

Chiltern Airwords



DH Devon C2, Serial XM223 of the Royal Aircraft Establishment seen circa 1984, somewhere over England (MOD)

The Chiltern Aviation Society Magazine
May - June 2021

CHAIRWORDS

As I write this, we appear to be on course to come out of the Covid-19 pandemic, that has affected us for so long. I have been liaising with the Church Lettings Secretary and if the Government restrictions continue to ease, we may be able to meet again in Room 1 in June or July, when hopefully a realistic number of members and guests will be permitted to meet. We'll keep our fingers crossed and hope for the best. In the meantime, Lawrence and John are keeping us in touch, through their good work with Chiltern Airwords, which I am told has articles for the next two issues after this but not much after that, so in next few months please let Lawrence and John have any suitable articles or photos, which reminds me we are very fortunate to have received the first set of photos from Pat Cleary from U3A Radcliffe on Trent in Nottinghamshire, for inclusion in 'Out of the Archives' on Page 30 of this issue.

Various Aviation Societies and Collections are somehow managing to keep going, albeit with great difficulty and reduced visitor income. But with determination they will prevail. I recently watched a TV programme on a Hurricane restoration project including its conversion to a two-seater. The professionalism and dedication of the team involved, was an eye-opener. With many Spitfires now restored, it was pleasing to see the Hurricane getting the recognition it deserves. I'm pleased that our Society is helping in a small way by being members of Aviation Heritage UK.

As far as members are concerned, it's pleasing, that Glyn Chambers, has taken the time to dig out some photos from his late father-in-law's (Alan Waitt) album, which have been scanned for inclusion in Airwords. They date from 1934-36, showing Hawker Hart, Hawker Ospreys and others of 24 Sqn at RAF Hendon and Hawker Harts of 12 Sqn in Aden. Incidentally Glyn served as the last National Serviceman in the Army Air Corps in Malaya, equipped with Austers and when he feels up to it may write about his experiences, for which Lawrence will give every assistance. Sadly, I have not been able to make contact with Eric Spanier, to check that he is still receiving his postal copy of Airwords in Hayes End. Hopefully if Eric reads this, he will give me a call or drop me a line.

Keep safe all!

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

2021 EVENTS PROGRAMME (PROVISIONAL DATES)

WEDNESDAY - 23rd JUNE 2021 - TBA

WEDNESDAY - 28th JULY 2021 - RAF POST WAR WELLINGTON T.10 - LP HAYWARD (PROV)

FROM DELPHINIUS TO DANAE (WERE WHEELS THEIR ACHILLES HEEL?) – BOAC DH86s AT WORK

In the late 1930s Imperial Airways' fleet included a small number of de Havilland DH86 four-engined ten seat biplanes which were inherited by BOAC. Originally these aircraft were based in Hong Kong operating regional services including the route to Bangkok, but prior to the Japanese invasion in 1941 were repositioned to Cairo.



One aircraft, G-ADUE *Dardanus*, was lucky to still be with the fleet. On 8 November 1939, even though Japan had not entered the war, there was already a state of tension with China when *Dardanus* took off from Hong Kong bound for Bangkok on a normal schedule. Commanded by Captain J Wilson and carrying three passengers, the aircraft was suddenly fired upon by three Japanese fighters. 92 bullet holes were later recorded but luckily nobody on board was injured. Captain Wilson diverted safely to the island of Wai Chao and later returned to Hong Kong. Japan refused to offer compensation claiming that the aircraft had flown too close to the island which they considered was their territory.

Once the fleet was re-established at Cairo the military situation in North Africa resulted in more and more BOAC aircraft being allocated to assist the campaign, as military transports, in particular the Lockheed 14s which were invaluable as part of the famous Tedder plan. It was found that the DH86s were ideal for use as air ambulances and they were duly converted and transferred to the Royal Air Force. The aircraft performed a valuable service on such duties. However, the conditions of some of the basic airfields in the Middle East area took its toll on the undercarriages of the small fleet. It was found that a trousered undercarriage was not the easiest feature for engineers to maintain in the field. The following summary highlights the problems; by the end of the war the small fleet had been written off, mainly with undercarriage problems.

The first victim was G-ADFF (AX760) *Dione*, operated by the Communication Flight of the RAF at Lydda. It must have been extremely rough ground there as the undercarriage collapsed whilst taxiing for take-off and was a write-off.

G-ADUI (HK830) *Denebola* suffered a tyre burst whilst taxiing on rough ground at Bilbeis airfield on 11 March 1942; due to a lack of spares the aircraft was considered a write-off.

G-ACPL (HK844) *Delphinus* came to grief on 10 April 1942 whilst taking off from landing ground 14 in North Africa, and both starboard engines cut; the aircraft swung violently with the subsequent collapse of the undercarriage, so written off.

G-ADUE (AX762) *Dardanus* landed heavily at Siwa on 23 June 1942 with subsequent collapse of the starboard undercarriage. The aircraft was not repaired.

G-ACWD (HK829) *Dorado* also landed heavily at Noffution, North Africa, on 17 March 1943. The undercarriage collapsed; it was considered a write-off.

G-AEAP (HK843) *Demeter* (shown right before military service) with 117 Squadron, RAF, was detached to assist in evacuating casualties from Sicily during the Italian campaign; on one of these sorties, on 23 July 1943, the aircraft was burnt out when a Verey pistol went off in the cartridge compartment (one hopes that this incident occurred while the aircraft was stationary on the ground and that there were no patients on board).



Finally, G-ADUG (HK381) *Danae* has no RAF service history recorded. It therefore seems likely, therefore, that the aircraft was used as vital source of spares for the rest of the fleet which were operating in very primitive conditions. It should also be borne in mind that Egyptian Airlines (Misrair), a BOAC Associate Company, also had a small fleet of DH86s which were used in a similar capacity during the campaign.

It is nice to know that these beautiful aircraft (aaaah, de Havilland!) were put to such vital use during the war in Africa despite the fact that their wheels seemed to be their 'Achilles Heel'. **KEITH HAYWARD**

THE LOCKHEED VENTURA– PART 1 – RAF SERVICE - BY LAWRENCE HAYWARD



Above, Lockheed Ventura Mk I AE660 was the third Ventura delivered to the RAF and survived its service with 21 Sqn, then 487 Sqn and later 299 Sqn, until it was struck off charge on 28th June 1945. It is often said that this photo, dated 9th March 1943, shows an aircraft of 21 Sqn but the H of the light grey YH code has been painted out, to make this EG-Y of 487 Sqn. Possibly for Exercise Spartan, it has a wash of black paint on most of the undersides.

In 1939, the British Purchasing Commission (BPC), visited the USA, desperate to acquire more aircraft for the RAF. The previous year they requested that the Lockheed Aircraft Company build the Lockheed Hudson and were impressed with it, especially as deliveries began in February 1939. On this their second visit, the BPC came to assess what was initially proposed as a ‘Super Hudson’ to replace or augment the Hudson as a patrol bomber with a greater range and bomb load, developed from the Lockheed Model 18 Lodestar civilian transport. Lockheed was not doing well financially at this time, as the Lodestar was not selling well enough against its competitors such as the DC-3, so the firm was more than happy to supply the British with a superior aircraft, using its subsidiary Vega factory for the purpose. The BPC placed a small order for 25 aircraft in February 1940. The first RAF Ventura flew on 31st July 1941 and the British were impressed with its performance and ordered 650 aircraft with deliveries promised for 1942. Of the 650 ordered, 394 were delivered, as by the time production was in full swing, the USA had entered the war in December 1941. Therefore, the rest of the order was diverted to the USN and USAAF for training purposes. Deliveries to the UK from California were made by air via Canadian bases, and fitted with Bolton Paul turrets and British radios on arrival in the UK.

Initially the engines in the Ventura Mk I were Pratt & Whitney Double Wasp S1A4-Gs, of 1,850 hp, which were built to commercial standards, whereas the Mk II had Pratt & Whitney R-2800-1 Double Wasps, rated at 2,000 hp that were built to US military standards and gave the aircraft a top speed of 312 mph. The Mk II had an altered bomb bay to carry up to 3,000 lb of bombs, an increase of 500 lb over the Mk I. At the time of the order, such performance figures of the Mk I were impressive, especially compared to the Blenheim, which regularly carried out missions over Europe with a top speed of 260 mph armed with one 0.303 MG for the pilot and one or two Vickers Ks for the WOP/AG!

So why is it that according to popular myth the Lockheed Ventura was a really awful aircraft, that never should have been ordered for Bomber Command, let alone the RAF? After all, 82 Sqn, the sister of 21 Squadron at RAF Watton was wiped out twice while flying Blenheims. While it is true that the Lockheed Ventura was not suited to low level bombing missions by 2 Group RAF against heavily defended targets, it was not a bad aircraft and in fact it performed well. The fault was not with the aircraft or the RAF crews who flew in them, but the decision to equip Bomber Squadrons in NW Europe, with a type more suited to maritime patrols for which it was designed. However, by 1942, Coastal Command was more interested in four engined types, like the Halifax than the Ventura, to close the ‘Atlantic Gap’ to give convoys air cover all the way over to the UK. Also, with hindsight one wonders why the Ventura was not initially used in Africa, the Middle East or Far East, at a time when the Blenheim Mk IV, Martin Maryland, Vickers Vildebeest, and Vickers Wellesley were still in frontline service. However, the RAF was hard pressed to equip every Squadron in the world, with modern types, and also getting aircraft, personnel and supplies to the combat areas, was just as much a headache.

In the USN, the Ventura was called the PV-1 (which first flew on 3rd November 1942), which replaced the earlier PV-3 which had no turret. About the same time as the RAF were becoming disillusioned with their Venturas for low level bombing missions over NW Europe, the USN started using the PV-1, and were rather dismayed to hear that the RAF did not like theirs. The USN had better luck with theirs, as traditionally the USN had been limited (due to inter service rivalry with the US Army Air Corps), to flying only seaplanes and flying boats, but because the USAAF wanted to have use of a USN aircraft factory to build the B-29, which first flew on 21st September 1942, there was some horse trading between the USAAF and USN; the USAAF got their factory and the USN got their first land-based patrol bomber. Ultimately the PV-1 was also a great success in its maritime patrol role as it did not encounter waives of enemy fighters like the Ventura. With its more powerful engines, greater range and bomb load, it outperformed the USN's flying boats to such an extent that there was a joke in the USN to say that if a PBY Catalina was to meet a convoy or affect an interception of a German U-Boat it would need to give at least 24 hours' notice to get to the correct spot! Meanwhile the PV-1 would be there and back in an afternoon!

While the DH Mosquito used its speed to get away from trouble, the Ventura like other light bombers in 2 Group relied on its defensive armament. Despite the publicity photos of RAF Venturas in 1942-1943, bristling with four machine guns in the nose, two MGs in the turret and ventral positions, these aircraft had 0.303-inch calibre machine guns which in combat with Bf 109Gs and FW 190As were pretty useless! In the USN, the 0.50-inch calibre machine guns used in the PV-1 would often disable an attacking fighter whereas hits from a 0.303 would barely do any damage. RAF Bomber Command would not appreciate this point until they eventually fitted 0.50-inch Brownings in to the rear turrets of Avro Lancasters late in the war. However, to up gun some Venturas they were fitted with four-gun turrets, as detailed below.



Above Right; A photo of the Queen (Mother) on a visit to 464 Squadron on 26th May 1943, showing the four-gun Bolton Paul Mk IV turret fitted in place of the earlier egg shaped two-gun BP turret in 'EG-H'. So far, the improvement in armament for the Ventura in RAF service has not been recognised by any written history of the type, not even in an article on the Ventura in Aircraft Illustrated Extra Number 10 circa 1969, nor PV Ventura/ Harpoon units of WW2 by Alan Carey by Osprey 2002 nor 'Vega Ventura - The Operational History of Lockheed's Lucky Star, written by John C Stanway in 1996. This omission is rather strange seeing as Pathe, AWM and IWM both have photos of UK based Venturas fitted with such four-gun turrets. So far, no RAF designation has been found for the modification such as Ventura Mk II Series II. This 'discovery' is therefore a historical first for Airwords!

The other reason of course for the disillusionment amongst RAF crews with the Ventura was the manner in which the RAF used the aircraft on low level ops, for which it was not designed. However, in their defence, the RAF was in great need of any new aircraft in 1940. Once in production, and paid for, the Ventura order had to be satisfied. Deliveries to the RAF began in April 1942, and so some use had to be found for them. Venturas Mk I and Mk II were therefore used to equip three Squadrons; 21 Sqn, 464 (RAAF) Sqn and 487 (RNZAF) Sqn within 2 Group Bomber Command. However, it is worth remembering that prior to the arrival of the Ventura, 2 Group was using the Bristol Blenheim Mk IV. The Ventura had a far better performance than the Blenheim, so why would there be any cause for alarm in carrying on striking at important targets in daylight, in Northern France, Holland and Belgium with a new type?

The normal crew of the Ventura comprised four crewmen; Pilot, Navigator, Wireless Operator and Turret Gunner, all of which were expected to defend the aircraft, including the Pilot with his two front 0.303s. Although not stated officially there must have been concern within the RAF that now that 2 Group was part of 2nd Tactical Air Force, from 1st June 1943, the Ventura was not suitable for the tasks involved for the forthcoming invasion of Europe. Also, for the loss of each Ventura aircraft in combat, there was the loss of four men instead of just two in a DH Mosquito. Eventually, 464 Sqn, 487 Sqn and lastly 21 Sqn all re-equipped with the Mosquito, much to the delight of the pilots and navigators, but I guess not the other crew members who were posted away to other Squadrons to take their chances in other bomber types in 2TAF or the 'heavies' of Bomber Command. During their time with 2 Group, Venturas took part in many notable operations, some a great success in hitting the target and others a dismal failure, and therefore it might be best to include memories of F/Lt. Albert Ricketts who flew ops with 21 Sqn, including Operation Oyster, a daylight-bombing raid on Phillips Radio Works, in Holland, on 6th December 1942. It was at the time the largest daylight-bombing raid of the war with the factory put out of action for several months.

Albert Ricketts had trained as a pilot and was eventually posted to 21 Squadron based at Methwold, Norfolk. Operation Oyster was his first bombing raid; Then he held the rank of Sergeant and piloted a Lockheed Ventura aircraft with a crew of four. At the end of the raid his aircraft ditched into the sea about 7 miles off Felixstowe and his crew were safely recovered. The following by Fl/Lt Albert Ricketts, was extracted from his memoirs.

My arrival at 21 Sqn which was positioned at RAF Bodney, which was a satellite to RAF Watton, in Norfolk, heralded the start of all that I had wanted since I joined the RAF and for which my training had hopefully prepared me.

The squadron had very recently been re-equipped with Lockheed Ventura A/c which was a medium daylight bomber carrying 3 x 500 lb and 4 x 250 lb bombs, replacing the Bristol Blenheim Mk 4 which had done sterling work both in the Middle East and Northern Europe. The Squadron had recently returned from the Middle East where they had been involved in a low-level attack on the German Fleet at Taranto in the Mediterranean Sea. Not only was 21 Sqn being re-equipped but the whole of 2 Group, which was a daylight Bomber group within Bomber Command, was also being re-equipped with other types of aircraft which included Douglas Boston, North American Mitchells, perhaps better known as the B-25 which was famed for its raid on Tokyo where the aircraft took off from an Aircraft Carrier. Later on, De Havilland Mosquitoes also joined the Group.

Whilst at Bodney I went on an SBA refresher course at RAF Horsham St. Faith which was on the outskirts of Norwich. Whilst I was on that course, the Sqn moved to RAF Methwold which was a satellite to RAF Feltwell, again in Norfolk. At Feltwell was our sister Squadrons on Venturas. These were, 464 RAAF Sqn (shown right with SB Sqn codes) and 487 RNZAF Sqn making up 140 Wing of 2 Group of Bomber Command.



The first Operations carried out by the recently re-equipped Group were Cloud Cover operations. This was individual aircraft flying to the target in cloud and only dropping out occasionally to verify its position and adjust accordingly. One of our crews were briefed to bomb the port of Rotterdam in the Netherlands and following the laid down procedure, eventually broke cloud immediately over Rotterdam harbour just as our training said he would. I joined the Squadron too late

to be competent enough to take part in these operations during which we lost we lost 3 aircraft & crews. One of those aircraft was piloted by a Canadian by the name of Sgt Henry whose aircraft was lettered ' R '.

When the replacement was delivered on the 27/11/42 to our parent station at R.A.F. Feltwell, the home of our sister squadrons, and modified to bring it up to date, I was told that this was to be my A/c and would be lettered ' R '. Interestingly, each one of my crew had the letter ' R ' in their initials namely R. S. Thompson, E. R. Goddard, W. R. Legge and myself A. V. Ricketts. After a considerable amount of training, we were adjudged to be capable of carrying out this type of operation and were briefed to bomb the harbour at Antwerp in The Netherlands. Being briefed to fly in cloud at 1000 ft with the freezing level at 800 ft, I didn't fancy the idea of the A/c being coated in ice and was pleased when the operation was called off for that reason.

That was the last we heard of Cloud Cover operations, for a while. We then concentrated our training on daylight low level operations and from the 21st to 30th Nov, numerous factories in England were ' bombed ' during these practices. We air tested our aircraft both on the 30th Nov and 1st Dec in view of the forthcoming raid. Eventually on the 2nd Dec we were briefed for a raid on the Phillips Radio Works at Eindhoven in The Netherlands. This was going to be, so far, the largest daylight bombing operation of the War involving the whole of 2 Group amounting to about 100 aircraft made up of Bostons, Mitchells (B-25s) some Mosquitoes and of course Venturas. Due to fog at the target, the raid was put back daily. Each day, whilst the weather at base was good, there was fog at the target and so there was nothing for it but to return to the mess and enjoy the liquid refreshment but bed was the last thing on our minds.

At last, on the 6th (my mother's birthday) the weather was favourable and at 12:30 hrs, after re briefing, it was all systems go and the relief and the anticipation was plain for all to see. We got into our A/c 'R' but my air gunner reported that the gun turret was u/s (unserviceable) and we had to change to another A/c i.e., 'YH-P' (AE687). We found out some days later that the flap, which could be raised to enable the air gunner to get in and out of the turret more easily and which had attached to it a control column to make the turret rotate, to raise and lower the guns (2) with a firing button at the top, could only be brought down with the guns in the ' up ' position, otherwise the turret would not operate.

By this time all of the Squadron A/c had taken off. Having waited this long we were not going to be denied the opportunity of 'fighting the enemy' and so we were anxious to get airborne as quickly as possible. In doing so I didn't strap myself in and as soon as the last crew member was inside the A/c and before the door was properly shut, we were building up speed for take-off. The fact that we swung on take-off and narrowly missed the Air Traffic Control (sic) building didn't seem to matter.

We were on our way and anxious to catch up with the squadron aircraft who, by this time, were out of sight. It wasn't too long before we could see them in the distance and was catching up quite quickly. Because we were the last to take off, we eventually joined up at the back of the 'gaggle' of A/c. Having now 'joined up' with the rest of the squadron, I was able to relax (as much as one could flying at 235 mph at 0 ft) Our Sqn was on the starboard side of 464 Sqn (see example a/c shown below right) who was leading the Wing on this operation with 487 Sqn being on their port side.

Eventually we reached the English coast and crossed it at Southwold in Suffolk. Now over the water without any trees or buildings to hamper us we were right down on the water so as to prevent the German Radar from picking us up and making life difficult for us when we crossed into Holland. Having been over the water for about 10 mins or so, I saw an aircraft of 464 Sqn dive into the sea seemingly for no apparent reason.* I had to remind myself not to do the same.

The course that 464 was flying, kept pushing our Sqn slightly to starboard which meant that when we crossed the Dutch Coast it was over a bird sanctuary so that the noise caused the birds to take off and fly into the aircraft as they passed over. One of the birds hit our windscreen in front of the navigator's position leaving a bloodstain where it had hit. The navigator of the Ventura doubled up as the bomb aimer and therefore sat in front of an alleyway to enable him to move down into the bomb-aimer's position although in this raid, because it was low level, myself as the pilot would release the bombs. On both sides of the nose of the Ventura were 4 small windows, some of them by the alleyway, and a bird came in through one of them, up the alleyway and hit Ron Thompson in the unmentionables. It wasn't until he saw the feathers that he realised it wasn't his blood. Now we were over land which was quite flat and with 'flak' towers about 30 ft high, we had to fly as low as possible so as to avoid being shot at. Not long after crossing the Dutch coast we were in the area of the 'dykes' and of course there were roads on some of these. It came as a bit of a surprise to see a fellow on a bike some 10 ft or so higher than our A/c riding along one of them. He seemed oblivious to our a/c and this was reported by other crews.



Our prearranged track took us to a place called Turnhout where we made a port turn on to our course to Eindhoven which was about 12 miles away. It wasn't long before we were being shot at by guns on the top of the Phillips factory. As we were approaching the factory the bomb doors were opened ready for the bombs to be released. As we were the last A/c to drop our bombs it wasn't surprising that, with the bombing that had gone on before we arrived, the factory was well and truly alight and billowing smoke. The incendiaries we were dropping were of a new type (for the period) and exploding on impact the contents would stick to whatever it hit and continue burning.

Unfortunately, the A/c in front of me was too close to the building when his bombs exploded so that they stuck to his plane and it went down in flames after he passed over the factory. Not wanting to suffer the same fate, as soon as I had released our bombs, I made the A/c climb rapidly and so we disappeared into the smoke and levelled out at about 600 ft. I continued to fly at that height blind and on instruments until we were out of the smoke and then realised how vulnerable we were. I pushed the nose of the A/c down quickly so as not to attract the anti-aircraft fire little realising the confusion this was causing to Bill Legge who was the air gunner in the downward rear facing gun position. These guns were fed by a switch back system from the bullet panniers positioned on both sides of the A/c. These switch backs didn't have a cover on them and the sudden descent of the A/c caused the bullets, which were linked together, to come out of the switch backs and wrap themselves around Bill's neck. The expletives he used were unprintable. However now that we were back to ground level, it wasn't long before we were being shot at once again from the flak towers, making us fly even closer to the ground. Not long after leaving the target I managed to make the A/c hit a tree. Fortunately, we hit it head on and about one third of the way down. Had it been a wing that hit the tree I would not be alive today to tell this story. The impact was not such that it would cause us to crash but did enough damage to make life quite difficult for us to keep flying.

It wasn't too long before I realised that the pitot head (that that provides the force of air for the air speed indicator to work) had been ripped off. Part of the underside of the wing had been ripped away so that Ron was able to see the ground through the side of the A/c. Just before we were about to leave the Dutch Coast our starboard engine packed up. I could only conjecture that the collision had damaged the pipe line to the engine and I had no alternative but to feather the prop and fly on only one, again a practice I had carried out quite often. This was necessary so as to reduce 'drag' and stay airborne. At about this time I realised that we had lost a lot of fuel and therefore I felt it imperative that we made a landfall in the U.K. as quickly as possible and so we altered course for Felixstowe in Suffolk. Gradually inching higher and higher so that if an emergency occurred, we would have sufficient height to deal with it. It wasn't too long before we were at 1,300 ft although without any idea of the speed at which we were flying it was important that I didn't cause the A/c to lose flying speed and thereby stall and lose the height that I had been able to gain. Although I didn't think of it at the time, I realised later how much I appreciated all the training I had been put through and the thoroughness with which my instructors had done their job. We ditched 7 miles off Bawdsey and were rescued by ASR Launch from Felixstowe.

* Ventura AE701 EG-F of 487 Sqn that hit the sea, due to damage from 20 mm flak just off the coast of Holland.

Despite the losses, Operation Oyster, the raid on the Philips Factory, was deemed a great success for the damage caused to the factory, despite the loss of sixteen aircraft. However, other operations, involving the Ventura, were a 'complete shambles.' One such operation was Ramrod 16 on 3rd May 1943. 487 Squadron was ordered on a Ramrod diversionary bombing attack on the power station in Amsterdam, (the code Ramrod meant a bomber raid escorted by fighters aimed at destruction of a specific target in daylight).



Right; A Lockheed Ventura of No. 464 Squadron RAAF flies over the docks at Flushing, Holland, during an attack by 12 aircraft on the De Schelde shipbuilding yards on 24th June 1943. Bombing at higher level reduced losses but within days 464 Sqn converted to the DH Mosquito.

For Ramrod 16, Nos. 118, 167 and 504 Fighter Squadrons of the Coltishall Wing were to escort the Venturas, and were to be met by further Squadrons of 11 Group, Fighter Command over the Dutch coast. The Venturas were to cross the coast at sea level so as not to alert German radar, then climb. Unfortunately, the 11 Groups Mk IXs flying Rodeo 212 ahead of the Venturas arrived early and crossed the coast high, being anxious to gain a height advantage but alerting the German defences. They ran low on fuel before the Venturas arrived and had to leave. The Luftwaffe scrambled some 70 fighters in four formations, with FW 190s to deal with the escort and Bf 109s the bombers. The RAF escort Wing Leader, W/C Blatchford, vainly attempted to recall the bombers but they were soon hemmed in by fighters. Under constant attack by II Gruppe, Jagdgeschwader 1, 487 Squadron continued on to its target, the few surviving aircraft completing bombing runs before being shot down. The Squadron was virtually wiped out. Trent shot down a Messerschmitt Bf 109 with the forward machine guns of his plane when it mistakenly crossed his path. Immediately afterwards, his own aircraft (Ventura AJ209) was hit, went into a spin and broke up. Squadron Leader Trent and his navigator were thrown clear at 7,000 feet and became prisoners. Squadron Leader Trent, whose leadership was instrumental in ensuring the bombing run was completed, was awarded the Victoria Cross in 1946, when the full details were known after his release from POW camp.

Meanwhile in another 487 Sqn Ventura, AE684, William Stannard was a tail gunner on the same operation. Struck by enemy gunfire, his Ventura caught fire forcing Stannard into the tail and away from his parachute. The aircraft then exploded and broke into pieces. By some aerodynamic trick of fate, the severed tail section glided to earth and landed in trees in the grounds of a large estate where Stannard was pulled alive from the wreckage without serious injury. He then became a POW.



Right; William Stannard, is seen far right with his crew members. Sadly F/O Stan Coshall, (pilot) and George Sparkes, (AG) both died when the Ventura was shot down. Apart from Stannard, Rupert North, (Nav) also survived after bailing out.

AN ORKNEY ISLANDER – BY FRED BARNES

Fred Barnes recalls a trip in September 1991 to the Orkney Islands in the Northern Isles of Scotland to fly on the world's shortest scheduled air route and to experience the Loganair Pilatus Britten-Norman Islander operation.

The Orkney Islands, or Orkneys, comprise some 70 islands situated 20 miles/32 km off the northern coast of Scotland, separated from the mainland by the Pentland Firth. About 20 of the islands are inhabited with a total population of around 20,000. The Orcadian Islanders are of Scandinavian ancestry with links to Denmark and Norway which can be traced back for 1,000 years. Agriculture, fishing and weaving were the traditional industries but modern developments such as the terminal for the North Sea Piper Oilfield and tourism are now used to generate additional income. Despite their northerly latitude (59N) the Orkneys have a warm maritime climate associated with the North Atlantic Drift, a warm sea current also known as 'The Gulfstream'. Rain, winds, low cloud and fog are the normal weather conditions which can make flying operations difficult. The administrative centre is at Kirkwall where there is the main airport with links to major Scottish cities and the hub for inter-island services.

Kirkwall, Orkney

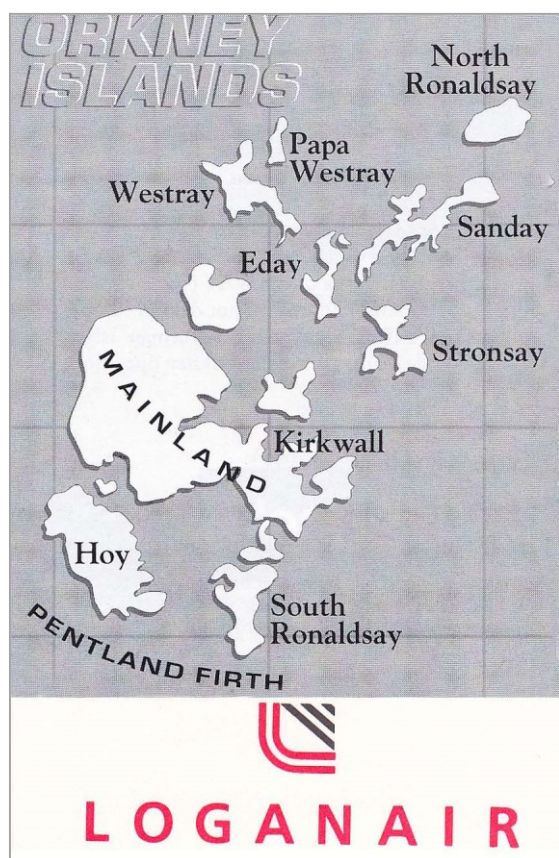
The British Airways Highlands Division BAe 748/2B broke cloud at about 2,000 feet on the approach to Runway 28 at Kirkwall (Grimsetter) Airport and I could just see the runway ahead. There was a strong north-westerly wind blowing at 25kt /45 km/h gusting to 40 kt/70 km/h as the clouds moved across the airfield and Captain Wavell continued manually flying the aircraft on a visual approach, which seemed very slow, and then expertly made a good landing in the weather conditions. After landing the aircraft was slowed to taxi speed and then followed the taxiway to the ramp outside the small terminal building where it was brought to a halt and the two Rolls-Royce Dart engines were shut down. The ground crew were quickly at hand and soon the rear internal airstairs were lowered to enable the passengers for Kirkwall to disembark and the forward cargo door was opened to start unloading the baggage and mail. I thanked Captain Wavell and his co-pilot for permitting me to travel on the flight deck on the 44-minute flight from Aberdeen, grabbed my bag, and then walked through the cabin, down the airstairs and across the ramp into the terminal building.

I went to the Loganair office and introduced myself to the staff who said that they were expecting me. They informed me that the inter-island flights first rotation was operating about 30 minutes late due to the rain earlier but the weather forecast was for an improvement with the wind decreasing, and rain showers later. The operations man said that Captain Holmes would be landing in about ten minutes. Then the sunshine broke through the cloud and I asked permission to stand just outside the Loganair office on the ramp to photograph the British Airways Highlands Division BAe 748/2B G-BOHZ c/n 1785 painted in the BA 'Landor' livery that I had flown in from Aberdeen. A few minutes later I saw the red and white Loganair Pilatus Britten-Norman BN-2B-26 Islander, G-BLNJ c/n 2189R, taxiing through the puddles towards the terminal. The aircraft came to a halt, engines were stopped, and the pilot got out to open



the doors and the passengers climbed out of the Islander and hurried across the ramp to the terminal. Meanwhile the ground staff were unloading the baggage on to a hand trolley. I returned to the Loganair office where I met Captain Alex Holmes, a stocky, cheery, bearded individual and introduced myself. I explained that I was keen for a flight in the Islander and especially wanted to fly the Westray – Papa Westray sector which of course is the world's shortest scheduled air route. Captain Holmes checked with the reservations department and confirmed that there was space on the afternoon flight and that I could sit in the right-hand seat. During the conversation I heard the sound of the two Dart engines on G-BOHZ spooling up and then the aircraft taxiing away from the apron. I then went into the British Airways office, located adjacent to the Loganair office, and had a chat with the local staff to check on the seat availability for the afternoon departure back to Aberdeen. I explained that I was returning on the Loganair flight LC631 from Papa Westray and that it would be a 'tight turnaround'. They laughed and said they were used to that and advised not to get too muddy!!

Loganair Orkney Inter-Island Operation



During the lunch period I had been able to talk to Captain Holmes about the Loganair Orkney operation. He said that the company operated five Islanders, two based in Kirkwall, one in Lerwick for the Shetland inter-island and Fair Isle services and one based in Glasgow for the Scottish Air Ambulance Service. The fifth was rotated for overhaul or used as a standby. Kirkwall was the overhaul centre for the Islander fleet and individual aircraft were rotated through the network. Four captains were based at Kirkwall with back up from Glasgow if necessary. The Kirkwall operation included the Orkney inter-island services and to Wick on the mainland and summer Saturday services to Fair Isle which is situated between Orkney and Shetland. Air ambulance flights were also undertaken on a 24-hour standby basis and if necessary, scheduled flights would be delayed. In Orkney there were about 160 ambulance flights per year and a total of about 650 flights a year for Loganair throughout Scotland. Doctors and nurses, all volunteers, are on standby in Kirkwall and at one of the major Glasgow hospitals to undertake the flights which are operated under government contract. Scheduled services on the inter-island network normally operate between 0830 – 1700 local time with no service on Sundays.

Flying operations are VFR with minima of 2 nm (3.5 km) visibility and 360 ft (110 m) cloud base. In flight visibility is 1 nm (1,500 m equivalent) with a ceiling of 360 ft (QNH), descent below that altitude is only permitted when all relevant runway markers are visible. In practice most flights operate below 2,000 ft (600 m) as there is no real high ground in the Orkneys. When the operation was started in 1967, airfield sites were selected and agents were appointed by the Orkney Islands

Council, often the farmer who owned the land where the airstrip was to be sited. The airstrips comprised various direction grass runways based on prevailing winds and the size of the field, an asphalt hard standing 'ramp', small terminal building, fire/rescue vehicle and a windsock. Each grass runway was marked and red and white marker boards which were erected at the ends of the runway on the stone walls surrounding the fields. The stone walls are definitely NOT frangible. Airstrips are equipped with emergency battery-powered lighting, replacing the original goose neck flares, but that is only used for ambulance flights. Most runways are 500-560 metres (1,600 – 1,800 ft) in length. The shortest strip is at Westray, with runway 01/19 only 260 metres (850 ft), where the wind must be in excess of 40 kt (70 km/h) to achieve maximum take-off weight for the Islander. There are two longer runways for normal use. There are no refuelling facilities at the airstrips.

The Loganair pilots have to acquire local knowledge of the airstrips, field conditions, and the associated meteorological conditions and air currents. Good flying skills are important and sometimes up to 24 sectors can be flown in a single day. Most pilots agree that the worst part of the operation is keeping the paperwork up to date. Captain Holmes explained that most problems came in winter with heavy rain, strong winds, boggy airstrips and shorter hours of daylight. The pilots then 'self-limit' the take-off performance based on the existing conditions, their experience and passenger load is reduced accordingly. Maximum take-off weight of the Islander is 2,994 kg (6,600 lb) and the type can be WAT (Weight/Altitude/Temperature) limited on hot days in summer. He said that the Pilatus Britten-Norman Islander is the ideal aircraft for the Orkney operation as it is a rugged aircraft with good airfield performance and handling qualities. Maintenance is relatively simple and the aircraft has a fixed undercarriage and the Lycoming engines are proven and reliable. Conversion from passenger to all-freight or ambulance configurations is easy, offering flexible operations. The type is capable of a high number of take offs and landings but one problem is wearing of the brakes. Normal configuration is eight passengers plus pilot, but nine passengers can be carried depending on weight available and in the all-freight role around 800 kg (1,760 lbs) can be carried. Operating costs are low which pleases the accountants. Since the start of the inter-island services on 16th September 1967, from Kirkwall to Sanday, Loganair has operated a number of individual aircraft. The company keeps each aircraft for about five years before replacing it due to the high number of take-off and landing cycles. When the Orkney inter-island air service was established, part of the plan was to improve communications within the islands and to try to reduce the outflow of the local population to the Scottish mainland. Orcadians receive a discount on air fares which are subsidised by the local council, and discount booklets are available at local post offices on production of the authorised documentation. Loganair have a central reservations system in Kirkwall for the Orkney inter-island operation.

The Loganair Summer Timetable in 1991 included scheduled services from Kirkwall to the islands of Stronsay, Sanday, North Ronaldsay, Eday, Westray and Papa Westray. All inter-island sectors are short with Kirkwall – Sanday eight minutes and Kirkwall to North Ronaldsay fifteen minutes, but probably the most well-known is the Westray to Papa Westray two-minute schedule, which is the shortest scheduled air service in the world.

Kirkwall to Westray



By the afternoon the weather was overcast, the wind had eased and the forecast was for showers. I returned to the Loganair office after lunch and was escorted on to the ramp to photograph the two operational Loganair Islanders G-BJOP c/n 2132R and G-BLNJ (*above*). Then I met Captain Holmes as arranged in the office and we went out on to the ramp, walked up to G-BLNJ and I accompanied him during the external inspection of the aircraft. He then invited me to sit in the right-hand seat in the cockpit and I entered via the left-hand front door and shuffled across to the right-hand seat. Captain Holmes then returned to the terminal to greet the passengers for flight LC631 and they followed him back across the ramp to the aircraft which had already been fuelled and loaded with baggage and freight. Many of the eight passengers were dressed in anoraks, oil-skins and Wellington boots and had obviously taken the

flight many times before. The passengers quickly climbed into the Islander via the many doors, one for every two seat rows, and the ground staff ensured that the doors were closed. Captain Holmes welcomed the passengers, gave an emergency briefing, and asked them to remain strapped-in as the weather would be a bit ‘bumpy’. I was already buckled-up when he climbed into the left-hand seat and offered me an ‘electric hat’ (headset). The cockpit was small but adequate, and the controls were clearly marked and instrumentation easily-visible with a good external circle of vision from the seat.

After checking that the Islander was clear of ground equipment start-up clearance was quick and the two Lycoming engines were started in sequence and G-BLNJ burst into life. Kirkwall Tower gave Loganair 631, ATC callsign ‘LOGAN 631’, immediate taxi clearance for Runway 28 and we taxied to the threshold of the runway, turned and lined up for take-off. Flight LC632, the other Islander G-BJOP, was on frequency requesting start up clearance for Stronsay. After a power check the tower called LC631 with the latest wind, temperature and clearance for take-off. The brakes were released, take-off power set and the Islander started accelerating along the runway and was airborne very quickly. With a full load the aircraft was heavy but climbed well and soon turned on a heading for Westray. I had my camera ready for some photographs. After reaching the cruising height of about 1,000 ft (300 m) the aircraft passed through a rain shower which spattered the windshield and reduced visibility. Captain Holmes had re-set engine power for the cruise. Once out of the shower I could see the islands where the sun was shining and I had a panorama of grey sea, green fields surrounded by stone walls, small houses or crofts and sheep, but there was a distinct lack of trees. Over the sea the white caps showed that the water was rough and soon we overflew one of the new ‘roll-on/roll-off’ ferries that had been recently introduced into service. Captain Holmes explained that the new ferries could be a threat to the inter-island operation in the future, but passengers preferred the shorter flight to the longer sea crossing, which is often rough especially in winter. I had noticed sheep on the beach of one of the islands and Captain Holmes explained that in Orkney, some sheep were fed on seaweed and could only produce a single lamb each time. He also pointed out the Island of Eday on the starboard side and the Einhallow Sound to the northwest on the port side. The airstrip on Eday was sighted with the threshold markings and marker boards at the runway ends clearly visible. He continued that all flying operations on the inter-islands’ services are VFR (Visual Flight Rules) and as there are no Air Traffic Control facilities at the outlying airstrips, all ATC functions are under the control of Kirkwall Tower. Islander LC632 was then on frequency informing Kirkwall that the flight was on finals to Stronsay. The Island of Westray came into view and the sunlight gave a silver effect on the sea and Papa Westray could be seen to starboard as we crossed the Westray Firth.

Captain Holmes advised Kirkwall Tower that LC631 was descending on finals to Westray and I could see the airstrip as the Islander turned on to final approach and I took a photograph. The Islander flew over a field of sheep, the stone boundary wall and then landed on the grass strip, which was Runway 28, and that was smoother than I had anticipated. Flight time was thirteen minutes from Kirkwall and Captain Holmes turned the aircraft off the grass runway and taxied across the field to the hard standing near the small building. The engines were shut down, a farm tractor and trailer appeared through the gate to the ‘ramp’ and moved alongside the Islander.

Captain Holmes got out of the aircraft, so did the passengers and I grabbed my camera and shuffled across to the open door and left the Islander to take the inevitable photographs. I could hear waves breaking on the shore and over the stone boundary wall was a splendid view of the deserted beach and breakers flowing over the rocky shoreline. Captain Holmes advised me to take care as the muck on the ground was NOT mud, the field was also used for grazing cattle! Joining passengers climbed into the Islander, baggage was transferred and the tractor moved away with the freight, mainly foodstuffs and essential items, for the island community.

Westray to Papa Westray



I returned to the Islander and my seat and Captain Holmes completed the load sheet in the open cockpit doorway using his seat as a desk. Then after another emergency briefing at the doorway, he climbed aboard, strapped-in and checked that everyone was clear of the aircraft before starting the engines. The local people have got the turnarounds down to a fine art, hardly surprising as they are frequently exposed to pouring rain and strong winds. Nine minutes after touchdown the Islander was taxiing across the grass to the threshold of Runway 28. No time to linger in the Terminal! (*above right*) Flaps, power check, brakes released, take-off power set and the Islander accelerated along the grass strip and became airborne. Due to the prevailing wind conditions our flight had to take the 'long way round' on the 1.7 mile/2.74 km flight to Papa Westray. Once airborne the Islander crossed the short strip of water of the Papa Sound. Captain Holmes advised Kirkwall ATC that LC631 was airborne from Westray, the number of passengers on board and that we were on finals to Papa Westray. It is not often that information is transmitted in a single call! The Islander crossed the shoreline, turned on to final approach and I could see the markings of the grass Runway 22 ahead. Captain Holmes skilfully flew over a stone wall and landed on the runway which was a bit bumpy during the roll out. Flight time was two minutes and twenty seconds. After taxiing across the grass, Captain Holmes brought the Islander to a halt on the hard-standing and shut down the two engines. Three passengers left the aircraft and people were waiting, dressed in the local fashion of anoraks and boots. Passenger baggage and a box of live crabs arrived on a hand cart and were loaded into the aircraft and arriving freight and baggage was taken away. Soon the joining passengers were aboard and all eight seats were full.

Papa Westray to Kirkwall



Captain Holmes completed his load sheet at his 'office' on his seat, then welcomed the joining passengers and gave his well-practiced emergency briefing. He also explained that the Islander was close to maximum take-off weight and might be a bit 'noisy' on take-off. Then he climbed back into his seat, checked that everyone was clear of the aircraft and started the two engines. He then taxied the Islander across the grass and went very close to the red and white marker boards on the stone wall to use the full length, 1,640 ft (500 m), available of Runway 22. Captain Holmes then turned the aircraft on to the runway threshold and came to a halt with the brakes on. After a power check, the Islander was held on the brakes and when full take-off power was set and established, the cabin was quite noisy. When the brakes were released, the Islander started moving forward, gathered speed, rumbled across the

bumpy grass runway and became airborne. The turnaround time had been just 8 mins!



Captain Holmes made the routine ATC call to Kirkwall, airborne from Papa Westray with passenger numbers, as the aircraft levelled out at about 900ft (270 m). Cruise power was set on the engines and for a few minutes the flight encountered turbulence. As the flight continued towards Kirkwall another rain shower splattered the windshield and darkening skies threatened that there was more rain ahead but this was real flying. After a few minutes a British Airways Highlands Division BAe 748 was on frequency inbound to Kirkwall from Stornoway in the Outer Hebrides and I was pleased because that was the aircraft for my return flight from Kirkwall to Aberdeen. LC633 also came on frequency preparing to depart Kirkwall for Sanday and once airborne that aircraft stayed below 800 ft (240 m) until our flight had visual contact with the other Islander which passed below to port in the opposite direction. Captain

Holmes advised Kirkwall ATC that our flight had passed LC633 and LC631 was starting its descent and then we heard that the British Airways flight had landed at Kirkwall. ATC cleared LC631 to land on Runway 28 and as the Islander turned on to final approach the runway looked very long compared to the previous two grass strips. After the slow approach in the Islander Captain Holmes landed the aircraft on Runway 28 with the slightest squeal from the tyres, the flight time from Papa Westray had been 14 minutes. After parking behind the British Airways BAe 748 Captain Holmes shut down the engines, the ground staff arrived at the aircraft and the passengers climbed out of the Islander and hurried across the ramp to the terminal before the next rain shower started. As I walked back to the Loganair office I thanked Captain Holmes for a most enjoyable and interesting day and some great flying. I had previously thanked the Loganair office staff because I knew that I had only a short turnaround time to catch the British Airways Highlands Division flight to Aberdeen. As I was boarding the Aberdeen flight one of the British Airways staff whom I had previously met said, ‘You got your shoes muddy then’ and we laughed and I walked across the ramp, climbed up the rear internal airstairs and into the cabin to my seat on the BAe 748. Soon the BAe 748/2B in British Airways ‘Landor’ livery, G-HDBC c/n 1786, was preparing for departure and I noticed Loganair Islander G-BLNU taxiing by and I knew that was flown by Captain Holmes operating flight LC634 Kirkwall – North Ronaldsay – Eday – Kirkwall. Then each of the two Rolls-Royce Dart engines was started in sequence and there was that familiar whining noise as each engine was spooled up and soon the BAe 748 was taxiing towards Runway 28 for the departure to Aberdeen. After a spirited take off, flight time Kirkwall to Aberdeen was 32 minutes with a tailwind. What an unforgettable day and the weather had been a real example of the Orkney Islands conditions.

Since the time of this trip Runways 10/28 at Kirkwall (EGPA) and Westray (EGEW) have been redesignated 09/27 due to changes in magnetic variation. The airstrips in the Orkney Islands have now been upgraded and each has at least one tarmac runway to enable flights to operate throughout the year and avoiding the boggy grass conditions in winter. Islander G-BLNU c/n 2197R operated by Loganair was repainted in the striking Scottish Air Ambulance Service livery in 1993. Captain Alex Holmes later flew the de Havilland DHC-6/310 Twin Otter and Islander aircraft from the company’s Glasgow base until his retirement. Loganair started Sunday services on the Orkney Inter-Isles Air Services to all islands except Eday and now use flight number code LM. British Airways withdrew from operating Scottish internal services on 27th October 1996 and ceased serving Benbecula, Kirkwall, Sumburgh and Stornoway. The British Airways name and its various liveries continued in Scotland for a few more years when Loganair and British Regional Airlines operated franchise services under the British Airways Express umbrella. Loganair continue to operate the Orkney Inter-Island Air service with two Islander aircraft and continue to operate within Scotland and have expanded their routes to other UK and European destinations. On 8th January 2021 it was announced that from 1st April 2021 Loganair will continue as operator of the Orkney Inter-Isles Air Services for a further four years following the award of a new Public Service Obligation (PSO) contract by the Orkney Islands Council.



CAPTAIN TED JORDAN – JERSEY AIRWAYS AND BEA – A CHANNEL ISLANDS PIONEER

“All Channel Islands departures delayed until tomorrow due to fog in Jersey and Guernsey.” Such dreaded announcements we had to make, in the 1950s and 1960s were all too familiar in the old domestic flight departure lounge in the Britannic Building in the Central Area of Heathrow. These were popular holiday destinations, particularly for honeymooners, at this time in the summer months and loads were high. If there were several flights affected by weather delays this could create considerable overnight accommodation problems with the added likelihood that the fog would often persist for several days and in all seasons. There was also an added, embarrassing, problem; the aircraft operating the routes were the sturdy, reliable, modified Douglas DC-3 Dakotas which were known as Pionairs in BEA service.



Some crews were Jersey-based including some very seasoned ex-Jersey Airways pilots. They knew the islands' climates very well, of course, and understood the foibles of local weather phenomena. In many cases they would continue to operate in low visibility conditions whereas the London-based crews – quite rightly – would delay overnight if necessary. It was very difficult to explain to 32 frustrated passengers as to why their flight was delayed, whilst the next service had just boarded! One of the well-known Jersey-based pilots was Captain E W 'Ted' Jordan. He was one of the early stalwarts from the pre-war Jersey Airways. In the 1930s he flew De Havilland DH84 Dragons, DH89 Rapides and then the four-engined DH86Bs operating off the sands of St Aubin's Bay. The main route was to Southampton, Eastleigh, but he also operated the longer route to Heston. On 10 March 1937 Jersey Airport opened at St Peter's so that the aircraft now operated from a grass surface instead of wet sand. Presumably this eradicated any saltwater corrosion problems.



In 1939 De Havilland demonstrated the new DH95 Flamingo, a twin-engined high wing airliner, at Jersey and Guernsey. G-AFUE operated a few ad hoc services whilst on loan from De Havilland during the summer before returning to Hatfield at the outbreak of war. Jersey Airways pilots were given familiarisation flights on the Flamingo. There were the inevitable teething problems and Ted Jordan summed it up – “lots of snags, but a good aeroplane.” With a retractable undercarriage, this was a first for many of the older pilots who, on their familiarisation flights probably had to underline that fact on their pre-landing checklist.

At the outbreak of World War 2, Ted Jordan, along with his colleagues, worked hard to fly Channel Islands residents to the UK mainland as the German invasion began before finally bringing the aircraft across the Channel to Southampton. With the fleet now in England it was absorbed into the wartime AAJC (Associated Airlines Joint Committee) operating valuable communication flights around the United Kingdom.

Post-war Ted returned to Jersey with the revived airline, now called Channel Island Airways, which became part of BEA when domestic routes were nationalised on 31 March 1947. The Rapides continued in service for some years when the Pionairs (BEA-modified DC-3s) took over and Captain Jordan continued as Flight Manager, Jersey.

Pilots with such experience and local knowledge were invaluable. Even in conditions of low visibility or low ceiling they carried on. Precise locations were spotted through a temporary gap in the clouds where a particular island landmark would guide them on their approach to the airport. An old colleague, the late Ted Williams, was a BEA Flight Clerk on Pionairs and he recalled that he felt so confident if Captain Jordan was in command in conditions of low visibility. Ted recalled he would sit there in the cockpit with his glasses on the end of his nose looking out for landmarks through a gap in the clouds and then looking down through his specs to check the instruments as they approached to land.

The DC-3s were finally withdrawn from services out of London on 31 October 1960. This included the Channel Islands routes which, by then, were mainly operating from Gatwick having transferred from Heathrow in 1958. The Viscounts were taking over and a new era began. Captain Jordan will be remembered as one of the many experienced pilots of an earlier, more primitive age of flying. **KEITH HAYWARD**

A SHORT WINTER BREAK IN SOUTHWEST TEXAS 2017 - BY JOHN ROACH

Recommended to me by my good friend Fred Barnes in January 2017, my wife Sue and I decided to take a winter break on a sightseeing holiday to southwest Texas taking in a few of aviation related locations on the way.

On the morning of 16th February, we boarded the newly acquired Boeing 787-9 of British Airways (*G-ZBKC - see photo*) for the 10 hours 20-minute flight to Austin Texas. The civil airport was opened on 23 May 1999 having been established on 19 September 1942 as Bergstrom Army Base. On arriving in Austin, it became apparent that this new BA destination had very few other international flights as there were only two arrival gates that were designed for overseas flights and on that day the only other flight requiring the passport control facilities was an Aeromexico service from Mexico City. Even now in 2021 many US airlines (predominantly Southwest Airlines) serve the city but there are only four international carriers seen here namely Air Canada Express, WestJet and from Europe Lufthansa and British Airways. After a good night's sleep, we headed due west from the state capital heading for Stonewall (70 miles away) for our first stop at the Lyndon B Johnson's ranch.



In 1951 Senator Lyndon B. Johnson set out to establish a base known as The Texas White House so that he could continue his work away from Washington and by 1953 he had created a 3,000 ft grass landing strip at the ranch. By the time Johnson had become president in 1963 a series of improvements had been made including a 6,300 ft asphalt airstrip however the expanded strip would not support the weight of the Boeing 707 (Air Force One) which meant the president had to fly either to Austin or San Antonio and then by Sikorsky VH-3A (same type still used by the current president) or the Lockheed Jetstar C-140B (*see photo left*) for the short flight to his country home. LBJ often referred to exec jet as 'Air Force One-half'. Also preserved at the ranch are some of the president's personal cars and the

'Presidential' Jetstar. In 1951 the LBJ Ranch had a single telephone line but within four weeks of becoming president in November 1963 his home had microwave towers providing 120 channels to Austin, two-way radios, teleprinters, cryptographic machines and an extensive telephone system with 100 lines, installed in a white wooden hut (*see aerial photo below right*) near the house. The US Secret Service maintained a presence with Johnson family from 1961 (when Lyndon Johnson became Vice President and then President in 1963) right up until the death of his wife Lady Bird Johnson in July 2007 making her the longest protected first lady of the twentieth century.

We then continued onto Fredericksburg (in the Texas Hill Country), the birth place of Fleet Admiral Chester W Nimitz and the National Museum of the Pacific War plus many other tourist sites in this German orientated town, more about this later. Our hotel accommodation was at the local airfield, a World War Two styled building called the Hangar Hotel. Everything at this venue was themed on the 1940s but with twenty first century amenities. Looking around the airfield I could not find the control tower, only to be informed that it was monitored by the airport at San Antonio, which is about 68 miles to the south as the crow flies. Next day we started exploring the local sights which naturally had to include the National Museum of the Pacific War and the Admiral Nimitz Gallery, the latter located in building that Nimitz had lived in during his childhood. We spent three days in this area of Texas experiencing German cuisine, wineries and the pioneer Heritage Museum plus enjoy the warm winter climate, 75F to 80F each day.



Leaving Fredericksburg, we headed for the historic city of San Antonio (approximately 80 miles by road) staying in a late 19th century antebellum hotel on the edge of the city. From there we were able to walk along a tree lined river path to the main city attractions including the site of the Battle of the Alamo and to visit Spanish Roman Catholic missions that have been preserved in this area.



Above Left; A Grumman TBM Avenger at the National Museum of the Pacific War. Above Right; A Japanese Kawanishi NIK Kyofu, also at National Museum of the Pacific War.



Left; The Nimitz Museum in Fredericksburg, with the statue of Nimitz to greet visitors. Above Right; The Hangar Hotel in Fredericksburg.

Next day we drove out to the historic Stinson Field and aviation museum. The airfield was established in 1915 with 500 acres leased from the city of San Antonio offering instruction to U.S. and Canadian military pilots. After the ban of civilian flights during World War 1 Stinson Field became the City's civil airport in 1918.



Above; Two exhibits at Stinson Field. (Left) an Eichmann Aerobat III and a Northrop F-89 Scorpion fuselage (Right)

In the 1930s Charles Lindbergh kept an airplane here and flew out of Stinson whilst he was stationed at the nearby Brooks Field Air Force Base. Commercial airlines began using the airport until the outbreak of World War 2 when again it became an army air corps training facility and currently Stinson is the primary general aviation for the City of Antonio. The museum at Stinson houses many different types in various states of preservation.

Whilst in San Antonio we visited the tourist information office and were advised that the aviation museum at Lacklands Air Force Base (8 miles west of San Antonio) was open to the public, so we journeyed out to the base only to be informed that you had to be invited onto the base by someone who was stationed at the facility, but after lengthy negotiations involving both the military and local police, I was able to take photos through the fence for one hour without being arrested!

Right; Our hotel in San Antonio, and Below at Lackland AFB a Bell Kingcobra, & Lockheed P-38L Lightning.



Below Left; A Convair B-58 Hustler at Lacklands AFB, taken through the wire, after we were denied entry.

After three days in San Antonio, we drove back to Austin Airport (80 miles) for our return flight to Heathrow. Now it's your turn to relate one of your aviation holidays. Send your article to cas.editors2020@gmail.com for possible inclusion in the next magazine.

OUT OF THE ARCHIVES – FROM THE EDITOR



Above Left; A Dornier Do17Z, 'parked' in the back of a row of terraced houses during the Battle of Britain, at an unknown location. Above Right a line up of new types for inspection at RAF Northolt on the 22nd May 1939. Can you spot the aircraft that wasn't new in 1939 or even in 1918 for that matter?



Above Lincoln RF432, possibly in the late 1960s in RAF markings, after service with Napier & Son Ltd & Cranfield

Dear John, many thanks for your e-mail and a copy of your very interesting article in Airwords, a PDF copy of which will be for our digital archive. It may push me to write a piece about all the Lincolns at Napier Luton (I'll give Chiltern Aviation Society a mention). Anyway, we are happy to help you with your research. Putting my Trust archivist hat on, I should mention that I have just finished scanning over 3,000 original negatives from Napier Luton. Naturally there are plenty of shots of the Lincoln and none have been published. To feed in some information from what I have been able to



research I can provide the following: The first image we have of RF342 was taken on 22nd January 1958, so Napier & Son did not have it in 1948, as some sources on the internet suggest. The Lincoln was registered G-APRJ by April 1959 where I have images of the Caravelle tail section mounted on it for testing (*see photo left*). In May 1960 it was fitted with an AW Argosy AW650 test section and by August 1960 had a Buccaneer NA.39 tail section fitted and removed 2.5.61. The final image I have of it was taken on 19th July 1961 on the ground with its water spray jets in operation and dwarfing Gyroplane G-19-3 next to it!

Left; RF342 with Caravelle test crew and with Mr. Crownie of Aeroplane Magazine (far left)

I am working on a book featuring this image collection and a series of essays written by the Luton staff from which I have extracted a few pertinent notes:

We began with the 'Britannia' hot gas wing system, and continued for the 'Comet' and the 'Beverley'. It was Spraymat for the A.W. 660 and 'Argosy', while the Avro 748 had rubber boots (with a long story to tell), and the 'Buccaneer' made use of slit-blowing. For each programme there was new installation work and new test instrumentation.

All this carried us through the review period and to the time when there was a second Lincoln similarly equipped with a water spray, and commissioned by the Ministry for pure research work into icing problems. It was all very interesting, if mainly straight-and-level stuff, with the sun in the right quarter. So much so that, having reached Spain on one occasion, Ken said that if we did not turn back soon, we would end up in the drink. Ton Lampitt was particularly involved, while Harry Partington probably did a hundred hours in the Eland Varsity.



Above Right; RF432 testing the icing equipment while stationary. Note the Napier G-29-3 Agricopter (autogiro) parked beside the Lincoln. It crashed on 23rd July 1961. Also note the rails used to 'slide' the Lincoln into the hangar sideways.

No doubt now as to our reputation, it would be acknowledged with the several Icing Conferences soon to follow. The two Lincolns were flown on anti-icing and de-icing trials for various customers and with different aerofoil sections. I was a little involved in the ground handling of these aircraft and well remember priming the engines for a start in the wheel bays of the aircraft, using a Ky-gas starting pump. The Lincolns had large balloon type tyres which meant they could use the grass of Luton Airport. A ground handling problem with the Lincoln was that we had to put the main wheels on a couple of metal skids which had wheels on (as shown above and below), and these wheels ran on two railway type lines which went the length of the hangar. The aircraft was then pulled sideways into the hangar, whereas most aircraft would have been pulled directly into the hangar. Which leads to another story. Having been asked how many aircraft would fit into the hangar, presumably so that all could be worked under the same roof, the hangar management made a scale drawing of the hangar and of the types to be hangered. After days of discussion and juggling of the models, it was found that they could all be made to fit. There was only one problem. One needed to take the hangar roof off (temporarily) to implement the plan!



The Eland flying at Luton was finished, although sane power plants had been built in support of the American venture. The Canberras too had all flown away leaving us with only the two Lincolns and they were Ministry property. So, what to do? Fortunately, there remained considerable good will for us at the Ministry, and the Management were able to negotiate the purchase of both Lincoln aircraft at a reasonable price. Spraymat success, they knew, had stemmed from flight evaluation - and there were competitors - so that a good test facility could give us an edge. Perhaps it was not quite like that, but Lincoln RF342 became G-APRJ, while RF402 was broken up for spares. The capability of our 'Napier Icing Research' aircraft, to be flown now under civil registration, was well proven and it remained to find the customers. Fortunately, we had the man to do the job.

Alan Richardson may not have been much of a metallurgist, but he was an ace salesman. So much so that by April we were airborne with a test section of the Sud Aviation 'Caravelle' starboard wing. We flew sections representing both wings and tail, and our reports gained for Sud full icing approval. It was something to stand us in good stead in the time for 'Concorde'. Next in line was the Avro 748, which was equipped with Goodrich pulsating rubber boots manufactured in England by Messrs B.T.R. Here then was the need for impartiality, although that proved difficult when early tests showed the arrangement applicable to the port outboard wing section to be ineffective. The pulsating boot principle of de-icing relied on the deflating stage to throw off any ice.

Unfortunately, because of the small leading-edge radius, there was insufficient expansion and contraction to achieve this. The bad news was hard to take, but improvements were made and a limited icing clearance obtained. What came next was totally different. The 'Buccaneer' used 'slit-blowing' just aft of the aerofoil leading edge for boundary layer control. And since the air came from an engine off-take it was hot, and might be expected to provide ice protection as a bonus. Indeed, that was what we found with a starboard half tailplane section. It was good news for Blackburn at Brough, and obtaining full military approval. What intrigues me now is that 'Bert' was still in on the act, for he too had gained a reputation as an icing expert and was on loan from the A.R.B. to the Ministry of Supply.



Left; Blackburn Buccaneer NA39 tail section 30th Aug 1960. Right; Caravelle test section and spray mast, 10th July 1959



Above Left: RF342 with SE210 Caravelle section on 16th Apr 1959. Above Right; a David Brown tractor ready to tow Lincoln RF342 at Luton. Note the aerofoil mounted on top of the fuselage ready for testing.

OTHER LINCOLNS

Of course, your e-mail has digressed me from all my plans this evening and I now realise (as mentioned above) that the Flight Research Establishment had several Lincolns. The first of was RF530 which arrived on 21st October 1946. This was used to test a Napier Naiad engine in its nose.

Lincoln RA643 arrived in November 1947 to be fitted with a Bristol Phoebus test engine fitted in the bomb bay.

RF402 had arrived by July 1948 and initially modified with a Napier Naiad fitted in the nose and spray water test boom (see photo right). Later it had a fuselage mounted de-icing test system similar to that on RF432 (Sept 1956 for the Beverley and July 1957 Comet)

In September 1951 Lincoln SX973 was fitted with a Napier Nomad engine and I have a couple of images of it in flight with the Nomad running. Also, Avro Lancaster ND784 with test airscrew Mamba engine in the nose was also flown by the Napier Chief Test Pilot (Mike Randrupp).

We flew SX973 (seen below) up to 20,000 feet or more. We flew it happily on the Nomad alone, with all Merlins feathered. We were airborne for two and a half hours or more at a time and we had no trouble. One might write a chapter on the likely problems, and sane might well have developed. But, for those of us not aware of the latest requirements of Coastal Command, the Nomad cancellation came as a surprise, and a considerable disappointment.

Avro Lincoln, RF402, was flown up to 30,000 feet, or similar such height, until the ailerons ceased to function. It was happily not the day when Stan Froy thought fit to proceed aft to the Elsan facility without oxygen, and had to be rescued. The main spar on all the Lincolns was a real obstacle between those up in front and the Observers at the Test Instrument panel in the rear. On a day that we carried a reporter from the 'Flight' magazine, the chap did not get far away from the closet but he wrote an excellent article. Also, and long before the days of Lucas Aerospace, we installed and tested in the Lincoln, the Lucas 2 and 4 Therm combustion heaters, as were being used for space heating and wing ice protection on the 'Beverley'. Frank Lester had for long become F.S.L. or 'John' or 'Fizzle' and he and I were well received at Burnley. The names escape me now, but we had some happy times at Burnley, making good friends with one of their Directors, and we succeeding with the flight test programme that was to perfect the heater re-light capabilities and performance at altitude, with varying aircraft attitudes and air intake configurations. It was perhaps why we were once up at 30,000 feet. Our website is www.npht.org if anyone fancies a look or has information to add on Napier & Son



Above; SX973 fitted with a Napier Nomad diesel turbo-compound installed in the nose. Above Right; Avro Lincoln RA643 arrived in November 1947 to be fitted with a Bristol Phoebus test engine fitted in a modified bomb bay.

THE CONVAIR B-36 ‘PEACEMAKER’ – BY BOB CHAD

Inspired by a visit to The National Museum of The United States Air Force, Dayton Ohio



For me a key interest, spawned from early plastic kits, was the massive B-36 bomber. I had a small model of the B-52. (I didn't understand at the time that it was of the prototype XB-52) and a friend had the B-36 to the same scale. It seemed at the time much more interesting with its array of ten engines and very large wings. In more recent times I knew there was a B-36 at The National Museum of The United States Air Force (Herein the USAF Museum) and went with my brother (as recounted in July – August 2020 issue of Airwords). On our first day as we headed towards our first 'target', the Valkyrie, I came 'face to face' with the giant! Here I had my first museum picture taken. On the upper floor between hanger 4 and 3 along with the "Refuelling" café there is balcony that gives a panoramic view over the 'Cold War' gallery aircraft (hanger 3) from which I was able to take some more photos trying to show the size of the B-36. I mentioned to John Roach that I was interested in the B-36 to which he very kindly sent me some of his pictures taken when he visited the Pima Air and Space Museum. I include one here. It is rare to find the space to get the whole aircraft in one shot!

Convair B-36 ‘Peacemaker’ – The Genesis

During the early phase of WW2, the rapid German advance across Europe caused the USA government to be concerned that Britain might also be overrun. In that case, if the USA was drawn into a war with Germany, it would be necessary to have intercontinental strike capability. The Boeing B-29 bomber was under development but it would not have the range to reach Germany and return to a US base. By 1941 (before the USA entered the war) the air force issued a requirement, to Boeing, Consolidated Vultee and later to Northrop, for investigations into a bomber with intercontinental range of 12,000 miles carrying weapons of 10,000 lb, a service ceiling of 45,000 ft and top speed of 450 mph with requested cruise of 275 mph.



In-flight refuelling would be some time away so the specification implied a lot of fuel resulting in a large wing. It was soon clear that the issued specification target was beyond the technology of the time so by August 1941 the numbers were reduced becoming a combat range of 4,000 miles and cruise speed of 240 mph. Boeing left the competition while Northrop designed the very futuristic XB-35 flying wing and Consolidated Vultee (later become Convair) stayed conventional with their XB-36. Both companies received prototype contracts in December 1941. In principle the Northrop flying wing would be much more efficient, able to go further, faster and cheaper. However, problems with the propulsion system and other technical issues eventually put the XB-35 out of the competition although airframes were retained for research, sometime later assisting with the jet powered XB-45. As the likelihood of German invasion of Britain diminished the emphasis became the production of the B-24 Liberator so work on the XB-36 bomber became delayed. Further delays followed as the project moved site and the design was modified. Then by 1943 as war in the Pacific progressed the USAAF wanted a bomber that could strike Japan from Hawaii so pushed to speed up the B-36 program by submitting a letter of intent for the production order of 100 B-36 bombers before completion of prototype testing. First delivery to the USAAF was to be August 1945. However, delays as the aircraft companies merged to become Convair led to August only producing the roll-out of the XB-36 from the Convair Fort Worth facility, adjacent to Carswell air force base. The first flight then did not take place until a year later on 8 August 1946. (Left; XB-36 taking-off)



What a giant the aircraft was; 163 ft long with a massive wing spanning 230 ft and a gross weight of 265,000 lb (twice the weight of the B-29) without weapons and other equipment that would be fitted to service aircraft! Power was provided by six Pratt & Whitney R-4360 radial engines of 3,000 hp driving 'pusher' propellers. This rather unusual configuration had the advantage of preventing propeller turbulence spoiling over wing air flow. However, the engine was designed for the leading edge 'Tractor' propeller format so the carburettor system was mounted at the back to take advantage of the warm air flow that would normally be driven past the hot cylinders. The reversal of the engine position put the carburettor in the ambient air flow with the susceptibility to icing as the standard short term carburettor heating systems were inadequate. In cold and humid air flow ice could build up in the carburettor air intake causing an increase the richness of the air/fuel mixture. This could lead to a build-up of unburned fuel in the exhaust until it caught fire. Such engine fires would lead to some operational aircraft damage and loss.

Initial test flights of the prototype demonstrated a top speed of about 340 mph and a cruise speed of a little over 200 mph. Range was estimated to be about 3,800 miles and the four large bomb bays could allow a total weapon load of over 70,000 lbs. While the speed and range capabilities of this prototype were below specification, performance would improve through the aircraft development program. The classic photo shows the B-29, a giant of WWII, being dwarfed by the enormous XB-36! The huge 230 ft span wing led to the nickname 'Aluminum Overcast' ('Aluminum' in the US as they miss out an 'i') and would provide the aircraft with a remarkable high-altitude capability sufficient to evade the early jet fighters and be out of range of ground-based guns. An odd requirement from the air force was that part of the original design specification included the use of single wheels on the main landing gear (maybe it was not understood just how big the aircraft was going to be). The great weight of the aircraft then led to the production of the largest aircraft wheels up to that time. (Photo wheel and man). Produced by Goodyear, the wheels weighed in at 1,320 lb each, with a diameter of 110 inches and width of 36 inches. (An example is on display in the museum alongside the B-36) The resulting high pressure loading on the ground demonstrated by the XB-36 then meant that only three air force bases had runways of sufficient strength to operate the aircraft. The air force then required a redesign.

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A very novel approach using a 'caterpillar track' main landing gear was then designed and tested (*see photo below*) but it proved unsatisfactory. The excepted design became a four wheel 'bogie' main landing gear (common today but new at the time) that reduced the landing gear weight by 1,500 lb.



The next aircraft to join the program were the YB-36 service test model and the B-36A initial production model. Twenty-two B-36A's were ordered with the first flying on 28 August 1947 from Fort Worth to Wright Field for the aircraft to be stress tested to destruction. The first flight of the YB-36 followed six months later in December initially fitted with the single large wheel under carriage but later refitted with the four-wheel bogies that became standard for all B-36 aircraft. Both the YB-36 and B-36A were built to essentially the same specification that included a defensive armament system comprising a mixture of machine guns and cannons but none were actually fitted with any defensive system. A key difference from the prototype XB-36 was the fitting of a new domed cockpit canopy which had to be developed to withstand the high-pressure difference between the low atmospheric pressure at high altitude and the pressurised crew compartments. This feature became standard for all the air force B-36's. Delivery of the B-36A's to the air force began in 1948 and they joined the 7th Bomb Group at Carswell air base to be used for training only.

The demonstrated speed capability of these early versions was still about 340 mph with cruise of about 200 mph. This was less than hoped for and became a concern. As an option to increase the aircraft speed a new version of the R-4360 engine with what was called a Variable Discharge Turbine (VDT) was considered. This engine would use the exhaust from a turbo-supercharger to produce some 'jet thrust' so boosting the aircraft speed. It would be then necessary to turn the engines around moving the propellers from being 'pusher' on the wing trailing edge to 'tractor' type on the wing leading edge. The estimated achievable speed increase was about 30 mph. This benefit was considered useful so in late 1947 an order for 34 aircraft was placed and the version would be designated as B-36C. However, problems with engine development led to the order being cancelled.



The first 'combat ready' aircraft was the B-36B which first flew on 8th July 1948, soon after the 'United States Army Air Force' became the 'United States Air Force, (USAF). Gross weight capability now increased to about 328,000 lb with a maximum bomb load of about 70,000 lb included and the full combat equipment installed. New equipment included a range of new defensive and offensive avionics, up-graded R-4360 engines, each adding an output power increase of 500 hp so raising the maximum speed to about 360 mph, and a suite of defensive guns. The aircraft then required a crew of fifteen. The defensive armament consisted of 16 20mm cannons employed in remotely controlled turrets. Four twin gun retractable turrets were fitted in the top of the fuselage and two beneath with a non-retractable twin gun turret in the nose and tail.

While a single turret from the fuselage is on display in the museum, they actually acted in pairs with one of each pair covering the port side and the other starboard. Retracting the turrets reduces the drag so they are rarely seen but the USAF photo here shows the underside pair during servicing. Seventy-three B-36B's were ordered and began to join the 7th Bomb Group at Carswell during 1948. During their operational training program practice missions included a round trip from Carswell to Hawaii with an average cruising speed of about 230 mph that lasted about 35 hours! The mission set a duration record but the low speed was still a concern. As Convair was working on the B-36, Boeing was developing the B-47 all jet medium bomber using the concept of podded engines hung under the wings. This idea was then taken up for the B-36 by adding a pair of jet engines under the outer portion of each wing. This feature was first installed on the B-36D and, with its first flight taking place on 11 July 1949, nudged the B-36 into the jet age. Top speed was now raised from about 340 mph to about 400 mph and the jets significantly improved its take-off performance. Twenty-two of the 'D' version were ordered and most of the earlier model 'B' aircraft (about 64) were also retro-fitted with the extra engines and became 'D' models. Now with ten engines as standard, more than any other mass-produced aircraft, the phrase '*Six turnin and four burnin*' became a common aircrew comment associated with the B-36.

The internal layout of the B-36 consisted of a pressurised nose section housing the commander, pilot, navigator, radio operator, radar observer, flight engineer, bombardier and gunners, linked by a pressurised tunnel (about 80 ft long) through the bomb bays to a pressurised section in the tail. Transit through the tunnel was on a wheeled trolley. The rear section included the stations for tail gunner, ECM and radar observers, a dining galley and a crew rest area with six bunks on an upper level above the working stations. The huge size of the aircraft presented a significant challenge for loading bombs into the bomb bays. From the ground the bombs had to be raised 17 ft to the internal bomb shackles and the standard techniques of a hand cranked hoist and cables were considered unsafe for the task. A solution was found for loading standard conventional bombs in the form of the K-3 self-powered weapons loader (under refurbishment USAF photo). As the B-36 entered the role of nuclear deterrence specialist modifications would be under taken at Kirtland AFB to cope with the complexity of the early nuclear bombs as at the time of the B-36 design such weapons did not exist. Even more complexity would arrive as the 'H-Bomb' also became a reality.



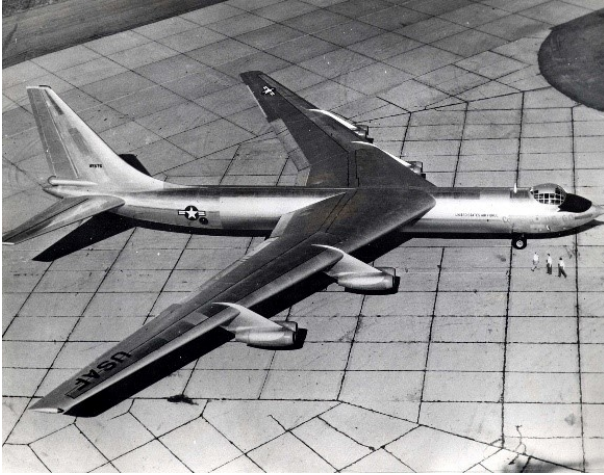
Further Developments

The high-altitude capability of the B-36 soon led to a reconnaissance version and December of 1949 saw the first flight of the RB-36D with service deliveries beginning in mid-1950 and operational status was reached during 1951. Developments in aviation technologies continued to be applied to the B-36 at such a pace that almost as soon as one new designation batch was being introduced another was being prepared. There was also a continuous program of 'up-upgrades' to early models in addition to some new builds. For example, the 'Y' and 'A' models (22 aircraft) were up-upgraded to the RB-36D level but were designated RB-36E. The next model followed improvements to the electronics, including improved radar bombing and defensive fire control systems, and engines that added about 10 mph to the speed, leading to the 'F' designation. Also included were some additional structural improvements, that increasing the maximum bomb load to 86,000 lb! Thirty-four of the bombers, (B-36F) were ordered into service along with 24 of the reconnaissance versions (RB-36F). During mid-1950s ten RB-36D's were modified to carry an RF-84F as a 'Parasite' aircraft.

Nearly an All-Jet B-36 – The 'G'

In late 1945, before the XB-36 had flown, the Air Materiel Command issued a requirement specification for a new intercontinental range bomber effectively to replace the B-36. In June 1946 Boeing had won the contract based on its submission of a turbo-prop powered aircraft. Over the next few years, the development program and specification changed many times. In the mist of all these changes, early in 1951 Convair received a contract to convert two B-36Fs into an all-jet version of the B-36 that initially received the 'G' designation.





This put Convair into the competition for the B-36 replacement. A great deal of engineering changes were required, so the designation was changed to YB-60. The most important changes were to produce a new swept wing with four pairs of jet engines in under wing pods, similar to the Boeing B-52. The first flight of the YB-60 occurred on the 18 April 1952. Its performance was much better than the B-36 with a top speed of about 510 mph and cruise of 435 mph, but it was not as good as the XB-52 (top speed 610 mph, cruise 525 mph) so Boeing won the production contract. (Photo XB-52 taxis past B-36) Convair then considered a double deck airliner using the wing of the YB-60 but the project was not proceeded with so inevitably later the YB-60 was scrapped. However, by this time Convair was working on what would become the supersonic B-58 so they would still be in the bomber business!

Continual Improvements

The next set of improvements included the addition of a second flight engineer, relocation of the electronic equipment into the pressurised portion at the rear of the aircraft to allow for in-flight troubleshooting and repair. This required the removal of the crew's rest bunks. In addition, an improved fire control radar system for the tail turret was introduced that added extra radomes. This became the 'H' model that took its first flight on 5th April 1952 and deliveries were complete during September 1953. Some earlier versions were converted to the 'H' specification so with new builds a total of 83 H versions were added to the inventory. Naturally there was a reconnaissance version (RB-36H) and with conversion of some earlier models their number reached 73. More changes led to the 'J' model that became the final service type of B-36. Key improvements included extra fuel cells in the outboard wing sections to increase endurance and changes to the undercarriage structures that allowed an increase in the maximum gross weight to 410,000 lb which was an increase of 50,000 lb over the 'H' model. A mixture of new builds and conversions of preceding models provided 33 'J' models as production ceased in 1954.

In addition to the continual aircraft systems improvements that led to the designation changes of 'A' to 'J' a program of weight reduction was also introduced known as the "Featherweight" design program. The program was undertaken in stages, labelled 'I', 'II', 'III' that gradually removed lower priority items. This included removal of the 'Parasite' fighter equipment at the end of that program and the crew 'comfort' area in the rear pressurised compartment (for the aircraft that still had that facility). It probably did not go down well with the crew on the regular long missions! The major gain was the removal of all the defence armament except for the rear gun turret with the corresponding reduction in crew. The combination of the weight reduction along with the continuous system improvements led to better overall performance the most important aspect of which was the increasing high-altitude capability.

From the initial operating altitude of about 42,000 ft the capability increased to more than 50,000 ft. Improvements to defence radars and fighters by the mid-1950s meant that the RB-36's missions became limited to flying outside the USSR borders. Penetration flights were then taken over by the reconnaissance versions of the new all-jet Boeing B-47 'Stratojet'. As the reconnaissance role diminished many of the RB-36s were returned to the bomber role while still keeping elements of the reconnaissance equipment.

A 'Last Fling'

In December 1955 North American Aviation received acceptance of their proposal for a hypersonic research plane, the X-15. The B-36 then had a slight connection with the program as it was initially proposed as the 'mother ship' able to carry and launch the proposed plane at high altitude. Initial design work for the process of loading the X-15 into the belly of the B-36 was undertaken following a similar pattern as the early rocket X-planes using a B-29/B-50 'mother ship'. (Sketch from Galeta air and space Museum.com) However by mid-1957 NASA directed that the B-52 take on the role. This was in essence because the B-36 was expected to be out of service by the time the X-15 (*right*) began flying and it would be difficult to maintain a lone B-36 through the test program.



The End of the B-36

Scrapping of the earlier models of B-36 began in 1956 and continued as they were replaced by B-52's. The B-36s were then flown to Davis-Monthan AFB in Arizona (Photo) where any useful items were removed and the bulk destroyed. A slight reprieve for B-36 occurred as the budget for the B-52 was cut back for the year 1958. The final retirement of the B-36 proceeded more slowly through 1958 as the Boeing B-52 took on the role of the USAF's premier heavy strategic bomber. Various numbers have been given to the total B-36 production and vary between less than 200 to 384 of which only 5 survive with 4 on display in museums and one in storage. Then on 30th April 1959 a B-36J flew from Davis-Monthan to Wright Field to become an exhibit in the USAF Museum and this marked the last flight of any B-36. Later when the USAF Museum was redeveloped with themed hangars, the B-36J became the first aircraft to be placed in the USAF Museum Hanger 3 'Cold War Gallery'. As you will see from the photo above, the B-36 needed some careful manoeuvring due to its size. It remains a star attraction in the museum and one of my personal favourites.



References – Thanks to the USAF for assistance with data and photos. Also, the National Museum of the USAF their exhibits, notes and the very friendly Staff & Volunteers, Wikipedia & also John Roach of CAS, for the heading photo

A NOTE FROM THE EDITOR

Firstly, an apology from me to Pat Cleary of U3A in Radcliffe on Trent, for not giving him proper credit for the BEA Vickers Viking photos in the last issue, (sent via Mike Seymour), also a big thank you for more on Page 30 and finally for this 1950s image of a Sikorsky S-51 helicopter at RAF Northolt. This S-51, registration G-AJOR was first registered to BEA in August 1947 and operated by them until sold in 1954 to Canada as CF-JTQ. BEA used it on flights all over the UK. The Sikorsky S-51 was also licence built by Westlands in Yeovil and an ex-FAA helicopter (WP495) was painted in BEA makings as G-AJOV in 1980 and is on display at the RAF Museum Cosford.



The airfield is still recognisable, as many older buildings remain, but there has since been a new passenger terminal built in the background and new hangars built, near where the left-hand tower is seen in the back ground of this photo. On the horizon is Sharvel Lane and Charville Lane (evidently connected bar the spelling) running along the ridge in Yeading. The Lane was the site of the crash on 27th September 1920, of a Central Centaur IIA joyriding six-seater twin engined aircraft, G-EAPG, with the loss of six lives. This ended the aircraft's development and also the Central Aircraft Company Limited too. Sharvel Lane / Charville Lane is the very ancient road from London, via the higher ground towards Oxford and beyond, and pre-dates the Roman period, possibly back to the Neolithic period. (LPH)



FEEDBACK ON THE CRASH OF B-17G FORTRESS, 42-107191, CALLED 'THE TOMAHAWK WARRIOR'

In the March - April issue of *Airwords*, Paul Kendall, kindly wrote the story of the above-mentioned B-17 that crashed near to his home in 1944 (in fields over the road from The Royal Standard pub in Forty Green, Beaconsfield built circa 1090!) Being the Editor of *Airwords*, my work often involves searching for a photo or two to accompany articles and in doing so, I found a photo of *The Tomahawk Warrior* which then turned out to be another B-17G and further investigation found the following comment from the American Air Museum in Britain.

For the last 74 years, this aircraft has widely been reported as having the nickname "The Tomahawk Warrior", in contemporary records, most likely due to the original aircraft named and flown across from the USA (Rapid City), to Nuthampstead, England. Recently discovered records from the Late George Schatz, who was bombardier on 42-107191, on at least 14 documented occasions, strongly suggest the aircraft was in fact called "Peggy", named after the wife of the aircraft Captain; Lt Ken Elwood. It is believed that the name "Peggy" was painted in red on the port side of the nose (under the Captains window). An image of a model which Lt Schatz built in 1999 accompanies this entry from his personal collection. This adds weight to the theory that 42-107191 was named "Peggy" and "The Tomahawk Warrior" is erroneous and attributed to the USAAF crash crews' earlier association with that aircraft. It has also been suggested from a photo (below right) that The Tomahawk Warrior was actually 42-97267.



Above, the model B-17G 42-107191 made by George Schatz, and right the other Tomahawk Warrior

Well, as you can imagine, my suggestion to Paul, that he was wrong and it was a B-17G called *Peggy* that crashed near his home, had him in a bit of a quandary, as so much effort has gone into honouring *The Tomahawk Warrior*. Paul therefore decided to consult with the Air Britain Information Exchange (IX) and this has provided a variety of feedback.

Dear Paul, living in Beaconsfield, I often walk country footpaths past Lude Farm, so the crash site and story is obviously of interest. During lockdown 1, I started undertaking some internet research and soon discovered that there is a forthcoming book on the subject which is due to be published later this year. I have been in touch with author David E Huntley who lives in Dallas, and his book seems to be a labour of love as he saw the B-17 pass low over Loudwater before crashing shortly afterwards. He was 8 years old at the time and cycled to the crash scene which obviously left an indelible memory and hence his research. He organised a visit by family members of the crew in late 2019, which was hosted by Lord Howe and Countess Howe at Penn House, so he is certainly keeping the memory alive. His research also uncovered the war diary of the B-17's navigator which he returned to the family at the event. David's website is: -

http://deathwatchbeetle.net/bomber_crash_1944.html

I believe there were two Tomahawk Warriors. Firstly 42-97267, which I surmise is the aircraft that the Searl crew delivered across the Atlantic which was immediately transferred to 535 BS at Ridgewell in Essex. I imagine that when they were assigned 42-107191 at Nuthampstead they also named it after Searl's home town. This aircraft was then mostly used by another Crew (Ken Elwood's) who flew their last mission on 8th August 1944 with Charles Searl taking it over again for the 12th August mission to Villacoublay. However, these questions and others I am assured by the author will be answered upon publication of the book.

In the 398th Bomb Group Memorial Association archives, the Bombardier of the Ken Elwood crew, refers to their mount as the "The Tomahawk Warrior" and 42-107191, so this casts some doubt as to the "Peggy" name. Please have a look at the following: - https://www.398th.org/History/Veterans/History/Schatz_Elwood.html Trevor Bartlett, (AB 20741)

Dear Paul, checking three second-hand sources, Roger Freeman/David Osborne: *The B-17 Flying Fortress Story*. Wallace Forman: *B-17 Nose Art - name directory*, Stan Bishop/John Hey: *Losses of the US 8th and 9th Air Forces Vol 4*, all state the name was *The Tomahawk Warrior*. There is no known photo of the aircraft, as far as I know, but as I see it, the aircraft could also have carried the name *Peggy*, for example under the cockpit where he sat. Some aircraft carried true double names as well, one on the port and another on the starboard side. Stig Jarlevik, (AB 09564).

Dear Paul, there was an article on this particular crash by Chiltern Historical Aircraft Research Group's Peter Halliday in the UK magazine "Wingspan" (originally "Planes") for September 1995 (issue number 127). No photos of this particular plane, but again the name is stated as *The Tomahawk Warrior*. Some pictures of the crew, and the final resting place, for most of them is at Arlington National Cemetery, USA. Chris Semmens (AB 14790)

In the original article I did not have space to name the crew in the crew photo so here is a list of names

Back Row, (viewer's left to right): 2nd Lt. Leo C. **Walsh**, Bombardier, 2nd Lt. Albert L. **Dion**, Co-Pilot, 2nd Lt. Charles J. **Searl**, Pilot, 2nd Lt. Saul J. **Kempner**, Navigator.

Front Row, (viewer's left to right): Sgt. Orville M **Wilson**, Waist Gunner, S/Sgt. James A **Beaty**, Engineer, Sgt. Alfred **Bueffel**, Ball Turret, Sgt. Albert W. **Knight**, Waist Gunner, Sgt. Cecil E. **Kennedy**, Radio Operator.

Front Row, (first on the right) Sgt. F.A. **Snyder**, Tail Gunner. Just before take-off, as the tenth member of the crew he stepped down from the flight. No one is sure why. All that is known of him is he was returned to America and so survived the war. No trace of him for re-unions etc has been found.



Regarding S/Sgt. James A Beaty, on the crash report he is listed as **HEATY** by mistake.

Charles Searl's last letter home (via David E. Huntley)

Dearest Arlie

I guess I'm rather morbid, but I figure I should write you one last letter. There is a chance that I may not come back & if I don't, I'd want to say a few things. Something like if I were there when you receive my few personal belongings. My happiest days were with you and Charlene. All the beer in the world could never take the hurt out of my heart when you and she are not near me. I don't feel that any of my sacrifice are so great as that of being parted from you & Charlene. I have loved you from the first time I met you, I believe, & I still love you even deeper than I ever thought I could love anyone. Charlene means the world to me & in spite of the pleasure I gain from your companionship & love, I couldn't be any place else, but where I am. If things seem bad, bear up & the sun will shine. I hope you will never receive this letter, but if you do, realize that I may be back, and if I don't come back, I'll always be with you, & I haven't failed in life completely. Charlene is part of me & part of you. If I go down it will be for a good cause & I hope your life is happy.



I love you,
Charles.

OUT OF THE ARCHIVES - WTH SPECIAL THANKS TO PAT CLEARY

These photos come from Pat Cleary, whose father served in the RAF pre-war and WW2, took these photos. As far as Pat is aware, they have never been published before, for which the Editors are very grateful.



Above Left; Avro 621 Tutor, K3278, of the Cambridge University Air Squadron RAF. Above Right; A Gloster Gauntlet '2' Mk II, K5280 at Hendon. It served with many units from delivery on 28th April 1936 until used for instruction in WW2



Above Left; A Handley Page HP.38 Heyford Mk IA of an unknown Sqn. Above Right; Fairey Hendon Mk II, K5093, of No 38 Sqn at RAF Marham in 1938.



Above Left; DH.60 Gipsy Moth, K1200, in India in 1930s. Above Right; Boulton & Paul P.75 Overstrand, K4551 'C' of 101 Sqn, at RAF Bicester in 1936. The Overstrand was the first RAF aircraft type to have a power operated turret.

HISTORIC AVIATION NEWS FOR MAY AND JUNE 1971, 1981 & 1991 BY JOHN ROACH

1971

May 20 – Boeing announces that it has cancelled its Supersonic Transport (SST) project.

May 23 – Aviogenex Flight 130, a chartered Tupolev Tu-134A (registration YU-AHZ) carrying British vacationers from London's Gatwick Airport, crashes while landing in heavy rain at Rijeka Airport in Rijeka, Yugoslavia, losing its right wing and coming to rest upside down; a fire breaks out and burns the plane out. The crash kills 78 people of the 83 people on board.

May 24 – Flight testing of the Grumman F-14 Tomcat resumes after the December 30, 1970, crash of the first prototype.

May 28 – First flight of the Dassault Mercure (registration F-WTCC)

May 28 -- World War II hero and movie star Audie Murphy is among five people killed in the crash of an Aero Commander 680 (registration N601JJ) flying in heavy thunderstorms over mountainous terrain near Catawba, Virginia.

June The last United States Marine Corps helicopters depart Vietnam.

June 6 – Hughes Airwest Flight 706, a McDonnell Douglas DC-9-31 (registration N9345), and a United States Marine Corps McDonnell Douglas F-4B-18-MC Phantom II (serial 151458) of Marine Fighter Attack Squadron 323 (VMFA-323) collide over the San Gabriel Mountains near Duarte, California. Both aircraft crash, killing all 49 people on board the DC-9 and one of the two men in the F-4B.

June 18 – Southwest Airlines begins scheduled service with flights from Dallas Love Field to Houston and San Antonio. The airline obtained an air operator's certificate from the State of Texas in February 1968 but had spent 3 years overcoming lawsuits challenging the certificate's validity.

1981

May 1 – American Airlines launches AAdvantage, the world's second airline frequent-flyer program and the first since Texas International Airlines introduced the world's first one in 1979.

May 2 – A 55-year-old Australian man, Laurence James Downey, enters a lavatory aboard Aer Lingus Flight 164, a Boeing 737-200 with 107 other people on board, five minutes before landing at London Heathrow Airport in London, England, douses himself with petrol, and walks into the cockpit with a cigarette lighter in his hand. He demands that the airliner fly to Iran, then specifies France when the flight crew tells him that the aircraft lacks the fuel to fly to Iran. The plane lands at Le Touquet – Côte d'Opale Airport in Le Touquet, France, where Downey demands that Pope John Paul II make public the Third Secret of Fatima. After 10 hours, French police storm the plane and arrest Downey without injury to anyone.

May 6 -- The world's first aircraft with a phased array radar – the Soviet Union's Mikoyan MiG-31 (NATO reporting name "Foxhound") – enters service with the Soviet Air Defence Forces.

May 6 -- A United States Air Force Boeing EC-135N (serial 61-0328) flying at an altitude of 29,000 feet (8,839 meters) pitches over into a dive, suffers an explosion at an altitude of 1,500 feet disintegrates, and crashes north-northeast of Walkersville, Maryland, killing all 21 people on board.

May 7 – On approach to Aeroparque Jorge Newbery in Buenos Aires, Argentina, Austral Líneas Aéreas Flight 901, a BAC One-Eleven 529FR (registration LV-LOX), enters a violent thunderstorm and crashes into the Río de la Plata 9.4 miles east-southeast of the airport, killing all 31 people on board.

May 8 – United Airlines launches its Mileage Plus frequent-flyer program.

May 9 – After modifications, the British aircraft carrier HMS Hermes re-enters service with the Royal Navy as the world's first carrier with a ski-jump ramp. Royal Navy Lieutenant Commander D. R. Taylor had developed the ramp.

May 20 – An Aero León Convair CV-440-11 (registration XA-HEK) crashes into Mexico's Pinarete Mountain at an altitude of 8,867 feet (2,703 meters), killing all 24 people on board.

May 21 – Iraqi Air Force aircraft make a missile attack on the Panamanian bulk carrier Louise I in the Persian Gulf outside the Iranian port of Bandar-e Emam Khomeyni, slightly damaging her.

May 22 -- American film director Boris Sagal is partially decapitated during the filming of the mini-series World War III when he turns the wrong way while disembarking from a Bell 206B (registration N58004) in the parking lot of the Timberline Lodge on the south side of Mount Hood in Oregon and walks into the helicopter's tail rotor. He dies five hours later.

May 22 -- A TAME de Havilland Canada DHC-6 Twin Otter 300 (registration HC-BAX) crashes into the side of a mountain near Zumba, Ecuador, killing all 18 people on board.

May 24 – An Ecuadorian Air Force Beechcraft Super King Air (serial FAE-723) carrying President of Ecuador Jaime Roldós Aguilera, Ecuadorian Minister of Defence Marco Subía Martínez, their wives, and five other people crashes into the mountain Huairapungo near Macará, Ecuador, killing everyone on board. The crash is attributed to various possible causes, including pilot error, overloading of the aircraft with cargo, and an assassination of Roldós by the United States Government.

May 26 – A United States Marine Corps Grumman EA-6B Prowler of Marine Tactical Electronic Warfare Squadron 2 (VMAQ-2) assigned to Carrier Air Wing 8 (CAW-8) crashes on the flight deck of the United States Navy aircraft carrier USS Nimitz (CVN-68) in the Atlantic Ocean off the coast of Florida. The resulting explosion and fire kills 14 men, injures another 45, destroys two F-14 Tomcats, and damages three F-14s, nine LTV A-7 Corsair IIs, three S-3A Vikings, a Grumman A-6 Intruder, and a Sikorsky SH-3 Sea King. Although none of the dead who tested positive for illegal drug use contributed to the crash, a U.S. Navy inquiry blames the accident on drug use by the enlisted men of the flight deck crew and prompts President Ronald Reagan to promulgate a "zero-tolerance policy" for drug abuse in the United States armed forces that creates the program in place ever since of mandatory, routine, random, universal testing of U.S. military personnel for the use of illegal drugs.

May 29 – An Egyptian Air Force Lockheed C-130H Hercules (serial SU-BAH/1276) crashes near Cairo, Egypt, killing all 17 people on board.

June 1 – First flight of the Shorts 360 (registration G-ROOM) and was later destroyed by a bomb at Belfast on 27 November 1989

June 7 – In Operation Opera, eight Israeli Air Force F-16 Fighting Falcons armed with two 2,000-pound bombs each, escorted by six F-15 Eagles, make a long-range strike into Iraq to destroy the nuclear reactor at Osirak. French technician and a number of Iraqis are killed. It is the first time any air force uses the F-16 in combat.

June 13 – Several Islamic Republic of Iran Air Force F-4 Phantom II fighter-bombers overfly Kuwait, apparently to warn Kuwait to reduce its support for Iraq in the Iran–Iraq War, and Kuwaiti air defences fire at them.

June 14 – Diverting from Nizhneangarsk after Nizhneangarsk Airport closes due to bad weather, Aeroflot Flight 498, an Ilyushin Il-14M (registration CCCP-41838) diverts to Ust-Barguzin in the Soviet Union's Russian Soviet Federated Socialist Republic. On descent to Ust-Barguzin, it crashes into a mountain on the Svyatoi Nos Peninsula on the east coast of the Lake Baikal at an altitude of 4,265 feet about 18.8 miles east of Ust-Barguzin's airfield, killing all 48 people on board.

June 18 – First flight of the F-117 Nighthawk (serial 79-10780)

June 26 – Dan-Air Flight 240, a Hawker Siddeley HS 748 series 2A cargo aircraft (registration G-ASPL), crashes near Nailstone, Leicestershire, England, killing the entire crew of three, after the failure of a cabin door causes a major structural failure.

1991

The Avro Shackleton was retired by the Royal Air Force also the Westland WG30 was prematurely retired from service in 1991 .

May -- Iraqi Airways, which has not flown since the Gulf War earlier in the year, attempts to resume service. The United Nations grants it permission to operate a domestic service only, and only using helicopters.

May 3 – After merging with Universair, Alisarda is renamed Meridiana.

May 10 – First flight of the Canadair CRJ 100 (registration C- FCRJ) and was destroyed during test flight on 26 July 1993 killing all three on board.

May 24–25 – Over a 36-hour period, Israel conducts Operation Solomon, a secret operation to airlift almost the entire Jewish population of Ethiopia 1,500 miles to Israel. The operation involves 35 aircraft – Israeli Air Force C-130 Hercules, El Al airliners, and a single Ethiopian airliner – making 40 flights, with 28 aircraft in the air simultaneously at one point overnight. Five babies are born aboard the planes during the flights. On May 24, an El Al Boeing 747 cargo plane participating in the operation sets the record for the largest number of people transported in one flight by any single aircraft of any type in history, carrying 1,087 people; three babies are born aboard the 747 during the flight.

May 26 – Minutes after take-off from Don Mueang International Airport in Bangkok, Thailand, a thrust reverser deploys in flight aboard Lauda Air Flight 004, the Boeing 767-3Z9ER (registration OE-LAV) named *Mozart*, causing it to stall, dive, and disintegrate at 4,000 feet. Its wreckage falls over a wide area in what is now Phu Toei National Park in Uthai Thani province, Thailand. All 223 people on board die.

May 31 – First of the Pilatus PC-12 (registration HB-FOA) was withdrawn from service after 644 flying hours in 1996.

June 14 – Julie Ann Gibson becomes the first woman to qualify as a pilot with the Royal Air Force.

June 17 – Alaska Airlines commences services to the Soviet Union.