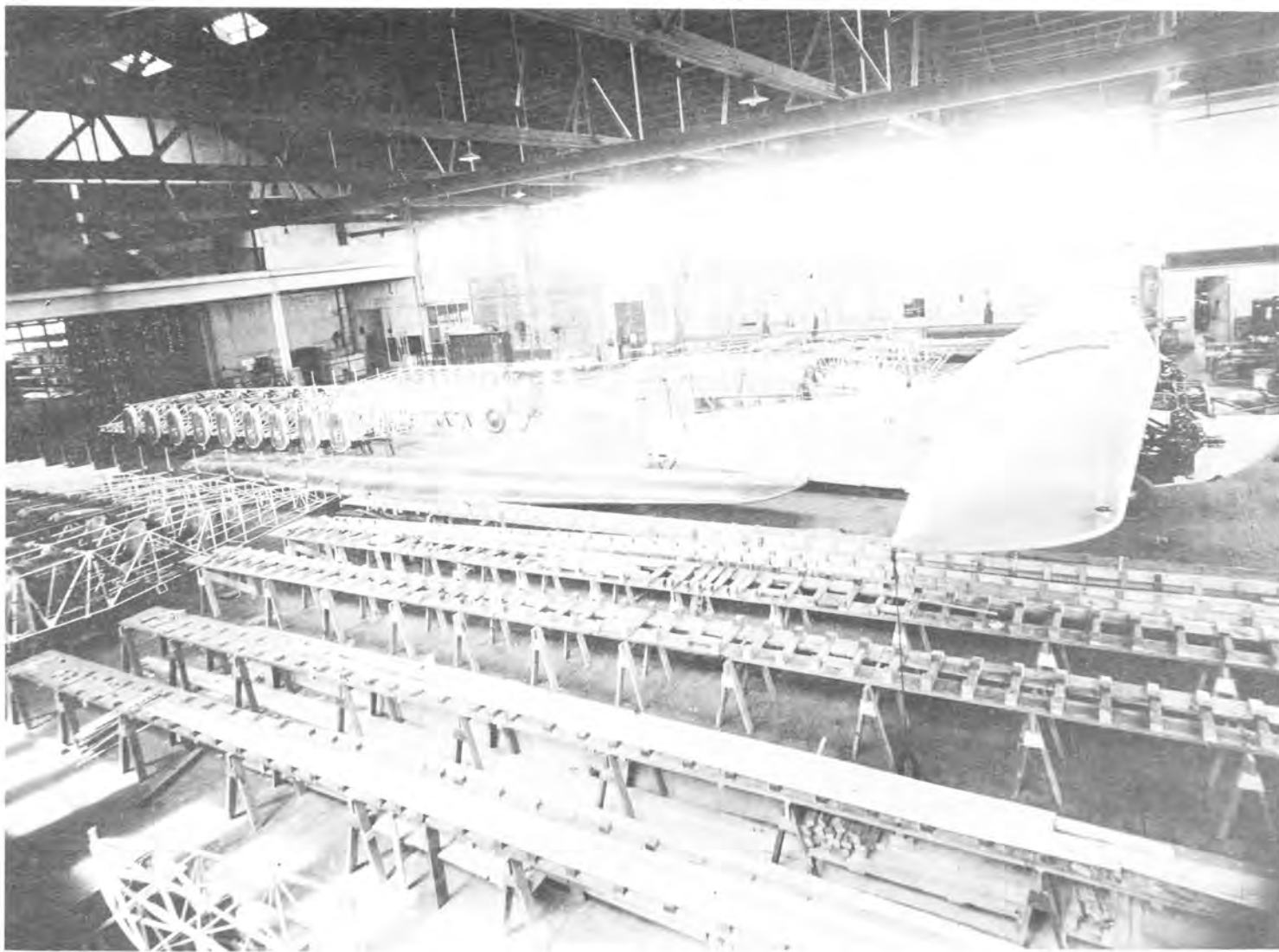




Interior of the American Fokkerplant's main building, 1926. Spar jigs for XLB-2 and C-2/TA-1s in foreground, an F-7 trimotor in final assembly at right center, and DH-4M2T fuselages at left. (Courtesy North American Aviation)

THE AMERICAN FOKKERS Part 2

By PETER M. BOWERS

In 1923 Tony Fokker was having little success in selling his Dutch-built airplanes in the United States through his company's American outlet. Friends in the Army Air Service, and others who could be objective about the designs of a former enemy and wanted to see them in service in the 'States, easily convinced him that he would have to have a plant and build his designs in the U. S. in order to sell them there. The "Buy American" edict then in force for military procurement was circumvented by the establishment of an American plant, but the public at large still associated Fokker with Germany and the very recent war, so the name Fokker was a commercial liability. Consequently, when the new company was formed, in December 1923, it avoided the problem by skipping the Fokker name completely and became the Atlantic Aircraft Corporation.

This was really an American firm and not just a front for a European organization. While Fokker himself had the title of Chief Engineer and had brought a lot of Dutch and German craftsmen and engineers over from the old countries, the officers and board members were all well-established U. S. businessmen and finan-

ciers. While few had any first-hand experience with aircraft manufacture, they knew all about "Big Business". This arrangement was to be a severe trial to Fokker personally, as he was in the habit of running everything in a company that he controlled completely. In spite of having tycoons instead of technicians managing the business, Fokker was still able to put the stamp of his personality on technical and sales matters for a number of years. He remained the impulsive gadgeteer he had always been, dropping everything now and then to do some tinkering in the shops. He'd even wake associates up at two in the morning and haul them down to the plant to help him work on some hot idea that had just come to him. (1) He still held his positions in the Dutch company and became a well-known transatlantic commuter with considerable shuttling back and forth.

While Atlantic was "The" American Fokker plant, there was also a separate American organization, the Fokker Aircraft Corporation. It replaced the American office of the Dutch firm when Atlantic was founded and served as the license holder for the Dutch Fokker patents and also as a sales and promotion organization. (2) This



Aerial view of the American Fokker plant on Teterboro Airport, Hasbrouck Heights, New Jersey in 1928.

firm had some of the Atlantic tycoons on its board, and Fokker Aircraft absorbed Atlantic in 1926, as will be discussed in Part 3 of this series. The airplanes were advertised as "Atlantics" in 1924 and most of 1925, but were plugged hard as "Fokkers" from then on since the wartime stigma on the name had apparently worn off. The same script lettering of the word "Fokker" was used as a trademark in both countries, but the underline in the American trademark contained the abbreviation "U.S.A."

A ready-made airplane factory was acquired when Atlantic purchased the defunct Witteman-Lewis plant (birthplace of the notorious Barling triplane Bomber) on Teterboro Airport, New Jersey, just across the Hudson River from Manhattan. The original business office was at 110 E. 42nd Street, New York City. Other plants were added later (see Part 3). There is much confusion today as to the actual location and name of the original Atlantic/Fokker plant. It was located on Teterboro Airport but was frequently called "Hasbrouck Heights." Actually, Hasbrouck Heights was the mailing address of the airport as well as the name of the little railroad station near the factory. Company letterheads and advertising give the address as Teterboro Airport, Hasbrouck Heights, New Jersey.

The new company didn't start out with a clearly-defined model designating system, but a sequential-numerical system soon evolved and was formalized with Model 4. The sequential or design model numbers as used by engineering frequently differed from the model numbers used by the sales department. The F-models import-

ed into the 'States from the early 1920s were not F-for Fokker, but were merely one lettered series among several then in production. The letter F was applied to all American Fokker designs from 1928 on but was never assigned to the older designs still in production. At times, the F was prefixed by the letter A-for-American, but the practice was not consistent.

At first, each civil Atlantic/Fokker was given a factory serial number or constructor's number (C/N) starting at 1 within each model. This was soon changed to a separate C/N series for each model, as 400 for the prototype Model 4, 401 for the first production article, and so on. There is nothing to indicate that planes ordered by the U. S. Army or Navy were ever assigned C/N's, at least until the very end of the 1920s. They had military serials assigned when the orders were placed, and the plant appears to have used these, rather than C/N's, when referring to individual aircraft under construction or test.

Detail distinction between minor variants of a single model was non-existent. It took something like a major change in wingspan to distinguish a plane as an A or B variant. Actually, in the small-production days at Teterboro, every civilian airplane produced was practically a custom model and would have rated a different letter to distinguish it from the others.

The remainder of this installment describes American Fokker Models 1 through 6 in model sequence. Part 3 will cover Models 7 through 10, and Part 4 will cover the transition of Fokker into General Aviation and North American with Models 11 through 18.

MODEL 1 (DH-4M2) - Although not designated as such at the time, Model No. 1 in the "American" Fokker series was a remanufactured de Havilland 4 of World War I fame. The Army was hard up for funds for new airplanes but had plenty of money available in maintenance funds to refurbish the many wartime DH-4s that were on hand. In fact, it was this DH-4 rebuilding program that kept many small aircraft firms going in the early 1920s and put Fokker in business in the United States.

By 1923, the Army Air Service became seriously interested in steel tube fuselage construction as introduced into the country by the war-booty Fokkers. For evaluation purposes, it seemed natural to try this on some of the DH's that had to be completely rebuilt due to wear and tear. The Boeing Airplane Company, using its own arc-welding process, received the first order for DH-4M's, as they were called, in 1923 after rebuilding quantities of DH-4B's with wooden fuselages. The "M" in the new model designation stood for "Modernized." Later, when Atlantic won an order for steel-tube DH's using the Fokker gas-welding technique, the two were identified as DH-4M1 for the Boeings and DH-4M2 for the Atlantics.

The first Atlantic DH-4M2, later converted to DH-4M2K target tug. The two fuselage stringers and the way in which the center section struts converge toward the top can clearly be seen. The DH-4-M2 designation on rudder is incorrect in having dash between 4 and M. (Courtesy Jack Canary)





One of the ten DH-4M2S's fitted with supercharged engine. Compare the nose contours and radiator location with the standard DH-4 nose of the XC0-8 modification at the bottom of the page. (McCook Field Photo 30449)

In these rebuilding programs, the Army sometimes assigned new serial numbers, but did not do so in the case of the DH-4M2s. Each carried its original WW I serial, some clear into 1932 when the last few were scrapped. Since the planes for rebuilding were selected at random, there were no solid blocks of consecutive serial numbers. The DH-4M2 total is too large to list in this installment, but it will be included in the complete listing of all military and civil numbers assigned to the American Fokkers at the end of this series.

The original order to Atlantic, placed in May 1924, was for 100 DH-4 rebuilds, 65 standard observation models, 25 photographic models and 10 with turbosuperchargers. (3) These looked like most of the other DH-4s in service except for very minor details. The principal recognition feature, discernible only by experts, was the spacing of the center section struts. When viewed from the side, they were farther apart at the longeron than at the wing spars. Also, there were two longitudinal stringers along the fore part and cockpit area of the fuselage where most of the DH's were flat-sided. Some of the Boeing DH-4M1s had a single stringer running the full length of the fuselage. The DH-4M2s had the main wheels moved $7\frac{1}{2}$ " ahead of the DH-4B position, which was itself considerably ahead of the WW I "Liberty Plane" position, the track was somewhat wider, and the wheels were larger. (4) After delivery, many of the DH-4M2s were modified by the Air Service (Army Air Corps after 1926) to various special purposes and were given a variety of supplementary designations to fit their function.

As originally delivered in 1925 and 1926, the DH-4M2s were olive drab over all and carried the standard three vertical tail stripes with red at the trailing edge. Early in 1927 the Army began the gradual change to chrome or orange-yellow wings and tail surfaces and put on the new arrangement of horizontal red and white tail stripes while retaining the original vertical blue stripe. At the same time additional identification data was put on the side of the fuselage, usually in white. This gave the name of the service, U. S. ARMY, the Air Corps serial number, and the manufacturer and model, ATLANTIC DH-4M2. This designation was carried when some other American Fokkers carried the word FOKKER in this posi-

tion. Fuselage identification data was retained on all Army planes well into 1932. In their last years the DH's were restricted to use as photographic planes only and the fact was stenciled conspicuously on the side of the fuselage near the cockpit.

* DH-4M2 - The original model equipped as standard observation type with two .30 caliber Lewis machine guns on a WW I Scarff ring around the rear cockpit and a single synchronized .30 caliber Browning in front of the pilot. Sixty-five built.

* DH-4M2P - Twenty-five photographic variants without armament.

* DH-4M2S - Ten high altitude observation and photographic types, with standard armament, fitted with side-mounted turbosuperchargers. Radiator mounted below the propeller instead of in the standard DH-4 style.

* DH-4M2T - Thirty-five unarmed dual-control training versions ordered under a second contract and delivered in 1926.

The following designations were applied after the 135 DH-4M2s had been delivered under the four designations spelled out in the contract:

* XC0-8 - This was not a Fokker project but is frequently considered one because the airplane still carried the "Atlantic" designation. The Army put several sets of



The XC0-8, a DH-4M2 fitted with Loening COA-1 wings, retaining its original wood undercarriage but fitted with early adjustable steel prop. (McCook Field Photo 24257)

Atlantic DH-4M2K target tug with steel tube undercarriage and a modified rear cockpit. The tow target reel is located under the fuselage. This aircraft was photographed at Crissy Field, San Francisco, California, 1928. (Photo - Jack Goodwin)



Loening COA-1 wings on DH-4s in the middle 1920s but did not change the airplane designation except in this one case with DH-4M2 A.S. 23163. It became XCO-8 for Experimental Corps Observation, Model 8. The plane achieved a degree of fame when used by Captain Albert Stevens for some pioneering high altitude photography in the late 1920s.

* DH-4M2A - Modified for "Airways" use with deep cockpits, lights, etc.

* DH-4M2K - Equipped with cable reel for towing sleeve targets.

MODEL 2 (S-3) - The first "Atlantic" model to be marketed as such wasn't an American design and may even have been assembled from Dutch-built parts. It carried the designation of S-3 (S as used for the contemporary Dutch-built trainer series) and was a combination of the Dutch S-III and S-IV models fitted with a 180 hp American Wright-Hispano E engine commonly known as the Hisso. It was submitted to the Air Service in a 1924 trainer competition but lost out to its more firmly-established rivals. FAA records confirm the existence of only one S-3 (note use of Arabic figures instead of Roman numerals as in European practice) after civil registration began in 1927. Registration No. 3395, C/N 1. The Wright Aeronautical Corporation had it in 1926, fitted with a 200 hp Wright J-4 radial engine. It was later used as a test bed for the new 220 hp J-5 engine and achieved a degree of fame when Clarence Chamberlin conducted

ship-to-shore airmail service by flying it from a platform on the deck of the S.S. Leviathan.

MODEL 3 (AO-1, CO-IV MAIL) - This American model also had solid Dutch ancestry and was virtually indistinguishable from the contemporary Dutch C-IV biplanes that had been built for the U. S. Army as CO-4 (See Part 1).

* AO-1 - Atlantic entered an American-built version of the CO-4 in the 1924 Air Service competition for Liberty-engined observation planes. This plane was a private venture and never received a U. S. military designation. It competed as the AO-1 for "Atlantic Observation" although it did carry military markings. In general, it resembled the second Dutch-built CO-4 with a modified nose radiator. Douglas won the competition with the XO-2. All that Atlantic got out of the competition was the return of its airplane. This plane, C/N 1, was given civil registration number 3526 in 1927 and retained the AO-1 designation as a commercial airplane.

* CO-IV MAIL - In 1925 the Post Office, which operated the U. S. Air Mail service at the time, held a competition for a Liberty-powered mailplane to replace the obsolete DH-4 which was still standard equipment. Atlantic entered a minor variant of the AO-1 with the side-radiator nose of the third CO-4 and the production CO-4A's, calling it the "CO-IV MAILPLANE." The use of the U. S. military designation with European-style numerals on a civil airplane was an oddity. The Post Office bought most of the competing prototypes, including



Original form of the Atlantic S-3, developed from earlier and contemporary Dutch models in the "S" series. Photographed at Curtiss Field, Long Island, New York and Atlantic by Curtiss' regular photographer. (American Fokker Photo 359 from North American Aviation)



Modified form of S-3 with 200 hp Wright J-4 radial engine. Compare wing with similar view of Hiss-powered model: enlarged cutout, slight sweepback and ailerons projecting behind the trailing edge. (USAF Photo 33536 AC)



American Fokker Model No. 3, Atlantic's entry in the 1924 Liberty-powered observation plane competition with unofficial designation of A0-1. (McCook Field Photo)



After losing out in observation competition the A0-1 was returned to Atlantic and a civilian buyer was located for it. (Courtesy Gordon S. Williams)

Atlantic's entry in the 1925 mailplane competition was called "Fokker C0-IV MAIL" because of close similarity to the Army's C0-4. It was fitted with extra cockpit and mail compartments. (American Fokker Photo 305 from NAA)



the CO-IV, but awarded the production order to Douglas with its M-2 variant of the Army O-2 which had beaten the AO-1 in the 1924 competition. The CO-IV operated with a Post Office number as did the other mailplanes. Apparently it did not find a private owner after the government turned the last of its routes over to private operators on July 1, 1927, as it does not show up on FAA records as did some other ex-post office planes.

MODEL 4 (UNIVERSAL) - This was the first real designed-in-America Fokker. However, the Dutch influence was still strong, not only in the structural details but in the type of paint job put on by the imported Dutch workers. It was designed by a Dutchman, too, Robert B. C. Noorduyt, whom Fokker had brought over and who was later to achieve recognition as the head of his own Canadian firm building the Noorduyt "Norseman" bush plane.

Introduction of the Universal (it was never called anything else in company advertising or FAA records) late in 1925 marked the adoption of a systematic model and serial number designating system for the American-built Fokkers. As Model 4, the prototype was given C/N 400 and the production versions were numbered 401 through 444 for a total of 45, many of which were exported. Flying was still open cockpit for the pilots in those days, and the Universal followed the trend. Normally one pilot was carried, but a second could sit on a jump seat at the pilot's right and operate a second set of controls. Enclosed cockpits were not adopted until quite late in the series. Four passengers were relatively cozy in the cabin. However, the cabin was so narrow, only 41 inches, that the seats had to be staggered. The Universal's wing broke with Fokker tradition by not being full cantilever, although it retained the standard wood construction, thick airfoil and taper. Though it was still a one-piece unit, it was

braced by short steel tube struts on each side. The tie-in of the forward struts to the landing gear became the standard arrangement for most of the strut-braced American monoplane designs that followed the Fokker during the next decade. Since most of the deliveries to relatively distant customers were made by surface transportation in those days, early advertising and the technical descriptions for the Universal pointed out that the 47' 9" wing could be sawed in two on the centerline for convenient shipping and could then be re-assembled with special fittings provided for the purpose. (5) This feature must have been deleted fairly early because engineers associated with the American Fokker plant since 1928 deny knowledge of it. (6)

The original Universal with the 200 hp Wright J-4 engine received Approved Type Certificate (ATC) No. 9 on June 17, 1927, and there was no need for a new certificate when the later 220 hp Wright J-5 was substituted for the J-4. However, a new ATC, No. 164, was issued on June 29, 1929 when a 300 hp Wright J-6-9 was used in place of the J-5. Some of the J-6 models retained the open cockpit but most had enclosures for the pilots. The Universals were built at Teterboro with the first production model being delivered in May 1926 and the last in April 1931. The Universal was widely used in Canadian bush operations on skis and floats. The \$15,000 price tag put it out of the reach of most private owners of the time, so its major U. S. service was as a business plane and small feeder airliner.

The reputation of the widely-publicized "Fokker Cantilever wing", which did not apply to this particular design, almost did one eager distance flyer in. Nat Browne had acquired a well-used J-5 Universal and tried to fly it non-stop from Seattle to Tokyo for an established prize. Since it couldn't take off with enough fuel for the distance, he decided to take on fuel from

Prototype Universal, American Fokker Model No. 4. On this one model the wing was not cantilever and required strut bracing. Two-tone paint scheme in cabin area gives false impression of a stringer running along the bottom window line. European touch is evident in the style of lettering FOKKER AIRCRAFT CORPORATION under the windows and use of slightly altered KLM airline emblem, partly hidden by shock strut. (Courtesy NAA)



The first production Universal, delivered to Colonial Air Transport with the unofficial U. S. letter registration used on a small scale from 1923 through 1926. For some reason Atlantic/Fokker deleted the lettering, WRIGHT AERONAUTICAL CORPORATION, from the hangar that backed up various views of this particular airplane. This same photo appears in this way in the 1927 AIRCRAFT YEAR BOOK. The Wright hangar was close to the Fokker plant at Teterboro. (American Fokker Photo 331 from NAA)



1927-28 production version of the Universal with 220 hp Wright J-5 engine. In spite of Fokker trademarks, lettering above lower longeron behind cabin reads: MADE BY ATLANTIC AIRCRAFT CORP. HASBROUCK HEIGHTS N. J. USA. Although the plane has no registration number painted on, the C/N painted above lower longeron between forward struts as SERIAL #422 (an unusual practice) identifies the plane as an export model for England, G-EBUT. (American Fokker 615)



Deluxe Wright J-6 powered Universal with enclosed pilot cabin, Townend drag ring and wheel pants. Photographed at Teterboro on May 6, 1931, aircraft is C/N 439. (American Fokker Photo 1780 from North American Aviation)



Special 300 hp J-6 Universal with open cockpit and anti-noseover wheel built for George Graves of New York. A J-5 Universal, 1548, C/N 420, was also fitted with the extra wheel for TELA Railroad Co. Honduras. (Fokker Photo 1771)



Nat Browne's wire-braced Universal on takeoff ramp at Boeing Field, Washington prior to his ill-fated Tokyo flight of May 1932. Aircraft was registered NR-1776, C/N 421. (Bowers Collections)

a tanker after takeoff. The tanker was the Fokker C-5 described in Part 1. An assistant was to take off with Browne to handle the refueling, after which he would depart by parachute and leave Browne to go solo the rest of the way. The Universal still had to take off with an overload since the tanker was of rather limited capacity. In order to get a running start, Browne had a sloping ramp built at the north end of Boeing Field. To save weight and drag on the plane, he had previously removed the wing struts and replaced them with wires, figuring that the "cantilever" wing would stand up under the weight when not in flight. However, the jolt at the bottom of the ramp on the running start of May 31, 1932 bent the wing downward momentarily and this was enough to crack the spars. The forward speed and resulting lift kept the wing from further downward movement and the wires held it from any noticeable upward movement. Under such conditions the Universal staggered into the air. Troubles developed during the refueling. The hose flopped around in rough air and the nozzle hit the Universal's tail. In the subsequent maneuvering, the wing folded under a negative load. Browne and his assistant, Frank Brooks, bailed out and the Universal crashed into

Puget Sound, to the west of the city of Seattle. (7)

MODEL 5 (Army XLB-2) - The single XLB-2 (Experimental Light Bomber, Model 2) was built to existing Army bomber specifications. It was the first twin-engine monoplane bomber that the Army tried. As such, it was too far ahead of its time and couldn't get anywhere in a military market still dominated by biplane boosters. The misadventures of the PW-5s (Part 1) did nothing to improve the cause of the monoplane. Although other monoplanes made the grade in the armed forces as transports at the time the XLB-2 appeared, none were ordered as combat types for another five years.

Basically, the XLB-2 was a minor development of the F-VII trimotor (Model 6) with the enlarged fuselage of the Army C-2 (Model 7) fitted with the standard bomber nose and equipment of the period. The engines originally specified by the Army were 420 hp air-cooled inverted Allison V-1410s. Although these were smaller than the famous Liberty, they were called "Air-Cooled Liberties" because they used quite a few Liberty parts. Since they hadn't worked out too well in other test planes, the Army called for a switch to the new Pratt & Whitney "Wasp" air-cooled radial before the XLB-2 was completed. This engine, also known as the R-1340, developed 400 hp but was soon replaced by the larger 525 hp P & W "Hornet." (8)

In spite of the higher total power concentrated in two engines, the military load of a bomber called for more wing area than the standard 63' 3" panel of the contemporary F-VII provided. This was obtained by increasing the span of the XLB-2 wing to 72' 10". Rib sizes and the wingtips remained the same. The new wing looked as though an F-VII/C-2 wing had been split at the centerline and a straight section had been spliced in. This was a nice production economy, too, in that it was not necessary to make new jigs for the longer ribs that would have been required had the longer wing used full-span taper. The straight section between the nacelles became a recognition feature in distinguishing between the "Short Wing" and "Long Wing" Fokker F-VIIs that soon followed the XLB-2.

The XLB-2, ordered in late 1925, was given Air

A.A.H.S. JOURNAL



American Fokker Model No. 5, the Army XLB-2, as originally delivered in 1927 with P & W "Wasp" engines and forward-slanted V-windshield. Windshield was later expanded to a complete enclosure similar to later Army C-2s and commercial F-10s. (Wright Field Photo 33326)

Service serial number 26-210. This apparent inconsistency results from the fact that the Army serial numbers were issued on a fiscal, rather than calendar year basis. Fiscal 1926 started on July 1, 1925. The A.S. prefix to the serial was changed to A.C. before the XLB-2 was delivered in the Spring of 1927 as the Air Service became the Air Corps.

MODEL 6 (F-VII or F-7) - The American Model 6 was entirely of Dutch origin. This was the F-VII, in its various forms, which had been in production in Holland since 1924. Those that came to the States were marketed as American products and were given a new serial number range starting at 600. The Dutch F-VIIs fitted into a consecutive line of serials that ran back, regardless of airplane model, to the first German-built Fokker. The prototype F-VII is believed to have carried C/N 4832. The original Dutch designation of F-VII was used on the American imports, although it was sometimes written in Arabic figures instead of Roman.

The first of the "American" F-VIIs, which was also the first of the Fokker Trimotors, began as one of Tony Fokker's brighter ideas. Henry Ford, the famous auto manufacturer, had been sold on aviation by some of his associates and soon went all-out to promote it. Worthwhile new civil designs began to appear in 1924 and 1925 as the cheap war-surplus types wore out and opened up a market for new equipment. Henry and his son Edsel sought to sell the public on the safety and reliability of the new models by staging a 1900-mile "Reliability Tour" to start at the Ford Airport near Detroit on September 28, 1925 and end there October 4.

Fokker was in the United States when the tour was announced and promptly decided to enter it. He did some sharp thinking in picking his entry. Under the rules, reliability and the ability to maintain a tight schedule would win over mere speed or payload. Fokker realized that the least reliable thing about contemporary single-engine airplanes was the powerplant. Even

a twin wasn't much better, for it couldn't keep going if one engine failed. The desired reliability, then, was dependent on a minimum of three engines since the probability of losing two out of three on the same flight was more or less remote. Fokker didn't have a trimotor at the time, and neither did anyone else, but he did have a good single-engine design, the 8-passenger 450 hp F-VIIA that the Dutch plant had just developed from the rather boxy-looking 1924 model. The F-VIIA was as good a single-engine transport as could be found anywhere at the time. Fokker firmed up his ideas for converting a stock model to a trimotor with three American Wright J-4 radial engines, replacing the single 400-450 hp Liberty, Napier Lion or Lorraine used in the F-VIIA, and ran up a big transatlantic cable bill by rushing his instructions to Holland. (9)

The basic concept of one engine in the nose and one on each wing at the landing gear shock strut attachment point was good, but one detail was faulty. In thinking of a clean installation, Fokker elected to build the side nacelles INTO the wing instead of under them. He was persuaded by other pilots and his engineers, notably Rheinhold Platz, to drop the side engines down so that they were on a level with the nose engine to minimize trim changes under different power settings.

(10) (Ford made the same mistake with the first Ford Trimotor, which was also developed out of a large single-engine model, but it was destroyed in a hangar fire before trim problems had a chance to materialize. The lesson was learned in 1930 when Ford tried to clean up the established trimotor design by moving the side engines up to the wing.)

Fokker rushed back to Holland, hurriedly tested the new plane and shipped it off to the U. S. in time to walk away with the tour. Thanks to Fokker's genius as a publicist, it was jokingly referred to as "The Fokker Publicity Tour." The plane was a flying billboard, with the large word FOKKER on each side of the fuselage, full-span under the wing, and on the leading



The first Fokker Trimotor under test at McCook Field following the Ford Reliability Tour of 1925. Placement of the markings show the prototype carried standard KLM colors when brought to the U. S. Fokker put his name in the white rectangles used for the European registration. Lettering under cockpit gives designation FOKKER F-VII. Name FOKKER AIRCRAFT CORPORATION appears beneath windows, and letters FAC appear in a winged shield emblem that was the regular KLM emblem but with the Royal crown painted out. (USAF Photo 22381 AC)



Single engine Dutch Fokker F-VIIA with Bristol Jupiter engine. Coloring and most markings are identical with the prototype Trimotor which was hurriedly converted and brought to the U. S. for the Ford Tour. (Fokker)



Prototype Trimotor arriving in San Francisco during its 1926 tour after North Pole flight. Named JOSEPHINE FORD and owned by Ford it is still a Fokker billboard. Nose letters BA-1 = BYRD ARCTIC NO 1. (Bowers Collection)



The first two F-VII Trimotors of the Philadelphia Rapid Transit Airline, from Philadelphia to Washington, were named KENDRICK and WILBUR for the mayors of the two cities. KENDRICK carries designation FOKKER TRIMOTOR F-7, while WILBUR used Roman instead of Arabic numerals on nose and tail. Lettering on both, above lower longeron between wing and tail, says: MADE BY FOKKER AIRCRAFT CORP. HASBROUCK HEIGHTS N.J. This in mid-1926 when the company was still known as Atlantic, yet the much later Universal C/N 422 (p 259) was labeled Atlantic. (Am.Fokker from NAA)



The second Fokker Trimotor, originally built for George Wilkins and fitted with a 71-foot wing, shown as SOUTHERN CROSS, FAGEOL FLYER and SPIRIT OF CALIFORNIA (all at once!) prior to takeoff for first endurance flight attempt at San Francisco. Pilot Kingsford-Smith pulling at the left wheel, copilot Lt George Pond walking behind tail. Original small rudder modified after this flight, wing painted gold and fuselage blue. (Bowers Collection)

edge of the wing above each nacelle. After the end of the tour, Fokker made the plane, which was designated simply FOKKER F-VII, available to the Army at McCook Field. After testing it, both the Army and Navy ordered three similar models each--C-2 for the Army and TA-1 for the Navy (See Model 7, Part 3). Edsel Ford then bought this plane for Commander Richard E. Byrd's North Pole flight of 1926. It was named JOSEPHINE FORD for Edsel's daughter, and in spite of a completely new paint job, it was still a Fokker Billboard with the words rearranged only slightly. The polar flight was completed successfully on May 9, 1926 from Byrd's base at Spitzbergen. The Trimotor went on a U. S. tour later in the year, piloted by Floyd Bennett, who had flown it over the pole, and Bernt Balchen, a Norwegian test pilot and arctic flying expert whom Byrd had recruited from Amundsen's "Norge" expedition when he returned from their joint base at Spitzbergen. The plane was owned by the Ford Motor Company and picked up U. S. Registration number 267 since it was still flying on company business in 1927. It was then installed in the Ford Museum in Dearborn and is still on display there.

The Fokker triumph in the Ford Tour triggered a boom in the trimotor business that all but standardized the world's airliners for the next eight years. American orders for Trimotors were beyond the capacity of the little Teterboro plant, so major components, notably wings and some fuselages, were shipped from Holland for finishing and the fitting of American engines and equipment. The second Trimotor was another special, ordered by the noted arctic explorer George Hubert Wilkins, and differed from the prototype notably in having a longer wing similar to that of the XLB-2. Gregory Kohn's article, in A.A.H.S. JOURNAL, Vol 4, No 3, page 195, details the misadventures of this plane and its single-engined sister in Alaska. It also debunks the widely accepted story that the Trimotor, which later became the SOUTHERN CROSS, was a hybrid aircraft at the time of the Pacific flight. The two aircraft had shared parts to become a long-wing single-engine machine briefly in 1927, but the transpacific Trimotor was back to its original wing-fuselage combination when reassembled in the United States. Later pushing of the hybrid story came from the Fokker plant. Even the 1930 catalog, put out by General Motors, states flatly that the SOUTHERN CROSS was "built from two Fokkers." Why spoil a good story with the facts? The same catalog also has Wilkins flying over the Pole, which he did NOT do in a Fokker, nor in his Lockheed Vega flight of 1928. Such was the caliber of aviation publicity at the time.

After Kingsford-Smith bought the Trimotor from

Wilkins, Boeing reassembled it in Seattle and installed new Wright J-5 engines. Boeing did quite a bit of this type of work then and had had some unfortunate experiences with pilots who made "test flights" and flew their planes away without paying their bills. To guard against a repetition with the refurbished Trimotor and its then-unknown pilot, C. L. Egvedt, who retired as the Chairman of Boeing in 1966, had the rudder taken off and locked up. Smitty paid the bill before flying the plane, and Egvedt told him about the rudder. Smitty laughed and said that the precaution was useless in this case, because he just happened to have a spare rudder and could have absconded easily with his own plane. (11)

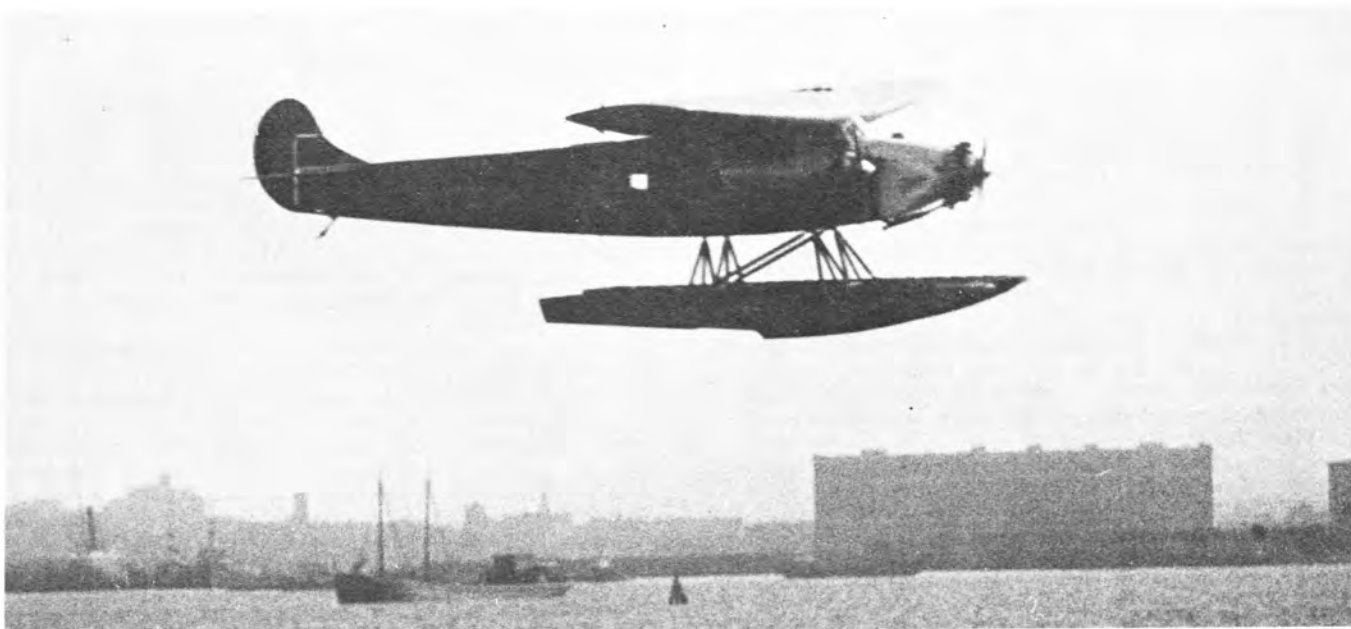
After reassembly Trimotor No. 2 was flown to Santa Monica, California, where Douglas installed long-range tanks and painted on the name SOUTHERN CROSS along with U. S. registration No. 1985. The C/N of No. 2 is unknown. Apparently the nameplate with this information was lost during the Alaskan misadventures and FAA records show it as 3F7, obviously a substitute. As the second American F-VII, it could logically have been 601, or it could have had number 604 through 608, none of which have corresponding registrations in FAA records.

The endurance flights out of San Francisco as SPIRIT OF CALIFORNIA and the Pacific flight of May 31 - June 9, 1928, are history. The SOUTHERN CROSS picked up the Australian registration of G-AUSU when registered in that country (G for Great Britain, AU for Australia, and SU as individual aircraft identification). This changed to VH-USU in 1929 when the dominions were given separate registration prefixes. Planes registered at the time of the change kept the last three of their original letters. VH-USU stopped at the Fokker factory on its westward journey around the world in 1930 and was completely rebuilt there as Fokker's personal gift to Kingsford-Smith. At that time, it officially became an F-VIIB/3M, reflecting the distinction that was finally made between the various F-VIIs. The single-engine models with the 63' 3" wing were F-VIIA and the short wing Trimotors were F-VIIB/3M. The long-wing Trimotors with 71' 2" span became F-VIIB/3M. However, these distinctions were not made at the time of F-VII deliveries in the United States. FAA records do not even distinguish between single and trimotor models. After reaching California again, it made its second Pacific crossing as deck cargo. After a long career of mail and passenger flying, it was used in a movie about itself and is now on permanent display in a special museum hangar at Canberra Airport.

At least four short-wing Trimotors were put in



The SOUTHERN CROSS after rebuild at the Dutch Fokker plant during its westward voyage of 1930. Wing now painted silver. Note concession made by Australian government in waiving size and location requirements for fuselage registration letters to permit the retention of the now famous name of the airplane. Lettering FOKKER F-VIIB/3M appears on the rudder. (Netherlands Fokker Photo)



The F-VIIB/3M Friendship on a test flight over Boston Harbor, piloted by Wilmer Stultz and Lew Gordon. This is the same plane purchased by Admiral Byrd for his Antarctic expedition but not used. (Bowers Collection)



The Friendship, after being discarded by Byrd because Ford, his major backer, insisted on his own design being used, was prepared for transatlantic flight with Amelia Earhart as passenger. Registration 4204. (Kadel & Herbert)



The last American F-VII delivered, C/N 617 with registration 7888 (later NC-7888). Fitted with 525 hp P & W Hornet engine and used by Standard and Universal Airlines on the Los Angeles to El Paso run. (American Fokker)

U. S. FOKKER MODEL NO.	SOLD AS	SPAN	LENGTH	WING AREA	ENGINE & HP	GROSS WEIGHT	HIGH SPEED	REMARKS
1	DH-4M2	42' 5 $\frac{1}{2}$ "	29' 4"	438	Liberty 420	4510	123.2	1924-26
2	S-3	35' 0"	26' 4"	275	Hisso 180	2490	115	1924
3	A0-1 CO-IV MAIL	39' 6"	30' 4"	397.2	Liberty 420	4525	134.8	1924-25
4	UNIVERSAL	47' 9"	35' 6"	330	Wright J-5 220	3810	118	1928 model
					Wright J-6 330	4300	130	1930 model
5	XLB-2	72' 10"	51' 4"	748	P&W Hornet 525	12038	123	Del. 1927
6	F-VIIA	63' 4"	47' 10"	630	Liberty 420	7900	112	1925 model
	F-VIIA/3M	63' 4"	49' 2"	630	Wright J-4 200	9000	122	1926 model
	F-VIIB/3M	71' 2"	49' 2"	728	Wright J-5 220	9923	115	1928 model

service in the U. S. in 1926 by commercial and private customers. These early American F-VIIs, including the two Wilkins' planes, are difficult to sort out because of the lack of U. S. registration requirements in 1926 and the fact that some were out of circulation before registration started in 1927. The highest "American" F-VII C/N in FAA records is 617, indicating a total of 18 in the series. However, only nine registrations can be found. Some of the Trimotors were used by airlines as late as 1932, but how this could be done when they had neither U. S. Approved Type Certificates (ATC's) nor Category-2 (Memo) approval is not known. They may have operated on the corresponding Dutch certificate under reciprocal air worthiness agreements between the two countries. One single-engine F-VII powered with a 525 hp P & W "Hornet" radial, operated under Memo certificate 2-34 issued on January 4, 1929 to that plane only, C/N 617, Registration 7888.

One other American F-VII Trimotor worth mentioning is the long-wing J-5-powered model that became the FRIENDSHIP seaplane in which Amelia Earhart made her famous transatlantic flight of June 17-18, 1928. This plane was registered 4204, but FAA records list the C/N as "Unknown." It was originally procured by Byrd for his Antarctic expedition of 1928. In spite of a falling-out with Fokker over the "America" situation in 1927, Byrd had still wanted the best plane for the job and the Fokker was it. However, political complications arose. Ford, one of the major backers of the expedition, was now in the trimotor business himself and wouldn't permit the use of his major competitor's airplane. Some excuse had to be found to ditch the Fokker that was already on hand. Since the Ford had a three-piece wing while the 71 foot Fokker wing was a single unit, the reason given for rejecting the Fokker was that its wing was too large to stow below decks on the ship. (12) So, it was sold. Fitted with floats, it flew on into history. The plane was returned to the 'States but soon vanished from the U. S. Register.

FOOTNOTES

- (1) Clayton Knight and Robert Durham, HITCH YOUR WAGON, Biography of Bernt Balchen, a Fokker employee for a few years.
- (2) AIRCRAFT YEARBOOK, 1926
- (3) Air Service Technical Bulletin No. 39.
- (4) Air Service Technical Bulletin No. 40.
- (5) JANE'S ALL THE WORLD'S AIRCRAFT, 1926.
- (6) Letter from Charles Froesch, Assistant Chief Engineer, April 6, 1964.
- (7) Associated Press.

- (8) Materiel Division Activity Report, January 1928.
- (9) Fokker and Gould, FLYING DUTCHMAN, Fokker's Official Biography, 1930.
- (10) Weyl and Bruce, FOKKER - THE CREATIVE YEARS, 1965.
- (11) Interview with C. L. Egvedt, October 1964.
- (12) Interview with Bernt Balchen, Seattle, 1956.

EDITOR'S NOTE: As a result of membership reaction to Part 1, this series on the American Fokkers will now be presented in five installments rather than the three originally planned. As already noted in the text, there will be two more installments to complete a detailed discussion of the various American-built models. The fifth and final installment will be a listing of all known, individual American Fokkers with C/N, serial and registration details, and will include a supplement developed from readers' comments. This feature was suggested by the response to Part 1 which has so far produced a number of letters, giving additional details and filling in some holes. Those who care to comment on the subjects of Parts 2 through 4, or who have supplementary information or useful photos, are invited to send such comments or material to the Editor or directly to the author for use in Part 5. (The latter's address: Peter M. Bowers, 13826 Des Moines Way So., Seattle, Washington 98168.) Letters may or may not be printed exactly as written, but all additional data, corrections and photos will be properly credited, and photos will be returned if requested.