

Chiltern Airwords



BA Viscount G-AOYN seen awaiting its passenger off stand at Heathrow. Photo by John Roach. See Article on Page 11

The Chiltern Aviation Society Magazine
January - February 2020

CHAIRWORDS

I recently came across a magazine article on early Heathrow by our late Chiltern Aviation Society President John W R Taylor. His description of early Northside activities was quite amusing with stories of “crocodiles” of passengers ambling out across the tarmac whilst aircraft were taxiing past dangerously close to them. Mis-boarding of passengers was not unusual and in BEA, sometimes the total number of passengers on board did not match the load sheet; in these circumstances the steward would make a destination announcement on the public address. If nobody queried this it was assumed that each passenger was travelling to that particular destination and the load sheet was amended accordingly. Such was security! Occasionally passengers were carried to the wrong destination. The one I particularly recall was an elderly gentleman bound for Gibraltar who actually travelled to Copenhagen; happy days! The 2020 programme is coming together quite well with speakers covering the aviation spectrum which we hope will appeal to all CAS members. Finally, our grateful thanks go to Cecilia who has retired as our Catering Officer after many years of keeping us refreshed at our monthly meetings. She certainly deserves a break. Many, many thanks to her. **Keith Hayward**

EDITORWORDS

Note to members; Once again thanks for the articles sent in so far, some of which are in two parts to help out with the next issue, and on that subject the number of articles has reduced making it hard to produce an issue every eight weeks, so, Airwords may need to be issued quarterly! When emailing articles for Airwords, to cas.clubsecretary@outlook.com

Please send the words and any photos separately and not within the article.

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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 Membership £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;

WED 26th February 2020 - Days with the Stars BSAA Story by Keith Hayward
WED 25th March - Chiltern Aviation Society AGM - plus History of Denham Aerodrome Part 2 by Tim Calloway
WED 22nd April - DH 106 Comet by Philip Birtles
WED 27th May - The Cult of Ace Luftwaffe pilots in B of B by Chris Goss
WED 24th June - RAF Heritage by Sqn Ldr Rick Lipscomb

TWO WEEKS WITH THE STARS – BSAA’s CHALLENGE – BY KEITH HAYWARD



On 15 March 1946 British South American Airways (BSAA) started scheduled flights to Buenos Aires from Heathrow Northside with a small fleet of six 13-seater Avro Lancastrians. In addition, four Lancaster freighters were acquired and these operated initially a series of mainly fruit charters to and from European destinations. The Lancastrians operated two flights per week to Buenos Aires via Rio and Montevideo and on 27 June 1946 a further service was added to Buenos Aires which continued on to Santiago, Chile, over the Andes. Twelve Avro Yorks with 21 seats were ordered to provide extra capacity and they were

delivered between May and November 1946, operating on the routes to Rio and Buenos Aires, with the Lancastrians still operating the Buenos Aires to Santiago sector, due to the high altitude required to cross the Andes, which the Yorks could not reach. With the York deliveries an intensive training programme was initiated for crews converting from the Lancastrians. With no specific aircraft allocated for training the Yorks were commandeered for training sessions as soon as they had arrived at Heathrow off service. Without flight simulators in those days, apart from BEA’s Link Trainer, which was hired on occasions, all training had to be carried out on aircraft in service with many hours of circuit training taking place at Heathrow and, later, at Hurn and Blackbushe. The wear and tear on tyres proved expensive. To highlight BSAA’s activities in its early days I have listed its Heathrow movements for two weeks in August 1946, but not necessarily complete.

Monday 5 August

Flight AN41, York G-AHEY *Star Quest*, commanded by Captain Hartley arrived from Buenos Aires at 20 00 GMT.

Tuesday 6 August

York G-AHEW *Star Leader* departed Heathrow as flight AS51 for Buenos Aires at 10 30 GMT

Lancastrian G-AGWL *Star Guide* with Captain Alcock positioned to Avro’s at Woodford for modifications

York G-AHEY *Star Quest* positioned to Langley for maintenance flown by the Duty Crew

Lancastrian G-AGWH *Star Dust* commanded by Captain Womersley flew UK Minister Earnest Bevin to Le Bourget for the Paris Peace Conference, positioning back to Heathrow early that afternoon. The same aircraft was chartered by The Daily Express to film the stricken US freighter American Farmer drifting in the Western Approaches. Captains Alabaster and Walton were airborne from 16 00 to 21 00 GMT, which proved to be a very difficult navigational exercise and very tiring. BSAA, desperate for additional training equipment had hired York MW175 from the Royal Air Force to help out with York conversion flights. On this day MW175 was busy on such duties carrying on with night training from 21 55 to 23 30 with Operations Manager Captain Gordon Store in command.



Wednesday 7 August

The duty crew were again busy positioning Lancastrian G-AGWJ *Star Glow* from Langley during the afternoon and delivering G-AGWK *Star Trail* to Langley on three engines later in the day. Air Vice Marshal Bennett’s commitment to Flight Refuelling included Lancaster G-AHJV, with Captain Graham flying to the UK South coast for 2 hrs 4 mins from 21 35 GMT.

The same day, York MW175 with Captain Gordon Store was again busy on training duties from 18 00 to 22 55 GMT.

Thursday 8 August

Lancastrian G-AGWJ *Star Glow* with Captain Aries flight CS8 with 13 passengers, a full load departed, for Santiago, nine minutes early at 10 21 GMT. In the other direction Captain Wellwood with York G-AHEZ *Star Speed* arrived with a full load of 21 passengers, two hours late at 22 20 GMT. Meanwhile York MW175 with Captain Gordon Store was airborne again on night training circuits at Heathrow from 19.35 to 21.47 GMT.

Chief Executive Air Vice Marshal Don Bennett flew the communication Proctor AGTH *Star Pixie* to Avro's at Woodford and back with BSAA Chairman John Booth and Technical Advisor Jim Kenny, no doubt putting the pressure on for more deliveries as soon as possible.

Friday 9 August

York G-AHEY *Star Quest* departed for Buenos Aires with Captain Allcock, flight AS52 at 10 24 GMT with a full load of 21 passengers. During the year BSAA had been operating a series of charters with boxes of peaches. On this day the first such flights were operated by Lancastrian G-AGWH *Star Dust* with Captain Womersley to and from Le Bourget.



Saturday 10 August

Lancastrian G-AGWG *Star Light* with Captain Taylor arrived from Santiago, flight CN7, during the day. Chief Executive Don Bennett flew Proctor G-AGTH *Star Pixie* to Miles Aircraft at Woodley and back with Senior Engineer Bill Forsyth during the morning.

Sunday 11 August

Training flights continued at Heathrow.

Monday 12 August

Technical delays are beginning to appear with spares not yet built up down the line. The Merlin engines were not really suited for long sectors in tropical climates and facilities at stations like Natal, Brazil were very basic, particularly for engine changes.

Scheduled arrival of flight AN51 from Buenos Aires, operated by York G-AHEX *Star Venture* with Captain Rodley was delayed until the next day.

Tuesday 13 August

Along with Captain Rodley's delayed arrival with York G-AHEX from Buenos Aires a much-needed Lancastrian, G-AGWL *Star Guide*, flew in from Avro's at Waddington at 13 55 GMT with Captain Wellwood following a series of modifications demanded by BSAA. This aircraft was immediately commandeered for training from 16 30 to 23 00 by Captain Harrison – such was the pressure on training. Another welcome arrival was Lancaster freighter G-AGUJ *Star Pilot* which was delivered to Langley that day.



Wednesday 14 August

Urgent maintenance work continued at Langley with the engineers under considerable pressure. Chief Engineer Wing Commander W Warner actually drove to the Royal Air Force Transport Command base at Lyneham to borrow York spares from the RAF 'to keep the airline's fleet serviceable.'

Thursday 15 August

Lancastrian G-AWGK *Star Trail*, flight CS9, departed on the long haul to Santiago via Buenos Aires and the high unpressurised crossing of the Andes. Incoming flight AN52 operated by York G-AHEW *Star Leader* from Buenos Aires was delayed until 16 August.



Avro Lancaster Mk III G-AGUM *Star Ward* of BSAA at Heathrow in 1949

Friday 16 August

Flight AS54, with York G-AHEX *Star Venture* (Captain Wellwood) departed late at 10 58 GMT with a full load of 21 passengers. AN52 G-AHEW *Star Leader* arrived a day late because of technical problems.

Saturday 17 August

The only scheduled movement, flight CN8 from Santiago was severely delayed downline when Lancastrian G-AGWJ *Star Glow* with Captain Griffin became unserviceable and was delayed until 20 August.

This was a typical record of BSAA's Heathrow movements at that time. Running on a shoestring on very long cross-ocean routes with training flights being fitted in between scheduled flights and planned maintenance with aircraft being ferried to Langley was indeed a challenge. Then, on 2 September, the Caribbean route was initiated and the pressure increased. With so many personnel being recruited by Air Vice Marshal Don Bennett from his former RAF Pathfinder force the press-on spirit prevailed and we coped. We were even issued with wartime RAF 'pep pills' to keep us going during the harsh winter of 1946/1947. The determination to succeed was there; however, the odds were stacked against us as time went on. The disaster of the Avro Tudors that followed tipped the balance and the merger with BOAC in July 1949 was inevitable. NB I am compiling a list of BSAA moments in and out of Heathrow during the airline's life which will go to the British Airways Speedbird Heritage Centre. For this I am relying on old logbooks. Sadly, most of the wonderful veterans have now gone; if any Air Britain member has access to BSAA pilots' logs please contact me. I am particularly trying to contact those of Captain D Cracknell, one of the original captains.

THE RAF'S LAST DIVE BOMBER – THE VULTEE VENGEANCE BY LAWRENCE HAYWARD



EZ854 of the RAF in Far East; note W shaped wing of these aircraft.

If you asked members of the public at an airshow, to name a dive bomber from WW2 perhaps the majority would name the Ju 87 Stuka, but none would every think to name the Vultee Vengeance, an American dive bomber, that served operationally in the RAF, the RAAF and the Indian AF in South East Asia in WW2!

In 1940, Vultee Aircraft started the design of a single engined dive-bomber, the Vultee Model 72 (V-72) to meet the requirements of the French Armée de l'Air. The V-72 was built with private funds and was intended for sale to foreign markets. The V-72 was a low-wing, single-

engine monoplane with a closed cockpit and a crew of two. An air-cooled radial Wright Twin Cyclone GR-2600-A5B-5 engine rated at 1,600 hp (1,200 kW) powered the V-72. It was armed with both fixed forward-firing and flexible-mounted .30 in (7.62 mm) machine guns in the rear cockpit. The aircraft also carried up to 1,500 lb (680 kg) of bombs in an interior bomb bay and on external wing racks. The Vengeance was uniquely designed to dive vertically without lift from the wing pulling the aircraft off target. To this end, it had a 0° angle of incidence on the wing to better align the nose of the aircraft with the target during the dive. This resulted in the aircraft cruising in a nose-up attitude, giving a poor forward view for the pilot, particularly during landing. It had an unusual, "W"-shaped wing planform. This resulted from an error in calculating its centre of gravity.



Moving the wing back by "sweeping" the centre section was a simpler fix than re-designing the wing root. This gives the impression of an inverted gull wing when seen from an angle, when in fact the wing has a more conventional dihedral on the outer wing panels.

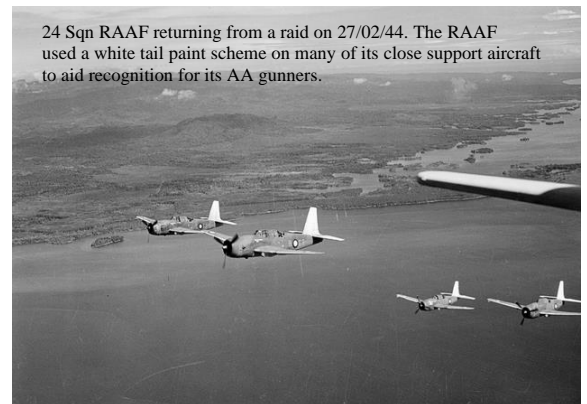
France placed an order for 300 V-72s, with deliveries intended to start in October 1940. The fall of France in June 1940 stopped these plans, but at the same time the British Purchasing Commission, impressed by the performance of the German Junkers Ju 87, was shopping for a dive bomber for the Royal Air Force, and as it was the only aircraft available, placed an order for 200 V-72s (named Vengeance by Vultee) on 3 July 1940, with orders for a further 100 being placed in December. As Vultee's factory at Downey was already busy building BT-13 Valiant trainers, the

aircraft were to be built at the Stinson factory at Nashville, and under license by Northrop at Hawthorne, California. The first prototype V-72 flew from Vultee's factory at Downey, California, on 30 March 1941. Additional aircraft were ordered for Britain in June 1941 under the Lend-Lease scheme, with these being given the designation, A-31.

After the U.S. entered the war following the attack on Pearl Harbor, a number of V-72 and A-31 aircraft were repossessed for use by the USAAF that became interested in dive bombing. They decided to order production of an improved version of the Vengeance, designated the A-35, for both its own use and for supply to its allies under Lend-Lease. It was fitted with a more powerful Wright Twin Cyclone R-2600-19 engine and improved armament. As US Army test pilots disliked the poor pilot view resulting from the zero-incidence wing, this was "corrected" in the A-35, giving a better attitude in cruise but losing some accuracy as a dive bomber. Consequently, the A-31 or A-35 was not operationally by the United States in any sector or front. When production of the Vengeance was completed in 1944, a total of 1,931 aircraft had been produced. The majority were produced at the Vultee plant in Nashville, Tennessee. Indecision about which aircraft type should replace it in production at the Vultee plant led to several "make-work" contracts for Vengeance aircraft to prevent dispersion of the skilled workforce. This resulted in overproduction of what was an obsolete aircraft, which is hindsight was a considerable waste as the factory could have built the P-47D Thunderbolt that was capable of carrying 2,000 lb of bombs over a greater range and was able to 'fight it out' with any Japanese aircraft of the era, thus saving the task of Curtiss P-40s acting as escort.

Operational experience with other dive bomber aircraft of the period, such as the Blackburn Skua, Junkers Ju 87 Stuka, Aichi D3A "Val", Douglas Dauntless, Breda Ba.65 and Curtiss SB2C Helldiver, indicated that the Vengeance would be vulnerable to enemy fighters. To be effective, all these aircraft required an environment of local air superiority and fighter escort. Fighter escort and lack of fighter opposition in the theatres in which it served, combined with its vertical dive capability, meant that the Vengeance suffered light combat losses.

Early experience with the aircraft showed that there were problems with engine cooling. In service, the British managed to solve these problems, but Free French aircraft that did not have these problems remedied were declared unreliable to operate and were grounded. The aircraft was described as being stable in flight and in a dive, with heavy elevator and rudder control, but with light aileron control. Forward visibility was considered poor due to the large radial engine. There were a number of fatal accidents with the Vengeance due to improper dive procedures and a centre of gravity problem when the aircraft was flown with the rear cockpit canopy open, but without a rear gunner. In combat, the type was considered rugged, reliable, stable, and generally well-behaved. Commonwealth forces operated the type from May 1942 to July 1944. Burma tended to be a low priority for Allied air planners, and forces in that theatre got what was left over, including Vickers Wellingtons bombers and Hawker Hurricanes that spent their last days in Burma, after those types were mostly withdrawn from front line operations in NW Europe. The Vengeance saw considerable action attacking Japanese supply, communications and troop concentrations in Burma. Its service in that theatre has been described as "...very effective..." Peter Smith, author of *Jungle Dive Bombers at War*, wrote that, "Their pilots had difficulty in getting them off the ground with a full load. At Newton Field they were using the full length of the 6,000 feet runway before becoming airborne. Kittyhawk aircraft could carry the same bomb load and in addition carry out ground-strafting". However, in contrast, many crews spoke well of the Vengeance, with one pilot saying "I certainly didn't have that experience of the Vultee. "I can recall no incidents of pilots having difficulty in taking off with full bomb loads, and the Kittyhawk could not carry the same bomb load even after their undercarriage had been strengthened. I remember the Vultee as a lovely aircraft to fly, an aircraft that was hard to stall and was fully aerobatic".



24 Sqn RAAF returning from a raid on 27/02/44. The RAAF used a white tail paint scheme on many of its close support aircraft to aid recognition for its AA gunners.

“You could do anything in them, rolls, loops, stall turns, and there was enough room in the cockpit to hold a ball. I used to like flying them, although a lot of blokes thought that they were too cumbersome”. By the time that Britain had received large numbers of Vengeances, its opinion on the usefulness of specialised dive bombers had changed. As the Battle of Britain and operations over North Africa had shown the dive bomber to be vulnerable to fighter attack, the RAF rejected the Vengeance for use over Western Europe or the Mediterranean. It was decided to use the Vengeance in the Burma Theatre to carry out dive-bombing operations in close support of British and Indian troops in the jungles.



The first RAF Squadrons (No. 82 and No. 110) received Vengeances in October 1942. The first dive bombing missions against Japanese forces were flown on 19 March 1943. A further two RAF squadrons in Burma received Vengeances, (No. 84 and No. 45), together with two squadrons of the Indian Air Force (IAF) (No. 7 and No. 8). Vengeances were heavily deployed in support of the second Arakan campaign of 1943/44, and defending against the Japanese attacks on Imphal and Kohima of April–July 1944.

Following the defeat of the Japanese offensive, in 1944 the RAF and IAF started to phase out the Vengeance in favour of more versatile fighter bombers and twin-engine light bombers, with the last Vengeance operations over Burma being carried out on 16 July 1944. After Burma service, a detachment from 110 Squadron RAF was sent to Takoradi in West Africa via the Middle East, a number of aircraft breaking down en route. Between September and December 1944, 11 Vultees took part in air-spraying trials against malarial mosquitoes, using under wing spray dispensers. Although phased out of front-line service with the RAF, Britain continued to receive large numbers of Vengeances, with bulk deliveries of Lend Lease aircraft (as opposed to those purchased directly by Britain) having only just started. Many of these surplus aircraft, including most Vengeance Mk IVs, were delivered to the UK and modified as Target tugs, being used in this role both by the RAF and the Royal Navy's Fleet Air Arm (FAA). In these roles, all armament was removed from the aircraft. In the UK USAAF used them as target-tugs.



Australia placed an order for 400 Vengeances as an emergency measure following the outbreak of war in the Pacific which was met by a mixture of Lend Lease and diversions from the original British orders. While the first Vengeance was delivered to the Royal Australian Air Force (RAAF) in May 1942, the aircraft did not arrive in substantial numbers until April 1943. The RAAF's first Vengeance squadron, No. 12 Squadron flew its first operational mission against Selaru Island in the Dutch East Indies. Squadrons equipped with the Vengeance included Nos. 12, 21, 23, 24 and 25 Squadrons. Of these, all but 25 Squadron served briefly in the New Guinea campaign. Australian Vengeances flew their last operational sorties on 8 March 1944, as they were considered less efficient than fighter bombers, such as the P-47D having a short range and requiring a long runway, and were withdrawn to allow more effective fighter bombers to move into the forward area. The Vengeance squadrons were re-equipped with Consolidated B-24 Liberator heavy bombers. The view of the Vengeance's limitations is disputed by Peter Smith in *Jungle Dive Bombers at War*,

"The precision and skill of the dive-bombing method...and its clear superiority over most other means of air attack when it came to destroying small and well-hidden targets in difficult country, was proven over and over again in the Asian jungle campaigns. Yet the men who achieved these excellent results, for such economy of effort and comparatively small loss, were but a handful of pilots who have been forgotten in the overwhelming mass of the heavy-and medium bomber



fleets that were pounding both Europe and Asia by 1945. This capacity was exemplified in the raid by RAAF Nos. 21 and 23 Squadrons on Hansay Bay. Smith wrote, "...the jungle-clad hills and islands of forgotten or unknown lands would become the major stage for the ultimate expression of the dive-bombers' skill." While the RAAF still had 58 Vengeances on order in March 1944, this order was cancelled and the aircraft were never delivered. However small numbers of Vengeances remained in service with support and trials units until 1946.

Just one complete aircraft is preserved in Camden Museum of Aviation Harrington, NSW, in Australia but it's currently closed to the public!

SIXTY YEARS LATER, THE F-4 PHANTOM STILL FLIES THE SKIES



Despite its age, it's close to matching fourth-generation fighters. The key to the Phantom's success is its adaptability. The McDonnell Douglas F-4 Phantom II is a legendary aircraft, an icon of the Vietnam War and the archetype of the third-generation jet fighter designs that entered service in the 1960s. More than 5,000 of these heavy supersonic fighters were built, and hundreds continue to serve and even see combat in several air forces today. But the Phantom's record in air-to-air combat over Vietnam, especially when compared to its successor, the F-15 Eagle, which has never been shot down in air-to-air combat has left it with a reputation of being a clumsy bruiser reliant on brute engine power and obsolete weapons technology. But this is unfair! The Phantom's fundamental flaws were

corrected by 1970, while more recently, Phantoms have had their avionics and ordnance upgraded to modern standards. These modernized Phantoms flown by the Turkish and Greek air forces can do pretty much what an F-15 can do, at a much lower price. When the F-4 came out in 1958 it was a revolutionary design, one that went on to set several aviation records. Weighing in at 30,000 pounds unloaded, its enormous J79 twin engines gave (and still gives) the aircraft excellent thrust, propelling the heavy airframe over twice the speed of sound at a maximum speed of 1,473 miles per hour. The early Phantoms could carry 18,000 pounds of munitions, three times what the huge B-17 bombers of World War II typically carried. The weapons officer in the rear-seat could operate the plane's advanced radar, communication and weapons systems while the pilot focused on flying. Furthermore, the F-4 came in both ground- and carrier-based models and served in the U.S. Air Force, Navy and Marines. The only other frontline fighter to serve in all three services before or since is the F-35. But when the F-4 confronted the lighter-weight MiG-17 and MiG-21 fighters of the North Vietnamese air force in 1965, the Phantom suffered.

In the Korean War, the U.S. Air Force had shot down between six and ten enemy fighters for every one of its aircraft lost in air-to-air combat. In Vietnam, the ratio was closer to two to one (including other aircraft types besides the Phantom). The F-4's primary problem was that it had no built-in cannon. Instead, it relied entirely on newly-introduced air-to-air missiles—the radar-guided AIM-7 Sparrow, the heat-seeking AIM-9 Sidewinder and the older AIM-4 Falcon. The Air Force didn't realize those early missiles were terrible. Studies showed that 45 percent of Vietnam-era AIM-7s and 37 percent of AIM-9s failed to either launch or lock on, and after evasive manoeuvres, the probability of achieving a kill fell to 8% and 15 % for the two types, respectively. The Falcon missiles were even worse, and the Pentagon later withdrew them from service. The North Vietnamese MiGs, equipped with both cannons and missiles (on the MiG-21), would out manoeuvre the heavier F-4, which for all its speed, was not especially agile. Worse, American pilots weren't trained for close range dogfights, as the Air Force assumed air-to-air engagements would occur at long range with missiles. Furthermore, the Phantom's J79 engines produced thick black smoke, which combined with the aircraft's larger size, made it easier to spot and target from a distance. On the other hand, the rules-of-engagement over Vietnam prohibited U.S. pilots from shooting at unidentified targets beyond visual range, further crippling the advantages of the missiles. However, the F-4's problems began to recede. Air-to-air missile technology dramatically improved with later versions of the Sparrow and Sidewinder. The F-4E model finally came with an internal M161 Vulcan cannon. Before, some Phantom units made do with external gun pods that vibrated excessively.



In 1972, an F-4 piloted by Maj. Phil Handley shot down a MiG-19 with his plane's gun—the only recorded aerial gun kill performed at supersonic speed. Eventually, the Air Force upgraded all its F-4Es with wing-slats that significantly improved manoeuvrability at a slight cost in speed. New J79 engines even dealt with the problem of the F-4's visible black smoke. The US Navy, in contrast, perceived the problem as being a lack of Air Combat Maneuvering training, and instituted the Top Gun training program in 1968. Navy pilots went on to score a superior kill ratio over Vietnam of 40 victories for seven planes lost in air-to-air combat. The USAF Phantoms claimed 107 air-to-air kills for 33 lost to MiGs, and the USMC claimed three. Ground fire shot down 474 Phantoms in all services, as the heavy-lifting Phantom fighters did double duty as ground-attack aircraft.

Two sub-variants of the Phantom also distinguished themselves; the RF-4 photo reconnaissance plane, optimized for speed, and the Wild Weasel, specialized in attacking enemy surface-to-air missile defences. The last US F-4s saw action during Operation Desert Storm, before being retired in 1996. The Pentagon later converted some into QF-4 target practice drones. However, the Phantoms proliferated around the world. The F-4 saw extensive use in Israeli service, scoring 116 air-to-air kills against the Egyptian and Syrian AF, starting in 1969 during the War of Attrition.



In one engagement on the first day of the Yom Kippur War in 1973, 28 Egyptian MiGs attacked Ofir Air Base. Just two Phantoms managed to scramble in defence, but they shot down seven of the Arab attackers. The Israeli Phantoms' primary target and most deadly foe, during these campaigns were Arab surface-to-air missile batteries. SAMs accounted for most of the 36 Israeli Phantoms lost in action. The swan song of the Israeli Phantom force came during Israel's 1982 intervention in the War in Lebanon, when Phantoms escorted by new F-15s and F-16s, wiped out all 30 of Syria's SAM batteries in the Bekaa Valley in one day without losing a single plane in Operation Mole Cricket 19.

Iran received 225 F-4s from the United States prior to the Iranian Revolution. These formed the backbone of the Iranian fighter force during the nine-year-long war with Iraq. The IRAIF Phantoms (photo right) reportedly acquitted itself well versus Iraqi MiGs, and carried out several long-range raids on the Iraqi airfields. The actual number of air-to-air kills remains disputed. The Phantom still sees service. But it's somewhat of an anomaly. Just compare it to F-15 Eagle. The F-15, which entered service in 1975, is emblematic of fourth-generation fighter aircraft that remain the mainstay of modern air forces today. The F-15 is also deliberately unlike the F-4. It's a heavy, twin-engine, two-seat fighter and an agile dogfighter. When the F-15 and the lighter F-16 saw their first major air action over Lebanon in 1982, they shot down more than 80 Syrian third-generation MiGs at no loss. The supremacy of the fourth-generation was confirmed again in the Gulf War, in which Iraqi fighters shot down only one fourth-generation fighter (an F/A-18 Hornet) for the loss of 33 of their third-generation aircraft. How could the F-4 possibly keep up in this new environment? Easy; by integrating the same modern hardware used in the fourth generation. The Phantoms flown by the Turkish and Greek air forces both have modern pulse-doppler radars, which give the F-4 "look down-shoot down" capabilities. In the past, high-flying radars had trouble detecting low-flying aircraft because the radar waves bouncing off the ground created a cluttering effect. Active Doppler radars cut through the ground clutter.



Modern F-4s can also fire the full range of modern ordnance such as the advanced AIM-120C AMRAAM air-to-air missile with a range of 65 miles, precision-guided munitions such as the AGM-65 Maverick, and late model Sparrow and Sidewinder missiles. As combat aircraft are essentially weapons platforms, these capabilities mean that the F-4s can handle most of the same offensive tasks a fourth-generation F-15 or Su-27 fighter can do. But surely the electronics and instruments are out of date? Not really. For instance, modernized F-4s have improved Heads Up Displays

(HUDs) so that pilots don't have to look down from the canopy to check on their instruments.

Germany flew upgraded F-4Fs until 2013, and maintains them in stock in case of future need. South Korea still has 71 F-4Es (only modestly upgraded) in its 17th Fighter Wing. Japan maintains the same number of F-4EJ Kais upgraded with pulse-Doppler radars and anti-ship missiles. The Israelis pioneered the art of Phantom upgrades in the 1980s with the Phantom 2000 Kurnass, or 'Sledgehammer'. Though retired from Israeli service in 2004, Israeli firms went on to upgrade Greece's 41 Peace Icarus Phantoms, (above left) equipping them with ANPG-65 pulse-Doppler radars and the ability to fire AMRAAM missiles. Israeli upgrades contributed to the Turkish Air Force's Terminator 2020 (next page), which has additional wing strakes for improved manoeuvrability. The 2020s have had 20 kilometres of wiring replaced for a net loss of 1,600 pounds in weight.



The Turkish versions also feature a diverse array of modern sensors and electronics. Like other modern F-4s, they can deploy advanced ordnance such as Paveway bombs, HARM anti-radar missiles and 3,000-pound Popeye missiles with a range of 48 miles. Recently, they've bombed Kurdish PKK fighters in Turkey and Iraq in 2015 and 2016. An RF-4 reconnaissance plane was shot down over Syria in 2012, and three F-4s crashed in 2015, earning them the appellation "Flying Coffins" in the Turkish media. **Credit; Sébastien Roblin, National Interest.**

BATTLE OF BRITAIN HURRICANE RESTORED AFTER SIX DECADES STUCK IN A BOG

Graham Williams kindly alerted us to the fact that Battle of Britain Hurricane V7497, that has recently been restored to flying condition after being stuck in a bog for six decades, was acquired by Peter Kirkpatrick who was at school with Graham Williams's son in law, Gareth Williams. They were at Menai Bridge School in the 1970s together! Peter Kirkpatrick is an NHS neurosurgeon with a passion for flying and bought the remains of V7497 that was found by metal detectorists in 1990s. The Battle of Britain veteran, Hurricane Mk I V7497, was lost on 28th September 1940, when Pilot Officer Everett Bryan Rogers, of 501 Sqn, bailed out of his stricken aircraft over Sutton, Kent following a skirmish with Bf 109Es. The Hurricane plummeted into marshes near Canterbury where it lay undiscovered until the 1990s, when it was excavated by Aviation Archaeologists. The decaying airframe was later bought by Peter, who handed the painstaking task of rebuilding the warplane to specialists Hawker Restorations Ltd, of Elmsett Airfield in Suffolk, England. She flew again following restoration on August 30th, 2018.



Now that the restoration is complete, V7497 will operate under the auspices of the Aircraft Restoration Company on behalf of her owner, Peter Kirkpatrick who will get to fly her as often as he can. The ambitious £2 million project was masterminded over two years by Peter Kirkpatrick, funded in part by a remortgage of his home! The fighter still contains 35 per cent of the original parts and is one of only 14 still flying Hurricanes worldwide. The stainless-steel joints were kept but the mechanics had to replace a number of parts. Peter spent hundreds of thousands of pounds on the project and is one of three stakeholders who met the £2 million cost, with Hawker Restorations retaining a 25 per cent share. He raised his share through remortgaging the home he shares with his wife Leisha. Peter, who learned to fly while he was a medical student in the 1980s, added: "I believe passionately in the history of these aircraft and the role they played in the war. Thanks to the courage of the young men who flew them, we enjoy much of what we enjoy today".

Peter, 57, said: "My first solo flight in V7497 was fantastic and a tribute to those who sacrificed their lives all those years ago. Without them, we would have lost the war. Restoring this plane, and being able to actually fly it, is a dream come true and a huge privilege. Though the Spitfire may have garnered more attention, it was the Hurricane that was the real workhorse of the war. The Battle of Britain statistics prove it was the plane that predominantly saved the day".

Peter had lessons from Stuart Goldspink, Hawker Restorations chief test pilot, before first flying his Hurricane in September 2018. Peter regularly flies his Pitts Special stunt aircraft at displays – but when he has built up more hours in the Hurricane, he intends to take it to public displays. He is even considering leaving his job at Addenbrooke's Hospital in Cambridge to fly the 350-mph plane at shows around the world. He said: "In some respects, flying is like surgery – there is very little room for error. Both involve the hand and eye co-ordination and, in the end, it comes down to having to make very rapid life-or-death decisions." "I've dedicated my life to the NHS but it's changed. It has become more like a factory. I love the NHS but I increasingly feel it is time my other passion, flying, has a chance. Now might be the right time to move on."

Interestingly, Peter's 13-year-old son, Elliott, is already learning to fly, no doubt in anticipation of flying this Hawker Hurricane when his father gets too old to do so! **With thanks to Graham Williams.**

A DAY TRIP TO INVERNESS & STORNOWAY IN 'YANKEE NOVEMBER' - PART 1 BY FRED BARNES



Fred Barnes has kindly sent is details of a memorable flight deck familiarisation flight from Heathrow to Inverness and Stornoway in British Airways Viscount V.806, G-AOYN. By early 1980 the British Airways Viscount V.806 fleet had been reduced to fourteen aircraft and the airline was planning to reduce the fleet further to ten aircraft as twenty-six unprofitable UK domestic routes were to be withdrawn on 30th March 1980, including all of those from Cardiff, Bristol, Leeds, Liverpool, Isle of Man and some from Newcastle. The route withdrawals were part of a plan to reduce losses as no economical replacement could be found for the ageing Viscounts and the airline was required to move forward into profit as part of the UK government's future privatisation plans for the company. I

realised that if I wanted to get a flight deck familiarisation flight on the Viscount, I would have to take some action before the chance was lost. Flight Technical Dispatch (FTD) staff could request a 'flight deck' trip but the criteria was that the flights would be in your own time, had to return to base the same day, with no other flight crew training taking place, a 'duty travel' passenger ticket had to be issued to cover legal requirements and any expenses were at your own cost. The winter timetable Viscount aircraft schedule provided a suitable rotation that worked from Heathrow to Inverness and Stornoway and return. A plan was formulated and my request was actioned, approved and the tickets were collected.

Crew Briefing and Pre-Departure at Heathrow; On Thursday 13th March 1980 I went to the Flight Crew Briefing Centre in Queens Building at Heathrow and met Captain Roger Burfoot who was operating flight BA5632 at 0840 from Heathrow to Inverness and two further flights with a round trip from Inverness to Stornoway. I had previously spoken to him earlier in the month when I explained my intended familiarisation trip and he was expecting to meet me. My colleagues in FTD had prepared the three fuel flight plans for the sectors operated by the pilots in their duty day and British Airways used Stored ATC Flight Plans which were held on a seasonal basis with the ATC Authorities throughout Europe. He introduced me to his First Officer and I attended the crew briefing including the weather, fuel plan, aircraft serviceability, NOTAMS and load information. The weather forecast was good at our destinations with no low cloud, poor visibility, or strong winds and the enroute weather was fair. G-AOYN was the aircraft allotted to the flights, it was serviceable and already at Heathrow so there was a good chance of an on-time departure. Captain Burfoot decided the final fuel requirement, which included some extra tankering fuel as the price of fuel was higher in Inverness than at Heathrow, and advised my colleagues in FTD. He also advised Load Control that there would be a third person travelling on the flight deck to be included in their documentation.

Then it was time to go to the aircraft and I accompanied the pilots through the security check and went in the crew transport vehicle as G-AOYN was parked on an off-pier stand at Terminal One. On arrival at the aircraft the First Officer stayed on the ramp to carry out the external checks and I followed Captain Burfoot up the mobile steps and moved through the cabin to the flight deck. The flight deck was small but functional with 1950s style analogue instrumentation and the third crew seat was between and behind the pilots' seats. I noted that there was not much space compared to the flight decks on Vanguard or Trident aircraft. I waited in the front of the cabin in order not to get in the way and when the cabin crew arrived on board Captain Burfoot chatted with them and I was introduced. The First Officer arrived, followed by the ground engineer and they both went into the flight deck.

After the Captain had signed the Aircraft Technical Log and confirmed that the correct amount of fuel had been loaded the engineer left and I was invited to go into the flight deck and strap into the third crew seat. I was given a head set so that I could listen in to the communications and a flight deck safety briefing by Captain Burfoot. During the next few minutes the First Officer was getting the latest ATC information and weather for departure and then Captain Burfoot went through the departure briefing with the First Officer. The passengers were boarding and after they were in their seats the Aircraft Dispatcher arrived with the load sheet and other paperwork. Captain Burfoot checked and signed the load sheet and the Aircraft Dispatcher left the flight deck after advising that the aircraft was ready for departure. The ground engineer then came on to the intercom to announce that the push back tug had arrived and that the tow bar was being connected to the aircraft. Next the cabin crew advised that they had the correct number of passengers on board and were ready for departure. Then the ground engineer advised that the aircraft was ready for engine start up.

Flight BA5632 Heathrow to Inverness; The First Officer contacted Heathrow Ground Control to advise that the aircraft was ready for push back and ATC confirmed the Flight Plan details. When push back clearance was received Captain Burfoot advised the ground engineer and the brakes were released and then Viscount started to move slowly backwards into the taxiway and was turned to face east. It was an on-time departure. When the push back was completed the aircraft came to a halt and the First Officer requested start up clearance from ATC. After start up clearance had been received the four engines were started in sequence and then the tug was disconnected from the aircraft and moved away. Then the First Officer contacted ATC for taxi clearance for runway 28L which was approved and Captain Burfoot applied power on the four engines and G-AOYN started to move along the taxiway towards runway 28L. There was the normal queue in the morning peak for take-off and the Viscount followed other aircraft to the holding point for runway 28L. The pilots went through the pre take-off briefing and had the flaps set for take-off in readiness for clearance to enter the runway. When ATC cleared the aircraft to enter the runway and hold after a departing company Trident Three Captain Burfoot taxied the Viscount forward and lined up on the centre line of the runway and brought the aircraft to a halt. I could see the expanse of the runway ahead and the lighting at the edges, touch down zone and centreline going into the distance. After the departing jet was airborne and climbing away ATC gave take off clearance and Captain Burfoot released the brakes and set take off power on the four Rolls-Royce Dart engines.

There was an increase in noise and vibration and G-AOYN started moving forward and then accelerated along the runway, the V1 and VR speeds were called out and the aircraft became airborne and after V2 when a positive rate of climb was established the landing gear was raised. After take-off the Viscount made a right turn towards Burnham and was later cleared by London ATC to climb in stages as traffic permitted to the cruising height of FL180. It was a busy time for the pilots as there is a great deal of air traffic in the London TMA. On reaching the cruising height the engines were reset to cruise power and the crew were able to settle down to an easier workload. The droning sound from the four engines was a steady background to conversation and there was a good view of Birmingham and the surrounding countryside through the scattered cloud below. Captain Burfoot said that the Viscount was a good aeroplane but it was ageing and needed to be replaced and it was never designed to be operated in the Scottish Highlands and Islands with difficult short runways at airports such as Kirkwall and Sumburgh. He said that it was a good idea for the staff in FTD who did the flight planning and crew briefing to experience the flight deck workplace for themselves.

Later the rugged and beautiful scenery of the Lake District in Northern England was below and then the flight routed over the waters of the Solway Firth and into Scottish ATC Airspace. The First Officer received the latest weather for Inverness and the other major Scottish airports and Captain Burfoot discussed the arrival briefing for landing at Inverness on runway 24. Captain Burfoot made an announcement to the passengers and said that they would get a view of the mountains and that the flight should arrive at Inverness on time. After Glasgow the aircraft was cleared to descend to FL170 and later the stunning sight of the snow-capped tops of the Grampian Mountains came into view in the morning sunshine. The First Officer called 'Speedbird' at Inverness on the company frequency with the ETA, technical status of G-AOYN, fuel requirement for the next sector to Stornoway and some passenger information. Scottish ATC gave descent clearance and the engine power was reset and later the flight was handed over to Inverness ATC for the approach and landing. The First Officer contacted Inverness ATC who gave further descent clearance and vectored the aircraft for a visual approach to runway 24. Captain Burfoot changed the engine setting, reconfigured the flaps for landing and lowered the landing gear. Engine noise increased as the Viscount slowed down and as the aircraft turned onto the approach the waters of the Moray Firth could be seen and then the runway lights could be seen ahead. ATC gave the weather information and cleared the aircraft to land as the Viscount was on final approach and I could see the runway ahead and the threshold markings and lighting. Captain Burfoot made a smooth landing on runway 24 and after slowing G-AOYN to taxi speed turned off the runway at the 06 threshold end on to the taxiway. ATC gave taxiing instructions to the stand at the terminal and on arrival the aircraft came to a halt and the engines were shut down after flight time of 1 hour and 42 minutes from Heathrow to Inverness (Dalcross Airport). The pilots went through the after-flight checks as the ground crew were bringing the steps to the forward door and other ground handling equipment to the aircraft. I unstrapped from my seat and moved to open the flight deck door and waited for the passengers to disembark.

Turnaround at Inverness; After the passengers had disembarked the pilots came out of the flight deck and I followed them down the steps and across the ramp to the small terminal building. Captain Burfoot introduced me to the local British Airways staff. The turnaround at Inverness was scheduled for 45 minutes before the next service BA5830 at 1130 to Stornoway. After coffee the crew checked the latest weather and NOTAMs for our destination and advised the Station Engineer of the round-trip fuel required for the next sector which would avoid refuelling with more expensive fuel in Stornoway.

It was a sunny morning but chilly and I wanted to take some photos of G-AOYN so I accompanied Captain Burfoot when he carried out the external pre-flight checks on the Viscount. The First Officer went back on to the flight deck to prepare for departure and the cabin crew had been tidying and dressing the cabin for the next passengers.

I followed Captain Burfoot up the forward steps and waited whilst he settled into the left-hand seat and then I went into the flight deck and strapped into the third crew seat. Soon the passengers were boarding and with departure procedures completed G-AOYN was ready for departure. Flights from Inverness to Stornoway link the administration centres for the Highland Region in Inverness and the Western Isles in Stornoway and it is therefore an important route. Surface travel would involve long ferry crossings and road transport between the two centres taking a great deal of time. In winter the rough seas make the air service more desirable.

Flight BA5830 Inverness to Stornoway; For this sector the First Officer was the handling pilot and he discussed the departure briefing for Inverness with the Captain who reiterated my safety briefing. Captain Burfoot contacted Inverness ATC for start-up clearance and when approved the ground engineer was advised and the four engines were started in sequence. The aircraft was parked on a self-manoeuvring stand and when ready G-AOYN was routed via the taxiway to the threshold end of runway 06 and then to continue along the runway to the threshold of runway 24. At the threshold the Viscount was turned through 180 degrees and brought to a halt ready for departure.

The pilots went through the pre take off checks, flaps were set and ATC was advised that the aircraft was ready for departure. After take-off clearance was received the engines were set to take off power, the brakes were released and G-AOYN accelerated along the runway and became airborne. Once airborne the landing gear was retracted and the aircraft started climbing and Inverness ATC handed the flight over to Scottish ATC. The cruising height was FL125 using the Scottish Quadrantal Rules and cruise power was set on the four engines. Below was the magnificent scenery of the Highland landscape with snow-capped peaks but there was some lower cloud ahead. Then Captain Burfoot received the latest weather for Stornoway and runway 18 was in use for landing and the pilots discussed the arrival briefing. I could see the waters of The Minch, the stretch of sea between the Scottish mainland and the Isle of Lewis in the Outer Hebrides. Captain Burfoot said that there could be busy days at Stornoway if there was a 'military exercise' taking place as it was used as a NATO forward operating base and the RAF had a base at the airfield. There was also a Helicopter Coastguard base but no activity for the arrival of BA5830. Scottish ATC gave the descent clearance and the First Officer reduced engine power to start the descent. Ahead I could see the coastline of the Isle of Lewis through breaks in the cloud and the flight was handed over to Stornoway ATC which gave clearance for an ILS approach to runway 18 and the latest weather information. The captain contacted 'Speedbird' at Stornoway on the company frequency with the ETA and passenger information.

During the descent the Viscount broke through the scattered cloud and the flaps and engine power were changed and after slowing down the undercarriage was lowered. ATC gave vectors for the aircraft to join the ILS and then I could see the lights of the runway ahead. The final approach was over water and ATC gave the latest wind, temperature and pressure information and clearance to land on runway 18. I could see the runway ahead and the threshold markings and the First Officer made a firm landing. After touchdown and when all of the wheels were on the surface braking was applied, engine power was changed and G-AOYN decelerated to taxi speed. ATC cleared the aircraft to exit the runway left via Taxiway 'C' to the main parking apron and then park on a stand near the small terminal building. The Viscount parked on the self-manoeuvring stand and came to a halt and the engines were shut down. It had been a short flying time of 27 minutes from Inverness to Stornoway but nevertheless it was a high workload for the two pilots. The ground crew arrived with the aircraft steps at the forward door as the pilots went through the after-flight checklist.

Lunch time turnaround at Stornoway; When the after-flight checks were completed Captain Burfoot said that it was time for lunch and would I care to accompany the crew into Stornoway town as there were only basic facilities at the airport and I readily agreed. After the passengers had disembarked, I left the aircraft by the forward airstairs and took some photographs of G-AOYN parked outside the small terminal building. Then I followed the pilots into the British Airways office and was introduced to some of the local staff. There was a two hour and twenty-minute turnaround scheduled at Stornoway prior to the next departure BA5833 at 1430 to Inverness. Captain Burfoot confirmed with the Station Engineer that G-AOYN was serviceable and that the fuel on board was sufficient for the sector to Inverness. Then it was time to get into the mini-bus with all the crew for the short drive into Stornoway town for lunch. Over lunch it was good to chat with the cabin crew and pilots and then I had a walk along the harbour and took some photographs of the fishing boats moored alongside and heard the mewing of many seagulls.

It was a surreal experience to have travelled from a major city to the Outer Hebridean Isle of Lewis and had lunch. The weather was cold with some cloud but the warm water of the North Atlantic Drift (part of the Gulf Stream current) keep the islands warmer than equivalent latitudes in other parts of the globe. All too soon it was time to re-join the crew and get back into the mini-bus for the return trip to the airport.



On arrival back at the airport I noticed two aircraft parked on an adjacent ramp a *Loganair* Britten-Norman BN-2A Islander registration G-BEDZ, c/n 544, and an *Air Ecosse* Embraer EMB-110 Bandeirante registration G-CELT, c/n 110161.

The Islander was operating the Loganair Western Isles Internal Network from Stornoway to Benbecula, Isle of Uist, and the Isle of Barra where the airport is situated on the beach known as Traigh Mhor whilst the Bandeirante was operating the Royal Mail contract to the Scottish hub in Edinburgh. I asked the local staff if I could walk across to the ramp to take photographs of the aircraft and they said it was permitted.

The military area was located on another ramp and the hangar doors were closed and there appeared to be little activity. When I returned to the office Captain Burfoot was looking at the latest weather for the return flight to Inverness and he said that conditions were good with light south westerly wind, broken cloud with good visibility but there was a cold front coming from the Atlantic later in the day. After a chat with local staff it was time to return to G-AOYN with the rest of the crew to prepare for departure on the next sector.



Flight BA5833 Stornoway to Inverness; I accompanied the First Officer on his external pre-flight inspection of the Viscount checking for any damage to the airframe, propellers, oil leaks from the engines, wear on the tyres and general state of the aircraft. G-AOYN was painted in the British Airways 'Negus' livery with white fuselage top and 'British Airways' titles and 'Speedbird' logo in black above the windows and dark blue under the windows and lower fuselage with a white tail fin with the stylised 'Union Jack' flag painted in red and blue. The aircraft registration was painted in white on the rear lower fuselage ahead of the rear passenger door and the wings and engines were in natural metal finish. After the inspection I followed the

First Officer up the steps at the forward door and waited outside the flight deck whilst he settled into the right-hand seat. Captain Burfoot was already seated in the left-hand seat and was preparing for the departure briefing. The cabin crew then advised that they were ready for passenger boarding and I went into the flight deck and strapped into the third crew seat and put on my headset. After the passengers had boarded the aircraft and all the departure procedures were completed Captain Burfoot checked with the Station Engineer that G-AOYN was ready for engine starting. Captain Burfoot and the First Officer had gone through the departure briefing and I had was given the safety briefing. The First Officer contacted Stornoway ATC for Flight Plan and Start Up clearances and when that was received the four engines were started in sequence. There was 'No Delay' and after the ground equipment was clear taxi clearance was requested and received to route via Taxiway 'A' to runway 18 and hold short of the runway. The brakes were released and engine power was increased until the aircraft moved slowly forward across the ramp and along the taxiway. As G-AOYN moved along the taxiway I could see the sea on the starboard side of the aircraft and the pilots were setting the flaps ready for take-off. ATC cleared the aircraft to enter the runway and hold and Captain Burfoot manoeuvred the Viscount on to the centre-line of runway 18 and bought the aircraft to a halt. The pre take off checks were carried out and when ATC gave the latest weather information and take-off clearance the brakes were released, take-off power was set and G-AOYN moved forward and accelerated along the runway and became airborne with Viscount G-AOYN departing Stornoway for Inverness.

THE CONSOLIDATED B-32 DOMINATOR AT WAR OVER JAPAN, AFTER THE WAR



Hands up who has heard of the Consolidated B-32 Dominator in WW2; that's right nobody! Whereas the Boeing B-29 Superfortress heavy bomber achieved fame and infamy for its role in the atomic bombings of the Japanese cities of Hiroshima and Nagasaki, developing this huge bomber, which could lug heavy bomb loads over long distances at high altitudes and speeds, amounted to the most expensive weapons program undertaken by the United States during WW2, more expensive even the Manhattan Project. However, the Superfortress actually had a little-known rival developed by the manufacturer Consolidated, better known for its mass-production of the B-24 Liberator heavy bomber. Had the Superfortress failed to perform as expected, the so-called B-32 Dominator was to be the fallback option. However, the B-29 actually performed according to

expectations when it began operations in the Pacific Theatre in 1944, but Consolidated still delivered a hundred and eighteen B-32s which were deployed into action in mid-1945. On 29th May 1945, the first of four combat missions by the B-32 was flown by 386th Bomber Sqn of the 312th Bomb Group against a supply depot at Antatet in the Philippines, followed by two B-32s dropping sixteen 2,000 lb bombs on a sugar mill at Taito, Formosa, on 15th June. On 22nd June, a B-32 bombed an alcohol plant at Heito, Formosa, with 500 lb bombs, but a second B-32 missed flak positions with its 260 lb fragmentation bombs. Another mission was flown by this unit on 25th June against bridges near Kiirun on Formosa.

In July 1945, the 386th BS completed its transition to the B-32, flying six more combat missions before the war ended. In fact, Dominator crews fought the last U.S. air battle of World War II, tragically, *after* the war had ended. The program for a super heavy bomber actually predated Pearl Harbor. However, Consolidated's project, which used the B-24 as its basis, fell considerably behind Boeing's development of the B-29. The hulking bomber went through several permutations—its original design included twin-rudder tail and bizarre configuration mounting 20-millimetre cannons to fire rearward from each engine nacelle, but these elements were eventually ditched. In the end, the B-32 is most visually distinguished by its enormous tail which stretched ten metres tall. The Dominator wound up resembling the B-29 in key performance parameters: both aircraft used four Wright R-3350-23 Cyclone engines for power, had a maximum speed of around 358 miles per hour as fast as an early-war Bf 109E fighter and could lug a huge bomb load of 20,000 pounds. The B-32's defensive armament included ten conventionally manned machineguns, operated by a similar number of crew. However, though Consolidated also tried to implement the pressurized fuselage and remote-control gun turrets that were features on the B-29, it eventually gave up due to technical difficulties. This resulted in the Dominator being considered a low or medium-altitude bomber, when compared to the B-29. On the other hand, the B-32 had a nearly 20 percent greater range of 3,800 miles, and could maintain a much higher cruising speed of 290 miles per hour, compared to 230 for the B-29. The Dominator also benefited from reversible-pitch propellers and the thick Davis wing inherited from the B-24, which minimized drag at lower speeds; an especially useful quality while attempting to land.



Despite the B-32's upsides, the Army Air Corps was largely satisfied by the B-29's performance and only dispatched three B-32s for operational testing in the Philippines at the request of the 5th Air Force. Eventually transferred to the 386th BS, the Dominators conducted a series of raids against Japanese forces in the Philippines and Formosa (Taiwan). The targets in Taiwan included a sugar mill and an alcohol plant, indicative of just how far-reaching and indiscriminate the U.S. strategic bombing campaign against Japan had become. The 386th was fully outfitted with B-32s in July, and in August was redeployed to Yontan airfield at Okinawa where it was reassigned to flying photo reconnaissance missions over Japan. On the evening of 15th August 1945, Emperor Hirohito made a speech declaring his

intention to surrender, and ordering the armed forces to cease resistance. While anticipating the proposed surrender of Japanese forces that took place on the USS Missouri in 2nd September 1945, the USAAF continued reconnaissance overflights of Tokyo to verify compliance with the terms of surrender and survey the road network for the occupation forces. However, Japanese fighter pilots on the ground perceived the overflying bombers in a different light.



One Japanese ace, Saburō Sakai, later claimed that they feared the American bombers were returning to bomb Tokyo in violation of the surrender, and decided they were justified in attacking them. Another Japanese ace, Sadumo Komachi, simply stated that they were infuriated by seeing the American bombers flying unopposed over the Japanese capital after the immense devastation wrought by American bombs. To put things in perspective, earlier that year on 9th March, 1945 American B-29s had dropped thousands of cluster bombs loaded with napalm bomblets over working-class residential areas of Tokyo, igniting a firestorm which sucked the air out of lungs and melted concrete. The conflagration killed around 100,000 Japanese civilians, more than died in either atomic bombing. Thus, on 17th August, Japanese fighters intercepted the reconnaissance B-32s and harried them for two hours

while the bomber crews shot back with 0.50 calibre machine guns, neither side inflicting much damage on the other. The surprised bomber unit decided to dispatch a follow up recon mission on 18th August to investigate whether the intercept was an isolated incident.

It's worth noting that that same day, Japanese air forces in the Kuril Islands also engaged in air battles against Russian aircraft supporting an amphibious invasion, another post-surrender conflict which would take several days to sputter to a halt. At 7 am on the morning of the 18th, two B-32s set out for Tokyo again, each plane loaded with three additional photo-recon specialists drawn from the 20th Reconnaissance Squadron. The extra crew normally flew aboard F-7s, a reconnaissance version of the B-24. By 2 pm the two B-32s completed their runs over Tokyo at altitudes of ten and twenty thousand feet when they noticed Japanese fighters rising from their aerodrome towards them.

In fact, records show fourteen A6M Zero fighters and three N1K-J Shiden (“Lightning”) fighters launched to intercept from Yokosuka air base. The Shiden was one of the best Japanese fighters of the war, capable of exceeding 400 miles per hour and well-armed with four fast-firing 20-millimetre cannons, though it had relatively poor performance at high-altitude. Nonetheless, the aircraft swarmed over the larger B-32s, their machineguns and cannons chattering. The ten 0.50 calibre machineguns on each bomber were soon spitting back curtains of lead in response. Both the bomber crew and fighter pilots on that last mission recalled what happened next.

Screaming down from 12 o'clock high, Komachi raked the engine of the B-32 named *Hobo Queen II* with his 20-millimetre cannons and burst the plexiglass bubble of the top turret, wounding turret gunner Jimmy Smart. Another fighter strafed *Hobo Queen's* fuselage, the rounds slicing through the plane and riddling the legs of aerial photographer Joseph Lacharait. The wounded specialist began applying a tourniquet to his wounds, and fellow photographer Sergeant Anthony Marchione, a nineteen-year old Italian-American from the Bronx, helped move him to a cot. Suddenly, a cannon shell penetrated *Hobo Queen's* fuselage and struck Marchione in the chest. The young man crumpled, bleeding from a big hole in his chest. Three crew members came to his aid, applying compression bandages and administering blood plasma and oxygen.



Meanwhile, both B-32s entered a steep dive, their relatively high speed combined with the momentum gained from their greater weight allowing them to surge ahead of the Japanese fighters. Both managed to limp back to base by 6 pm that evening. *Hobo Queen II* was down one engine, had a damaged rudder and was pock-marked by thirty large holes in its fuselage. Lacharait would spend several years recovering from his wounds. Sadly Marchione, bled to death thirty minutes after his injury, and would bear the unfortunate distinction of being the last U.S. airman to die in combat during World War II. His Italian immigrant family was stunned to receive notice of his death after the end of hostilities had been declared. The following day the Japanese military was compelled to begin removing the propellers from their aircraft to avoid further such incidents. Just three weeks later the USAAF cancelled production of additional B-32s and began swiftly decommissioning the 118 already produced—the B-29 had simply rendered the type redundant. The last Dominator was scrapped in 1949, leaving none in preservation as evidence behind of the aircraft type that had embarked on that fateful last mission over Tokyo. **Credit; Sébastien Roblin, National Interest.**

THE TALE OF TWO SPITFIRES BY JOHN R ROACH

MK959 / N959RT



The Texas Flying Legends Museum recently acquired a Supermarine Spitfire Mk. IX! Not only is it a fabulous airframe, but a combat veteran as well. The aircraft started life with the Royal Air Force as serial MK959. Her first combat assignment was with 302 Squadron, one of the pair of Polish-manned fighter squadrons who served Britain so valiantly during WWII from the Battle of Britain onwards. MK959 joined 302 in 1944, flying a number of combat missions with the unit coded as WX-F before her last flight with them on May 30th, 1944.

The Spitfire then moved on to 329 Sqn, flying her first sortie with the unit over the Normandy beachhead on June 17th, 1944. In fact, she currently wears the same codes (5A-K) and invasion stripes she flew with 329 Sqn during

this time. Interestingly, 329 Sqn was manned by French personnel from a former French Air Force unit absorbed into the RAF. MK959 left 329 for 165 Sqn by August 30th, 1944 and continued to fly missions over Europe during the remainder of WWII. After the war, MK959 was one of many Spitfires which received refurbishment for foreign sale. She joined the reconstituted Royal Netherlands Air Force on September 26th, 1946, and again saw action with the Dutch 322 Sqn over the Dutch East Indies during the Indonesian fight for independence in the late 1940s. MK959 survived to return home to Holland before being stricken on March 16th, 1949 following an accident. The Spitfire again had a lucky escape though, as rather than scrap the retired airframe, the Dutch patched her up and used her as an airfield decoy. By mounting her atop a pole in front of their air base in Eindhoven, where she stayed for many years until the Dutch Spitfire Flight took her down in the early 1990s to use as a pattern/spares ship in returning their Spitfire Mk. IX MK732 back to flying condition.

The Dutch sold the Spitfire to Raybourne Thompson in Houston Texas in 1995, and Thompson spent the next decade lavishing his exceptional skills on returning the aircraft back to flying condition. She made her first post-restoration flight in February, 2004.

Thompson sold his pride and joy to Tom Duffy in Millville, New Jersey in late 2007, but now she has come home to Houston with the Texas Flying Legends Museum!



MJ271 / G-IRTY



On October 24th 1943 MJ271 is delivered from Castle Bromwich to 33 MU at RAF Lyneham. From there she's sent to 411, a Polish Repair and Salvage unit tasked with harmonising the guns and performing test flights before passing the aircraft on to an operational unit. Delivered to the Sqn in February 1944 the aircraft sees action in 16 operational sorties from RAF Detling, Maidstone, Kent which included withdrawal cover and escort for B-24, B-17 and B-26 bombers attacking V1 launch sites as well as fighter sweeps over France. Formed in 1941 as a day fighter unit equipped with Spitfires 132 Sqn moved between defensive duties in Scotland and offensive duties in France from the south of England.

MJ271 moved to 132 Bombay Sqn and followed the Sqn to RAF Ford in Sussex in April/May 1944. She saw action in 28 operational sorties which included close escort for B-25 and B-26 bombers as well as dive bombing of targets on the French coast, before having a 'wheels-up' landing at RAF Ford during the night of May 9th 1944.

On May 15th she is moved to Hamble for repairs and readied for collection on July 24th. The Silver Spitfire then transfers to 39 Maintenance Unit at RAF Colerne on August 19th, 83 GSU at RAF Bognor on September 19th and lastly to RAF Westhampnett (home today to the Boulton Flight Academy and known as Goodwood Aerodrome) with 83 GSU on November 4th. 401 Sqn were heavily involved in D-Day and the European offensive in 1944 operating in fighter-bomber, ground attack and armed reconnaissance operations. The Spitfire moves with the Canadian pilots of 401 RCAF (City of Westmount) Sqn to the Netherlands on November 23rd at Volkel. After performing ten dive-bombing missions she is 'over-stressed' on December 24th and sent to RCAF 410 – a repair and salvage unit. On 21st June 1945 MJ271 was delivered to 29 Maintenance Unit at High Ercall before passing on to the Royal Netherlands Air Force (RCAF) on 25th November the following year with the designation H-8, later becoming 3W-8, the designation she would wear for



some 70+ years before rolling into a hangar at Duxford to begin the restoration which is transforming her into airworthy condition once again, ready to begin her next adventure as the Silver Spitfire.

MJ271 'The Silver Spitfire' is a Mk. IX Spitfire finished in polished aluminium with the guns removed. By 'de-militarising' the aircraft in this manner we aim to highlight the timeless beauty of its design. With a plane that is less provocative than one adorned with camouflage paint, we hope to broaden the appeal and reach of the project, and gain easier access to nations en route. The plane landed back in Britain on Thursday 5th December at 11.30 am after successfully completing a first-ever attempt to fly the iconic World War II fighter

around 27,000 miles of the globe. The gleaming silver aircraft touched down on the grass runway at Goodwood Aerodrome outside Chichester, exactly four months after it took off on 5th August 2019. British aviators Matt Jones, 46 from Exeter, and Steve Brooks, 58 from Burford in Oxfordshire, took turns at the controls over 74 legs. Jones flew the final one-hour, 57-minute journey from Lelystad in the Netherlands back to the Silver Spitfire's home hangar.

The fighter, registration G-IRTY, did a loop around the White Cliffs of Dover landmark as it reached the English coastline. It was flanked by two Red Arrows, the Royal Air Force aerobatics display team, trailing white smoke as it approached Goodwood, near the south coast of England and was escorted throughout the four month trip by a Pilatus PC-12 registered OY-THP Jones did a roll and a few flypasts for the onlookers before touching down. After stepping out of the plane, Jones hugged his partner and their new born son Arthur. The former banker had to dash home for the birth from Russia during the circumnavigation. The so-called Longest Flight expedition saw the plane fly over the Statue of Liberty in New York and the Pyramids in Egypt. The Spitfire traversed the Atlantic Ocean via the Faroe Islands and Reykjavik, crossing Greenland before flying south over the remote wilds of northern Canada.

In the United States it spent two days on a ranch in Texas after the temperature gauge failed mid-flight, and went to Las Vegas and Santa Monica before visiting tycoon Richard Branson's Virgin Galactic spaceflight project in the Mojave Desert. After flights around the north Pacific Rim through Canada, Alaska and Russia, the Silver Spitfire hunkered down in Japan during recent typhoons.

The Spitfire then flew on to Taiwan, Hong Kong, Vietnam, Thailand, Myanmar and India, bypassing New Delhi because of visibility-reducing pollution. After stops in Pakistan, the United Arab Emirates, and Bahrain, the longest leg was 830 miles across the Saudi Arabian desert, in a three-and-a-half-hour flight from Kuwait to Aqaba in Jordan. It then returned to Britain via Egypt, Greece, Italy, Germany and the Netherlands.



MORE VICKERS VIKINGS – PART 1 - BY BRIAN A L JONES

Since I previously wrote about after service use of several Vikings, used to develop a cafe complex in the Netherlands a large number of new photos have appeared on websites. A lady, Margaret Edwards, seems to have made a significant effort to assemble as many photos of the type as possible. I have used some of those as a basis for this article, while adding information about the aircraft and their operators from a number of sources. I suggest that, within a comparatively short time span, the Viking fleet, with a total of 163 produced, had a higher ratio of operators to available aircraft numbers than any other airliner type. Setting aside the large fleets of BEA and Eagle Airways, which had some level of stability, the movement of aircraft between companies, often newcomers to airline operations, was exceptional.

The Viking was a staple component of many European operators' fleets at the dawn of the large-scale introduction of packaged holidays, operated with chartered flights. Many tourists, travelling abroad for the first time would also have experienced their introduction to air travel in a Viking. Before the introduction of more sophisticated air traffic control regimes, the comparatively sedate progress of unpressurised Vikings would set a pace along designated corridors which could inhibit faster and more modern types on the same route. At the same time, restricted to lower altitudes, the Vikings would wallow in the denser air increasing the likelihood of passenger air sickness and, unfortunately, sometimes have in a disastrous meeting with high ground en route.

I have personal memories of the late 1950s summer night scenes at London's Gatwick Airport, when Vikings from several British independent operators would be setting forth to then exotic destinations, such as Perpignan in France and Rimini in Italy, alongside Douglas DC-4s and DC-6Bs plus the odd Boeing Stratoliner, all sourced from European carriers. Some Vikings served a dual life, operating scheduled or charter passenger services and then, with minimal changes to the cabin, moving cargo. The following account does not pretend to be a comprehensive account of Viking operations, but rather an overview of the part they played in introducing the experience of cheap overseas air travel to the masses as a result of their availability at affordable purchase prices and relative reliability.

Some of the photographs used here are unattributed and I apologise in advance for not being able to establish the original photographers.



Air Ferry operated a total of 5 Vikings between Feb 1963 and Nov 1966 from its base at Manston, Kent. This one had served BEA as "Vibrant", then "Sir James Somerville" before being sold on in 1955 and operating for two German and a Swiss operator, arriving with Air Ferry in February 1963. It then served with Invicta Airways for a year and was broken up at Manston in 1968.



Seen at Blackbushe Airport, G-AHOR of Airwork Limited, having initially operated with BEA as “Valet” had been utilised by several other airlines before being sold by Eagle to the Company in March 1953. After use on trooping flights as XD637 it was sold in November 1955 to South African operator Trek Airways, then on to African Air Surfaris in April 1958. It was damaged beyond repair at Tarbes, France by a heavy landing on 29 May 1960.



Initially established in 1953 as a helicopter operator, Autair became an airline in 1960 and purchased two Vikings in 1962 and eventually operated six. G-AHPB illustrated below served with them from March 1963 to May 1968. Its subsequent history as a coffee bar, airport exhibit and museum artefact was recounted in the previous article.



Taxiing in front of BEA's Northolt maintenance hangar in the Corporation's original livery, G-AHPO was named "Venturer" later taking "Sir Edward Howard", then "Lord Dundonald". Sold to Eagle Aviation, which also used both of the latter names, in April 1953. Used for trooping flights with the serial XF631 it was damaged beyond repair at Nuremburg, West Germany, when it overran the runway in December 1953.



There are no known published colour photographs of BEA owned Vikings in any of their liveries. Is it possible that any of readers can remedy that situation? The hand of a stewardess, hidden from view, warns an approaching passenger to duck on entering the entrance doorway with a low threshold. The airport is Northolt.



First used by BEA as "Vulcan" then renamed "Sir Charles Napier" in 1951 it was purchased in December 1954 by B K S Air Transport and named "Jim Mollison". It is seen here at Burnaston Airport, Derby, with a Derby Aviation, Miles Marathon in the left background. It later served with Continental Air Services Ltd., East Anglian Flying Services and, finally, Channel Airways Ltd, finally being broken up at Southend Airport in April 1964.



A surprising amount of mainly fuelling related equipment surrounds a Channel Airways Viking. Channel operated a total of eleven Vikings during the period May 1958 and January 1965.



Channel Airways Viking on final but rather risky approach over a local road to Southend in 1962 – Ken Elliott – Air Britain



Taken in 1959, this Heathrow view shows the apron in front of the Queen's Building with a Trojan minibus for crew transport backed up to one of Eagle's numerous Vikings with its baggage hold doors swung open. A Ministry of Aviation yellow and black Ford Estate was transport for marshallers. Rear left is an Icelandair Douglas DC-6, centre rear an Aer Lingus Viscount and right a BEA Viscount. The structure with the enclosed vertical stairway rising from the passenger ramps is a floodlight tower.



As can be seen in this view taken outside BEA's maintenance base, with an accompanying Commer Commando town terminal coach, Eagle's early livery for Vikings was similar to that of former owner BEA. (Via Margaret Edwards)

More Vikings to follow in Part 2.

HISTORIC AVIATION NEWS FOR JANUARY TO MARCH 1970,1980 & 1990 BY JOHN R ROACH

1970

January 1 -- Nord-Aviation, Sud-Aviation, and SEREB merge to form SNIAS (the future Aérospatiale).

January 1 -- Six passengers hijack a Cruzeiro do Sul Sud Aviation SE-210 Caravelle VI-R (registration PP-PDZ) during a flight with 33 people on board from Montevideo, Uruguay, to Rio de Janeiro, Brazil, and demand that it fly them to Cuba. Over the next two days, the airliner makes stops at Lima, Peru, and Panama City, Panama, before finally arriving at Havana, Cuba, on 3 January.

January 6 – Anton Funjek, a 41-year-old Yugoslav man on probation for threatening President Richard Nixon, pulls out a knife and grabs a stewardess aboard Delta Air Lines Flight 274, a Douglas DC-9 with 65 people aboard flying from Orlando to Jacksonville, Florida, and demands to be flown to Switzerland. The captain makes a deliberately hard landing at Jacksonville International Airport to throw Funjek off balance, and three passengers overpower him when he stumbles.

January 7 – A hijacker aboard Iberia Flight 032, a Convair CV-440-62 (registration EC-ATG) on a domestic flight from Madrid to Zaragoza, Spain, demands to be flown to Albania. The hijacker surrenders after the airliner lands at Zaragoza Airport.

January 8 –To protest an Israeli military operation that resulted in the capture of several Lebanese nationals, Christian Bellon, armed with two handguns and a rifle, hijacks Trans World Airlines Flight 802, a Boeing 707 with 20 people on board flying from Paris to Rome, and demands to be flown to Damascus, Syria, spraying the airliner's instrument panel with gunfire to emphasize how serious he is. After the airliner lands in Rome to refuel, Bellon changes his mind and demands that the plane fly him to Beirut, Lebanon, instead. When the airliner lands at Beirut International Airport, Bellon surrenders to Lebanese police.

January 9 – A hijacker takes control of a Rutas Aéreas Panameñas SA (RAPSA) Douglas C-47 Skytrain making a domestic flight in Panama from David to Bocas del Toro, demanding to be flown to Cuba. Security forces storm the plane at David and arrest the hijacker. There is one fatality during the hijacking.

January 12 – A Hellenic Air Force Douglas C-47 Skytrain crashes in Greece's Cithaeron mountain range. Press reports variously state that 25 people were on board and all died, 27 were on board and four survived, or 30 were on board and four survived. It is the third-deadliest aviation accident in Greek history at the time.

January 13 – Polynesian Airlines Flight 208B, a Douglas C-47B-45DK Skytrain (registration 5W-FAC), encounters wind shear one minute after take-off from Faleolo Airport in Apia, Western Samoa. Its nose pitches up, and it stalls, crashes into the Pacific Ocean, and explodes, killing all 32 people on board. It is the deadliest aviation accident in the history of Western Samoa (now Samoa).

January 14 – A Faucett Perú Douglas RC-54V Skymaster (registration OB-R-776) crashes into Pozo Chuño Mountain in Peru's Contumazá District, killing all 28 people on board.

January 17 -- First flight of the Sukhoi T-6-2IG (prototype of Sukhoi Su-24 'Fencer')

January 22 – Pan American World Airways begins the world's first wide-body airliner service, introducing the first Boeing 747 registration N736PA named 'Clipper Victor' into service on the New York-London route.

January 24 – A man accompanied by two women and a baby hijacks an ALM Antillean Airlines Fokker F27 Friendship 500 (registration PJ-FRM) flying from Santo Domingo in the Dominican Republic to Curaçao in the Netherlands Antilles with 31 people aboard. He demands that he and his companions be flown to Cuba. The pilot first lands in Haiti in the hope of refuelling there but is unable to refuel. He then proceeds to Santiago de Cuba in Cuba.

January 25 – A Convair CV-240-2 (registration XC-DOK) operated by the Mexican *Comisión Federal de Electricidad* (Federal Electricity Commission) and carrying journalists covering the Mexican presidential campaign on a flight from Mexico City crashes into La Vega hill while on approach to El Tajín National Airport in Tihuatlán, Mexico, killing 19 of the 20 people on board.

January 28 – After its crew prematurely initiates their descent to a landing at Batagay Airport in Batagay in the Soviet Union's Russian Soviet Federated Socialist Republic, an Aeroflot Antonov An-24B (registration CCCP-47701) crashes into the rocky slope of a 3,547-foot mountain 25 miles northeast of Batagay at an altitude of 1,020 meters (3,346 feet). All 34 people on board die in the crash.

January 29 – Aeroflot Flight 145, a Tupolev Tu-124V (registration CCCP-45083) on approach to Kilpyavr air base in Murmansk in the Soviet Union strikes the side of a hill 18.1 miles from the air base and slides down its slope before coming to rest. Of the 38 people on board, five die on impact and six more freeze to death while others awaiting rescue.

January 31 – The Soviet aerospace engineer Mikhail Mil, founder of the Mil Moscow Helicopter Plant dies, age 61

February - The last flight of an active U.S. Navy anti-submarine Lockheed P-2 Neptune takes place, with Rear Admiral Tom Davies at the controls. The P-2 had been in active U.S. Navy service since March 1947, and Davies had set a world distance record in the Neptune *Truculent Turtle* in September 1946. Vickers-Armstrong ceases production of the Vickers VC10 after manufacturing 54 of the aircraft.

February 4 -- Descending in poor visibility, TAROM Flight RO35, an Antonov An-24B (registration YR-AMT) with 21 people on board, strikes trees in Romania's Vlădeasa Mountains, crashes on a mountain slope, and breaks up. All six crew members and seven of the passengers die instantly, and six more passengers die before rescuers arrive, leaving 1 survivor.

February 4 -- The Avro 748-105 Srs. 1 named *Ciudad de Bahía Blanca*, (registration LV-HGW) operating as Aerolíneas Argentinas Flight 707, encounters severe turbulence and crashes near Loma Alta in Chaco Province, Argentina, killing all 37 people on board.

February 6 -- During its descent to a landing at Samarkand Airport at Samarkand in the Soviet Union's Uzbek Soviet Socialist Republic, an Aeroflot Ilyushin Il-18V (registration CCCP-75798) crashes into a mountain 20 miles northeast of the airport at an altitude of 4,921 feet, killing 92 of the 106 people on board.

February 6 -- Two men, each armed with a handgun, hijack a LAN Chile Sud Aviation SE-210 Caravelle during a domestic flight in Chile from Puerto Montt to Santiago with 47 people on board. After the airliner lands at Pudahuel International Airport in Santiago, the hijackers release seven adults and five children and order the plane to be refuelled. Two policemen disguised as mechanics then board the airliner and overpower the hijackers, killing one of them.

February 12 – After suffering engine failure, a Líneas Aéreas La Urraca Douglas C-47-DL Skytrain (serial TAM-11) crashes near Puerto López, Colombia. Thirteen of the 14 people on board die on impact; the only person recovered alive from the crash site later dies of his injuries.

February 15 -Hugh Dowding, the commander of Royal Air Force Fighter Command during the Battle of Britain, dies at the age of 87.

February 15 - A Dominicana de Aviación McDonnell Douglas DC-9-32 (registration HI-177) crashes into the Caribbean Sea two minutes after take-off from Las Américas International Airport in Santo Domingo in the Dominican Republic following engine failure, killing all 102 people on board. World lightweight boxing champion Carlos Cruz and his wife and two children, as well as 12 members of the Puerto Rican national women's volleyball team, are among the dead. The Puerto Rican salsa orchestra El Gran Combo de Puerto Rico had planned to board the flight, but chooses not to after one of its members has a bad feeling about the flight and convinces the others not to take it.

February 16 – Flying with his wife, 10-year-old daughter, and eight-year-old son aboard Eastern Airlines Flight 1 – a Boeing 727 flying from Newark, New Jersey to Miami, Florida, with 104 people on board – Daniel Lopez jumps up with a flaming "Molotov cocktail" and a pistol equipped with a crude bayonet when the airliner is 80 miles south of Wilmington, North Carolina, shouts "Viva Cuba!" and demands to be flown to Havana, Cuba. The flight crew agrees to fly him there as long as he extinguishes his Molotov cocktail. Lopez and his family disembark at Havana, and the airliner returns to the United States after about five hours on the ground in Havana. An investigation reveals that Eastern Airlines did not screen any of the passengers boarding the flight.

February 17–18 – United States Air Force Boeing B-52 Stratofortresses attack Laos.

February 21 – A bomb explodes in the cargo compartment of Swissair Flight 330, a Convair CV-990 (registration HB-ICD), nine minutes after take-off from Zurich International Airport in Zürich, Switzerland. The flight crew attempts to return to Zürich, but have difficulty seeing their instruments because of smoke in the cockpit; the aircraft finally suffers an electrical failure and crashes near Lucerne, Switzerland, killing all 47 people on board. Responsibility for the bombing is never determined.

February 24 – Royal Navy recommissions the aircraft carrier HMS *Ark Royal* after a £UK 30 million refit of the ship.

February 25 – TWA inaugurates scheduled non-stop Boeing 747 service between Los Angeles, California, and New York City, thus becoming the first airline to offer domestic Boeing 747 service in the United States.

February 27 -- Hawker Siddeley begins buying back surplus Hawker Hunters from the Royal Air Force to remanufacture for new customers.

The British light aircraft manufacturer Beagle Aircraft goes into voluntary liquidation.

1980

January 7 – Pan American World Airways completes its acquisition of National Airlines, taking control of National's assets and routes. National Airlines formally will cease to exist on October 26.

January 8 – A Mooney 231 lands in San Francisco, after flying coast-to-coast non-stop across the continental United States, setting a record by completing the flight in 8 hours and 4 minutes.

January 10 - A Cessna 441 Conquest II (registration N441NC) en route from Shreveport to Baton Rouge, Louisiana ceases communications, flies far off-course on autopilot, and eventually crashes into the Atlantic Ocean off North Carolina due to fuel exhaustion. The two occupants, new Louisiana State University football coach Bo Rein and the pilot, are killed, and are assumed to have lost consciousness in flight due to hypoxia resulting from cabin depressurization.

January 14 – A Tunisian man hijacks Alitalia Flight 864 – a Douglas DC-9-32 (registration I-DIZI) with 93 people on board flying from Rome, Italy, to Tunis, Tunisia – and forces it to land at Palermo, Sicily. He demands the release of 25 Tunisian prisoners without success, and surrenders after 12 hours of negotiations.

January 16 – British Island Airways and Air Anglia merge to form Air UK.

January 18 – A hijacker commandeers a Middle East Airlines Boeing 720 bound from Beirut, Lebanon, to Larnaca, Cyprus, demanding to be flown to Iran. The hijacker surrenders at Beirut.

January 21 – While on approach to Mehrabad Airport in Tehran, Iran, in fog and snow, an Iran Air Boeing 727-86 (registration EP-IRD) crashes in the Alborz Mountains, killing all 128 people on board.

January 23 – A Pelita Air Service CASA/Nurtanio NC-212 Aviocar 100 (registration PK-PCX) on descent to Jakarta, Indonesia, in bad weather crashes into Mt Cemonyet at an altitude of 2,700 feet, killing all 13 people on board.

January 24 – A Burmese Air Force Fairchild FH-227B (serial 5002) suffers an engine failure shortly after take-off from Mandalay-Annisaton Airport in Mandalay, Burma, strikes the roof of a tobacco factory, and crashes, killing 43 of the 44 people on board and injuring a watchman at the factory.

January 25 – Armed with a pistol and pretending to have a bomb, a man claiming to be a Black Muslim hijacks Delta Air Lines Flight 1116 – a Lockheed L-1011 Tristar with 63 people on board bound from Atlanta, Georgia to New York City and forces it to fly to Havana, Cuba. He then demands to be flown to Iran, but eventually surrenders to Cuban authorities. It is the first time since the United States implemented the mandatory security screening of airline passengers nationwide on January 5, 1973, that anyone has smuggled real weapons through U.S. airport security screening system.

January 28 – A hijacker commandeers a Middle East Airlines Boeing 720 flying from Baghdad, Iraq, to Beirut, Lebanon, and demands to be allowed to make a political statement. The hijacker surrenders at Beirut.

January 30 – Two hijackers take control of an Interflug Ilyushin Il-18 during a domestic flight in East Germany from Erfurt to East Berlin but are taken down.

February - An Aeroflot Ilyushin Il-18 flies 30,000 km (18,630 miles) from Moscow in the Soviet Union to the Molodyozhnaya Station observatory in East Antarctica.

One year after the Iranian Revolution, repeated purges of the Iranian armed forces have led to the loss of 25 to 50 percent of majors and field-grade officers of the Iranian Air Force and Iranian Army.

February 21 – Australia experiences its first fatal airline accident since 1968 when an Advance Aviation Beechcraft King Air 200 (registration VH-AAV) suffers the failure of an engine shortly after take-off from Sydney Airport in Mascot, Australia, due to water in the fuel tank and crashes into a seawall while trying to return to the airport. All 13 people on board die.

February 23 – Trying to avoid a cyclist or pedestrian on the runway during its take-off run at Kheria Air Force Station in Agra, India, an IAF Fairchild C-119G Flying Boxcar stalls, crashes, and bursts into flames, killing 46 of the 47 people on board.

February 27 – A China Airlines Boeing 707-309C (registration B-1826) originating from Taipei crash-lands in Manila, the Philippines, and is destroyed by fire. All 124 passengers and 11 crew members survive.

February 28 – A Guatemalan AF Douglas C-47 Skytrain carrying Guatemalan Army officers and their families on an excursion to Poptún, Guatemala, crashes in a mountainous region 40.6 miles from Poptún, killing all 31 people on board.

1990

January 4 – Northwest Airlines Flight 5, a Boeing 727-251 with 145 people on board, takes off from Miami International Airport in Miami, Florida, for a flight to Minneapolis–Saint Paul International Airport in Minneapolis, Minnesota, with its forward lavatory external seal improperly installed, causing a leakage which allows the starboard engine to ingest frozen chunks of lavatory fluid. The engine detaches from the aircraft at 35,000 feet (10,668 m) over Madison, Florida, an hour into the flight. The aircraft flies normally for another 50 minutes until the crew makes a safe emergency landing at Tampa International Airport in Tampa, Florida.

January 10 – First flight of the McDonnell Douglas MD-11 (registration N111MD) and it is still being operated by Federal Express as N601FE

January 11 – The United States Department of Defense awards Bell Helicopter a \$US 123 million development contract for the V-22 Osprey.

January 20 – North American Airlines began operations.

January 25 – Avianca Flight 52, a Boeing 707-321B, (registration HK-2016) runs out of fuel and crashes at Cove Neck, Long Island, New York, killing 73 of the 158 people on board.

January 26 – The first of two new Air Force Ones, VIP variants of the Boeing 747-200 for the use of the President of the United States and his staff, are delivered.

February - Vietnam's national civil aviation authority, the Civil Aviation Administration of Vietnam, moves from the Ministry of Defense to the Ministry of Transport.

February 14 – Indian Airlines Flight 605, an Airbus A320-321(registration VT-EPN), crashes on a golf course on approach to Bangalore, India, killing 92 of the 146 people on board and injuring all 54 survivors.

FLIGHT SERGEANT NICHOLAS STEPHEN ALKEMADE – THE MAN WHO FELL TO EARTH



While men have invented means to mitigate the dangers of flying bombing missions over enemy territory, such as life jackets and dinghies in case of the need to ditch on the way home or parachutes if an aircraft is incapable of doing anything other than plummeting to the ground, there is still no accounting for luck. If these last resorts fail death is usually a certainty. Sometimes everyone escaped from a stricken bomber or none at all and some men were in luck. Indeed, plummeting to the earth without a parachute from 18,000 feet in the air is pretty much guaranteed to end only one way for the unfortunate person involved but, as history has often taught us there are always exceptions to the rules, and one man who miraculously survived a parachute-less jump from his burning airplane was Flight Sergeant Nicholas Stephen Alkemade was born in 1922 in Norfolk, England. Originally Alkemade was a gardener before signing up with the Royal Air Force when WW2 broke out. He trained as an air gunner, and after

completing his training he served as a tail gunner with RAF 115 Sqn at Witchford. On the night of 24 March 1944, 21-year-old Flight Sergeant Alkemade was one of seven crew members in a Bristol Hercules powered Avro Lancaster B Mk.II, DS664, marked A4-K of No. 115 Sqn. Returning from a 300 bomber raid on Berlin, Losses were very heavy with over 70 Bomber Command aircraft lost attacking Berlin on 24th/25th March 1944, and one of those was Lancaster DS664 (given the name *Werewolf*) which was attacked from below at 19,000 ft by a German night-fighter, and the resulting damage tore up *Werewolf's* wing and fuselage, and set the plane on fire. It was obvious that *Werewolf* was beyond salvation, and the pilot ordered the crew to grab their chutes and bail out. Alkemade, alone in his turret at the back of the plane, was already being scorched by the flames, with his rubber oxygen mask beginning to melt on his face, and his arms seared by the fire. Scrambling for his parachute in a panic, he was hit with a moment of pure dread when he finally located it – for his parachute, like everything else around him, was on fire.

Faced with a terrible choice – that of burning to death, or falling to his death, Alkemade chose the latter option. Better to suffer the brief terror of the fall and have a swift, merciful end than suffer through the torment of fire. He jumped from the burning plane without his parachute, and, falling at almost 120 mph and looking up at the starry sky and the burning airplane from which he had just jumped, he then lost consciousness. Amazingly he woke up three hours later, lying in deep snow in a pine forest. It seemed that the flexible young pines had slowed his descent enough that the snow was able to cushion his fall. He had not broken any bones, but had managed to sprain his knee after his 18,000-foot fall from the sky. In addition, he had suffered burn wounds from the fire and had pieces of Perspex from his flak-shattered screen embedded in his skin. Despite this he had no major injuries. Sadly, his Lancaster crashed in flames east of Schmallenberg, killing pilot Jack Newman and three other members of the crew. They are buried in the CWGC's Hanover War Cemetery.

While he had survived the fall, surviving the rest of the night was not a guarantee. His knee was in too much pain for him to walk, and the freezing cold was beginning to take its toll. He began blowing his distress whistle, which eventually attracted the attention of some German civilians. He was taken to Meschede Hospital where his wounds were treated, and when he was well enough to talk, he was interrogated by the Gestapo. He told them his story, but they refused to believe that he could have survived such a fall without a parachute. They insisted that he had buried his parachute somewhere and that he was a spy – but when they sent men to investigate the landing site, as well as the wreckage of Werewolf, they were amazed to find that the remains of Alkemade's parachute were indeed still in the wreckage of the plane. (Reportedly, the Germans gave Alkemade a certificate testifying to the fact.) Alkemade then became something of a celebrity, and met a number of Luftwaffe officers who wanted to hear about his miraculous jump. However, this did not earn him any special treatment, and like any other captured Allied airman he was sent to the notorious prison camp Stalag Luft III. Alkemade's luck remained with him, though. When the camp's 10,000 inmates were forced to trek hundreds of miles across northern Germany, through a blizzard, with temperatures dropping as low as -22 degrees C, he survived and was eventually liberated. After the war Alkemade worked in the chemical industry in the UK, and lived to the age of 64. He passed away in June 1987.

AIRLINE AND AIRLINER NEWS FOR NOVEMBER AND DECEMBER 2019 BY JOHN R ROACH

EasyJet has picked up several slots at London Gatwick and Bristol airports from the liquidators of collapsed leisure firm **Thomas Cook Group**. **EasyJet** says it paid £36 million (\$46 million) for the slots. They include 12 summer slot pairs and eight winter slot pairs at London Gatwick. The carrier adds that its Bristol acquisition comprises six summer pairs and one winter pair" Contractual terms have concluded and the slots have been awarded to EasyJet," it says. EasyJet is to detail its plans for the slots when it discloses its full-year financial results on 19 November.

After 48 years of active service with the **Boeing's** iconic jumbo jet, Israel's national airline **El Al** said goodbye to its 747 fleet with a special event. On November 3 2019, an **El Al** Boeing 747 took off from Rome at 1000 local time and flew a special route over the Mediterranean Sea. The aircraft drew on the sky a Boeing 747 commemorating the airline's final flight with the 747s There were two 747-400s in the El Al's fleet. Including the last two jets, the airline historically operated 17 Boeing 747 in total (two 747-100s, eight 747-200s and seven 747-400s).

Unsure when the Boeing 737 MAX 8 will return to service; Singapore Airlines will retrofit subsidiary SilkAir's 737-800 aircraft instead as it moves ahead with integration into the parent airline.

Eight months after the collapse of WOW Air, a new **Icelandic LCC** called PLAY has emerged with plans for services to Europe and North America.

Indonesian LCC Lion Air has discovered 'pickle folk' cracks on two of its Boeing 737NGs, each aircraft having fewer than the 22,000 flight cycles stipulated by FAA's threshold for inspection since cracks were discovered on other airline aircraft.

Wizz Air plans to add four Airbus A320s to its Polish operations, for a total of 30 aircraft based in the country, and launch 15 new routes.

Norwegian Air Shuttle will add seasonal nonstop routes from Chicago to Paris and Rome, and from Denver to Rome next summer.

Embraer says it will be at least March 2020 before the proposed US\$4.2 billion commercial aircraft joint-venture with **Boeing** is concluded. The updated timetable for the transaction was announced at **Embraer's** third quarter results presentation on Tuesday (Brazil time). In October, Boeing and Embraer pushed back the expected completion date to early 2020, from the end of calendar 2019 previously, after the European Union said it planned to take a closer look at the proposed deal.

Russia's **Utair Aviation** will lease two additional 186-seat Boeing 737NGs from **Carlyle Aviation** in 2020 while the Boeing 737 MAX grounding drags on. The carrier is negotiating two more aircraft of the same type.

Qantas has completed the second of its three planned ultra-long-haul trials by operating a non-scheduled flight from London to Sydney in 19 hr. 19 min. The trial used a new **Boeing 787-9**, with its delivery flight from Seattle re-routed via London Heathrow. The goal of the trial flights is to conduct a wide range of research and passenger monitoring.

The European Aviation Safety Agency (EASA) has awarded type certification to the **Airbus Beluga XL**, the latest generation of custom-built freighters used by the European manufacturer to transport major components between its factories. Certification will allow **Airbus** to start operations with the new aircraft in early 2020. **The Beluga XL** provides 30% extra transport capacity than its Beluga ST predecessor, having a cargo hold 7 m (23 ft.) longer and 1 m wider. The XL is based on the **Airbus A330-200** freighter, whereas the ST was converted from the A300-600.

More than a decade after Airbus and GE parted ways over failed plans to power the Airbus A350, the two companies have begun preliminary talks aimed at development of an "evolved" GENx-based engine design for possible future variants of the big twinjet.

Emirates had tentatively opted for 30 A350-900s and 40 A330-900s earlier this year in a rejig of its long-haul strategy as Airbus cancelled its A380 programme, for which Emirates had been the primary customer.

But the revision unveiled at the Dubai air show makes no mention of the 40 A330neos. Emirates says the new purchase deal "replaces" its previous declaration of intent.

GE Capital Aviation Services (GECAS) has signed a firm order for 12 new generation Airbus A330neos and 20 long-range single-aisle A321XLRs, Airbus said Nov. 19 at the **Dubai Air show**.

De Havilland Aircraft of Canada, continuing its strong showing at the Dubai Air show, unveiled commitments for 14 more Dash 8-400s on Nov. 19, pushing its show total to 37 and filling more gaps in its near-term production skyline.

Air Senegal has placed a preliminary order for eight Airbus A220-300s to expand its African and European network.

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Low-cost carrier Air Arabia has signed a firm order for 120 Airbus aircraft including 20 A321XLRs.

The agreement was signed at the Dubai air show on 18th November and also comprises 73 A320neos and 27 A321neos.

Middle Eastern carrier Emirates has revised its previous tentative agreement for Boeing 787s, opting to take 30 of the 787-9 variant rather than the larger 787-10 Deliveries of the aircraft, worth \$8.8 billion, will commence in May 2023 and continue for five years.

EasyJet used its full-year results conference to announce a series of strategic moves, including the launch of **EasyJet Holidays**, two environmental initiatives and the firming of purchase rights on 12 more Airbus A320neos.

Italian infrastructure group Atlantia said conditions had not yet been met for it to join the planned rescue of Alitalia, adding further doubt to plans for the bankrupt carrier's future as the latest deadline for the presentation of a formal business plan approaches.

The UK government will provide 50% of the cost of a 30-month, £18 million (\$23.3 million) demonstrator project to convert the nine-passenger **Britten-Norman Islander** to hybrid-electric propulsion for short-range flights such as inter-island routes.

British Airways (BA) has confirmed it will receive its first Boeing 787-10 in January 2020, which will initially operate to Atlanta, Georgia in the US.

A Tanzanian court declared **LCC fastjet** Tanzania insolvent and has appointed a liquidator for the carrier, according to local media reports. fastjet needs to restructure by February 2020, if it is to continue as a going concern, with the disposal of fastjet Zimbabwe forming part of its survival plan.

Boeing's first 737 MAX 10 narrow body has emerged from the company's Renton final assembly line in Washington State. The rollout of the largest member of the 737 MAX family was held on Friday 22nd November

No new deadline extension is being considered for the submission of an investors' rescue plan for bankrupt Alitalia, Italy's economic development minister said.

Turkey-based **AtlasGlobal** ceased all operations and suspended ticket sales Nov. 26, saying the suspension will continue until Dec. 16 The Turkish carrier is preparing to restore services, after re-opening its reservations system after nearly a month-long suspension.

SMBC Aviation Capital CEO drew a clear distinction between the regulatory approvals required to get the

Russia's Polar Airlines has received six additional Antonov An-24 aircraft from Yakutia Airlines, doubling the number of the type in its fleet.

Airbus has unveiled the 100th A220 regional jet to be delivered to an airline customer some three years after the aircraft entered service in 2016. The 100th aircraft, A220-300 YL-AAU destined for Latvia-based airBaltic, was formally presented to staff, invited guests and media the program's Mirabel, Canada facility on Thursday, November 28 2019 (Canada time). Airbus said in a statement the A220 program had achieved 530 firm orders from about 20 customers at the end of October 2019.

Low-cost, long-haul carrier **Norwegian Air** Shuttle said it has been given three take off and three landing slots at London's Heathrow Airport for the summer 2020 season, but did not say what routes the slots could be used for.

Berlin's new airport—**Berlin Brandenburg Airport (BER)**—is now set to open at the end of October 2020, eight years late. **United Airlines** has put pen to paper for 50 Airbus A321XLR long-range narrow bodies to replace its existing fleet of Boeing 757-200s and announced plans to push back deliveries of the 45 A350-900 on order by five years. The first A321XLR is expected to join the fleet in 2024, United, an Airbus operator since 1993, has 174 A320neo-family aircraft in its fleet. Adding the A321XLRs gives Airbus an opening for its current-generation narrow body family at United—and could put some of the airline's 170 outstanding MAX deliveries at risk.

Sir Richard Branson has backed out of a deal to sell a 31% stake in Virgin Atlantic to Air France-KLM that was struck in 2017.

Ryanair is making cuts to its European network of bases as a result of the growing impact of the Boeing 737 MAX grounding.

Air France-KLM's Dutch LCC Transavia will launch operations from Brussels, initially serving nine destinations. From the summer of 2020, **Transavia** will add flights from Brussels to Tel Aviv; Verona Corfu, Heraklion and Thessaloniki; Agadir; Faro; and Alicante and Ibiza,

Thomas Cook Aircraft Engineering has gone into liquidation, two months after the demise of the 178-year-old travel group. The closure of the Manchester-based maintenance arm will mean the loss of 400 workers who were with the unit on a temporary basis until all Thomas Cook aircraft were returned. Formerly Mytravel Aircraft Engineering, Thomas Cook Aircraft Engineering Limited was bought by Cook 12 years ago as part of a merger worth £1.1 billion.

Flydubai has finalised a wet-lease agreement with Czech Republic-based Smartwings for 4 Boeing 737-800s from Dec. 14- Jan. 25, 2020 as the MAX grounding drags on.

Airbus' discussions with General Electric on a possible new engine for the A350XWB, revealed by Aviation Week threaten **Rolls-Royce's** most important platform. The value of forecasted Trent XWB deliveries is greater than Rolls' other commercial engine applications combined, so losing it would be catastrophic. These discussions, coupled with Rolls' decision to not offer an engine for Boeing's proposed new midmarket airplane ...

Loganair will close its operating base at Norwich Airport early next year following the failure of a route to produce anticipated results.

Scandinavian Airlines (SAS) has taken delivery of its first Airbus A350-900 in what will eventually be a fleet of eight.

Boeing faces a \$4 million fine for failing to ensure a supplier was delivering airworthy 737NG slat tracks, then not rejecting them once the issue came to light.

Chile-based SKY Airline has signed a purchase agreement with Airbus for 10 A321XLRs, confirming the LCC was behind the undisclosed Sept. 30 order for 10 of the new-generation narrow bodies.

Air Malta plans to introduce two Airbus A321XLRs to its fleet in 2024 enabling the airline to launch its first long-haul services.

In 2020, easyJet will base two more aircraft in France and open up seven new routes—four from Bordeaux, two from Toulouse and one from Nice—as the UK LCC continues expansion plans in the French market.

Vietnam startup **Bamboo Airways** has received its first Boeing 787-9 at the US manufacturer's South Carolina delivery centre on 9th December.

The first Airbus A220-300 for **Air Canada** has successfully completed its inaugural test flight from the Mirabel A220 final assembly line in Canada. The first of 45 aircraft for Air Canada is scheduled to be delivered to the Montreal-based airline in the coming weeks.

The Air France-KLM Group has decided to place a firm order for 10 additional widebody Airbus A350-900s, which will take its total order for the type to 38 aircraft. The A350 XWBs are intended to be operated by Air France. They currently operate a fleet of 159 Airbus aircraft.

British Airways has launched six new European routes from London Heathrow for 2020; Rhodes, Perugia, Kosovo, Pristina Dalaman and Bodrum, these flights will join a new summer service between London Gatwick and Antalya that takes off from 30th April 2020. Customers will also have the choice of two London Airports for flights to Dalaman as the airline already operates a weekly service from Gatwick.

A 63-year-old aircraft, a 37-year old airline and a 10-year-old start up came together on Dec. 10 in Vancouver to close the decade with an aviation milestone - the first flight of an all-electric commercial aircraft. The modified **de Havilland Canada DHC-2 Beaver**, powered by a 560-kW (750-hp) MagniX electric motor, made a 4-min. flight from Harbour Air's seaplane terminal on the Fraser River adjacent to Vancouver International Airport.

Qantas has tentatively selected the Airbus A350-1000 for its Project Sunrise ultra-long-haul route initiative, following a competition against the rival **Boeing 777X**, the final choice will be made in March 2020.

The future of Boeing's proposed New Mid-market Airplane (NMA) seems more uncertain than ever thanks to United Airlines' recent order for Airbus's competing A321XLR. That deal left analysts split on the NMA, with some speculating the order suggests Boeing does not intend to offer its competing NMA. But another analyst, Michel Merluzeau with aerospace consultancy **AIR**, thinks the A321XLR's success perfectly demonstrates why Boeing needs the NMA, and why it will green-light the project.

Boeing, citing "uncertainty" when the 737MAX will be cleared for service as a key factor, will suspend production in Jan 2020.

Icelandair Group's pessimism over the Boeing 737 Max's return to service has deepened, with the company disclosing that it does not expect to re-introduce the twinjet before May next year.

Aviation history can be interesting, with hidden gems found from time to time. Though the last original Boeing 737NG airframe was built and delivered to Skymark, the very, very last 737NG will be going to KLM, with the registration of PH-BCL, msn: 98801. It is named "Krooneend/ Crown Duck".

China Southern Airlines has taken its partnership with BA up a notch, entering a joint venture with the **Oneworld** alliance member.

Amazon has hired **Sun Country Airlines** to deliver its packages in Amazon Air-branded aircraft, representing a huge expansion for the Minnesota-based ultra-low-cost carrier and promising to represent up to 20% of the airline's business.

Air New Zealand says it has leased two aircraft from alliance partner Cathay Pacific as cover while its fleet of Boeing 787-9s undergo required engine checks. A Cathay Pacific Airbus A350-900 will take over Air New Zealand's Auckland-Hong Kong nonstop flight between January 6-19 2020. The route would then be flown daily in February and five times a week in March by a **Cathay Pacific Boeing 777-300ER**. South Korean low-cost carrier **Jeju Air** is acquiring a 51% stake in compatriot Eastar Jet for W69.5 billion (\$59.6 million). Jeju says the carriers have signed a memorandum of understanding and foresee sealing a contract by year-end.

Airbus is not benefiting from Boeing's ongoing 737MAX troubles, including the U.S. manufacturer's Dec. 16 decision to suspend production of the type, Airbus chief commercial officer Christian Scherer said "The answer to the question of whether Airbus is benefiting from Boeing's woes is explicitly, clearly no. We're in a growth industry, a duopoly, so when one player is not playing its role it's extremely disruptive to the whole industry."

Air France has announced both an all-new order for 60 Airbus A220-300s. The airline's order for the A220-300s includes 30 confirmed units and 30 options, with deliveries scheduled to take place by September 2021.

Azimuth Airlines is now offering two weekly flights, departing on Sundays and Tuesdays, from Munich to the southern Russian city of Krasnodar. The university city with a sub-Mediterranean climate, located between the Black Sea and the Caspian Sea, is approximately 1,200 km south of Moscow. It is an important research and business centre. Azimuth Airlines operates a fleet of 11 Sukhoi Super Jet 100 Singapore Airlines was an early adopter of the Boeing 737, operating the initial 737-100 model. Singapore operated 5 of the type which it inherited from MSA – Malaysia-Singapore Airlines.

As previously reported, **Singapore Airlines** will fold subsidiary **SilkAir** into Singapore Airlines including its 17 B737-800s and 6 'MAX 8s.

United Airlines will pull its 14 Boeing 737Max aircraft from its schedules through 4 June as the FAA's safety review of the grounded aircraft extends into 2020 and carriers remain uncertain when those fleets could be cleared to return to service.

Avion Express has announced it has landed an agreement to wet-lease four Airbus A320s to LOT Polish Airlines. In Summer 2020 **LOT** will add new holiday destinations to its growing flight network from Budapest. Starting from June 2020, passengers will be able to fly directly from Hungary to Dubrovnik and Varna.

International Airlines Group (IAG) has reached agreement with Boeing for new long-haul aircraft for the group's fleet. IAG plans to convert 18 existing Boeing 787s options into firm orders for British Airways. They will be used to replace some of the airline's Boeing 747-400 aircraft between 2020 and 2021. For **Iberia**, **IAG** has reached agreement with Boeing to secure commercial terms and delivery slots that could lead to an order for Boeing 787s. Firm orders will only be made when Iberia has restructured and reduced its cost base and is in a position to grow profitably.

On December 27 2019, a **Fokker 100** (UP-F1007, msn 11496) (above) operated by Bek Air as flight Z9 2100, heading to Nur-Sultan, crashed shortly after take-off from Almaty International Airport at 7:21 am, killing at least twelve of 93 passengers and five crew members on board. Kazakh carrier has disclosed details of the in-flight upset which affected the Fokker 100 which crashed on take-off from Almaty on 27 December. The airline states that the aircraft's airframe and engine de-icing systems had been activated, and that the jet departed with zero flap extension. The aircraft accelerated along runway 05R, from which it was conducting a full-length take-off roll, and became airborne at 07:20:36 at a speed of 148kt. Bek Air adds that the aircraft's Rolls-Royce Tay engines and other systems were functioning normally with no anomalies evident. The carrier has not stated whether the aircraft underwent an external de-icing process before departure.

Tarom is expecting to start taking delivery of new ATR 72-600s in February 2020, after the Romanian flag-carrier formally signed for the acquisition of nine of the turboprop airliners.

Chinese authorities have approved operations by Zhongzhou Airlines, an intended freight carrier to be based in central China.

After celebrating its momentous centenary year in 2019, British Airways is now looking to 2020, with 20 New Year resolutions that are every bit as exciting as the achievements of 2019. New aircraft – the airline is due to take delivery of more than 20 new aircraft in 2020, including 787-10s and A350s which are up to 40% more fuel efficient than the aircraft they replace.

Italian authorities are to suspend the operating licence of carrier Ernest Airlines from mid-January, although it has not detailed the reasons for the decision. Civil aviation regulator ENAC says that the suspension will take effect from 13 January 2020.