

DATABASE

AIRSPEED ENVOY, OXFORD AND CONSUL

WORDS: JAMES KIGHTLY



Envoy

Oxford

Technical Details

Consul

Insights

ABOVE: A neat formation of Oxford Is from No 3 Flying Training School at RAF South Cerney, Gloucestershire, in 1938 is led by L4580. AEROPLANE

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Envoy

The elegant twin that helped make Airspeed's name

Airspeed was an unusual company even by the remarkable standards of aviation businesses in inter-war Britain. Founded in York during 1931 by the engineer (and later author) Nevil Shute Norway and designer A. Hessel Tiltman, with A. E. Hewitt, Lord Grimthorpe and Alan Cobham, it was not lacking in original ideas. Its first design was a glider, the AS1 Tern, and after a couple of paper-only concepts came the AS4 Ferry, a tri-motor biplane intended to carry pleasure-flying passengers from temporary airfields for Alan Cobham's National Aviation Day Displays, better known as his 'Flying Circus'. Four were built, and two went into airline service.

Moved to Portsmouth in 1933, and soon afterwards backed by Swan Hunter shipyards, the company produced the AS5 Courier, a clean single-engine, low-wing, retractable-undercarriage monoplane transport. It first flew on 11 April 1933. Airspeed's 'trademark' tail and other design details were established,

and the aircraft obviously had great potential as an opportunity for development. One way was simply to scale up the whole design and make it a twin-engine type, a configuration that by now was becoming standard and taking over from the tri-motor thanks to improving engine power and reliability.

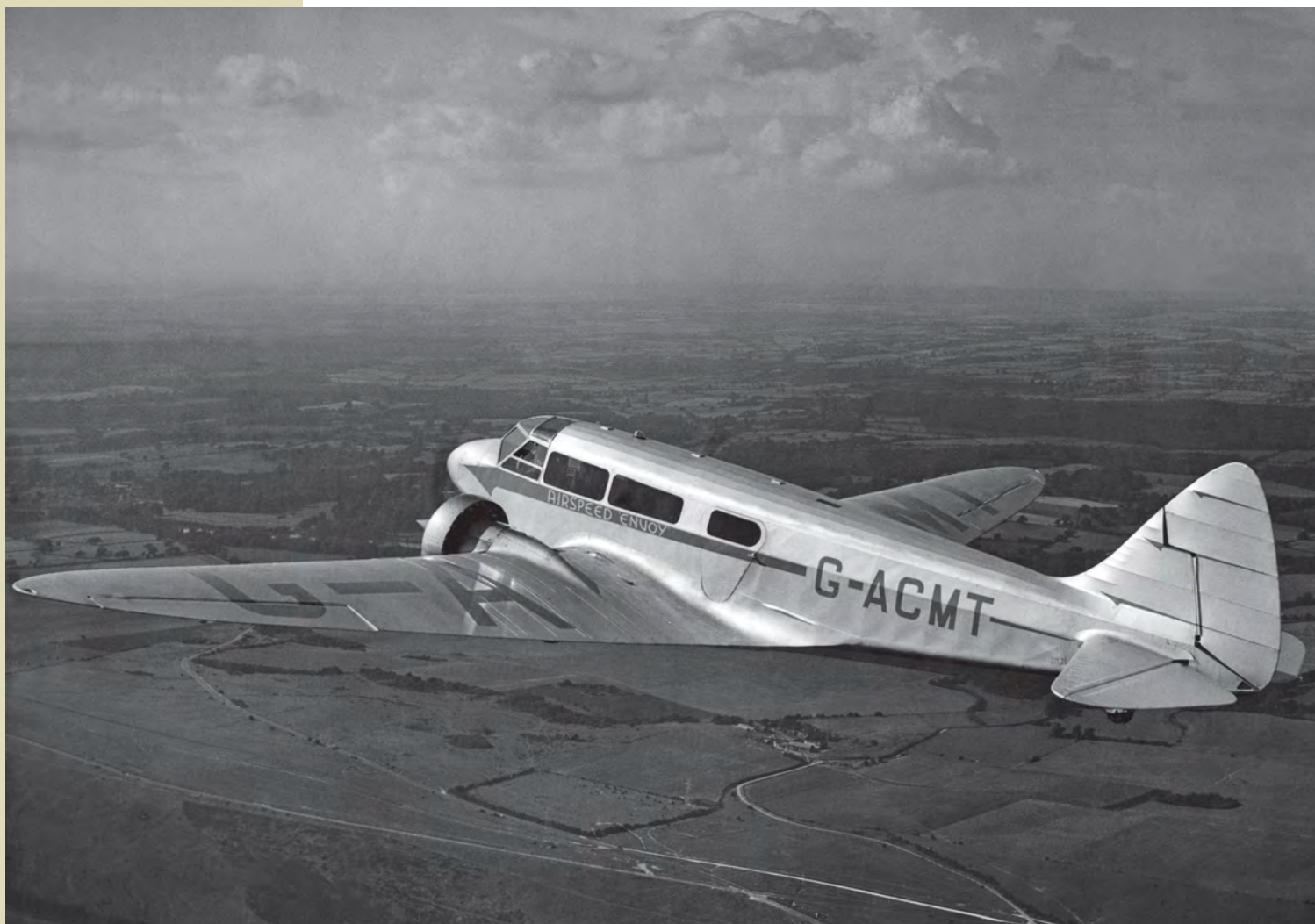
The retractable main undercarriage was innovative when introduced on the Courier. Neophyte test pilot Bill Pegg, later of Bristol, recalls as a junior officer seeing the Courier arriving at Martlesham Heath, the RAF's testing station, in 1933. It was the first retractable-undercarriage aircraft he had seen, and turned up along with a lorry fitted with a full-scale working model of the landing gear and a smooth-talking gentleman from the company to explain it all. While this was being shown, one of the RAF test pilots managed to bring the Courier in on the airfield behind them with the undercarriage retracted, resulting in "a splintering crash and a cloud

of dust". He had disconnected the undercarriage warning hooter while undertaking altitude tests at different throttle settings because it had annoyed him.

But the Courier's greatest contribution was probably Airspeed director Sir Alan Cobham's work using one as a receiver aircraft for air-to-air refuelling with a Handley Page W10 as the tanker. An attempted long-range record flight in Courier G-ABXN proved abortive, but the concept contributed to the establishment and success of Flight Refuelling Ltd.

At the company board meeting in November 1933 it was agreed to go ahead with a twin-engine development of the Courier, known as the Envoy. One reason was to counter a proposed ban on over-water passenger-carrying flights in single-engine types, and it would also provide competition to de Havilland's successful — but far more basic, and lower-performance — DH84 Dragon fixed-undercarriage biplane. Apart from a structurally more robust,

BELOW: Wolseley AR9 Aries III-powered first prototype Envoy G-ACMT shows off its lines. AEROPLANE



if still all-wood, airframe coupled with a carefully streamlined and fully enclosed monoplane layout, Airspeed was offering the first hydraulically operated retractable undercarriage to be used in a production multi-engine British passenger airliner.

The prototype Envoy, G-ACMT, was flown by Flt Lt C. H. A. Colman on 26 June 1934. It appeared in semi-public at the SBAC trade show at Hendon on 2 July, going for testing to Martlesham Heath in August. A single-pilot aircraft, it could carry eight passengers, or, if a toilet was fitted in the aft cabin, six.

The first three Envoys were powered by the Wolseley AR9, or Aries III, engine. These were the prototype, first production Envoy I G-ACVH for Wolseley Motors, which flew during October 1934 but was ditched and lost in Langstone Harbour in May 1936, and G-ACVI, named *Miss Wolseley*, which had been ordered by Wolseley Motors for Lord Nuffield and was intended for engine testing.

At this stage the Airspeed story was intertwined with Nuffield's development of a putative aero engine business, which was looking very viable. William Morris, Lord Nuffield, founded Wolseley Aero Engines in the early 1930s as an offshoot of his personal purchase of Wolseley Motors. It was kept separate by Nuffield and put in the ownership of a newly incorporated company, remaining his property when Wolseley Motors was transferred to Morris Motors in mid-1935.

The premier Wolseley engine under development, which first ran in 1933, was the Aries III. It was a nine-cylinder, air-cooled radial that showed development potential and was rated at 225hp. The smaller seven-cylinder Aquarius I of 170hp had been flown successfully as well, while other, larger units were undergoing bench tests.

The brand-new Envoy *Miss Wolseley* was entered by Lord Nuffield in the 1934 MacRobertson air race, but it was damaged in a forced landing near St Neots, Huntingdonshire before the event and had to be withdrawn. A year-and-a-half later, in 1936, Sqn Ldr E. G. Hilton set off from Martlesham Heath for a flight to South Africa in the same Envoy, G-ACVI. It was reported as a 'holiday trip' — curiously, his wife was expecting to come along but was left on the ground in apparently poorly planned favour of Hilton's mechanic, Mr H. A. Lacroix! In reality, this was a test flight for the Wolseley engine, Hilton having



ABOVE: The first of the four Walter Castor-engined Envoys for Czechoslovak carrier CSA was OK-BAL, pictured pre-delivery in 1935. AEROPLANE



ABOVE: King George VI arrives at Northolt on 9 May 1938 in King's Flight Envoy G-AEXX. AEROPLANE

taken six weeks' leave to undertake the task.

Equipped with parachutes, spare propellers, emergency rations and a small collapsible boat, they flew to Marseilles, Sardinia, Tunis and Cairo, then took the eastern route via Khartoum, Malako and Nairobi to the Cape. On the return trip, the engine having performed satisfactorily — a major endorsement of such a new powerplant from a new engine company — he attempted a record flight, starting on 30 May 1936. A delay at Athens made it impossible to achieve the record. A year later, promoted to wing commander, Hilton was killed in an accident in the King's Cup air race.

Despite the engines' success, when presented with the Air

Ministry's intention to proceed (ITP) paperwork the fiercely independent Lord Nuffield didn't like the terms of 'cost plus agreed profit', even though he had already spent in excess of £200,000. Nuffield said to Nevil Shute Norway, "I tell you, Norway... I sent that ITP thing back to them, and I told them they could put it where the monkey put the nuts!" He withdrew from the market in 1936, and Airspeed aircraft were forced to switch to other engine manufacturers' products. As a result, later Envoys were equipped with 240hp Armstrong Siddeley Lynx IVc or 350hp Cheetah units.

Envoy *Miss Wolseley*, orphaned by Nuffield's abandonment of the engine project, was sold to Ansett Airways in Australia later

that year as VH-UXM, becoming the new airline's second machine. Remarkably, its Aries IIIs remained viable until 1944, most likely being the last working examples, when spares ran out. It was finally re-engined with Wright Whirlwinds.

In October 1936, a batch of Envoys was adapted by Airspeed with a manually operated turret, fixed forward-firing armament, bomb racks and other military equipment for joint ownership and use by the South African Air Force and South African Airways as 'Convertible Envoys'. It was a useful coup for Airspeed, showing that its airliner was both useful and militarily adaptable without the taint of illegal arms deals.

Four men could transform the aircraft from the transport version into a bomber within four hours. In military use, the crew consisted of four: pilot, navigator, radio operator and gunner. Three of these Envoys were delivered in military configuration, and four to the airline without the military equipment fitted. They were used between Johannesburg, Bloemfontein and Port Elizabeth. In due course they all served with the SAAF.

Although produced in small numbers compared to the following Oxford, with more than 60 built between 1934 and 1939, the Envoy was used remarkably widely, and proved a great success for such a young company. There were three main variants, the Series I having no flaps and the Series II and III being

DATABASE ENVOY, OXFORD AND CONSUL



ABOVE: 'Convertible Envoy' 251 of the South African Air Force. The former G-ADCD, and then ZS-AGA with South African Airways, it was delivered to the SAAF in August 1936. AEROPLANE

flap-equipped, with the latter having a number of detail improvements.

The type was chosen to transport British royalty, the highest vote of confidence in the land. In 1936 a Series III Envoy was purchased for the King's Flight and registered G-AEEX. Painted in the Guards' regimental colours of red and blue, it was equipped with seats for four passengers, and crewed by a pilot, wireless operator and steward. Flown by Wg Cdr Edward 'Mouse' Fielden, captain of the King's Flight, it was used regularly until impressed into the RAF as L7270 for wartime service. Five other Envoys were bought by the Air Ministry, serialled P5625 to P5629, for use as communications aircraft.

North Eastern Airways, whose chairman was Airspeed director Lord Grimthorpe, had Envoys named *Tyendale* (G-ADAZ), *Wharfedale* (G-ADBB) and *Swaledale* (G-ADBZ). On the export scene, five examples went to French carrier Air Pyrénées, while Czechoslovak airline Československé státní aerolinie (CSA) acquired four Envoys in July 1935, powered by Walter Castor engines and used on the route between Prague and Moscow. When Czechoslovakia was

THE RACING VICEROY

The efficient, streamlined Airspeed designs were attractive for racing and record attempts. The second airframe off the Envoy production line, c/n 18, was produced as a dedicated racer.

Redesignated as the AS8 and called the Viceroy, it was fitted with what were then the only supercharged Armstrong Siddeley Cheetah VI engines of 315hp in long-chord, smooth NACA cowlings. It had a strengthened undercarriage to enable the higher-weight take-offs required as a result of the increased fuel load from the 270-Imperial gallon auxiliary tank installed on the port side of the fuselage. There was a streamlined spat for the tailwheel, a toilet aft of the cabin, and a demountable canvas bed to starboard. The fuselage was narrowed and had no passenger windows.

Registered G-ACMU and presented in a very smart red and white scheme, it was entered in the October 1934 MacRobertson air race from Mildenhall to Melbourne, flown by Capt T. Neville Stack and Sidney Lewis Turner. The Viceroy was withdrawn mid-race at Athens by the dissatisfied crew, quoted as saying the machine was "not really ready". An Airspeed Courier finished in seventh place.

In dispute with Airspeed, the aircraft was eventually taken back, Nevil Shute Norway noting that the resultant court case found in the manufacturer's favour and awarded it damages. Like several other aircraft of the era, the Viceroy finished up by an indirect route in the Spanish Civil War, being used on the Republican side.

It was in another specially configured Envoy – VH-UXY *Star of Australia* – that Charles Ulm and his two crew vanished without a trace between Oakland, California and Honolulu.




ABOVE: The unique – and somewhat controversial – AS8 Viceroy, G-ACMU. AEROPLANE

engulfed by war, one ended up with the Finns, another with the German Luftwaffe.

G-AERT was supplied to the governor of China's Kwangsi Province, being fitted with bomb racks and guns at Liuchowfu. This caused a diplomatic protest to the British government about supplying arms to a 'rebel state', clearly without the desired effect as another Envoy followed some months later. Both were delivered in remarkable long-distance flights.

The most notable export order was for six Envoys to Japan in 1935. They were used between Japan and Japanese-occupied Korea. One served with the Imperial Japanese Navy for a short period and a rare licence production agreement was struck, 11 being built by Mitsubishi as the Hinazuru (Young Crane) for domestic employment by the Japanese Air Transport Co. Details are sketchy, but one was unsuccessfully fitted with flaps and Gasuden Jimpu engines. It crashed on a test flight with the death of the flight test observer. The Hinazurus had four passenger windows per side rather than the usual two, and a starboard baggage door in the rear fuselage, as well as the Mitsubishi logo on the nose. In 1938 the aircraft (less two lost in fatal crashes) were taken over by the Greater Japanese Airways Co, but they had apparently been withdrawn by 1942.

Airspeed might not have been showing profitability, but with the remarkable success of its fourth production design — certainly its most useful type to date — the company had managed to gain Air Ministry interest, and achieve notable military, civil and even royal sales in just a couple of years. 

BELOW: Max Findlay and Ken Waller's Envoy III G-AENA Gabrielle being flagged away in the 1936 Schlesinger Race from Portsmouth to Johannesburg. It crashed on take-off from Abercorn, Rhodesia, killing two of the four on board including Findlay. AEROPLANE



Oxford

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ABOVE: The first Oxford, L4534, at Portsmouth in its original finish. KEY COLLECTION

One of the RAF's most versatile, and useful, multi-engined trainers

In the mid-1930s, British expansion plans in response to the coming war meant that a plethora of requirements and specifications were issued. This was matched to the establishment of specialised training schools and systems, something that was to increase as demands for aircrew grew during hostilities, and which saw its greatest achievement with the British Commonwealth Air Training Plan. Dedicated training types would be needed, beyond the traditional ab initio aircraft and the use of obsolete front-line machines.

The Air Ministry had been impressed at how well Airspeed had

done with the Envoy in particular. The five examples purchased were clearly a trial of the manufacturer's capability. Airspeed's experiment with the 'convertible' Envoy for the South Africans meant it was well placed to offer a type that could fulfil most of these tasks. Unlike de Havilland's Dragon Rapide, it could do so as a high-performance monoplane fitted with flaps and a retractable undercarriage. Avro's Anson, which was being introduced for maritime patrol, was regarded as too tricky a type for training — quite unlike its later benign reputation.

As well as the successes it had achieved in terms of design and

performance, Airspeed was now backed by the large shipbuilding company Swan Hunter, ensuring a strong financial position even if its production capacity remained limited. The demanding specification T23/36 was issued for a twin-engined trainer, Airspeed being the only company invited to tender. It was for an enhanced version of the Envoy to serve as a multi-role crew trainer, involving pilot, navigation, wireless, gunnery, photography and bomb aimer training. The RAF was operating a range of increasingly heavy and complex twin-engined transports and bombers, and while the four-engined, 11-crew bombers lay in the future, it was clear that these other aircrew roles were going to be vital.

The Air Ministry initially offered a contract for a tiny number of aircraft, as had been the 'penny packet' approach throughout the inter-war years, but an intention to proceed was placed in October 1936 for 160 machines, including some to be delivered to dominions overseas. A total of 136 serial numbers were allocated to the type at this stage. It was designated as the Oxford in January 1937, in line with the Air Ministry's policy of naming training types after famous university towns, as well as educational titles. Another Airspeed example was the later, now forgotten, AS45 Cambridge.

Even before the order, Airspeed had already flown the prototype Oxford, L4534, on 19 June 1937. It worked fast as the threat of war

BELOW: A set of mixed camouflage and trainer yellow-schemed No 3 FTS Oxford Is at South Cerney. VIA JAMES KIGHTLY





ABOVE: A trio of aircraft from the Empire Central Flying School in October 1942 includes Oxford I DF233, flanked by Miles Magister N3838 and Master W8962. AEROPLANE

and the demand for training aircraft became evident. The aeroplane was piloted on its first flight by Flt Lt C. H. A. Colman, and it was present in the New Types Park at the RAF Display at Hendon later that month. Test flying was mainly carried out by George Errington, and the first three Oxfords were delivered in November.

Production grew apace. By the outbreak of war in 1939 more than 400 Oxfords had been delivered, even with a year's delay in getting under way due to having to restructure the factory. Quite quickly the demand proved too much for the original Portsmouth plant alone, though 4,411 were built there.

Airspeed opened another factory in Christchurch, Hampshire, which produced 550 examples. Oxford production was sub-contracted to de Havilland at Hatfield, which built 1,515, and Percival Aircraft



ABOVE: A post-war view of silver-schemed Oxford I V3884. KEY COLLECTION

at Luton, which turned out 1,360, while car builder Standard Motors at Coventry made 750 Oxfords as well as de Havilland Mosquitos. By the end of production, in excess of 8,500 Oxfords had been built.

Manufacturing by Airspeed continued without interruption throughout the war. The last was

turned out in July 1945, its delivery being the subject of a ceremonial event at Portsmouth Airport. A notable attendee was the seventh Oxford built, L4542, which had been in service since January 1938.

The original Air Ministry expectation was that the Oxford

would provide the entire multi-crew training component, with a number being sent overseas to undertake the same work in the dominions and colonies. The first four Oxfords went to the Central Flying School at Upavon, where manuals and procedures were developed. The remainder of the initial six delivered over the winter of 1937-38 were destined for the Wittering-based No 11 Flying Training School. The lack of dual-control training on aircraft like the Blenheim had proved costly, so the early Oxfords were supplied to Flying Training Schools in order to train pilots to fly the twins then in service: the Blenheim, Hampden, Wellington and Whitley.

Several factors meant that the Oxford, after being used for the range of tasks intended initially, was in the end mainly employed as a pilot trainer. There was the obsolescence and replacement of the Avro Anson in the maritime reconnaissance role and its redeployment to navigation, bombing and wireless training; the similar withdrawal of the Fairey Battle from front-line use in 1940 and its reassignment for training across the Commonwealth; and the development of the DH Dragon Rapide into the Dominie wireless trainer. The Oxford's functions, however, were varied in themselves, including night training on the new night flying aids, continuation checks on flying instructors, and a multitude of others.

The Air Transport Auxiliary flew the Oxford as an air taxi and as a conversion trainer for multi-engine ferrying requirements. A low point, of course, was when aviatrix Amy Johnson went missing. On 5 January 1941 she baled out of the Oxford she was flying, V3540, into the Thames Estuary after being caught over cloud and low on fuel, and drowned, despite a valiant rescue effort by Lt Cdr Walter



**Oxford I PH185
778 Squadron, Fleet Air Arm
CHRIS SANDHAM-BAILEY**

IN ACTION AT HABBANIYA

Although never intended for front-line service (unlike the Anson), the Oxford did fly in one battle. During the May 1941 Rashid Ali revolt in Iraq, Oxfords from No 4 Service Flying Training School at RAF Habbaniya, beside the River Euphrates, were used as light bombers – along with Hawker Audaxes and Fairey Gordons – to attack rebel Iraqi troops surrounding the base.

AVM Tony Dudgeon, who was a squadron leader at the time, was newly arrived from an operational posting and put in charge of the Oxford flight. It was found that the bomb rack recesses, intended only to hold 8lb smoke bombs on the Oxford, could not take the 20lb bombs they wanted to use. The excessively cautious command wouldn't permit modifications.

Dudgeon added: "It was carefully explained to us, as delinquent children, that the Oxford was aerodynamically a very delicate airframe and the disturbance from bombs or racks sticking out into the airstream could easily make it catastrophically unstable, particularly on the approach; which obviously was why the bombs had been put into recesses in the first place... I volunteered, as the Oxford CO, that if Workshops would make the pieces, I would 'suck it and see'. No go. Workshops could not and would not make the bits which the boss did not authorise.

"So we rustled up some 1/8in sheet mild steel, a hacksaw, some files, a drill, and a bench with a vice. Drawing on my Cranwell engineering training, I made a set of four little strips about 4in long by 1in wide with two holes to take the bolts. These dropped the rear of the bomb racks down so that the tail fins of the eight 20lb Coopers stuck out beneath the fuselage, below and behind the back edge of the recess.

"The CO's concern over the Audax was nothing compared to getting his agreement to take off with an unauthorised modification. Eventually another note waiving potential blame for him secured his acquiescence and the aircraft flew quite happily. So Station Workshops went into quantity production on the distance-pieces, and we had 27 more bombers."

But they had only 15 pilots, one observer and one gunner, so they used pupil pilots and "any odd bod who was prepared to come along" as bomb aimers and gunners.



ABOVE: The view from inside a formation of No 4 FTS Oxfords flying from Habbaniya circa 1940. VIA ANDREW THOMAS

Once combat started, Dudgeon recalled how the Oxfords bombed from about 1,000ft "for maximum accuracy" with the dive-bombing Audaxes below. He noted: "My observer/bomb-aimer was Sergeant Prickett. I guess he was a few years older than I and he was a tower of strength. His bombing corrections were impeccable, and he had an eye like a hawk when it came to picking out pop-pom guns, machine gun emplacements or other unpleasant devices.

"After their crash course, the pupils acting as bomb aimers and rear gunners quickly became remarkably accurate – even if some of the bombing run corrections were a bit garbled at first... However they all did a fabulous and courageous job and soon became highly efficient."

At the end of the first day the unit had lost the use of 19 of its 35 pilot instructors, either dead or in hospital, and 22 of the 64 aircraft. After five days, the 27 Oxfords on strength had been reduced to four usable machines, but along with the Audax and Gordon biplanes, and Wellingtons flying in from Basra, they had broken the revolt.

Fletcher RN from HM Trawler *Haslemere*. He died in the attempt, and was awarded a posthumous Albert Medal. Johnson's body was never recovered.

In 1943 Oxfords took over from Westland Lysanders on the anti-aircraft co-operation squadrons, flying as targets to aid in ranging gun batteries and for calibrating

radar stations across the UK. Oxfords continued to fulfil this task well into the 1950s.

Indeed, Oxfords served the RAF post-war almost without any change. They continued, albeit in vastly reduced numbers, to perform training in the many roles for which they had become essential. A new task was to instruct pilots used to

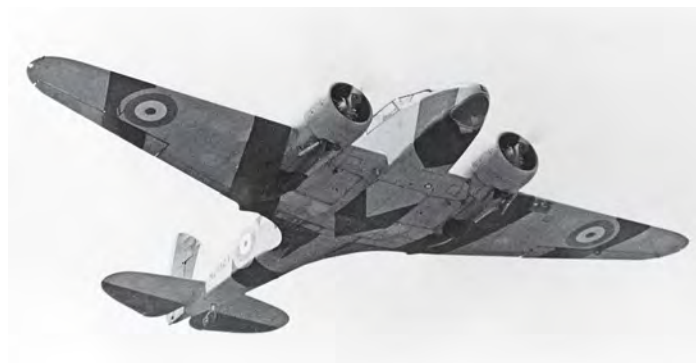
single-engined types in twin skills, including those going on to de Havilland Hornets and Mosquitos, as well as the new twin-jet Gloster Meteors. At the start of the Korean War, Oxfords were brought out of storage to train National Service pilots. Silver Oxfords with post-war roundels were a common sight until the mid-1950s.

Other operators on the 'home front' were the Royal Navy, which flew the type both during wartime and post-war for training and communications, and the US forces. Remarkably, 137 Oxfords are recorded as having been allocated to the US Army Air Force and US Navy in Britain, some of them only briefly.

OXFORDS WORLDWIDE

NEW ZEALAND

The very first Oxfords exported were five shipped to the Royal New Zealand Air Force, assembled at Auckland on the country's North Island in August and September 1938, and then flown down to and operated from Wigram on the South Island (where the Air Force Museum of New Zealand has recently completed the restoration of Oxford PK286). These were the first of 297 examples for New Zealand, the Oxford becoming the fourth most numerous wartime type in the RNZAF. Two were



ABOVE: RNZAF Oxford I NZ1327 served as a target tug. AEROPLANE

civil-registered post-war (ZK-APX and -APY) and for a short period flew cargo, based in Wellington.

CANADA

The Canadians ordered 25 Oxford Is pre-war for the Royal Canadian Air Force, diverted from RAF orders. They were re-serialised as RCAF 1501 to 1525, assembled by Canadian Vickers at Montréal, Québec, and issued to the Central Flying Training School at Trenton and 1 FTS at Camp Borden, both in Ontario.



ABOVE: A well-known shot of No 1 SFTS, RAAF Oxfords from Point Cook over the Melbourne Cricket Ground. RAAF MUSEUM ARCHIVE

This was ahead of the development of the Empire-wide training scheme, as was the transfer of several RAF advanced training units — shipped to Canada complete with equipment and personnel — between May 1940 and May 1943. Some 532 Oxford Is and IIs and 188 Wasp Junior-powered MkVs were sent, mainly for use by the Service Flying Training Schools.

AUSTRALIA

After the start of the war, Oxfords were exported to Australia. There,



ABOVE: RCAF Oxford V EB666 over the snowy Canadian wastes. AEROPLANE

the RAAF type prefix A25- was allocated but the Oxfords retained their RAF serials and camouflage, over time adopting local white and blue roundels and yellow training bands. In total, 391 Oxford Is and IIs were shipped over. The first aircraft, P6878, arrived on 28 October 1940 and the last, LW999, on 20 March 1944.

Used with Ansons at Empire Air Training Scheme schools for instruction in flying, navigation, gunnery, radio operation and bombing, RAAF-operated

BAT WINGS

The Beam Approach Training (BAT) Flights instructed newly qualified night fighter pilots in instrument landing practice. Their Oxfords carried distinctive yellow triangles to warn other aircraft to keep clear, since the pilot should have been flying on instruments and only responding to audio signals with the cockpit windows screened, and a check pilot monitoring. Many of the techniques developed in this role led to airliner blind landing technology and procedures. The RAF Museum's Oxford I, MP425, is in such a scheme, having undertaken the role with No 1536 BAT Flight at Spitalgate, Lincolnshire. Later, civilianised as G-AITB, it went to Air Service Training and continued to train BOAC pilots in instrument flying.

RIGHT: RNZAF pilot Edward Flemming training in the UK in a BAT Flight Oxford, 'T for Tart!' VIA TONY FLEMMING



VARIANTS AND MODIFICATIONS

The MkI was the turret-equipped version for bombing, gunnery and general purpose training, and the MkII was used as a multi-engine pilot trainer, also for navigation and radio training. But, even pre-war, many had the turret removed, and the majority of Oxfords weren't delivered with it fitted though the turret base ring remained built-in.

With only one seat for the navigation and wireless operator's positions, and the Anson and Oxford both able to be configured with multiple positions for each role, the Oxford majored in pilot training. Most of the Airspeed machines flew throughout the war in one task without being refitted for variant roles.

The design essentially remained the same. An ambulance version was the only structural variation, equipped with a larger entry door to enable the insertion of stretchers into the cabin. In 1938 a single Oxford, L4539, was experimentally fitted with a Maclaren castoring undercarriage as a drift correction device. Though it was made workable for crosswind landings up to 30° out of wind, problems in terms of ground handling and retraction meant that it was not adopted in practice. The concept was eventually developed into the Maclaren pram.

Another one-off which did not receive a designation was Oxford N6327, fitted with twin vertical tail surfaces for spin recovery testing. Though the Oxford was designed as a purely military type, 1938's fourth production example L4538 was initially retained by Airspeed, going on to British Airways as G-AFFM for blind flying training and other radio navigation tasks. As such it had the manufacturer's designation AS40. The aircraft was lost on 20 November 1939 when it flew into barrage balloon cables.

A single Oxford, P1864, was fitted with Cheetah XV engines with feathering Rotol constant-speed airscrews, and thus became the MkIII. Intended as a multi-crew trainer, the version was abandoned



ABOVE: A staged shot of a 'wounded' airman being loaded into an Oxford by three nurses in flying kit shows the ambulance version's modified entry door. VIA JAMES KIGHTLY

after this one was built, and the pilot trainer equivalent, to be known as the MkIV, was never built.

The final mark was the Oxford V (AS46), developed in the UK with Pratt & Whitney R-985-AN-6 Wasp Junior engines and Hamilton Standard propellers. AS592 was the prototype. The majority of these were used in Canada.

Oxfords were also found as hacks and communication machines with Nos 1, 2 and 5 Communication Units, and remained in service as trainers and communication aircraft until 1953.

OTHER COUNTRIES

More than 500 Oxfords were sent to South Africa and Southern Rhodesia. The South African Air Force examples were operated at Nos 21, 26 and 42 SAAF Training Schools at Kimberly, Pietersberg and Port Elizabeth respectively.

After the war, the British donated 30 Oxfords to Belgium's reconstituted Militaire Vliegwezen to form a flying training school. These followed six transferred in April 1944 to the Force Publique in the Belgian Congo, remaining in use there until 1955. Two went to Norwegian Air Lines as trainers and were later passed on to the Royal Norwegian Air Force.

In 1948, in excess of 15 ex-RAF Oxfords (and Consuls) were refurbished by Airspeed for the Union of Burma Air Force.

Equipped with pod-mounted forward-firing guns, they even had four sets of underwing rails for paired unguided rocket projectiles. This configuration was tested by the Aeroplane and Armament Experimental Establishment at Boscombe Down, and the notes

would no doubt make interesting reading.

Other operators included the air arms of Argentina, Ceylon, Czechoslovakia, Denmark, Egypt, the Free French, Greece, India, Iran, Israel, the Netherlands, Portugal and Turkey. **A**



ABOVE: A Burmese-operated Oxford, serial UB348, and rocket projectiles. Firing these from the wooden Airspeed aircraft must have been interesting! VIA PETER R. ARNOLD

ENGINE TESTBEDS

Oxford AS504 became the sole in-line engine-equipped Oxford, being fitted with two de Havilland Gipsy Queen IV (also known as Gipsy Six IIIS) units as a testbed. A downgrade in horsepower terms – the Queens gave only 250hp rather than the 375hp of the Cheetah X – it went on to the A&AEE. Incidentally, it has sometimes incorrectly been listed as the Oxford IV. AS504 was eventually returned to MkI standard, the original Cheetah mountings having been retained.

A later test platform was the former LX119, registered U-7, then as G-AJWJ. In 1947 it was converted by Miles Aircraft into the AS41 for testing the 515hp Alvis Leonides with constant-speed propellers, spinners, and the rarely seen apron-style undercarriage doors. Rounding out the Airspeed designations, the AS42 was an Oxford I re-designated for specification T39/37 for the RNZAF, while the AS43 was a survey version of the AS42, itself a designation change reflecting RNZAF equipment requirements.



ABOVE: Oxford AS504 looking somewhat ungainly with its two Gipsy Queen IV in-line engines. AEROPLANE

Technical Details



ABOVE: The cabin and well-laid-out cockpit of a typical RAF Oxford. AEROPLANE

Eminently practical for a range of training tasks, the Oxford could be usefully adapted

Of completely wooden, semi-monocoque construction, the Oxford differed from the Anson, which (initially) had a wooden Fokker wing under a fabric-covered steel frame fuselage. While the Oxford's Envoy heritage

was evident, the fuselage windows were reduced in number, while the fuselage itself was widened, and could be equipped with side-by-side cockpit seating and full dual controls.

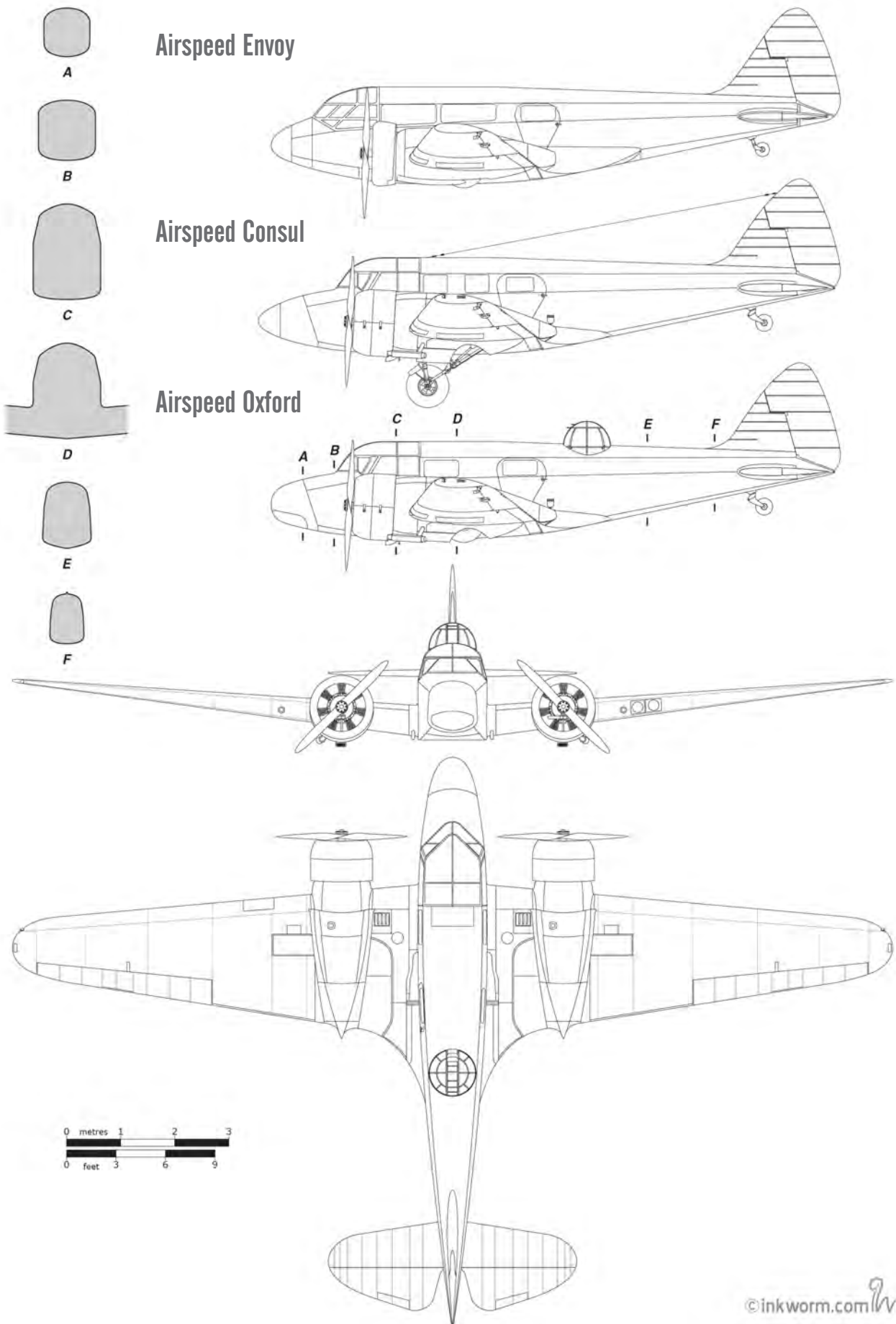
In the cockpit, *Flight* noted: "a really modern array of controls and

instruments has been planned in complete detail and, as a whole, almost for the first time". Compared to what had come before, it was remarkably logically laid out, with the standard RAF blind flying panel centred in front of the left-hand seat for the pupil or first



ABOVE: Practice smoke bombs being fitted to an Oxford's under-fuselage bomb rack. AEROPLANE





pilot, and a full set of engine and hydraulic controls on a central pedestal. This, notably, included an unconnected 'dummy' propeller pitch lever for the fixed-pitch airscrews to enable teaching of the proper cockpit drills for future types. The instrumentation for the instructor (or second pilot) did not feature the panel though all the instruments were present.

The fully glazed canopy had port and starboard direct-vision panels and side windows that could be opened in flight. After early experience, the upper glazing was tinted or fitted with blinds. Visibility was excellent in most directions, only obscured by the nose and engine nacelles. A blind flying hood could be rigged over the pupil pilot's head inside the canopy, although tall pilots, even with the adjustable seat fully depressed, found it too low.

The wireless operator's position faced aft on the starboard side with a seat on the rear of the centre-section decking. The navigator's position was the second pilot's seat slid aft, enabling the use of a folding chart table. A trailing aerial and retractable direction-finding loop were fitted. Over the centre section, behind the cockpit, was an escape hatch with two skylights. The open bulkhead structure behind the pilots' seats was designed to prevent the cabin being crushed if overturned. On the port side, aft of the pilot, was the electrical panel, which included an altimeter.

The main crew entry door, a distinctive and effective triangular shape, could be jettisoned in an emergency, and had one of the four cabin windows in it. It was possible to access the rear fuselage in flight by way of a drop-down panel, which revealed two flare chutes. There was provision for a camera aperture and mount in the main fuselage floor.

The nose interior, with a permanent glazed section, could be configured with a bomb aimer's position, with the right-hand (instructor) pilot's controls being removed for access. A course-setting bombsight was then installed, plus an air speed indicator, altimeter and watch on an instrument panel above, with a prone-position bench and bomb release gear. Light series carrier racks could be fitted to the wing centre section for the use in training of 12 smoke bombs, weighing either 8.5lb or 11.5lb. Other bomb loads were listed.

The clean and effective design meant that the Oxford retained excellent performance and



ABOVE: A good view of the Oxford I's turret installation, as a visitor to No 3 FTS is shown one of the early service examples. AEROPLANE

handling characteristics as well as a comfortable — if not large — cabin. Examining the type's fit-out reveals that it was, for the time, comprehensively equipped. Almost nothing a trainee would encounter in a service aircraft of the late 1930s was left out.

The Oxford was of all-wood construction. The plywood-

covered, spruce frame-panelled fuselage was of semi-monocoque configuration, initially using casein and later synthetic glues. It sat on a wooden wing centre section, to which the engine mounts and rearwards-retracting undercarriage were also fitted. A pair of outer extension planes were attached; the landing light was in the port

wing leading edge, and a pitot head beneath the starboard one. All three wing sections had two wooden box spars, laminated spruce booms and ply webbing. Ply apron strips strengthened rib-spar joints. Tail and control surfaces were constructed separately; each sub-assembly was jig-built and could be made at different locations in sub-contracted production. The nose and engine nacelles were fashioned from formed light aluminium alloy.

A five-part split flap was operated — like the undercarriage — by hydraulic power from a pump on the starboard engine, and with a manual hand-pump back-up system. The brakes were pneumatic, running at 200psi from a starboard engine-driven compressor, and actuated by thumb control levers in the middle of the control yokes.

Two 49-gallon centre-section fuel tanks were supplemented by a further pair of 29-gallon gravity-fed tanks fitted to the outer wing sections. Two oil tanks with integral oil cooler radiators were contained in the upper engine nacelles.

THE TURRET

The Oxford I was fitted with a gun turret ring for the Armstrong Whitworth 'birdcage'-type turret, and a .303 Vickers K machine gun. This form of turret was fitted to several other types of the period, including the Anson, and had a single flexibly mounted pan-fed machine gun located in a freely-rotating cupola.

The gunner's tip seat was connected by a mechanism that enabled him to retain sighting over the gun at high elevation. Power was provided by the gunner's muscles, the unit being pushed around by his feet on the fixed deck below. Firing abeam proved somewhat difficult as the gun was pushed aft by the slipstream, and wind balance vanes were added to the turret's rear for compensation.

On the Oxford, like the Anson, the turret could be traversed through a full 360°. Some airframes had a detent rail fitted to protect the tail surfaces. The turret could be locked in position, and the gun still had limited traverse in the open slot. For training, the turret proved very useful as the protection of the Rhodoid acrylic-glazed cupola meant gunners could dispense with some of their protective clothing; as a direct result, gunnery scores improved noticeably. If the turret was not fitted, a 'dumb-bell' with two weights was carried on the mounting ring, and the cover unit had skylights.

Specifications

	Envoy	Oxford (MkI)	Consul
POWERPLANTS	Two Wolsley AR9 MkII radial engines, 200hp (150kW) each or two Armstrong Siddeley Cheetah IX radial engines, 345hp (257kW) each; other engine types also used	Two Armstrong Siddeley Cheetah X radial engines, 350hp (260kW) each	Two Armstrong Siddeley Cheetah X radial engines, 395hp (295kW) each
DIMENSIONS	Length: 34ft 6in (10.52m) Span: 52ft 4in (15.95m) Height: 9ft 6in (2.90m) Wing area: 339 sq ft (31.5 sq m)	34ft 6in (10.52m) 53ft 4in (16.26m) 11ft 1in (3.38m) 348 sq ft (32.3 sq m)	35ft 4in (10.77m) 53ft 4in (16.26m) 11ft 1in (3.38m) 348 sq ft (32.3 sq m)
WEIGHTS	Empty: 4,057lb (1,840kg) Gross: 6,300lb (2,858kg) Crew/passengers: One pilot, six or eight passengers	5,380lb (2,445kg) 7,600lb (3,454kg) Three crew	6,047lb (2,749kg) 8,250lb (3,750kg) Two pilots, six passengers
ARMAMENT		One 0.303in (7.7mm) Vickers K machine gun in dorsal turret; 12 11.5lb (5kg) or 8.5lb (3.8kg) practice bombs carried externally	
PERFORMANCE	Max speed: 210mph (338km/h) at 7,300ft (2,230m) Cruise speed: 192mph (309km/h) at 7,300ft (2,230m) Range: 650 miles (1,046km) Service ceiling: 22,500ft (6,858m)	192mph (309km/h) at 8,000ft (2,440m) 160mph (257km/h) at 7,500ft (2,286m) 925 miles (1,490km) 19,500ft (5,945m)	190mph (306km/h) 156mph (251km/h) 900 miles (1,449km) 19,000ft (5,800m)

Consul



ABOVE: A very fine study of the first Consul, G-AGVY, which went to Bata Shoes. AEROPLANE

A post-war civil conversion gave some surplus Oxfords a new lease of life

At the end of the war, as well as 40 Oxfords that had been civilianised and registered, more than 150 were converted into a civil airliner version as the Airspeed AS65 Consul. It was successful for a period and ensured the survival of a handful of examples of the Oxford family, though all the Envoyos had disappeared by the 1960s.

The Consul was able to provide a cost-effective light transport twin, predominately popular around the British Commonwealth and Europe. Despite the wooden construction, the type seems to have been effective.

It was described in *Flight* during April 1949 as follows: "The airframe being basically that of the proven Oxford trainer and the Armstrong Siddeley Cheetah X engines having an inter-overhaul life of 1,250 hours, the Consul continues to give satisfaction in numerous roles and in exacting climates. Of variants in service, the most familiar is the five-to-six-seater, to which modifications (eg for photography) can be made to order. Especially appealing is the Consul Convertible, which, with its larger door, is truly a general-purpose aircraft. The five seats can be folded against the cabin sides to give clear floor space for freight."

"Cruising at 127mph, with pilot, four passengers and 120lb of baggage, the Consul has a range of 870 miles. The Sperry AL1 Pilot Aid is a valuable fitment for long flights". Consuls were offered for £5,500, regarded as an attractive price. It included dual controls and covers but no radio.

Changes to the Oxford airframe were mainly in the fuselage and relatively simple. The nose (on all examples apart from the prototype) was extended and converted into a baggage compartment, with another such compartment aft of the cabin. Double doors were fitted to the window-equipped cockpit bulkhead, separating the cabin and cockpit in a manner the Oxford had never needed, and more windows fitted to ensure a better view out for the passengers. The tailplane was 'reset' to enable a centre of gravity forward of the Oxford's, and enhancing stability in the climb.

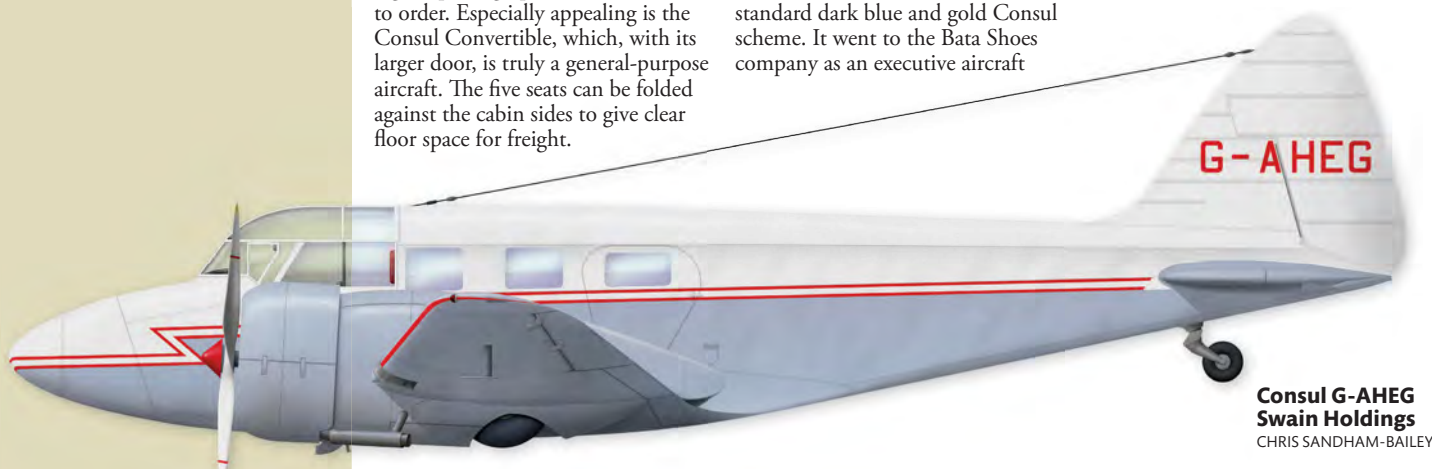
The first example was G-AGVY, the former de Havilland-built Oxford V3679, delivered in what became the standard dark blue and gold Consul scheme. It went to the Bata Shoes company as an executive aircraft

for travelling between its European factories. How the firm compared the Consul to its pre-war all-metal Lockheed 10 would be an interesting question to answer. Airwork took on official distribution of the type, with former Oxford T1206, now G-AHEG, as its demonstration machine. Seventy were sold in the first year to British firms alone.

Variants were few, the standard configuration proving more than adequate. Perhaps surprisingly, the wooden construction was fine in almost all climates, the type being popular throughout Europe and the Middle East, and even in Indochina with several French operators. Consul Convertible G-AJWR was exhibited at the 1947 Radlett SBAC show. Oxford noses with modified glazing were refitted to F-OHAJ and F-BHVY for photo survey work in French West Africa. One Consul, G-AKCW, was given a pair of Alvis Leonides engines for testing (following on from the Oxford noted previously) and clocked up a respectable 188.5mph in the 1950 *Daily Express* race, flown by R. Milne with its three-bladed variable-pitch metal propellers.

According to historian H. A. Taylor, the Consul was "Airspeed's only financially successful civil transport venture". As well as charter airlines, they went to private individuals, including aristocracy. In 1947, Prince Aly Khan acquired his own Consul (G-ALJP) at a similar time as he was posted as permanent representative of Pakistan to the United Nations, while Spain's Duke of Almodóvar del Rio attended the Royal Aero Club's International Air Rally in his Consul (EC-ACZ) the following year.

Five were supplied to the Ministry of Civil Aviation Flying Unit during 1947 to train and test pilots in instrument flying and blind approach techniques, harking back to the work done by Oxfords with the BAT Flights in wartime. Another two, ex-British South American Airways Corporation, were flown by BOAC for the same task. **A**



Consul G-AHEG
Swain Holdings
CHRIS SANDHAM-BAILEY



ABOVE: An RAF Oxford about to go night flying. AEROPLANE

**Pleasant to fly,
the Oxford's
more demanding
characteristics
rendered it a
good trainer**

Originally developed because the Air Ministry believed the docile Avro Anson was too challenging to use as a trainer, the Oxford proved to be the more demanding machine of the two, and arguably resulted in the production of better pilots. Most accounts cite the Oxford as a pleasant aircraft to fly, and note that it encouraged precision, particularly on take-off, approach and landing. Another almost universal impression was that Oxfords could become prone to heavy pre-stall buffeting, and unpredictable in wing drop.

In 1938, a *Flight* reporter noted: "The controls appear to be everything that they should be, and the aileron control in particular is a good deal more pungent than is usually expected in comparatively large aeroplanes; their effect is equally vigorous at comparatively low gliding speeds, and does not seem to differ one way or the other when the flaps are in the fully down position."

Display doyen David Ogilvy recalled the Oxford thus: "Many people tend to consider the Avro

Anson and Airspeed Oxford in almost a single breath, although in practice they were very different aeroplanes and had few features or qualities in common. Both were Cheetah-powered low-wing twins, but there the similarities stopped. Their duties overlapped as both served on communications work; however, the relatively tame Anson shone as an uncomplaining load-lifter while the Oxford had a sporting spirit that made it more tricky to fly and therefore more suitable for the pilot training role.

"On take-off the Oxford showed its real worth as a pilot trainer; the pronounced tendency to swing to starboard called for positive corrective action by generous use of the rudder and by applying power gently, leading with the starboard throttle. This was a much more significant quality feature than is the case today, for trainees were destined to graduate onto more powerful tailwheel piston twins, some of which had very strong determination not to go straight ahead unless forcibly compelled to do so! Here the Oxford could reveal one of its less charming

characteristics. A high percentage of the lift was generated from the wing centre section between the fuselage and the engines. Dented or badly fitting fillets or panels could lead to stalling at the wing roots and there are several recorded cases of aircraft needing extended take-off runs or even failing to get airborne.

"If all was well the Oxford would lift off cleanly at about 65mph and accelerate reasonably rapidly to the modest safety speed of 85mph — the figure at which directional control would be possible in the event of an engine failure — on the way to a recommended climb speed of 110mph... Once settled into the cruise, with 2,100 and -1 boost generating about 120mph, the 'Oxbox' revealed its generally pleasant handling characteristics, with controls that were light, effective and rapid in response to small displacements. At slightly less economical power settings leading to a modest increase in airspeed, the ailerons in particular were surprisingly crisp."

In May 1943 *Flight* published an account of a night flight at an Advanced Flying Unit: "Now we had an opportunity of appreciating





ABOVE: Early production example L4576 being manoeuvred for the camera in 1938. AEROPLANE

the qualities of the Drem lighting system — which may not be described in detail — for by its aid even a novice like ourselves could see the right way down to approach the flare path. And as our Oxford

made its straight approach we saw also the value of the glide-path lamps which flank the beginning of the flare path. These lamps are so devised that while the pilot holds to the correct gliding path they

show him a pair of coloured lights. Should he be too high or too low he will see lights of other colours. The squadron leader instructor was piloting, and the reassuring pair of lights remained steadily visible

all the way in; only when we were within a few yards of them did a glimpse of white peep momentarily from below the 'safe' colour; it was a perfect approach and a perfect landing." **A**

THE LAST FLYER

After retirement from service, almost all of these Airspeed aircraft disappeared. One Consul was restored for Singapore Airlines as VR-SCD, representing the original Malayan Airlines machine that was the first airliner in post-war service there, and displayed in the late 1980s for the 40th anniversary of that event. It is now stored in New Zealand. Other surviving examples are presented as Oxfords, some having been Consuls for a period, others never modified.

The last operational example of the entire family was the Oxford I flown by the remarkable Skyfame Collection at Staverton. Built for the RAF as V3388, it was operated as G-AHTW by Boulton Paul Aircraft for 14 years as a company machine, before being acquired by Skyfame's Peter Thomas. One of the aircraft flown regularly by that pioneering operation (along with Anson G-AMDA), it was displayed in the expert hands of David Ogilvy, but eventually it proved unviable to continue and the Oxford was grounded in 1972. Upon the collection's sale, it was delivered by road from Staverton to the Imperial War Museum at Duxford in March 1978.

During the early 2000s it was decided that the Oxford would be suitable for Duxford's forthcoming AirSpace hangar, and it was put into a major conservation programme in the hands of Andy Robinson and his team. Despite its long service with Boulton Paul, the aircraft

is remarkably original inside, including most of its wartime systems such as the turret base and flare chutes. On completion of the work in 2006, it was suspended from the roof of AirSpace, where it remains on show today.



ABOVE: Oxford V3388/G-AHTW of the Skyfame Collection flying at Staverton on 23 April 1967. ADRIAN M. BALCH