

1: Boeing - Wikipedia

The sixth volume in the Legends of the Air Series, Boeing , Douglas DC-8 and Vickers VC10 studies in depth three pioneering long range jet airliners responsible for shrinking the globe, plus the military KC members of the Boeing , an aircraft which paved the way for Boeing's commercial airliner success.

Boeing had pointed the way to the modern all-metal airliner in with the , but Douglas, more than any other company, made commercial air travel a reality. When de Havilland flew the first jet airliner, the Comet , in , Douglas felt no need to rush into anything new. All three companies were working on a new generation of piston-engined designs, with an eye to turboprop conversion in the future. Initially it was a success, but it was grounded after several fatal crashes in and . The cause of the Comet crashes had nothing to do with jet engines; it was a rapid metal fatigue failure brought on by cycling the high stresses in corners of the near-square windows from pressurizing the cabin to high altitudes and back. The understanding of metal fatigue that the Comet investigation produced would play a vital part in the good safety record of later types like the DC In Douglas remained the most successful of the commercial aircraft manufacturers. They had almost orders on hand for the piston-engined DC-6 and its successor, the DC-7, which had yet to fly. Competition Edit Boeing took the bold step of starting to plan a pure-jet airliner in as early as . The B, in particular, had to descend from its cruising altitude and then slow almost to stall speed to work with the KC, even when the latter was augmented with jet engines to boost its speed. Believing that a requirement for a jet-powered tanker was a certainty, Boeing started work on a new jet aircraft for this role that could be adapted into an airliner. As an airliner it would have similar seating capacity to the Comet, but its swept wing would give it higher cruising speed and better range. First presented in as the Model C, Boeing failed to generate any interest at the airlines. Boeing remained convinced that the project was worthwhile, and decided to press ahead with a prototype, the " Dash ". Design Edit Douglas secretly began jet transport project definition studies in mid Douglas remained lukewarm about the jet airliner project, but believed that the Air Force tanker contract would go to two companies for two different aircraft, as several USAF transport contracts in the past had done. Boeing was just two months away from having their prototype in the air. Donald Douglas was shocked by the rapidity of the decision which, he said, had been made before the competing companies even had time to complete their bids. He protested to Washington, but without success. Having started on the DC-8 project, Douglas decided that it was better to press on than give up. Consultations with the airlines resulted in a number of changes: This led to larger wings and tail surfaces and a longer fuselage. The DC-8 was announced in July . Four versions were offered to begin with, all with the same footinch . Douglas steadfastly refused to offer different fuselage sizes. The maiden flight was planned for December , with entry into revenue service in . Well aware that they were lagging behind Boeing, Douglas began a major push to market the product. The pioneering 40-seat Vickers Viscount was in service and proving popular with passengers and airlines: Meanwhile the Comet remained grounded, the French passenger twin jet Sud Aviation Caravelle prototype had just flown for the first time, and the was not expected to be available until late . The major airlines were reluctant to commit themselves to the huge financial and technical challenge of jet aircraft. But no one could afford not to buy jets if their competitors did. There the matter rested until October , when Pan American placed simultaneous orders with Boeing for 20 s and Douglas for 25 DC-8s. To buy one expensive and untried jet-powered aircraft type was brave: In the closing months of , other airlines rushed to follow suit: This Douglas DC was photographed at Boston in . The first DC-8 ND was rolled out of the new factory at Long Beach on 9 April and flew for the first time, in Series 10 form, on 30 May for two hours seven minutes with the crew being led by A. In August Boeing had begun delivering s to Pan Am. Douglas made a massive effort to close the gap with Boeing, using no less than ten aircraft for flight testing to achieve FAA certification for the first of the many DC-8 variants in August . Much had needed to be done: Despite the large number of DC-8 early models available, all used the same basic airframe, differing only in engines, weights and details. Delta ordered Convair s but United went

for the newly developed lightweight but prevailed on Boeing to rename the new variant the "DC-8" in case people thought they were dissatisfied with the DC-7C. The flight was to collect data on a new leading-edge design for the wing, and while doing so, this DC-8 became the first civilian jet - and the first jet airliner - to make a supersonic flight. The DC-8 program had been in danger of closing with fewer than 100 aircraft sold, but the Super Sixties brought fresh life to it. By the time production ceased in 1972, 1,000 of the stretched DC-8s had been made. With the ability to seat 140 passengers, the DC-8 Series 61 and 63 had the largest passenger-carrying capacity available. That remained so until the Boeing 737 arrived in 1970. All the earlier jetliners were noisy by modern standards. Increasing traffic densities and changing public attitudes led to complaints about aircraft noise and moves to introduce restrictions. As early as the New York Port Authority expressed concern about the noise to be expected from the then still unbuilt DC-8, and operators had to agree to operate it from New York at lower weights to reduce noise. By the early 1970s, legislation for aircraft noise standards was being introduced in many countries, and the 60 Series DC-8s were particularly at risk of being banned from major airports. In the early 1970s several airlines approached McDonnell Douglas for noise reduction modifications to the DC-8 but nothing was done. Third parties had developed aftermarket hushkits but there was no real move to keep the DC-8 in service. Finally, in 1972, General Electric began discussions with major airlines with a view to fitting the new and vastly quieter Franco-American CFM56 engine to both DC-8s and 737s. MDC remained reluctant but eventually came on board in the late 1970s and helped develop the Series 62. The Super Seventies were a great success: By 1980, of the 1,000 DC-8s and 737s manufactured for commercial use, just 80 remained in service - though many of those 80 were converted for USAF use, either in service or for spare parts. Of the DC-8s made, around 1,000 were still in commercial service in 2000, including about 25 Series 61, 82 of the stretched Series 62, and 96 out of the re-engined Series 62. Most of the surviving DC-8s are now used as freighters.

2: Legends of the Air | Awards | LibraryThing

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Its name is commonly pronounced as "seven oh seven". Although it was not the first jetliner in service, the was the first to be commercially successful. Dominating passenger air transport in the s and remaining common through the s, the is generally credited with ushering in the Jet Age. The was developed from the Boeing , a prototype jet first flown in Pan American World Airways began regular service on October 26, Later derivatives included the shortened long-range and the stretched , both of which entered service in A smaller short-range variant, the , was introduced in The has been used on domestic , transcontinental , and transatlantic flights, and for cargo and military applications. A convertible passenger-freighter model, the C, entered service in , and passenger s have been modified to freighter configurations. Boeing produced and delivered 1, airliners including the smaller series; over military versions were also produced. Ten Boeing s were in commercial service in July The company had produced innovative and important bombers, from the B Flying Fortress and B Superfortress , to the jet-powered B Stratojet and B Stratofortress. During "â€", Boeing embarked on studies for a new jet transport, realizing that any design must be aimed at both the military and civilian markets. At the time, aerial refueling was becoming a standard technique for military aircraft, with over KC Stratofreighters on order. The "Dash 80" took less than two years from project launch in to rollout on May 14, , then first flew on July 15, The prototype was a proof-of-concept aircraft for both military and civilian use. Whether the passenger would be profitable was far from certain. At the time, Boeing was making nearly all of its money from military contracts: From left to right: Gannett were awarded the first Iven C. Kincheloe Award for the test flights that led to certification. These modifications also aided in the mitigation of Dutch roll by providing more stability in yaw. JT3D-engined s and s were denoted with a "B" suffix. The final variant was the C, C for "Convertible" , which had a large fuselage door for cargo. It had a revised wing with three-sectioned leading-edge flaps, improving takeoff and landing performance and allowing the ventral fin to be removed although the taller fin was retained. Production of the passenger ended in In total, 1, s were built for civilian use, though many of these found their way to military service. The production line remained open for purpose-built military variants until , with the last new-build airframes built as E-3 and E-6 aircraft. These were also used on the previous , while the also used the fuselage cross-section. Boeing already had considerable experience with this on the B and B, and had developed the yaw damper system on the B that would be applied to later swept-wing configurations like the However, many novice pilots had no experience with this phenomenon, as they were transitioning from straight-wing propeller-driven aircraft such as the Douglas DC-7 and Lockheed Constellation. The plane, a brand new , N, destined for Braniff, crash-landed on a river bed north of Seattle at Arlington, Washington , killing four of the eight occupants. He went to the cockpit and found the crew unable to understand and resolve the situation. He introduced himself and relieved the ashen-faced captain who immediately left the cockpit feeling ill. Johnston disconnected the faulty autopilot and manually stabilized the plane "with two slight control movements". The number 1 engine mount does not have the "hump" for a pressurization turbocompressor. The uses engine-driven turbocompressors to supply pressurized air for cabin pressurization. On many commercial s, the outer port number 1 engine mount is distinctly different from the other three, as this engine is not fitted with a turbocompressor. Later-model s typically had this configuration, although American Airlines had turbocompressors on engines 2 and 3 only. Early models often had turbocompressor fairings on all four engines, but with only two or three compressors installed. These doors are fully open sucked in at the rear during takeoff to provide additional air. When the engines are throttled back to cruise, the doors are shut. The was the first commercial jet aircraft to be fitted with clamshell-type thrust reversers on each of the four engines. The competition between the and Douglas DC-8 was fierce. Several major airlines committed only to the DC-8, as Douglas Aircraft was a more

established maker of passenger aircraft at the time. The new version was numbered In December, National Airlines operated the first U. TWA started domestic flights in March and Continental Airlines started flights in June; airlines that had ordered only the DC-8, such as United , Delta , and Eastern , were left without jets until September and lost market share on transcontinental flights. Qantas was the first non-US airline to use the s, starting in Its popularity led to rapid developments in airport terminals, runways, airline catering, baggage handling, reservations systems, and other air transport infrastructure. The advent of the also led to the upgrading of air traffic control systems to prevent interference with military jet operations. The was now too small to handle the increased passenger densities on the routes for which it was designed. Saha Airlines landing at Tehran-Mehrabad in Saha Airlines was the last commercial operator of the In , during the Falklands War , the Argentine Air Force extensively used s for long-range maritime patrol , with some of them being intercepted and shepherded away by Royal Navy Sea Harriers , [23] it also led to the conversion of British Nimrods to carry Sidewinder air-to-air missiles after a casual encounter. Trans World Airlines flew the last scheduled flight for passengers by a US carrier on October 30, , [24] although s remained in scheduled service by airlines from other nations for much longer. Middle East Airlines of Lebanon flew s and s in front-line passenger service until the end of the s. By the late s, Boeing s had been equipped with the Quiet package. Boeing acknowledged that more s were in service then than before the hush kit was available. Boeing The was the original designation for what ultimately became the Boeing Launch customer United Air Lines was a Douglas DC-8 customer and preferred not to be seen as buying the competing , hence the designation. American Airlines always referred to its s as s. The cabin had a full set of rectangular windows and could seat up to passengers. Major orders were the launch order for 20 aircraft by Pan Am and an American Airlines order for 30 aircraft. It was a variant for Qantas, thus had its customer number Five of these were produced, but only four were ultimately delivered, with one being lost during a test flight. All were for Braniff International Airways and carried the model number ; the first entered service in December This version was made obsolete by the arrival of the turbofan-powered B. The wing modifications included outboard and inboard inserts, as well as a kink in the trailing edge to add area inboard. Its first flight was on January 11, ; 69 turbojet s were delivered through January , the first passengers being carried by Pan Am in August The British Air Registration Board refused to give the aircraft a certificate of airworthiness, citing insufficient lateral control, excessive rudder forces, and the ability to over-rotate on takeoff, stalling the wing on the ground a fault of the de Havilland Comet 1. These modifications except to the fin under the tail became standard on all variants and were retrofitted to all earlier s. First service was June , with Pan Am. These reduced takeoff and landing speeds and altered the lift distribution of the wing, allowing the ventral fin found on earlier s to be deleted. These were often identified as BA-H. The wing was fitted with three-section leading-edge flaps which allowed the deletion of the underfin. The addition of two additional emergency exits, one on either side aft of the wing raised the maximum passenger capacity to a theoretical Only a few aircraft were delivered as pure freighters. One of the final orders was by the Iranian Government for 14 J9C aircraft capable of VIP transportation, communication, and in-flight refuelling tasks. After testing in , NQT, the last commercial airframe, was restored to C configuration and delivered to the Moroccan Air Force as a tanker aircraft via a "civilian" order. Boeing abandoned the retrofit program, since it felt it would be a threat to the Boeing program. So, more DC-8s than s are in service now. Other variants The was a proposed domestic range-stretched variant of the B. The was to carry around passengers while retaining several aspects of the B. The project was cancelled in in favor of the newer Boeing Two variations were proposed, the model and the model. Like the , the was also set to compete with the stretched DC-8s. The was also cancelled in in favor of the The and U. These models were in operational use from to The two aircraft remain on display: In essence the same system as used on the earlier Boeing , the code consisted of two digits affixed to the model number to identify the specific aircraft version. For example, Pan American World Airways was assigned code "21". Thus, a B sold to Pan Am had the model number B. The number remained constant as further aircraft were purchased; thus, when Pan American purchased the , it had the model number A total of 10 aircraft were in

BOEING 707, DOUGLAS DC-8 VICKERS VC10 (LEGENDS OF THE AIR 6)

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commercial service with Saha Airlines three , Hewa Bora Airways two , and operators with one aircraft as of July

3: Vickers VC10 – Aeroflight

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Boeing had pointed the way to the modern all-metal airliner in with its Model 707, but Douglas, more than any other company, made commercial air travel a reality. When de Havilland flew the first jet airliner, the Comet, in 1952, Douglas felt no need to rush into anything new. All three companies were working on a new generation of piston-engined designs, with an eye to turboprop conversion in the future. Initially it was a success, but it was grounded after several fatal crashes in 1954. The cause of the Comet crashes had nothing to do with jet engines; it was a rapid metal fatigue failure in corners of the near-square windows brought on from cycling cabin pressures in flight to high altitudes and back. The understanding of metal fatigue that the Comet investigation produced would play a vital part in the good safety record of later types like the DC-8. They had almost orders on hand for the piston-engined DC-6 and its successor, the DC-7, which had yet to fly. The B-707, in particular, had to descend from its cruising altitude and then slow almost to stall speed to work with the KC-135. As an airliner it would have similar seating capacity to the Comet, but its swept wing would give it higher cruising speed and better range. First presented in 1955 as the Model C, Boeing failed to generate any interest at the airlines. Boeing remained convinced that the project was worthwhile, and decided to press ahead with a prototype, the Boeing "Dash". Boeing was just two months away from having their prototype in the air. He protested to Washington, but without success. Having started on the DC-8 project, Douglas decided that it was better to press on than give up. Consultations with the airlines resulted in a number of changes: This led to larger wings and tail surfaces and a longer fuselage. Four versions were offered to begin with, all with the same footprint. Douglas steadfastly refused to offer different fuselage sizes. The maiden flight was planned for December 1958, with entry into revenue service in 1959. Well aware that they were lagging behind Boeing, Douglas began a major marketing push. The pioneering 40-seat Vickers Viscount was in service and proving popular with passengers and airlines: Meanwhile, the Comet remained grounded, the French passenger twin jet Sud Aviation Caravelle prototype had just flown for the first time, and the was not expected to be available until late 1959. The major airlines were reluctant to commit themselves to the huge financial and technical challenge of jet aircraft. However, no one could afford not to buy jets if their competitors did. To buy one expensive and untried jet-powered aircraft type was brave: In the closing months of 1958, other airlines rushed to follow suit: This Douglas DC-8 was photographed at Boston in 1959. Following complaints by neighboring residents, the city refused, so Douglas moved its airliner production line to Long Beach Airport. In August Boeing had begun delivering 707s to Pan Am. Douglas made a massive effort to close the gap with Boeing, using no fewer than ten aircraft for flight testing to achieve FAA certification for the first of the many DC-8 variants in August 1959. Much needed to be done: The flight was to collect data on a new leading-edge design for the wing, and while doing so, the DC-8 became the first civilian jet – and the first jet airliner – to make a supersonic flight. Delta ordered Convair 440s but United went for the newly developed lightweight but prevailed on Boeing to rename the new variant the "Boeing 708" in case people thought they were dissatisfied with the DC-8. In DC-8 sales dropped to just 26, followed by 21 in 1960 and 14 in 1961; many were for the Jet Trader rather than the more prestigious passenger versions. The DC-8 program had been in danger of closing with fewer than 100 aircraft sold, but the Super Sixties brought fresh life to it. By the time production ceased in 1966, 1,000 of the stretched DC-8s had been made. With the ability to seat 189 passengers, the DC-8 Series 61 and 63 had the largest passenger-carrying capacity available. That remained so until the Boeing 747 arrived in 1970. All the earlier jetliners were noisy by modern standards. Increasing traffic densities and changing public attitudes led to complaints about aircraft noise and moves to introduce restrictions. As early as the Port Authority of New York and New Jersey expressed concern about the noise to be expected from the then still-unbuilt DC-8, and operators had to agree to operate it from New

York at lower weights to reduce noise. By the early s, legislation for aircraft noise standards was being introduced in many countries, and the 60 Series DC-8s were particularly at risk of being banned from major airports. Third parties had developed aftermarket hushkits but there was no real move to keep the DC-8 in service. Finally, in , General Electric began discussions with major airlines with a view to fitting the new and vastly quieter Franco-American CFM56 engine to both DC-8s and s. MDC remained reluctant but eventually came on board in the late s and helped develop the Series . Of the DC-8s made, around were still in commercial service in , including about 25 Series, 82 of the stretched Series, and 96 out of the re-engined Series. Most of the surviving DC-8s are now used as freighters. The initial DC model had the original, high-drag wingtips and all were converted to DC standard. The DC had the new wingtips and leading-edge slots , 80 inches long between the engines on each wing and 34 inches long inboard of the inner engines. These unique devices were covered by doors on the upper and lower wing surfaces that opened for low speed flight and closed for cruise. This model was originally named "DC-8A" until the series 30 was introduced. By the mid sixties United had converted 15 of its 20 surviving aircraft to DC standard and the other 5 to s. Delta converted its 6 to DCs. This model was originally named "DC-8B" but was renamed when the series 30 was introduced. Many and DC-8s were upgraded to this standard. A total of 57 DCs were produced. The Conway was an improvement over the turbojets that preceded it, but the Series 40 sold poorly because of the traditional reluctance of U. It was used on all later DC-8s. The first DC was delivered in ; 32 were built. Fourteen earlier DC-8s were converted to this standard. All but the were certified in . Douglas approved development of freighter versions of the DC-8 in May , based on the Series . A large cargo door was fitted into the forward fuselage, the cabin floor was reinforced and the rear pressure bulkhead was moved by nearly 7 feet 2. Airlines could order a windowless cabin but only United did, ordering 15 in . It was retired in October and is now in storage with the th Aerospace Maintenance and Regeneration Group. The "Super DC-8" Series 61 was designed for high capacity and medium range. It had the same wings, engines and pylons as the , and sacrificed range to gain capacity. Having decided to stretch the DC-8, Douglas inserted a inch 6. The added length required strengthening of the structure, but the basic DC-8 design already had sufficient ground clearance to permit the one-third increase in cabin size without requiring longer landing gear. The long-range Series 62 followed in April . It had a more modest stretch, two inch 1. The engine pods were also modified with a reduction in diameter and the elimination of the and bypass duct. Eastern Airlines bought six PFs with the strengthened floor of the freighters but no cargo door. The DC achieved the same end but required more modification because the did not have the improved wings and relocated engines of the and . Maximum takeoff weights remained the same, but there was a slight reduction in payload because of the heavier engines. All three models were certified in and a total of Series DC-8s were converted by the time the program ended in . Cammacorp was disbanded after the last aircraft was converted. The first jet airliner used by the airline, she was retired from service in for use as a cockpit trainer.

4: Douglas DC-8 | Military Wiki | FANDOM powered by Wikia

The Boeing is a mid-sized, long-range, narrow-body, four-engine jet airliner built by Boeing Commercial Airplanes from to Its name is commonly pronounced as "seven oh seven". Its name is commonly pronounced as "seven oh seven".

In , the Brabazon Committee introduced command economy -style principles into the industry, specifying a number of different types of airliners that would be required for the post-war years, though it assumed that US dominance in transport aircraft would translate into leadership in long range airliners and conceded in principle that the industry might have to cede the long-range market to US makers. During the s, the government required the aviation industry to consolidate: Rolls-Royce and Bristol Siddeley. In , the government cancelled the RAF order in a round of defence cuts. Several companies proposed a suitable replacement. De Havilland offered the DH. After carefully considering the routes, Vickers offered the VC It had a generous wing equipped with wide chord Fowler flaps and full span leading edge slats for good take-off and climb performance; its rear engines gave an efficient clean wing and reduced cabin noise. Vickers designer Sir George Edwards is said to have stated that this plane was the sole viable option unless he were to reinvent the and, despite misgivings on operating cost, BOAC ordered 25 aircraft. On 14 January , BOAC increased its order to 35, with options for a further 20 aircraft, the largest civil order ever placed in Britain at that time; [15] [16] these were to have smaller seat interiors and more first-class seating. As the BOAC order alone reached the break-even point, the reuse of Vanguard jigs was abandoned and new production jigs made. To offer greater economy, Vickers began work on the Super development of the VC10 with more powerful Conway engines and a 28 feet 8. By the time deliveries were ready to begin in , airline growth had slowed and BOAC wanted to cut its order to seven Supers. In May, the government intervened, placing an order for VC10s as military transports to absorb over-production. This lengthy, well-publicised trouble eroded market confidence in the type. By this point, seven of the original 12 Standards were complete and the production line was preparing for the Supers. A Certificate of Airworthiness was awarded on 23 April and the plane was introduced to regular passenger service between London and Lagos on 29 April. The two inboard engines could have thrust reversers installed such as on military VC10s , matching the Later VC10 developments included the testing of a large main-deck freight-door and fitting new wing leading edges featuring a part-drooped, four-per-cent chord extension over the inboard two-thirds and a drooped, extended-chord wing-tip that allowed more economical high-altitude flying. This mimicked the aerodynamics of the similar-looking but significantly different Il Further developments proposed included freighter versions, one with front-loading like the C Globemaster II. The VC10 would have needed an entirely new double-deck fuselage, which raised emergency escape concerns, and the design failed to attract orders. This section needs additional citations for verification. Please help improve this article by adding citations to reliable sources. Unsourced material may be challenged and removed. The VC10 became an immensely popular aircraft in the BOAC fleet, both with passengers and crew, being particularly praised for its comfort and low cabin noise level. Ghana Airways ordered three VC10s in January The first was delivered in November and the second in May ; the third was cancelled. The other was retired from service in One saw further service with Air Malawi, being retired in , and another was sold to the Sultan of Oman as VIP transport and is preserved at Brooklands since its retirement in One aircraft went to the Royal Aircraft Establishment for equipment tests and was retired in Nigeria Airways had planned to buy two VC10s but had to cancel the order for financial reasons; they leased a BOAC aircraft from , but it was destroyed in a landing accident at Lagos in November that year. Of these, one was destroyed in a takeoff accident at Addis Ababa in , and the other four were retired in and returned to BAC, subsequently being purchased by the RAF. After the last aircraft was delivered in February , the production line closed, 54 airframes having been built. Marketing overtures were made elsewhere, particularly in Mexico, Argentina , Lebanon , Thailand , Czechoslovakia , and Romania , often fronted by British politicians. It was confirmed in but by then the production equipment had been broken up. Ten of the

eleven surviving standard models were retired in 1967. The Government of the United Arab Emirates used another for similar purposes until 1990; it is preserved at Hermeskeil, Germany. The other three were traded in to Boeing as part payment on new aircraft, and were scrapped at Heathrow. It was preserved at RAF Cosford in the British Airways Museum collection; its condition deteriorated after BA withdrew funding, being reduced to a fuselage in 1990 before being moved to the Brooklands Museum. After failing to sell them to other operators, British Airways sold 14 of the 15 survivors to the RAF in May 1971, one went for preservation at Duxford. The VC10 served its intended market for only one decade and a half. Written down and amortised by the 1960s, it could have continued in airline service much longer despite its high fuel consumption but high noise levels sealed its fate. Hush-kitting the Conways was considered in the late 1960s but rejected on grounds of cost. Military service[edit] s and s[edit] In 1964, the RAF issued Specification for a strategic transport, which resulted in an order being placed by the Air Ministry with Vickers in September for five VC10s. The order was increased by an additional six in August 1965, with a further three aircraft cancelled by BOAC added in July 1966. Another difference from the civil specification was that all the passenger seats faced backwards for safety reasons. The VC10s were named after Victoria Cross VC medal holders, the names were displayed above the forward passenger door. During the 1960s, the VC10s of No. 101 Squadron were used for transport. It was considered uneconomical to repair and was partially scrapped, part of the airframe retained for load training. In practice, the fuel load was capped by the maximum take-off weight before the tanks were full. Both variants featured a pair of wing-mounted refuelling pods and a single centreline refuelling point, known as a Hose Drum Unit HDU, installed in the rear freight bay; nose-mounted refuelling probes were also fitted. The K3s had a forward freight door, facilitating the insertion of five upper fuselage tanks in the main fuselage; the K2s lacked forward freight doors, thus a section of the upper fuselage was dismantled to insert the five upper tanks. In the K2 and K3 conversions, extensive floor reinforcement was installed to support the additional weight imposed by the five fuel tanks. In the early 1970s, to help the VC10 fleet replace the recently retired Handley Page Victor tankers, five of the stored aircraft were converted to VC10 K4 tankers. Extensive wing tank corrosion rectification work, including tank replacement, often took place during major services. The K4 conversions, as with the K2, lacked forward freight doors, thus it was decided that there would be no internal refuelling tanks fitted. The K4 has identical refuelling equipment to the K2 and K3, but lacks the extra fuselage fuel tanks and retains the same fuel capacity as a Super VC A total of 5, flight hours across sorties were flown in the theatre, flying both aerial refuelling and logistical missions in support of coalition forces in combat with the occupying Iraqi forces in Kuwait. The VC10s provided air transport missions in support of British and allied forces stationed in Afghanistan fighting against the Taliban, codenamed Operation Veritas. Known as "Base Hangar", when built in 1966 it was the largest cantilever-roofed structure in Europe; a quarter of a mile in length with no internal supports. Up to six VC10s could be positioned inside with adequate room remaining for working space around each aircraft. In the mid-1970s, when the design of detailed components was subcontracted, the design team transferred from Woodford to Chadderton. The Chadderton site maintained responsibility for the MoD contracts for project managing modifications; major repairs and major maintenance being carried out at RAF St Athan.

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The company had produced innovative and important bombers, from the B Flying Fortress and B Superfortress , to the jet-powered B Stratojet and B Stratofortress. During 1940s, Boeing embarked on studies for a new jet transport, realizing that any design must be aimed at both the military and civilian markets. At the time, aerial refueling was becoming a standard technique for military aircraft, with over 100 KC Stratofreighters on order. The "Dash 80" took less than two years from project launch in to rollout on May 14, 1954, then first flew on July 15, 1954. The prototype was a proof-of-concept aircraft for both military and civilian use. Whether the passenger would be profitable was far from certain. At the time, Boeing was making nearly all of its money from military contracts: From left to right: Gannett were awarded the first Iven C. Kincheloe Award for the test flights that led to certification. Please help improve this article by adding citations to reliable sources. Unsourced material may be challenged and removed. December Learn how and when to remove this template message The initial standard model was the 707 with JT3C turbojet engines. These modifications also aided in the mitigation of Dutch roll by providing more stability in yaw. JT3D-engined 707s and 720s were denoted with a "B" suffix. The final variant was the 707-300, C, C for "Convertible" , which had a large fuselage door for cargo. It had a revised wing with three-sectioned leading-edge flaps, improving takeoff and landing performance and allowing the ventral fin to be removed although the taller fin was retained. Production of the passenger ended in 1971. In total, 1, 707s were built for civilian use, though many of these found their way to military service. The production line remained open for purpose-built military variants until 1971, with the last new-build airframes built as E-3 and E-6 aircraft. These were also used on the previous 707, while the 720 also used the fuselage cross-section. Boeing already had considerable experience with this on the B and B, and had developed the yaw damper system on the B that would be applied to later swept-wing configurations like the 707. However, many novice pilots had no experience with this phenomenon, as they were transitioning from straight-wing propeller-driven aircraft such as the Douglas DC-7 and Lockheed Constellation. The plane, a brand new 707, N, destined for Braniff, crash-landed on a river bed north of Seattle at Arlington, Washington , killing four of the eight occupants. He went to the cockpit and found the crew unable to understand and resolve the situation. He introduced himself and relieved the ashen-faced captain who immediately left the cockpit feeling ill. Johnston disconnected the faulty autopilot and manually stabilized the plane "with two slight control movements". The number 1 engine mount does not have the "hump" for a pressurization turbocompressor. The 707 uses engine-driven turbocompressors to supply pressurized air for cabin pressurization. On many commercial 707s, the outer port number 1 engine mount is distinctly different from the other three, as this engine is not fitted with a turbocompressor. Later-model 707s typically had this configuration, although American Airlines had turbocompressors on engines 2 and 3 only. Early models often had turbocompressor fairings on all four engines, but with only two or three compressors installed. These doors are fully open sucked in at the rear during takeoff to provide additional air. When the engines are throttled back to cruise, the doors are shut. The 707 was the first commercial jet aircraft to be fitted with clamshell-type thrust reversers on each of the four engines. The competition between the 707 and Douglas DC-8 was fierce. Pan American ordered these planes, when and as they did, so that they would be the operators of the "first-off" production line for each aircraft type. Until their initial batch of the aircraft had been delivered to them and put into operation, Pan American would have the distinction of being not only the "Launch Customer" for both transcontinental American jets, but the exclusive operator of American intercontinental jet transports for at least a year. The only rival in intercontinental jet aircraft production at the time was the British de Havilland Comet. However, this was never real competition for the American market as the Comet series had been the subject of fatal accidents due to design flaws early in its introduction, withdrawn from service, virtually redesigned from scratch, and

reintroduced as version It was also smaller and slower than the Several major airlines committed only to the second place in the production race Douglas DC Douglas Aircraft was the more established and preferred by airlines and their passengers maker of passenger aircraft at the time. The new version was numbered In December, National Airlines operated the first U. TWA started domestic flights in March and Continental Airlines started flights in June; airlines that had ordered only the DC-8, such as United , Delta , and Eastern , were left without jets until September and lost market share on transcontinental flights. Its popularity led to rapid developments in airport terminals, runways, airline catering, baggage handling, reservations systems, and other air transport infrastructure. The advent of the also led to the upgrading of air traffic control systems to prevent interference with military jet operations. The was now too small to handle the increased numbers of passengers on the routes for which it was designed. Saha Airlines was the last commercial operator of the In , during the Falklands War , the Argentine Air Force extensively used s for long-range maritime patrol , with some of them being intercepted and shepherded away by Royal Navy Sea Harriers , [27] it also led to the conversion of British Nimrods to carry Sidewinder air-to-air missiles after a casual encounter. Middle East Airlines of Lebanon flew s and s in front-line passenger service until the end of the s. By the late s, Boeing s had been equipped with the Quiet package. Boeing acknowledged that more s were in service than before the hush kit was available.

6: Vickers VC10 - Wikipedia

They were the Boeing , Douglas DC-8, and the Vickers VC They were not the first jetliners, however; that distinction goes to the De Havilland DH Comet, Sud Aviation SE Caravelle, and Tupolev Tu

Yet, more than 40 years after its first flight, the VC10 is still considered a vital asset, albeit in a rather different role from that originally intended. In the far-sighted Vickers design office began exploring jet-powered derivatives of the highly successful Viscount turboprop airliner and forthcoming Vanguard. Early studies resembled a Vanguard with a gently swept wing and rear-mounted engines attached to a Caravelle-style tail unit. Known as the Vanjet VC10, the design evolved into a three-engined airliner which was planned to be available in two versions: During the s and s these two state-owned companies were notorious for indecision, political meddling and lack of strategic planning. Although aircraft closely resembling the short-haul Vanjet were later to appear in the form of the Trident, Boeing and Douglas DC-9, BEA a soon-to-be Vanguard operator failed to show any enthusiasm. It therefore showed interest in a long range aircraft for its Commonwealth routes to South Africa and Australia, but demanded a four-engined layout. Accordingly, the design was modified to accommodate four rear-mounted engines and other requirements. Detailed design work started in March This aircraft originally had a small wing of ft 2 in Development flying showed that cruise drag was slightly higher than estimated and a number of aerodynamic tweaks were progressively introduced into the design. Most notably, these included a beaver-tail extension fairing between the jet pipes of each engine pair, and a rearward extension of the engine pylon fairing. This model introduced graceful curved wing tips which increased the wing area and reduced cruise drag. These aircraft introduced a 4 per cent chord extension to the wing leading edge, between the root and mid-span. The wing also featured a large new fence near the root and a modified tip with slightly drooped leading edge. Another new feature was the addition of a large hydraulically powered side cargo door, 11 ft 8in 3. BOAC now wanted its initial order reduced and a stretched longer-range version introduced. The Super VC10s was a development which traded take-off performance against the ability to carry a much heavier payload. The fuselage was lengthened by 13 ft 0 in 3. Up-rated Conway RCo 43 engines installed in nacelles angled 3 degrees nose-up and a strengthened structure were also a feature. Almost from the start, the VC10 and Super VC10 were popular with passengers, pilots and airline maintenance teams. The rear location of the engine gave a very quiet and vibration free cabin. This had a damaging effect on potential export orders and production ceased in after only 54 had been completed. In fact the annual utilisation of the VC10 and Super VC10 was the highest in the BOAC fleet, its load factors were always significantly higher than the and the actual operating profit was also the highest in BOAC, beating even the Special features for the military aircraft included the Conway Mk 31 engines with thrust reversers on the outboard only, an auxiliary power unit APU in the tailcone to supply ground electrical power and compressed air for main engine starting, a specially reinforced full area cargo floor, aft facing seats, a large side cargo door and provision for in-flight refuelling. The RAF placed an order for five aircraft in September , and subsequent orders brought the total to 14 aircraft. The VC10 was the heaviest and most powerful aircraft the RAF had received up to that time and introduced a global transport capability which was entirely new to the RAF. By the mids the VC10 and Super VC10s had mostly been withdrawn from airline service and were available at very low prices. In April British Aerospace was tasked with conducting a feasibility study into converting these aircraft into in-flight refuelling tanker aircraft for the RAF. The outcome was favourable and in July BAe was awarded a contract to convert nine aircraft. Five Type s were to be converted to K. The conversion was carried out by BAe Filton and involved first bringing the aircraft up to roughly C. Five extra fuel tanks were fitted in the fuselage, together with a nose in-flight refuelling probe and three Flight Refuelling Ltd Hose Drum Units “one in the lower rear fuselage and one outboard under each wing. Other changes included additional avionics, a closed circuit TV system to monitor receiving aircraft and external lighting. The first aircraft converted, a K. The last of the nine tankers was delivered to Sqn on 24

BOEING 707, DOUGLAS DC-8 VICKERS VC10 (LEGENDS OF THE AIR 6)

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September Another 5 Super VC10s were converted from to K. The first flying on 30 July The VC10 has proved to be an excellent tanker aircraft. A steady hose basket is much easier to connect with. In early the RAF postponed for another year a decision on awarding a contract for a civilian-supplied replacement for the VC10 and Tristar tankers, ensuring that VC10s will remain in active service until as least Vanguard fuselage, mid-set tailplane. Modified Vanguard fuselage, three rear-mounted RR Avon engines, mid-set tail. Boeing style larger centre engine intake. Later modified with 4 engines in pairs for BOAC. Acorn fairing below fin-top of T-tail. Vanguard cockpit shape replaced. Thrust reversers on inboard engines only. Curved wingtips increase wing span. Type Version for Ghana Airways. Type Variant for Nigerian Airways. Converted to Type on the production line. Type VC10 C. Fin-mounted fuel tank and uprated Conway engines with thrust reversers on all four engines. Type Never built. Not EAA variant as given in some sources. No extra fuel carried. Super VC10 Alternative project to Super , with seats. Longer fuselage, enlarged passenger doors. Enlarged Super VC10 airframe, extra fuel tanks in freight hold. Total seats VC10 Alternative seater project with double-deck fuselage, uprated engines Pan Am Super VC10 Proposed version for Pan Am airline with extra fuel tanks in wing leading edge fillets and wingtip tanks, stretched fuselage, 2 crew cockpit, Conway 7 engines, US designed cabin interior. VC10 F-3 Freighter Projected dedicated freighter with side-loading cargo door. Max payload 80, lb. VC10 F4 Freighter Nose-loading freighter with swing nose and palletized freight cabin. Project Nov VC10 Freighter Projected dedicated freighter with double-deck fuselage, clamshell nose doors, raised cockpit to give straight-through nose loading. Multi-Role VC10 Early s proposed military variant able to undertake tanker, transport, maritime patrol, free-fall bomber and missile carrying roles. Standard VC10 with bulged area ruled fuselage and undernose loading doors.

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Boeing Military Tanker Jet Plane Crashes at Naval Air Base in California.

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