Dedicated to Jan Wilhelm Mulder Røste.

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Front cover: The Fokker F.XXII of AB Aerotransport on the tarmac of Malmö-Bulltofta airport.
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Inside cover, back: The Fokker F.32, NC333N at Los Angeles, artist: Thijs Postma
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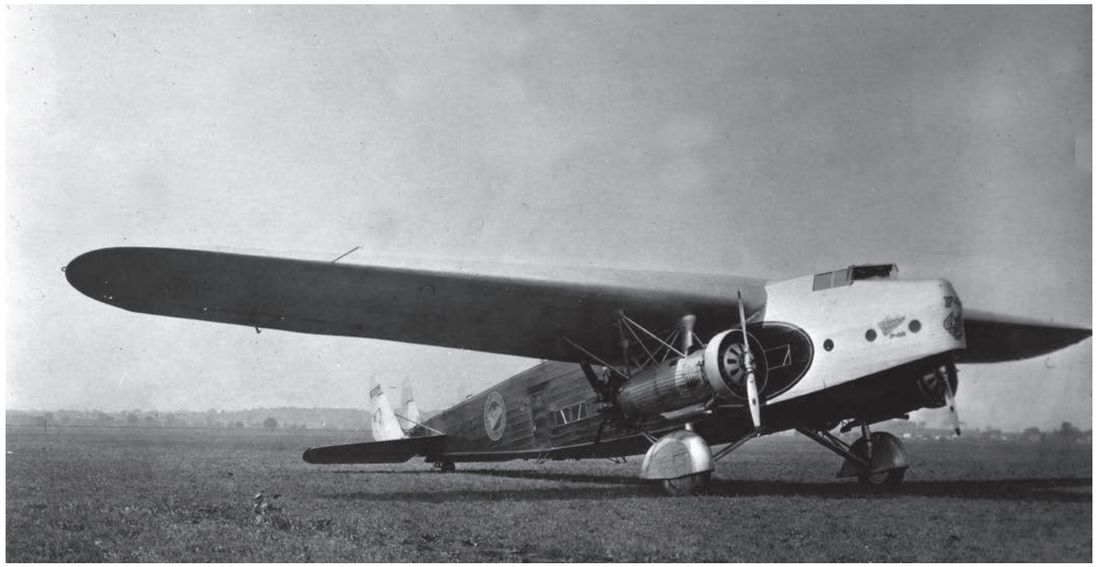


The success story of the well-known Dutch aircraft designer Anthony Gerard Fokker started well before the First World War. Before the war his so-called 'Eindecker'monoplanes were ordered by the Luftstreitkräfte (the Imperial German Army Air Service). When the First World War commenced, the German government took control of the factory, where Anthony Fokker remained as director. Fokker was also told that if he wanted to continue to deliver aircraft, he had to give up his Dutch citizenship and apply for a German one. He did this and during the war, his aircraft production reached high numbers exporting also to Germany's ally, Austria-Hungary. His aircraft were feared by the Allied pilots and especially the Dr.1 and D.VII were among the best fighters of the war. The latter aircraft was specifically mentioned in the Treaty of Versailles. The Germans had to hand over all Fokker D.VIIs for destruction.

The end of the war meant the collapse of Germany and although the remaining orders were partially fulfilled, Anthony Fokker had to find a solution to sell his products. He wanted to return to the Netherlands to start up production. It was expected that German aviation industry would be banned from the production of aircraft that would be superior to those of the Allies. The revolution and social unrest in Germany made Anthony Fokker's position more and more difficult. In December 1918, he moved from the Hotel Bristol in Berlin, where he usually stayed, to the newly acquired apartment of the former Hungarian consul, who had left Berlin. In order to save his earned capital from the war, he invested much of it in real estate around Germany. It was still difficult for Anthony Fokker to walk the streets of Berlin and he had to be accompanied by a bodyguard. The revolution council nevertheless issued an identity card in his name, making it possible for him to move around a bit more freely. On 6 December, an uprising started, when the military command demanded the arrest

Anthony Fokker in front of one of his products. (via Rob Mulder)

of the revolutionary council members. Anthony Fokker became more and more nervous, and on 12 December he asked the authorities if he could leave the country. He visited Jacob Wolff, the Dutch consul in Berlin who told him that he had to make an official request for a Dutch passport, and he needed confirmation from the ministry in the Netherlands he was still a Dutch citizen. Of course, Anthony Fokker had German citizenship, and had a talk with Major Hans Bratsch of the Kriegsministerium (Ministry of War) to see if this could be undone. Since this would take time, Anthony Fokker decided to travel to Schwerin (where he had his largest factory) and apply for a travel permit to the Netherlands with his German passport. On 16 December 1918, he and the Dutch consul, Hans Friese, visited the local police station and Anthony Fokker was given a permit for the period 18 December 1918 until 17 March 1919 to travel to Rotterdam. Meanwhile he sent an official application to the Kriegsministerium to cancel his German citizenship of 1915.

Anthony Fokker wanted to keep his German factory and use it for the production and export of aircraft. He saw great potential in the Netherlands, where the Luchtvaart-Afdeeling (LVa – Dutch Army Air Corps), the Marine Luchtvaart Dienst (Dutch Naval Air Corps) and the LA-KNIL (the Army Air Corps of the Netherlands East Indies Army) needed 200 aircraft quickly, but the local industry was not able to deliver. While in Berlin, the revolution became more and more bloody, and Anthony Fokker now really wanted to leave the country as soon as possible. The Reichsverwertungsamt (an office formed for the sale of surplus aircraft) appointed Anthony Fokker's friend Hermann Göring as representative, and offered to buy back all aircraft at the Schwerin plant not yet delivered to German air force. The decision was confirmed by the Allies and Anthony Fokker was able to buy back 92 D.VII fighters and 100 rotary engines. Subsequently, still in December 1918, he sent his trustworthy friend Bernard de Waal to the Netherlands to find out if the Dutch authorities would be interested in purchasing these 92 aircraft. They were, and Anthony Fokker send an order to his transport manager Heinrich Mahn to prepare the shipment for the Netherlands. Heinrich Mahn did his best to find transportation. Fortunately for him (and Anthony Fokker) the Allies were more interested what came into Germany rather than what went out, despite the rule that export had to be approved as well. Since the Supreme Allied Economic Council was not functioning fully at the beginning of 1919, the transport did not seem to be a big problem.

Anthony Fokker had brought millions of Marks to his motorised sailing ship 'Hana' and gave the order to Captain August to take this money from Travemünde to the Netherlands. In addition, Anthony Fokker and his future wife Tetta von Morgen, were to travel to the Netherlands to get married there. They travelled also with a suitcase with one million Dutch guilders to the Netherlands, but took the train. All arrived safely.

Once in the Netherlands, he signed a contract with Henri Wijnmalen of Industriële Maatschappij Trompenburg (Trompenburg Industrial Company) for the delivery via this company of 98 Fokker D.VII fighters and 118 C.I reconnaissance aircraft to the Dutch Air Services. With the contract sealed, it was now possible to send the aircraft from Schwerin officially to the Netherlands, where Trompenburg was the receiver of the shipment. On 18 March 1919, the first train arrived in the Netherlands followed by several more. In the end, 220 aircraft were shipped to the Netherlands: 120 D.VIIs, 60 C.Is, eight D.VII, about 400 engines and a number of prototypes. The aircraft were delivered to the LVa, but due to budget cuts the order was reduced. Nevertheless, Anthony Fokker had made a good profit on the deal.

The Kriegsministerium informed Anthony Fokker that it would cancel his German citizenship, but Dutch law, however, states that once you have lost your Dutch citizenship, it cannot simply be reversed. A frustrated Anthony Fokker now used his family connections, and asked his uncle Eduard (a former member of Parliament) to take up the matter with the Prime Minister Charles Ruys de Beerenbrouck. It is believed that H. R. H. Prince Hendrik was involved as well. On the day of his marriage, Theo Heemskerk, the Minister of Justice, informed Anthony Fokker that he would get his Dutch citizenship back. The government was aware that he could become an important entrepreneur in the Netherlands.

In order to make some money, he wanted to start a flying school from the beaches near Den Haag (The Hague), but the police were not too happy. Instead, he started 'Fokker Luchttourisme' (Fokker Air Tourism) and offered joyrides with his pilot Willem van der Drift.

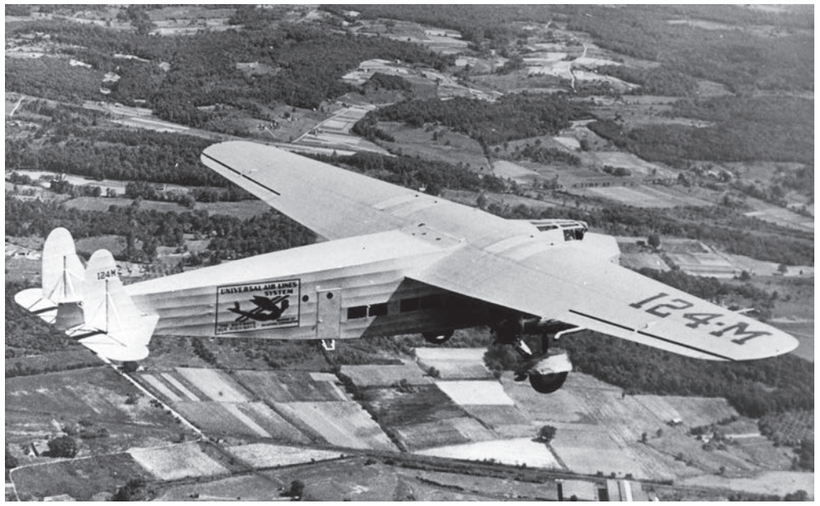
Anthony Fokker (far right) was given a laurel wreath after his flying display on the opening day of the ELTA. The lady beside him is Fokker's charming wife Tetta von Morgen. On the left of the couple the Minister A. König and General Snijder, chairman of the ELTA committee. (Thijs Potsma)

how pleased he was with the aircraft: “We are particularly pleased with the ratio between the top speed and the landing speed. For the first time in a large ship, this ratio is better than three to one, the F-32 flying at 157 miles per hour (253km/h) top speed and landing at 47 miles per hour (75.6km/h).“ It is important to correct Anthony Fokker, as the Board of Directors of the FACoA had ‘only’ given the green light to build nine aircraft to begin with.

On 20 September, factory inspector Oscar L. Wallace send in the application for an experimental licence and the day after, the Fokker F-32 124M flew to Central Airport at Camden (New Jersey) for registration. Gilbert G. Budwig, Chief of the Inspection Section of the Department of Commerce, Aeronautics Branch, forwarded the application for identification mark on 21 September. In the application, chief engineer of FACoA, Alfred A. Gassner quoted the aircraft was the Fokker ‘F-XII’. The aircraft had been manufactured in August 1929 and on 30 August, the registration 124M was applied to the unlicensed aircraft. The stated purpose for which the aircraft would be used was for demonstration. On 4 September, the Notary Public confirmed the paper officially. The identification mark of just a number and the letter M were only issued for those aircraft not eligible for any class of licence and for aircraft for which the owners specifically requested identification only. The aircraft had to remain within one State and were only to be flown by licensed pilots when carrying persons or property for hire or payment.

By the end of September, the twin rudder and vertical stabilisers were changed. A third fin was added to improve directional stability. This fin was a bit smaller than the original two fins. Shortly afterwards, the application for an experimental aircraft licence was issued (application number A11363). From 24 September, the aircraft carried the registration X124M, and was now registered as the Fokker F-32. The experimental aircraft licences X or NX were issued for experimental purposes and for demonstration only. Paying passengers were not allowed to be carried. Only licensed pilot had to fly these aircraft. On the same day, the ‘Record, Transfer and Reassignment Form’ by the Department of Commerce, Aeronautics Branch was issued, that had to be kept in a safe bank vault or some other secure place.

On 21 September 1929, the Fokker F-32, 124M flew to the Central Airport at Camden (New Jersey) for inspection by Gilbert G. Budwig of the Department of Commerce, Aeronautics Branch. (via Gert Blüm)



The Fokker F-32, 124M (1201) flew on 24 September from Teterboro airfield to Washington-Bolling Field for demonstration flights and joyrides for the federal government and military officials. (via Aviodrome)

New demonstration flights were made out of Teterboro, and Anthony Fokker announced that it by then had received orders in excess of $1,000,000. Jim King, inspector from launch customer Western Air Express, was enthusiastic about the luxurious interior, but also had a point of criticism: “Our biggest problem is to cut the noise, as when you increase the horsepower, the noise increases considerably”. Around the same time, a second type United Air Lines logo was painted on the rear of the fuselage which included the text ‘Division of Aviation Corporation’.

Between 24 and 26 September, the Fokker F-32, 124M made demonstration flights and joyrides in the capital Washington. The aircraft landed at the military Bolling Field. During three days, it carried 1,000 passengers from official circles, dignitaries of the U.S. War Department, Navy Department, Department of Commerce, U.S. Marine Corps, U.S. Coast Guard service and internal revenue officers. During the presentation, the possibility to fly on two of the four engines was underlined. An economic gain could also be reached, as the payload capacity was increased three times with only one-third increase of horsepower. The FACoA anticipated more orders as a result of the visit to Washington. The journalist Carolyn Vance made an analysis of the air mindedness of Congressmen and -women. She wrote that The House was considerably more ‘air minded’ than the

The aircraft photographed at Washington-Bolling airfield. Between 24 and 26 September 1929, it carried 1,000 passengers during joyrides. The mechanic near the rear engine is Norwegian Chris Braathen. (via Theo Wesselink)

aluminium, but the major portion of the fuselage was Fokker red with a gold stripe edged in black. The windows were edged in black on gold frames. The tail surfaces were aluminium, except for the lower part of the centre rudder, which was in Fokker red with gold and black striping.

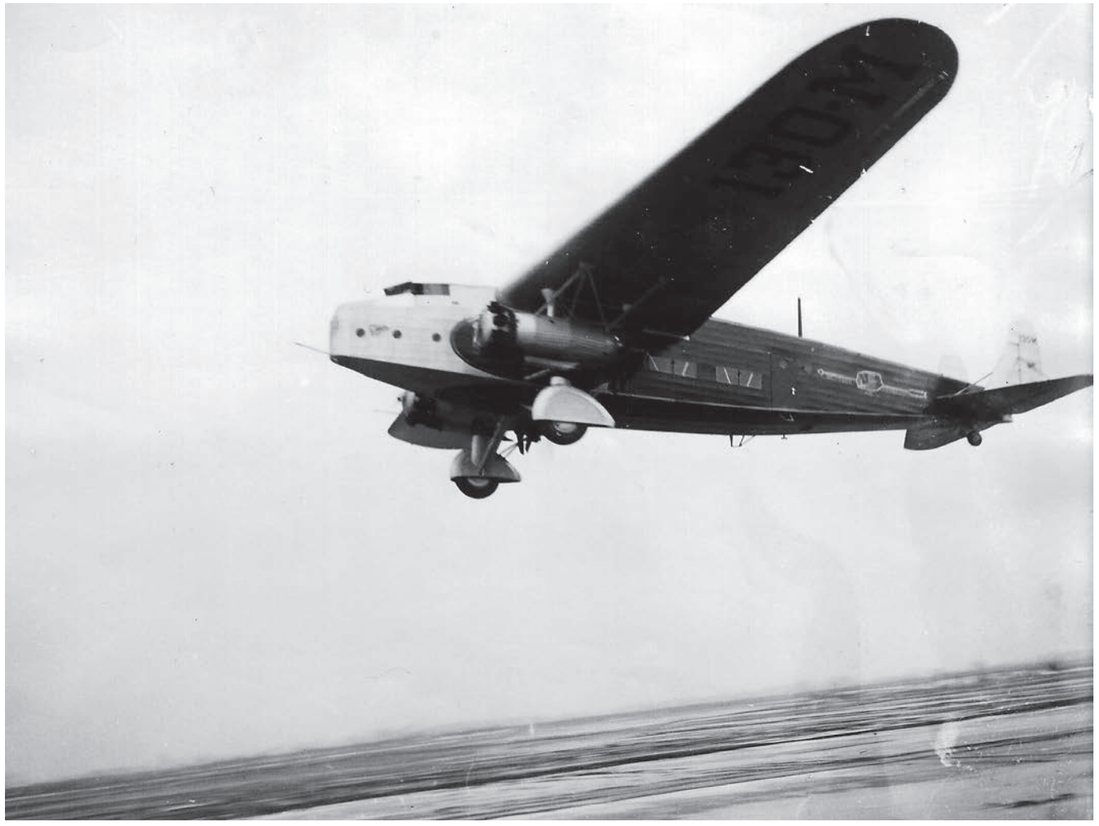
On 23 January, FACoA wanted to transfer the Fokker F-32, 130M, from Teterboro Airfield to Newark (New Jersey) to make its first public flight before it was said to fly to the west coast with a party of guests on Sunday, 26 January. It was to make a test flight under the name of 'Transcontinental Tour of Aerial Radio Experiment'. The Police Commissioner Grover C. Whalen, his aviation secretary Arthur N. Chamberlin and other members of his staff wanted to test its two-way radio equipment, which the Police wanted to install in the new police aircraft. The test was also to be broadcast over the Columbia Network through WABC. Herbert Hoover Jr. was to supervise the tests. Two days before the flight would take place, Cpt Eddie Rickenbacker had to announce that the flight had been cancelled.

The Fokker F-32 would then start 'The Flying House Party' by carrying a group of specially invited guests from New York to Los Angeles with stops at several cities. The take-off was to take place on 26 January and arrival on 1 February in Los Angeles. Stops would be made in Detroit (Sunday), Chicago (Monday), St. Louis (Tuesday), Kansas City (Wednesday), Denver (Thursday) and Los Angeles on Saturday. The field superintendent for Western Air Express in Oakland told to local newspapers that the aircraft would fly from Los Angeles to Oakland on a WAE demonstration flight, but neither flight was made.

By Fokker F-32 around the world?

In 1925, Harry A. Husted from Cleveland was broke, but that year he invented a hard rubber steering wheel for automobiles, which was mass-produced and millions were sold to the automobile industry. He amassed millions of Dollars and in 1929, he was president of his rubber wheel company at Akron, Ohio. As was the custom in those days, aviation attracted also his attention and he founded six companions, who were willing to invest in his plan to make a flight around the world during 1930. In August 1929, the German-built and -operated, passenger-carrying rigid airship LZ.129 *Graf Zeppelin* made an around-the-world flight in 21 days, 5 hours and 31 minutes covering 33,234km (20,650miles). The flight began and ended at Lakehurst Naval Air Station in New Jersey (USA). Inspired by this record-breaking flight, Harry A. Husted started to develop the plan to break the record by using the largest available aircraft in the world, the Fokker F-32. He expected to need somewhere between $500,000 and $750,000, of which $147,000 would be spent on the Fokker F-32, but exclusive special equipment would bring the total purchase price up to a staggering $250,000. The empty weight of the aircraft

On 19 January 1930, the next Fokker F-32, registered 130M (1202) made its maiden flight from Teterboro airfield. She was painted in Fokker-red and carried the logo of Western Air Express, which took over the UAL-contract. (via Gert Blüm)



The Fokker F-32, 130M (1202) taking off from Teterboro air field on 20 January, the day after the first flight. WAE-pilot Silas Morehouse made several test flights in the aircraft during the month of March. (via Gert Blüm)

was expected to be 12,570lbs. (5,702kg) and with special equipment and passengers 31,088lbs. (14,101kg). The delivery was scheduled for 1 May 1930.

After the first flight of the Fokker F-32 on 9 September 1929, Harry A. Husted was even more convinced that the F-32 was the most suitable aircraft. On 20 November, he published his initial plan for a flight across the Pacific Ocean from San Francisco to Hong Kong, taking with him a crew of eight men. Before the flight would take place, a trial flight from New York to San Francisco would be made in January 1930. When the prototype of the Fokker F-32 crashed a week later, the plans were delayed and modified. The second aircraft completed, the c/n 1202, registered 130M, was prepared for a flight from the east to the west coast of the USA on 15 January 1930. The object of the flight was to check performance. The captain on board was to be James T. King, pilot of Western Air Express, and the co-pilot James Doyle of San Francisco. A navigator would complete the crew, but who would be decided later. Although the plan was to fly from New York to San Francisco on 15 January, the newspaper incorrectly wrote that they would continue the next day to make the jump across the Pacific Ocean, refuelling in the air above Honolulu (Hawaii, USA) and continuing to Hong Kong. The flight from New York to San Francisco was not made either, unfortunately for Harry A. Husted. The aircraft had not yet made its first flight.

On 24 January 1930, Husted told the press that he had ordered a Fokker F-32, and that the factory was arranging changes to the aircraft. He expected the take-off from the west coast to be on 15 June for Hawaii for refuelling (in the air!), before they started on the non-stop flight across the Pacific Ocean to China, their first stop. The flight would continue across China and the Soviet Union to Moscow. From there they expected to fly across Europe to Paris and cross the Atlantic Ocean from Ireland to New York and the back to the west coast. He said: "Newer developments in multi-engined aircraft, in the manufacture of fuel and oil, and in refuelling will make ocean hops in heavier-than-air craft regular ventures in the future."

Harry A. Husted wanted to place a motion picture camera in the nose of the aircraft, half tone and coloured, and every inch of the way he hoped to keep it clicking. He would give these films to the Bureau of Education in Wash-

and this was a bit lower than the other aircraft. Nevertheless, the 'airplane licence' issued showed the regular empty weight of 15,278lbs. (6,930kg) and a gross weight of 24,250lbs. (11,000kg). The aircraft had dual controls in the cockpit with two steering wheels. It was registered to Fokker Aircraft Corporation of America as NC335N and its commercial licence was valid until 1 July 1931.

"'And the ship flies beautifully"

In 1928, Charles Edward Kingsford Smith and his crew made the first trans-Pacific flight from the United States of America to Australia. Later, he made the first non-stop crossing of the Australian mainland, the first flight between Australia and New Zealand, and the first eastward Pacific crossing from Australia to the United States. Finally, he made a flight from Australia to London in 10.5 days. All these flights were made by the Fokker F.VIIb-3m, named *Southern Cross*. His aircraft was overhauled at the N.V. Nederlandsche Vliegtuigenfabriek at Amsterdam-Schiphol. In June 1930, the aircraft was ready, and Kingsford Smith made a successful east-west crossing of the Atlantic Ocean from Ireland to Newfoundland in 31.5 hours. He was welcomed as a hero at New York, and of course, Anthony Fokker was proud of the achievement in one of his aircraft. On 26 June, the Fokker F-32, NC335N, flew from Teterboro to Roosevelt Field and back to welcome the *Southern Cross* after the Atlantic flight. On 30 June, Charles Kingsford Smith and his ocean fliers were transported in the Fokker F-32, NC335N from New York to Washington D.C. to meet President Herbert Hoover. They originally planned to fly to the capital in the Fokker F.VIIb-3m, *Southern Cross,* the three-engined aircraft in which they had crossed both the Atlantic and Pacific and almost ringed the world, but it was decided shortly before departure to leave the aircraft at Hasbrouck Heights, in the hands of the mechanics grooming it for the flight to Oakland, California, which was to begin on 2 July. Anthony Fokker, placed his Fokker F-32, NC335N, at Kingsford Smith's disposal.

In the morning of 30 June at 0850, the silver and crimson coloured Fokker F-32, piloted by Major Victor Bertrandias and with Bernt Balchen in the co-pilot seat, left Hasbrouck Heights and flew non-stop to Bolling Field. In the cockpit was also pilot William N. DeWald. Kingsford Smith was allowed to sit in the co-pilot seat and try to fly the giant aircraft as well. Kingsford-Smith, his co-pilot Evert van Dijk, his navigator J. Patrick Saul, and radio operator John Stannage, were given a rousing reception by a crowd, when they landed at Bolling Field near Washington at 1112. The passengers told that the flight was uneventful, the only mishap occurring on land. The party was hurrying to the airport by motor car when a traffic policeman in Jersey City stopped them. They explained and were released. Upon arrival in Washington, they were greeted by Sir Ronald Lindsay, the English ambassador, William J. B. Macaulay, the minister of the Irish Free State, Philip Botha, the commercial secretary at the Union of South Africa legation, and Jan Herman van Roijen, the minister of the Netherlands in the USA, as well as U.S. Army and Navy officials. They were taken to the English embassy where they could refresh themselves before being received in the Blue Room at the White House by President Herbert Hoover at 1230. After a 15-minutes talk, they had lunch, where also Eddie Rickenbacker, Anthony Fokker, and Bernt Balchen joined as guest. The stay in Washington was ended with a visit to the Senate before the guests returned to Hasbrouck Heights. In the aftermath, Kingsford Smith wrote a letter to Anthony Fokker, which was published in an advertisement in the Aero Digest, dated August 1930. It said: "When President Hoover was good enough to invite us to the White House we flew down in your latest Fokker, the F-32. And the ship flies beautifully. You have always built planes that flew magnificently. I fought against some of them during the war … and I knew them well! All of the record flights I have since made were in Fokker planes; so well justified by the safety and durability of the *Southern Cross*."

Spurred by the success of the Trans-Atlantic flight of the Southern Cross, Evert van Dijk said his next aerial venture would be a west-to-east Atlantic flight to Amsterdam, the capital of the Netherlands. The plan called for the use of the giant Fokker F-32, and Evert van Dijk would be accompanied by Captain J. Patrick Saul, as navigator, and John Stannage, as radio operator. The second aerial venture he planned was an around-the-world flight. Unfortunately, neither of these plans were realised.

Little is known about the operation of the aircraft after it had been registered, but between 8 and 10 July it made

A nice photograph of the crew of the 'Southern Cross' and FACoA staff taken in front of the Fokker F-32. From left to right: Captain Eddie Rickenbacker, Fokker test pilot Bernt Balchen, Evert van Dijk (co-pilot), J. Patrick Saul (navigator), John S. W. Stannage (radio operator), Charles Kingsford-Smith (pilot) and Anthony Fokker. (via Gert Blüm)

Fokker chief test pilot Victor Bertrandias and Bernt Balchen flew the Fokker F-32, NC335N, on 30 June to Washington for a visit of the crew of the 'Southern Cross' to President Herbert Hoover. Kingsford-Smith was given the possibility to fly the aircraft as well. The crew was given a rousing reception at Bolling Field. (via Gert Blüm)

KLM's Fokker F.XXXVI

KLM has been one of the largest airline companies during the period prior to the Second World War. The Dutch airline has contributed a lot to the development of airlines in Europe and the opening up of the air routes from Europe to the Far East. After the First World War, Deutsche Luft-Reederei opened on 5 February 1919 an air service between Berlin, Leipzig and Weimar. This was seen as the beginnings of regular air service in Europe. Airline companies were formed all over Europe, often working together with or owned by aircraft factories. These factories supplied the fledgling airlines with modified surplus aircraft from the front or new-designed aircraft. A large number of companies went bankrupt or were dissolved after the loss of their aircraft, lack of capital etc.

In the beginning of 1919, British businessmen had talks with the Dutch Government about the opening of an air route to The Netherlands, but many noticed that the country was not yet air-minded. The two Flight Lieutenants, Albert Plesman and Mari Louis Johan Hofstee from the Luchtvaartafdeeling (LVA), the Dutch military air corps, wanted to do something about it, and suggested to organise a large air exhibition. On 1 August 1919, the ELTA - Eerste Luchtvaart Tentoonstelling Amsterdam (First Aviation Exhibition Amsterdam) opened its door, and in the 42 days the ELTA lasted, the public showed up by the hundreds of thousands. More than one hundred aircraft from mostly Allied countries showed their products, including the most impressive ones like, the Caproni Ca.57 and Ca.60, the Handley Page V/1500 and O/400, the Bréguet 14 Limousine, Spad XV/5 and many others. From the Netherlands the audience saw two products from the Dutch factory Trompenburg: the Spyker V.2 and the prototype of the Spyker V.3. The Dutch Marine Luchtvaartdienst – MLD (naval air corps) displayed a Friedrichshafen FF 49C, while the Luchtvaartafdeeling had parked the Vreeburg A.2M bomber on its stand in the main hall. This was the first twin-engined aircraft designed and built in the Netherlands. In addition, young designer Joop Carley showed his single-engined low-winged Carley S.1. Former Allied enemy Anthony Fokker had formed a new Dutch aircraft factory, N.V. Nederlandsche Vliegtuigenfabriek (NVNV – Dutch Aircraft Factory Ltd.), and attended, much to the dismay of the Allied countries.

The start of KLM Royal Dutch Airlines

In mid-1918, the KNVvL took the initiative to form a Commissie voor Luchtvaartverkeer (a commission for 'aviation traffic') that produced a report pleading for airmail services. A private company supported by the State should operate these. After the Armistice of 11 November 1918, the economic optimism grew in the Netherlands as well. The commission members were granted permission to leave for the United Kingdom to check out the British plans for an airmail service between England and India. The Netherlands could perhaps establish a branch line from Amsterdam or Den Haag (The Hague) to Brussels and Paris. The commission offered its report on 1 June 1919 to A. A. H. W. König, the Minister van Waterstaat, the minister of water affairs, who was responsible for civil aviation. In Belgium, there was also interest in an air service between the Netherlands, Belgium and France.

Already in February 1919, A. S. Baxendale of the British airline company Aircraft Transport & Travel and the Minister of Waterstaat met to discuss aviation matters. After this visit, on 15 February, a meeting at the Rotterdamsche Bankvereeniging (Rotterdam Bank Association) was held to discuss an air service, which was followed by a meeting at the Ministerie van Binnenlandsche Zaken (Ministry of Interior), where it was decided to send out a government commission to determine the position of the Netherlands and the Netherlands East Indies (now Indonesia, at the time a colony of the Netherlands). On 5 June, owner of the shipping company Wm H. Müller & Co. gave his Advisory Commission details about an air service, and handed over a report to Dr. Hendrik Colijn. On 18 June, a new meeting took place and on the agenda was the possible formation of a Dutch airline. The Advisory Commission informed on 21 June that it was decided to form an airline with a capital of hfl. 500,000 (hfl.=Dutch Guilders). The name of the company was to be Nederlandsche en Koloniale Luchtverkeer Maatschappij (Dutch and Colonial Airline Ltd). It requested the prefix Koninklijke (Royal). The stock capital was hfl. 771,000 paid in by four companies, later increased by new subscribers to hfl. 1,200,000. On 17 September 1919, Albert Plesman was informed that he was to become the director of the company. On 7 October 1919, a party met at the notary's office of meester Stoop to confirm the formation of the 'NV Koninklijke Luchtvaart Maatschappij voor Nederland en Koloniën – KLM' (nowadays generally known by the English expression KLM Royal Dutch Airlines). Exceptionally, the prefix Koninklijk (Royal) was already awarded by H. R. H. Queen Wilhelmina in September 1919. The seat of the company would be at The Hague. It was not until 30 June 1920 that the shareholders of KLM approved the Articles of Association. Among the stock holders belonged the Nederlandsche Handels Maatschappij (Dutch Trading Co.), the Administratiekantoor Unitas (Administration Office Unitas), the Bataafsche Petroleum Maatschappij (the Batavian Petrol Co., the predecessor of Shell), de Wm. H. Müller & Co., the bank Lippmann Rosenthal & Co., the Rotterdamsche Bankvereeniging (Rotterdam's Bank Association), the Twentsche Bank (Bank of the County of Twente), and the Nederlandsch-Indische Handelsbank (Netherlands Indies Trade Bank).

After the formation of the company, KLM needed an airfield and aircraft to fly with. The field Maaldrift near Wassenaar (near The Hague) was chosen and a hangar built. The British pilots, however, found this airfield not safe at all, and in May 1920, Albert Plesman requested to use Schiphol instead of Maaldrift. The Government gave permission. KLM would nevertheless keep its head office in The Hague and not at Amsterdam-Schiphol.

In September 1920, the Fokker F.II, H-NABD, made a trial flight from Amsterdam to Croydon and Cricklewood. The aircraft can be seen here at Croydon. The photograph clearly shows the impressive Fokker wing. A classic feature of the Fokker aircraft for the coming years. In front of the Fokker F.II are standing from left to right: Cpt W. G. R. Hincliffe (pilot), Bernard de Waal (pilot), Henri Hegener (journalist and passenger) and flight engineer S. Elleman. (via Stichting Behoud Erfgoed NLR)

The aircraft had an absolute service ceiling of 5,300m (17,388ft), a service ceiling of 4,800m (15,748ft), and an absolute ceiling at maximum weight on three engines of 3,000m (9,842ft). Its range with full fuel at cruising speed was 1,350km (838 miles), but the range on 62.5 % power and at the service ceiling increased with full tanks to 1,550km. The fuel tanks had a capacity of 850 litres per fuel tank and four of these were installed. Octane was 87. The four oil tanks each contained 60 litres of oil.

The undercarriage and tailwheel could not be retracted. The vertical oleo-pneumatic shock absorber struts from the company Rubery Owen Messier Ltd. ran from the front wing spar to the axles, which were attached to the fuselage by 'V' struts. The front tyres were delivered by Dunlop and had a size of 22x26. The air brakes were also constructed by Dunlop. The engine starters were electric and there was a radio and direction finder of the type NSF VR11 of the Nederlandsche Seintoestellen Fabriek (Dutch Signalling Aparatus Factory).

The 24-metre (78ft) long fuselage contained the cockpit, the galley, and four compartments for 32 passengers on leather seats in red colour, or 16 in beds. The walls in the passenger cabin were stretched with blue Rexine. This was an artificial leathercloth fabric produced in the United Kingdom by Rexine Ltd. of Hyde, near Manchester, England. The ceiling was stretched with yellow fabric with the KLM initials weaved in. The centre aisle was laid with red linoleum. The lighting on the ceiling was made in light metal with synthetic nacrolaque, the lighting on the wall was of a simpler design. On the front and rear spar, running through the cabin, the company attached a metal plate with the motive of an *Arend* (eagle). A clock and an altitude meter were installed on the spar as well. On the wall was also a board, where the name plates of the crew were attached.

The cabin had sixteen double seats, which could be transformed into beds, constructed in hydronium, stretched with Rexine red coloured fabric with KLM initials. At the seats nearest to the wall were rotatable head supports. The cushions could be taken out and the matresses were covered on one side with Rexine and the other side stitched in the KLM initials. Under the armrests were installed containers for small articles. The pillows were placed in special bags for storage.

Between the seats were eight folding tables in light metal with wooden trays. Thirty-two rings were installed to secure drinking glasses, and a further eight higher up for the upper beds.

Eight roller blinds of silk were attached to rolling poles. There were eight curtains for the lower beds and six for the upper beds, carried out in so-called 'fantasy'-fabric. The seats were equipped with a folding armrest and attached to the wall. At the entrance of the fuselage two handles were installed. Once on board, the passengers could wipe their feet on a red mat.

On the walls, the company installed small "No Smoking" signs and 16 number plates for when the aircraft was operated for joyrides. In addition, plates were attached on the door of the toilet. A sign with the text 'No entrance for passengers' was attached to the cockpit door. Between the different cabin, curtains in 'fantasy'-fabric were hung up. A similar curtain hung in front of the cloakroom and the cockpit door. The total cost of the interior amounted to hfl. 22,619.63.

The fuselage was of elliptical shape, and built of welded steel-tubes as patented for the Fokker F.XX. The nose section was ply-covered and the rest had fabric covering. In the nose were two holes for the supply of fresh air, which could be regulated in each of the four compartments. The nose contained also the radio direction-finder (hence the ply- and fabric covering), and the air bottles for the brake system. The passenger compartment was heated by hot air from the engines, which entered the cabin from under the tables. Above the seats were nets for small hand luggage.

In the cockpit, the first pilot sat forward in the middle (100 % view) with the second pilot a little behind him on the starboard side (60% view). To provide the best possible view these seats were on a raised platform. The radio operator sat facing aft beside and below the pilots. Behind them was a compartment for the flight engineer and chart table, followed by the steward's compartment and an electric kitchen. Over the front of the cabin was a sleeping compartment for two of the crew. There was an entrance to the cockpit in the port side of the fuselage. The main cabin was divided into four eight-seat sound-proofed compartments. Aft of the main cabins were two lavatories and a coat cupboard, as well as the entrance door on the port side for the passengers. To begin with, the aircraft carried its own stair for the passengers to get in and out of the aircraft.

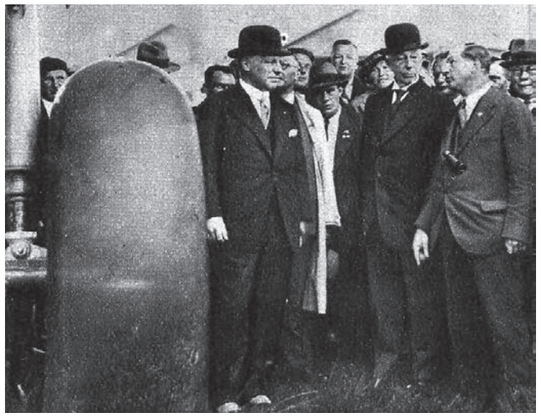
The idea of the special layout in the cockpit (first pilot upfront and second pilot behind him) was an idea Anthony Fokker had for many years. Since the Fokker F.III (pilot sitting upfront beside the engine) he had thought about this concept, and could finally implement it in the F.XXXVI and F.XXII. The mock-up first showed a crew sitting side-by-side, but that was changed after a discussion with KLM and AB Aerotransport. Several senior pilots of KLM had agreed to the new layout as well. Later when the aircraft had been taken into service, problems occurred. Some of the pilots said that they despite the great view, having nobody beside you, made them feel 'lonely'. They rather preferred that than having the second pilot sitting behind them. The KLM pilot Leendert 'Boontje' Sillevis mentioned that he was not pleased with the fact that he was sitting so close to the front window. He said that when he flew through the monsoon rain, the rain drops would look so big. The weather was playing a lesser role, as blind flying was getting more advanced, so a good view was not

On 11 May 1934, the wing and the fuselage were transported from the construction hall to the barges that would transport them to Schiphol for final assembly. The entire staff of the factory toiled to get both parts on the two deck barges. It was a tough job to transport the parts across the terrain to the canal, and it was unbelievable that those two parts would form an aircraft that would fly through the air in a few weeks' time. On the photograph below both fuselages during the transportation to the barge. (via Aviodrome)

On 14 July, the aircraft made its first flight to an airport outside Amsterdam-Schiphol. That day, Emil Meinecke flew the aircraft to the military airfield of Soesterberg. It took only 17 minutes to get there. The reason for the flight was the national 20th Anniversary celebration of the Luchtvaartafdeeling. It has to be said that the actual date for this was in 1933, but due to the economic depression, the government and military authorities did not want spent money on an air display at that time. A year later, the economy had improved and on 14 July, the 'Luchtvaartdag' (Aviation Day) was organized. Some 50,000 spectators came to Soesterberg airfield to join in the celebrations. Among the celebrities present was Albert Plesman, Ir. Albert Gilles von Baumhauer, Anthony Fokker, Frits Koolhoven and Dick Asjes. The Fokker F.XXXVI attracted a lot of interest, and Anthony Fokker showed the Prime Minister Hendrik Colijn, together with his minsterial colleagues Laurentius Nicolaas Deckers (Defence Minister) and Jacob Adriaan de Wilde (Interior Minister), the F.XXXVI, PH-AJA. Impressive was the nearly 1.80-meter-high tyre of the aircraft (5ft. 10 in.). After lunch, the air display started and the audience was informed by Flight Captain Fredrik Raland about the different aircraft in the air. After two Fokker fighters had landed, Flight Cpt Raland could tell that the mighty Fokker F.XXXVI was to take off for a joyride. Emil Meinecke warmed up the four engines, taxied to the runway and after a short run, it graciously took off from the ground: "it was a fantastic sight to see the giant Fokker-aircraft in the air. The colossus swings around the heathland a few times while nine new, small fighters stand ready already shaking for the display", a journalist wrote. After the display, the Fokker F.XXXVI returned in 52 minutes back to Schiphol.

On 15 July, during a test flight with personnel from the RSL, the Fokker F.XXXVI visited Rotterdam-Waalhaven for the first time, as Dr. Ir. Henk van der Maas had a meeting there. After the meeting the F.XXXVI returned to Schiphol, and on the way new tests were performed with regard to the stability of the aircraft. On board were nine men: Emil Meinecke, Dr. Erich Schatzki, Dr. Ir. Henk Van der Maas, Mr. Fransse, Ir. Wim van Neijenhoff, Mr. Stok, Mr. Westerhuis (KLM) and two mechanics, named Jansen and Busse.

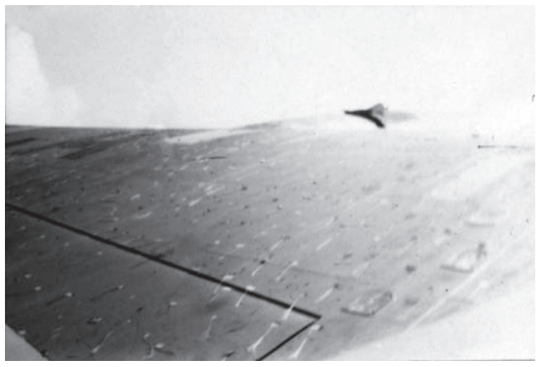
Anthony Fokker (to the right) explains the details of the Fokker F.XXXVI to Prime Minister Hendrik Colijn (beside Fokker) and Defence Minister Nicolaas Deckers (to the left). (via Dirk C. Top)

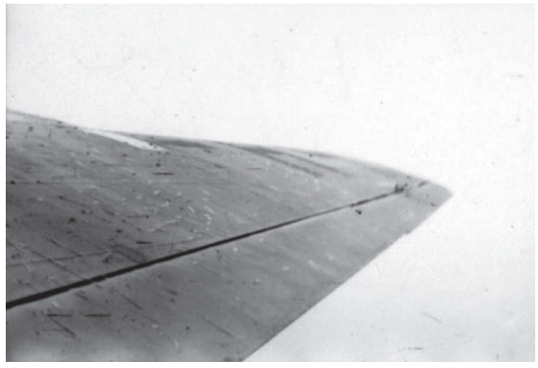


On another test flight on 16 July, Fokker F.XXXVI, PH-AJA was flying at an altitude of 3,800m (12,467 ft.) when the oil temperature suddenly increased to 90-95°. The oil pressure reduced to 2, while the engine was losing a lot of oil. The reason for this problem was a too small oil cooler, according to Mr. Carlson of Curtiss-Wright. A larger oil cooler was installed and the problem solved.

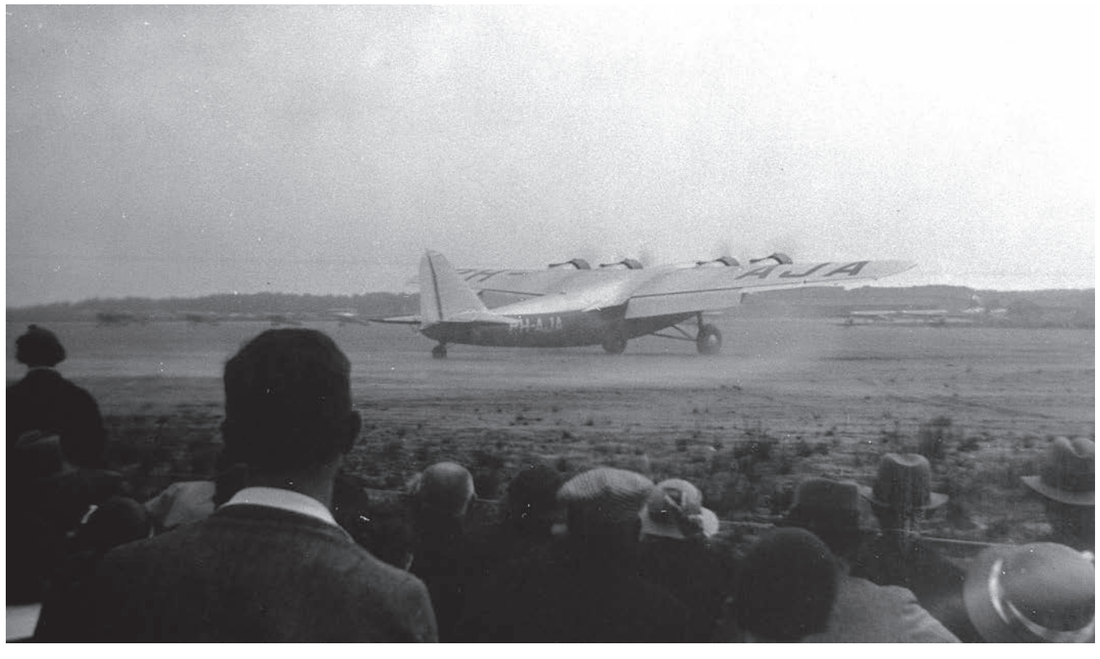
After the test flight the aircraft was parked in the hangar of the NVNV to implement the new improvements on the cowlings as mentioned before. It was not back in the air until 21 August. Again, a modification on the exhaust pipes and NACA cowlings was made, to counteract the vibrations and problems with the exhaust pipes. On the two inside engines, the cowlings were extended backwards, the exhaust pipes shortened, and finally covered by aluminium plates to obtain a better airflow. The port outside engine remained in the old condition in order to measure the differences. In addition, the servo on the rudder had been enlarged. This new arrangement made the aircraft more stable to fly and also in the gliding flight lower speeds could be obtained. By 21 August, these changes were ready on all four engines and new test flights conducted. Dr. Ir. Henk

Photographs taken of the wings of the Fokker F.XXXVI. The exhaust pipes have been covered for a better air flow. This helped a lot and made the aircraft extra stable. The weather vanes were glued on the wings to determine the air flow behind the engines. (via Stichting Behoud Erfgoed NLR)





Pilot Emil Meinecke landing the Fokker F.XXXVI, PH-AJA, after a short display and joyride. The flaps on the wing are down. Shortly after the display, Meinecke returned in 52 minutes back to Schiphol. (via Herman Dekker)



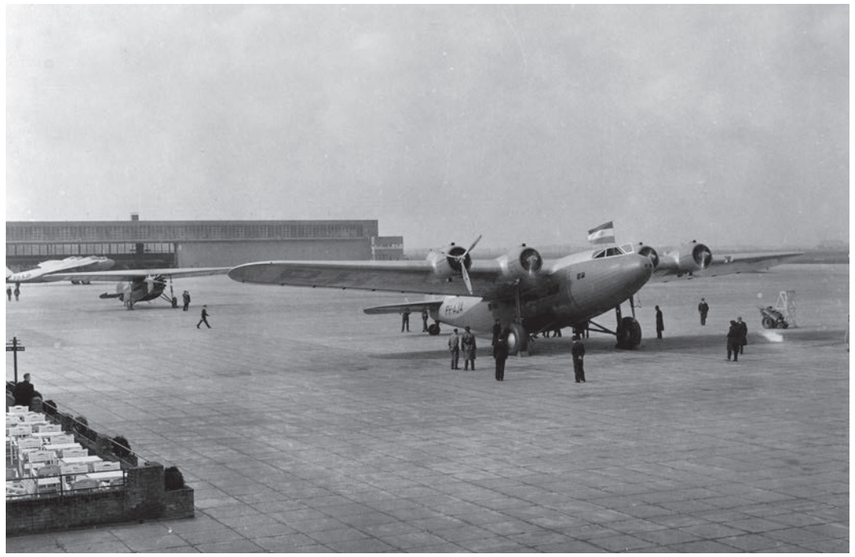
On 18 July, during a test flight with personnel from the RSL, Emil Meinecke and Erich Schatzki flew the Fokker F.XXXVI, PH-AJA to Rotterdam-Waalhaven for the first time. The Fokker F XXXVI, PH-AJA going for landing. (City Archive Amsterdam)

The Olympic Games in Berlin from 1-16 August 1936 contributed to high activity on the London-Amsterdam-Berlin service. The Fokker F.XXXVI, PH-AJA *Arend* was therefore regularly called upon to cover the high demand of passengers.

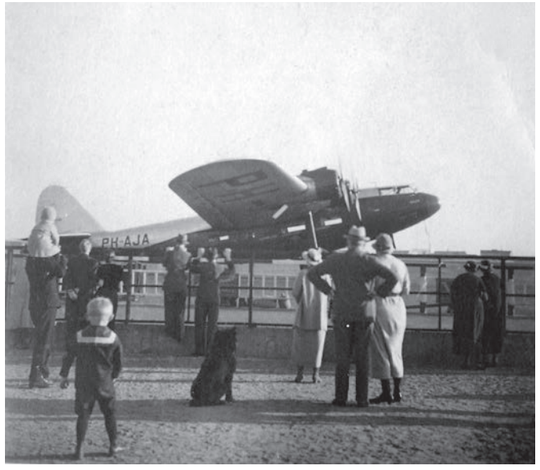
KLM was modernizing its fleet and wanted to sell as many as possible obsolete Fokker-aircraft. The first new Douglas DC-3 (PH-ALI *Ibis*) entered service in September 1936, while the last three of a total of eighteen DC-2s entered service in 1936. At the end of the year, KLM had reduced its fleet from 51 to 33 aircraft, but worked with much more efficient aircraft. This made it possible for the airline to extend its network in all directions and make it possible to reach more cities in one day. The sold aircraft included seven Fokker F.XIIs, four Fokker F.VIIas, two Fokker F.VIIb-3ms, one Koolhoven F.K.40, one Fokker F IX, two Fokker F.VIIIs, one Fokker F.XVIII and one Fokker F.XX. Twelve were taken over by a British airline, one by a Belgian and four by a French airline. Two aircraft remained in the Netherlands.

It is interesting to have a closer look at the sales of the aircraft to Great Britain and France. The French airline Air Tropique purchased four Fokkers: F.XII, PH-AGA *Adelaar*, PH-AIJ *IJsvogel* and PH-AIP *Pelikaan*, and the F.XX, PH-AIZ *Zilvermeew*. The Dutch were told that the aircraft would operate on the Dakar-Goa air service. KLM was not aware of the fact that Air Tropique was a fake company, and that the aircraft would end up in Spain, where, in July 1936, Civil War had broken out. To begin with, KLM sold the aircraft to Alfred Pilain of the French airline Société Française des Transport Aériens (SFTA), which was not formally founded until 28 September 1936. All four arrived in October 1936 at Paris-Le Bourget for delivery much to the dislike of right-wing nationalistic press, who were not too keen about the attitude of their pro-Spanish Republic Air Minister Pierre Cot. SFTA stated that the aircraft, before delivery to Africa, would be used to evacuate French citizens from Madrid to France. On 26 October they left for Spain, but, of course, never returned to France nor flew to Africa. KLM also sold four Fokker F.XIIs to the British airline Crilly Airways Ltd., which planned to start up a service London-Bordeaux-Madrid-Lisbon and made a trial flight on 1 February 1936. The company was denied Spanish traffic rights and the airline sold the four aircraft to British Airways Ltd, which managed in the end to sell the aircraft to a Polish arms dealer, who tried to fly the four aircraft to Spain. Only the Fokker F.XII, G-ADZH with pilot Adam Szarek managed to reach Spain. This is not the book to tell about the exploits of the Fokkers during the Spanish Civil War, but at the start , the Dutch government considered to charter the Fokker F.XXXVI, PH-AJA *Arend* to evacuate Dutch citizens from Madrid back to the Netherlands. The crew would be headed by Evert van Dijk and co-pilot Verhoef. The route to follow was Amsterdam-Paris-Biarritz-Madrid. The Spanish government was requested officially to allow the aircraft to come to Madrid. There is some mystery about this request, but the aircraft never flew to Madrid.

Instead it looks like the Fokker F.XXXVI, PH-AJA *Arend* was involved in the transportation of troops. As from August 1936, volunteers from the Soviet Union started to arrive in Spain. They wanted to fight on the Republican side against the National rebels. The next month, the Spanish airline pilot Pedro Tonda Bueno received orders from Cpt Mellado to pick up the Soviet volunteers in France. According to Rondas biography ('La Vida y Yo') he made these flights in a large four-engined Fokker, which Líneas Aéreas Postales Españolas (LAPE, the Spanish national airline at the time) did not operate too much due to the high costs'.



The PH-AJA 'Arend' at Amsterdam-Schiphol warming up its engines for the departure on yet another route of the extensive KLM-network. Three of the engines are already running. To the extreme left the Fokker F.XXII, PH-AJP 'Papegaai' can been seen parked in front of the hangar. (via Aviodrome)



The Fokker F.XXXVI, PH-AJA 'Arend' was often used on the important Berlin-Amsterdam-London service. The aircraft is parked here at Berlin-Tempelhof. (via Aviodrome)

Since the PH-AJA *Arend* had been taken out of regular air services, it must have been this aircraft Tonda referred to. He said, they had 50 volunteers on board, where there was space for 32, but they sat in chairs and on the floor. Most did not have any equipment with them. Tonda continued in his book that the tail of the aircraft was painted in the colours of the Republicans (purple-yellow-red). LAPE must have chartered the aircraft from KLM. About 168 Russians must in that way have been transported from France to Spain, which would indicate at least four flights between the end of September and the middle of October. He also told about the heavy snowfall while flying over the Massif Central in France. In addition, his passengers needed to be quiet and not to speak in order not to be recognized. Since the aircraft was too big and visible, it was decided to stop any further flights. The Soviet Union had also found other ways to transfer its volunteers to Spain.

Fewer incidents - good service

More and more the Fokker F.XXXVI participated in air shows, charter flight and joyrides. It was always a treat to come to Schiphol and take a joyride in the giant eagle. The aircraft also played a role in the celebration around the jubilee of Anthony Fokker. In 1936, Fokker could celebrate the fact that he had been a pilot for 25 years. From his early start in 1911 flying the aircraft 'Spin' (Spider) and right up to the giant Fokker F.XXXVI, he had shown that aviation had come far. In May 1936, the personnel of the N.V. Nederlandsche Vliegtuigenfabriek offered Anthony Fokker a nice dinner at the Carlton Hotel in Amsterdam. In the restaurant, a model of the 'Spin' was a silent witness to the jubilee. Fokker had decided to start the 'A. H. G. Fokker Fonds', a trust with the object to train as fast and as many as possible pilots for the national defence of the country; support Dutch aviation pioneers and their widows and children; stimulate the development of Dutch aviation in general through, among others, scholarships; and finally support or take the initiative to increase the growth of Dutch aviation. The festivities continued on 6 June.

The aircraft now flew without any major technical problems, at least compared with earlier years. On 30 May, the PH-AJA *Arend* was flying from Amsterdam to Brussels and Paris, when after the take-off at Brussels-Evere the starboard tyre exploded. Since they were in the air, the captain informed the passengers and reassured them that the landing would be no problem. They had decided to con-

Despite the running engines, these visitors at Amsterdam-Schiphol, show no fear for the giant Fokker F.XXXVI behind them. (via Amsterdam City Archive)

ones to keep contact with the tower. The spectators on the terrace on Schiphol were well aware of the progress and could tell when each aircraft flew above a certain city. In the air, the situation was more chaotic. The *Jan van Gent* lost the group completely and flew above the clouds, the others flew too fast. When the Fokkers reported to be above Haarlem, the formation was nearly complete again. The Douglas *Ibis* and *Kwak* together with the German Ju 52/3m, arrived via Aalsmeer, while the *Jan van Gent* returned like a lonely bird. The Fokkers and remaining Douglases arrived one by one and after reporting the tower their arrival, the aircraft taxied to the crowded tarmac, where the ground crew with orange and blue flags directed the aircraft to their parking position. Nevertheless, the Dutch had seen their national pride in the air again.

In June 1937, the pilots flying the Fokker F.XXXVI, PH-AJA *Arend*, complained about the quality of the control. The director of the Luchtvaartdienst requested the National Luchtvaart Laboratorium to investigate the complains and on 25 and 29 June, the NLL joined on a flight between Schiphol to London-Croydon and from Rotterdam-Waalhaven to Schiphol. The weather condition was favourable and the inspectors got a good impression of the problem. The conclusion of the inspection was that the control mechanism of the main and servo rudder had very long cables. Over time, the long cables stretched out (8cm giving a 2-degree difference on the rudder) and thus the responds in the cockpit slackened. Above 230km/h the vibrations in the tail increased, which had to do with the servo and elevator. Especially in rough weather, the pilot might feel that he was not in complete control of the aircraft. It was therefore of importance that this was repaired, and in the future checked more often.

During the 5th World Scout Jamboree (31 July-9 August, 1937) at Vogelenzang near Haarlem, the PH-AJA *Arend* was called upon by the Public Relation Department of the Organization Committee to make a flight to Vogelenzang and see the terrain from the air. On 29 July, a few days before the opening of the jamboree, the press chief C. R. Th. Baron von Kraijenhoff invited some journalists for a flight. They arrived at Schiphol, where they could see the engines of the PH-AJA *Arend* already running. A few minutes later, Captain Pieter Both taxied away and took off over the heads of the workers, who were building a new runway. Within a few minutes they had arrived near Vogelenzang and could see people working down below. The PH-AJA *Arend* made a left turn so the people on the other side could see the terrain as well. The camps of the different nations could be studied from the air as well as the stadium. But before they knew of it, the PH-AJA *Arend* had turned its nose toward Schiphol again and Captain Pieter Both landed the aircraft gently back on the ground. During the jamboree, it would also be possible to take a joyride in the PH-AJA *Arend* and see the jamboree from above.

During the Nederlandsche Rondvlucht (Dutch Circuit Flight) on 28 July 1937, the Fokker F.XXXVI, PH-AJA *Arend*, was in the air again. The participating aircraft started from Ypenburg near The Hague and reached, due to bad weather and low clouds, different airports like Eindhoven, Gilze-Rijen, Rotterdam and Haamstede. Twenty-six aircraft continued from Eindhoven to Teuge, where they, at 1400, were joined by the mighty 'eagle' of the KLM. The guests on board the Fokker were transported to Apeldoorn for lunch, while the PH-AJA *Arend* made numerous joyrides with excited passengers. Present were also some Koolhoven aircraft, which also made joyrides, and in the end not many were left behind. On the way back, the PH-AJA *Arend* made a special circle above Amsterdam, so the people on board could see the fleet review on the occasion of the hand-over of the vessel *Piet Hein*. From the aircraft a telegram was send to Princess Juliana and Prince Bernhard: 'We congratulate Your Royal Highnesses with the successful hand-over of the *Piet Hein*. Passengers and crew of the F.36'. They continued to Ypenburg, where they witnessed the end of the Dutch Circuit Flight. The Fokker F.XXXVI returned home after that.

In December, the Fokker F.XXXVI, PH-AJA *Arend* made that year's last flight, when it flew at the beginning of December from Schiphol to Twente, where KLM stored the aircraft during the winter, and before it returned on the Amsterdam-Berlin service in the summer of 1938. During its stay at Twente, people could come to the airport and the hangar to visit the aircraft and go inside, of course against a small reimbursement …

The year 1938 started with a disturbing message in the newspaper: "Roerdomp and Papegaai demolished – Will also the 'Arend' share this fate"? From 'well-informed sources' the journalist had received this message, which turned out to be fake-news. Both F.XXIIs and the single F.XXXVI were still active, but not flying for KLM anymore.

During the winter, the CofA of the PH-AJA *Arend* had been withdrawn, but on 18 May, the certificate had been renewed and the aircraft could be taken in operation again. On Monday, 6 June, the Fokker F.XXXVI, PH-AJA *Arend* flew to the airport of Eelde, near Groningen, where a flying display was held. No less than 18,000 travelled to the airport by car, coach or bicycle and enjoyed a day of fun. The whole day, KLM-Captain Willem van Veenendaal

The coronation of George VI and his wife Elizabeth as king and queen of the United Kingdom and the Dominions of the British Commonwealth took place at Westminster Abbey, London, on 12 May 1937. The Fokker F.XXXVI, PH-AJA 'Arend' made special flights with newspaper in connection with the coronation. (via Amsterdam City Archive)

Football for a good cause

On 4 September 1937, the Algemeene Nederlandsche Politiebond (the Dutch Police Association) celebrated its 50-year jubilee. By initiative of the Voetbal Vereening Doetinchem (Football Club Doetinchem), the football team of the Metropolitan Police and New Scotland Yard from London were invited to take part in their Jubilee celebrations and play two football matches. On Saturday, the 4th they played in the Olympic Stadium in Amsterdam a match against a Dutch police team (6-2 to the Dutch team) and the day after, a match at Doetinchem against the local team supplemented by six famous Dutch football players. This match ended 6-3 for the Dutch team. The photograph showes the British team prior to their departure for Amsterdam on Friday 3 September. They returned on the flight to London on Monday. (via Metropolitan Police Authority/Mary Evans)

ABA's Fokker F.XXII

Since its formation in March 1924, AB Aerotransport had been a good client of Junkers Flugzeugwerk AG, not surprisingly, as the German company was one of the largest stock holders of the Swedish airline. At the end of the 1920s the connection with the German aircraft factory was disbanded, and after that, AB Aerotransport was free to purchase the aircraft it needed. Nevertheless, the Junkers products would still dominate the fleet until well after the Second World War. The co-operation agreement between KLM Royal Dutch Airlines and AB Aerotransport stipulated that similar flying equipment would be used to minimize the competition between the two airlines. In the beginning of the co-operation, AB Aerotransport operated the Junkers G 24, but on 30 September 1931 it decided to order a Fokker F.XII at NVNV. At the same time the board expressed the wish to purchase a second aircraft for the service, that would be kept as a spare aircraft. In February 1932, the Swedish airline took over its first product from the Dutch factory, the Fokker F.XII, SE-ACZ *Värmland* (5303) and the three-engined aircraft was put into service on the Scandinavian Air Express: Malmö-Copenhagen-(Hamburg)-Amsterdam. In addition, AB Aerotransport had, on 17 September 1931, obtained the right for representing the NVNV as general agent for Sweden for the duration of two years. This was extended in 1933 by another two years.

On 28 December 1932, the NVNV made contact with AB Aerotransport for the sale of the Fokker F.XX, a new three-engined airliner. It was the first Fokker design to use an elliptical-section fuselage instead of the traditional square fuselage, and the first Fokker aircraft with retractable landing gear. On 29 March 1933, Karl Lignell and Karl Henrik Larsson travelled to the office of the NVNV at Rokin 84 in the centre of Amsterdam for a meeting about the possible order of a Fokker aircraft. The meeting was set up to inform the NVNV about the requirements of a new aircraft. Karl Lignell and Karl Henrik Larsson told chief designer Marius Beeling, and his colleagues Heinrich Hentzen and Hellebrekers, that AB Aerotransport had a special interest in a four-engined aircraft powered by four Pratt & Whitney Wasp T1D1, much like the Fokker F.XXXVI. For AB Aerotransport the evolution from F.XII to F.XXXVI would be too big. Further demands were a four-man crew, at least 20 seats, 3 in a row, cruising speed of 220km/h (137.7 mph.), range of 1,050km (652 miles) including 50% reserve, passenger cabin width of 2.10m (6 ft. 11 in.), one toilet, combined with the entrance door (!), 0.3m^3 (10.59 cu. ft.)storage per passenger, good possibility for transportation of large boxes (up to 80kg/176 lbs.) in the cargo hold, and luggage space in the wings. A special request was that the windows should be able to open, so fresh air could get in when the aircraft was on the ground. As AB Aerotransport wanted to include a steward on the flights, a galley should be installed with a maximum empty weight of 75kg (165 lbs.). It also would like to have aluminium fuel tanks, normal Dunlop tyres and wheel spats. Requested delivery date: end of the year 1933, latest on 1 February 1934. Mr. Hentzen informed the airline right away that the design of such a large aircraft would take time, so it would be better perhaps to buy the Fokker F.XXXVI instead. This aircraft could be delivered much faster.

Loose negotiation between AB Aerotransport and the NVNV continued throughout the spring of 1933, but did not lead to any order. Other offers AB Aerotransport received from the NVNV included the Fokker F.XXIV for 20 passengers and for the F.XXXVI, both expected for delivery at the beginning of 1934. On 10 April 1933, AB Aerotransport requested an offer for the Fokker F.XX and the F.XXIV. It has to be mentioned that this Fokker F.XXIV was not the same as a project at the end of the 1930s, which was also called F.24. Shortly after the request was sent, NVNV announced that the Polish government had received the licence-rights for the construction of the Fokker F.XX. The announcement was made to impress the Swedish airline, and make it understand that the F.XX was a good product, also for AB Aerotransport. To top this, the NVNV announced that KLM was to operate the airliner on the postal service between London, Amsterdam and Berlin. Around mid-April, the AB Aerotransport engineers Karl Lignell and Karl Henrik Larsson travelled to Amsterdam to discuss the offers and were informed about a new design under development, the F.XXII, diverted from the F.XXXVI. Upon return, the technical staff discussed this design with the management and believed it to be of more interest than the Fokker F.XX or F.XXIV. Furthermore, KLM had shown interest in the type as well. As a result, AB Aerotransport requested an official offer for this aircraft on 24 April. On a board meeting at the NVNV of 23 May 1933, it was mentioned that both AB Aerotransport and KLM were interested to operate the Fokker F.XVIII on the Scandinavian Air Express, but that KLM was willing to alter the order of two F.XVIII-a (four-engined version of the F.XVIII) into an order for two F.XXs. ABA was still also looking into an offer for a 20-seat, four-engined aircraft.

On 18 May, just five days before a board meeting at the NVNV, the company handed to AB Aerotransport the first offer for a Fokker F.XXII powered by Pratt & Whitney Wasp T1D1-engines. These engines were to be delivered by AB Aerotransport. The aircraft would have a regular two-crew cockpit, where the pilots sat beside each other. The offer of hfl. 164,200 included the installation of the engines, but not the furnishing of the passenger cabin nor installation of the lavatory. It also included a Dutch Certification of Airworthiness. The price could be reduced by 2,200 guilders if two aircraft were ordered at the same time. Delivery was scheduled for early 1934, but could only be guaranteed if the contract was signed by 15 June 1933.

The offer was discussed by AB Aerotransport, but not accepted. Already a day later, Friedrich Seekatz (manager at the NVNV) informed the Swedish airline that the NVNV was willing to reduce the price by 6% to hfl. 154,348. The NVNV ended the official offer by saying "that a tremendous concession has been made by our company" and hoped to receive a positive answer. The four-page supplement to the offer specified the details of the aircraft.

On 22 May, the NVNV stated that the sale of the Fokker F.XXII was very important for the Dutch company, and that it wanted to send Friedrich Seekatz to Paris to meet Carl Florman, the general manager of AB Aerotrans-

Artist's impression of the Fokker F.XXII, SE-ABA 'Lappland'. On 17 July 1933, AB Aerotransport ordered one aircraft for delivery in 1934. Fokker's publicity department had this drawing made of the aircraft for use in Swedish magazines and newspapers. Note that the cockpit still had the two pilots sitting beside each other. This was later changed, see next page. (via SFF Archive)

on 4 and 5 October to the NVNV and had a meeting with Henk Barto. They had seen the F.XXXVI and compared it with their F.XXII and small modifications were to be implement in the Swedish aircraft. In addition, the NVNV listed a number of points for improvement. It had gained experience with the F.XXXVI, which had flown since June 1934, and two modifications were to be implemented in the F.XXII: one to avoid reflections in the roof of the front window, and the second modification was the result of flight and wind tunnel tests that had shown that the guidance of the exhaust pipes had to be changed and now ran through the middle of the engine and upwards. This change also required a modification of the NACA-cowlings; this work would be speeded up. In addition to the four NACA cowlings for the aircraft, the fifth for the reserve engine, which had been ordered by AB Aerotransport, was also produced at the same time.

On the positive side, Mr. Smit-Kleine informed Karl Henrik Larsson that as AB Aerotransport did not want to modify the roof (as KLM wanted, and which was a considerable modification), the Swedish aircraft would be made ready before the KLM aircraft. The undercarriage mounted on the KLM aircraft would be demounted and transferred to the AB Aerotransport aircraft. The earlier mentioned modifications on the NACA cowlings would take some four weeks and, if no further delays, it was expected that the SE-ABA *Lappland* would get to Schiphol by 1 November. Of course, this date could not be held.

Finally, first flight and delivery!

Despite earlier expectations, the Fokker F.XXII was not completed until the end of November. On 1 December, the fuselage and the wings were transported to the barges for transport. After the aircraft had been put together at Schiphol, the SE-ABA *Lappland* was weighed on 15 December, by personnel from the RSL. The empty weight was set at 8,724kg (19,233 lbs.). After the aircraft was assembled, the RSL and the NVNV started the preparations for the first flight. On 12 December, tests were run on the rudder and wings.

The first flight of a Fokker F.XXII would soon take place. On 24 December 1934 (Christmas Eve), the first Fokker F.XXII, SE-ABA, in the newspaper called for 'The Flying Restaurant', made its first flight. Just before 0900, the aircraft was rolled out of the Fokker hangar and onto the tarmac. The next ten minutes were used to warm up the engines. The NVNV test pilot Emil Meinecke took the front seat in the cockpit, and behind him sat Ir. Wim van Neijenhoff (NVNV) and P. G. Jansen (technician of the NVNV). Also Ir. Winter, was onboard in one of the compartments as representative from AB Aerotransport. After Emil Meinecke had given the signal that the chocks could be removed, the aircraft rolled across the field and made a perfect take-off. During the flight, Emil Meinecke did not want to experiment, but rather check that all was in accordance with the wishes. He used a longer runway than needed, and climbed slowly to 600 metres (1,969 ft.). He made a few turns above the airport, before he headed for Sloten, just southwest of Amsterdam. Emil Meinecke returned to the airport and lowered the aircraft a few times to check the flaps, but increased height again every time. The handling of the aircraft was easy. After fifteen minutes, Emil Meinecke made a perfect landing. Ir. Winter jumped out of the aircraft and the first thing he said was: "tip-top" (all well). He was very pleased to see that the aircraft had met all expectations on this first flight. Especially the landing, when the flaps were deployed, had been really smooth. Up in the air the aircraft flew smoothly, while nearly no sound of the engines could be heard in the passenger cabin. If all test flights would go in accordance to the plan, the aircraft could well be delivered to Sweden on 10 January 1935. The pilots from AB Aerotransport could then make some test flights, after which the aircraft would enter service on the Scandinavian Air Express. Emil Meinecke was also content and called Anthony Fokker, who was at his chalet Oberalpina in St. Moritz (Switzerland) to tell him the good news of the first flight.

At 1100, a second flight took place, where Ir. Wim van Neijenhoff and two journalists participated. A ten-minute flight was expected to be made, but fog delayed the flight until 1200. The journalists were thrilled to be on board this new Fokker product. Emil Meinecke was again flying the aircraft, and took a short run before he took off and flew towards Sloten again. Ir. Wim van Neijenhoff said to the journalists: "He [*Emil Meinecke-author*] flies now above his house. And that is a good sign. If everything goes well, he always flies above his house. That is the best evidence that all is well." Emil Meinecke then subjected the aircraft to various tests. Once he made a very sharp turn, then he let the plane climb steep and fast. They flew at low altitude over the airport, and then suddenly started to climb again. In the meantime, the mechanics and RSL employees on board were checking various instruments. Despite the fact that the interior of the F.XXII was not yet finished, the journalists found the noise level very low and a regular conversation was fully possible. Holes had been cut in the wallpaper, in order to be able to check the various cables. Soon, Emil Meinecke put the aircraft down on the field and taxied back to the platform in front of the NVNV hangar. These flights were witnessed by several pilots of AB Aerotransport on the ground, who were later given the possibility to fly the aircraft, but not that day.

During the month of January, word came out that the delivery of the F.XXII was again delayed, but delivery was eminent. Spare parts were ordered by the NVNV, so it looked like the aircraft could finally be ready for delivery. For unknown reasons, a modification of the fixing of the windows was changed costing another hfl. 1,412. AB Aerotransport accepted, as agreed, 50% of these costs, but the

On 24 December 1934 (Christmas Eve), the first flight of a Fokker F.XXII took place. Just before 0900, the aircraft for AB Aerotransport was rolled out of the Fokker hangar and onto the tarmac. After warming up the engines, the NVNV test pilots Emil Meinecke, Ir. Wim van Neijenhoff (NVNV) and mechanic P. G. Jansen (NVNV) took off from the runway of Amsterdam-Schiphol. (via Thijs Postma)

KLM's Fokker F.XXII

The order for the F.XXII came in the wake of the order of the F.XXXVI. The F.XXII was the last four-engine pre-war Fokker transport aircraft and was basically a scaled-down F.XXXVI. The original plan was to convert the Fokker F.XVIII into the F.XVIIIa with four engines instead of three, all mounted inside the wing. The conversion of this aircraft was regarded by Albert Plesman as too expensive, and thus the F.XXXVI was discussed. The Swedish airline AB Aerotransport was interested in a four-engined aircraft as well, but found the F.XXXVI too big. The NVNV made contact with KLM to discuss a smaller aircraft, and the Dutch airline thought this might be a good concept. Albert Plesman also thought that the development costs would not be that high, when more airlines ordered the type. Anthony Fokker was not too keen about the large F.XXXVI and rather wanted to build a smaller version first, before starting on the giant F.XXXVI. His idea was to construct a F.XXXVI with retractable landing gear (later offered as the F.XXXVII). In June 1933, AB Aerotransport and the NVNV agreed to a contract (not signed until September, see chapter 'ABA's Fokker F.XXII') and the technical specifications were forwarded to KLM for the Dutch airline to use in its negotiations with the NVNV. The two airlines wanted to have similar aircraft. That would also make it easier for the NVNV to construct the F.XXII. Still, the NVNV was not too eager to work on two expensive projects for which no order had been received yet. Albert Plesman became angry because of the delay, and threatened to cancel the order for the Fokker F.XX. From the NVNV's point of view it was of course difficult to work on three large projects at the same time: the F.XX, the F.XXII and the F.XXXVI. The costs were enormous.

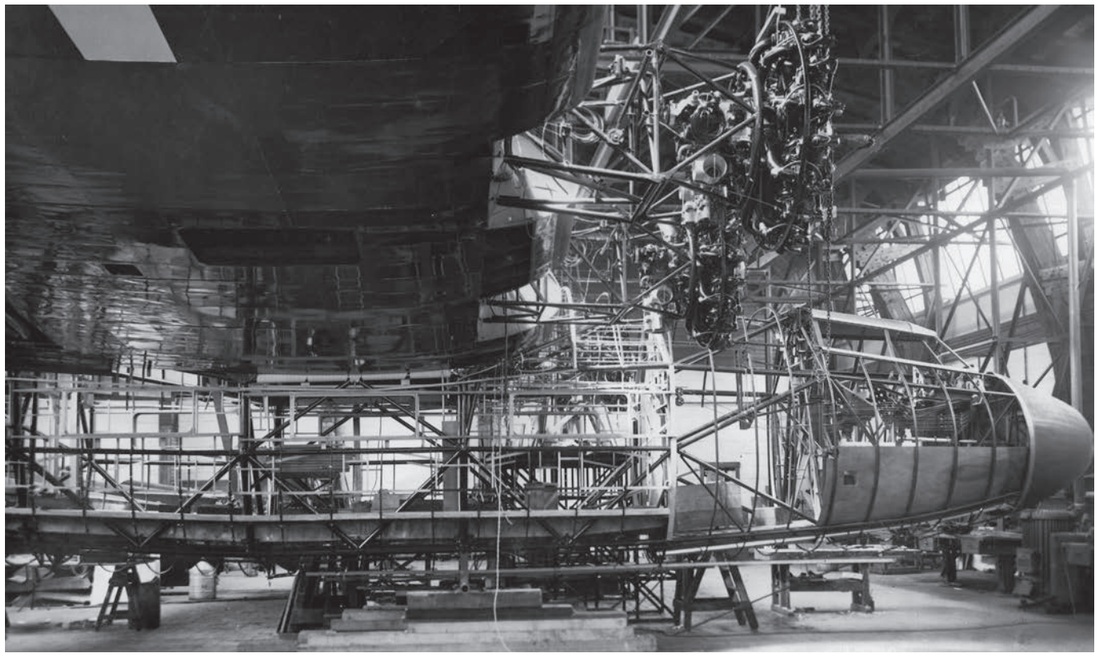
On 10 May 1933, Albert Plesman presented to his board of directors three versions of the Fokker F.XXII: One for the service to the Netherlands East Indies with a range of 1,400km; one for the European network with a range of 650km; and one for a direct service Amsterdam-Malmö, where the aircraft was to have a range of 1,100km. All were to be powered by four 500hp Pratt & Whitney Wasp T1D1 engines. In November 1933, Albert Plesman requested permission from his board to order one Douglas DC-2, one Fokker F.XXXVI and one F.XXII for the Netherlands East Indies service. In that way the three aircraft could be compared with each other. It was difficult to order foreign aircraft for KLM, because the contract with the government stipulated that KLM should fly with aircraft built in the Netherlands. There were two exceptions to the rule, and that was when the Dutch product did not meet the requirements, or the Dutch product was too expensive compared with the foreign product. For a Dutch aircraft manufacturer to make a similar aircraft as the DC-2, would take at least 1½ to 2 years. Douglas could deliver in September 1934, while the Dutch manufacturer could not deliver until earliest June 1935. The board agreed to the request and an order was placed with both Douglas and the NVNV. Later the request for the 'Malmö'-version of the F.XXII was dropped and only a Netherlands East Indies and a European version were requested. The 'Malmö'-version was a long-range aircraft for the European services, especially for a direct line, KLM planned to open: directly from Amsterdam to Malmö in Sweden. This version was dropped in favour of three nearly similar Fokker F.XXIIs.

The Swedish airline AB Aerotransport forwarded to KLM its design '*Bauprogramm*' (construction programme), dated 28 June 1933, specifying the Fokker F.XXII. This program had been discussed by KLM and AB Aerotransport and was eventually used by the Technical Department of KLM as a basis for the contract for the two Fokker F.XXIIs of KLM, which was ready on 16 September 1933. On 29 June, KLM placed the order, although the technical contract was not signed until in November.

Technical description of the Fokker F.XXII

The Fokker F.XXII was a four-engine commercial cantilever high-wing monoplane, the wing being directly attached to the fuselage. The wing was of typical Fokker wooden construction. Its power plant consisted of four 500hp Pratt & Whitney Wasp T1D1 air-cooled engines, fitted with tractor

Above, right: The strength of the rudder is tested by shaking it violently. (via Aviodrome)
Below: The fuselage was made up of seamless cold drawn steel tubes autogenously welded together, partly braced with diagonally inserted steel tubes, partly with steel wire and turn buckles. The Pratt & Whitney Wasp T1D1 air-cooled engines have already been installed (via Aviodrome)



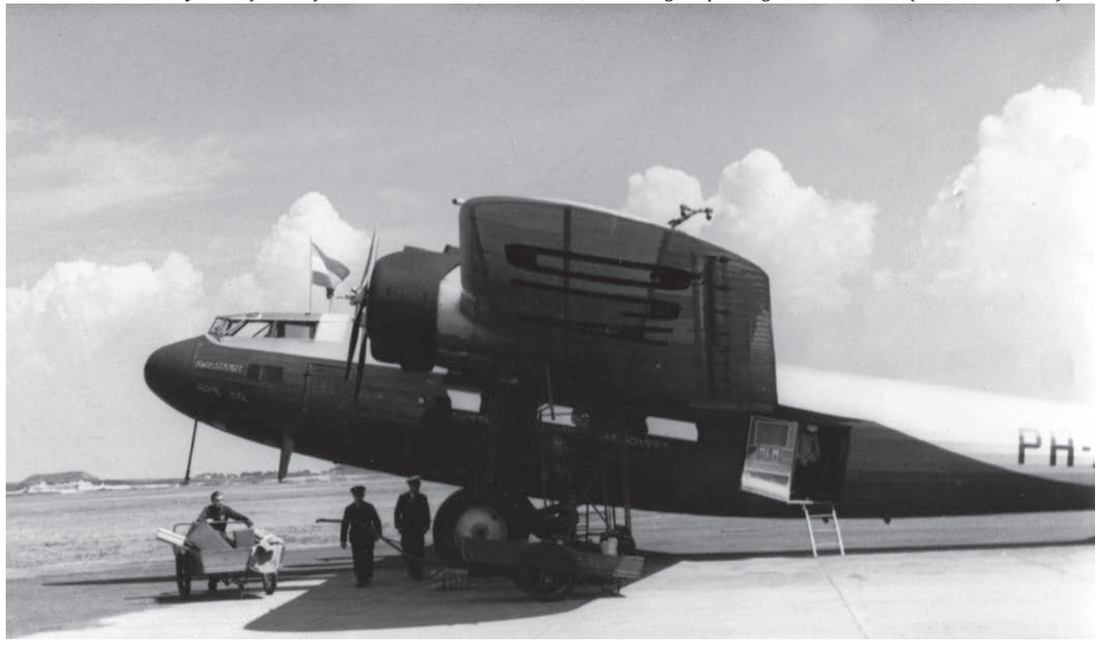
airline, because he could not present an Aryan certificate, he and his wife had to leave Germany and settled in The Netherlands, where KLM had use for pilots. He was the first foreigner employed by KLM since Iwan Smirnoff, and his appointment nearly led to the announcement of a strike by KLM pilots, who could not understand, why a Dutch pilot was not appointed. However, the pilots did not strike. Silberstein and his wife lived in one house, part of a small group of houses, at the edge of Schiphol airport, specially built for KLM personnel.

Luck was not with the F.XXIIs of KLM. On 29 June, when the PH-AJR *Roerdomp* with Captain Jan Duimelaar at the controls, taxied to the runway for a flight from Waalhaven to Schiphol, the left tyre burst and as a result, the tyre flew off the rim, the aircraft made a turn and sagged to the side of the burst tyre. As a result, the nose of the aircraft hit a building and was damaged. This accident was due to the small diameter of the rim of the wheel, and as a result of which the rim, as it were, drilled into the ground and remained stuck. The damage was quite severe. The next day, Ir. J. van der Heijden (Luchtvaartdienst) came to Waalhaven and immediately withdrew the Certificate of Airworthiness until further notice. Under his supervision, the nose was completely repaired, while the small tyres were replaced with the larger type as used on the PH-AJP *Papegaai* and PH-AJQ *Kwikstaart*. While the PH-AJR *Roerdomp* was in the workshop, it was decided to give the aircraft a major overhaul. All engines were checked (30 hours inspection), the bolts on the exhaust pipes were renewed, the oil cooler dismounted and checked and new petrol filter installed. The handles in the cockpit for the carburettor for the cabin heating were moved to make place for the new hand pumps for the fuel supply. After the crash of the PH-AJQ *Kwikstaart* (see further on), four new Romeo hand pumps were installed and the cabling mounted. The NACA cowlings were further improved. The propellers on the starboard side were removed, inspected and reinstalled. Of course, the major repair was the replacement of a completely new aircraft nose, produced by the NVNV. Beside the nose, new steel tubes were also mounted and a part of the floor replaced. The pyramid construction for the mounting of the steering cables pulleys was renewed and the floor had new rubber. The luggage and battery storage were renewed and several instruments as well. Due to the accident, a number of wooden partitions were re-installed and the cabin ventilation in the nose was renewed. The radio equipment was taken out and checked.

During the repairs and overhaul, the undercarriage had new wheels, the same type as under the PH-AJP *Papegaai* and the PH-AJQ *Kwikstaart*. The mounting of new wheels meant that the aircraft came up higher, and thus the stair to the rear door had to be extended. The Dutch firm Bosman had made a new type of fridge, and this was installed as well. In addition, a lot of smaller modifications were made, but the long stay in the hangar meant that the aircraft was not ready until 14 August. On 12 August, Jan Duimelaar was asked to make a test flight with the PH-AJR *Roerdomp* from Waalhaven to Schiphol, and see if all was in order. After a flight of 45 minutes, he arrived at Schiphol and could sign the statement that all was in perfect order. Mr. P. B. Behage of the KLM Technical Service, requested the Luchtvaartdienst to re-issue the Certificate of Airworthiness for the aircraft. On 17 August, the certificate was sent to KLM and the aircraft was ready for service again.

On the Scandinavian Air Express, the Fokker F.XXXVI, PH-AJA *Arend* with Koene Dirk Parmentier visited Copenhagen and Malmö again on 6 July. On 14 July, it was the first time for a long time, a KLM aircraft did not arrive at Copenhagen and Malmö. That day, one of the F.XXIIs crashed near Schiphol. That same evening the Fokker F.VIII, PH-AEI, flew three passengers on an extra flight from Amsterdam to Hamburg and Copenhagen.

The Fokker F.XXII, PH-AJQ 'Kwikstaart' during a nice summer day, while being serviced at the Malmö-Bulltofta airport. The Dutch red-white-blue flag waves from the top of the cockpit. Captain Leendert Sillevis had the honour to fly the PH-AJQ 'Kwikstaart' on 5 May 1935 for the first time between Amsterdam, Hamburg, Copenhagen and Malmö. (via ABA Archive)

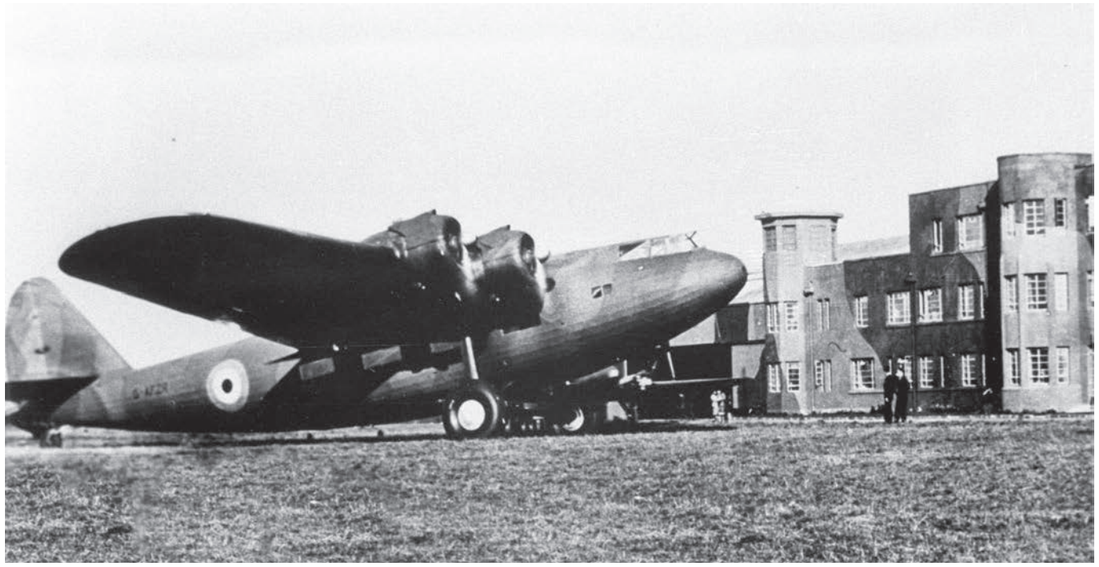


The loss of PH-AJQ *Kwikstaart*

On 13 July, after a regular flight to London, the PH-AJQ *Kwikstaart* returned at Schiphol and parked on the tarmac. That day, just before departure from London-Croydon a fault in the spark plug on the left outside engine delayed the departure, but this was quickly attended to by the flight engineer. During the evening the ground personnel worked on the regular overhaul of the aircraft and prepared it for next day's flight to Hamburg, Copenhagen and its final destination in Sweden: Malmö. The summer had been hectic, but until now there had been very few problems with the PH-AJQ *Kwikstaart*. The next day, 14 July, the morning temperature rose fast and had already reached 22 degrees Celsius (71.6 degrees Fahrenheit) by the time the aircraft was prepared for take-off. There was a light breeze from the northeast. That morning, fifteen passengers had booked a seat on the flight. Two of these passengers, the British citizens W. E. Newman and H. C. Hodson had come by Fokker F.XXXVI, PH-AJA *Arend* from London that morning and managed to get early on board the PH-AJQ *Kwikstaart* together with the crew. The two British citizens both worked for the company Masonite Ltd. They found themselves a seat at the front of the passenger cabin. Today's flight was under command of KLM Captain Heinz Silberstein, who had the day before flown on a regular flight to Knocke in Belgium and returned early that Sunday morning to Schiphol. He transferred to the PH-AJQ *Kwikstaart*, an aircraft he had 34 flying-hours on. The remaining crew consisted of radio operator G. F. Nieboer, and two flight engineers by the name of G. Brom and L. J. van Dijk. Steward on the flight was J. Haberer. Silberstein (he was the only pilot in the cockpit, a twin crew cockpit was not yet mandatory) was informed by the steward that the passenger cabin was ready for departure. The captain started up the four engines and ran them idle, while the pre-flight checks were made. In the seat of the radio operator sat Blom, also an experienced flight engineer. Flight engineer L. J. van Dijk was added to the crew for training purposes and stood un-

The Fokker F.XXII, PH-AJQ 'Kwikstaart' just minutes before its final flight. The private photograph was taken by a visitor at the airport. Little did he know what was going to happen minutes later. (via Herman Dekker)

Fokkers In War and Peace



All three remaining Fokker four-engine aircraft ended up in the United Kingdom. The first aircraft to be sold to the UK was the Fokker F.XXII, PH-AJR *Roerdomp* (5360). On 8 August 1939, the Dutch newspaper published the news that the PH-AJR *Roerdomp* was sold to British-American Air Service Ltd. This company was formed on 6 April 1935 to run charter flights from London-Hendon Aerodrome. Its 'American' connection was nothing more than that one of the founders was an American citizen. The company started off by purchasing several single- and multi-engine aircraft from the de Havilland Company. It went bankrupt in January 1937 but re-emerged under the same name in April 1937 with Mrs. Lilian Gibbs as the new owner. The company was engaged in charter, advertisement and demonstration flying, in addition to the flying carried out in connection with Army co-operation exercises. It flew regularly to the main race meetings as well and during 1938, the company flew a total of 226,340 miles (364,259km) and carried 2,183 passengers. With larger ambitions, the company decided to purchase one of the four-engine Fokker F.XXIIs from KLM. On 2 August, the Dutch registration was cancelled, and the aircraft overhauled at Schiphol under supervision of British personnel. The name of the company was painted on the fuselage and the Dutch registration removed. On 9 August, the British registration G-AFXR was issued and the aircraft was inspected upon arrival at London-Heston. The next day, the Certificate of Validation no. 188 was issued in the name of the airline. The aircraft was still being fitted as a luxury airliner for private charter, chiefly for use by parties flying to race meetings.

Only a few flights were made, of which one was remarkable. On 29 August, G-AFXR made a test flight from London-Heston. The airliner, suspected of being a foreign aircraft flying on an unauthorised route, was chased by a RAF Spitfire. The Fokker was recognised by the RAF station at Hornchurch as a foreign type rarely seen. The Spitfire was sent up to give chase, caught up with it just before London-Croydon, circled, and signalled it to land. The BAAS-pilot noticed that he was being pursued, but still wanted to return to London-Heston. The Spitfire, however, cut off the Fokker and continued circling at high speed until the Fokker was forced to land at Croydon. The military authorities at Hornchurch had mistaken the Fokker F.XXII for a German aircraft, and alarmed the Royal Air Force, which immediately send a fighter. After the misunderstanding was cleared up and the papers checked, the BAAS-pilot could return to London-Heston.

Three days after this incident, the Second World War broke out, when German forces attacked Poland. Civil flights in the United Kingdom were now prohibited, and British-American Air Service Ltd. had now no possibility to earn money with the Fokker F.XXII, G-AFXR. On 14 November 1939, the registration was cancelled pending the sales of the aircraft to Scottish Aviation Ltd. at Prestwick. This company had just before the Second World War purchased the other two four-engine Fokkers: the F.XXXVI, PH-AJA *Arend* (5348) and the F.XXII, PH-AJP *Papegaai* (5357). The deal between BAAS and Scottish Aviation went through, and on 29 November, the registration G-AFXR was reapplied, but now to Scottish Aviation Ltd. It was to be operated by No. 12 Elementary Flying Training School. In 1940, the aircraft was transferred to No. 1 Air Observer Navigation School.

Night Air Transport Ltd. wants Fokker Fours

In August 1935, Scottish Aviation had been established at Prestwick by Lord George Douglas, 14th Duke of Hamilton and Flt Lt David Fowler McIntyre. The Duke's personal acquaintance with the directors of the de Havilland Aircraft Co. resulted in an order for that company's D.H.82A Tiger Moth. The Air Ministry was, in the light of the increase of Britain's air strength, interested to let private companies do the basic training of new air-crews. One of these contracts was won by Scottish Aviation and on 9 August 1935, the Scottish College of Aviation Limited was formed. De Havilland Aircraft Co. was heavily involved in this company and was one of the major shareholders. Prestwick (Orangefield) was selected as the company's airfield. 157 acres of land were purchased, and at the same time another 190 acres of adjoining land for future expansion. Construction of the airfield started in September 1935 and offices, training accommodation, hangars and tarmac aprons constructed. Work was finished by February 1936. The No. 12 Elementary Flying Training School was established at Prestwick, with one-third of the capital provided by de Havilland Aircraft Co., which also provided two gentlemen for the Board of Directors: W. E. Nixon as Chairman and T. P. Mills as Board Member. The training school was one of

The Fokker F XXII, PH-AJR 'Roerdomp' was sold to British-American Air Service Ltd. This company was formed to run charter flights from London-Hendon Aerodrome. In the UK the aircraft was registered as G-AFXR. Note the name of the company written under the windows and the logo promently on the nose. The colours were the standard KLM-colours. (both photographs Joe Connolly via Douglas Rough)

great fun. There was no organised sport or PT, and with the exception of Morse code I found the syllabus relatively easy.

"I took my first flight in the Fokker (coded G-AFZR) on November 17, an air experience flight of an hour-and-a-half with Flight Sergeant Palethorpe. I flew again with Palethorpe and with two different flight lieutenants, Vetch and Cane (Peter Cane was later a Captain with BOAC and with his experience on Comets became special duties pilot assigned to the VC10), throughout the course of the next six weeks on a series of map-reading and other navigational exercises. I also flew with another, Flight Lieutenant Thomas who post-war went to work for Airwork at Blackbushe. A brief record of each flight had to be recorded in ink in my observer's flying logbook that was to become my constant companion in the months and years ahead.

My trips in the three Fokkers (along with G-AFZR were G-AFZP and G-AFXR) were interspersed with cross-country flights in the station's Avro Ansons. We were allowed home for Christmas and by February 16 and the completion of the first stage of my training I had recorded just short of fifty flying hours in total, and had been rated 'above average' by the chief instructor.

"The group was then split into two, one half heading north to Evanton, and the rest of us being sent to a 'proper' RAF base, RAF Aldergrove in Ulster. Aldergrove was home to No. 3 Bombing and Gunnery School (B&GS) and had on its inventory a mixed bag of aircraft including an old Westland Wallace."

One of the other pupils, who has flown on the Fokker F.XXXVI was Sgt Pilot William Close. He enlisted in the RAF Volunteer Reserve in the second half of 1939 and in October that year was posted at Prestwick at No. 1 AONS. Within days he was flying the Fokker F.XXXVI, G-AFZR and the first three hours were with Flt Sgt Palethorpe, followed by two hours map-reading with Flt Lt Vetch. He remained at No. 1 AONS until January 1940, passing on to the next unit after 50 flying hours on both Ansons and Fokkers. He continued on the No. 8 Bombing and Gunnery School at RAF Evanton.

On 29 November that year, the second UK-based Fokker F.XXII (G-AFXR, 5360) was sold from British-American Air Service to Scottish Aviation, and quickly modified into a flying classroom as well. It entered service with No. 1 AONS. The Fokker F.XXXVI and F.XXIIs were modified into flying classrooms for the training of air observers and navigators and up to 19 July 1941, over half the air observers and navigators in the Royal Air Force had received their training on these aircraft. It is also worth noting that this was the first occasion this method of training had been adopted although it later became the standard practice in all the air forces of the major countries. At Prestwick airport, Scottish Aviation had constructed a large hangar, where the three Fokkers found space and where they were overhauled. The hangar was known as the 'Fokker-hangar'.

In a book about Scottish Aviation, the critics of an Air Officer Commanding Reserve Command was quoted. He suggested "that the authorities took an unfavourable view of this approach to training and were likely to take steps to withdraw the Air Ministry's approval of it. David McIntyre, however, sprang to its defence with his customary vigour, setting out the case for the 'Fokker-Anson' method in a letter to the Under-Secretary of State for Air asking for an immediate investigation to be made so that full consideration might be given to introducing this method of Air Observer training more widely." Training activities were, however, progressively transferred from Great Britain to Canada and South Africa and No. 2 SWS closed in Mid-November 1940 and No. 12 EFTS on 22 March 1941. The Air Observer training survived until it was stopped on 19 July 1941.

Unfortunately, no Operation Record Books exists of this school, again due to the fire, but one source survived and that is the logbook of the Flt Lt H. C. S. Vetch. He had started flying for No. 12 EFTS in December 1938, flew for the No. 1 AONS, and would be transferred to No. 11 EFTS in February 1941.

The logbook of Flt Lt H. C. S. Vetch

The first entry of a Fokker-flight in Vetch's logbook dates from 23 September 1939, when he was second pilot under F/O Jennens. They made a 40-minute instruction flight in the Fokker F.XXII, G-AFZP, followed by a new flight three days later in the same aircraft, but this time with Flt Lt Noel Capper as first pilot. This flight was a training flight for Flt Lt Vetch and lasted for three hours and 20 minutes.

Vetch's first registered flight in the Fokker F.XXXVI, G-AFZR, was as second pilot, again under F/O Jennens, on 12 October 1939. That day, they flew 33 pupils at the same time on a forty-minutes air observer training flight. The next day, three more training flights were made with resp. 24, 26 and 29 pupils. First pilot was Flt Lt Dobson. On 18 October, he was for the first time the First Pilot on board the Fokker F.XXXVI, G-AFZR and made a 1.5-hour flight with pupils on board. The main object of the flight was map-reading. Throughout October, he stayed as First Pilot on the Fokker F.XXXVI, G-AFZR, and made map-reading and air navigation flights. At the end of October, he had flown 20 hours as First and 8 hours and 20 minutes as Second Pilot on the Fokker F.XXXVI. He continued flying the aircraft throughout November and all the time right up until 22 December, when he was sent on leave. He was in the air every day and logged numerous flying hours, sometimes nearly six flying hours per day. When he went on leave he had flown 98 hours and 50 minutes on the Fokker F.XXXVI, G-AFZR. During these two months, he only flew one ferry flight with the Avro Anson, N9717, from Prestwick to RAF Grangemouth in Falkirk.

Over the New Year he returned to Prestwick, and on 2 January 1940 started flying the Fokker F.XXXVI. On 18 January, he was transferred to the Fokker F.XXII, G-AFZP, and also started on 22 January flying the F.XXII, G-AFXR. On 23 January he was told that he qualified as First Pilot and that he could fly both the Fokker F.XXXVI and F.XXII on night flights. A proud moment for Flight Lieutenant Vetch. In February, he flew a mix of both types, but mainly the Fokker F.XXXVI as he now was one of the most experienced pilots on the type. He logged the following flying hours:

February	58:00;
March	28:00;
April	53:00; and
May	54:10.

On 20 May, Flt Lt Vetch and P/O Palethorpe performed an air observer's training flight with the Fokker F.XXXVI, G-AFZR, and little did they know that these 3 hours and 30 minutes would be their last minutes in this aircraft. The day after, on 21 May, the unfortunate end of the Fokker F.XXXVI, G-AFZR, had to be registered. Flt Lt Vetch and P/O Palethorpe taxied from the tarmac to the start of the runway. On board were also crew members LAC R. A. Anderson and LAC Richard Harry Freeman. They had 26 trainees going on air observer training. The civilian navigation instructors were Mr. House and Mr. Cornock, and the civilian wireless operator was Sergeant H. Macrae. At 0950, when he turned on the runway and started his take-off, he was unaware of obstacles on the runway. He tried to take-off with the aircraft, but soon realised that he could not clear the obstacles and closed the throttles and applied the brakes. The aircraft overran the boundary of the airport, and upon impact, an engine fire broke out damaging the aircraft beyond repair. Sergeant Richard Harry Freeman was slightly injured, but the crew and tutors and pupils managed to get out in time, and the fire was put out fast. It was, however, not possible to rebuild the aircraft due to the lack of spare parts. It had to be written off. Flt Lt Vetch did not enter the flight in his logbook, as he never took off. The RAF had reserved on 30 November 1939, the serial HM161 for this aircraft, but never applied it. As all other Fokkers in RAF service, it had always flown under its civil registration. After five years of operation, the Fokker F.XXXVI was no more. Its civil marks were not cancelled until 5 November 1945 though. Now, only two 'Fokker Fours' remained in service.

Crew and passengers on board the Fokker F.XXXVI, G-AFZR on 21 May 1940

34010 F/Lt. H. C. S. Vetch
78704 P/O H. W. O. Palethorpe
944628 LAC R. A. Anderson
742673 LAC Sgt Richard Harry Freeman
908075 J. S. Barrett
970018 S. N. Beckett
902247 W. N. Blau
905397 J. W. R. Boggis
902262 G. Carter

938735 J. Carter
743033 R. W. S. Cuthbertson
758074 J. F. Daly
944581 A. W. Dormand
904693 D. Draffin
742473 D. J. Farr
938031 H. H. Foster
938067 C. E. Gansler
745898 C. A. Goad
93525 A. J. H. Gordon

908578 F. G. Grimshaw
754142 L. D. Groom
908586 H. C. J. Hanks
970017 J. A. Harrison
747835 A. H. Hazell
938917 D. Hogg
938919 J. N. Huddlestone
742530 L. L. Hunt
971854 A. M. Illingworth
900135 W. H. Johnson
755106 P. Manning
All above: uninjured

Civilian navigation instructors Mr. House and Mr. Cornock, uninjured
Civilian wireless operator Macrae, uninjured
*742673 LAC Richard Harry Freeman (*30 April 1920), injured on right heel, fracture doubtfull, not serious.*

Above: The logo as printed on the nose and tail of the Fokker F XXIIs and F XXXVI, while operated with Scottish Aviation. Colour version in colour section. (via Douglas Rough)
Right: The Fokker F.XXXVI, G-AFZR, at Prestwick. It was damaged during a failed take-off on 21 May 1940. (via Thijs Postma)

port outside engine #8549, had air screw #T.26308; port inside engine #9288, had air screw #8356 CPL; starboard inside engine #8722, had air screw #T.26350; starboard outside engine #9296, had air screw #T.26312. The engines had run since their manufacture P.O. 2,028 hrs. 51 min., P.I. 1,614 hrs. 51 min., S.I. 1,628 hrs. and 51 min. and S.O. 15 hrs. and 16 min. All four new air screws had just run 11 hours and 26 minutes and were also purchased from RAF sources. The inspection report mentioned that the aircraft since the manufacture in the Netherlands had flown 3,385 hours and 31 minutes. And since the last major repair, 8 hours and 56 minutes.

It was not until 18 October 1946, that the Fokker F.XXII, G-AFZP made two trial flights out of Prestwick. This did not go that easy. It was on the second attempt that the aircraft managed to take off, but in the end, the aircraft took to the air again.

The pilot J. A. Dobson made a forty-five-minutes test flight on 6 November 1946 with an all-up weight for the test of 28,600 lbs. (12,973kg) and climbed in 8 minutes to 5,000 feet (1,524m). The test was carried out to prove the new engine installation. He concluded that "all of which were normal and free of snags". Before a test flight, the aircraft had been weighed and a weight schedule prepared. On 20 December, the Certificate of Airworthiness was reissued under No. 8845 (A2949). It had at the time of certification flown 3,385 hours and 31 minutes.

It was made ready for use on the service they started to operate between Prestwick and Belfast, a service operated on behalf of British European Airways (BEA). On 11 December, it was announced in the newspapers that BEA, on 16 December 1946, would move its operations to Nutt's Corner Airport (Belfast) and that it would be the place of departure and arrival of all aircraft. On that day, the Belfast-Prestwick service would be restored, using the 22-seater Fokker F.XXII, G-AFZP on charter to BEA. On the

The Fokker F.XXII, G-AFZP, photographed on 6 February 1947, by an airplane spotter. The aircraft operated then the Prestwick-Belfast service. (via Ernest Hart)

Belfast-Glasgow service the Douglas Dakotas would come into use as well. The charter with BEA ended on 10 August 1947 and this was the day, the aircraft made its last flight. During the Summer, she only made some joyrides around the Clyde Coast.

Eric Skemp has been second pilot for Scottish Airlines and actually flew the Fokker F.XXII. This account was found, written by an unknown person: "I had a very good friend called Eric Skemp. Sadly, Eric is no longer with us, but I met him through 53 Sqn (Eric flew Liberators on 53). After the war, he joined Scottish Airlines, ostensibly to fly their Liberators, but he also flew the Fokker F.XXII. Eric had two books published at his own expense before he died and I am honoured to have a copy of both books (the production run was only 30 copies each). Here is what Eric had to say about the F.XXII: "And three days later, I had my first taste of the Fokker F.XXII - again with Cormack - on a short 'pleasure flight'. The F.XXII was a remarkable beast. A beautifully streamlined airship-like fuselage, covered in silver fabric, surmounted by a ninety-nine-foot wooden wing and supported on a fixed (tail wheel) undercarriage, was fitted with seats for twenty-two passengers in facing pairs. Long rectangular windows afforded an excellent view. Carrying, in orange letters the Scottish Airlines name below the windows and the registration, G-AFZP, the company's rampant lion logo on the fin and the irreverently nicknamed 'three pissy cats' either side of the nose, she was a magnificent sight. But, for my money, her claim to fame arose from her engines. Anyone who has heard a North American Harvard trainer with its high-revving Pratt and Whitney Wasp engine emitting a banshee-wail of ear-piercing intensity will remember the sound. 'ZP' had four of these engines in close proximity to the fuselage, each exhausting through a pair of short vertical smoke-stacks. With minimal internal soundproofing, the noise was indescribable. Up front, the flight deck was a long narrow affair. The Captain sat in the nose, facing a huge circular control wheel. The first officer sat behind him to starboard, with a somewhat smaller wheel. The flight engineer was behind him, with a slightly smaller wheel which was used to operate the flaps. Engine starting was hilarious. On the command 'Go!' the engineer waggled the wobble pump, I waggled the mixture-lever and the Captain waggled the throttle. Or maybe it was the other way around. At any rate, I distinctly remember all three of us either going up and down or backwards and forwards. Ground handling in a high wind was tricky. But she was a grand old lady and the last of her line. Incidentally, we had a facing pair of seats from 'ZP in the original Prestwick Spotters Club. The seats were beautifully made from red leather and each seat had the KLM logo pressed into the leather. I actually know where they are now but some vandal has cut out the KLM logos."

In October 1948, the aircraft was offered for sale in the aviation magazine 'Flight' and had by then a flying time of 3,472 hours (just flown 86 hrs. and 29 min. since moment of certification). It was inevitable that following the acquisition of a fleet of Douglas C-47 Dakotas, and Scottish Aviation's heavy airline commitments in the early post-war years that the Fokker F.XXII had to fade out of the picture. It was described as being a 'Hangar Queen'.

Nevertheless, the company had a sentimental attachment to the aircraft, and they kept her stored until July 1952. They offered the Fokker F.XXII, G-AFZP, to the NV Nederlandsche Vliegtuigenfabriek (Fokker) and the Netherlands Aeronautical Museum under formation, neither of whom to 'their' regret could accept it on account of storage difficulties at that time. Hence, the registration was cancelled in July 1952 and the next year, the aircraft had to be removed from the hangar due to lack of space. With pain in their heart, the aircraft was broken up and burnt at Prestwick. Her markings were cancelled on 5 February 1959 and as reason 'w. f. u.' (withdrawn from use).

The aviation magazine 'Flight' of 25 December 1953, had under the heading 'Trophy Tells a Story' a final note about the Scottish Fokker F.XXII: "An industrial salvage trophy presented to the South Ayrshire Local Savings Committee by Mr. D. F. McIntyre, managing director of Scottish Aviation, Ltd., bears this inscription: 'The base is made of a piece of spruce wood from the main spar of a Fokker F.22 aircraft G-AFZP. The aircraft was one of three purchased by Scottish Aviation and flown by them from Holland on the eve of the outbreak of war in 1939 to save them falling into the hands of the Germans. All three aircraft were then extensively used as flying classrooms for the mass training of navigators at Prestwick, where, during 1939-41, more than fifty per cent of the R.A.F. intake of navigators received their training'.

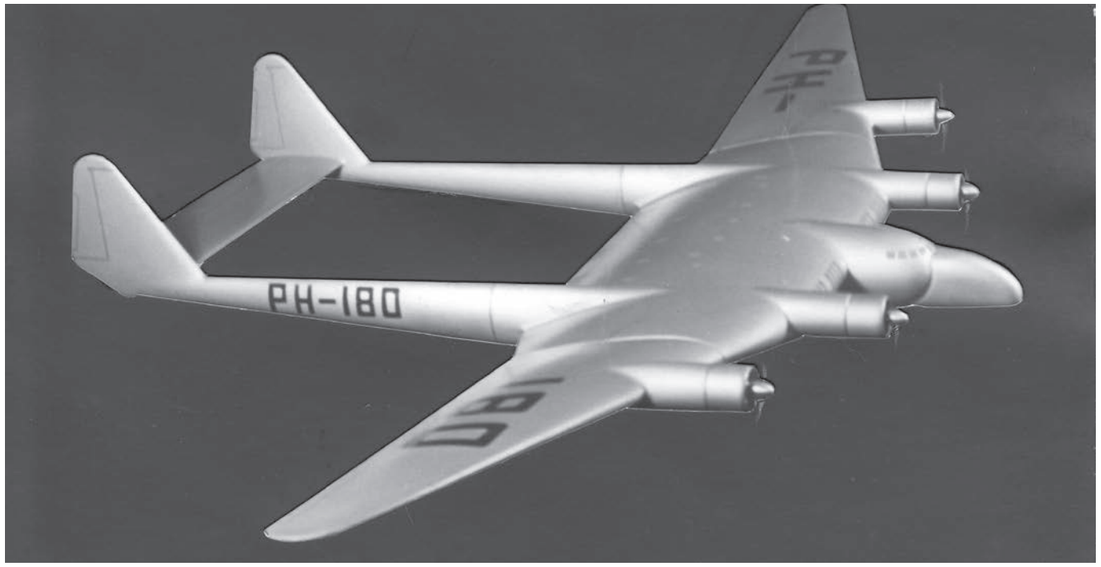
A couple of seats from the Fokker F.XXII ended up in the Clubroom of The Renfrew Observers Group Club (i.e. the local Renfrew Spotters Club). They had a double and a single seat from the Fokker F.XXII in the clubhouse from 1953 and were there at least until 1965. The seats then went into storage with the single seat ending up in Gordon Macadie's garage. The double seat disappeared out of sight. In 2016 the single seat was sold and is still around.

But, the last of 'The Fokker Fours' was no more.

Left: With a beautiful winter sky (around March 1947), the Fokker F.XXII, G-AFZP, of Scottish Airlines waits for a new flight. In the background a Supermarine Walrus and a Douglas DC-3. (via Aviodrome)

Page 299: A misty morning is the decor for the Fokker F.XXII, G-AFZP 'The Highlander'. Note the different livery (tail, stripes and name of the airline) compared with the photograph on page 295. (via Douglas Rough)

Four-engined Projects

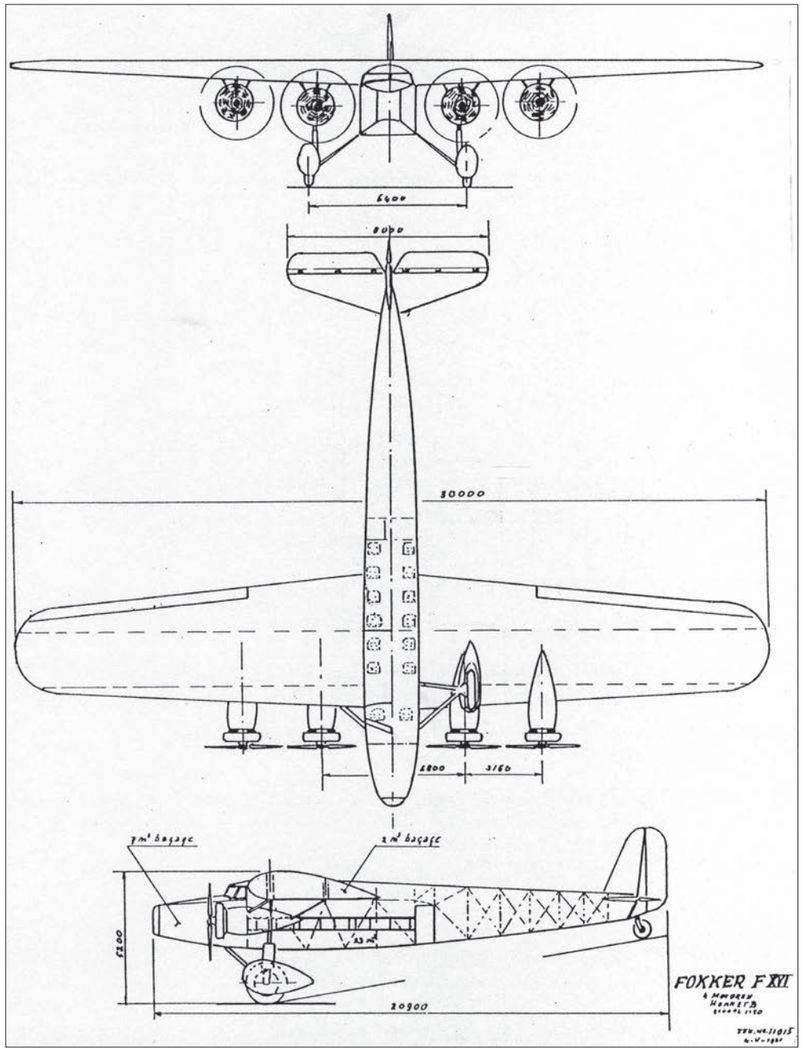


There is comprehensive information about the projects from the NV Nederlandsche Vliegtuigenfabriek, Fokker. Details are available of more than 200 different military and civil projects. Many of these remained in the Fokker archive, and were never presented to a customer. Several civil projects were offered to KLM and evaluated, but in the end rejected. This could be anything from single-, twin-, three-, four- or five-engined designs. In this chapter the four-engined (and one five-engined) projects will be presented, which already make up an impressive list of designs. Sometimes KLM had requested a new model, but most were initiatives from NVNV factory. The last ordered (1933) and delivered Fokker (1935) before the Second World War was the Fokker F.XXII, PH-AJR *Roerdomp*. The last remaining years of the 1930s, a lot of time was put into discussions about different projects for feederliners, taxi and training aircraft and intercontinental transport aircraft, with or without pressurized cabin. Meanwhile, the technical team in KLM had been in the USA looking at similar aircraft of metal construction. The biggest problem for the NVNV was the transition from wooden wings with steel-tube plywood covered fuselage to complete all-metal aircraft. This was going too slow. Even new projects at the end of the decade still included a wooden wing with an all-metal fuselage, or even a combined wooden fuselage with fabric cover or with metal nose and tail. At the end of the 1930s and under pressure from the Dutch government, KLM ordered four twin-engined Fokker F.24 airliners, as replacement for the Douglas DC-2 and DC-3. War prevented their construction and delivery.

In this review, the four-engined projects will be presented together with some details when available. Initially, while in Germany, Fokker started to use the letter 'V' for its projects, where the letter stood for "Versuchsmaschine" (test aircraft). At the end of the First World War, Fokker started with project V.44, the first aircraft in the F-series, later to be known as the Fokker V.1 (Verkehrsflugzeug – 'Transport Aircraft') or F.I. The designer of this aircraft was the genius Reinhold Platz, who had worked for Fokker since 1912, when he started as a welder. He became head designer at the Fokker factory in Schwerin in 1916, and was responsible for the design of the famous Fokker D.VII. After the war, he moved with Fokker to Amsterdam, where a Dutch factory was established at Amsterdam-Noord in the former ELTA exhibition halls. From the Fokker V.45, Fokker developed the F.II, that was the first single-engined, high-wing cantilever monoplane airliner designed by Fokker. Adolf Prage made the first flight with the Fokker F.II in October 1919 at Schwerin in Germany, but the aircraft was flown by Fokker's friend Bernard van der Waal to the Netherlands in March 1920. It formed the basis for many of the future F-series aircraft, with the exception of the F-6, which was an American fighter design. The only number missing in the F-series is the F.XIII, which can be traced back to the end of the 1920s: a twin-engined passenger aircraft on floats. Fokker engineer Marius Beeling recalled about this project that it had been initiated by KLM and Fokker together. The aircraft was based on the torpedo bomber/maritime reconnaissance floatplane, the T.IV, which had the wing of the Fokker F.VIII and F.XII. The passenger cabin had seating for ten, and the aircraft had a range of 650km. It was to be powered by 480hp Jupiter engines. The aircraft was intended for operation with the KNILM (Royal Netherlands East Indies Air Lines) on the scheduled line from Batavia to Singapore and Belawan. It was never built.

Fokker F.XVI (1931)

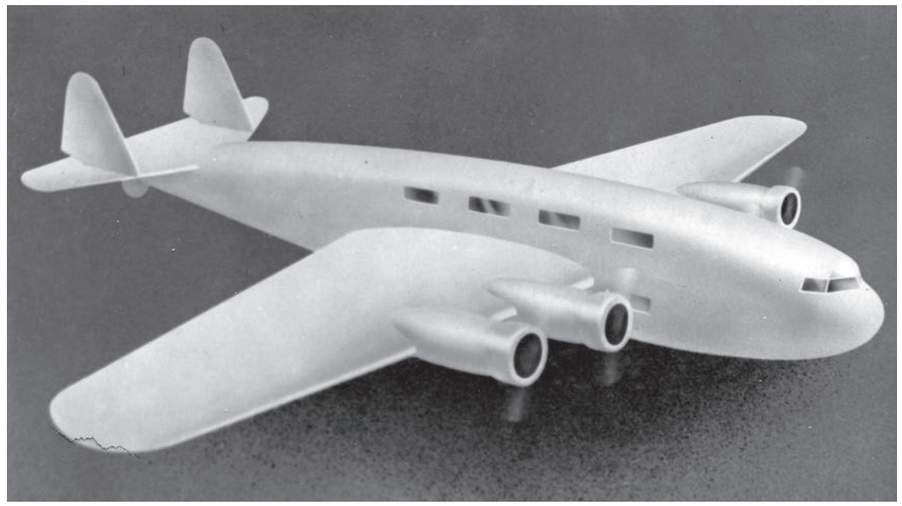
The first four-engined aircraft the NVNV designed was the Fokker F.VIIb-4m, a four-engined version of the successful three-engined F.VIIb-3m. This design was to have four 130hp Armstrong Siddeley Mongoose engines hanging under its wing and offered seating for eight passengers. For the time being, many of the Fokker-designs were three-engined aircraft, and in March 1931 the Fokker F.XV was designed. It was also considered as a new aircraft for the Netherlands East Indies-route. Out of this model, the first four-engined project of Fokker in Europe was born: the F.XVI, possibly requested by KLM. Besides this design, the NVNV offered also the Fokker F.XIX, F.XXI and the finally selected F.XVIII. Five were built of this three-engined Fokker and exclusively operated on the route to the Netherlands East Indies. The F.XVI was a four-engined design, developed from the three-engine F.XVa and F.XVb and powered by four Pratt & Whitney Hornet B engines of 575hp each. There is only one drawing remaining of the Fokker F.XVI, and it shows the aircraft with twelve regular seats for European operation. The wing came from the three-engined Fokker F.XV. The advantage between three- and four-engined aircraft was just not big enough and thus KLM kept opting for three-engined aircraft.



Fokker F.XIX (1931)

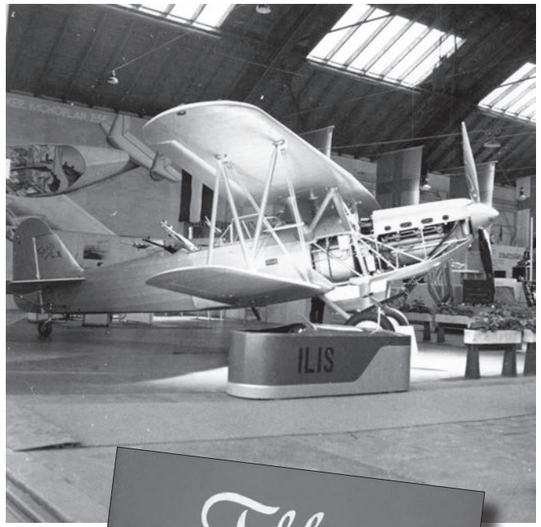
The NVNV continued with three-engined aircraft like the Fokker XVIII and the F.XX, of which the first served with KLM until 1935 on the Netherlands East Indies route. The aircraft in between these was the F.XIX. This was basically a scaled-down Fokker F-32 from the USA equipped with four 440hp Pratt & Whitney Wasp C engines placed in tandem, but this time with a Townend ring around each engine. As the Fokker F-32, the front engine had a two-bladed propeller and the rear engine a three-bladed propeller. The resemblance with the Fokker F-32 was remarkable. This version could carry a maximum of 16 passengers on the European routes and ten on the Netherlands East Indies route. Six of the ten seats were regular, while the remaining four could be converted into beds.

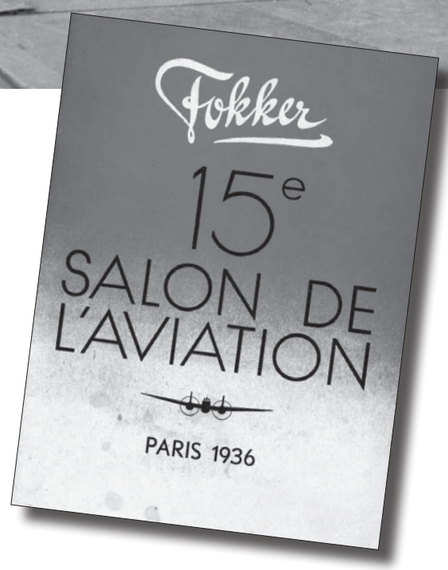
Artist's impression of the F.56. The resemblance with the Douglas DC-4E was striking. (via Aviodrome)
Below, right: on the wall behind the aircraft hangs a poster of the F.56. Photo has been taken at the ILIS aviation exhibition in Stockholm in May-June 1936. (via SFF Archive)
Brochure for the 15th aviation show in Paris in 1936. (via Edwin Hoogschagen)

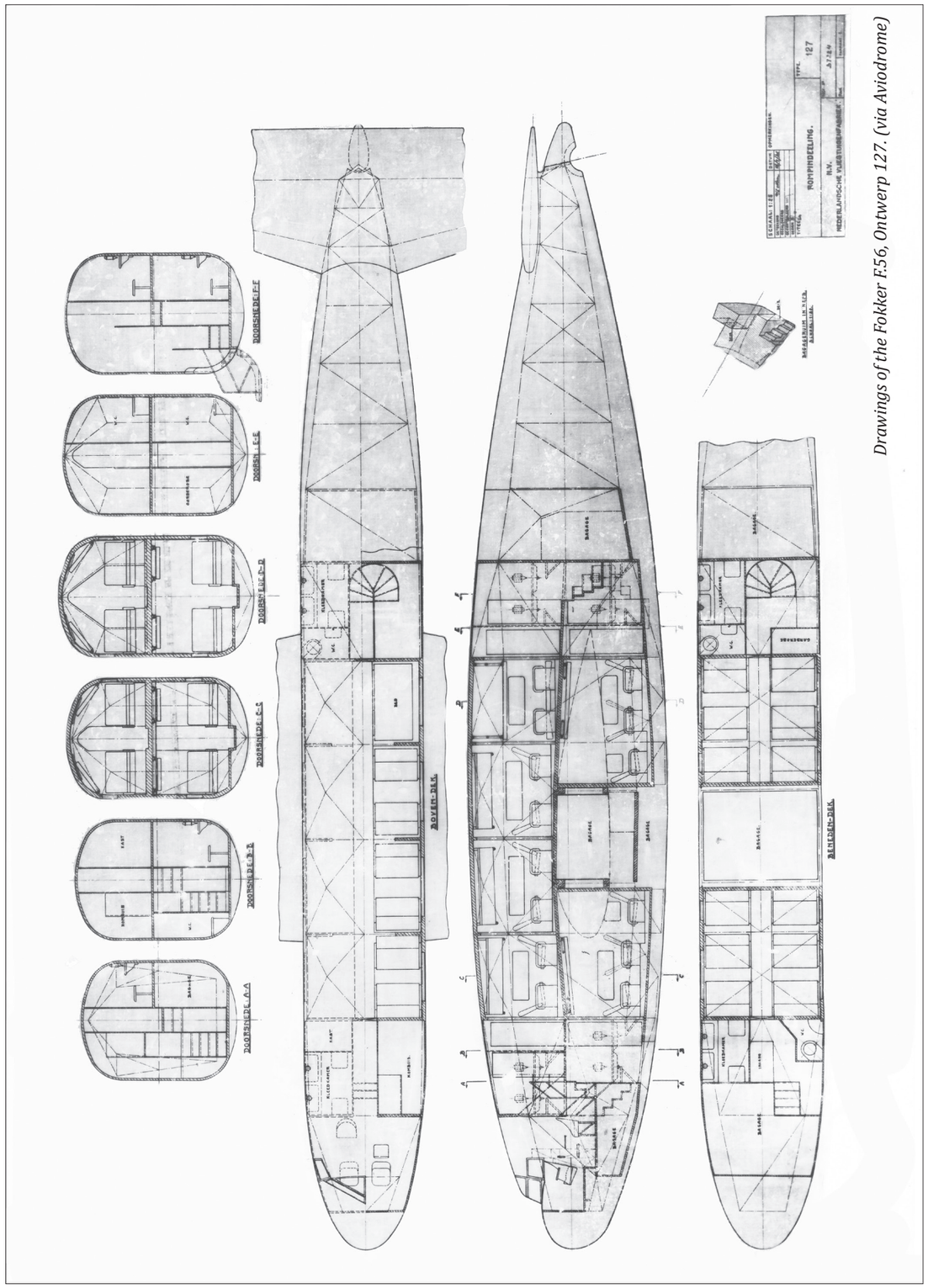


The Fokker F.56 (Ontwerp 127, 1935)

This was a four-engined, cantilever, semi-high wing monoplane. Equipped for day flying, it carried 56 passengers and a crew of 5-6 over a distance of 1,000km (621 miles). When equipped for night flying the F.56 had 28 sleeping berths and four dressing rooms each with two lavatory basins. Under these conditions, the aircraft had a range of 1,600km (994 miles). The special feature of this aircraft was that the fuselage had two floors. The seating arrangement on the upper floor was similar to that in a low-wing aircraft, whilst the seats on the lower floor were arranged like those in a high-winged aircraft. The wing was a one-piece cantilever wing made up of two box spars, plywood ribs and Bakelite plywood covering. The space between the spars in the centre section of the wing was utilised for a luggage hold. The fuselage was constructed with welded chrome-molybdenum steel tubes and covered with metal cowlings, plywood and fabric. The cockpit had dual controls and the wireless operator's room was to the rear of the cockpit, the wireless set being installed on the right, whilst there was a seat for a mechanic on the left. The flying instruments were mounted on a panel before the pilots. The remainder of the instruments, fuel gauges etc. were on a special panel and switchboard installed in the wireless room. The lavatory was installed on the lower floor, and a staircase was leading to the upper floor. The cockpit section could be reached via a trap-door. The upper floor was divided into four compartments. For daytime service, each compartment provided accommodation for eight persons. The passengers could either sit facing each other or one behind the other. For night-time service, each compartment contained four sleeping berths. The two roomy seats each for two passengers to the left and right of the aisle were then converted into single-beds. The second berth was above these and could be folded back against the wall when not in use. The lower floor was divided into two







Drawings of the Fokker F.56, Ontwerp 127. (via Aviodrome)