

Chiltern Airwords



Vickers Viscount G-ARBY of Alidair at Heathrow. Photo Trevor Warne via Bob Hickox

The Chiltern Aviation Society Magazine
September - October 2020

CHAIRWORDS

As I write this, we are still unable to meet for our monthly meetings due to Covid-19 restrictions. From Monday 14th September the Government reduced the numbers who may meet from thirty to just six people, making meetings simply not viable. Before these new restrictions, which we sincerely hope will be temporary, the Church Hall Committee had planned to make Room 1 available, but even so they would have only allowed us to accommodate less than a dozen, suitable spaced and masked, occupants. The kitchen would not be available and access to the lavatories has yet to be worked out in the narrow corridors. For the moment with no monthly meetings in sight, all we can do is review the situation each month and let you know. However, on the plus side Chiltern Aviation Society Airwords continues to keep us in touch and grateful thanks go to Lawrence for his excellent work in putting it together.

As we were unable to hold our AGM earlier this year, these are the main points from the Agenda;

1. Subscriptions for 2021 will remain the same
2. The John WR Taylor Cup is awarded to Peter Fraenkel for his 2018 article on Air Travel to the Falklands
3. The Peter Keating Trophy is awarded to Brian Jones for his long-running support with articles for Airwords and his fiendish quizzes which appear regularly
4. Well done Peter and Brian

Keep safe all. Our best wishes to Bob Hickox who is recovering from a Cataract Operation. **Keith Hayward**

EDITORWORDS

Thanks for the articles sent in so far from CAS, U3A and those spotted in other walks of life; more please! When emailing photos and words to cas.editors2020@gmail.com keep them separate please, as it is so much easier for me to edit.

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THE CHILTERN AVIATION SOCIETY (CAS); Founded in 1968. Associate member of Air Britain Historians Ltd. President; Philip Birtles. Patron; David F. Ogilvy OBE FRAeS. CAS is a not for profit Society relying on donations and membership fees. Membership is £15 PA. Non-Members also welcome at our monthly programme of talks for a small contribution of £2 per event.

MEETINGS: Fourth Wednesday of the month (third in December) 8pm to 10 pm at *Ruislip Methodist Church Hall, Ickenham Road, Ruislip, Middx, HA4 7BX.*

2020 PROGRAMME;

ALL CANCELLED UNTIL FURTHER NOTICE

RADIO OFFICER BOB CHANDLER, BSAA & BOAC, SO CLOSE TO ROYALTY – BY KEITH HAYWARD



On 1 January 1946 British South American Airways' Avro Lancasterian G-AGWG *Starlight* was en route between Lisbon and Bathurst in the Gambia, West Africa, operating the company's first proving flight to South America. This was a long eight-hour schedule bearing mind that the crew had already operated the initial Heathrow to Lisbon five-hour sector earlier in the day. With limited navigational aids on board and ground stations few and far between, tracking *Starlight's* position as they flew down the west coast of Africa was a challenge. Bob Chandler was the Radio Operator on this pioneering flight along with Radio Superintendent Jim McGillivray, and on-board tensions were rising.

Bob struggled hard to make contact with the sparse ground stations listed in the manual in order to obtain a fix by Wireless Telephony. He would scribble down the perceived position report and crawl forward to the cockpit to pass the information on to the pilots. In charge was BSAA's Chief Executive, Air Vice Marshal Don Bennett, along with Captain Cracknell as First Officer and Captain Alabaster as Navigator. In Bob's words, the atmosphere up front was tense and quite bad-tempered. He would hand over the estimated position reports and then scuttle back to his seat. They eventually landed at Bathurst, snatching a few hours' sleep before taking off on the next arduous sector to Natal, Brazil.

Born in Kent in 1912, Bob wanted to go to sea from an early age and, after training as a ship's radio officer in his early teens, joined the merchant navy in the late 1920s. This was a tough life but Bob was up to it and with a cynical sense of humour he survived a life at sea for some ten years. Wanting a change, and hearing about the development of aircraft radio equipment, he joined Air Dispatch at Croydon as a Radio Officer on their De Havilland Dragons. He then freelanced at Croydon in the 1930s as a Radio Officer/Engineer and was contacted by Imperial Airways for radio installation work. During this period, he obtained a Second-Class Navigator's Certificate. Restless as ever Bob moved to Western Airways as a Radio Officer in the late 1930s at Weston-Super-Mare. At the outbreak of World War 2 the company was involved with military aircraft repair work including radio equipment. He soon got bored with this and offered his services to Royal Air Force Ferry Command – but initially heard nothing.

Months later a letter arrived from the Air Ministry confirming his appointment as a civilian radio officer on the Atlantic Ferry Service. From June 1943 until the end of hostilities Bob helped to deliver a variety of aircraft from Canada to the United Kingdom. These were mostly Catalina flying boats but also included a number of Dakotas, Hudsons, Mitchells and Liberators. He resigned in November 1945 and was immediately taken on by Don Bennett as one of BSAA's first Radio Officers. Following the merger with BOAC in 1949 he flew with the Constellation fleet and then joined up with Captains Rodley and Majendie to form the nucleus of the new Comet 1 crews in January 1951. Soon they were deployed to Hatfield and Bob enjoyed his first experience of jet flying, in Comet 1 G-ALZK on 22 May 1951, with John Cunningham in command. This two-hour experience was exhilarating. With Comet 1 familiarisation completed they positioned back to Heathrow to embark on a concentrated training programme. Route familiarisation flights were intensive and Bob was promoted to Flight Radio Officer. He was honoured to be the Radio Officer on the first scheduled Comet 1 flight to Johannesburg on 2 May 1952, operating the London to Beirut sector.



Shortly after this, he was loaned to De Havilland as Radio Officer on a special VIP Comet 1 demonstration flight around Europe operating from Hatfield carrying Her Majesty Queen Elizabeth The Queen Mother and Her Royal Highness Princess Margaret. The Comet flight deck was notoriously tight for space and when the royal couple came forward to view the cockpit it was critical. Bob recalled that he was probably the only non-royal to have been that close to a royal posterior as the Queen Mother leant forward to see the instrument panel more clearly! What a claim to fame!

Bob's work at Hatfield had impressed John Cunningham who persuaded him to leave BOAC and join De Havilland as a Radio Officer on Comet 1 sales tours. He finally retired from active flying in 1957 at the age of 45. He'd had enough. Years

later I recall meeting up with him at Cheltenham to examine his log book where we were joined by another aviation character Don L Brown, ex-Miles Aircraft test pilot and BSAA Administration Officer. It was a great day for reminiscing but I seem to recall that by then Bob was suffering from arthritis and was quite physically restricted although retaining his acerbic wit. It was an honour to have known such an aviation character!

MORE ON PETER BUTTERWORTH – BY LAWRENCE HAYWARD

It seems that mention of Peter Butterworth (the 'Carry On' Film actor) in the article by Rex Russell on the Short Solent accident in the last issue, has generated further interest in the actor's career in the FAA, and I have been lucky enough to find Peter's own account of being shot down, with additional details from Mr. Hans Nauta, from the village of Egmond-Binnen, Noord-Holland, and the crashed aircraft photo from Mr. Bram van Dijk.

Peter Butterworth;

"On the way to the target our (Albacore) plane was intercepted by the enemy, attacked by three Bf 109s. Soon the engine was damaged, so it was necessary to make a belly-landing on the island beach, at about 16.00 hrs., and my observer Vic was hit! Robert and I climbed out of the wreck after the crash landing and we laid down Vic on the sand beach, because he was badly injured. (He died of his injuries)

A civilian, who was nearby relaxing before, reading a book till our smash (crash landing), was sent by us to get help for our patient (S/L Victor Dyke). We were waiting next to Vic, trying to cheer him up, to the moment an ambulance was coming; then we were hiding in the dunes (in those early times there was not yet something like an Atlantic wall).

Suddenly a girl came to us over there, speaking in English, that she had seen our landing and hiding and.... that she knew a beach hut 3 miles to the N.E., near the lighthouse being a better place to hide. Maybe this was a perfect chance, so we (agreed to) followed her, and about half an hour later she came back with a first aid kit, because of our wounds. She told us the Germans had destroyed and stolen many boats - and it was forbidden to go to the mainland; the only way to leave the island was via the regular ferry, controlled by the soldiers of course. But, with help of some other people, she was making a plan to escape (...?). After waiting again, maybe for 3 hours, another girl came - her English wasn't so good alas - but she would take us to her father, who had also seen our landing, and with refuge in their home, a farmhouse, for the coming night. While we were walking cautiously to this new address, via a country road, we suddenly found a bunch of Jerries were waiting there for us! Our first reaction was



*"run for your life", and each of us was going another way, but those b*****ds were shooting in the air and shouting "Halt" and all kinds of unpleasant words, and they aimed lower and lower! We gave up, also for the safety of that girl."*

They were taken to the temporary German HQ, for some food and sleep etc locked in a room for the night with an armed guard. The next day, after some interrogation, they were transported by car and ferry to Den Helder, then to mainland Germany, for further interrogation and where a POW camp was waiting! After being captured Peter Butterworth became POW No. 622. He is seen here in Stalag Luft III working on his own and in the centre of the group seated, with a beard!



sqn LDR REGINALD J PEACOCK - BLENHEIM MK IVF 'ACE' – BY LAWRENCE HAYWARD



Most histories of the Bristol Blenheim state that the type was out dated even before WW2 and that the Mk IV Bomber was not much of an improvement over the Mk I nor was the Mk IVF night-fighter much use, let alone the Mk IVF day fighter. Therefore, it may come as a surprise to know that one pilot, Sqn Ldr Reginald J Peacock of 235 Sqn, Coastal Command became an 'ace' on Blenheims, with several Messerschmitt Bf109s to his credit!

Reginald John Peacock, (Service No. 40257) from London, was born on 3rd October 1917 and joined the RAF on a short service commission and began training on 23rd August 1937. However, he already had his wings as he was awarded Aero Certificate 13685 at Cambridge Aero Club on 19th March 1936. At the outbreak of war, RJ Peacock was serving with 'A' Flight of 2 AAC, RAF Gosport (flying Fairey Battle Target Tugs) and he was appointed 'B' Flight Commander there on 7th September 1939. He joined 235 Squadron as a Flying Officer, flying the Blenheim Mk IVF at Manston on 22nd January 1940. However, within a month, 235 Sqn was transferred from Fighter Command to RAF Coastal Command, as was 236, and 248 Sqn (and 254 Sqn in April 1940). These Squadrons were tasked with 'Trade Protection' essentially keeping coastal shipping lanes open and attacking air and seaborne targets deemed to be a threat to Allied ships. Each Sqn flew the Blenheim Mk IVF pending the arrival of the Bristol Beaufighter in 1941.

These Blenheim Mk IV aircraft were the Mk IVF variant equipped with a four 0.303 Browning MGs in an under-fuselage gun pack, fixed on a tubular frame-work inside bomb bay. The gun packs were made specially for the RAF by Southern Region Dept at Ashford, Kent in three locomotive sheds. These belly packs were powered by starboard engine, and carried 500 rounds for each MG. The forward firing MG in the port wing also had 500 rounds, and there were external bomb racks carried 20lb bombs if required. In July 1940 Coastal Command's ACM 'Ginger' Bowhill issued orders to make modifications to all Coastal 'Trade Protection' Blenheim Squadrons. Consequently, these Squadrons soon added an extra MG in the forward glazed nose perspex and also had two Vickers Ks installed in the turret.

The fixings for the four 0.303 Brownings were occasionally prone to coming loose and the guns had the odd stoppage, though stoppages were a feature of many RAF aircraft. There are several accounts of stoppages after just a few rounds, such as an occasion a Blenheim Mk IVF of the Special Duty Flight, RAF Christchurch came out of cloud and was presented with a Ju88 dead ahead near Blandford Forum during the Battle of Britain. After a few rounds the four guns jammed and firing at the E/A was left to the WOP/AG with his single Vickers K gun. However, to be fair stoppages occurred in all RAF types during WW2, even the Spitfire and Hurricane on occasions.

It is said Flying Officer Peacock got his ace status by having an aggressive fighting spirit and also by having well thought out tactics. The navigator stuck his head out the bulged side window situated behind the pilot's seat on the port and likewise kept a good lookout on starboard side. This enabled the Blenheim pilot to turn at the last moment should it come under attack, and with a good rate of turn, the Blenheim could often get on the tail of an attacker. Amazingly the Blenheim Mk IVF could actually out turn a Bf 109. and it was quite normal for these Blenheim Mk IVF aircraft to attack Messerschmitt Bf 109s and Me 110s. This was in marked contrast to the Blenheims of 2 Group that were poorly armed with one Vickers K in the turret and one in the wing, and no option other than to go 'flat out' for home after their bombing attacks. In Peacock's Blenheim, internal communication with Peacock's gunner Sgt William Wilson as a prerequisite for success. However, if comms failed, they had a bicycle chain pulley system which they could attach note to. The Blenheim had a simple drop-down ring sight, with some aircraft having chinagraph pencil marks on the Perspex to aid aiming. A contemporary of Peacock's Jackson-Smith said you just had to get in close as you could as the 0.303 machine guns had little convergence in the gun pack. Here's a summary of the five claims by Peacock;

12th May 1940 - One Bf109

Peacock's Flight was bounced by Bf109s but broke up in a swirling dogfight of individual actions, and Peacock bounces a passing Bf109, that passes in front of him, fires his front guns and claimed as a kill. Peacock notes that Blenheims can turn inside Bf109s if they break at the right moment. Sadly, the rest of Blenheim Flight was badly mauled by Bf110s and Bf109s.)

27th June 1940 – One Bf109 destroyed and one damaged over the Zuider Zee, Holland. It is thought that these E/A aircraft were retiring back to their bases in Germany, and being fuel conscious, they were flying at cruise speed and perhaps rather complacent in not having a proper look out for RAF aircraft that had a greater range than their own aircraft.

3rd August 1940 – One Heinkel He 115 Floatplane destroyed over Holland in a combined attack by three Blenheims of 235 Sqn. Peacock is granted a 1/3rd share.

11th August 1940 – One Bf109 destroyed, during a reconnaissance flight by 235 Sqn. The Bf109 was downed by combined defensive fire by the 3 Blenheim turret gunners. Peacock is granted a 1/3rd share (surely it belonged to the WOP/AG!)

18th August 1940 – One Ju87 Stuka over RAF Thorney Island (235 Sqn base) during a raid. Thinks he hit a Ju88 during dogfight. Subsequently awarded kill. But postwar research suggests it was a Ju87 Stuka.

The unit diary describes:

“A formation of about 28 Ju 88s and Me 109s started a diving attack on the aerodrome. Peacock flew straight for the leader of the lot, who broke away, followed by Peacock, who closed to 200 yards and opened fire. One of the enemy aircraft’s engines burst into flames and the bomber crashed into the sea.”

This was Peacock’s fifth victory and it made him the only Coastal Command pilot to achieve 'ace' status whilst flying a Bristol Blenheim. He was awarded the Distinguished Flying Cross (DFC) on 13th September 1940.

His DFC citation read (in difference to Sqn records!):

“This officer has carried out approximately 100 hours operational flying as the Leader of a Section during the last three months. He has on all occasions displayed a fine offensive spirit and has led his Section with great coolness and determination. On two occasions his section has been attacked by superior enemy forces and, although on both occasions his two following aircraft have been shot down, he has carried on and completed the patrol on his own. On May 12th, when attacked by 8 ME 109s this officer succeeded in shooting down one and seriously damaging a second. On 27th June, whilst one of six carrying out a reconnaissance of the Zuider Zee on his own. At the end of this patrol he encountered a Heinkel seaplane which he attacked and only broke off the engagement when all his ammunition was expended.”

However, there is some confusion with Peacock’s fifth victory claim. In fact, there is no record of Ju 88s being involved in the attack on Thorny Island. But twenty-eight Junkers Ju 87 “Stukas” of I./StG 77 were known to have been attacking Thorney Island, escorted by Messerschmitt Bf 109s of II./JG 27. I attribute this mistake to a typographical error by the RAF Intelligence Officer recording details, as it’s so easy to write ‘88’ rather than ‘87’. Peacock would surely have known a Stuka from a Ju88. There is one tantalising snippet of information in the late Dr Alfred Price’s book *“The Hardest Day, Battle of Britain 18th August 1940”*. Page 188 states the following, as told by one of the Stuka pilots involved in the attack:

“Kurt Scheffel (I./StG 77) was straining every last ounce of speed out of his battered Stuka, as he picked his way through the ‘witch’s cauldron’ of tracer rounds, plunging aircraft, and floating parachutes to the south of Thorney Island. He managed to thread his way to the front of one of the depleted Staffel formations; with his own radio operator dead, he needed some protection from behind. A Blenheim passed right across his nose, holding an almost vertical bank as its pilot yanked it round in pursuit of another of the dive-bombers. It was one of the Coastal Command fighters of 235 squadron, which had stormed vengefully after the Stukas that had attacked their base.”



Photo Left; L9446 (coded LA-N) was the usual mount of the Flight Lieutenant Andrew W. Fletcher. Peacock usually flew Blenheim Mk IVF, Serial No. N3542 (coded LA-X). Perhaps on this day he rushed out during the attack and jumped into whichever aircraft was available. Hence why he was flying L9446 (LA-N) when he made his claim for a Ju88 (Ju87 Stuka).

Peacock was later promoted to Sqn Ldr and served in Malta and North Africa but sadly was killed on 5th February 1943. While serving with No. 227 Squadron based at Luqa, Malta he was a passenger in Hudson, Serial No. EW877, of 117 Squadron which lost power and crashed on take-off and at El Adem, Libya. He was 25 and is buried in Tobruk War Cemetery, Libya.

Despite the postwar questions over the accuracy of his claims, and ace status, Sqn Ldr Peacock was by all accounts an audacious and brave pilot who deserves to be remembered. Currently the Kent Battle of Britain Museum staff are building a replica of L9446 LA-N (show above) in his honour, using left over parts of a Blenheim donated by IWM Duxford and cockpit parts of a Bolingbroke sent from Canada. The Blenheim Project started in 2017 and is expected to be completed in the next few years.

TWO SHORT LIVES; SCYLLA & SYRINX OF IMPERIAL AIRWAYS BY KEITH HAYWARD

The Short S17 Scipio class flying boats were worked hard by Imperial Airways in the 1930s and had proved to be reliable aircraft in service. Short Brothers were well aware of the popularity of the Handley Page 42s and proposed a landplane version of the Scipio to supplement these large biplanes which were hard stretched on the European routes – particularly to Paris including the famous ‘Silver Wing’ service.



A prototype was built at Rochester and first flown by Chief Test Pilot John Lankester Parker on 26 March 1934. Imperial Airways ordered two aircraft: G-ACJJ *Scylla* and G-ACJK *Syrinx*; they were delivered in June 1934 and went into service immediately after conversion training.

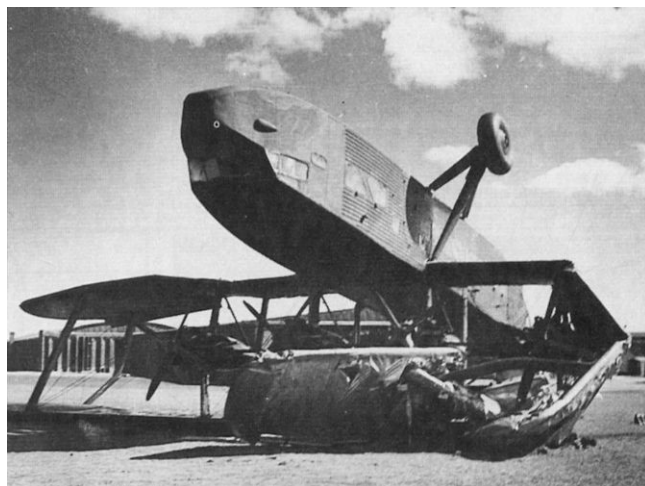
With 113 ft wingspan and a height of 30 ft they were large aircraft, powered initially by four Bristol Jupiter engines mounted between the wings. Carrying 38 passengers they had a spacious 11 ft wide cabin which was appreciated by Imperial Airways’ passengers on the European routes. However, in general terms, the popularity of *Scylla* and *Syrinx* was marred by the fact that they yawed and wallowed in rough weather. Also, the ailerons and rudders were heavy and tiring to operate.

On 3 August 1934 *Scylla* experienced a jammed wheel brake whilst landing at Le Bourget, Paris. The huge aircraft tipped on its nose which was damaged; not a pretty sight. As a result of this the centre of gravity was moved further aft.

As war clouds gathered Imperial Airways (soon to become BOAC following the merger with British Airways Limited) reacted fast. On 29 August 1939 they started to move the Croydon operation to the designated wartime base at Whitchurch, near Bristol. *Scylla* and *Syrinx* were quick off the mark and flew the advance party to the new base. Heavily loaded with equipment, they played their part. Following this a number of Imperial Airways aircraft were put at the disposal of the NAC (National Air Communications) carrying military supplies or personnel as required. However, the wartime service of *Scylla* and *Syrinx* was to be short-lived. Initially, in November 1939, they were positioned to Exeter to be camouflaged. In March 1940 they were impressed into RAF service, but it was discovered that *Syrinx* had already been dismantled at Exeter following the expiry in December 1939 of her Certificate of Airworthiness.

Her sister aircraft, *Scylla* (shown right), was being positioned to RAF Drem in Scotland on 14 March 1940 to pick up some Imperial Airways staff and fly them south. However, there was a severe gale which turned the machine violently over on to its back, virtually reducing it to scrap in seconds – again, not a pretty sight. This was a somewhat ignominious end for an aircraft type which, although not that popular with its operator, had played its part in the Imperial Airways story.

There is no doubt that these large biplanes were very vulnerable to high winds. Two of the Short 17’s contemporaries, Handley Page HP42s G-AAUD *Hanno* and G-AAXE *Heracles* which had been requisitioned by the RAF in March 1940, were blown together and wrecked in a gale at Whitchurch on 19 March of that year. A further write-off occurred when another HP42W, G-AAUE *Hadrian*, broke away from her moorings in a gale at Doncaster on 6 December 1940, was blown down an embankment and subsequently scrapped – virtually the end of an era for the huge biplanes.



(Editor; The first DC-2 took to the air on 11th May 1934 just 7 weeks after the first flight of the Scylla prototype, so perhaps the passing of these bi-plane types was not such a bad thing!)

CRASH OF VICKERS VISCOUNT 708 G-ARBY OF ALIDAIR ON 17th JULY 1980 – BY JOHN ROACH

The Vickers Viscount G-ARBY was engaged upon a passenger charter flight from Santander (SDR), Spain to Exeter (EXT). The aircraft arrived at Santander 8 minutes ahead of schedule, at 16:22. The aircraft commander recorded in the Technical Log a fuel state on shut down of 3,178 litres and ordered a total fuel load of 5,902 litres for the return flight, that is 454 litres less than the figure for full tanks. Whilst the aircraft commander was with the handling agents, the co-pilot supervised the refuelling. He requested a total uplift of 2,720 litres and wrote the figures down, showing them to the senior of the two operators of the refueling vehicle, which was not the one that had refuelled the aircraft on its earlier flight that day. On this previous



flight, intermittent contact at the external electrical supply socket caused the aircraft's refuelling valve to open and close intermittently, interrupting the refuelling process. The refuelling was therefore completed using electrical power from the aircraft batteries. With the aircraft obtaining its electrical power from the same ground power unit as before apparently quite satisfactorily, the operators then refuelled the two sides of the aircraft one after the other, using the same hose each time. When the refueller finished pumping, its indicators recorded a total delivery of 2,720 litres and the co-pilot, who had watched the operation, checked the figures and signed the delivery note accordingly. Neither pilot made a physical check of the aircraft's tanks using the dip sticks. Both fuel contents gauges had a history of defects. A recurrent problem in the port fuel gauge was recorded in the Technical Log as a deferred defect, expressed as 'port fuel contents gauge fluctuating occasionally, i.e. full-scale deflection; rectification being carried forward until the next check'. The starboard gauge also had a defect. The aircraft commander Captain Geoffrey Whittaker did not draw the attention of the co-pilot Captain Arthur Hickox* to this logbook entry.

Before starting the engines, the pilots again set the flow meter totals at zero. The aircraft left Santander at 17:33 and was shortly afterwards cleared to its planned cruising level of Flight Level 180. The planned flight time was 2 hours and 9 minutes, with an expected fuel consumption of 3,375 litres, leaving a reserve of 2,527 litres. At 18:46 the aircraft passed over Nantes. The flow meters then indicated that 1,964 litres had been consumed, which was exactly according to the navigation plan and the crew therefore recorded that at that moment 3,320 kg (4,150 litres) remained in the aircraft tanks. At approximately 19:10 whilst in the area of Dinard, the fuel contents gauges began to cause them some concern. The port gauge, with various fluctuations, occasionally fell to zero, but sometimes read full. The starboard gauge gave a reading equivalent to 500 litres and continued to fall steadily as the flight progressed. The pilots reviewed the fuel situation and although uneasy, considered that in the light of the recorded uplift and the totals on the flow meters, that they must have ample fuel on board. As the aircraft approached Guernsey the aircraft commander considered diverting there in order to take on more fuel, but after further thought decided against this action. At 19:28 when the aircraft was between Guernsey and Berry Head, it received initial descent clearance and shortly afterwards was further cleared to Flight Level 40 on a direct track for the Exeter NDB. At 19:42 the crew changed frequency to Exeter approach and started to receive radar positioning for runway 26. The cloud was given as one okta at 700 feet, 5 oktas at 1000 feet, and 7 oktas at 2,500 feet, with a visibility of 13 kilometres and a surface wind of 280 degrees at 7 knots.

At 19:44 the crew performed the approach checks, which included selecting flap to 20 degrees and switching on the fuel heaters. As fuel heat was selected, there was momentary flash from one of the two low pressure warning lights and after a brief discussion the crew opened the fuel cross feed cocks. At 19:50 the aircraft was at 2,000 feet QFE, just below cloud and about 8 miles from touchdown. The flap was still at 20 degrees and the undercarriage was retracted. Suddenly both low pressure fuel warning lights illuminated and in rapid succession all four engines lost power. The aircraft commander made an immediate Mayday call to Exeter and at the same time gave a warning on the passenger address system. Knowing the local terrain, the commander turned left in the best hope of finding a suitable area for a forced landing. With the flap still set at 20 degrees, the aircraft descended on a heading of approximately 190 degrees (magnetic) along a small grassy valley studded with trees, the average elevation of which was 130 feet amsl. As the aircraft crossed the boundary of the field, the port wing struck a tree, damaging the under-skin and removing the mid-section of the port flap. It then touched down with the nose well up, with the stall warning in operation and the control column hard back. The rear of the fuselage struck the ground first and almost simultaneously the port wing struck a tree causing a noticeable yaw to the left as the nose pitched down. Without hitting any further obstructions, the aircraft came to rest after 307 metres on a heading of 074 degrees (magnetic). The crew assisted with the subsequent evacuation, which was orderly and there were no injuries.



The total flight time since takeoff from Santander had been 2 hrs 20 minutes, with a fuel consumption, according to the flow meters, of 3,458 litres. On examination all tanks were found to be empty.

The Probable Cause

The accident was caused by the aircraft running out of fuel due to the crew's erroneous belief that there was on board sufficient fuel to complete the flight. The aircraft's unreliable fuel gauges, the company pilots' method of establishing the total fuel quantity and lack of precise company instructions regarding the use of dipsticks were major contributory factors. Meter indications on the refuelling vehicle at Santander, which cannot have reflected the quantity of fuel delivered, are also considered to have been a probable contributory factor.

By the 20 July 1980 the Viscount had been jacked up and its undercarriage lowered in preparation for its removal to RAE Farnborough for further investigation work to be carried out. Up to the date of the accident G-ARBY had been the oldest Viscount still flying and had made a total of 35,122 flying hours.

*The late Captain Arthur John Hickox was the uncle of Bob Hickox (Chiltern Aviation Society member). Below are some of Bob's recollections of his uncle and of the accident as related to him.

"My uncle's name was Arthur John Hickox. I don't think he liked Arthur, so he was always to me uncle John, and John to the rest of the family. Unfortunately, he passed away a few years ago so that I cannot get his personal account. I do remember him saying that he suggested one field but the Captain had another location in mind. My uncle said that the wheels-up landing seemed okay until one wing hit a tree and they began to slide sideways. I know that both or all the low fuel warning lights were lit up, as a passenger entered the flight deck with a camcorder and the TV news that evening showed that piece of film. But the crew just thought it was gremlins and took no notice although they did have some misgivings about the fuel state as mentioned above and were thinking of landing at Guernsey."

CRASH REPORT DETAILS FOR VICKERS VISCOUNT 708 G-ARBY

Date: Thursday 17 July 1980
Time: 19:53
Type: Vickers 708 Viscount
Operator: Alidair
Registration: G-ARBY
C/n / msn: 10
First flight: 27th May 1953 (27 years 2 months)
Total airframe hrs: 35,122
Engines: 4 Rolls-Royce Dart 505
Crew: Fatalities: 0 / Occupants: 4
Passengers: Fatalities: 0 / Occupants: 58
Total: Fatalities: 0 / Occupants: 62
Aircraft damage: Damaged beyond repair
Location: Bishops Court Farm Ottery St. Mary.
Phase: Landing (LDG)
Nature: International, Non-Scheduled Passenger
Departure airport: Santander Airport (SDR/LEXJ), Spain
Destination airport: Exeter Airport (EXT/EGTE), United Kingdom

Credits: Air Britain, Flight Safety Foundation, Bob Hickox, Ken Clay / Vickers Viscount Network, and various sources.

THE HISTORY OF VICKERS VISCOUNT G-ARBY



In November 1951 Air France became the first airline in mainland Europe to order the Vickers Viscount when it placed an order (production order number F02/708) for twelve of the British turboprop airliners.

The subject of this article is the second example namely F-BGNL (*photo left at Heathrow June 1959*) construction number 10 which first flew from Brooklands Airfield Weybridge on 27th May 1953 and landed at Wisley Airfield for fitting out and test flying prior to delivery to Air France on 25th August 1953. Initially the aircraft was configured with 48 seats but later changed to 63 seats in 1955. During its time with the French airline it had one major incident when it had an in-flight decompression shortly after take-off from Stockholm (Bromma) on flight number AF493 bound for Paris on 16 April 1954, and returned to Stockholm with No. 4 engine severely damaged.

In 1960 Air France retired this Viscount and sold it to Maitland and Drewery (*below left, at Basle September 1960*), via WS Shackleton & Company on 27 June that year with the aircraft positioning to Cambridge (in Maitland colours but still French registered) for Marshalls to carry out its overhaul prior to entering service as G-ARBY



During 1961 'BY the Viscount was seen numerous times at Heathrow operating services for Austrian Airlines and on 3rd June 1961 was the last service by Maitland Drewery Aviation from Italy to Manchester after this date Maitland leased the aircraft to many operators including BKS, Silver City and British United. Maitland Drewery parted company with this Viscount on 27 April 1966. Then on 21st June 1966, was registered to British United Airways. (*See photo below of G-ARBY in BUA colours at Gatwick July 1964*). This arrangement lasted until 7th October the same year when it was sold to Air Inter as F-BOEC on 2 February 1967 and delivered to Paris Orly the same day and was operated by the French domestic airline until it was leased to Alidair on 8 April 1975, and delivered to Castle Donnington three days later and operated initially on the French register in

basic Air Inter colours. The Viscount became G-ARBY on 29 July 1975.

Subsequently bought by the East Midlands' airline on 7 August 1975 and on 8th August was rolled out in full Alidair colours. During 1975 the Viscount was leased to Dan-Air Services (26 October to 9th December) and Cyprus Airways (14th December to 27th March 1976). At the end of March, the aircraft was transferred to Alidair (Scotland) and based at Dyce carry out North Sea oil contract work. On 13th July 76 there was taxiing accident at Liverpool resulting in damage to the leading edge of the wing and both Rolls Royce Dart 505 engines, and was repaired by 22nd of that month. It was again leased to Dan-Air from 1st March 1977 to 1st September 1979. During this lease the aircraft was ferried to East Midlands Airport to have its wing spars renewed. From that date until its crash (see below) 'BY was operated in Alidair (Scotland) colours.



Alidair was formed in 1971 and began airline charter services in January 1972 and operated, during its brief history, the Vickers Viscount both series 700 and 800, but in July 1983 (due to financial problems) ceased trading.



Above left; F-BOEC Air Inter seen at Paris Orly June 1971. Above Right; G-ARBY on lease to Cyprus Airways seen East Midlands Airport December 1975



Above Left; G-ARBY Alidair Scotland seen at East Midlands Airport January 1976. Above Right; G-ARBY on lease to Dan Air seen East Midlands Airport March 1977.



Photo left; Another photo of Viscount G-ARBY seen in its 'final resting place' in a field at Bishops Court Farm, Ottery St. Mary, Devon. It is believed that the photo was taken shortly after the crash landing by a passenger.

NORTH AMERICAN XB-70 VALKYRIE - BY BOB CHAD

On the 11th of May 1964 the first North American XB-70 Valkyrie was rolled out from the construction hanger at Palmdale into the rather overcast daylight in front of several thousand celebrities including actor Jimmy Stewart and local guests. The white body was a triangle spanning 105 ft with the serpentine neck thrust forward giving a total length of 185 ft and the head 20 ft above the ground. Beautiful giant but menacing! Just sitting there, the Valkyrie was awe inspiring. Science fiction was becoming science fact!

Genesis

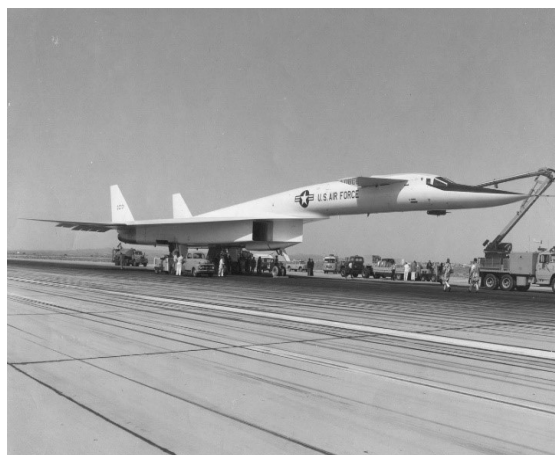
As early as 1947 air force planners began developing requirements for a supersonic bomber. Then in 1949 the Air Research Development Command introduced the Generalised Bomber Study for the development of a super-sonic, long range manned bomber aircraft. This program led to the B-58 Mach 2 bomber that was introduced into service in 1960.

By the early 1950s studies continued into even more advanced bombers. Proposals were initiated with the aim of service entry during the 1960s. In December 1954 two weapon system development studies were proposed. Weapon system 125A (WS 125A) was a program for a nuclear-powered bomber and WS 110A for a “chemical” powered bomber. A more detailed system requirement for WS-110 was issued in April 1955 that set a target date of 1963 for an operational service wing. This was the expected date that the early B-52’s would be retired and a year earlier than the expected last B-52 would be manufactured.

At the end of 1955 contracts were issued to Boeing and North American for development proposals to achieve the goals of the WS-110 program that included that the aircraft be able to cruise at Mach 3 at 70,000 feet (approximately 2,000 mph) with a weapon load of 25,000 lb and have a range of 6000 miles. A multitude of options were studied and eventually in December 1957 North American was announced as the selected manufacturer of what would be called the Valkyrie. The ‘aircraft component’ of WS-110 was designated as the B-70 and, as in traditional project terminology, would be referred to as ‘the Article’ (U-2’s on flying missions are still referred to as ‘the Article’).

A key element of the North American proposal was the design use of what is referred to as “compression lift”. This aerodynamic feature provides an increase to the ‘lift / drag’ ratio at high supersonic speeds by careful shaping of the aircraft to control shock wave development. This increase in efficiency significantly increases the aircraft range. For the Valkyrie it is the shape of the under wing “engine box” that directs the shock wave pressure under the wing to increase the lift. This process is also referred to as “wave riding” (many years ago I came across a small note about a Rolls Royce concept for a hypersonic air vehicle that added fuel burning into the high pressure wave zone making it into “surface burning” propulsion but I have not been able to find the reference. This sort of technology is currently being developed for space launch vehicles in the form of ‘aerospike’ engines).

A major challenge for air vehicles cruising at high Mach number is frictional heating. Typical aluminium alloys used in aircraft manufacture at that time experience thermal expansion and strength reduction at temperatures expected for the Valkyrie. In addition, the temperature rise would affect the lubrication oils and in particular the fuel. Vaporisation of the fluids is then a potential hazard. For flight at up to Mach 2 the heating problem can be mitigated safely (i.e. Concorde) but as the Mach number increases beyond Mach 2.2 the heating rises rapidly requiring new materials. In the 1950s stainless steel was the main option with titanium as a new possibility. Both of these metals are difficult to work with and in addition the high cost and limited availability of titanium would put a great strain on project cost. The designers then took the approach to put great effort into aircraft shaping to minimise aerodynamic friction. A novel feature of the design was the use of large wing tips (about the size of the B-58 wing) that could be tilted down. This was termed ‘variable geometry’. The purpose was to provide extra flight stability through the transonic region and high Mach number which would allow the vertical stabilisers to be smaller reducing to total surface area and thus less drag. For the structure the approach was careful selection of several advanced aluminium alloys for different structural parts, development of a ‘honey comb’ form of stainless steel particularly for wing panels to give strength at reduced weight and titanium for critical components only.



A pressurised nitrogen gas would also be employed in the fuel tanks to control vaporisation issues and an internal refrigeration system to protect critical areas. At this time other research programs outside WS-110 were working on new engines and fuel options that might be useful for many different air vehicles. The Valkyrie utilised a new engine designed for Mach 3 operation but test flights were conducted with conventional fuel. A competition to find a suitable name for this amazing aircraft was initiated and on the 3 July 1958 the name 'Valkyrie' was announced as winner. The 'Valkyrie maidens' are from Norse mythology where they have the power to choose who will live and who will die.

From about November 1959 until March 1964 as development work progressed the cost estimates rose significantly, the timescale to service operation extended and political pressure grew. These issues gradually eroded the Valkyrie program until the bomber project was cancelled. However, the USAF ordered two XB-70's for research purposes, A/V-1 and A/V-2. Production of the A/V-2 would be delayed to take advantage of information gained from the production and early flights of A/V-1. Construction of A/V-3 had already begun so was stopped in March 1964 due to the funding issues but the items already made would prove useful as spares. The funding problems also led to a reduction in the flight test program to a maximum of 180 flight hours.

Engineers and Test Pilots Solve Problems



The first flight of A/V-1 was set as 21st September 1964 and it was hoped that the aircraft would exceed Mach 1 during the test. Preparations were extensive and included a wide range of "chase planes" as preparation for any eventuality. The prime chase aircraft was a TB-58A 'Hustler', a group four T-38 'Talons' between them carrying engineers and a photographer, a C-130 was there to check emergency landing sites, a helicopter carried a surgeon and another helicopter was on the ground to be ready if needed. Civilian air traffic control (Palmdale) was also ready to assist if any flight emergency arose.

With everything in place, the pilots (Alvin White and Col. Joe Cotton) began their checks. There then began the detection of a series of faults that led to a delay of about two hours before the Valkyrie finally took to the air! Because there had been hydraulic system problems during previous ground tests the landing gear was to be left down for the 'climb out'. A steep climb was then required to keep the air speed down below 250 knots. At 15,000 ft straight and level everything seemed ok but when undercarriage retraction sequence began the main bogies did not complete the manoeuvre. Eventually the ground engineers suggested a recovery procedure and the main gear was then returned to fully down. The flight test continued through the low speed regime and the aircraft was said to have performed well. Touch down at Edwards Air force base went smoothly until a fire was seen in one of the main bogies! After a roll of 10,800 ft to stop, the fire was extinguished and so ended a not so glorious first flight! Glory would come at Mach 3!

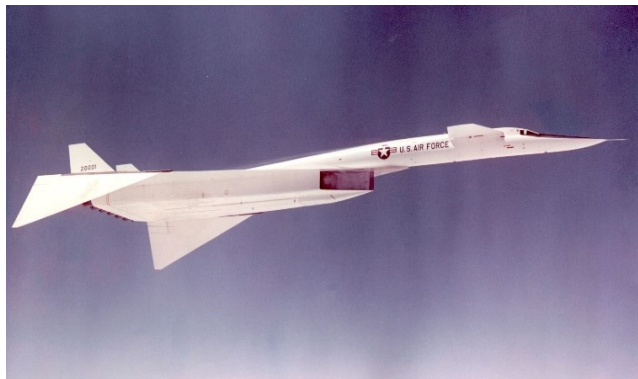


Flight Test Progression

The Valkyrie first exceed Mach 1 on the third flight as it repeatedly tested the transition from high subsonic to about Mach 1.1. All went well but after landing it was noticed that some areas of the white paint had peeled off. Subsequent flights led to further loss of paint. The fundamental reason was that the paint layer was too thick and as the skin flexed during flight it caused the flaking (it was estimated that the weight of paint used was 1000 lbs). However, this was not a flight safety issue. Exactly why the paint was so thick was not clear but a common suggestion was that a viewing of this marvel of aviation was so popular with so many 'dignitaries' that marks caused during ground work were continually repainted to ensure the aircraft looked pristine! The fourth flight set a record for the longest sustained supersonic flight which lasted for 40 minutes out of a total flight time of 85 minutes. Mach 1.4 was attained at 46,300 ft. During this portion of the flight the wing tips were lowered 25 degrees to their mid-down position for the first time and verified that it cured a slight stability issue.

During the fifth flight on 16 February 1965 the wing tips were lowered to their full 65-degree position during 40 minutes of supersonic flight that reached a speed of Mach 1.6 at 45,000 ft.

Speed was gradually increased in subsequent flights reaching Mach 1.85 at 50,200 ft during 60 minutes of supersonic flight in the seventh test flight and Mach 2.14 at 56,100 ft for the eighth flight. This flight also achieved several records including 40 minutes of sustained flight above Mach 2 and added 34 minutes above Mach 1 to be the longest sustained supersonic flight. It also recorded the heaviest take-off weight of just over 500,000 lbs! Setting weight, speed and height records would become the norm as the flight test program proceeded!



The ninth flight was intended to obtain stability data for Mach 2.25 at 57,500 ft but after some engine problems the plan changed to subsonic tests at lower altitude. However hydraulic problems developed so the test schedule was terminated. With the reduced flight time the remaining fuel meant that the aircraft would land 'heavy' requiring a longer roll to stop. Normally such landings would be made on the Rogers dry lake but as the lake was not dry at this time the shorter concrete runway had to be used. Luckily the drag chutes deployed correctly and the landing was fine but the tyres had taken a great strain and were very hot. Protective baskets were placed over the tyres and after about 45 minutes one tyre exploded! Luckily no serious damage was done to the aircraft.

Flights 11, 12 and 13 proved 'exciting' for the pilots as they tested features of the engine inlet ducts and investigated the effects of stopping and restarting different engines at high Mach numbers (Mach 2.2 – 2.6 at about 64,000 ft). The dramas included unintended asymmetric flying, some complete loss of control for short periods, damage due to the peeling of some 'honey comb' panels including some engine damage, and for flight 13 hydraulic faults leading to a lake bed landing with a long roll of 13,000ft!

The second 'article', A/V-2, would include some automatic features as would have been intended for production aircraft to control engines and the air duct system so the recovery techniques demonstrated by the test pilots provided the emergency actions necessary should system failures occur in the future. Hydraulic failures and peeling of some of the stainless-steel surface panels during flight haunted the program. Too often the engines ingested some of the peeling skin causing failures and sometimes complete engine destruction! Pilot skill saved the day and eventually engineering development solved the technical issues. Despite all the issues encountered the testing continued to extend the operational envelope as flight 14 moved to Mach 2.85 at 68,000 ft. The target was still Mach 3.



The Team is Joined by A/V-2

The roll out of A/V-2 Roll occurred on 29 May 1965. Most of the engineering issues found on A/V-1 were alleviated during the manufacture of A/V-2 including the skin peeling and hydraulic problems. A major change was that A/V-2 was given a wing dihedral of 5 degrees, compared to zero on A/V-1, to overcome some stability issues. The first flight of A/V-2 took place on 17th July 1965. The whole test schedule was completed very smoothly, unlike the first trip for A/V-1, including wing tips to fully down and a supersonic dash to Mach 1.4 at 42,000 ft.

The 'Push' to Mach 3

Each aircraft had a dedicated team of engineers and other staff and there was a friendly rivalry as to which aircraft would be first to achieve Mach 3. The test program proceeded with both aircraft and the target of Mach 3 was getting closer. On 14th October 1965 A/V-1 set a path to the goal. After take-off the wing tips were lowered to the 25-degree position ready for the transition to supersonic flight. The aircraft climbed to 32,000 ft, levelled out and began accelerating. At Mach 1.3 the wing tips were lowered to the full down position and acceleration continued to climbing speed of Mach 1.48. Clearance was given to proceed to higher altitude and perform the test schedule. As the speed reached Mach 2 in the climb the instruments indicated inlet duct problems. Speed was reduced to sort out the problem and then the climb continued reaching 62,000 ft and Mach 2.6. A slight adjustment was made to the flight path to avoid "booming" Salt Lake City (on the starboard beam) and the climb continued. As the altitude continued to increase so did the Mach number and the aircraft temperature.

Mach 2.77, height 67,000 ft, temperature 484⁰F. Al White called the ground and began to call out the numbers; M2.82, 68,000 ft, 506⁰; M2.94, 69,000 ft, 551⁰; M2.96, 69,300 ft, 567⁰; then "...that big magic number!" Mach 3 and still accelerating. A minute later the temperature reached 576⁰ (3,020 C). After two minutes at about Mach 3.04 a loud bang was heard and while there was no noticeable problem with the aircraft the pilots decided to slow down and descend to perform other tests. After reaching 34,000 ft a sequence of tests were performed, by which time one of the chase planes caught up and reported to seeing that a strip of skin was missing from the leading edge of one of the wings, an explanation for the bang. Testing was then stopped and the aircraft returned to base. Once the aircraft had landed an announcement was made to all staff of the success of the flight to Mach 3. The A/V-1 team were ready and had prepared a stencil that read "XB-70 _ Ship 1 – MACH 3+" and everyone had the words sprayed on the back of their coveralls! All staff involved with the XB-70 program were invited to a celebration that afternoon.

The continuing problem for A/V-1 of peeling skin now led to the imposition of a maximum limit of Mach 2.5 for its further testing program. Flight testing continued with both aircraft but it was not until its seventeenth flight on 3rd January 1966 that A/V-2 reached the magic number of Mach 3. A top speed of Mach 3.05 for three minutes was achieved. Cautiously two more short flights above Mach 3 were flown and then on 17 February 1966, A/V-2's 22nd flight, a speed above Mach 3 was sustained for 15 minutes. Flight testing using both aircraft continued to accumulate data through the complete flight envelope. In total A/V-2 built up a total time at Mach 3 and above of one hour forty-six minutes.

Tragedy

The XB-70 Valkyrie was the greatest aviation 'celebrity' of its time and everyone wanted to 'rub shoulders' with this giant. Aircraft manufactures kept pressing for their aircraft to have a 'photo opportunity' with Valkyrie. Eventually a photo session was arranged to take place after a short Valkyrie flight test. Early on the 8th June 1966 A/V-2 took off on its 46th flight with Al White at the controls and Carl Cross as second pilot on his first XB-70 flight. The short test sequence included a 'sonic boom run' and all went well and then the preparation for the photographic sortie began.

A Lear Jet was the photographic aircraft with the main formation consisting of a NASA F-104N Starfighter, McDonnell F-4B Phantom II, a Northrop F-5A Freedom Fighter, and a Northrop T-38A Talon. All the aircraft formatted on the Valkyrie at about 25,000 ft and 300 knots and the photo shoot began. During the flight a USAF photo aircraft returning from an unrelated mission was also given permission to film the group.



The photo shoot went well and the formation prepared to break and return to base. The Valkyrie pilots heard a bang and then a radio call "mid-air", "mid-air", while the aircraft continued steadily on its path and then began a roll. Valkyrie pilot Joe Cotton riding back seat in the Talon was calling "Bale out", "Bale out"! The F-104 had struck the Valkyrie wing, curled over its back and crashed through its vertical stabilisers and the pilot Joseph Walker was not able to escape and was sadly lost in the crash. The Valkyrie entered a spin leading to high G forces on the pilots. Al White was able to begin the eject procedure and left the aircraft. Very sadly Carl Cross was unable to leave the aircraft and was lost in the crash. Al White descended very fast and hit the ground hard. He was taken to hospital and while in pain had not broken any bones. After 3 months he returned to flight status but did not fly the Valkyrie again.

Sonic Booms and Airliners

Supersonic flight began to grow during the 1950s and the associated 'boom' began to be heard. Initially sonic booms were not expected as it was thought that the sonic shock wave would dissipate before reaching the ground. However, as fighter aircraft began to be able to sustain longer periods at supersonic speed so complaints grew and so more research was needed to better understand the phenomena.

In 1961 North American released details of a proposal for possible development plans for an early supersonic passenger aircraft based on the XB-70. By removing all military equipment, the 'neck' area could be modified into a passenger compartment. Three different configurations were offered giving room for 36 to 76 passengers. The cruise speed would be Mach 3. This proposal was not accepted and when eventually development work began on the US SST the speed requirement was reduced to Mach 2.7. It was fast enough to beat Concorde and high enough to enter the regime of many engineering difficulties!

The fairly scattered data in the early 1960s about sonic shock waves and the various proposals for supersonic transport (SST) aircraft in the US led to the National Sonic Boom Program, NSBP, to be set up to coordinate research into the issue. Fighter and rocket powered aircraft would be used along with the Convair B-58 Hustler bomber but a larger aircraft was required to be able to provide data more appropriate to the SST.

NASA originally proposed the use of the XB-70 for research during 1962 and eventually the first XB-70 flight for the NSBP took place on 6 June 1966. The flight using A/V-2 lasted about 2 hours with 9 minutes above Mach 3. The next NSBP test took place on 8 June and tragically ended with the loss of A/V-2. The XB-70 program now fell back to A/V-1. Flight testing restarted with A/V-1's 50th flight on 3 November 1966. Many modifications and more instrumentations were added to A/V-1 including parts from A/V-2 and the program continued until December 1968 having amassed vast amounts of aeronautical data and successfully developed many new engineering technologies.

The Finale

The North American XB-70 Valkyrie was an amazing dream and an icon of the age where 'anything was possible'. Engineering technology and piloting skill through 129 flights was stretched to make real the imagination.



The final flight of the Valkyrie took place on 4th February 1969 from Edwards Air Force Base on a subsonic flight of 3 hours 17 minutes that included taking further flight test data before landing at Wright-



Patterson Air Base. The final act was the handover of the log book to the USAF Museum. At the museum the aircraft has moved a few times and now rests in the Research and Development Gallery part of the new hanger 4 surrounded by other amazing air vehicles including some that share that age when anything was possible.



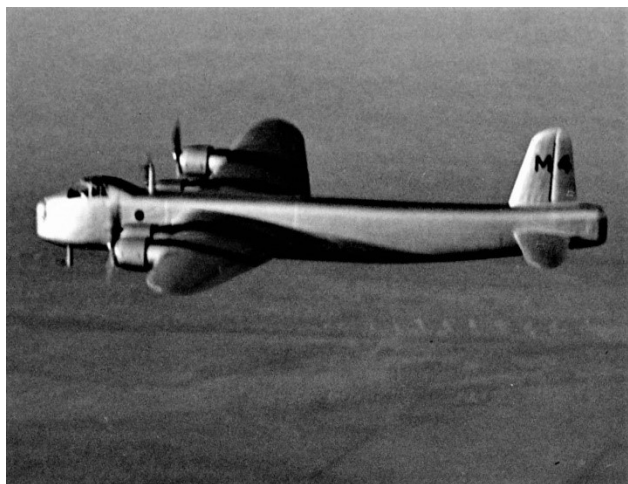
Restoration staff move the North American XB-70 Valkyrie into the new fourth building at the National Museum of the U.S. Air Force on Oct. 27, 2015. (U.S. Air Force photo by Will Haas)

THE SHORT STIRLING - BY BRIAN A L JONES

The first British four engine heavy bomber of the Second World War, was later over-shadowed by the Avro Lancaster and Handley Page Halifax (note - all British WWII RAF heavy bombers were named after cities)

In the period between the two world wars, Short Brothers of Rochester, Kent had gained considerable experience in designing and constructing large metal multi-engine aircraft. They had focused on flying boats, winning the large “off-the-drawing-board” order from Imperial Airways for 14 (swiftly increased to 28) Empire C-class aircraft in 1935.

In 1936 the Air Staff issued specification B.12/36 for four engine heavy bombers for the RAF which resulted in awards of contracts to Supermarine and Short Brothers for the development of two prototypes each. (Avro and Handley Page were similarly awarded contracts for two engine tactical bombers, which, of course, eventually resulted in the Lancaster and Halifax).



The design for the new Short's bomber, by a team led by Arthur Gouge, was inhibited from the outset by the specifications laid down in the contract. Perhaps the most onerous was that the wingspan should not exceed 100 feet to ensure that the bomber would fit inside the then RAF Standard hangar. Furthermore, the aircraft had to be capable of accommodating 24 fully equipped troops, or bombs up to 200 lbs, while having good short take-off and landing characteristics on grass airfields and good buoyancy should a ditching at sea be needed. An additional requirement was that the airframe should be divided into sections of a size which allowed them to be loaded onto a standard sized British railway wagon.

Photo Left; The half-scale Stirling, the S.31 only carried the M4 manufacturers serial and never received a civil or military registration, but operated under “B” condition.

To test aspects of the proposed design, a half scale flying model was constructed, the Short S.31. This emulated the success of an earlier and similar half-scale project for proving elements of the design of the C-Class flying boat, which had utilised a Short Scion Senior. The S.31 first flew at Rochester on 19 September 1938, which after initial testing at the home base was flown to the Martlesham Heath test centre for evaluation by their pilots. This led to a recommendation to increase the angle of incidence of the wing by 3 degrees to improve take-off performance. Shorts responded to this proposal by increasing the length of the main undercarriage legs, as production tooling for the Stirling had reached the stage when major changes to the fuselage layout to accommodate a wing change would have radically affected costs and dates of delivery. Thus, was created the Stirling's “Achilles Heel” of undercarriage related problems that were unresolved throughout its operational career.

Returning to the S.31, it was demonstrated to King George VI and Queen Elizabeth on their visit to Rochester on 14 March 1938. The Queen was entranced by the little aircraft and requested a second demonstration flight, which, of course, was provided. The S.31 continued in use until 1943 when, following its 110th flight, the Pobjoy Niagara engines were declared time-expired and the aircraft was subsequently scrapped.



John Parker made the first flight in the Stirling prototype L7000 at Rochester on 13th May 1939, but there was a catastrophe the following day when, after a 20-minute flight, a brake seized leading to an undercarriage collapse. The aircraft was so badly damaged that it was written off.

Photo Left; The complex design of the Stirling main undercarriage leg is evident in this photograph

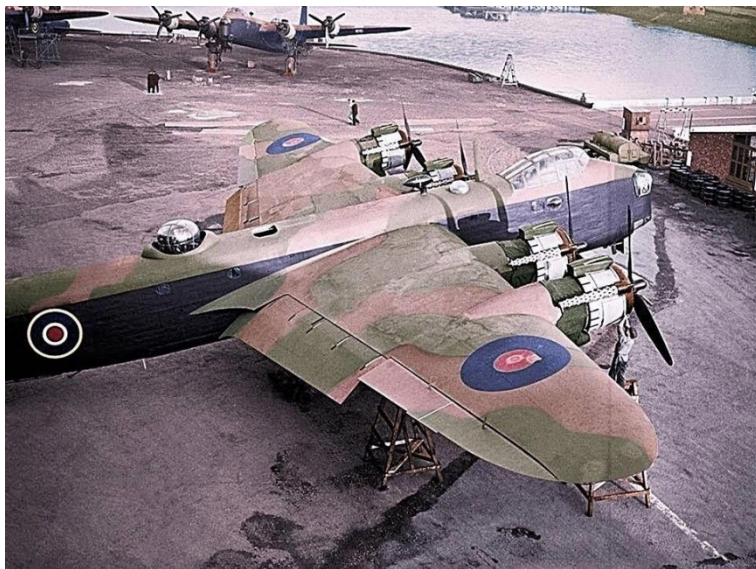
The second prototype, with a slightly modified undercarriage, flew on 3 December 1939 and was delivered to Boscombe Down for service testing on 22 April 1940. While the first production Stirling flew on 7 May 1940, problems continued, now with the hydraulic throttle control system.

Production of Stirling was spread across several manufacturing facilities. Led by Short's own factories at Rochester and Queen's Island, Belfast, shadow factories operated by motor car manufacturers, Austin at Longbridge and Rootes at Stoke-on-Trent all with many dispersed sub-contractors. All aircraft were powered by various marks of the Bristol Hercules radial engine.

The wisdom of these shadow factories arrangements was quickly realised on 9th August 1940 at Rochester, and on 15th August at Queen's Island, four, completed Stirlings were destroyed during Luftwaffe bombing raids. As a result of those raids, further new shadow factories at Hucclecote, Gloucestershire and South Marston, Wiltshire, joined the Stirling production system and Short's drawing office was temporarily re-located to Kidderminster.

Right, Nearly complete Stirlings have just come off the Shorts Belfast production line, via Alvin R Williams IV.

Also, in August 1940 the first deliveries from Rochester were made to No.7 Squadron based at Leeming, who had the honour of operating the first four engine RAF heavy bombers in service since the Handley Page V/1500s were withdrawn in 1919.



No. 7, having regrouped at Oakington, then flew the first Stirling operational night mission when overnight on 10/11th February 1941, installations in Rotterdam Port were attacked. In the following April Berlin was the target and daylight raids deep into Germany quickly followed. Operational use revealed the need for modifications to the wing leading edges to incorporate barrage balloon cable cutters and changes to the de-icing system. As deliveries of aircraft continued to grow more squadrons were equipped with Stirlings and the scope of their operations broadened to include long-range missions against Italy's cities in their northern industrial heartland, Milan and Turin.

Both posthumous Victoria Crosses awarded to Stirling pilots were related to such raids. Flt. Sgt. R H Middleton, No. 149 Squadron, having raided the Fiat Works in Turin on the night of 28/29 November 1942, was seriously injured by anti-aircraft shell splinters but continued to fly his badly damaged aircraft until reaching the English Channel with low fuel, where he ordered his crew to bale out. Five crew successfully departed the aircraft but two were drowned when they stayed with Middleton as he ditched the Stirling.

On 12th August 1943, after a similar raid on a Turin industrial target, Flt. Sgt. A L Aaron, No. 218 Squadron, though seriously wounded in the face and on an arm, continued southwards and crash landed at Bône, North Africa, but died of exhaustion during the next day.

Despite the "disappointing performance" at maximum altitude, the Stirling could take quite a lot of punishment. One Stirling even suffered a head-on collision with a Messerschmitt Bf 109 fighter over Hamburg, and was able to return to base. RAF pilots were delighted to discover that, due to the thick wing, they could out-turn the Ju 88 and Bf 110 night-fighters they faced. Its handling was much better than that of the Halifax and some preferred it to the Lancaster. Based on its flight characteristics, Flt Lt Murray Peden (RCAF) of No. 214 Squadron RAF described the Stirling as "one of the finest aircraft ever built". A consequence of the thick wing was a low ceiling; many missions were flown as low as 12,000 ft (4,000 m). This was a disadvantage if crews were attacking Italy and had to fly through (rather than "over") the Alps. When Stirlings were on operations with other RAF bombers which could fly higher, the Luftwaffe concentrated on the Stirlings. The Stirling's maximum bomb load could be carried for only around 590 miles (950 km). On typical missions deep into Germany or Italy, a smaller 3,500-pound (1,600 kg) load was carried, consisting of seven 500-pound (230 kg) GP bombs; this payload was in the range of that which was already being carried by the RAF's medium bombers, such as the Vickers Wellington and by 1944, the de Havilland Mosquito. Perhaps the biggest weakness present in the design was that, although the bomb bay was large at 40 ft long (12 m), it had a pair of structural dividers that ran down the middle, limiting the bay to nothing larger than the 2,000-pound (910 kg) bomb.[41] As the RAF started using the 4,000-pound (1,800 kg) "cookies" and even larger "specials", the Stirling became less useful. The Handley-Page Halifax and especially the Avro Lancaster offered better performance and when these aircraft became available in greater numbers from 1943, the Stirlings were relegated to secondary tasks although the last bomber Squadron, No. 218, relinquished theirs in August 1944.

Other Stirlings operated in the ECM role in support of Bomber Command, and others were used by No.138 Sqn and No. 161 Sqn in support of SOE. However, the prime utilisation of Stirlings was therefore changed to glider towing, para-trooping and transport roles. For those activities, modifications included removal of gun turrets, and for para-trooping, the creation of a large bath shaped exit on the fuselage underside. As a glider-tower, Stirlings were fitted with M.L. designed couplings, proving a capability of towing one Hadrian, two Horsas or up to five Hotspurs (when used for ferry or training purposes).



Above Left; Mass production of Stirlings underway. Above Right; A further photo of Stirling production. Note the cabin windows that were thoughtfully provided for when aircraft were used in their secondary passenger/ trooping role.



Above Left; The twin tail wheels which were a feature of every Stirling and are obvious in this photo. Above Right; How closely the 99-foot wingspan of a Stirling fitted into a standard pre-war built RAF hangar can be seen in this 1942 photo.



Above Left; They also served! In addition to the eight flight-crew, seen here, rather than the six normally employed – an additional 47 personnel are shown as having responsibilities related to supporting an offensive Stirling mission. Above Right; The cockpit of a Stirling, which Pilots of an Imperial Airways C-Class Empire flying boats would have found many that they were familiar with in their ‘office’.



Above Left; Stirling Mk 1 of a Heavy Conversion Unit at Waterbeach, Cambridgeshire in 1942. The sheer size of the aircraft presented difficulties for servicing and re-fuelling crews – imagine working on top of the wings in wet or icy weather! Above Right; The same aircraft as seen left, demonstrating the size of the bomb load which could be carried by a Stirling. (IWM)



Above: The airmen of 75 (NZ) Squadron assemble around one of their Stirlings in 1943. (National Library of New Zealand)



Stirlings participated in the invasion of Europe on D-Day and subsequently at Arnhem and Nijmegen and the subsequent operations related to Rhine crossings.

The final Stirling variant was the pure transport version, the Mark V, first flown by Geoffrey Tyson in August 1944. While primarily seen as a heavy support aircraft for the expected use by the Tiger Force in the Far East, only 160 were produced and, while some were operated on long-distance routes, they were displaced by Avro Yorks in 1946, when that became the standard RAF Transport Command aircraft.

Most remaining Stirlings quickly moved to storage, closely followed by large-scale scrapping (even including some brand-new transport versions) and none was saved for posterity.

Photo Left; A glider towing Short Stirling, - note the glazed nose position in place of the front turret.



Above left; LK137 of 295 Squadron taking off at Harwell with an Airspeed Horsa on tow (via Anthony Bramall). Above Right; Stirling Mark V Transport in India 1945 (via San Diego Aerospace Museum).



Above Left; A sparkling new Mark 5 Stirling transport at the beginning of its short life. Above Right; The first civilianised Mark 5 Stirling, converted by Airtech Ltd for Trans-Air S.A. Of Belgium.

Shorts, no doubt seeking civil orders converted one aircraft with improved cabin accommodation for 30 passengers, which flew in May 1945 but failed to find the limited success enjoyed by civil conversions of the Lancaster and Halifax.

Nevertheless, Airtech Ltd., located at Haddenham airfield (previously RAF. Thame) Buckinghamshire, civilianised 12 transport Stirlings obtained from store at RAF Polebrook, Northamptonshire, for £2,000. Those were sold to Belgian operator Trans-Air SA. (subsequently Air Transport) registered OO-XAK to OO-XAV and initially based at Brussels Melsbroek Airport. Taking advantage of the aircraft's 27 (some reports quote 36) seats or cargo carrying long-range capability, unscheduled services were flown out of both Brussels and Blackbushe, Surrey, to destinations, which included Shanghai with merchant seamen and Australia (first arrival at Darwin on 20th June 1948) with migrants. One aircraft crashed at Kunming, killing the co-pilot, otherwise operations continued until November 1948, when the Stirlings began to depart to Egypt, where at least seven entered service with that Country's Air Force.

This article does not set out to provide a detailed account of the Stirling's war record but some statistics may be relevant.

Total Stirling production was 2,381 and flew 18,440 sorties dropping 27,821 tons of bombs. Loss by enemy action was 641 out of a total of losses from all causes of 769.

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WORK STARTS ON RECOVERING A SHORT STIRLING FROM BOTTOM OF A DUTCH LAKE



An operation to recover a wartime Stirling bomber from the bottom of a lake near Amsterdam is beginning this week following a 10-year campaign by families. Short Stirling BK716 was shot down on March 29, 1943, on its way home from a raid over Berlin, and ditched in the Markermeer. It was based at RAF Downham Market in Norfolk. The remains of all seven crew – five British RAF airmen and two members of the Royal Canadian Air Force – are still believed to be in the water. The first pieces of wreckage were discovered in December 2008 when a boat stranded in the Markermeer pulled up a piece of landing gear with its anchor. Over the next few weeks divers found several other pieces strewn over a large area, including a faded aluminium panel with its serial number. The operation, which is expected to take around six weeks, is being carried out by the Dutch Ministry of Defence, including bomb disposal experts and army and air force technicians, together with private

contractor Leemans Speciaalwerken and Almere City Council.

The plane is one of the first to be recovered under the Dutch government's National Aircraft Wreckage Recovery Programme, which focuses on around 30 crash sites where human remains are most likely to be found. The Dutch state is financing the recovery programme in full, unlike regular operations where the local authority is liable for 30% of the cost. The defence ministry carries out its share of the work pro bono. For several years the plane was believed to be a different Short Stirling bomber, the BK710, after forensic experts misidentified the serial number on the aluminium panel. The relatives of the BK710 crew were contacted by the volunteer research organisation Aircraft Recovery Group and petitioned politicians in the UK and the Netherlands to recover the aircraft from the water. A monument to the lost airmen was (mistakenly) erected on Marken island, north of Amsterdam. BK710, which was shot down in May 1943, is now thought to have ended up in the North Sea off the coast of Texel. Johan Graas, of the Aircraft Recovery Group, visited the families of the BK710 crew last year to tell them of the mistake. 'It wasn't a nice job: the news was shocking for them,' he said. 'But their responses weren't as bad as I expected. They said: you can't change history and other families will be glad that the BK716 has been found.'

The story began on a winter's day just before Christmas in 2008, the Royal Dutch Rescue Society received a call-out to a boat that had broken down on the Markermeer lake, around six miles north-east of Amsterdam. The crew dropped anchor while they waited to be rescued, and when they pulled the weight back up again, they found a piece of aircraft machinery attached. It was the first piece of a wartime puzzle that would take 12 years to piece together. More than 3,000 Allied planes were shot down over the Netherlands during WW2. They came to rest in fields, skewered through farm buildings, in the North Sea or in the country's network of waterways. Thirty years after the war, a teenage boy named Johan Graas began poking around crash sites with his metal detector. 'I was at a birthday party where an uncle of mine was telling me how he had found a lifejacket at a crash site,' he recalls. 'An American life jacket with a name on it. As a 16-year-old boy I found it fascinating, so I went out to the site, just outside Purmerend, and asked the landowner if he knew about the crash. And he showed me the spot. At a crash site you get lots of oil and fuel seeping into the ground. The vegetation is different: it's discoloured and there are a lot more weeds.' Metal detector 'So I bought a metal detector and started digging, and 10 cm beneath the ground we found the first pieces. It was an American B24 Liberator – most of it had already been recovered, but we found a propeller, a ball turret and machine-guns. The aircraft pieces were interesting, but I started wondering: what sort of people flew these planes? How young were they? I became fascinated by these guys of around 20 or 25, sometimes 30. They had families, they had hobbies, they'd been through school and graduated and I thought: what made them volunteer to give it all up for this?' Graas's curiosity became a lifelong quest to retrieve the relics of war. At weekends he would go out scouting fields or diving in the IJsselmeer – the lake formed with the Markermeer after the damming of the Zuider Zee – chasing tip-offs about newly discovered crash sites. 'I had a busy job and I was doing this for 30 to 40 hours a week. I was never home,' he says. When people found pieces of plane wreckage while out walking or fishing, they took them to Graas. The fishermen who hauled the wreckage from the bed of the Markermeer at Christmas 2008 contacted Graas, who immediately identified it as a motor from the landing gear of a Short Stirling bomber. 'When you've been doing this for 45 years you recognise just about every part of every plane,' he says.

Graas set his team of divers to work and within a few days recovered further pieces, including an aluminium panel with the plane's serial number on it. Years of lying in the mud had faded the paintwork, so Graas sent it for analysis to the police

forensic investigation unit at Schiphol, where it was identified as the Short Stirling BK710. ‘We suspected it was likely to be the BK710 and they confirmed it, so I didn’t investigate further,’ says Graas. ‘They were a professional organisation so I assumed they’d get it right.’ The next stage was to contact the relatives of the deceased airmen using the tools of the amateur detective’s trade: a list of the crew from the Commonwealth War Graves Commission and a telephone directory. ‘All I had was their surnames and the place they were born. So, I’d send hundreds of letters to everyone with the same name in their home town and wait for the replies.’

In the case of the BK710, Graas estimates he sent 450 letters over the course of four years. The responses came in from all corners of the Commonwealth: relatives of missing airmen from the same plane often stayed in touch after the war, and Graas’s letters were distributed through these networks. BK710 had been shot down on the night of May 25, 1943, over the North Sea on its way back from a raid over Düsseldorf. The operation, involving 759 aircraft, was not judged a success – only between 50 and 100 buildings were destroyed, as a combination of bad visibility and decoy fires lit by the Germans threw the bombers off course. The toll on the RAF was high, with 27 aircraft lost and 161 crew killed. The BK710 was on its way back to RAF Lakenheath when it was hit 40 miles north-west of the island of Texel. Most of the seven crewmen were heading back for a few days’ leave; wives and girlfriends had congregated under the clock at Waterloo Station in London, ready to greet them. Rear gunner Charles Percival baled out, but landed in the sea and was washed up on the German island of Heligoland. The others were presumed to have perished in the plane. Though the flight path of the BK710 was to the north of Amsterdam, the 21-year-old pilot, Jack Henry Uden, appeared to have turned inland and ditched in the Markermeer as he tried to find a spot for an emergency landing. The divers’ efforts revealed that the remains of the bomber were strewn over a large area, indicating it was still moving forwards as it hit the water. They also found three parachute locks with the clasps still fastened, a sure sign that the men had not had time to jump out of the plane. Their remains were therefore still in the water.

Even 75 years on, the discovery of a ‘missing’ airman’s last resting place is an emotionally charged event for his family, says Graas. ‘It’s better to know that someone’s been found dead than that they’re missing. That’s the worst thing you can hear.’ Relatives expect that the bodies, or whatever remains of them, will be recovered and given a proper burial. But their hopes often foundered on the rocks of Dutch regulation. Until recently, the state would only cover 70% of the cost of recovering an aircraft, with local government liable for the balance. Councils were reluctant to find the funding, especially for something as costly and complex as recovering an aircraft from the water. ‘Some councils would do it, others wouldn’t, but the municipalities that covered part of the IJsselmeer tended to say, they’re fine where they are,’ says Graas.

There were also issues around the legal status of wreckage sites. ‘The defence ministry sent round a circular on aircraft recovery which described them as war graves,’ says Graas. ‘But that’s not legally correct (in Holland). I asked two independent legal experts to look into it, and they both concluded that they’re not war graves: they’re places where a fatal accident took place. That’s a very different thing.’ The families of the BK710 crew spent years petitioning to recover the wreckage from the water. Letters were sent to Almere council, government ministers in the UK and the Netherlands, Dutch members of parliament and even Prince Charles. ‘This is not the end of the story,’ Margaret Hadden, the sister-in-law of flight engineer Leslie George Hadden, told *Een Vandaag* in 2018. ‘George has to be recovered and given a decent burial. If they don’t bring the plane up it’s like losing George again.’ In November 2011 a memorial was unveiled on the island of Marken, composed of a propeller blade on a stainless-steel plinth and the names of the seven crewmen. The deadlock was broken in 2018, when the government agreed to pay in full for the recovery of between 30 and 50 aircraft over the next 10 years at a total cost of €15 million. One of the first wrecks on the list was the Short Stirling at the bottom of the Markermeer.

In the meantime, Graas’s team had recovered further artefacts that were causing alarm bells to ring. One was a cigarette case engraved with the initials JMC, which did not match any of the crew of the BK710. Another was a wooden elephant that appeared to be the squadron’s mascot. But the BK710 belonged to No. 149 Squadron, whose emblem was a horseshoe and a lightning bolt. Graas began a new search and soon discovered that another Short Stirling had been shot down on March 30, 1943, around 4 km east of Marken island. The aircraft belonged to No. 218 ‘Gold Coast’ Squadron, based at RAF Downham Market, which had been officially adopted by the governor of Gold Coast, the colonial name of Ghana. And among the seven airmen who flew on that fatal mission was a John Michael Campbell – JMC. The plane’s serial number was BK716. In the museum, Graas points out the aluminium panel with its three-digit number almost stripped away after decades in the water. ‘Here you can see a complete grey 7, this is a grey 1, and this is what we thought at first was a zero. But if you look really closely you can see it stops here and turns very slightly inwards.’ It was a heart-stopping moment. ‘I’d done hundreds of investigations and never been wrong, but the one time I call in an official agency I get a bum steer,’ says Graas. As well as a new search for the relatives of the BK716, he now faced the unenviable task of telling the families of the BK710 crew that the plane they had spent 10 years campaigning to retrieve from the water was, in fact, a different aircraft. ‘I sent them an email first of all, telling them I had disappointing news,’ Graas explains. ‘But then I realised it’s not the sort of thing you can reveal in a phone call or an app chat. So, in May last year (2019), once we knew for sure it was the BK716, I went to England and spent a week visiting as many of the relatives as I could.’

It wasn't a nice job: the news was shocking for them. But their responses weren't as bad as I expected. They said: you can't change history and other families will be glad that the BK716 has been found.'

All seven crew of the BK716 are believed to have been on board when it hit the water on the night of March 29, 1943, as it returned from a sortie over Berlin. They included five British airmen and two members of the RCAF. Determination One of them was the 24-year-old navigator, Harry Farrington, from Niagara Falls, Ontario. He had qualified as a banker and was working as a clerk at the Canadian Bank of Commerce, but when war broke out, he volunteered to train as a pilot – rejecting the offer of a more secure role as a radio mechanic. Harry's father, Arnold, had died when he was 19 and his younger brother, Clifford, succumbed to diabetes as a child, leaving his mother, Bertha, alone with his sister, Edith. Now 94, and still living in Niagara Falls, Edith McLeod recalls how determined her brother was to go to the front. 'His bank manager told him he did not have to go because my mother was a widow and I was the only one left,' she says in a video call from Canada. 'His bank manager tried very hard to convince him not to sign up, but Harry felt it was his duty. And my mother said: if that's how he feels, that's fine. So, he joined up.' 'He was very good to me after my father died,' says Edith, who was eight years younger than Harry. 'We were interested in the same things. We both played basketball: he was a good player and he came to see my games when he could. 'I was singing in a musical festival in Niagara Falls one time and mother left him a note saying that's where we'd be if he got home. So, he came up and walked in the gym just as I was about to sing and it was a lovely feeling. We were close.' Edith McLeod with family celebrating her 93rd birthday in 2019 Harry's dreams of becoming a pilot were dashed when his examiners rated his flying skills 'below average' and 'extremely poor on landings'. Instead he was given the job of navigator with 218 Squadron. In England he met Kathleen Blease, who had survived a Blitz strike on her block of flats in London not long before, and married her in January 1943. They were allowed two days' honeymoon before he returned to service. Wedding 'I wish you and Mother could have been here for the wedding (we'd have had you sing) but it just wasn't possible,' he wrote to Edith in mid-January. More letters followed, the last on March 14, when he confided he had 'been over Germany quite a few times and dropped a few bombs for you'. He went on: 'Our crew are as pleased as Punch because we're getting a brand-new aeroplane when we come back from leave – it's going to have a green dragon painted on it and we're calling her The Dragon's Revenge – like that?' Less than two weeks later, Harry was reported 'missing in action'. 'I'd just gone out when the telegram came,' recalls Edith. 'I'd gone to fetch a bottle of ink for school. That was it. I remember how badly I felt because mother was alone.' A typed letter from his commanding officer followed, explaining that Harry was 'missing on operations' and may have been killed or taken prisoner of war. Letters sent to Harry Farrington's family in 1943 More letters and telegrams followed in the coming months, in which the hope of Harry returning home alive steadily receded. But officially he remained 'missing', even after the terse letter of September 7 stating he was 'now for official purposes presumed to have died on March 29, 1943'. That Harry's last resting place now appears to have been identified, nearly 80 years on, is 'very special,' says Edith. 'My mother's at peace, even though she's died. She knows all that happened now, and so do I.'

The operation to recover the Short Stirling began on 31st August 2020 and is expected to last five to six weeks. It is a complex collaboration involving researchers, army and air force technicians, and civilian recovery specialists. Because of the aircraft's recent history, the military is still hedging its bets as to whether the pieces belong to the BK716. 'For us it's the most likely candidate,' says Major Bart Aalberts, aircraft recovery staff officer for the Royal Netherlands Air Force. 'The best thing, and what we're hoping for, would be to find one of engines with the serial number engraved. Then we can say with certainty: that's the aircraft.' The engineers will sift an area of around 75 metres squared with diggers and analyse everything larger than 8 mm, so any machinery parts or human remains can be identified. The technique has provoked some controversy, but Major Aalberts says it was the only viable option for such a large area. The BK716 bomber crew were Sgt Ronald Kennedy (flight engineer), Sgt Leonard Shrubbsall (mid-upper gunner), F/O John Michael Campbell (radio operator), F/O John Harris (pilot), F/O Harry Farrington (navigator), F/Sgt John McCaw (tail gunner), Sgt Charles Bell (bomb aimer) The alternative method of building a dam around the crash site and draining it was used four years ago to recover a Wellington bomber, but its remains were confined to a smaller area of around 34 by 23 metres. 'The image people have in their heads is of a complete wreckage of a plane with the bodies still inside, but that's not the reality,' Major Aalberts says. 'In this case the aircraft hit the water with such great force that it was spread across a huge area. 'The lake bed mainly comprises sludge. The small, fine pieces only become visible on the sieve, regardless of whether the sludge is dug up wet or dry. And we don't know beforehand where we're going to find machine parts or human remains. The Aircraft Recovery Group has found the parachute locks, so we know that the bodies were in the water. But are they still there?' Major Aalberts welcomes the government's decision to fund more operations, but says it is ultimately down to municipalities to decide whether wrecks are recovered. 'The awkward truth is that more than 250,000 servicemen from Britain alone went missing over Europe during the two world wars,' he says. 'We'll never find them all. But it is far more interesting and satisfying for us when we're able to bring a missing airman home.'

OUR HONEYMOON JOURNEY, COURTESY OF BEA (AND STAFF TRAVEL) - BY KEITH HAYWARD



In 1953 Cecilia and I saw an advert in a BEA Magazine offering hotel accommodation in the tiny fishing village of Torremolinos (how times have changed!). Situated near Malaga on the Costa del Sol in southern Spain, this looked like the ideal location for our forthcoming honeymoon in early October. Having confirmed our booking, we were faced with the problem of how to get there. In those days there were no flights from London to Malaga, the nearest airport to our destination, and the alternative was to fly to Gibraltar with a coach connection across the border. Using my staff travel concession I made the bookings accordingly and we awaited the day. On Sunday 4 October 1953, following our wedding in Ruislip the previous day, we arrived very early at the BEA check-in desk at Northolt Southside to check in for flight BE118 to Gibraltar. The aircraft type operating on the route was the sturdy Vickers Viking 1B,

by now converted to the high-density Admiral Class. Twin-engined and unpressurised, the Viking had limited range and altitude which necessitated two refuelling stops for the flight to Gibraltar. At 08 24 (a very precise scheduled departure time which BEA published in those days), having boarded G-AMGJ Sir John Warren we taxied out and took off for Bordeaux, the first stop on our honeymoon flight. In command was Captain E S 'Jack' Linstead. Nicknamed 'Tiny,' he was an ex-Fleet Air Arm pilot of small stature as his nickname implied. He had applied for Royal Air Force service in 1939 but was considered too young. He reapplied for the Fleet Air Arm and was accepted. Post-war, he joined BEA as a First Officer, gaining his command in 1950 on Vikings. Later he flew Viscounts, Vanguarders and Tridents, retiring in 1976. He was an active member of the British Airline Pilots Association (BALPA) and was Chairman in his later years.

Two and a half hours after leaving Northolt we landed at Bordeaux for refuelling and personal refreshments. The next sector to Madrid at a higher altitude – for mountain clearance – lasted one hour 40 minutes. After light refreshments at Madrid Airport we were off again on our final leg to Gibraltar. One hour 40 minutes later we lined up on the approach to Gibraltar's notoriously tricky runway with its sudden crosswinds and the huge Rock ominously close. It was now 5pm local time and too late for the cross-border coach into Spain. We booked in at the famous Rock Hotel ready for our onward journey into Spain the following morning. It had been a long day with a total flying time of five hours 50 minutes. Nowadays the nonstop flight from London to Gibraltar by an Airbus A320 takes three hours 55 minutes – such is progress (and Torremolinos is unrecognisable!).

The return flight to Northolt on 15 October was in Viking Admiral class G-AMGH Sir John Duckworth commanded by Captain Joe Cooper. He was a typical stocky be-medalled ex-Bomber Command pilot complete with moustache, with an air of authority. He had joined BEA in 1946 as a First Officer and quickly gained his command on Vikings. Later he had the honour of operating the first Viscount service between Gibraltar and Tangiers on 2 April 1959. He finally retired in December 1971. We took off from Gibraltar at 08 20 and headed north for Madrid. Once we were at cruising altitude breakfast was served. All too soon we landed at Madrid having been airborne for one hour 50 minutes. After refuelling we were off again to cross the Pyrenees en route to Bordeaux. Lying ahead above the mountains was a huge wall of cloud towering above us. Being unpressurised the Viking was unable to climb over it. The 'fasten seat belts' sign lit up and suddenly we hit the turbulence. The sturdy Viking ploughed through the dark clouds with wings visibly flexing in the half light. There was a particularly sudden jolt followed by the sound of smashing crockery in the galley. Just as suddenly we were into dazzling clear air, flying as steady as a rock. After refuelling at Bordeaux, we were off again on the final leg to Northolt, landing there at 16 45. It had been another long day but thanks to BEA we were home, safe and sound.

As for G-AMGH Vickers Viking 1B *Sir John Duckworth* (shown above) it was operated by South African Airways as ZS-BNH from October 1947; sold to BEA on 19 December 1950. Converted to Admiral Class. Sold in Germany as D-AEDO in October 1955 but scrapped at Southend in 1961. (*Sir John Thomas Duckworth, 1st Baronet, GCB was an officer of the Royal Navy, serving during the Seven Years' War, the American War of Independence, the French Revolutionary and Napoleonic wars, as the Governor of Newfoundland during the War of 1812, and an MP in the House of Commons during his semi-retirement. Duckworth, a vicar's son, achieved much in a naval career that began at the age of 11.*)

Likewise, G-AMGJ Vickers Viking 1B *Sir John Warren*, also operated by South African Airways as ZS-BNJ from October 1946; sold to BEA on 19 December 1950 and subsequently converted to high-density Admiral Class. Sold to First Air Traders at Blackbushe in December 1955. Later it went to Italy as I-RASC, finally being broken up in Nice in 1962.

AVRO 652 AVALON & AVTAR – IMPERIAL’S SHORT-LIVED MAILPLANES BY KEITH HAYWARD



In the early 1930s and thereafter Air Mail continued to be a significant part of the payload for the world’s airlines. Imperial Airways realised that they had a need for specific aircraft for such duties. In 1933 they approached Avro with such a specification.

Young Roy Chadwick, later to achieve fame as designer of the Lancaster bomber, came up with the Avro 652. This was a twin-engined low wing aircraft powered by two Armstrong Siddeley Cheetah VI radial

engines with a cruising speed of 130 mph, a range of 420 miles and seating for four passengers if required. It also had a retractable main undercarriage – a novelty for that period and a novelty that soon wore off as it required a lot of energy to operate the ‘wobble-pump’ that raised the wheels!

Imperial Airways amended the specification before ordering two of the type in April 1934 for operation on the Karachi – Bombay – Colombo night mail service. The prototype flew on 7 January 1935 and the two aircraft were duly delivered to Imperial Airways at Croydon in March of that year. They were then subsequently employed as mailplanes on the London to Brindisi route; most of this mail was destined for Cairo and onwards to the Far East. London to Brindisi was a long route for a small twin-engined aircraft and, being unable to cross the Alps with a full load, the service operated via Marseilles as did the flying boats.

By 1938, with the introduction of the ‘C’ Class flying boats on the eastern routes and their ability to carry larger mail loads, the two Avro 652s were withdrawn from service and sold to Air Service Training at Hamble as navigation trainers.

With the outbreak of World War II G-ACRM *Avalon* was impressed into the Royal Air Force and later the Royal Navy as DG655, still based at Hamble.

Whilst at Hamble, *Avalon* suffered the unusual experience of a double forced landing on one journey. On 12 March 1940, operating out of Hamble, the pilot encountered extremely bad weather and carried out a successful forced landing at Overton, near Basingstoke. When the visibility improved the indefatigable pilot took off but was shortly forced to land yet again in bad visibility before finally reaching his destination, albeit somewhat late.

G-ACRN *Avtar* (later *Ava*) was also pressed into military service with the RAF and later RN as DG656 in 1941. During a cross-country flight from Hamble the pilot decided to land at Desford but failed to lower the undercarriage. After repair, whilst with the Royal Navy at Lee-on-Solent, the aircraft was finally written off on 1 October 1941 when a Chesapeake dive bomber collided with the stationary Avro whilst landing, and the latter was considered a write-off.

While not a major aircraft type in Imperial Airways’ service the Avro 652 proved a winner with Avro. It was developed as a military trainer and communications aircraft for the Royal Air Force as the famous Anson (“faithful Annie”). Over 11,000 were produced, operating right through World War II and beyond. The Anson finally retired from RAF service in 1968!

Little did Avro realise in the early 1930s what would develop from that tiny order for two mailplanes from Imperial Airways.

Photo credit top; *Bernard CF Klein* and G-ACRN lower right; *Airwar.ru*



WHO'S MOVED THE AIRFIELD? - BY KEITH CAMERON



I'd flown into Turweston several times so there was nothing daunting about doing it again – except this would be different with Silverstone's aviation activity was restricted to commercial helicopters and the two heliports inside the motor circuit would be more than busy. (In 1999 Silverstone recorded the greatest number of movements at an airfield/airport in a single day – 4200 movements. 24 Air Traffic Controllers were on duty.) Turweston would have several hundred aircraft and helicopters booked in for the Grand Prix. Only four miles from Silverstone, Turweston's Grand Prix service offered a breakfast and a huge fleet of Range Rovers, Sherpas and SUVs to transport visitors across

fields on a direct route to Stowe Corner, followed by a return pick-up after the Grand Prix. So, race tickets were obtained, the Turweston service booked and a Robinson R22 hired for the day. My compatriot for this sortie lived in Hampshire so I drove to Denham Airfield, pre-flighted the 'heli' and flew for almost an hour down to Hampshire to collect my friend from his garden. The two of us then enjoyed an hour's uneventful flight through a cloudless blue sky with a golden sun beaming at us.

After landing at Turweston we took the bumpy ride to Stowe Corner in a hot Land Rover which was already doubling as an oven. The Grand Prix was thrilling and met expectations. Everything was perfect although a little shade to relieve us from the relentless sun would have helped. At the end of the racing we formed a short and orderly queue for one of the line of vehicles waiting to return us to the airfield. Departure from Turweston was quickly expedited and an hour later we arrived back in friend's garden. I refused the offered cup of tea as I had to return the R22 to Denham and it was already after six o'clock. The weather was still fine with only a slight wind. I was enjoying the return flight and as I approached home territory I looked out for the familiar landmarks. The sun was starting its downward to the horizon making it slightly hazy but the golden orb was behind me so visibility was good enough. But I still couldn't spot the landmarks I expected to see. Was I on track? Yes, I had maintained the unchanged and correct heading since I validated it against ground features about ten miles earlier. So never mind the landmarks, the airfield should be in view soon.

Denham is inside the Northern perimeter of the Heathrow CTR (which forbids entry to recreational pilots) and is eight miles from the airport's parallel runways. It operates under a Local Flying Area concession. But Denham did not come into view. Perhaps I was looking too early...I'll just keep going on my Easterly track. Within a few minutes, now slowed to 90 kts, I thought I might have gone too far. Time to turn 180 degrees and then adopt an adjusted reciprocal, roughly in a West-South West direction. But I was now flying into a setting sun and after a couple of minutes Denham had still not materialised. Somebody must have moved the airfield. Then it dawned on me that overshooting on this heading could take me into the Heathrow CTR and that would mean a letter from the CAA and a demand for a lot of money. So, I turned onto a Northerly heading – that would be safe. I had bought time to search for the missing airfield. Not much time though as a Northerly heading would provide me with an unplanned view of southern Birmingham but that would be just before I ran out of fuel. So, I turned South...slowly. I could see a motorway but I didn't know whether it was the M1 or one of the snake-like sections of the M25. My brain had been fried by the enduring heat throughout the day and four hours flying.

Luckily, there was just enough brainpower for one sensible thought. Call D and D – the 24-hour service for any pilot in trouble. I dialled in 121.5 and called Distress and Diversion who acknowledged immediately and asked me to do the same.

"G-JBWI is an R22 from a private site in Hampshire to Denham at 1,500 feet on 1025 (QNH) and currently unsure of my position." They gave me a squawk and I plugged it into the transponder. After less than a minute the Controller asked me if I could see a motorway just ahead of me.

"Affirmative, Golf Whisky India."

"Golf Whisky India, steer 220 degrees for 8 miles and you will be at Denham – call them on 130.725."

"I've tried Denham's frequency but they've finished for the day."

"OK," said D and D, "Stay with us and sign off when you're letting down at Denham."

And within six minutes there was Denham. I signed off gratefully, let down clumsily, disengaged the clutch and waited for the engine to cool and the spinning rotors to slow and felt a huge wave of tiredness wash over me. As for Distress and Diversion – what a service! A positioning fix within a minute and guidance all the way to the ground. 121.5 had got me back and saved me from a CAA letter and an empty wallet or worse?

Editor; This particular Robinson R22 was written off when its right skid touched the ground in a hover/taxi manoeuvre at Gloucester Airport on 20 April 2006.

MY DAD'S FIRST FLIGHT – JUST PART OF THE BEA SERVICE – BY KEITH HAYWARD



On 1 April 1963 – my father's 70th birthday was approaching. Born in Hastings on 5 May 1893, Dad served as a sergeant in the Bedfordshire & Cambridgeshire Yeomanry right through the First World War and was involved in most of the major battles. Miraculously he emerged in 1918 safe and sound but for one small wrist wound.

Dad had never flown and, bearing in mind he was only ten years of age when the Wright Brothers flew their first controlled flight in December 1903, I thought that a short flight 'there and back' would surprise him as a birthday present.

On 15 April, using my BEA travel concession opportunity, we drove to Heathrow and made our way to Terminal 2 in the Central Area, my workplace, and headed for the Britannic Building for domestic flight

departures. I discreetly checked us in for the next Manchester flight whilst Dad understood that he was off on a Heathrow sightseeing coach tour that BAA operated in those days. In due course we proceeded to the domestic departure gate for the coach ride out to the aircraft positioned on an outer stand.

We pulled up alongside Vanguard 953 G-APEN Valiant. This aircraft was comparatively new, having been delivered in November 1961. The Vanguard seemed huge compared to the earlier Viscount, with 135 seats and four powerful Rolls Royce Tyne engines; it was impressive. Dad quietly took in the scene. Was he nervous? We will never know.

Once we had boarded and following start-up, G-APEN taxied out in the hands of Captain D G Moynihan. An experienced pilot, he had suffered the doubtful honour of operating the first commandeered ex-Luftwaffe Junkers Ju52/3m on a BEA domestic flight to Liverpool. Fortunately, these draughty unreliable aircraft were soon withdrawn from service as they were almost falling apart.

After take-off and reaching a modest cruising height we were able to assess the aircraft. Seated towards the rear we noticed that the Vanguard tended to shudder somewhat and the noise level seemed quite high. Some 40 minutes later we landed at Ringway, Manchester, and checked in for our return flight some two hours later, whilst we remained in the airport lounge, and refreshed ourselves.

All too soon we were called to board the aircraft for our return flight. The Vanguard on this leg was G-APET *Temeraire* which was just over a year old, having been delivered on 23 February 1962. In command was one of BEA's earliest pilots, Captain John Liver, a very approachable character who was happy to have a word with my father as we boarded. Captain Liver's claim to fame was that he was in command of the first BEA German internal service when he flew a Dakota from Hamburg to West Berlin on 9 September 1946. We took off on time and soon settled into the cruise at a modest altitude; Dad was able to follow the scenery below – a totally new experience. All too soon we were into the London Control Zone and back at Heathrow after 45 minutes flying time - quite an experience for someone who had seen the birth of powered flight in his own lifetime. I think that he enjoyed it, although he was a man of a few words.

And what of the aircraft involved? With the advent of the pure jet aircraft coming into service the days of the turboprops were numbered. However, it was realised that the Vanguard with its capacious fuselage could accommodate a large cargo load and some were converted as such and renamed 'Merchantman.' G-APET was one of those converted to a Merchantman configuration and sold to Air Bridge Carriers at Castle Donington, finally being scrapped in May 1987.

However, G-APEN did not follow this route; it remained in its passenger configuration and was sold to the Indonesian airline Merpati Nusantara as PK-MVE, whereas



CELERA 500L BULLET PLANE - VIA CNN



The whispers started three years ago. A mysterious bullet-shaped plane was spotted at the Southern California Logistics Airport near Victorville in April 2017. Its unusual design prompted immediate speculation, with military website *The War Zone* being the first to report that the aircraft was the work of California-based Otto Aviation -- and that development was very much under wraps. Now, in the late summer of this, the strangest year in aviation history, the Celera 500L has finally been revealed to the world, with the launch of a new website and a bunch of very cool new photos. What we're looking at is a six-person private craft that promises to fly at jet speeds, but with eight times lower fuel

consumption, and a range that's twice that of a comparably sized craft. Bold claims indeed. Otto Aviation says on its website that 31 successful test flights have so far been performed, with aerodynamic efficiency proven in 2019, bolstering its declaration that "the Celera 500L is the most fuel-efficient, commercially viable aircraft in existence." The company, founded in 2008 and an offshoot of Bill Otto's Otto Laboratories, says that the Celera 500L runs at 18 to 25 miles-per-gallon fuel economy (compared to the 2-3 miles-per-gallon of a comparable jet aircraft). Then there are the modest \$328 hourly operating costs, which are about six times lower, and the generous 4,500-nautical-mile range. Maximum cruise speed is projected to reach more than 460 miles per hour.

"Our goal has always been to create a safe and private aircraft that would allow for direct flights in the US at speeds and cost comparable to commercial air travel," company CEO Bill Otto Jr. tells CNN Travel. The range is such that the Celera 500L would be able to service nearly every city pairing in the United States without refueling. The reason its aircraft can do all this, says Otto Aviation, is down to laminar flow. Laminar flow is the minimum drag solution for aircraft surfaces, explains its website, and features smooth layers of airflow with little to no mixing of adjacent layers. The Celera 500L's fuselage takes advantage of an optimum length-to-width ratio to maximize laminar flow. Laminar shapes are also used for the wings and tail sections. Inside, the cabin is spacious enough, with its 6-foot 2 (1.88 meters) height and six first-class equivalent seats with customizable configuration. With its aerodynamic airframe meaning it requires a lot less horsepower to achieve takeoff and cruise speeds, the Celera 500L is powered by the RED A03 diesel engine. It has a liquid-cooled V12 twin six-cylinder bank and, says Otto Aviation, offers best-in-class efficiency. It's certified to operate on Jet A1 fuel and biodiesel. While the newly unveiled plane is window-free, Otto tells CNN Travel that the passenger version will have windows, and has shared this rendering. "The windows will not have an impact on laminar flow, as they are mounted flush and have the same contours as the exterior shape of the fuselage," he explains.

Otto Aviation has completed its first funding rounds and those successful test flights, but they still need to begin the FAA certification process, find a location for a manufacturing facility and create an initial order book. All amidst an industry which has been decimated by a pandemic which has been keeping people in their homes and out of the air. "Launching amid the current aviation landscape has only bolstered what we aim to provide with the Celera 500L," declares Otto to CNN Travel. "We believe that when the price of private air travel is competitive with commercial air travel, an enormous market opportunity will result." If the air-taxi market becomes more commercially viable, and more affordable, it's easy to see how it could be attractive to the consumer. "Of course, we didn't anticipate Covid-19," says Otto, "but there are enhanced market opportunities in being able to afford to fly with only those you choose to. Being able to avoid crowded airports and lines is another big benefit. "In many cases, individuals and families will be able to charter the Celera 500L at prices comparable to commercial airfares, but with the convenience of private aviation." Celera XL could have another application as a cargo plane. E-commerce is one of the big winners of the pandemic and with consumers valuing next-day or even same-day delivery, the neat and economical Celera 500L could help facilitate this by flying more direct routes into regional airports. The company also has visions for the Celera 1000L, which is the Celera 500L scaled up 20% while maintaining its laminar flow. This means close to doubling cabin size, allowing more passengers or more freight. If FAA certification and finding a manufacturing facility goes to plan, we could see the first commercial deliveries of the Celera 500L by 2025.



HISTORIC AVIATION NEWS FOR SEPTEMBER AND OCTOBER 1970, 1980 & 1990 BY JOHN ROACH

1970

September The Bellanca Sales Company acquires the assets of the Champion Aircraft Company, creating the Bellanca Aircraft Corporation.¹

September 2 – Shortly after climbing to an altitude of 29,527 feet, Aeroflot Flight 3630, a Tupolev Tu-124 (registration CCCP-45012) crashes near Dnepropetrovsk in the Soviet Union's Ukrainian Soviet Socialist Republic, killing all 37 people on board.

September 3 Descending to land at Leninabad in the Soviet Union's Tajik Soviet Socialist Republic, an Aeroflot Yakovlev Yak-40 (registration CCCP-87690) crashes at an altitude of 6,890 feet into the side of 7,546-foot Mount Airy-Tash, 56 miles northeast of Leninabad, killing all 21 people on board. At the time, it is the deadliest accident in history involving a Yak-40 and the deadliest aviation accident in the history of Tajikistan.

September 3 -- Air France places the first orders for the Airbus A300

September 6 -- Members of the Popular Front for the Liberation of Palestine (PFLP) hijack three airliners bound for New York City. The hijackings of Trans World Airlines Flight 741 – a Boeing 707-331B (registration N8715T) flying from Frankfurt-am-Main, West Germany, with 155 people on board including Rabbi Yitzchok Hutner – and Swissair Flight 100 – a Douglas DC-8-53 (registration HB-IDD) with 155 passengers on board flying from Zürich-Kloten Airport in Switzerland – proceed without injury to anyone, and the airliners are flown to Dawson's Field, an abandoned former Royal Air Force airstrip in a remote desert area of Jordan near Zarka. The hijacking of El Al Flight 219, a Boeing 707 with 158 people on board, fails when hijacker Patrick Argüello is shot and killed after injuring one crew member and his partner Leila Khaled is subdued and turned over to British authorities in London; two other PFLP members prevented from boarding El Al Flight 219 a Boeing 707-458 (registration 4X-ATB) instead hijack Pan American World Airways Flight 93, a Boeing 747-121 (registration N752PA) flying from Brussels, Belgium, and Amsterdam, the Netherlands, with 153 people on board, which they force to fly to Beirut, Lebanon, and then on to Cairo, Egypt. All occupants were evacuated and minutes later the aircraft was blown up.

September 8 – While a Trans International Airlines Douglas DC-8-63CF (registration N4863T) taxis at John F. Kennedy International Airport in New York City for a ferry flight to Washington Dulles International Airport in Fairfax County, Virginia, with eight flight attendants and three cockpit crew members on board, a foreign object becomes wedged between the right elevator and horizontal stabilizer, blown there by backwash from the aircraft preceding it on the taxiway. The problem is not detected, and the aircraft crashes upon take-off, killing all 11 people on board; it is Trans International's only fatal accident. The accident prompts the U.S. Federal Aviation Administration to institute new minimum distances between aircraft in line-up for take-off.

September 9 – To pressure British authorities into releasing Leila Khaled, a PFLP sympathizer hijacks BOAC Flight 775, a Vickers Super VC10 (registration G-ASGN) flying from Bahrain to Beirut with 114 people on board, and forces it to land at Dawson's Field in Jordan.

September 11 – U.S. President Richard Nixon orders the immediate deployment of armed federal agents aboard U.S. commercial aircraft to combat hijackings.

September 11 – First flight of the Britten-Norman Trislander registration G-ATWU

September 12 -- After removing all hostages from them, PFLP members use explosives to destroy the three empty airliners at Dawson's Creek and Cairo hijacked on September 6 and 9. By September 30, all hostages from the three planes were recovered unharmed.

October

In its Supplementary Statement on Defence Policy, the new British Conservative government only partially reverses the preceding Labour government's plans to phase out all Royal Navy aircraft carriers by the end of 1971, instead rescheduling the decommissioning of HMS Eagle for 1972 and of HMS Ark Royal for the late 1970s, with the Royal Navy to have no large, fixed-wing aircraft carriers after Ark Royal retired in 1979.

Trans European Airways is founded. It will begin operations during 1971.

October 2 -- Shortly after take-off from Sung Shan Airport in Taipei, Taiwan, a United States Air Force Lockheed C-130E Hercules (serial 64-0536) crashes near a 700-foot hill 13 miles southwest of Taipei, killing all 43 people on board. Its wreckage is not discovered until October 8.

October 2 -- National Airlines begins the first Boeing 747 service to or from Miami, Florida, offering flights between Miami and New York City

October 2 -- A Golden Eagle Aviation Martin 4-0-4 (registration N464M) carrying the starting players, coaches, and boosters of the Wichita State University football team crashes on a mountain west of Silver Plume, Colorado, killing 31 of the 40 people on board.

October 4 – American stock car racing driver Curtis Turner is one of two people killed when the Aero Commander 500 he is piloting, crashes near Mahaffey, Pennsylvania.

October 15 – The first successful aircraft hijacking in the Soviet Union takes place, when the Lithuanian nationalist Pranas Brazinskas and his son Algirdas seize Aeroflot Flight 244, an Antonov An-24, over the Soviet Union after a shoot-out on board with guards in which flight attendant Nadezhda Kurchenko is killed while trying to block them from entering the cockpit and several other crew members are wounded. The hijackers force the plane to fly to Trabzon, Turkey, where they surrender to Turkish authorities. The Soviet government later will present Kurchenko with the Order of the Red Banner posthumously.

October 19 – Hindustan Aeronautics completes its first licence-built MiG-21

October 25 – National Airlines expands Boeing 747 service at Miami, introducing flights to Los Angeles, California.

October 28 – The U.S. Air Force completes Operation Fig Hill, an airlift begun on September 27 to bring medical personnel, equipment, and supplies to Jordan in the aftermath of combat between the country's armed forces and the Palestine Liberation Organization. During the airlift, transport aircraft have delivered 200 medical personnel, two field hospitals, and 186 short tons (169 metric tons) of supplies, equipment, vehicles, tents, and food.

NB There were at least a dozen hi-jacking during September and October, but I have edited them out to conserve space.

1980

September 9 – Island Air begins operations in Hawaii.

September 12 -- Florida Commuter Airlines Flight 65, a Douglas DC-3A,(registration N75KW) crashes in the Atlantic Ocean near West End Settlement, Grand Bahama Island, Bahamas, killing all 34 people on board. Fifteen bodies are recovered before search-and-rescue operations cease on September 15.

September 14 -- A Royal Saudi Air Force Lockheed C-130H Hercules (serial 453) crashes after suffering engine failure on takeoff from Prince Mohammad bin Abdulaziz Airport in Medina, Saudi Arabia, killing all 89 people on board.

September 14 -- A Zaire Air Force Lockheed C-130H Hercules (serial 9T-TCE) crashes while attempting to take-off from Kindu Airport in Kindu, Zaire, on three engines at maximum gross take-off weight, killing all 36 people on board.

September 17 – A Zaire Air Force de Havilland Canada DHC-5D Buffalo (serial 9T-CBC) crashes at Kindu Airport in Kindu, Zaire, killing 36 people.

September 19 – The Islamic Republic of Iran Air Force admits to losing two F-4 Phantom II fighter-bombers during heavy fighting with Iraq over control of the Shatt al-Arab waterway.

September 21 – A Douglas A-26 Invader (registration N3710G of the Cavalier Air Force) crashes during an air show at Biggin Hill Airport in London, England, killing its pilot and seven passengers. The incident prompts the United Kingdom's Civil Aviation Authority to introduce rules prohibiting aircraft from carrying passengers during air shows.

September 22 -- The Iran–Iraq War begins. The Islamic Republic of Iran Air Force has about 100,000 men and 447 combat aircraft, while the Iranian Army Aviation Corps has about 70 light reconnaissance and support planes and over 200 armed helicopters; only 50–60 percent of Iranian fixed-wing aircraft, 18–50 percent of its combat aircraft, and 60 percent of its helicopters are operational. The Iraqi Air Force has about 38,000 men, of which about 10,000 are air defence personnel, and 332 combat aircraft, and the Iraqi Army Air Corps has about 70 armed helicopters.

September 22 The Iraqi Air Force begins the war with an attempt to destroy the Iranian Air Force on the ground in a surprise attack, striking the Iranian airfields at Mehrabad, Kermanshah, Sanandaj, and Al-Ahwaz, and the Iranian Army bases at Hamadan, Tehran, Isfahan, Dezful, Shiraz, and Tabriz, but the attacks have little effect.

September 23–24 – Iraqi aircraft attack Iranian airfields at Tabriz (twice), Dezful (twice), Shahroki, Kermanshah, Al-Ahwaz, and Sanandaj, but again make little impact on Iranian air capabilities. Iranian aircraft fly 100 sorties on September 23 despite the attacks, prompting Iraq to disperse many of its aircraft into other Arab countries for the next 7-10 days.

September 24 – The Iraqi Air Force attacks Iran's oil terminal at Kharg Island for the first time.

September 28 – Iraqi Air Force Tupolev Tu-22 (NATO reporting name "Blinder") bombers land in Riyadh, Saudi Arabia, after bombing Iran.

September 30 – At Saudi Arabia's request, the U.S. Air Force's "ELF-1" force – consisting of four E-3A Sentry Airborne Warning and Control System (AWACS) aircraft, two KC-135 Stratotanker tanker aircraft, and 300 support personnel – arrives at Dhahran International Airport in Saudi Arabia to provide long-range air defence and maritime surveillance support to Saudi and American forces. ELF-1 will remain in Saudi Arabia through the end of the Iran–Iraq War in 1988.

October 1 -- Republic Airlines completes its buyout of Hughes Airwest.

October 1 -- Seaboard World Airlines merges into Flying Tiger Line and disappears as a corporate entity. The merger makes Flying Tiger the largest air cargo carrier.

October 2 – A Westland Sea King helicopter rescues 22 passengers from the Swedish ship *Finneagle* in the North Sea.

October 12 – Mesa Airlines commences operations.

October 20 – The first dogfights of the Iran–Iraq War take place. Islamic Republic of Iran Air Force F-4 Phantom IIs shoot down an Iraqi Air Force Mikoyan-Gurevich MiG-21.

October 26 – National Airlines formally ceases to exist. Pan American World Airways already had completed its acquisition of National Airlines on January 7, when it had taken control of National's assets and routes.

NB- Again I have deleted most of the hi-jackings from this listing for September/October 1980

1990

September -- The U.S. Navy aircraft carrier USS Midway (CV-41) departs Japan to join USS Independence (CV-62) in the northern Arabian Sea within striking range of Iraq and Kuwait.

September Lauda Air Italy is established. It will begin flight operations in 1993.

September 1 -- L'Express Airlines inaugurates its first service outside of Louisiana, beginning flights to William P. Hobby Airport in Houston, Texas; Birmingham International Airport, Alabama; and Mobile Regional Airport, Alabama.

September 1 -- The Government of New Zealand establishes New Zealand's Transport Accident Investigation Commission. Initially responsible only for the investigation of aviation accidents and incidents, it will take on the additional responsibilities of investigating railway accidents in 1992 and marine accidents in 1995.

September 2 -- The number of U.S. Air Force aircraft deployed in and around Saudi Arabia has risen to 400 combat and 200 support aircraft.

September 27 -- United Air Lines is the first airline to introduce satellite communications for its aircraft.

September 29 -- First flight of the YF-22 Raptor (the winner against the YF-23)



October 2 -- Wishing to seek political asylum in Taiwan, Jiang Xiaofeng hijacks a Boeing 737-247 (registration B-2510) Xiamen Airlines Flight 8301 during a flight from Xiamen Gaoqi International Airport in Xiamen, China, to Guangzhou, China, demanding that it be flown to Taipei, Taiwan. When the pilot explains that the aircraft lacks the fuel to fly to Taipei and proposes that it fly to Hong Kong instead, Jiang insists on flying to Taipei. After a lengthy discussion, the pilot decides that he lacks the fuel to continue and opts to land at Guangzhou's Guangzhou Baiyun International Airport against Jiang's wishes, and Jiang wrestles control of the aircraft from him moments before landing. The Xiamen plane sideswipes a parked China Southwest Airlines Boeing 707-320B (registration B-2402)– injuring its pilot, who is the only person on board – then collides with China Southern Airlines Flight 2812, a Boeing 757-21B (registration B-2812) awaiting take-off with 122 people on board, before flipping onto its back and coming to a stop. Eighty-two of the 102 people aboard the hijacked Xiamen Boeing 737 die – including the hijacker – as do 46 of the 122 people aboard the China Southern plane, bringing the combined death toll to 128.

October -- East Germany's air force, the Luftstreitkräfte der Nationalen Volksarmee ("Air Forces of the National People's Army") is dissolved at midnight along with the rest of the East German armed forces as East Germany is reunified with West Germany. Its aircraft, personnel, and facilities become part of the German Luftwaffe.

October 2–6 -- The U.S. Navy aircraft carrier USS Independence (CV-62) operates in the Persian Gulf, demonstrating the feasibility of such operations as the Coalition build-up in the confrontation with Iraq over Kuwait continues.

October 4 -- On the day after German reunification, East Germany's national civil aviation authority, the Staatliche Luftfahrt-Inspektion der DDR (Public Department of Aviation of the GDR), is disestablished, and West Germany's Luftfahrt-Bundesamt (Federal Aviation Office) takes over all functions in a unified Germany.

October 10 -- First flight of the Learjet 60

October 28 -- When the Iraqi tanker Amuriyah refuses to stop for inspection by Coalition warships enforcing an embargo against Iraq, the pursuit of her by Coalition forces includes low-level flyovers by U.S. Navy aircraft carrier-based F-14 Tomcats and F/A-18 Hornets.

October 28 Lufthansa begins service to Berlin. Prior to the German reunification five days earlier, it had been prohibited from flying to Berlin.

October 31 -- The Australian airline industry is deregulated. Airlines are allowed to select their own routes and set their own fares.