kemal's army advanced on Constantinople and encountered a small British garrison at Chanak. Not wishing to antagonise the British, Kemal did not attack, but the garrison was surrounded and isolated. Accordingly the British launched a relief force, including an air component consisting of Nos 4, 25 and 207 Sqns.

Working around the clock, the Sqn's equipment and aircraft were crated up and personnel issued with tropical kit. Those personnel without the necessary inoculations for overseas service (over half the Sqn) were replaced, as were any lame aircraft. Eventually everything was loaded onto the trains bound for Portsmouth.

On arrival at the docks everything was transferred to HMS *Ark Royal* by crane. The *Ark* was a seaplane carrier and as such had no flight deck, using its crane to pluck seaplanes out of the water. The intention was to off-load the Sqn's aircraft at a dockyard on arrival at Chanak. However, the dock proved too small and the aircraft had to be transferred to the carrier HMS *Argus*. The aircraft were then reassembled and flown off on 29th September. After this novel experience the Sqn set up camp at the airfield at Kilya Bay and the first

four patrols were flown the following day. However, by this time the crisis was over. The Turks had recognised the neutrality of the Chanak Peninsula and Lloyd George quietly toned down the threats of military force.

The expeditionary force remained in quarters at Chanak, and for 4 Sqn at Kilya Bay the conditions were not pleasant. During the dry season dust storms blew up without warning and the heat warped the wooden structure of the aircraft. It was no better during the rainy season and aircraft frequently became bogged down in mud up to their axles. Towards the end of October severe gales ruined the tents that both provided shelter to personnel as well as hangars for the aircraft. In an attempt to stop the aircraft sinking into the mud, a runway was devised with wire netting stretched over canvas. Even so the aircraft had to make sorties partially fuelled to keep down the weight, although this meant much-reduced operational radius. Conditions got so bad that the aircraft had to be parked on duckboards, even in the hangar.

The missions that were flown followed the same patterns as those during World War I, with reconnaissance flights photographing the disputed areas. Whereas back at Farnborough all the photographic processing had done by the school of photography, at Kilya this work was done under primitive conditions in two bell tents and a three-ton truck. These tents were so worn that processing was hampered on bright moonlit nights!

Due to over-crowding, the Sqn moved to Lilid el Bahr on 11th December and stayed there for nearly a year. Eventually it was decided that the situation was stable enough for the expeditionary force to be withdrawn. The Sqn returned to Kilya at the end of August and embarked for England on HMS *Ark Royal* on 5 September.

After returning to Farnborough in mid September, the Sqn settled down into a cosy routine of training flights and summer camps at either Stonehenge or Boscombe Down. The sqn also took advantage of the opportunity to exercise with the army under field conditions on Salisbury Plain and showed off its skills at the annual Hendon Pageant.

Tactics and techniques changed little over these years and although the equipment changed, the Sqn operated pretty much as it had done with the BE.2s of 1914. This meant that on exercises, the Sqn had to operate from ordinary fields in the neighbourhood of the Army HQ to which it was attached. Therefore all Sqn personnel had to live in tents next to the aircraft for the duration of the exercise.

From 27th March 1924 all sqns were authorised to include their role in the squadron title, and so from May, No 4 Sqn became No 4 (Army Co-operation) Squadron. Although this practise was officially banned for security reasons in 1939, many units continue to this day to include their role in the Sqn title.

In 1925 the CO, Sqn Ldr Blount, was replaced by Sqn Ldr JC Slessor (the future Marshal of the Royal Air Force Sir John Slessor GCB DSO MC). Sqn Ldr Slessor commanded the Sqn during the Royal Review on Laffans Plain during the summer. At the parade the Sqn was granted a special privilege by King George in that it was the only Sqn in the RAF that was inspected at "advance arms" instead of the more normal "present arms".

The following year saw the general strike, and because the Govt was nervous about the possibility of armed insurrection and sabotage in the North, No 4 Sqn was sent to Turnhouse to patrol the railway systems.

The Armstrong Whitworth Atlas finally replaced the venerable Bristol in 1929. The Atlas was the first purpose-designed aircraft for Army co-operation, but it was already rapidly becoming out-dated, even as it entered service. The Atlas was replaced less than three years later with the far superior Audax, a product of the Hawker stable and the genius of Sydney Camm. No 4 Sqn were the first to receive the new aircraft and were fully equipped by the summer of 1932.

Sqn COs came and went, the most famous (up to that point) being Sqn Ldr FMF West VC, who joined the Sqn on 4th October 1933.

During the first few days of the German offensive in August 1918, Capt West had been a pilot with No 8 Sqn, flying Armstrong Whitworth FK 8s. On 8th August West and his usual observer, Lt JAG Haslam were flying a tank contact patrol and had also been briefed to be on the lookout for enemy troop concentrations. They came under heavy machine gun fire and were forced to crash-land at their aerodrome. The following day the two were again engaged in a contact patrol and were again hit by ground fire and returned damaged. The 10th August saw them in action yet again, and yet again they were hit by ground fire, but not before they had noted significant concentrations of troops, which in West's opinion were the reserves for the German assault. The pair attempted to return to base with this important information, but were set upon by seven German scouts. Of the ensuing action, West later reported:

"*We were heavily attacked and one of them got quite close to me and an explosive bullet virtually severed my left leg. I was fortunate enough not to faint and to carry on flying until we reached our lines and somehow managed to land reasonably safely….it was very painful and that kept me going.*"

This typical understatement disguises the fact that West was virtually paralysed down his left side, with his badly wounded left leg jamming his rudder pedals, and according to his observer was drifting

in and out of consciousness. On landing they were rescued by Canadian troops. Whilst on a stretcher and in obvious pain, West was to relate the details and the location of the German reserves to the Canadian officer. For his valour, West was awarded the Victoria Cross.

The Sqn went on Armament Training Camps, at Thame in March 1934. The site was notorious for poor accommodation and appalling weather. However, the problem with the weather did not seem to faze the Infantry Liaison Officer, Capt Hargreaves, who put the Sqn to shame by landing his private Kemp monoplane at the Camp whilst the Sqn was grounded!

Viscount Acheson, a member of the Sqn during the thirties, remembered working with the fledgling armoured brigade and briefed "Flight Magazine":

"I remember that once, when A Flight was attached to the one and only armoured brigade at Tilshead in 1934, our "airfield" was a strip of ground on the side of a hill approximately 75 yards by 350 yards, the long leg being along the slope. Landing on this strip caused a deal of excitement (and amusement to the watching Army officers) whenever the wind was not up or down the long leg. Furthermore, the position was complicated when the tanks lost their way one night on returning from a manoeuvre, and wandered across the middle of our strip, only failing to demolish our tents by a matter of six feet. The mess their tracks made of the strip made our life even more exciting."

The following description of "The Corps Squadron in the Field", from "Aeroplane" magazine, certainly will sound familiar to those who operated in field conditions during the Cold War.

"An Army Co-operation Squadron is a self contained mobile unit. It moves with the Division or whatever Army formation to which it is attached, complete with all its flying and ground equipment. Flights can be detached and operate independently of the rest of the Squadron. In the event of all the three flights operating separately, arrangements would have to be made for certain ground sections to be centralised.

Trailers are provided for a Squadron office, liaison section, a photographic section and a armament section. There is a complete signals organisation and lighting plant, two water trailers and a cooking trailer, which uses petrol and can provide four meals a day for over 150 men.

When a Squadron goes out to a manoeuvre area it is preceded by an advance party that prepares the camp. This can be done in one day but two or three days are usually allowed. Some of the camps in the manoeuvre areas are put up in ordinary fields, but occasionally they are established on one side of an existing aerodrome. In the latter instance the Squadron works independently of the Station and makes no use of the permanent buildings or supplies.

Aircraft are picketed out and the camp is lighted by its own power plant. Tents are provided for Squadron flight "sheds", Officers' Mess and lines, NCOs' Mess and lines and Airmen's' dining rooms and lines, guard tents etc.

The camp defence is organised against gas and other attacks, with shelter trenches marked out, machine gun posts and a gas decontamination centre.

Pilots doing a tactical reconnaissance get their instructions from the Army Air Liaison Officer who is in direct communication with Army Headquarters. They are given an outline of the

position and orders to report special movements and general movements.

Another important branch of the work of an Army Co-operation Squadron is photography. The pilot takes vertical and oblique photographs from the air. He brings back the exposed negatives and they are developed and printed in the Squadron photographic tender. From the time the pilot hands the film out of his machine to the time the prints are ready for delivery to the Army commander, is about two hours according to circumstances. The photographic tender is a mobile unit entirely self-contained. It can be assembled and ready for work in any place in under an hour. It has its own water tank and generates its own electricity.

In early 1936 the Sqn was moved to Odiham in late 1936 as part of the plan to concentrate the Army Co-operation squadrons together. There was also a replacement aircraft, the Hawker Hector, which arrived in 1937. As part of the build-up to possible war in Europe, the Sqn's Hectors supported an Army platoon in an experimental airmobile assault. The troops deplaned from transport aircraft that landed at Worthy Down and went straight into action. However, it was decided that this style of assault was a tactical non-starter, as the aircraft would have been shot to pieces on landing. In 1938 the Sqn received its first Lysander, and it was with this aircraft that No. 4 (AC) Sqn went to war.

THE SECOND WORLD WAR

4 Squadron

On 3rd September 1939, war was declared and the Sqn prepared to move to France. The Sqn left in a ragtag convoy of requisitioned lorries for Southampton and embarked on SS Maid of Orleans. The Sqn arrived at its new base, Mons-en-Chausee the next day and immediately set up shop. Unfortunately the lorries carrying the personal kit became lost en-route and eventually arrived a week later, so rations and blankets had to be drawn from the French Air Force. Whilst the bread, jam and Camembert cheese satisfied the English palate, the horse-meat certainly did not. The biggest danger to the Sqn pilots during the "Phoney War" seems to have been the Belgian AAA gunners, who warned them that they had strayed across the border by firing a few bursts in the general direction of the Lysanders.

Due to congestion at Mons-en-Chausee the Sqn dispersed to Ronchin and Monchy-Lagache airfields. On 10th May 1940 the Luftwaffe as part of the German invasion raided Monchy-Lagache. Little damage was caused and there were no casualties, but without doubt the "Phoney War" was over.

The Sqn commenced reconnaissance patrols for II Corps BEF as it advanced into Belgium and dug in on the River Dyle. On 13th May, the Sqn began reporting on German troop movements and also began to encounter enemy aircraft and AAA. P/O Bill Maloins and his gunner LAC Ginger Drewitt, were lucky to survive a barrage in which they took 32 hits. Over the next few days though, others were not so lucky. F/O Vaughn and AC Mold, F/O Clarke and AC Rodalson and F/O Barbaur and Cpl Waters were all killed in action.

On 16th May, the whole Sqn moved from Monchy to Ronchin, with a detached flight at the dirt strip at Aspelaere. This flight was attacked by Stukas and subjected to artillery fire before it rapidly withdrew.

The Sqn was ordered to withdraw to Boulogne and although the ground convoy under F/O King was bombed en-route, no casualties were sustained. Upon arrival the convoy was directed to the airfield at Clairmarais, where it set up ready for operations. The aircrew did not get away so easily. Slightly after take-off six Me110s bounced the Lysanders. Using low level manoeuvres and low speed to evade the attackers the Sqn eventually made it to Clairmarais. Two Lysanders, flown by P/Os Plumb and Oldacres and their crews were lost, although one ME110 was claimed.

As an interesting aside, the Sqn believed that they would return to Ronchin so the Sqn safe and flag were buried in some woods at the edge of the airfield. The safe contained some French Francs and the Sqn diaries. As far as the author is aware these have never been recovered.

The Sqn flew a few more reconnaissance missions before being withdrawn To Hawkinge. The ground crew withdrew by road to Dunkirk, and suffered numerous casualties to air attack before being taken back to the UK on HMS *Wild Swan* and the SS *St Helier*.

One crew, P/O Gerry Scott and his gunner LAC Paddy McAleese, were forced to head for the airfield at St-Pol during the chaotic withdrawl, where they met an Army Major who informed them that the airfield had been evacuated. He asked them to look for some German tanks which were reportedly in the vicinity as he had some troops and guns that were acting as rearguard. Scott and McAlesse

initially failed to find anything, they were returning to St-Pol when they came across the Germans quite by chance. The Germans opened fire and upon emergency landing, the crew found 23 bullet holes, including one through an engine cylinder. They spent the night there and were awoken by a Frenchman who informed them that the Germans were only a mile down the road. The first attempt to take-off failed due to a flat battery and they resigned themselves to being taken prisoner. However the engine caught and they took off under fire. Scott and McAlesse decide to head for England and landed safely at Ford airfield, still partially civilian owned. After refuelling and receiving instructions that the remainder of the Sqn were at Hawkinge, the surprised duo in their quite obviously battle damaged Lysander were stopped by a white coated civilian who demanded they pay 7s 6d landing fee. Needless to say after a few choice words Scott and McAlesse flew on to Hawkinge without paying! On arrival at Hawkinge they found nothing but confusion. Fortunately they received orders to report to Detling, where they met up with the remaining survivors of the Sqn aircrew.

During the Battle of France the Sqn had sustained 60% casualties amongst the ground crew and eighteen aircrew had been killed. In the period 10th-23rd May 1940, No. 4 Sqn had flown 106 combat sorties and lost all but eleven aircraft. Additionally all heavy equipment had been lost.

The Sqn reformed at Ringway, now Manchester Airport, and with time on their hands could be found at Listons Bar in Manchester Piccadilly. As the remainder of the aircraft had been withdrawn, hopes were high for replacement by either Blenheims or Defiants. In the end, however, the new equipment arrived on 28 May and to everybody's dismay they were Lysanders again.

The Sqn was brought up to strength and worked up to operational readiness. On 7th June the Sqn moved to a more permanent base at Linton-on-Ouse and commenced coastal patrols to guard against invasion. With there being more aircrew than missions available, some pilots commandeered the airgunners slots on missions. The gunners then volunteered to fly with the local Whitleys of No 58 Squadron, who were detached to Linton at the time.

The increase in enemy activity and the Battle of Britain saw a detachment moved to Manston for Air-Sea Rescue (ASR) duties, and the first crew, P/O Empson and Sgt Gethin, were lost to marauding enemy fighters in late August. On 27th August the Sqn moved to Clifton, on the outskirts of York, and in September took delivery of the Lysander MkIII. P/Os Knight and Edwards were shot down and killed in this month whilst on an ASR sortie.

After the Battle of Britain the Sqn settled down into an intensive training period. During this time there was an intense debate between the Army and the RAF as to the role of the Army Co-operation Sqns. Both parties conceded that the artillery observation roles and the tactical reconnaissance role using slow, plodding aircraft were tantamount to suicide against modern fighters and AAA. Clearly, a total re-think of tactics and equipment was needed.

The answer was seen to be the formation of Army Co-operation Command. Formed on 1st December it proved practically unworkable as its commander, Air Marshal Sir Arthur Barratt had no operational control over his Sqns.

No. 4 Squadron finished this most traumatic year quietly, snowed in over Christmas at Clifton. Poor weather meant that 1942 started slowly, time being taken up with ground school and flying whenever possible. February saw Command issue a directive that gas training be carried out as the Germans were expected to use gas to aid any invasion. These unpopular

drills were practised and full-scale exercises held, with an added incentive to get it right; CS gas was used to simulate Mustard gas!

Until June of 1941 the Sqn had a relatively quiet time. Because there were no British troops fighting in Europe there was little for the Army-Co-operation Sqns to do except train. The photographic capability was put to good use updating the Army's maps of East Yorkshire and visits to the ranges were made to practice gunnery and dive-bombing.

No. 4 Squadron maintained its detachment at Manston, with regular trade coming from ditched bomber crews and those fighters unable to make it all the way back from sweeps over France. However the obsolescence of the aircraft was again demonstrated when P/O Edwards and his gunner, Sgt Knight, were shot down and killed by patrolling Messerschmitts.

The Sqn also provided a useful training unit for the large numbers of aircrew and ground crew posted in and out. Many were posted away as experienced nuclei for new sqns, notably to 138 Squadron and 161 (Special Duties) Squadron.

In August, the annual formal inspection of the Sqn was carried out by General Sir Alan F Brooke, KCB, DSO, GOC-in-C Home forces and the AOC 71 Gp, Air Vice Marshal PC Maltby, CB, DSO, AF. They inspected the Guard of Honour, Squadron personnel, aircraft as well as the defences. AVM Maltby must have enjoyed himself so much that he returned unannounced six days later for an informal inspection - however the Squadron was not caught out!

Further up the command chain it was decided to use the light Taylorcraft Auster as the new artillery observation aircraft and to form "Air Observation Post" Squadrons. At a stroke the Army Co-operation Squadrons had lost their raison d'être. Pressure for a new role and new equipment became intense.

Despite not being in the front line, the Sqn had its fair share of excitement. On 14th August, F/O Astin had a mid air collision with P/O Huntley. Fortunately both aircraft recovered to base safely, with no injuries. However, Astin's luck was absent this day. Within hours of landing and being torn off a strip by the CO, Astin was singled out for attention by a German night fighter. The German fired a burst at Astin, who managed to evade. The intruder then proceeded to shoot up P/O Wales and his gunner F/S Lewis, but luckily they escaped injury, F/S Lewis even returning fire.

Throughout September and October there were yet more exercises, "OUTSPAN", "CHRIS", "BUMPER" and "PERCY". November, though, was the highlight; a large-scale defence exercise for the station. This signalled a day of attacks by Army units on the airfield, all of which were repulsed by the defenders. At the end of the day the umpires agreed that the airfield would have been held. Finally the Sqn participated as enemy bombers in an exercise with 50th Armoured Division, watched by the Prime Minister, Winston Churchill. Apparently the Prime Minister was very interested in the role played by the Lysanders.

After yet another slow start to a year, the Sqn was re-equipped in April of 1942. The old Lysanders were gradually phased out and rumours again spread of Defiants, Blenheims and Havocs. However, the appearance of the brutish Master Mk I trainer settled the issue; the P-51 Mustang was to be assigned and the Sqn would become a tactical reconnaissance unit. At the start of April, the pilots trained initially on the Master and then proceeded to advanced training on one of the Sqns' two Curtiss Tomahawks. Although obsolete by European fighter standards they were thought ideal for reconnaissance. However they were

soon replaced by the Mustang and relegated to the advanced fighter training role.

With the gunners now rendered redundant on the Sqn, they were all granted leave and arrangements made for their posting. The Sqn continued to qualify pilots on the Mustang and in preparation for a return to operations the boffins at Boscombe Down had gathered a collection of captured enemy aircraft together and displayed them at Church Fenton.

On 12th May, all the air gunners and their gunnery leader, Flt Lt Stone were posted en masse to Nos 296 or 297 Squadrons, both operating Whitleys.

On 26th May the Sqn participated in exercise" TIGER" at Detling, where the Sqn proved adept at low level attacks. The Sqn also received a couple of Fairey Battles for dive bombing training, but this never occurred and the Battles were used for navigation training instead.

On 21st June, when four pilots were sent on a course to HQ 65 Med Regt RA in connection with upcoming artillery shoots, someone pointed out that the Mustang was hardly the ideal aircraft for artillery observation duties and the idea was rapidly dropped!

By the end of the month ten more Mustangs had been delivered and the final two Lysanders taken away. However there was a problem with the recognition features of the Mustang. British fighters up to this point had always had pointed or curved wingtips. The Mustang, with its square cropped tips could be mistaken for a Messerschmitt Bf 109 from some angles. The preferred solution was a tour of Fighter Command Stations by the Mustangs, and No. 4 Squadron was assigned this duty. The first display was at Digby on 29th June.

The Sqn had waited a long time to get back into the action, and on 14th October P/Os Draper and Skirrow took off from Gatwick on the first operational sortie in nearly thirty months. The coastal defence sortie was uneventful, as was a similar sortie the next day. On 20th October, the pair made a photographic reconnaissance of Witrepan on the French coast. After successfully taking photographs, the pair strafed machine gun posts and ammunition dumps on the return journey. Draper's machine was hit by light flak, necessitating a forced landing at Redhill. However the damage was light and the pair carried out another photo recce two days later in the St-Valerie area.

The end of the year and the start of 1943 saw the Sqn performing "Rhubarb" (fighter sweeps), "Popular" (armed reconnaissance) and "Ranger" (ground attack) missions. These involved attacking locomotives, wireless stations, marshalling yards and AAA positions, amongst others. Led by a new, aggressive and inspirational CO, the New Zealander Wg Cdr GE MacDonald, the Sqn continued to take the war to the enemy.

Over the course of four months the Sqn lost three more pilots to crashes, F/O Marlett in November 1942, P/O Hunnings in December and P/O Richardson in February 1943. The first casualty due to enemy action came when Flt Lt Wilson failed to return from a sortie on 18th January 1943.

At the start of March the Sqn was withdrawn from operations to take part on Exercise SPARTAN. The scenario was that the Allies had landed in Europe, established a beachhead with air superiority and were about to breakout. The Sqn flew intensive recce sorties and learned some valuable lessons. The future of Army Co-operation, or "air support" as it was becoming known, was summed up in Air Marshall Barratt's, AOC-in-C Army Co-operation Command, report on the exercise as *"…a broader conception of air support, in which the fighter, the ground attack fighter, the*

fighter reconnaissance aircraft, the light bomber and the heavy bomber were all harnessed for army support. This made the old idea obsolete, in which army co-operation was considered a specialised and limited form of air assistance."

The Sqn finally moved from Clifton towards the end of March and set up camp at Bottisham, near Cambridge. It was from here that Wg Cdr MacDonald flew his last sortie on 28th April when he attacked some barges. Pressing his attack too closely, he was caught in the subsequent explosion and killed. Flt Lt Baker explained that:

"Mac's death was spectacular and typical. He was on a RANGER with Brian Slack (later killed in a Typhoon over Holland) *as his No.2. Mac found some barges on a canal between Zwolle and Deventer. He opened fire at one thousand yards. Instead of dropping his opening burst half way, as most of us would have done, his first rounds were on the target. The barges were full of ammunition and as Mac arrived they exploded."*

On 1st June the Army Co-operation Command was abolished as a direct result of exercise SPARTAN. The Tactical Air Force took its place. There was little change, however, for No 4 Squadron and the middle part of the year saw continued operations over Europe, attacking airfields, FLAK ships and minesweepers. These missions were not without cost though, the Squadron losing three pilots.

During July and August the Squadron moved to a temporary airfield at Gravesend and then on to Odiham on 7th August. The ground crew were detached to 130 Airfield HQ, a very unpopular move. However, as the HQ moved around with the Squadron and the ground crew worked on the Squadron aircraft there seemed little point in the change. It was at about this time that the Squadron was informed that it was to trade its Mustangs in for the famous Mosquito.

The remainder of the year saw the numbers of POPULARS increase as the Squadron started to practise its new role, that of high level photo recce. However, some pilots couldn't resist the urge to cause the Germans some grief, so when F/O Thomson and P/O Cooper found a German army football match they proceeded to ruin the enemy's entire afternoon!

On 30th November the Squadron moved to Sawbridgeworth, an airfield heartily disliked by all. The runway was made of cinders and the dispersals of Pierced Steel Planking. As a result of a decision to cut this airfield from a marsh there was mud everywhere, even in the living tents. The airfield was officially unfit for combat aircraft, but with every airfield filled with aircraft in anticipation of the forthcoming invasion; there was nowhere else for the Squadron. During December the future of the Squadron became clearer, with "A" Flight operating Spitfires and "B" Flight Mosquitoes. The rest of the month was spent on either aircraft conversion courses or on Photo Recce courses at the PRU.

The dawn of 1944 saw the Squadron at Aston Down converting to the Spitfire PR XI and the Mosquito PR XVI. Both aircraft were painted the famous PRU Blue, were unarmed and operated at altitudes of between 30,000-40,000ft, well above that of the current crop of German fighters.

However the first few months saw problems with the Mosquitoes. The Navigators proved inexperienced at map reading and required

additional training, and when the Squadron finally returned to Sawbridgeworth (a return that saw a plummet in Squadron morale), the cinders thrown up from the runway damaged the delicate Mossies and rendered the entire flight unserviceable!

As a result of ongoing training problems with "B" Flight, only the Spitfires were involved in Operation BODYGUARD, part of the massive deception operation designed to mislead the Germans as to the exact landing area for the invasion. The Mossies finally got into the action when Flt Lt Stephenson and his navigator, F/O Brittain, flew a PR mission over France. It was also during this period that Germans launched their counter to these high altitude incursions, the FW 190D. Several 4 Squadron pilots suffered severe frights on encountering these formidable machines, but fortunately none were lost.

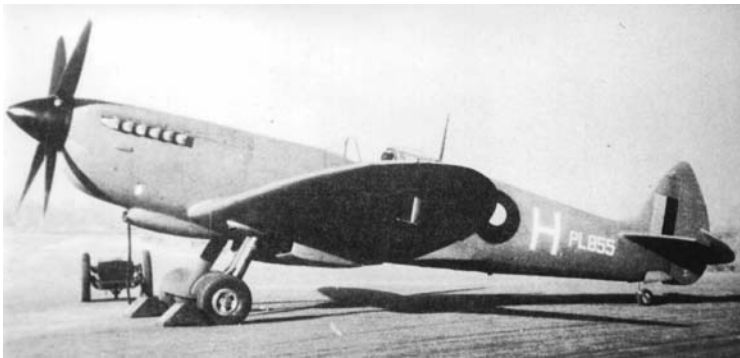
During May it was finally decided that all pilots in "B" Flight with single engine experience were to convert to Spitfires and the Mosquito crews were to be posted out. Nobody was really sorry to see the Mossies go; they had been more trouble than successful.

The Squadron diary entry for 27th May gives some idea on the tempo of operations that the Squadron was undertaking in support of the build up to operation OVERLORD:

"A big day for the Squadron, 17 sorties being flown. S/L CD Harris St. John DFC and Bar photographed the radar stations at St Valery and Le Treport. The photos had to be taken at 12000ft and he flew out at zero feet, climbing just before reaching the coast-the sortie was successful. F/L KO Peachey took the RDF installations at Touvres and Cap D'Antife. F/L CAB Slack and F/O RC Cooper took the RDF station at De la Perces and of St Denis Westrem airfield respectively. F/L DC Wilkins and F/S DE Penn photographed Cap de la Hagueand at Boulogne and Neufchatel respectively. F/O DE Mobbs was allotted target Etrapagny/Begy and Bovara airfield but had to return due to oxygen trouble. F/L Draper took photos in the Trouville area and saw an enemy aircraft at 20,000ft South of Rouen. F/L Leventon took photos of St Denis D'Arclon, Bonnetot and Le Grandperdet. F/L MJ Ahearne took two VPPs (vertical Pin Point) at Antwerp/Devous and Grimbergen. P/O JC Cox took photographs of Louviers, Forges, Sanney-Forges, Argueil, Londinn, Ieres and Amiens. F/O GG Hubah took photos at Le Culot and Tirlemont/Gossencourt. F/L CAB Slack secured two VPPs at Bouvard airfield and Grand Parc, whilst F/L RC Cooper made 4 runs of a mosaic N.E. of Rouen and S.E. of Dieppe. F/L KO Peachey took VPPs of Campagne Les Hesdin and Gueschart Tillen Court. F/L HD Leventon was able to cover three of his targets only; Saleux, Amiens marshalling yard and Arras marshalling yard-the remainder were covered in cloud."

An interesting incident occurred at the start of June that illustrates the hazards of high altitude operations. On 4th June Flt Lt Cowell was flying at 31,000ft over his target when he noticed that his oxygen supply was diminishing. He abandoned his sortie and began a dive to lower altitudes. However he blacked out and had no further knowledge of any events until he came round over the English coast. He was believed to have spent an hour over France at heights of between 10,000ft and 15,000ft, during which time he was fired on by FLAK at Zeebrugge. During this period he was also tracked by radar at Kingsley, who wondered quite what he was up to. Fortunately Cowell suffered no permanent damage from his adventure and soon returned to duty.

The Allied invasion of Europe was a huge



disappointment to the Squadron, as the Squadron diary states;

"D-Day. Today must be the most disappointing day in the long history of 4 Squadron. Cloud obscured the operational areas and only one sortie was flown all day. F/L DE Mobbs did a VVP over Le Messil Le Roi and two runs South-West of Rouen."
The remainder of June and July was spent avoiding the awful weather and the occasional Luftwaffe fighter as the Squadron continued recce work for 2ATAF. However on 31 July Flt Lt Draper and F/O Hutchinson were ordered to Normandy and to operate from B.10 (Plumetot) for a few days. The pair returned with (according to the diary)

"gruesome stories of dust, lack of beer, lack of sleep (owing to AA barrages) and of a shell on the airstrip perimeter. All these discomforts were outweighed by the innovation of flying at less than 12,000ft and with (very efficient) escort. One and all seem keen to get out to Normandy, especially if it's just for a few days."

The Squadron eventually moved to Beny-Sur-Mer in late August and continued photo recce work. However, with the breakout of the Allies into the interior, there were times that the advance was so rapid that pilots would photograph our own troops instead of the Germans!

The Squadron moved forward with advancing armies, occupying one airstrip after another, to the consternation of all, who were fed up of living in tents and wallowing around in mud all day! Operations were flown over the Pas de Calais and increasingly over Holland and Belgium. Towards the end of September the Squadron moved again; to B.61, St. Denis Westrem, on the 27th. The new base was located south of Ghent in Belgium and was a great improvement on the earlier strips, with a great many amenities.

On 1st October No 4 Squadron learned that it would have a subsidiary role as a low level recce Squadron, using a recce version of the Typhoon fighter. A monster of an aircraft, the Typhoon was at first disconcerting to those used to the Spitfire. However, both pilots and ground crews became familiar with the beast and learned to admire its stability and ability to sustain much damage.
Towards the middle of the month the Squadron moved again, this time to B.70, Deurne, just outside Antwerp. The Squadron settled into its routine, only to be informed that VIPs would be visiting. The visit occurred on 13th October, and it would have been difficult to find a more important VIP than the chief visitor, HRH King George VI. Accompanying His Royal Highness were Field Marshal Montgomery and Air Marshal Sir Arthur Coningham, AOC 2ATAF. His Royal Highness spoke to several pilots and showed a good deal of interest in the Squadron operations room.

The remainder of the month saw continued sorties utilising both the Typhoons and Spitfires. Late in the afternoon the Germans surprised 4 Squadron with a barrage of V.1 missiles on the airfield perimeter. Although no aircraft were damaged, casualties must have been moderate although no mention of the fact appears in the Squadron diary.

Into November and the Luftwaffe made some unwelcome appearances; being particularly tenacious in attacking Flt Lt Lischke's Spitfire until he was rescued by Mustangs and utilising an ME 262 to attack Flt Lt Cowell's Spitfire from a previously unheard of direction-above! Cowell escaped after ducking into some clouds. However he was not so lucky on 18th November when he was caught by light flak and forced to crash land near Kessel. After landing he informed his wingman, Flt Lt Draper that he was all right. Nothing further was heard and it later transpired that he had been captured.

The Squadron moved to B-77, Glize Rijen, in Holland between 23rd and 25th November and settled into a recently vacated Luftwaffe base, being visited by none other than the Supreme Commander of the Allied Forces in Europe, General Dwight D Eisenhower.

December 1944 remained business as usual, despite a scare on the 17th when fourteen Me 109s overflew the airfield. On Christmas Eve the Squadron suffered another tragedy, made more poignant by the time of year, when F/O Priddle was intercepted by German fighters over Nieuwkuik. His Spitfire was unable to escape and Priddle was shot down and killed.

Christmas Day was not even noted as such in the Squadron Diary. To 4 Squadron it was simply *"another excellent flying day with no cloud and very little haze."* Overall twenty PR sorties were flown that day and the COs' aircraft was hit by flak.

January 1945 saw Operation Bodenplatte, an all out Luftwaffe attack to destroy Allied air power on the ground. The assault was generally a failure, although much damage was done to installations and parked aircraft. At Gilze Rijen, only two aircraft were destroyed, a Spitfire of 4 Squadron and a Typhoon of 168 Squadron. Buildings were also damaged and destroyed.

During the remainder of January the Typhoons were withdrawn because the Squadron was ordered to return to high level work. The Squadron spent February and March providing coverage for the Canadian 1st Army during the push up to the Rhine, with little enemy activity or excitement.

Throughout March and April the Squadron continued to support the Canadian 1st Army, this time during the liberation of northern Holland. It was during this time that the Squadron moved yet again, this time to B-89, Mill, just south of Nijmegen and then on to B-106, Twenthe, just outside of Enschede on the German border. During this period the Squadron also focused on industrial areas, airfields and docks in and around Bremen, Kiel and Wilhelmshaven.

May proved to be quiet apart from the outrageous celebrations on 8th May, VE Day! The Squadron continued operational flying, and Sqn Ldr Harris St. John handed command over to Flt Lt Ogilvie on the 21st. The Squadron moved yet again, this time to B-118, Celle, in occupied Germany, on 28th May, after the wing had flown a "display of strength" over the airfield.

Celle was a shambles, wrecked buildings and German aircraft everywhere. It took the best part of a week to clear most of the mess up, and flying finally resumed on 8th June. Sharing the base with 4 Squadron was 2 Squadron, operating the powerful Spitfire FR XIV, and the two Squadrons took the opportunity to familiarise themselves with each other's aircraft.

On a more serious note, there was a real fear of the "Werewolf" organisation, a terrorist network of Nazi fanatics and anti-terrorist lectures were given. Fortunately, however, these fears came to nothing. Although the war was over, the base was still kept on a war footing until further notice.

Until August the Squadron conducted aerial surveys of Germany and practised formation flying for flypasts that were invariably cancelled. Flt Lt Ogilvie retained command of 4 Squadron until it was disbanded on 31 August 1945.

THE COLD WAR

IV(AC) Squadron

The Squadron may have disbanded on 31 August 1945, but it was resurrected the next day when No 605 Squadron was renumbered IV (AC) Squadron. The role of the Squadron now changed from Photographic Reconnaissance to Light Bomber, and the Squadron was re-equipped with the Mosquito FB.6. It was in this role that the Squadron celebrated its first peacetime New Year on the continent at Gutersloh, later to become the Squadron's base when flying Harriers. The transition from peace to war saw the departure of many members who had served together throughout the war as demobilisation got under way. To quote the Operations Record Book for May 1946: *"So many old friends seem to have gone and new faces appeared this month, that the old place seems very different."* The new faces, however, were not arriving in large numbers and the Squadron remained under-manned for about a year.

In September 1947 the Squadron sent four aircraft to Udine in Italy to join a detachment to cover the evacuation of Pola, a town on the southern extremity of the Istrian peninsula in the Adriatic Sea. The peninsula was due to be handed over to Yugoslavia and Pola was to be evacuated by the British as a result. However, the impatient Yugoslavs moved in overnight prior to the agreed date of handover. This necessitated a more rapid evacuation than had been anticipated. The withdrawal went according to plan and the twelve aircraft of the RAF detachment were utilised in a show of force to quell rioting in the British–administered port of Trieste. The display continued for two days until the situation had been bought under control. On the 18th of September the 4 Squadron detachment returned to Gutersloh.

The Squadron moved two years later to Wahn, where life continued in the post war leisurely manner. Training consisted of air-to-air and air-to-ground gunnery, low level navigation and formation practise, as well as exercise play.

On 18th September 1949 the Squadron flew to its new base at Celle, where it remained for less than a year before moving to Wunstorf on 10th July 1950. Almost immediately after arriving, the Squadron started to convert to its first jet aircraft, the Vampire FB.5. Although the aircraft changed, the role did not, and the high serviceability rate of the Vampire impressed all, particularly on exercises.

The Squadron moved yet again, this time to Jever, where it arrived on 1st March 1952. The last few months at Wunstdorf had seen an intense period of training as new pilots arrived and needed to qualify as Section Leaders.

One of the proudest days in the history of IV(AC) Squadron occurred on Friday 20th November 1953, when it was presented with it's Standard. Marshal of the Royal Air Force, Sir John Slessor, who had commanded the Squadron in 1925, made the presentation. It was a fitting climax to forty-one years of service.

It was also during November that the Squadron re-equipped with Vampire FB.9s. However these were destined to be on the Squadron strength for only a few months as the first group of pilots left in March 1954 to convert to

the Sabre. The first impressions were *"that for a single-seat fighter, it is an exceedingly complicated aircraft"*. Complicated or not, it was a great improvement over the Vampire and was soon appreciated as a very versatile aircraft. By the end of May the last Vampire had left and the Squadron was equipped with fifteen Sabres.

The Sabre, however, did not remain with the Squadron for long and in 1955, conversion to the Hunter F4 was completed.

It was at Jever, the home of 4 Squadron for nearly nine years that the Squadron was disbanded again, this time on 30th December 1960. However, on 1st January 1961 the Squadron was reformed after No 79 Squadron was renumbered as IV (AC) Squadron. The Squadron returned to Jever on 1st March in the reconnaissance role and initially equipped with Swift FR.5s (a legacy from 79 Squadron). These were rapidly exchanged for Hunter FR.10s.

On 5th September 1961 the Squadron moved to Gutersloh, where on 30th November 1963 it celebrated fifty years of service to the Crown. Again MRAF Sir John Slessor was the principal guest and many other, now high ranking, former members of the Squadron were invited, including AVM Kingston-McLoughry, Air Commodore West, VC and ACM Sir Norman Bottomley, all former Commanding Officers of the Squadron.

The following are the texts of a signal sent to Her Majesty the Queen on this occasion, and that of her reply;

"No 4 Squadron celebrates the completion of fifty years service today. Last night a reunion dinner, attended by Marshal of the Royal Air Force Sir John Slessor and five other Air Officers, and many others, was held in the Officers' Mess. Today Sir John reviewed a parade of all Squadron personnel and the Bishop of Maidstone officiated at a Drumhead service of commemoration.

The Commanding Officer, officers and airmen of No 4 Squadron are to reaffirm their allegiance and devotion to their Sovereign at this their Jubilee."

"The Queen has received with much pleasure your message on the Jubilee of No 4 Squadron. Please convey to the Officers and Airmen under your command an expression of our sincere thanks for their loyal assurances. We send them our warm congratulations on the achievements of the Squadron in its first fifty years and our good wishes for the years to come."

The Hunter FR.10 was a superb fighter-recce aircraft and with these new mounts IV (AC) Squadron became one of the premier reconnaissance Squadrons in NATO. Each year there was a photo-recce competition called "Royal Flush", in which all the NATO Squadrons competed. IV (AC) Squadron first entered the competition in 1961 when it gained second place. Thereafter the Squadron was the first RAF unit to win the competition outright, both in 1962 and 1963 and was rarely out of the top three until 1968 when "Royal Flush" was replaced by the Tactical Fighter Meet.

An incident from one of the "Royal Flush" competitions is related so;

"Situation-10 miles west of Wetzlar the pilot was tasked on strip in a training area. Whilst approaching the IP, he hears on GUARD;

VOICE Aircraft over Wetzlar. Are you going to remain orbiting?
A/C Yes.
VOICE Are you a T.33?
A/C Yes.
VOICE Are you a Royal Flush umpire?
A/C Yes!

Four Squadron pilot immediately reduces height from 2,000ft to 500ft, and increases speed from 250kts to 420kts.

VOICE Could you go to 288.2?
A/C Yes.

Pause for T.33 to change frequency and for 4 Squadron pilot to manually select 288.2.

VOICE (to T.33) I'm the ground umpire. The Honest Johns and tank Regiment haven't arrived. IV Squadron pilot removes missile card, unable to believe his good fortune.
VOICE All we have here is a few tanks, jeeps and some dug in infantry.
A/C Roger.
VOICE When is the next aircraft due?
A/C Anytime now

(as IV Squadron aircraft approaches strip).

VOICE Ah! I see him.
A/C Roger, contact looks OK.

IV Squadron pilot, cackling with insane glee sees Leopard, HS 30 and a couple of Jeeps. Doesn't see infantry, but knows they are there so inflights "suspect infantry". Pilot resists temptation on leaving area to ask Army to at least give him a plottable UTM with their info and returns to base, giggling uncontrollably!"

During this period IV (AC) Squadron provided the RAFG Aerobatic Display Team. Unofficially known as "Four's Four", the team had many successful seasons on the continental airshow circuit.

THE COLD WAR – Harrier I

IV(AC) Squadron

The Squadron retained the Hunter for nearly nine years whilst at Gutersloh until the Harrier replaced it. On 1st September 1969, No 54 Squadron, equipped with Hunter FGA.9s at West Raynham, became IV (AC) Squadron (UK Echelon). Conversion began in May 1970 when four pilots, who were experienced on the type, were posted in from No 1 Squadron. At the end of May, IV Squadron lost its operational commitment and on 2nd June the Squadron held its farewell parade. The last of the Hunters were flown out and the UK Echelon became the new IV (AC) Squadron.

The new home for the Squadron was Wildenrath and on 22nd June 1970, the first four Harriers arrived, led by Wg Cdr McKee. Meanwhile, "A" Flt of the old IV (AC) Squadron travelled to Wildenrath to join the new Squadron, leaving "B" Flt at Gutersloh to become No 4 Harrier Course and in time to be the nucleus of 20 Squadron.

By April 1971 the Squadron was up to establishment in manpower and aircraft and was declared operational and assigned to NATO. It was less than a year later when the first IV Squadron Harrier crash occurred (on 4th May 1972). The circumstances were rather interesting, and were reported in a British daily newspaper:

"JUMP JET FLIES BY ITSELF by Derek Wood, Air Correspondent.

NATO fighter planes stood by to shoot down a British Harrier strike jet as it soared into the clouds with nobody at the controls on a 30 minute flight over Germany after its pilot had escaped by firing the ejection seat.

Sqn Ldr Peter Taylor, based at Wildenrath, West Germany, was flying the vertical take-off Harrier at 400mph when he ran into a flock of birds. The jet's engines began to fail and he fired the ejection seat.

As he drifted earthwards on his parachute, he looked up to see his plane regain power, discharge the birds from its engine, go through a series of switchback manoeuvres ands disappear into cloud at 9000ft.

Ground based security forces raised the alarm as the Harrier was tracked on its course to 24,000ft by radar scanners. At that height the runaway jet, one of the RAF's latest strike planes, levelled out and flew in ever widening circles.

Fighter crews were ordered to be ready to shoot down the Harrier if it looked like crossing the East German border and getting into Communist hands. Instead the jet ran out of fuel and glided down to soft ground near Schleswig, towards the Danish border.

The incident happened on May 4th as Sqn Ldr Taylor, flight commander of No IV Squadron, was on a flight path at 4000ft about 40 miles south-west of Kiel. His plane sucked in birds as it hit the flock and at once lost much of its power.

Under these conditions, Sqn Ldr Taylor had no alternative but to point the plane towards open ground and bale out. The firing of the ejection seat automatically changed the electronic picture on the ground radar screens to show what action the pilot had taken.

Experts took the engines of the fly-by-itself Harrier for examination after what was called a "good" crash-landing. One of the mysteries they hope to solve is how the Harrier performed its unusual manoeuvres compared to previous performances by pilotless planes."

The Squadron had, until the autumn of 1972, been an attack squadron, but on 1st September 1972 a dual role capability was declared to NATO. The Squadron's role was now to be attack and battlefield reconnaissance. However, the primary task was to remain close air support and battlefield air interdiction. To facilitate the recce role, a Reconnaissance Intelligence Centre (RIC) was attached to the Squadron to enable the imagery to be exploited and intelligence disseminated immediately after the aircraft had landed.

With the new aircraft came a new concept of operations. Factory and supermarket sites were earmarked as forward deployment areas in the contingency plans in case of a Warsaw Pact assault. However, since these sites were unavailable for exercise purposes during peacetime, practice deployments were made three times a year to "field" locations in the army training areas in Germany. These locations were much like Forestry Commission land in England; hides were set up amongst the trees to camouflage the aircraft during arming and maintenance and the B roads in the forest were used as taxiways and runways. Where no suitable roads were available, the Royal Engineers constructed operating surfaces from metallic strips staked into the ground.

Landings at these sites, regardless of taxi surfaces, were made vertically onto 70ft square pads constructed from these same metal strips. Personnel lived and worked in 12ft by 12ft tents, whilst the site operations, flight planning, intelligence, engineering co-ordination and site defence were controlled from four, 4 ton, box

body trucks which were arranged back to back to form a cruciform. The Squadron operated three such sites per deployment and received engineering, logistic and combat support from the Royal Engineers, Royal Signals and RAF Regiment, as well as from station support personnel. Engineering practices were adapted to field operations, which allowed even complex procedures such as a full engine change to be carried out quickly and efficiently.

Mission planning was carried out in the box body for the first wave, but subsequent planning was made by the pilots as they sat in the cockpits whilst the engineers rearmed and refuelled the aircraft in the hides. This was known as cockpit turning, during this the pilots communicated via the telebrief, a type of intercom system plugged into the jet.

The basis for these operations was one of providing Close Air Support (CAS) to the troops fighting sixty or seventy miles from the site areas. The small transit distances allowed for rapid retasking to trouble areas, and along with cockpit turns, meant that incredibly rapid returns to the battle could be made.

These rapid turnarounds meant that the pilots could fly more sorties than normal, and therefore individuals were limited to six sorties a day to prevent over fatigue. Regardless, the two weeks spent in the field were tiring for all involved, both in the air and on the ground, particularly since the majority of time during

the last few days of the exercise was spent in NBC suits and respirators. However, all prided themselves on being part of a unique team.

On 4th January 1977 IV(AC) Squadron left Wildenrath for Gutersloh where it would be closer to the Army formations which it would support. On 28th February the Squadron strength increased to eighteen, the extra numbers made up by six Harriers and their pilots from the recently disbanded 20 Squadron.

BELIZE

In August 1978 the Squadron took over the Harrier support of the British forces in Belize. These forces were to deter the Guatemalan Government from over-running and annexing Belize. The commitment was shared with Nos 1 and 3 Squadrons and lasted until 1993.

FALKLANDS

In 1982 Argentinian forces invaded the Falkland Islands. Two IV(AC) Squadron pilots, Flt Lts Loader and Haward were detached to 1(F) Squadron, which had received orders to prepare to sail with the Task Force to reclaim the Islands. After a brief work up at RNAS Yeovilton the pilots ferried aircraft to Ascension Island before embarking on the MV St. Edmund and set sail for the South Atlantic. They arrived on 17th June, unhappy to have missed the excitement, and boarded HMS *Hermes* on the 21st and began flying Air defence sorties. For the first time since Chanak, and not for the last, IV(AC) Squadron pilots were operating from an aircraft carrier.

The Harriers deployed to the Falklands on a regular basis to support the land forces until the Harriers were withdrawn in 1985.

The Squadron operated the Harrier GR.3 until 1992, making it the longest serving aircraft on IV(AC) Squadron, until it was replaced by the far more capable GR7.

POST COLD WAR – Harrier II

IV(AC) Squadron

IV(AC) Squadron continued operating the Harrier GR3 (the longest ever serving IV(AC) Squadron aircraft) until 1989 when the GR3 was replaced by the Harrier GR5 with much improved range/payload capability, a 'glass' cockpit and larger wings for greater lift. This was soon superseded in 1994 by the night attack Harrier GR7 with a Forward Looking Infra Red (FLIR) sensor integrated with the pilot's Night Vision Goggles (NVG) and NVG-compatible cockpit lighting providing a full 'clear weather' night attack capability. IV(AC) Squadron once again lives up to the full significance of its badge, namely a day and night attack and recce squadron.

Operation WARDEN

After the fall of the Soviet Union and the disintegration of the Warsaw Pact, the Squadron left Gutersloh for Laarbruch in November 1992. Shortly after conducting the only Harrier GR7 detachment to Belize, the Sqn began operating out of Incirlik, Turkey, in support of Operation WARDEN. The Sqn flew armed reconnaissance missions to enforce the No-Fly zone in Northern Iraq. No IV(AC) Squadron therefore were the first RAF squadron to take the Harrier II into operations. Over nearly 3 years, the commitment was conducted in rotation with the other Harrier Sqns until the Force handed over to Tornado GR1s in January 1995. During that time Sqn Ldr Jim Fernie ejected over Iraq; his experiences are recounted in a later section.

Operation DENY FLIGHT

There was however, no let-up and the Squadron found itself at Gioia del Colle in Southern Italy supporting Operation DENY FLIGHT over the troubled former Yugoslavia. The already unstable situation worsened and on 30th August 1995 NATO airstrikes were authorised following a Serb mortar attack on Sarejevo. In the ensuing two weeks 144 sorties were flown during Operation DELIBERATE FORCE. Forty eight laser guided bombs and 32 freefall bombs were dropped by the Squadron on varying targets including ammunition dumps, communications sites and radar emplacements. The military action in September 1995 subsequently lead to the Dayton Peace Accord and a resumption by the Squadron to Operation DENY FLIGHT concentrating once again on providing reconnaissance imagery of the former Yugoslavia. An account of Operation DELIBERATE FORCE can be found in a later section.

Operation DELIBERATE FORGE

Although stood down from operations over the former Yugoslavia in the autumn of 1996, the break was not long. In the summer of 1998, IV(AC) Squadron redeployed to Gioia in response to continued Serbian aggression. The commitment continued through Operation DELIBERATE FORGE and ultimately several Squadron members participated in Operation ALLIED FORCE; the air strikes that helped persuade Slobodan Milosevic to withdraw his troops from Kosovo. First in and last out of the Balkans, the Squadron brought the Harrier Force out of Gioia del Colle having been stood down from Operation DELIBERATE FORGE in April 2001.

Return to UK and RAF Cottesmore

It was also during this time that IV (AC) Sqn moved from Germany back to reside in the UK for the first time since the UK Echelon were based there in 1970. On 12th April 1999, IV (AC) Squadron's advance party moved into the disbanding Tornado tri-national training base at RAF Cottesmore in Rutland. 3(F) Squadron also moved from Laarbruch, thereby continuing the close ties between two of the RAF's oldest flying units.

Joint Force Harrier

On 1st April 2000 the Royal Navy Sea Harrier Squadrons and those of the RAF came under one joint command entitled Joint Force Harrier (JFH). The JFH concept was borne out of the 1998 Strategic Defence Review to bring together the management and capabilities of the 2 Harrier forces (RAF and RN) and develop a force that would ultimately become the flying wing for the Joint Strike Fighter aircraft due in Service in 2015.

However, a study undertaken in 2001 showed that the return of investment in an improved Sea Harrier airframe and weapon system was uneconomical. Instead, the funding was better utilised in upgrades to the Harrier GR7, thus improving its abilities both in land and sea-borne roles. The upgraded Harrier GR9/9A entered service in 2006. The aircraft has improved avionics and can be fitted with the more powerful Pegasus Mk107 engine (Harrier GR9A). Nearly all of IV(AC) Squadron's aircraft are Harrier GR9/9As.

The decision was taken in early 2003 to re-brigade 4 JFH squadrons at RAF Cottesmore as a consequence of the phasing out of the RNAS Yeovilton-based Sea Harriers. No IV(AC) Squadron emerged unscathed (No 3(F) Squadron was disbanded) and, as previously mentioned, now works alongside No 1(F) Squadron and the Naval Strike Wing (currently 800NAS).

POST-9/11 CONFLICTS

IV(AC) Squadron

In September and October of 2001 the Squadron took part in Exercise SAIF SAREEA II. The exercise consisted of a work-up phase on HMS ILLUSTRIOUS for a month in the Mediterranean, a transit through the Suez Canal and the Red Sea before deploying to Masirah in Oman in support of 3 Commando Brigade. This event was the longest period that the Squadron had spent on a carrier since the Chanak Crisis over eighty years ago. As the Sqn embarked the day after the horrific attack on the World Trade Center in New York, unsurprisingly there was a heightened state of tension with the potential for ops in Afghanistan.

Operation TELIC

As 2003 dawned, the imminent deployment of IV(AC) Squadron to the Gulf felt inevitable. Saddam Hussein had spent the previous 12 years trying to avoid the ever-watchful eye of the international community, whilst consistently breaking UN resolutions put in place to provide some sort of assistance to the Iraqi people.

UN Security Council Resolution No 1441 was introduced on 8 November 2002. It formally acknowledged Iraq's non-compliance with previous resolutions and recognised the threat to international peace and security posed by Hussein's proliferation of weapons of mass destruction (WMD). The resolution further highlighted that Iraq had failed to provide information on its programmes to develop WMD, as required by Resolution No 687 in 1991. It also criticized the fact that UN weapons inspectors had been unable to continue their work since being forced to leave in December 1998.

Iraq had been in material breach of its obligations under previous resolutions and, in the eyes of at least 2 members of the Security Council, time was running out for the regime. Hussein was given a final opportunity to comply with his disarmament obligations failing which he would face serious consequences. He did not comply and military action was sought.

It became clear that the international community's idea of how the situation should be handled was at variance with views held by the USA and the UK. Military intervention was not the course of action sought by the majority. As a result a small coalition headed by the USA and the UK emerged whose aims were subtly different but essentially required the forcible removal of Saddam Hussein from power, and the liberation of Iraq from many years of oppression. It was clear from late 2002 that the Harrier Force would be called upon to put their training into practice, once again deploying to the Gulf region.

After a year of 'almost going on ops', nearly going to Bagram (Afghanistan) and then Batman (E Turkey), the uncertainty ended in early 2003 with the arrival in theatre of the Squadron's advance party in the early hours of Tuesday 4th February 2003 followed by 10 Harrier GR7s on 23 Feb 2003 to Al Jaber Airbase, Kuwait. Known as 'Harrier Force South', this was a joint deployment with 1(F) Squadron, but led by IV(AC) Squadron due to its recent SAIF SAREEA II and COPE THUNDER experiences. (1(F) Squadron led a concurrent deployment of 8 Harriers to a second regional base known as 'Harrier Force West'). The aircraft had been modified to be as capable as possible in terms of recce, Maverick video, secure radio and Enhanced Paveway 2 (GPS) modifications. Al Jaber was also host to USAF A10s and F16s, USMC F18C/Ds and AV-8Bs, Kuwaiti F18s and the collocated USAF and USMC HQs, ie with the bulk of CAS airpower located there. Initial sorties consisted of Operation SOUTHERN WATCH monitoring missions in the No Fly Zone

even though the Squadron's heavy kit had not yet arrived from the UK by ship.

On 19th March 2003, Operation TELIC commenced with, unusually, land ops (G hour) occurring before the main air strikes (A hour). Squadron Harrier GR7s were almost exclusively used in the CAS and Killer Interdiction CAS (KICAS) roles, carrying mixed GPS-guided Paveway 2s and Maverick loads. Search for targets was carried out using mainly aircraft on-board sensors rather than with the assistance of any external cueing. Additionally the newly introduced Joint Recce Pod was used for tactical recce. Missions occurred round the clock at intensive rates resulting in long days and hard work for all. Whilst the Iraqi Air Force was of minimal threat, the danger from ground systems was ever present.

V Corps' rapid advance meant the battle moved swiftly up country towards the edge of the GR7s un-refuelled range on the West flank. A steady, though lower than expected, number of weapons were released on military targets, with precision weapons the preferred method of employment. Flexibility was the order of the day as aircraft were sent far and wide within Iraq. As V Corps and the MEF paused near Baghdad to regroup, airpower turned the Republican Guard defending the City from a formidable Force to units incapable of effective fighting. Although the prospect of flying within 'Super-MEZ' was unnerving, the only real threat came from poorly aimed AAA.

During the month of fighting, the desert temperatures rose from pleasant 20s to unbearable high 40s. Still waiting for desert boots and clothing and sleeping in tents without climate control, the ground crew's esprit de corps and fighting spirit carried the day. They made an immense effort to generate serviceable aircraft at excellent rates.

Under the media spotlight, 1(F) and IV(AC) Squadrons gave very good accounts of themselves in terms of a Force that was flexible, reliable, with a capable platform, skilfully flown and well supported. The Squadrons returned to Cottesmore 3 months later, thankfully having suffered no casualties or major incidents.

Operation HERRICK

Twelve months after returning from Operation TELIC, the Harrier Force was once again called upon for operational service overseas. Following an initial request by the US to relieve their US Marine Corps AV-8Bs from Kandahar Airbase in Southern Afghanistan, 3(F) Squadron became the first Joint Force Harrier Squadron to be committed to air operations in Afghanistan in October 2004 in support of both Operation ENDURING FREEDOM, the US led counter terrorism operation, and NATO's mission with the International Security Assistance Force.

During March 2005, IV(AC) Squadron flew two operational sorties into Afghanistan from HMS INVINCIBLE as part of an in-theatre jet swap whilst 1(F) Squadron were operating from Kandahar. IV(AC) Squadron then took over the commitment for the first time on 8th April 2005, returning to UK 4 months later having clocked up almost 900hrs of operational flying. A date for the History books occurred on 25th May with the first female RAF Harrier pilot to fly an operational sortie.

The Squadron deployed on a further 4 occasions (October 2005, May 2006, June 2007 and February 2008) in rotation with other Harrier squadrons for periods of 2 to 4 months, before its final (and sixth) deployment from December 2008 until April 2009, with Joint Force Harrier handing over the commitment to the Tornado Force in June 2009. The Squadron's final detachment achieved a 100% success rate in terms of missions flown against missions tasked.

The deployment in May 2006 was very different in character to previous ones with the arrival of UK forces to the Helmand Valley creating considerable tensions on the ground which ultimately escalated into high intensity armed conflict. The Squadron's mission quickly focused on providing support for the UK Forces who were becoming increasingly fixed in their positions around the major towns of Helmand. By the end of August, the Squadron had received an additional 7th aircraft and were flying missions around the clock in the most demanding conditions with every officer and a large proportion of the Squadron's groundcrew deployed. In September alone, some 250 missions were flown (with not one mission lost to aircraft unserviceability) and, significantly, dropping some 80,000 pounds of mixed ordnance. September also saw 18 rockets being fired into Kandahar Airbase but, with incredibly good fortune, the Squadron experienced no casualties nor damage to its aircraft. No IV(AC) Squadron safely returned to RAF Cottesmore at the beginning of October 2006 after what was widely recognised as the most intensive phase of offensive air operations by the RAF since operations in Iraq in early 2003.

Despite the relatively basic form of warfare seen in Afghanistan, the use of sophisticated technology played an important role in prosecuting attacks against the enemy. 2007 saw deployment of the much improved Harrier GR9, which was equipped with the Lockheed Martin Sniper targeting pod under an Urgent Operational Requirement (UOR). With its improved optics and video datalink, the pod radically improved the Harrier Force's ability to deliver its operational capability. The Helmet Mounted Cueing System also entered service under a UOR in 2008, along with the new 500lb GPS/Laser Guided Paveway IV bomb. The Squadron was the first to employ this new weapon operationally at night.

Throughout its ninety seven years of service, IV(AC) Squadron has shown adaptability, consummate professionalism and the ability to integrate and operate with our sister services both in peace and war. *IN FUTURUM VIDERE.*

POST-SCRIPT

IV(AC) Squadron – IV(R) Squadron

On 15th December 2009, AOC 1 Gp, AVM Greg Bagwell, publicly announced plans to downsize Joint Force Harrier and relocate the Force from RAF Cottesmore to RAF Wittering, the spiritual *Home of the Harrier*, in 2011 and close RAF Cottesmore by April 2013. This announcement formed part of the 2010 Planning Round within MoD and was part of a broader initiative to save money within UK Defence. The unfortunate and immediate impact of the announcement was for Number IV(Army Co-operation) Squadron to renumber as Number IV(Reserve) Squadron and change role from a Front Line squadron to that of the Harrier Operational Conversion Unit from 1st April 2010. Whilst this was incredibly sad news for all on IV(AC), the silver lining to this cloud was that the Squadron's name-plate would be kept alive in Reserve status, vice being subject to complete disbandment: the strategic vision being for IV(AC) Sqn to be reinstated as one of the first front line Joint Strike Fighter squadrons some time in the near future.

On the 31 March 2010 a formal parade was held at RAF Cottesmore to mark the renumbering of the Squadron as No IV(R) Sqn with ACM Sir Chris Moran, CINC AIR and a former OCIV(AC) Sqn, acting as Reviewing Officer. Wg Cdr Harvey Smyth DFC formally handed over the Squadron to Wg Cdr Linc Taylor, and as the Squadron Standard changed hands, IV(AC)'s *Four's Four* performed its final flypast.

MEMBERS' RECOLLECTIONS

IV(AC) Squadron

The Death of Major Raleigh

The following is taken from a report by Capt Holt, describing how Maj Raleigh, the Sqn's first Commanding Officer, died:

"At about 4pm on January 20th Major Raleigh reached Dunkerque at a height of about 2,000ft. The light was good and there was no wind. He cut off his petrol and commenced his descent with two or three well banked right-hand spiral turns from 2,000ft to about 1,200ft. He then did a straight glide and was commencing an under-banked left-hand turn when the machine suddenly started very close right spirals and was out of control. At a height of about 500ft the spirals suddenly ceased and the machine glided very flat for about thirty yards. It then suddenly commenced left-hand spirals which turned into a straight nose dive twenty feet from the sea.

"I consider that the first spirals commenced in some way owing to an underbanked turn and that the pilot then either slipped out of his seat or became giddy. All controls were found to be intact, the belt fastened but the woodwork to which it was attached had given way. The machine fell into about two feet of water and it was twenty minutes before the pilot could be got out of the machine.

"Dr Wells of the NAS was one of the first to arrive at the wreck and took charge. Major Raleigh was taken straight to the hospital ship Magic, where he died at 7 pm. He was conscious whilst being taken to the ship but gradually lapsed into a comatose condition."

* * * *

The Escape of Lt Mapplebeck

The following is a somewhat over dramatised and imaginative account of Mapplebeck's escape as published in one of London's picture papers under the title "Air Stories by a Pilot":

"…I'll tell you a true story," said oneman. "It's about an RFC man named Mapplebeck, a fine fellow; he's dead now, though."

"It all happened one very misty morning. Mapplebeck was up on a reconnaissance trip; his engine went wrong and down he had to come a good ten miles behind the German lines. He landed safely and had just burnt his machine when he saw three figures coming up out of the fog. He fled and hid himself in a ditch hard by. He was in it for the whole of a blessed day and night. We've since heard that there were close on five thousand Boches searching for him the whole time. When he found the coast was clear he crept out of the ditch and marched off boldly down the road until he met a friendly Belgian peasant, from whom he wheedled an old suit of clothes, and thus dressed he walked on nearly to Lille.
"Here he did a silly thing. He got aboard a tramway car bound for the city. The car was full of Prussian officers, and when the conductor came for his fare he was startled. Then he had a brain-wave; remembering that every town in Belgium possesses a glorified market square, he said, "A la grande place, s'il vous plait," and pulled out a handful of silver coins to pay the man. Such a thing as a silver coin hadn't been seen in Lille for months, ever since the Germans had captured it in fact; but, fortunately, the Prussians were too occupied in their own conversation to take any notice……

"Arrived in the city, luck again favoured him and he obtained shelter in a garret for three weeks. From the window of the garret he was able to make notes of enemy guns, ammunition

columns, supply wagons, troop trains, troops, aircraft; everything in fact. Then the police grew suspicious and he was forced to clear out hurriedly one night. After leaving the city he had a terrible time. Right across Belgium he tramped, always at night and every moment in fear of his life, feeding on anything that he could find-refuse thrown to the pigs and stale bread thrown away by the soldiers. Footsore and hungry, he at last arrived at the Dutch frontier, where he had another agonizing wait for a day and a night in a ditch.

"Late in the evening the sentry paused on his beat to light his pipe; this was Mapplebeck's opportunity. He dashed across the frontier. It was a moonlit night and the sentry fired three shots, missing him each time. He crossed Holland; heaven only knows how; reached a seaport town, stowed himself aboard a fishing smack to England, and reported himself to the astonished officials at the War Office. His death had been announced three weeks before."

Capt Mapplebeck was killed in August 1915 when his Morane monoplane crashed whilst engaged in a display back in the UK

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* * * *

The Chanak Crisis

Flying Officer PK Campbell was a pilot on 4 Squadron during the Chanak crisis:

"Our first thought was to get our aircraft ashore and up to the landing ground where they could be assembled. How wrong we were, for at this early stage we struck our first snag, for whilst the jetty was adequate for handling normal supplies and equipment, no facilities were available for lifting an aeroplane ashore. To carry on to Constantinople by sea, transport and erect our aircraft at San Stefano and then fly them down to Khilia was ruled out as this would delay our becoming operational by at least a further week.

The OC, Sqn Ldr Blount, conceived the alternative of trans-shipping our aircraft from HMS ARK ROYAL *to* HMS ARGUS, *erecting them on* ARGUS *and flying them off the carrier's deck. Certainly no Bristol Fighter had ever been flown from a carrier's deck before, neither had any pilot in the Squadron flown from a ship's deck. Furthermore, the Navy pointed out that no assistance in take-off could be provided to help a somewhat slow aircraft off the deck and into the air.*

The following day all twelve aircraft were transferred from ARK ROYAL *to* ARGUS *together with the necessary bits and pieces.*

This was a two stage process as each aircraft had first to be lifted onto the quarter deck of ARGUS *and then lifted again up to the flight deck. It should be noted that in their state of transportation the aircraft were complete apart from their wings, ie centre section, tail unit and undercarriage remained fixed to the fuselage, so, for assembly, the wings had to be boxed, fitted to the fuselage and the rigging checked. All appeared to be going to plan when it was discovered, fortunately before any assembly had commenced, that when fully rigged it could not be transferred from the hangar below deck up to the flight deck. Although the Bristol Fighter had filled many diverse roles in a distinguished career, it had never tried its hand at being a carrier- borne aircraft and was therefore incapable of folding its wings in true nautical fashion.*

Undeterred by this set back, all aircraft were returned to the flight deck where the airmen set

to work to make them airworthy. This was not without problems for ARGUS *was anchored well off shore and continually on the swing due to the strong current running down the "Narrows", that neck of the Dardanelles between Khilia on the Gallipoli side and Chanak on the Asiatic side. Rigging a biplane by conventional methods was out of the question. Here was an instance where the practised eye of the rigger would be more reliable than the conventional "plumb-bob".*

Although this rather unconventional method of rigging was being adopted, nobody appeared to have the slightest qualms as to its effectiveness, least of all the riggers themselves, who obviously had complete faith in their work for there were more than enough volunteers for the "back seat" when the time for take-off arrived.

On the morning of October 11th, all was pronounced ready for "go". Engines had been warmed up; last minute checks made and were on the move. HMS ARGUS *weighed anchor and set course up the Dardanelles towards the Sea of Marmora with an escort of two destroyers, one to port, the other to starboard, an escort we assumed to have been earmarked by the Navy as "picker uppers" of ditched Bristols. Although their services were not required, it was a nice thought."*

* * * *

Wg Cdr MacDonald

Flt Lt Baker, one of his flight commanders remembers Mac:

"Wg Cdr MacDonald was the most vivid and invigorating person who came to No. 4 Squadron in my time. When Mac first joined us in October 1942, we were based at York, but we used to detach flights, for a month at a time, to Gatwick or Detling, to take pictures, or as a sideline, to beat up trains. Mac had little interest in cameras, except gun cameras, and in his sudden visits to the detachment he set a splendid example of zeal and skill in finding Germans and killing them. One day he and CTP Stephenson came upon a parade on Poix airfield, which they joyously attacked. The next day, Sunday, the picture papers bore the headline "WE DISMISSED THE PARADE," SAYS WING COMMANDER. In fairness to Mac, I should say that I believe this to have been an invention of the sub-editor.

Mac was a splendid pilot and shot and an inspiring if impetuous leader. We were all the better for trying to live up to the standards he set us and achieved himself. His passion was guns. He loved using them, harmonising them, talking about them, and, I have no doubt, dreaming about them. When off on this one subject his mind ricocheted from topic to topic with a speed that left his audience speechless. His adjutant, "Arty" Fischel, was the chief sufferer, and after a session of trying to get a decision on an administrative matter, Arty would be quite distraught.

One day a new pilot asked Mac how to go about shooting down a Hun. Mac's reply went like this: "What, shoot down Jerries? Too easy. Go to the French coast, fly up and down slowly at 500ft for an hour or two. They'll come up. Shoot a couple down, come home. No trouble. Barman, a flock of beers!" All this was delivered with such a serious air that for a little while it was taken to be serious advice…"

* * * *

The hazards of Air to ground Gunnery; Ian Dick, Mosquito Pilot 1949

The following is a somewhat over dramatised and imaginative account of Mapplebeck's escape as published in one of London's picture papers under the title "Air Stories by a Pilot":

"It was in Germany that we flew. 1949 had been a glorious summer and the island of Sylt had been much enjoyed for its nude sunbathing by the Auxiliary squadrons from the UK! We, the permanent residents, only went up for our APC (Armament Practice Camp) when the weather was lousy-and the sun-worshippers had exchanged their sun-oil for anti –freeze.

There had been a party celebrating some insignificant event as parties usually do, like a General Election, and we had been late to bed. After an hour in bed and two hours trying to wash, shave and dress, we oozed down to the hangar for an ear-shattering attempt at Air to Ground Gunnery. The Boss had kindly kept the altitude down for the sake of our throbbing heads.

Ernie taxied out with Ken, not his usual Nav, to try his hand at this dangerous hobby. A Canadian and an ex-wartime PR Mossie pilot, we felt it was reasonably safe to let him loose with loaded 20mm guns.

The targets were sited at a spot on the southern bulge of the island across from the causeway that joined it to the mainland, Morsum, with the sea behind them and a large muddy pond in front-I suppose the idea being that if you missed the targets there was nothing else to hit.

Ernie made his first lightning dart at his target-and missed. After a couple more tries he decided he'd get really close to make sure of putting at least something through the canvas. At the last second he fired-and undershot by yards throwing up a veritable barrage of thick oozing mud-which he flew straight into.

Ken, looking through the side window which was the only part of the cockpit roof that afforded any visibility at all, assured him that

they were still safely at fifteen feet altitude, and wouldn't it be a good idea if they climbed up a bit in case the seagulls were standing up? The windscreen was totally obscured but Ernie remembered that the kite was fitted with screen wipers. A search round located the switch and the wipers dutifully "zip zak zip yakked" across the glass-leaving a well defined arc of paler opaque brown. But there was a clear patch, 6 inches wide and half an inch high-where the blade had been before he turned it on.

He headed back to the airfield just a couple of miles to the north with
"Your starboard engine's getting hot" from Ken.
Ah-there's the field…
"Your engine's getting hotter."
into the circuit…
"It's nearly boiling."
and landed.

The machine looked as though it had been painted with matt brown camouflage all over, including the cockpit-and the radiator flange were beaten flat!

His score was disallowed…"

* * * *

Operation WARDEN – Sqn Ldr Jim Fernie's ejection

"On 23rd November 1993, 6 aircraft from IV (AC) Squadron launched from their base in Incirlik, Turkey, on a reconnaissance mission tasked over Northern Iraq. The weather for the trip was marginal for medium level operations, with extensive cloud cover between 10,000ft and 25,000ft. During the air-to-air refuelling portion of the trip, Sqn Ldr Fernie's aircraft suffered an engine surge. As he descended in cloud he made several unsuccessful attempts to relight the engine. With options and height running out, he ejected into the rugged mountainous area north of Sirsenk, Iraq. Fortunately, despite landing on the side of a mountain, Sqn Ldr Fernie suffered only a twisted knee and was able to quickly take cover behind a large boulder.

As Sqn Ldr Fernie attempted to compose himself, he heard a thump behind him. Slowly, he turned around to see a fearsome looking Kurd armed with an AK-47 rifle and wrapped in belts of ammunition. Fearing the worst, Fernie raised his arms in surrender. At this the Kurd advanced swiftly towards him and gave him the biggest and most welcome hug he had ever received.

Soon after, the Kurd and his brother (subsequently discovered to be called Abdullah Mohammed and Mohammed Abdullah), helped Fernie aboard an American Special Forces Black Hawk helicopter, which flew him back to Turkey. The Kurds of Northern Iraq could not have been more friendly or helpful during the subsequent investigations into the accident; even the ejection seat, which had been "borrowed" by a local man to use as a chair, was returned. As a reward the local Kurdish village was presented with a herd of pregnant goats, water damming and purification equipment and the ubiquitous Squadron aircraft print signed by all the IV (AC) Squadron pilots."

* * * *

Operation DELIBERATE FORCE

IV (AC) Squadron had the honour of proving the GR7 in combat during Op DELIBERATE FORCE in 1995. Detailed below are two of the many stories that came out of that operation:

"It all happened quite suddenly – we only had a day of warning that the air strikes were to go ahead. We had one Jaguar equipped with a TIALD pod, which had arrived from the UK 29 August. The Boss, Wg Cdr Chris Moran, arrived from Laarbruch with 2 other pilots in 3 jets the morning that the first missions were getting airborne, 30th August 1995. The second Jaguar also arrived that morning. Two attack packages were flown that day – the first 6 ship, led by Sqn Ldr Andy Suddards the Exec, went according to plan, although it was 2 QFIs who had the honour of spiking and dropping the first Laser Guided Bombs (Flt Lts Blake and Linney). On the second package Sqn Ldr Stuart Atha and Major Mike Hile the USMC exchange officer, were tasked as mission commanders of a multi national package. Twenty-four British, French and American aircraft were tasked against targets surrounding Pale, a Bosnian Serb stronghold. When the IV(AC) Sqn aircraft approached Pale the scene was reminiscent of World War 2 footage with most of the storage buildings and

factories surrounding the town already ablaze. As Sqn Ldr Atha prepared for his bombing run, his wingman Major Hile called for him to break and drop decoy flares. Looking over his shoulder as he spoke, Atha could see two surface to air missiles arcing towards him. Fortunately the first missile detonated close to the flares, some 2000ft from the aircraft, and the second missile continued to fly straight between the two aircraft. The two shaken pilots then reformed formation and re-attacked the target from a different direction. Although Maj Hile successfully destroyed his target, Sqn Ldr Atha was less fortunate; his bombs stayed on the aircraft due to a wiring problem in the pylon. Two French aircraft were even less fortunate. After attacking their target they were shot down by missiles fired from the same area as those fired against the IV(AC) Sqn aircraft. The two French aircrew survived and were released four months later.

"After this incident a friendly rivalry grew between the French and British Sqns. This was best exemplified by the "race" to be the first to destroy an enormous mast north of Tuzla. Both nations had made attempts but had been thwarted by the weather. However on 7th September 1995 the weather was beautiful and it was IV (AC) Squadron's turn against the mast. To ensure success four aircraft armed with a mixture of slick and laser guided bombs flew on the mission. These aircraft were joined by a fifth Harrier that was re-tasked in the air to join the formation.

"Unfortunately it was rather late in the afternoon and only one pass was allowed against this prestigious target. Therefore all five aircraft dropped their bombs in very quick succession. Unsurprisingly, the mast was successfully downed. As the Squadron aircraft also carried reconnaissance pods, a photograph of the mast lying on the ground was sent to the French detachment. 7th September 1995 will not only be remembered as the day that we got one over the French, but also the first and only day that every combat ready member of IV (AC) Squadron successfully dropped bombs in an operational environment."

* * * *

Operation TELIC

The Junior Pilot:

Flt Lt Mike "Smutty" Rutland was tasked against a suspected Surface to Surface Missile, which Saddam Hussein was using to target ground units in Kuwait, as well as attempting to strike Kuwait City itself. The incident drew much interest by the media, who renamed him "the Saviour of Kuwait City" as a result of his efforts!

"The Boss and I were flying together as a pair, and as we arrived on task just east of Baghdad we were told that we were being re-tasked against a suspected Surface to Surface Missile (SSM) located at Tallil. We hot footed it back to Tallil, getting all the relevant information on the way. On arrival I was acting as cover, listening to the talk-on and looking out for possible launches. After about 10 minutes of the Boss searching, he tried to get my eyes on too. I spotted the vehicle just before it started to move, but once it was driving around it was easy to determine that we were looking at the same target. Although a guy on the ground was providing the talk-on, he was not in the area; I suspect he was receiving a live link from

the Predator Unmanned Air Vehicle. We held for a frustrating 10 minutes, watching the vehicle moving around in the desert below, waiting for authority to engage the target. The first run we did had to be aborted as the Forward Air Controller, for some reason, removed the authority to fire. After finally getting permission to engage the target again, the Boss informed me that I would be the shooter. For a second I was nervous, hoping I wouldn't mess the engagement up, but my training quickly kicked in and I set up for the mandatory Line Of Attack that we had been given, and rolled in on the attack. After locking up the vehicle in my sights I fired the Maverick and hit the target. A mobility kill was called over the radio, but we were then asked to re-attack to ensure a kill kill. My second run was unsuccessful as the Maverick locked onto burning shrapnel just short of the target, and was seen to impact short by 10m. The Boss then moved in for the final attack and dropped a PWII on the vehicle, completely obliterating it."

The Junior Engineering Officer:
Flt Lt Daniel Miller was our youngest J Eng O at Al Jaber. His recollection concerns the first air raid warning.

"The first Air Raid Red warning came whilst I was in a meeting with the Sqn management team. It was the feeling that IRAQ was launching a pre-emptive strike against us, that the war had started early and not on our terms. The dread of the situation, filled with a fear of the unknown, of death, a feeling of angst about the uncertainty of what we were doing; of whether it was right to do (right to attack another country). All these feelings mixed with a flash of excitement (which shouldn't have been there) in 3 seconds, the time it took me to don my respirator and then find my IPE. Adrenaline pumping, running to the HAS for protection. A HAS with a bloody great hole in the middle, from an LGB in the last Gulf war. Safe?"

The Boss:
Wg Cdr Andy Suddards who as OC IV(AC) Squadron also found himself as Det Cdr, Harrier Force South comprising elements of 1(F) and all of IV(AC) Squadron writes:

"My second time flying in the area to the West of Baghdad, the area 'formerly known as the Supermez'. A clear night, stars in the sky, looking at the City through the green of the NVGs. AAA seemed to be everywhere, some of it quite far away~30 miles, some of it very close, probably directed from the noise we were making, puffs of explosions around and above us, called (helpfully, but rather superfluously!) by my wingman Prov. I remember thinking that I had seen the picture somewhere before – for the first Gulf War by the CNN cameras based in Baghdad! However this time it was no TV show, it was for real and it was happening here outside the cockpit and all around me right now. It was all rather surreal."

* * * *

Op HERRICK 'Scramble' – Flt Lt Em Rickards

No day is ever the same in Afghanistan. Past are the pre-planned missions of Op TELIC and Op ALLIED FORCE, with detailed routes, maps and target study. Instead the Harriers of 1(F), IV(AC) and 800(NAS) Squadrons typically launch into the brilliant blue skies (and occasional dust storms!) above Kandahar, never quite sure what mission awaits them. Often a recce sortie or CAS mission will be superseded by a 'Troops in Contact' (TIC) situation on the ground that requires immediate assistance to turn a potentially life-threatening situation into a more controlled or safer environment.

"The'Scramble! Scramble! Scramble!' reverberates throughout the ops building. For an instant people freeze, all eyes on the 2 pilots, g-suits already on, who leap from their chairs in reflexive reaction. Without a word they dash for the door, pulses racing; they grab their combat waistcoats and keys and jump into the car parked in readiness outside. As they hurtle down the taxiway to their primed jets, a frenzy of activity commences at either end of the runway: in ops, crucial information about the mission is being collated to pass to the pilots on check-in; at the line, when the 'GCAS Bell Run Like Hell' gong is struck, engineers run to the jets, seemingly oblivious of temperatures hitting 50degC.

Safety pins are removed in readiness for the pilot to hit the start switch the moment he gets into the cockpit. A few minutes later, the jets burn off down the runway with the sole aim of getting to the troops in trouble as quickly as possible, be they British, American, Canadian, Dutch, Afghan or any other friendly coalition partner. The mission has changed, technology has advanced, but it is surely reminiscent of the fighter pilots of World War II running across the grass not knowing who or what they faced.

The GCAS pair has arrived in Sangin, where they have been tasked. A Joint Tactical Air Controller (JTAC) of 3 PARA fills them in on the ground situation: they are taking RPG, mortar and small arms fire onto their position, from the North. It has been relentless now for over 20 mins and their return fire is having little effect. Quickly the pilots commence circling overhead; looking down they can see dust and smoke kicked up by the fire and fall of weapons. The JTAC on the ground calmly begins to talk the pairs' eyes onto the exact target location; in the background the ack-ack of the return fire is clearly audible, as are the shouts of command and communication. The smoke on the ground thickens slightly. The pilots are now eyes-on-target and swiftly go through the process of selecting the most appropriate weapon and checking that all systems are set up to deliver the most accurate attack possible. The striker turns in, onto his attack run; the cover stays overhead in over-watch. Final clearances are given by the JTAC, and the weapon is released. As it falls to the ground, time seems to slow and heart rates rise. Then, with a resounding boom on the ground, but in complete silence to the watching pilots, the weapon impacts with a momentary flash, and then a huge mushroom of smoke and dust. 'Direct hit' is called by the JTAC, followed a couple of minutes later by the indication that they are no longer taking fire. The pair remains overhead conducting battle damage assessment and maintaining support. However, eventually, with fuel reserves running low, they reluctantly leave the Brits on the ground and turn for 'home'. On occasions they might now be re-tasked to a new TIC via a tanker, but today there is no follow-on CAS, so back to base, time for the armourers to reload the weapons, the engineers to refuel the jets, and the pilots to return to ops to debrief and return to their readiness, waiting for the next call.. 'Scramble! Scramble! Scramble!'"

* * * *

Op HERRICK: Utilising Joint Force Harrier in Afghanistan's Counter Insurgency Campaign – Wg Cdr Harv Smyth OC IV(AC) Sqn Jan 10

"Harriers have given me excellent support throughout this tour…they give the ground commander an accurate suppression and neutralisation effect. Overall, the pilots are the key. When I hear a British pilot's voice it definitely puts me at ease..."

29 Mar 2009
C S H HEWITT
Capt RA
'OPAL 83'
Kajaki Dam

The Royal Air Force has had Combat Air assets, in the form of Joint Force Harrier and most recently the Tornado GR4 Force, in Afghanistan supporting Operation HERRICK since September 2004. The role of the Harrier has been to provide air support across the *piste* of Afghanistan's Counter Insurgency (COIN) operations. The aircraft are tasked daily by the Combined Air Ops Centre situated in the UAE, to deliver air effect for the whole of ISAF, not just the British troops located in and around the Helmand Valley. Moreover, and this is where the first major shift in thinking regards utilisation of fast jets occurs, the fast jet tasking is not just about bombing and firing rockets, colloquially the 'kinetic' end of the spectrum of effect, but about using Combat Air's agility and adaptability to deliver a precise *tuneable* effect, proportionate to the requirements of the scenario.

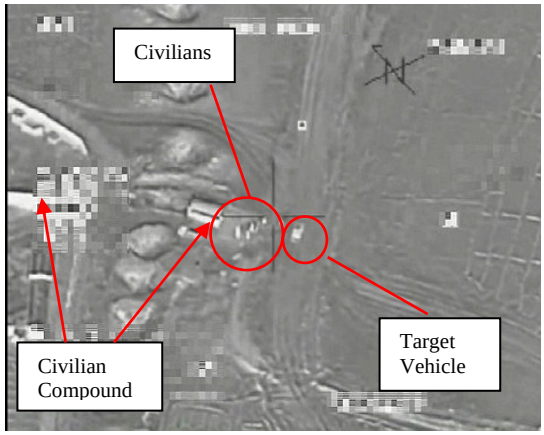
COIN operations are by far one of the most difficult arenas within which to appropriately utilise Combat Air assets; operations of this type are not only difficult but also incredibly delicate. Make no mistake, at present there is a fight to be fought in Afghanistan and we must continue to employ both kinetic and non-kinetic means to defeat the insurgency and provide security and stability for the local population; however, we must always remember that we are in Afghanistan to help rebuild a country, and with this in mind, we have more to gain from letting an insurgent escape than we do by engaging him with the risk of civilian casualties or destruction of an Afghan's property or home. This is, and always will be, the dichotomy faced by military practitioners during a COIN campaign. Without a doubt in Afghanistan, Combat Air provides ISAF with a battle winning strategic advantage. However, and this is the 'delicate' part of the conundrum, Combat Air can also very quickly become our strategic vulnerability, especially regards single kinetic effects causing mass civilian casualties. These facts are widely acknowledged within the RAF and hence, the use of proportionality, requisite restraint, utmost discrimination and a constant appreciation of the potential for civilian casualties and property damage are the key tenants of employing Combat Air in Afghanistan. The question every Harrier pilots asks before releasing ordnance of any kind is not 'could I drop this weapon' (ie am I within the ROE) but rather, 'should I drop this weapon?'

Throughout the 5 years of supporting Op HERRICK, the Harrier's capability has exponentially developed and improved. Whilst the aircraft had hitherto proved itself as a robust Close Air Support and Air Interdiction platform in the Kosovo War and latterly in Op TELIC, the second Iraqi War, the early years of its use in Afghanistan were frustrated by inappropriate equipment and sensors to conduct COIN ops. Today however, the jet is arguably a world-beater in this arena. From a non-kinetic perspective each aircraft now carries an advanced targeting pod in the form of SNIPER, from which footage can be data-linked to the ground in real-time; alongside this pod are carried 2 other podded systems, the Joint Reconnaissance Pod (JRP) which takes high definition digital imagery and

the TERMA Defensive Aids pod which offers countermeasures against all threats in theatre. Furthermore, each pilot is fitted with a Helmet Mounted Cueing System (HMCS), which employs a holographic aiming site in the pilot's helmet visor to either guide his eyes to a point of interest or, be used by the pilot to designate a point of interest. With a view to delivering graduated kinetic effect, each aircraft carries CRV-7 rockets, which can be fired individually, or in multiples up to a total of 38, and 2 Paveway IV 500lb GPS or laser guided bombs. This full suite of 'soft and hard' capability affords each Harrier pilot the ability to practice 'graduated response through the delivery of tuneable effect' therefore allowing him flexibility of capability to practice proportionality, restraint, discrimination and above all, precision.

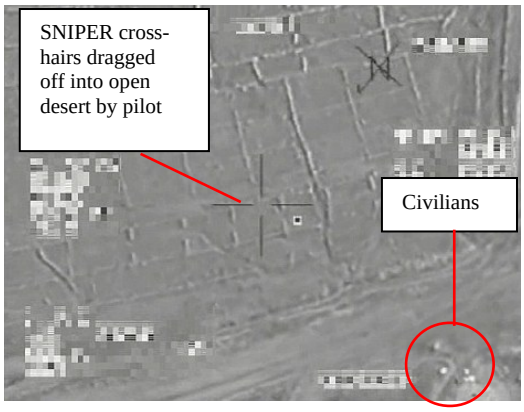
Of all Harrier weapons expended in Afghanistan, most were employed in self-defence scenarios where there was imminent threat to the lives of friendly forces. When ordnance is required, Harrier pilots use a graduated response, perhaps firing a single rocket over the heads of the enemy into a blank area of desert, in an attempt to have the desired effect which is generally to get the enemy to disengage from their attack. Should pilots be forced to employ heavier ordnance such as a precision bomb, then today's technology allows for incredible discrimination and precision. The Harrier's newest bomb, the Paveway IV, can have its fuse and flight path reprogrammed from the cockpit therefore allowing exact weapon effects to be achieved; this can be used to mitigate against potential collateral damage. More importantly, unlike many other weapons such as artillery, Harrier pilots retain ownership of these weapons until they impact the target because they can be laser guided: if during the weapon's time-of-flight to the target something untoward happens, the SNIPER pod's laser can be used to guide the bomb away, into an open and uninhabited area, exercising discrimination throughout the whole attack from identification of target, to impact of weapon, to bomb damage assessment. Obviously, this 'whole targeting cycle' cannot be completed by land-based weapon systems like artillery or mortars.

As an illustration of this point, previously classified video footage from a Harrier over Afghanistan shows the pilot 'steering' 2 x laser-guided bombs in mid-flight away from a crowd of villagers who suddenly appear next to his target. The pilot had dropped a pair of 500lb Paveway IV bombs from thousands of feet above Helmand Province, and was guiding his weapons with laser from his SNIPER pod towards a moving car which contained a 'high value' Taliban leader. But with the bomb plunging towards the ground and set to hit the car in less than 20 seconds, the pilot watched as his SNIPER pod screen showed the vehicle driving into a village and stopping next to a cluster of local civilians, seemingly to ask for directions – the civilians show up clearly as small white 'hot' shapes.

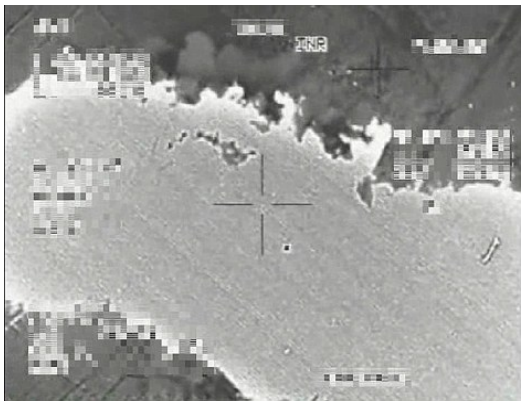


The Harrier pilot, serving with IV(AC) Squadron, held a hurried conversation with his Forward Air Controller and took the split-second decision to break off the attack. With just moments to go before the bomb's impact it was too late to disarm the warhead, but he successfully shifted the laser aiming point - which guides the bomb - away into a nearby field, just far enough to save the lives of the civilians. They never knew what a narrow escape they had had, as the massive explosion rocked the village, but left them all alive and with no damage to their property. In this recent attack, the pilot showed immense skill, because shifting the aim point too fast can cause the falling bomb to break contact with the laser spot and lose all guidance. Conversely, moving the aim point too

slowly would have meant the bomb exploding within lethal range of the crowd of civilians.



The above snap shot is taken just before weapons impact



If it were not for the support provided by Combat Air, such as Harrier, all ISAF land forces would be suffering markedly more casualties; in fact one could argue that these casualty figures would be wholly unacceptable by both the Government and the UK populace as a whole. Fast air is a critical enabler for Land Forces' operations in Afghanistan because it removes risk from their mission and provides a precise and measured punch when required: a punch that far outmatches that of the insurgent. However, to remain credible and relevant, this punch must continue to be utilised with proportionality, restraint and the utmost discrimination. This is what the Harrier Force does best.

GATE GUARDIAN

IV(AC) Squadron

The Gate Guardian

Hawker Hunter F.6A XE606 presently sits as a gate guardian in front of the Sqn Hangar at RAF Cottesmore. The aircraft is similar to the marks of Hunter flown by No IV(AC) Squadron between 1955 and 1960. It was inherited in 1984 at Laarbruch when 20 Squadron disbanded as a Tornado unit and saved it from its intended fate as a Battle Damage Repair specimen. The airframe itself has flown with 54 Sqn; 65 Sqn; 74 Sqn; 92 Sqn and in 1965 it joined 65 other Hunters as part of Chivenor's 229 OCU. Later it joined No1 TWU fleet at Brawdy. Whilst at Brawdy it was flown and displayed by our former 'Uncle', Sqn Ldr Keith Skinner.

AFFILIATIONS

IV(AC) Squadron

4 Regiment Army Air Corps

During autumn 2001, IV (AC) Squadron became affiliated to 4 Regt Army Air Corps (AAC). Originally formed in 1969 as the 4th Division Aviation Regiment, it was finally consolidated as 4 Regt AAC in 1983 and consists of 654, 659 and 669 Sqns. Since Sept 1999 the Regt has been part of the elite 16 Air Assault Brigade.

The Regt operates the Gazelle, the TOW armed Lynx Mk 7 in the anti-armour role and the Lynx Mk 9 to provide utility support on the battlefield. In addition, the formidable Apache Attack Helicopter will be supplementing the inventory in the near future. The Regt gained the distinctive honour of being the only AAC unit to deploy to the Gulf War in 1991. Yet another milestone is the support given during the Kosovo campaign of 1999. IV (AC) Sqn is proud to be affiliated to such an illustrious Regt and the affiliation puts the "Army" back into the "Army Cooperation" that IV (AC) Sqn has been such a part of.

Guild of Air Pilots and Air Navigators

GAPAN is a City of London Guild which aims to establish and maintain the highest standards of air safety through promotion of good airmanship among pilots and navigators. The present Grand Master is Mr Duncan Simpson OBE. As a test pilot in 1964/5 with the Kestrel Tripartite Evaluation Squadron at RAF West Raynham, Duncan Simpson was instrumental in developing the aircraft we know as the Harrier.

444 Sqn (Shoreditch) Air Training Corps

444 (Shoreditch) Squadron has a long and distinguished history within the London Borough of Hackney. Most notably are the squadron's successes over the years as winners of the Lees Trophy (top UK squadron), Dacre Sword (best male cadet) and the Dacre Broach (best female cadet). The squadron has also been a Region and Wing Lees Trophy representative more than 15 times.

1st Queens Dragoon Guards

1st The Queen's Dragoon Guards is a Formation Reconnaissance Regiment normally based in Sennelager (near Paderborn) in Germany as part of 20 Armoured Brigade. The Regiment was born on 1 January 1959 as a result of the amalgamation of the 1st King's Dragoon Guards and The Queen's Bays (2nd Dragoon Guards) both of which were formed in 1685. 1st The Queen's Dragoon Guards is the senior Regiment of the Line in the Army.

The Squadron's affiliation was established in February 2009 as a result of the support to the Helmand Task Force provided by the Squadron during its final deployment to Afghanistan from December 2008 until April 2009.

SQUADRON STANDARD

IV(AC) Squadron

The Standard is awarded by order of the Sovereign when a squadron has completed twenty-five years of service in the Royal Air Force, the Royal Auxiliary Air Force, the Royal Flying Corps or the Royal Naval Air Service. The original Standard of No IV(AC) Squadron was presented by Marshal of the Royal Air Force Sir John Slessor GCB DSO MC on 20th November 1953.

The following is an extract from the Squadron diaries (F540) in 1953.

"Friday 20th November 1953; a day destined to be perhaps the most colourful in the history of No 4 Squadron. It is the climax of forty-one years of continuous service, of difficulties overcome and achievements gained. It is not surprising then that everybody from the OC to the lowliest airman is on tenterhooks and only wishing that the parade had been successfully completed. After ten days of continuous drill we had reached a satisfactory standard and the only possibility that remained was that we should have a relapse, unlikely though it may be, and above all that the weather would be kind to us. The Standard Bearer was perhaps the most concerned over this as from his point of view the slightest breeze would prove difficult and anything approaching the Beaufort scale would be embarrassing if not hazardous. Despite the gloomy forecasts from Group (our own Met office was more encouraging) the parade commenced on schedule at 1130. The parade ground itself was surrounded on three sides by Vampire aircraft, armoured cars and Bofors guns representing all the fighting branches at RAF Jever, and on the fourth side the Saluting Base with copious stands behind. The latter seated many illustrious persons, among them being old members of the Squadron, four of whom had been OCs and many others who had Squadron connections.

The parade began in earnest when Marshal of the Royal Air Force Sir John Slessor (a former Officer Commanding of IV (AC) Squadron) arrived to present the Standard. Astute observers, guests from our brother services, would have been casting critical eyes on the performance of the Squadron. Let it be said that we came through with colours flying.

Afterwards, having marched the Standard into the Officers' Mess, we attended a formal lunch at which speeches were made and compliments paid. At approximately 1500 Sir John departed and we joined the airmen and NCOs in a Squadron party befitting the occasion."

The Squadron received a replacement Standard on 6th July 1984 at RAF Gutersloh from the Commander in Chief RAF Germany, Air Marshal Sir Patrick Hine KCB FBIM who, in 1974, had commanded the RAF Germany Harrier Force whilst he was Station Commander at RAF Wildenrath.

IV(R) Squadron will receive a replacement Standard in 2010.

OPERATING BASES

IV(AC) Squadron

DATE	BASE
16th September 1912	Formed at Farnborough
14th June 1913	Netheravon
21st July 1914	Eastchurch (C Flt det Netheravon)
13th August 1914	Amiens (C Flt det Swingate Down)
16th August 1914	Maubeuge
24th August 1914	Le Cateau
25th August 1914	St-Quentin
26th August 1914	La Fere
28th August 1914	Compiegne
30th August 1914	Senlis
31st August 1914	Juilly
2nd September 1914	Serris
3rd September 1914	Touquin
4th September 1914	Melun
7th September 1914	Touquin
9th September 1914	Coulommiers
12th September 1914	Fere-en-Tardenois
6th October 1914	Amiens
8th October 1914	Abbeville
9th October 1914	Moyenneville
12th October 1914	St-Omer (dets Poperinghe, Dunkirque, Bailleul)
21st April 1915	Bailleul (Town Ground)
20th July 1915	Vert Galand
5th August 1915	Baizieux
7th November 1915	Allonville
February 1916	Baizieux
February 1916	Marieux
27th March 1916	Baizieux
28th February 1917	Warloy
30th May 1917	Abeele
18th November 1917	Chocques
8th April 1918	Treizennes
16th April 1918	St-Omer
18th September 1918	Ste-Marie-Cappel
21st October 1918	Linselles
16th November 1918	Ascq
13th February1919	Northolt (Reduced to cadre)
20th September 1919	Uxbridge

30th April 1920	Re-established at Farnborough (dets Stonehenge, Aldergrove, Baldonnel)
26th September 1922	En-route to Turkey, HMS *Ark Royal* and HMS *Argus*
11th October 1922	Kilya Bay
11th December 1922	Kilid el Bahr
5th September 1923	En-route UK
18th September 1923	Farnborough
16th February 1937	Odiham
24th September 1939	Mons-en-Chaussee
3rd October 1939	Monchy-Lagache (det Ronchin)
16th May 1940	Ronchin (det Aspelaere, Clairmarais)
21st May 1940	Clairmarais (det Ronchin)
22nd May 1940	Dunkerque (det Detling)
24th May 1940	Ringway
9th June 1940	Linton-on-Ouse
27th August 1940	Clifton
1st March 1943	Barford-St-John
5th March 1943	Cranfield
8th March 1943	Duxford
12th March 1943	Clifton
20th March 1943	Bottisham
16th July 1943	Gravesend
7th August 1943	Odiham
15th September 1943	Funtington
6th October 1943	Odiham
14th November 1943	North Weald
30th November 1943	Sawbridgeworth
3rd January 1944	Aston Down
3rd March 1944	Sawbridgeworth
4th April 1944	Gatwick
27th June 1944	Odiham (det B.10/Plumetot)
16th August 1944	B.4/Beny-sur-Mer
1st September 1944	B.27/Boisney
6th September 1944	B.31/Fresnoy-Folny
11th September 1944	B.43/Fort Rouge
27th September 1944	B.61/St Dennis-Westrem
16th October 1944	B.70/Deurne
23rd November 1944	B.77/Gilze-Rijen
8th March 1945	B.89/Mill
17th April 1945	B.106/Twenthe
30th May 1945	B.118/Celle
31st August 1945	Disbanded
1st September 1945	Reformed at Volkel (No 605 Sqn renumbered)
13th September 1945	Gilze-Rijen

8th November 1945	Gutersloh
4th February 1946	Sylt
17th February 1946	Gutersloh
2nd June 1946	Manston
12th June 1946	Gutersloh
27th June 1946	Handorf
12th August 1946	Gutersloh
6th September 1946	Sylt
9th October 1946	Gutersloh
5th August 1947	Sylt
22nd August 1947	Gutersloh
13th November 1947	Wahn
1st March 1948	Gatow
31st March 1948	Wahn
1st May 1948	Lubeck
5th June 1948	Wahn
14th August 1948	Lubeck
25th August 1948	Wahn
19th September 1948	Celle
10th July 1950	Wunstorf
1st March 1952	Jever
30th December 1960	Disbanded and reformed at Gutersloh (79 Sqn renumbered)
16th March 1961	Jever
6th September 1961	Gutersloh
30th May 1970	Disbanded
1st September 1969	“UK Echelon” formed at West Raynham from a nucleus of 54 Sqn
13th March 1970	Wittering
30th September 1970	Joined main Sqn at Wildenrath
1st June 1970	Reformed at Wildenrath
4th January 1977	Gutersloh
November 1992	Laarbruch
12th April 1999	Cottesmore
31st March 2010	Disband
1st April 2010	Reform at Wittering as No IV(Reserve) Sqn

OPERATIONAL AIRCRAFT

IV(AC) Squadron

Cody V	Sep 12
Breguet Biplane	
BE4	
Farman Longhorn	
Bristol GB75	
BE1	
Caudron GII	
Farman Shorthorn	
BE2	
BE2A	
BE2B	
BE2C	
Sopwith Tabloid	Apr 15-May 18
Martinsyde S.1	
Voisin LA	
Brisyol Scout	
Caudron G III	
Morane H	
BE2D	
BE2E	
BE2G	
RE8	May 18-Sep 19
Bristol F 2.b	Apr 20-Oct 29
Armstrong-Whitworth Atlas	Oct 29-Jan 32
Hawker Audax	Dec 31-Jul 37
Hawker Hector	May 37-Jan 39
Westland LysanderII	Jan 39-Sep 40
Westland Lysander III	Sep 40-Jun 42
Westand Lysander IIIA	Mar 41-Jun 42
Curtis Tomahawk IIA	Apr 42-Oct 42
North American Mustang I	Apr 42-Jan 44
De Havilland Mosquito XVI	Jan 44-Jun 44
Supermarine Spitfire XI	Jan 44-Aug 45
Hawker Typhoon FR.1B	Oct 44-Feb 45
De Havilland Mosquito FB.6	Sep 45-Jul 50
De Havilland Vampire FB.5	Jul 50-Dec 53
De Havilland Vampire FB.9	Nov 53-Apr 54
Canadair Sabre F.4	Mar 54-Aug 55
Hawker Hunter F.4	Jul 55-Feb 57
Hawker Hunter F.6	Feb 57-Feb 60
Supermarine Swift FR.5	Jan 61
Hawker Hunter FR.10	Jan 61-May 70
Hawker Hunter FGA.9	Sep 69-Mar 70

Hawker Siddeley Harrier GR.1	Apr 70-Jun 72
Hawker Siddeley Harrier GR.1A	Feb 72-Aug 76
Hawker Siddeley (BAe) Harrier GR.3	Mar 76-92
BAE SYSTEMS Harrier GR.5/7	1992 - 2007
BAE SYSTEMS Harrier GR.9/9A	2007-

Non-Operational Types

Vickers Vespa
DH.56 Hyena
Bristol Bloodhound
DH Moth Minor
DH Tiger Moth
Miles Magister
Percival Proctor I
DH Dominie
Miles Master III
Fairey Battle
Airspeed Oxford
Gloster Meteor T.7
Hawker Hunter T.7
Hawker Siddeley Harrier T.2
Hawker Siddeley Harrier T.2a
Hawker Siddeley (BAe) Harrier T.4
BAE SYSTEMS Harrier T.10
BAE SYSTEMS Harrier T.12

COMMANDING OFFICERS

Major G H Raleigh	Sep 12
Major H R P Reynolds	20 Jan 15
Major C A H Longcroft	29 Jan 15
Major G E Todd	29 Sep 15
Major V A Barrington-Kennett	17 Feb 16
Major T W C Carthew	13 Mar 16
Major L Jenkins	20 Sep 16
Major R E Saul	2 Dec 17
Major H B Prior	6 Jan 19
Sqn Ldr C H B Blount MC	30 Mar 20
Sqn Ldr J C Slessor	4 Apr 25
Sqn Ldr N H Bottomley	15 Oct 28
Sqn Ldr C E H Medhurst	6 Jan 30
Sqn Ldr S P Simpson MC	3 Jan 31
Sqn Ldr F M F West VC	4 Oct 33
Sqn Ldr E J Kingston-McLoughry	16 Jan 36
Sqn Ldr G H Loughman	10 May 37
Sqn Ldr I O B MacGregor	11 Jan 38
Sqn Ldr G P Charles	1 Sep 39
Sqn Ldr P L Donkin	7 Sep 40
Wg Cdr G P Charles	11 Sep 40
Sqn Ldr J F Maffett	29 Oct 40
Wg Cdr P H R Saunders	9 Dec 40
Wg Cdr G P Charles	17 Feb 41
Wg Cdr P H R Saunders	1 Jun 41
Wg Cdr G E MacDonald	20 Oct 42
Sqn Ldr R H D Riggall	15 Mar 43
Flt Lt A S Baker	17 Dec 43
Sqn Ldr R J Hardiman DFC	27 Dec 43
Sqn Ldr W Sheperd	15 May 44
Sqn Ldr C D Harris-St John DFC & Bar	21 May 44
Flt Lt B C Ogilvie	21 May 45
Wg Cdr R I Jones	14 May 46
Sqn Ldr B Everton-Jones	3 Nov 47
Sqn Ldr C P N Newman DFC	26 Sep 49
Sqn Ldr P G K Williamson DFC	9 Mar 51
Sqn Ldr P W Gilpin	7 Aug 53
Sqn Ldr J R Chapman	5 Dec 55
Sqn Ldr T J McEllhaw	2 Sep 57
Sqn Ldr R J Spiers	Feb 59
Sqn Ldr R J T Buchanan AFC	30 Dec 60
Sqn Ldr R J Bannard	7 Nov 61
Sqn Ldr W J Milner	Dec 63
Sqn Ldr E J E Smith OBE	Nov 64
Sqn Ldr A J Hopkins	7 Jun 67
Wg Cdr I K McKee AFC	1 Jun 70
Wg Cdr L A B Baker	28 Aug 72
Wg Cdr P D J Melaniphy	28 Oct 74
Wg Cdr A J Chaplin	17 Mar 77
Wg Cdr I C H Dick MBE AFC	11 May 79
Wg Cdr K G Holland AFC	27 Nov 81
Sqn Ldr P R Webb	29 Jun 82
Wg Cdr A J M McKeon AFC	31 Aug 82
Wg Cdr P V Harris AFC	24 May 85
Wg Cdr R W Gault	20 Nov 87
Wg Cdr M G F White	11 May 90
Wg Cdr D A Haward	16 Dec 91
Wg Cdr C H Moran MVO	8 Apr 94
Wg Cdr A S KirkPatrick	25 May 96
Wg Cdr K B McCann	26 Nov 98
Wg Cdr A J Q Suddards	9 Apr 01
Wg Cdr A Offer	21 Oct 03
Wg Cdr I W Duguid	17 Mar 06
Wg Cdr H Smyth DFC	1 Sep 08
Wg Cdr LS Taylor	1 Apr 10

AGE v SENIORITY

IV(AC) Squadron

Whilst 1(F) Sqn may be the oldest RAF Sqn and 3(F) Sqn the first to operate fixed wing aircraft, for history buffs here is an extract from the Air Historical Branch's official tables listing the seniority (not to be confused with age) of RAF Squadrons as at 1 March 2010:

	Current Ac Type	Current Location	Seniority (Yrs.Months)
II(AC) Sqn	Tornado	Marham	97.1
1(F) Sqn	Harrier	Cottesmore	97.7
IV(R) Sqn	Harrier	Wittering	97.6
3(F) Sqn	Typhoon	Coningsby	95.1
24 Sqn	Hercules	Lyneham	94.6
14 Sqn	Tornado	Lossiemouth	94.0

SQUADRON ORIGINS

IV(AC) Squadron