

RAF FIGHTER COMMAND PILOT

The Western Front 1939–42



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ILLUSTRATED BY GRAHAM TURNER

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Series editor Marcus Cowp

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RAF FIGHTER COMMAND IN THE INTER-WAR PERIOD

When war broke out in 1939, not only was the Royal Air Force (RAF) the ‘junior service’ among Britain’s military forces, but military aviation was still in its infancy, and the era before man-powered flight was still well within living memory. The RAF had been formed in the closing stages of World War I, when the Royal Naval Air Service and the Army’s Royal Flying Corps were amalgamated on 1 April 1918. The 59 fighter squadrons, or ‘scout’ squadrons as they were then known, were based along the Western Front, with a further 16 tasked with defending the home front. Immediately following the Armistice, the RAF, like the other services, experienced enormous cutbacks as the military stepped down from a war footing and the vast majority of service personnel returned to civilian life. The RAF was reduced from being the world’s largest air force at its inception with some 290,000 personnel and 3,500 aircraft, to losing 90 per cent of its manpower in the post-war demobilization. Peacetime strength was planned at less than 30,000 officers and other ranks and, by 1920, the RAF consisted of only 25 squadrons of all types of aircraft.

The vast war-weariness that swept across the nation in the post-war years permeated parliament, leading to the ‘Ten Year Rule’ guideline. This was adopted by the British Government in August 1919 and stated that the armed forces should be formed and maintained on the assumption that the British Empire would not be involved in any major wars for the next decade. This had as much a profound effect on the fighter arm of the RAF as on every branch of all three services – by the late 1920s technological development of fighter aircraft had slowed to such a pace that the vast leaps made during World War I were reduced to a mere trickle. The Sopwith Camels and SE5as that the RAF used at the time of the Armistice had been replaced only by Gloster Gamecocks and Bristol Bulldogs – open-cockpit biplanes with a similar armament and only marginally superior performance to their Great War ancestors. There had been some optimism for the fighter squadrons of the RAF in April 1923, when recommendations by the Steel–Bartholomew Committee on the Air Defence of Great Britain led to the establishment of a strength of 52 squadrons for Home Defence, 17 of which would be fighter squadrons. These would fall under the command of the Air Defence of Great Britain (ADGB) that was established in 1925 under Air Marshall Sir John Salmond. However, the ‘52 squadron plan’ was deferred. Originally to be implemented with ‘as little delay as possible’ in 1927, two years later it was judged far less urgent, and put back to 1935–36. Furthermore, the low number of fighter squadrons within the total plan indicated a clear and obvious preference for funding bomber squadrons. This was articulated in November 1932 during Stanley Baldwin’s famous speech to the House of Commons: ‘In the next war you will find that any town within reach of an aerodrome can be bombed within the first five minutes of war to an extent inconceivable in the last war. ... I think it well also for the man in the street to realise that there is no power on earth that can protect him from being bombed, whatever people may tell him. The bomber will always get through.’

Hampered by the global depression, the plan was delayed again in December 1929, and then again in May 1933, by which time the first stirrings of another major war were beginning as Adolf Hitler had been democratically elected in Germany only two months previously. By 1934 Germany was

emerging as a clear threat, with British Intelligence well aware of Hitler's rearmament programme in defiance of the limitations laid down by the Treaty of Versailles. Britain finally began plans for more effective rearmament, although for the RAF this would still be dominated by the bomber. In July 1934 the British government adopted the new 'Scheme A', which planned for 84 squadrons, 28 of which would be fighter squadrons, to be effective by March 1939. 'Scheme C' came into effect in March 1935, and called for 123 squadrons, including 35 fighter squadrons, to be in service by the end of March 1937. Critically, Scheme C also radically altered the entire command and control structure of the RAF to enable functional and administrative control over the newly proposed strength. The ADGC was dissolved and four new Commands were created: Training, Coastal, Bomber and Fighter.



Promoted to Air Chief Marshal in 1937, Hugh Dowding commanded RAF Fighter Command at the outbreak of the war. Here photographed as an officer in the Royal Flying Corps during World War I, Dowding had experience of front-line squadron command. (RAF Museum, PO23092)

Fighter Command became operational on 14 July 1936, under Air Marshal Sir Hugh Dowding at RAF Bentley Priory. Dowding had commanded No. 16 Squadron RFC on the Western Front during World War I, but after altercations with General Hugh Trenchard, overall commander of the RFC, Dowding spent the last two years of the war in Great Britain, albeit with the rank of brigadier. Dowding's new Fighter Command was made up of four groups – No. 11 and No. 12 (Fighter) Groups, No. 22 (Army Co-operation) Group and the Observer Corps. Dowding made two major contributions

to the development of Britain's aerial defence. First, he pushed for the development of modern, fast and heavily armed fighters to replace his force of soon-to-be-obsolete biplanes. Dowding engaged talks with Hawker and Supermarine about the need for a modern, fast, monoplane fighter effective to combat the worrying reports of world-class fighters and bombers being developed in Germany. He also developed Britain's network of fighter defence, which would become known as the 'Dowding System'. This involved heavy investment in Radio Direction Finding (RDF) – or radar as it would become known – partnered with the Observer Corps and command centres to build a picture of incoming threats before effectively controlling Fighter Command via raid plotting and radio control. Although he had his critics, Dowding's system would soon be proved absolutely integral to the defence of the entire nation.



Indicative of the technological standard of aircraft employed by the RAF throughout the inter-war period, the Bristol Bulldog was an open-cockpit, fixed undercarriage, two-gun biplane with a fixed pitch propeller. Still equipping squadrons into the 1930s, the Bulldog was similar in many respects to its Great War predecessors. (RAF Museum, PC71-66-83)

When Dowding took charge of the new Fighter Command he controlled a mere 18 fighter squadrons equipped with open-cockpit, two-gun biplanes. While the development of the fighter had still not come a long way since 1918, Britain was by no means alone in its stagnancy. While also rushing to develop a modern, monoplane fighter, in early 1936 Germany was employing similar types of aircraft to the RAF. All this was about to change for both nations; the eight-gun, monoplane Hawker Hurricane had carried out its initial test flight on 6 November 1935 and on 3 June 1936, the Air Ministry placed orders for 600 Hurricanes for Fighter Command. Only shortly behind chronologically was the Supermarine Spitfire, whose first prototype was flown on 5 March 1936 in response to Air Ministry Specification F.5/34, calling for an eight-gun, enclosed cockpit, retractable landing gear, monoplane fighter – the same call to arms which had spurred Hawker into action. F.5/34 demanded, in effect, a fighter to shoot down bombers. Speed, rate of climb and firepower were essential, where manoeuvrability was secondary. 'Scheme F' – approved on 25 February 1936, promised to deliver 12 squadrons to the RAF by the end of March 1939; 30 of these would be fighter squadrons, made up of 500 Hurricanes and 300 Spitfires.

However, while Fighter Command would use the Hurricane and Spitfire very successfully, also in development was the Bolton Paul Defiant. With the manoeuvre-based dogfights of the last war now considered a thing of the past, 'modern' fighters were developed to combat the main threat: bombers. The Defiant was a single-engine monoplane whose armament consisted of four machine guns in a turret behind the pilot's cockpit. In theory, this fighter had the punch to break up enemy bomber formations whose escort would not have the range to accompany them far over Britain. In practise, the

weight of the turret and gunner made the Defiant nothing short of a disaster as a day fighter. The Bristol Blenheim was another fighter aircraft which proved a sad reflection of the experience lost since World War I. A twin-engine aircraft that had started life as a private venture intended for Bomber Command, it was fitted with a tray housing four machine guns beneath the fuselage. The Blenheim 1F entered service with Fighter Command as a long-range fighter in December 1938, in an era when manoeuvrability was thought to be secondary to speed and firepower.

In the build-up to war in the late 1930s, the RAF could at least draw some consolation from the almost last-minute push to modernize its aircraft: the Spitfire and, to a slightly lesser extent the Hurricane, were undoubtedly a match for Germany's formidable Messerschmitt Bf 109 fighter. However, while the RAF would have the modern aircraft and first-class aircrew training to go to war, doctrine and experience were sadly lacking. With the outbreak of the Spanish Civil War in July 1936, Germany set up the Condor Legion, a unit that provided military aid to the Spanish Nationalist rebels. The involvement of the Condor Legion in the Spanish Civil War could almost be considered a dress rehearsal for the blitzkrieg that would sweep across Europe in 1939. In Spain the pilots of the Condor Legion learned the value of carpet-bombing, terror-bombing, air support for lightning-fast advances by ground forces, and the role of the fighter aircraft in all of this. Unfortunately for the RAF, while the Luftwaffe was learning by trial and error in Spain, British fighter pilots could only rely on old, outdated and untested tactics in air-to-air combat. Furthermore, although British pilot training was among the best in the world, it was still no substitute for the actual combat experience that many German pilots were gaining. Pilots who had actual combat experience in World War I still served at various levels of Fighter Command, but the vast majority of squadron commanding officers were men who had only ever flown in peacetime.



One of the most vital aids to the pilots of RAF Fighter Command in the defence of Britain was RDF, or Radio Direction Finding. Set up in a defensive perimeter codenamed 'Chain

Home', RDF was effectively an early network of radar stations whose detection of incoming enemy aircraft would be plotted at the main operations room of Fighter Command HQ at Bentley Priory. (RAF Museum, PC95-111-2)



Eager to see his pilots equipped with high-performance, eight-gun monoplane fighters, Dowding welcomed the introduction of the Hawker Hurricane, the first modern aircraft to enter service. (RAF Museum, PC98-173-5884-11)

With war considered by most to be a grim and unavoidable eventuality, reservists were mobilized into the RAF in August 1939. The RAF Volunteer Reserve had been created in 1936 to provide training for some 800 pilots per year. Although these pilots did not have the benefit of continuous experience in front-line fighter aircraft afforded to their regular RAF peers, they added an absolute pivotal strength to Fighter Command in the days leading up to the outbreak of hostilities, and were better trained cadre than many of those who would be rushed through training during some periods of the war.

When Britain declared war on Germany on 3 September 1939, Fighter Command was able to muster a strength of 39 squadrons; the most recent assessment by the Chief of Air Staff estimated that the absolute minimum number of fighter squadrons necessary for a coherent defence of Britain was 50. There were 30 squadrons of single-engine fighters available, consisting of some 570 Hurricane Spitfires, Defiants and Gladiators, with 659 pilots. Another seven squadrons of Blenheims bolstered the numbers, with 107 crews available. Finally, two squadrons of ageing Gauntlet and Hind biplanes were still on the books. With single-engine fighters set to form the bulk of the nation's defence

perhaps the most worrying statistic at the outbreak of the war was the comparatively low number of pilots in relation to the number of available airframes. Fighter Command entered World War II with poor tactics and doctrine, no current combat experience and a poor strength of truly modern aircraft but, thanks to Dowding and other far-sighted individuals, Fighter Command was significantly stronger than it would have been under the guidance of less capable men.

RECRUITMENT AND TRAINING

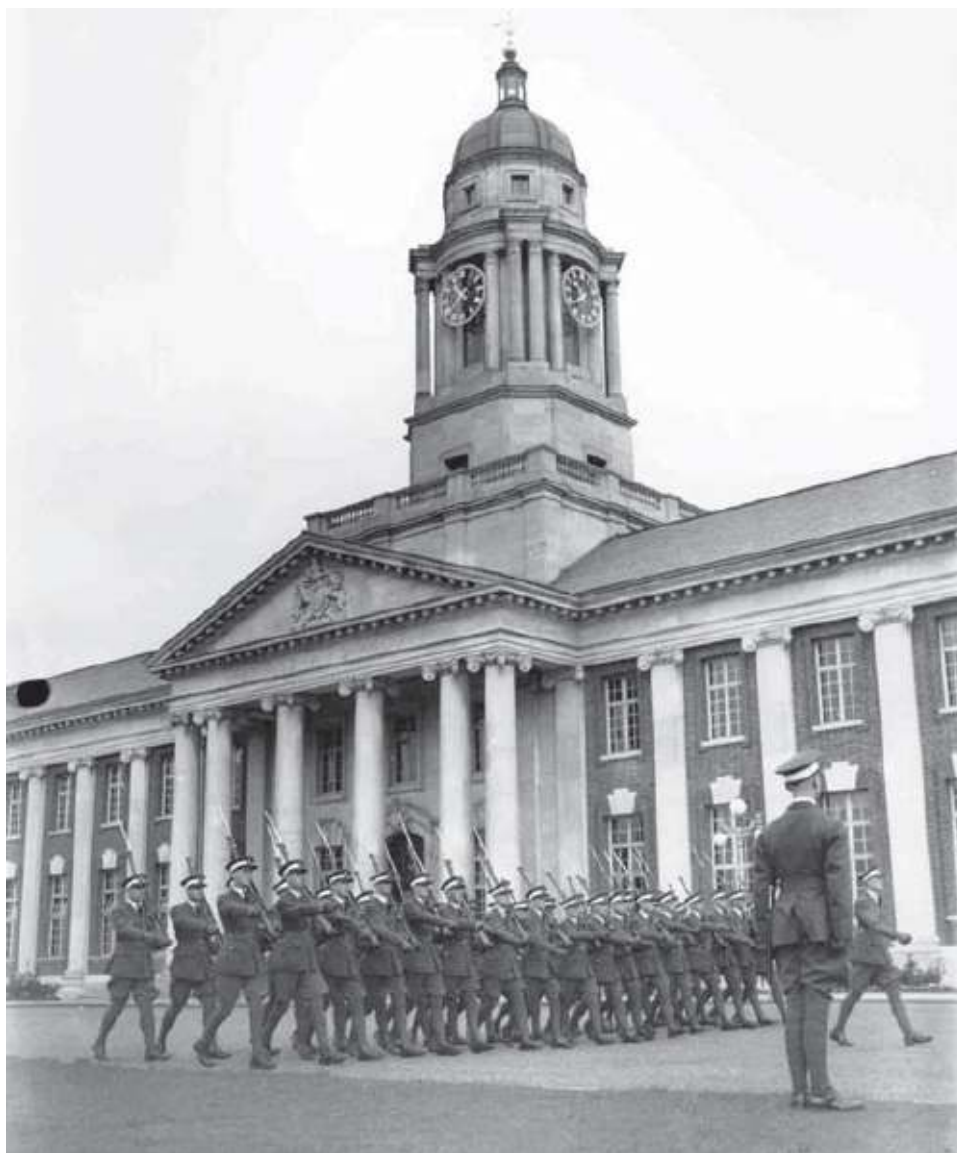
In comparison to the Royal Navy and Army, the RAF had less of a problem with attracting volunteers to join its ranks. Furthermore, within the aircrew fraternity the role of fighter pilot was considered to be something of an elite status, and a glamorous calling for many young men considering a career in the military. During World War I the act of shooting down other aircraft had been glorified by the media, with pilots who achieved 'ace' status being mentioned in newspapers and the most successful even becoming household names. The notion of controlling an agile, exciting aircraft in a dogfight with the prospect of media attention bringing fame back home appealed far more than the prospect of piloting a heavy aircraft laden with bombs on long-range raids over enemy territory, most of which would be in straight and level flight. This absolute fallacy was compounded by popular fiction such as Captain W. E. John's adventures *Biggles*, which were aimed at an adolescent market and glorified aerial combat. Whereas *Biggles*, which was hugely successful in the inter-war period, proved inspirational to many aspiring fighter pilots, despite its minimal factual basis, more realistic accounts of air combat during World War I, such as *Winged Victory* by V. M. Yeates, met far less commercial success. This glamorous appeal ensured that there was never a problem attracting volunteers to the RAF in the inter-war period, with the number of applicants always exceeding the training capacity for pilots. As a result, many aspiring pilots would fail selection, being offered non-piloting jobs within the aircrew cadre or ground-based branches, or denied entry into the service altogether.

The outbreak of war brought a different aspect to the recruitment process. The National Service Act made all fit adult males liable for war work of some description. Warned of the horrors of trench warfare by an older generation, huge numbers of young men still applied to become pilots in the RAF as the 'lesser of two evils', considering that military service was an inevitability for most. After the outbreak of war, the number of non-British nationals flying aircraft in Fighter Command increased hugely. Moved by events in Europe such as the Spanish Civil War and the Winter War in Finland, small numbers of Americans volunteered for service as pilots overseas, initially with the Royal Canadian Air Force or with the plan to join a US detachment of the French Air Force. With the fall of France, the RAF was now the next logical option for American pilots wanting to help in the fight against Nazi Germany. Seven American pilots flew in Fighter Command during the Battle of Britain and by September 1940, the first of three 'Eagle Squadrons' was formed – fighter squadrons with British commanding officers and flight leaders but American pilots. Many other nationalities flew with the RAF throughout the war – the RAF welcomed into its ranks exiles from fallen European countries such as Poland, Czechoslovakia and France, which gave the RAF hundreds of pilots with actual combat experience and an almost fanatical devotion to duty at a time when they were needed the most. The contribution from Commonwealth nations was also invaluable; hundreds of pilots from New Zealand, Canada and Australia flew with the RAF despite their own nations having air forces. In December 1939, the signing of 'Article XV' meant that personnel of the RAF, RCAF, RAAF and RNZAF who had graduated from the British Commonwealth Air Training Plan were all placed in a pool and made available as operational needs dictated. As a result, the majority of these servicemen would serve with the RAF in front-line roles.

In the pre-war period the first stage of training upon selection for aircrew duties in the RAF would be at RAF College Cranwell in Lincolnshire, where Initial Officer Training was carried out. Officer training had been undertaken at Cranwell since the establishment was transferred to the RAF from the Royal Navy in 1918, with College Hall opening in 1920, but with war approaching it was correctly predicted that the number of officers who would now need training was far in excess of the capacity of Cranwell. Furthermore, the rigorous and comprehensive pre-war programme now needed to be replaced with training that provided little more than the absolute minimum so as to ensure as little

delay as possible in getting officers to the front line. To that end, Cranwell was not used specifically for officer training throughout the war. Moreover, because of these changes and the fact that pilots would now be 'hostilities only' and therefore recruited into the RAFVR, by 1941 a rigid system was in place whereby a trainee pilot would not know if he was going to be an officer until some way into his flying training.

After volunteering for service as aircrew with the RAF at a local recruiting centre, applicants would then return to their civilian occupation while waiting for a joining letter. After receiving their joining dates, new recruits would then report to an ACRC – Air Crew Reception Centre – where they would spend between two and ten weeks, the exact duration varying throughout the war. As an aircraftman 2nd class, aspiring aircrew would learn the basics of service life, including stringent medical examinations (particularly with regards to eyesight), written exams, centred heavily around mathematics, drill, guard duties, and kit issue and husbandry. Following successful completion at the ACRC, potential aircrew would move on to one of many Initial Training Wings (ITW) situated throughout the country. ITW built on the lessons learned at ACRC, with further tutorials on mathematics, meteorology and principles of flight, drill and PT, and the issue of flying kit.



Originally a training establishment for the Royal Naval Air Service, Cranwell was transferred to the newly formed RAF in 1918. Officer cadets would conduct their initial officer training and obtain their commission at Cranwell, with some also undergoing early stages of their flying training at the same location. (RAF Museum, PC98-173-5605-1)

However, an extra step in the process was introduced in late 1941 – grading. Grading involved a short flying course at an Elementary Flying School, where students were given a limited number of hours of dual instruction on De Havilland Tiger Moths or Miles Magisters. Within around 12 hours of instruction, students needed to show the necessary levels of competency with which to ‘go solo’ – carry out their first flight without an instructor. Effectively a cull to save valuable time and resources at later stages of training, those without the required aptitude would be failed from the pilot training pipeline at this point. Only at this stage were successful trainees ready to commence flying training earnestly, and as a result were promoted to leading aircraftsmen. However, places on flying training courses were finite, and the newly classified ‘Pilot Under Training’ would be sent to an Aircrew Dispatch Centre to await his next flying training course.

In the first two years of the war, flying training was almost exclusively carried out within Britain. Elementary Flying Training (EFT) was again carried out on either Tiger Moths or Magisters – the first purpose-designed monoplane training aircraft operated by the RAF. Trainee pilots would progress through a rigid and comprehensive syllabus, commencing with the primary and secondary effects of controls, and then progressing on to the relatively simple but vital skills of straight and level flight, medium turns, climbing and descending and stall recoveries. Once these skills had been completed to a satisfactory standard, pilots would begin flying circuits. The circuit consisted of taking off, climbing and levelling off before turning to fly straight and level downwind, parallel to the runway, then turning to line the aircraft up for landing on ‘finals’ and then either carrying out a full stop landing or a ‘roll’ – touching the wheels down and then powering up to carry out further circuits. The circuit was not only an excellent tool with which to learn and maintain essential handling skills, but also a technique used on front-line air stations to ensure safe distances were maintained between aircraft joining, departing or operating on the runway. The student pilot’s first solo on type would then consist of a single circuit – in the days prior to the addition of grading in the pilot training syllabus, this would be the pilot’s very first solo. The first solo was a huge step in the pilot’s career, as described in a letter home by Arthur Vincent Gowers from the De Havilland School of Flying near Maidenhead in 1937 (Gowers would go on to fly Hurricanes and achieve the rank of squadron leader). ‘You will be pleased to hear that I went “solo” today, after passing the test yesterday. It’s a grand feeling, being up there all on your own, swearing into the telephones (aircraft’s internal communication system) at an imaginary instructor! I had an irresistible desire to “shoot up” the neighbouring village, but was checked by the thought that low flying is the quickest way out of the Service.’



First flying in 1937, the Miles Magister was the RAF's first monoplane designed specifically as a trainer, and with its low wing provided a good introduction to front-line fighters. (RAF Museum, PC98-173-5732-4)



Trainee Pilots and instructors pose by a De Havilland Tiger Moth trainer. The leads for their Gosport tubes can be seen hanging from their helmet ear pieces – the Tiger Moth had no internal radio, leaving the crew to communicate via simple speaking tubes. (RAF Museum, P016609)

Solo consolidation would be carried out in the circuit, and from this stage of training pilots were given dual instruction before then repeating lessons while flying solo. The exact syllabus content changed several times throughout the war, but further instruction included spinning, navigation and formation flying before successful pilots passed the course with some 50 hours flying, up to half of which could be solo. Unfortunately, many pilots would fail EFT and considerable numbers would also be KIFA – Killed in Flying Accidents.

For British-based flying training in the opening stages of the war, the next stage echoed the pre-war training system, moving on to Service Flying Training (SFT). This was carried out in a dual-control training aircraft, but a higher performance model, such as the Miles Master, was used to bridge the gap between Elementary Flying Training and front-line types. SFT also varied in duration and syllabus content throughout the war, but typically consisted of some 80 hours flying. Many stages of SFT, particularly the first half of the course, were re-flights of EFT, but were carried out in a faster and more demanding aircraft. Again, pilots were expected to advance to solo standard before a short period of consolidation, then further dual instructional sorties, followed by repeating these exercises solo. Night flying was a new addition to the trainee pilot's skill set during SFT.

By mid-1941 a growing number of pilots were being trained overseas, notably in the United States or as part of the British Commonwealth Air Training Plan. For those bound for the USA, flying training followed a slightly different programme of events. Trainee pilots – who were strictly ordered to wear civilian clothes while off base in the days before the United States entered the war – were posted to either a United States Army Air Corps or a civilian flying training base to carry out EFT, followed by Basic (BFT) and then Advanced Flying Training (AFT). Each stage of training built on the previous stage, progressing through faster and more complex aircraft types. A typical training pipeline with the USAAC might consist of EFT on the Stearman biplane, BFT on the Valiant and the AFT on the relatively high-performance Texan.



Entering service in 1932, the De Havilland Tiger Moth was used for Elementary Flying Training, and grading later on in the war. It was also used by civilian flying schools to train

Like their contemporaries completing SFT in Britain, pilots training in the USA were awarded the 'wings' – the pilot's flying badge on completion of AFT. For leading aircraftmen of the RAFVR, the decision was now made regarding their commission. The RAFVR looked for leadership potential in its officers, and with thousands of pilots under training moving through its pipelines, quick decisions needed to be made on whether or not an individual would qualify for a commission. As a rule of thumb those with a university education or public school background were very often selected as officers, whereas the majority of others would become NCO pilots. Streaming was also an important part of the flying training system. A large number of trainee pilots, although certainly not all, wanted to fly fighters. However, individual strengths and weaknesses and the needs of the service were more of a driving force behind the selection of fighter pilots rather than individual preference. Fighter pilots, particularly those moving on to single seat aircraft, needed the mental capacity and situational awareness required to pilot a high-performance aircraft alone, while simultaneously dealing with airmanship considerations such as navigation, fuel management and communications. Coordination and 'hands on' piloting skills were also a must, but many successful fighter pilots were stronger at a gunnery than actual flying. With some now striped up as officers, all proudly wearing the pilot's flying badge, those streamed as fighter pilots would now move on to one of the Operational Training Units (OTU) in Britain to complete the last stages of their training.

The OTU was the final bridge over the gap between a pilot of a training aircraft and a front-line combat aircraft. For pilots of the pre-war era and opening stages of the war, the front-line role training was carried out at the individual's front-line squadron. This meant that fighter pilots would be posted to their new squadron with very little time in single-seat fighters, and in some cases with no tactical training of any sort. This system worked well enough during the inter-war years; there was plenty of experience on each squadron and no rush to bring new pilots up to speed. However, with the outbreak of war and the massive increase in the number of pilots moving up through the training system, this was simply no longer feasible and was one of the reasons behind the creation of OTUs.

In January 1939, No. 11 Fighter Group Pool was formed at Andover, a holding area for freshly trained fighter pilots to work up on Hawker Hurricanes and Fairey Battles if they were not allocated a place on a front-line squadron as soon as they had finished training. This provided valuable experience on front-line aircraft, but still no tactical training was provided so it was still not a true OTU. In the early stages of the war, new fighter pilots often arrived at front-line squadrons with no training in formation attacks or having ever fired guns from an aircraft – a lack of gunnery training was perhaps the single largest shortcoming in Fighter Command's training.

Number 12 Group's Pool was created at Ashton Down in September 1939, operating Gloster Gladiators, North American Harvards and Bristol Blenheims. It was not until March 1940 that these two units were redesignated as No. 6 and No. 5 OTUs respectively, now equipped with a mixture of front-line and training aircraft, including 48 Hurricanes and 34 Spitfires. By June 1940, in keeping with plans for Bomber Command's new training scheme, the decision was taken to make OTU training mandatory for all new pilots. This at least ensured that by the time of the Battle of Britain, new pilots would arrive at front-line squadrons with some experience of their operational type. The number of OTUs steadily increased throughout the war. As well as providing new pilots with valuable extra dual seat tuition in a high performance trainer and single seat experience in their front-line type, formalized air-to-air gunnery training was finally provided, although poor training in this skill continued to plague fresh Fighter Command pilots throughout the early years of the war.



An assortment of training aircraft at No. 20 Service Flying School. The types in the foreground are North American Harvards, high-performance aircraft used in advanced training. (RAF Museum, P016630)



The cockpit of a Hawker Hurricane: the instruments are deliberately set out for the 'selective scan' used in instrument flying, a technique which had developed into an embryonic state in World War I for flying through cloud. The technique involves centring the scan around the artificial horizon, then glancing across at other instruments at regular intervals. (RAF Museum, P010041)

EQUIPMENT: FLYING CLOTHING AND UNIFORM

Daily working dress for RAF officers had remained largely unchanged since the incorporation of the Air Force blue (or blue-grey as it was known) Service Dress uniform in 1919, as a result of Air Ministry Order 1049. Other ranks were only allowed to wear the RAF's new colours from October 1919 after AMO 1150 sanctioned them wearing blue-grey for ceremonial and walking-out purposes only. Blue-grey was not permitted as working dress until 1924. By 1936, much of the RAF working uniform was standardized between officers and other ranks, including the jacket. Single breasted with four buttons and a fabric belt, the jacket had flap pockets at the breast and hip, with officers and warrant officers having buttons on all pockets whilst other ranks only had buttons on the breast pockets.

Rank was worn on the upper sleeve for NCOs and on the cuff for officers and warrant officers, with pilots wearing their wings above the left breast pocket. Pilots who had joined the RAF Volunteer Reserve or Auxiliary Air Force before the war wore a 'VR' or 'A' badge respectively on their jackets. Officers wore the badge in gilt metal on their collars, NCOs wore an embroidered version below the eagle badge on their shoulders. For pilots of Allied nations, a further shoulder badge was worn with their parent nation embroidered on a curved badge at the very top of the sleeve.



One of the top aces of Fighter Command in the first years of the war, Robert Stanford Tuck, poses in front of his Spitfire while serving on No. 92 Squadron. He wears standard Service Dress uniform with a peaked cap. (RAF Museum, P007985)

A unique trademark of the fighter pilot was the wearing the top button undone on their service jackets, although this practise was often used by aircrew of other commands and services. The jacket was worn over a shirt with separate collar; pale blue for officers and dull blue-grey for other ranks. Black ties and blue-grey trousers were worn by all ranks although, as with the jackets, officers and warrant officers wore uniforms made of soft barathea, while other ranks wore uniforms of rough serge.

Further differences between ranks were highlighted with footwear; officers wore shoes of black patent leather, and other ranks wore boots, again of black leather. The peaked cap was constructed of blue-grey fabric, with a black mohair band. The peak itself was fabric-covered for officers and leather for other ranks. The officers' cap badge was based on the gilt eagle, which had been taken directly from the Royal Naval Air Service in 1918. This was surrounded by laurel leaves and topped with

crown; NCO pilots' cap badges replaced the eagle with an 'RAF' monogram. Warrant officers used simple, gilt metal version of the officers' cap badge. The cap would become an iconic part of the fighter pilot's uniform by one simple virtue – abuse. Contemporary fashion dictated that peaked caps should be worn at slants, with the peak itself bent out of shape so as to curve down at the edges. As a mark of experience, the battered cap was a clear sign of a pilot with a respectable amount of hours logged up as opposed to those with pristine caps, straight out of training. Some took this practice further, going as far as to artificially 'age' their caps, removing the wire which prevented them from losing shape so as to look a little more dishevelled and a little less inexperienced.

An alternative to the peaked cap was the field service cap, or side cap, introduced in 1936. Made of blue-grey material, officers and warrant officers wore a gilt eagle and crown on the left-hand side whilst NCOs below the rank of warrant officer wore their normal cap badge. Again, this cap was more often than not worn at a suitably fashionable angle by the discerning fighter pilot. From December 1939, the peaked cap was removed from use for NCOs of many branches, aircrew included, and NCO pilots wore only the field service cap. The final item of daily working dress was the greatcoat; double-breasted and in blue-grey, made of serge and with four rows of buttons for NCOs, and with five rows of buttons for officers and warrant officers, made of fleece cloth for the former and plain cloth for the latter.

FLIGHT LIEUTENANT, 1939

Operating from Britain during the Phoney War, this pilot **(1)** wears a 1930 Pattern Flying Suit with detachable fur collar fitted, under which is worn daily working uniform shirt and tie. He also wears a 1932 Pattern life jacket, with his parachute already fitted before walking out to his aircraft. The parachute itself also formed the pilot's seat cushion, sitting inside the aircraft's bucket seat **(2)**. It was attached via four straps, on the end of which were lugs that fitted into a quick release buckle **(3)**. This system met with some criticism, as on some aircraft types the straps and buckle were very similar to the actual seat harness, meaning that if trying to leave the aircraft in a rush and whilst panicked it was possible to misidentify the buckles and remove the parachute instead of the seat harnesses. The pilot wears a Type B helmet with Type D oxygen mask fitted **(4)**, and earlier 1933 vintage Mk III goggles **(5)** and 1933 pattern gauntlets. This is completed with 1936 Pattern black leather boots. Whilst wholly functional, this pilot's kit is typical of early war aviators – perfectly useable, but with room for improvement based on operational experience. One of the first changes made based on operational experience was replacing the shirt and tie with a roll-neck or open collar and silk cravat, which were far more forgiving when constantly craning the head during lookout for enemy aircraft.

A



GRAHAM TURNER '11



Pilot Officer Whitney-Straight of No. 601 Squadron poses with greatcoat and peaked cap in front of a Blenheim 1F. The Blenheim's gun tray is visible on the aircraft's belly. (RAF Museum, P001679)

In terms of flying clothing, pilots of Fighter Command used a myriad of different garments and attire throughout the war, depending on the theatre, season or the role they were being employed in. Popular in the early stages of the war, the 1930 and 1940 Pattern Flying Suits were one-piece overalls made of cotton and thicker gabardine respectively. Both patterns of suit could be fitted with a detachable fleece collar and an inner liner, made of fur fabric or quilted kapok. These flying suits were produced in several colours and some squadrons had their squadron badge added to the breast pocket of the suit. Also available was the two-piece Irvin suit, consisting of a jacket and trousers made of brown sheepskin. While the suit was popular in Bomber Command due to the warmth it provided at altitude, pilots of Fighter Command often favoured the jacket alone, worn over the top of daily working dress. The Irvin suit was introduced in 1938, but a second pattern to the jacket was issued during the war with extra seams on the sleeves to reduce production costs by allowing smaller cuts of material to be used. The Irvin jacket would go on to become one of the most enduring images of the RAF pilot.



Pilots of No. 501 Squadron in France, 1940. Two pilots wear cotton flying suits, one of which carries the squadron badge on the left breast pocket. A combination of 1936 and 1939 Pattern flying boots are also visible. (RAF Museum, P002750)



Prince George, Duke of Kent, visits Polish pilots on the front line. The pilot to his right wears a jumper and cravat, both considered more comfortable than Service Dress uniform within the confines of a fighter cockpit. (RAF Museum, PC77-1-3)

Pilots in the opening stages of the war had the choice of wearing their blue-grey uniform in the cockpit, with or without an Irvin jacket, or a one-piece flying suit. Early experience of combat added another essential item to this – the silk scarf or cravat. As the primary job of any fighter pilot was to close with and shoot down enemy aircraft, the fighter pilot would spend his entire sortie scanning the skies for enemy aircraft, constantly craning his neck and keeping his head moving. To prevent rubbing

his neck raw against the starched collar of his uniform shirt, the collar would often be worn open with a privately purchased cravat replacing the uniform tie. Whilst other branches or services often dismissed this as an extravagance, the silk cravat was more than just self-indulgence on the fighter pilot's part. A popular alternative to this was the roll-neck jumper, produced in unbleached white wool and worn with the one-piece flying suit or blue-grey jacket.

Initial experience also revealed that the smart Service Dress uniform was far from ideal for continued use within the cramped confines of an aircraft, not being designed for comfort or durability in these conditions. To that end, a blue-grey version of the army's battledress – the Suit, Aircrew – was announced in December 1940. This consisted of a short jacket with integral belt and epaulettes and trousers with buttoned ankle tabs. Officers wore their rank on the epaulettes, and NCO rank was displayed on the right sleeve, with wings being sewn above the left breast pocket. The aircrew suit proved popular and was often worn by aircrew in lieu of Service Dress for non-flying duties.

Once basic clothing had been covered, the pilot needed his specialist safety equipment; a flying helmet with goggles and mask, a life jacket, and finally boots and gloves. At the start of the war, RAF aircrew used the Type B flying helmet, made of brown leather with chamois lining and integral earpieces inside zipped external housings. The earpieces were attached to the aircraft's radios via a 'pig tail' – a male/female intercom that was designed to part easily so that it would not constitute a snagging hazard if the pilot needed to vacate the cockpit in an emergency. As a back-up to this, the adjustment slit at the rear of the helmet could also be used as a quick release. The Type B helmet was designed to work in conjunction with the Type D oxygen mask, which was fitted to the front via pressure studs. The Type D mask was of constant flow design, made of green fabric with a chamois lining. The oxygen mask also had an integral microphone for radio communications or, in the case of multi-crew aircraft, speaking via the intercom. Five separate specifications of microphone were cycled through the service life period of the Type D mask. The Type B helmet was logically replaced with the Type C in mid-1941, which was of a similar appearance but was designed to be more comfortable, with the earpieces now sited inside cylindrical housings of black rubber. The Type C helmet was compatible with the older Type D mask, but this too was replaced by the Type E oxygen mask in 1941. This black rubber mask was the first to feature a regulated flow design, which released air only upon inhalation by the user rather than the constant flow of older, less sophisticated designs.



Czechoslovakian Hurricane pilots are visited by an air vice marshall at Duxford in summer 1940. Of note, the Czech pilots wear their original pilots' wings on the right breast pocket of their RAF Service Dress jackets. (RAF Museum, X003-6084-047)

SERGEANT, 1941

Building on the experience of the last two years of operations, this pilot's equipment is more practical. He wears an Irvin jacket over a Suit, Aircrew jacket **(1)**. A roll neck replaces his collar and tie and he also wears a 1941 Pattern life jacket **(2)** and 1941 Pattern boots, together with the light chamois inner glove. Also worn are a Type C helmet and Type E oxygen mask **(3)**. His goggles are fitted with a flip-up anti-glare shield for aiding visibility in bright sunlight **(4)**. In only two years, the flying clothing preferred by many pilots of Fighter Command has changed markedly.

Badges of rank are illustrated up to the rank of group captain; the highest rank a pilot could hope to achieve without leaving the cockpit for a staff post. Station commanders were typically group captains and were discouraged from flying on combat operations, although individuals such as Adolph Malan often paid lip service to this guidance. The rank of wing commander was typically responsible for a wing of three squadrons, a squadron leader naturally commanded a single squadron and a flight lieutenant would be his second in command, responsible for leading the second flight of the squadron. The officer ranks of the RAF were simple modifications of naval ranks after the RNAS and RFC were merged to form the RAF; flight lieutenant and wing commander were RNAS ranks with the similar responsibilities to their new RAF counterparts, and squadron leader was a modification of squadron commander, itself based on the rank of lieutenant commander. The rank of group captain, equivalent to an army colonel, was used as RFC colonels typically commanded groups.

Rank from top left: sergeant, flight sergeant, warrant officer class 2, warrant officer class 1, pilot officer, flying officer, flight lieutenant, squadron leader, wing commander, group captain. The pilot's flying badge is also illustrated above. The rank of warrant officer 2 was declared obsolete during the inter-war period; however, not all WO2s were automatically promoted to WO1, so the badge is included here for completeness.



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