



The Fokker H-51, an all-metal monoplane with its original German Siemens engines.

(Photo — Fokker Aircraft Corp. courtesy of author)

The American Fokkers *Part 4*

By PETER M. BOWERS

In this fourth installment of "The American Fokkers" author Peter M. Bowers brings the imported and American-built Fokker airplanes and the company history in the transition period when the merger of Fokker and General Motors became imminent. Part five, to be presented in the next issue, will present a compilation of the known American Fokkers by constructor's number (C/N), civil registration number, or military serial number and conclude the history.

From 1929 on, the corporate history of the Fokker Aircraft Corporation of America, founded in December 1927 with the original Atlantic Aircraft Corporation of 1923 as a subsidiary, became quite complicated. The management situation of 1928, with control exercised by Western Air Express, Richfield Oil Company, Universal Aviation Corporation, and the Aviation Corporation of America, continued into 1929. Harris Hanshue, President of W.A.E., was also president of Fokker while A.H.G. Fokker himself had the title of Chief Engineer.

In May, 1929, General Motors Corporation acquired 41% of the stock of the Fokker Aircraft Corp. Hanshue stayed on as President and Edward V. Rickenbacker came in as Director of Sales. Fokker retained his title of Chief Engineer. General Motors then formed General Aviation Manufacturing Corporation (G.A.M.C.) to take over the manufacturing activities of the Fokker Aircraft Corp. and others but the airplanes continued to be called Fokkers and were advertised as such. G.M. also owned the assets of the Dayton-Wright Aircraft Company, formed during WW-I but out of production since 1923, and made it a subsidiary.

On June 1, 1930, the name of Fokker Aircraft Corp. was changed to General Aviation Corporation (G.A.C.) with J.M. Schoonmaker as President and Rickenbacker as Vice President. Tony Fokker acquired a new title, Director of Engineering, and Albert A. Gassner, who had been with the Austrian Albatros firm in World War One, became Chief

Engineer. By the time the new organization settled, the depression was well under way and the rosy plans for a "General Motors of the Air" did not materialize. The aviation industry suffered severely from the depression, but the infamous "Rockne Crash" of March 1931, in which beloved football coach Knute Rockne was killed, virtually blackballed Fokker airplanes in the U.S. airline business.

Further management changes came in 1931. H.V. Thaden, whose own aircraft company has been absorbed by G.M., replaced Gassner as Chief Engineer and Anthony Fokker departed from the organization altogether with a tidy profit. In October, 1931, all manufacturing activities of General Aviation were transferred to the former Curtiss-Caproni plant at Dundalk, Maryland. Rickenbacker then resigned rather than move from his New York home to Maryland.

The General Aviation Corp. next turned over all its assets to G.A.M.C. in April 1933. G.A.M.C., which had also purchased the stock of Berliner-Joyce (later B/J) Aircraft Corporation, then exchanged its stock for stock in North American Aviation Incorporated (N.A.A.) and became its subsidiary. N.A.A. was formed as an investment trust in December, 1928, and later acquired Western Air Express, Eastern Air Transport, Transcontinental and Western Air (T.W.A.), and Berliner-Joyce, was then acquired by G.M. N.A.A. had formed B/J Aircraft Corporation in June, 1930, to purchase the existing Berliner-Joyce Aircraft Corporation of Baltimore, Maryland.

In 1934, the government trust-busting that resulted from the air mail contract cancellations forced a separation of airline and aircraft manufacturing activities. N.A.A. got rid of its airline holdings, kept the remaining assets of the former G.M.-owned manufacturers, and went into aircraft manufacture under its own name, first at Dundalk and then in a new plant at Inglewood, California. The files of its acquired companies went with it and are still in storage in Inglewood today.

For all of its big-business savvy and connections, G.M.'s only real assets in the aircraft business were the established

Fokker airplane designs. However, these had run the course and were nearing the end of the line. Anthony Fokker had been urged by his associates on both sides of the Atlantic to move on to more advanced structures but he preferred to stick to the tried-and-true steel tube fuselages and plywood wings that had built his fame. He was severely criticised for this policy at the time; subsequent events proved the critics right. When aviation began to recover from the world-wide depression, Fokker's European plant, still attempting to sell wood-and-tube airplanes, was in a poor competitive position relative to the new crop of all-metal airliners. Tony was quick on his feet and profited from the situation by acquiring the European distribution rights for the American Douglas airliners. However, he did not live to see the eclipse of his European activities by the Second World War.

Anthony Herman Gerard Fokker, an American citizen at the time, died in New York on December 20th, 1939, at the age of 49.

MODEL 11 — This is one of the "mystery airplanes" of the American Fokker Company. No other information is available from Fokker sources except than the photographs and no description of it appeared in the contemporary aviation press. In FAA records it is identified as "Fokker-Hall H-51," with registration X-499E and c/n 1100. The c/n fits the H-51 into the American Fokker designating system as Model 11. As detailed in Part III (JOURNAL, Fall, 1967) the airplane known as American Fokker F-11 was actually Model 9. There was also an entirely different Dutch F-XI model that was named "Universal" after the earlier American Model 4.

The H-51 fuselage was all metal, a technique that was well ahead of its time, with more conventional rib and spar construction with fabric cover for wings and tail. The fuselage skins were joined by a unique system of inward flanging and riveting instead of the more conventional lap joints. Its major unique feature of the H-51 was the use of folding wings.

Even though carrying the Fokker name, it is readily apparent that Fokker did not design this. Neither did he build it. It just appeared at the Teterboro factory one day to undergo flight tests.³ Because of the reappearance of some of its structural details in later Fokker and G.A. models, it is possible that the H-51 was an outside research project in metal construction that Fokker sponsored.

AAHS Member John C. Barbary's exhaustive research of individual aircraft histories in the Federal Aviation Agency files turned up further information, but no specifications: FAA records state that it was built by Fokker Aircraft Corporation of America in 1928 and was given an experimental license on February 20, 1929. It was a three-place closed cockpit landplane, originally powered with a 115 h.p. German Siemens-Halske engine that was later changed to a Kinner, then a 120 h.p. Walter NZ (Czech). This was to be replaced with a 90 h.p. Cirrus. The last of several short-term renewals of the X-license expired on March 1, 1930. Following a check-up by FAA in 1935, the successor company, N.A.A., advised that the plane had been dismantled.

MODEL 12 — This is another of the "two digit" designs that is known principally by its "Sales" number, F-32, rather than by its "Design" number, F-12. The F-32 designation resulted from the new Fokker practice of designating the transport models by their seating capacity. It was more widely applied to the Dutch-built F-series, which carried the practice into the 1930's. The F-32 was the only American Fokker model affected by this system. (See JOURNAL of AAHS, Vol. 11, No. 2, pp. 110-117.)

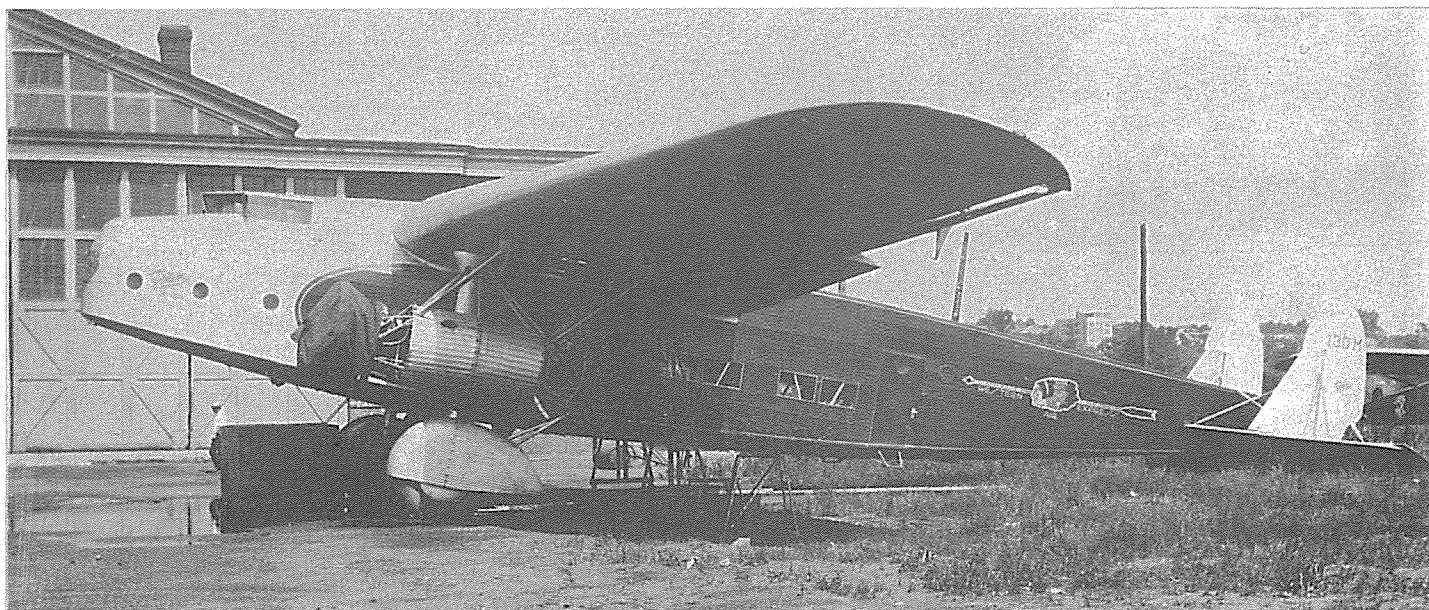
The prototype was built at Teterboro as a Fokker airplane. By the time the production models were delivered the firm had become G.A. but the Fokker name still figured prominently in company affairs and the word FOKKER in the familiar script was included in the new company trademark. Altogether, seven F-32's were built, including the prototype. The c/n range of the F-32's differed from earlier American Fokkers. Instead of the prototype having a c/n as an even hundred, it was c/n 1201, the rest following through c/n 1207. Of the seven, only two actually entered airline service and W.A.E. had both, NC-333N and NC-334N, c/n's 1203 and 1204, respectively. The impression exists that W.A.E. had more, for the prototype was photographed in W.A.E. markings (after flying with Universal Airlines markings), and 130M (c/n 1202) was also photographed at the factory in W.A.E. markings.

While the F-32, with its roomy fuselage, set new standards for luxurious passenger accommodation, there was little really new about its features. Its construction embodied the traditional welded steel-tube fuselage and tail, with tapered wood cantilever wing that had become the world-wide Fokker trademark. In spite of the four Pratt & Whitney



No single feature of the Fokker-Hall, or Fokker-Huff, monoplane reflected previous Fokker design practice. Its wings folded, upon removal of the front spar pin, by turning them vertically and swinging aft. The rear spar hinge, on a sliding tube in the center-section, pulled outward for clearance, and the wingtip attached to the stabilizer. A brace held the leading edge to the strut attach fitting at the lower fuselage.

The logbook of Max Holtzem, Fokker test pilot in the 1929-31 period, calls this airplane a Fokker-Huff and his test flights with various engines, the Seimens, Kinner, Walter, and Wright J-6 continued from May 5th, 1929 to May 6th, 1930. (Photo—Fokker)



“Hornet” engines arranged in tandem pairs (a configuration dating back to WW-I), its speed was no better than its contemporary trimotors while the maintenance requirements were considerably greater. The Hornets were especially troublesome. Rickenbacker reported the loss of three engines on a single flight. The right front engine threw a cylinder which went through the cabin, hit the left front engine, and then went through the left rear propeller.⁴

Even so, the F-32 might have become more widely used if the depression had not had such an effect on the aircraft and airline businesses. W.A.E.’s two were the only ones to be sold.⁵ Fokker used NC-342N (c/n 1207) as a DeLuxe personal transport for a while. Unsold, it was scrapped in 1934.

YC-20 — The first production F-32, NC-130M, was tested by the Army Air Corps at Wright Field under the designation of YC-20. It was unusual to assign a military designation to a company-owned plane under test, but this was done for two different Fokkers (actually G.A.C. at the time of testing, which was in 1931). The other was the C-16 (See *JOURNAL* of AAHS, Vol. 12, No. 3, p. 183). No orders

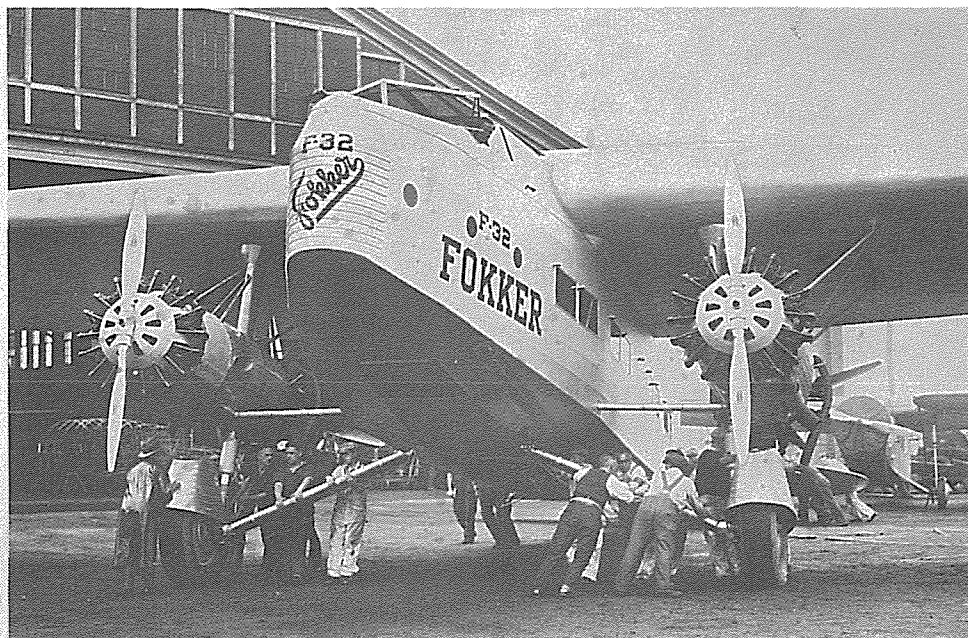
resulted from the Army testing and NC-130M was returned to the factory and scrapped without being sold.

MODEL 13 — Another “mystery airplane” with no data, not even a photograph, available in the Fokker files or contemporary publications. The author’s first knowledge of this plane came from a summary of FAA Fokker registration records compiled 21 years ago, which showed registration number X-7283 and c/n 1300. Another registration source, the American Bureau of Aircraft, gave additional data which indicated that the plane carried one crew member, was powered with an 80 h.p. Anzani 6RA engine, and was registered to the Atlantic Aircraft Corp.⁷

Very recently AAHS Member K.M. Molson, former curator of the National Aviation Museum of Canada, knowing of the author’s special interest in Fokkers, forwarded the photograph of an “Experimental Fokker” taken at Teterboro by Leigh Brintell, a Western Canada Airways pilot who had gone there to ferry an airplane to his airline. This photo shows the Model 13 to be a side-by-side two-seater very similar to the Model 11/H-51 in outline, with Anzani engine and apparently a fabric covered fuselage.

The second F-32, above, was not used by the airlines in spite of having Western Air Express markings, photographed here at the factory before it was licensed. (See *JOURNAL* of AAHS, Vol. 15, No. 3, page 177) (Photo—Stephen J. Hudek)

Right, the prototype F-32 being rolled out of the factory, August 1929. It was given Universal Airlines markings, but crashed later on 27 November in W.A.E. livery though not ever delivered to either airline. Only the third and fourth F-32’s, NC-333-N and NC-334-N served Western on the Los Angeles to Oakland run from April through October 1930. One of these ended as a Mobil service station on Wilshire Blvd. in Los Angeles. (Fokker)





The only known photograph of the American Fokker Model 13 was taken at the Teterboro factory, informally by Western Canada Airways pilot Leigh Brintell. (Courtesy of K.M. Molson)

The prototype F-14 displayed a different style of W.A.E. markings not used by the airline, although shown here and on an F-10, NC-8048, and an F-32, X-124-M. This F-14 was also not used by Western Air Express. (See *JOURNAL* of AAHS, Vol. 11 page 112; Vol. 12, page 180 and Vol. 15, No. 3, page 176). (Photo—Fokker No. 1250)

Additional FAA data found by John Barbery reveals that it was built in July, 1928 and was, according to a company statement, a development of the "Skeeter" described in Part III. On appearances, this statement is not verified. Barbery found that the engine was soon changed to a 90 h.p. Le Blonde, followed by a Brownback "Tiger." The Model 13 was kept by the company until sold in April, 1952. It disappeared from the Federal registration records in 1936.

MODEL 14 (Army C-14, C-15) — This was the last commercial American Fokker, and was the only one other than the F-10 to use the same "Sales" and "Design" numbers. In view of Fokker's well-known pioneering efforts with commercial cabin monoplanes having the pilot ahead of the wing (and enclosed), the F-14 with an open cockpit and the pilot aft seemed to be a big step backward. It was not a slip on the designer's part; the customer specified the configuration and several other manufacturers designed airplanes to it as well as Fokker.

Tradition dies hard in the aircraft business. Mailplane pilots since 1918 had been in open cockpits located well behind the wings of traditional biplanes, a practice that remained standard until the end of the 1930's. When the airlines wanted replacement mailplanes (with added passenger capability to match the 1927-28 Boeing 40A and 40B), the

pilots insisted on the traditional cockpits and locations. The replacements were specified to be monoplanes since the biplane design was obviously on the way out. However, if the wing were to be directly attached to the fuselage (a normal high-wing monoplane configuration), the pilot's view would be seriously impaired, hence the "parasol configuration."

Fokker publicity releases stated that the F-14 was developed for Western Canada Airways which did buy six.⁸ However, the fact that W.A.E., which controlled Fokker in 1928, had issued rear-cockpit parasol mailplane specifications to Lockheed for the airplane that became the "Air Express," plus the fact that the F-14 prototype 150H (c/n 1401) flew in W.A.E. markings, makes it appear that the F-14 design was developed for W.A.E.

CIVIL F-14's — Fokker records indicated that 14 civil F-14's were built, verified by FAA registration records and export licenses. However, the known c/n's of the civil models show a wider spread than the registrations, but not enough to accommodate the military versions if they were in fact given c/n's. It could be that some orders were cancelled, the c/n's with them. Eight of the F-14's were exported; four went to W.A.E. and from them to T.W.A., with one later being donated to the second Byrd Antarctic Expedition. One was retained by Fokker and one that was flown for a while with civil registration was sold to the Air



At right, the prototype F-14, now with engine cowl brightly burnished, photographed prior to delivery to Canada as CF-AIG. (Fokker)

Below, the Fokker F-14A, a "modernized" F-14 with slightly modified vertical fin, Townend ring, and shorter nose as X-844-W. It was later exported to Canada as CF-AUD. (Fokker)



Corps as the C-15A.

F-14 Prototype — Built at Teterboro and tested in W.A.E. markings with the registration X-150H and c/n 1401. Powerplant was the 525 h.p. Pratt & Whitney "Hornet A" engine. There was provision for six passengers, with mail and express carried in a separate compartment. The payload of 1551 pounds for the mail/passenger model could be divided between passengers and mail. ATC No. 234 was issued September 21, 1929.

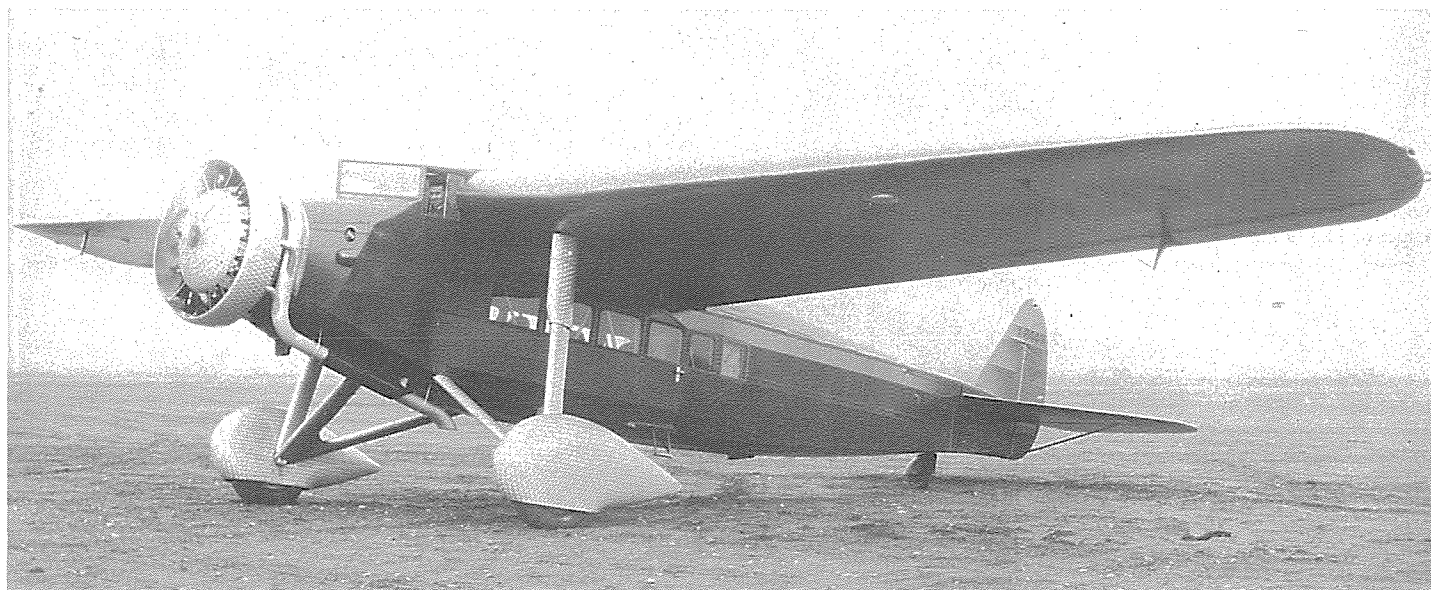
Fokker publicity releases claim that this was the first American commercial production model to use the new S.A.E. X-4130 chrome-molybdenum steel tubing for the metal structure. The wing was constructed in the traditional Fokker birch-plywood manner. This was an interesting design and production short-cut since it was the same 59-foot-span, 550-square-foot-area wing as used on the F-11A amphibians. The prototype was not delivered to W.A.E. but went instead to Western Canada Airways as CF-AIG.

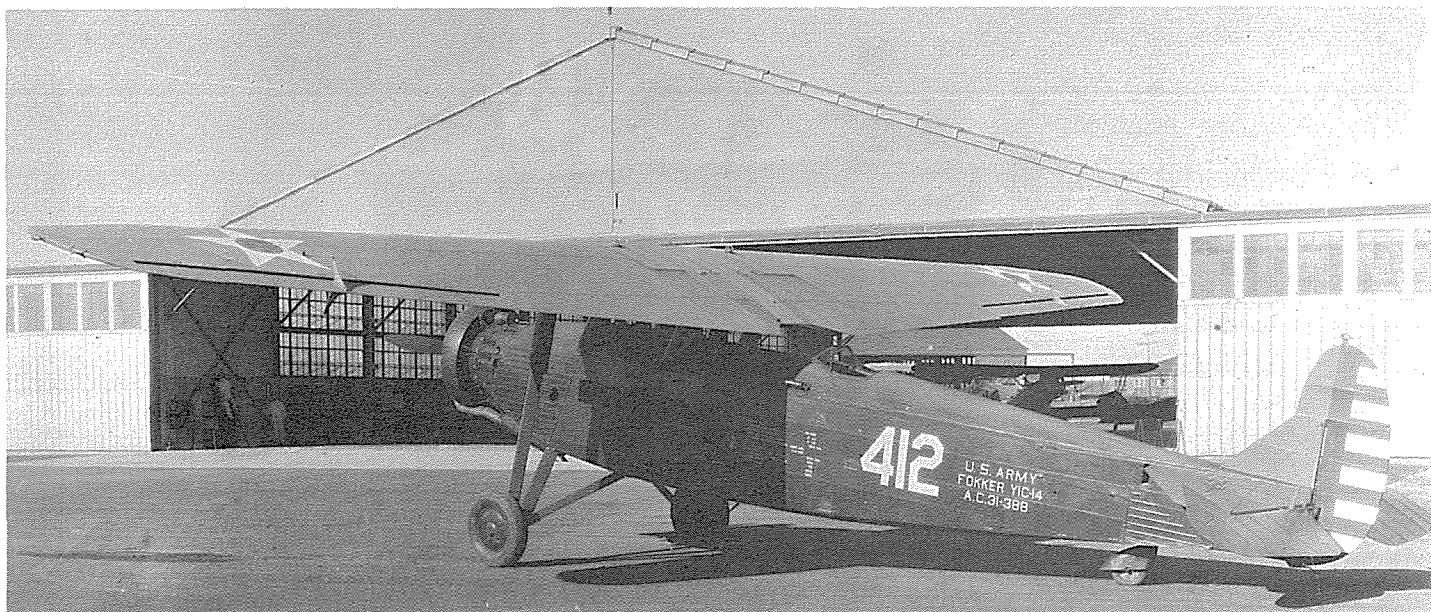
F-14 Production — Production models, identical to the prototype, were also built at Teterboro. C/n's start at 1402 and run to 1412, then skip to 1421 and 1422. The original price was \$26,500, but this was cut to \$22,500 in 1932 in an attempt to unload the unsold models after the depression was well under way.⁹

F-14A — This was a "modernized" F-14 built in August, 1930, with the wing lowered to the upper longerons and the pilot moved ahead of the wing and into an enclosed cabin. No figures are available on the resulting improvement other than a gross weight increase to 7450 lbs. Originally flown as X-844W, c/n 1421. Became NC-844W under Memo 2-395 in December, 1931. Exported to Canada in May 1933 as CF-AUD.

F-14B — Built as a standard F-14 in March, 1930, refitted with a 575 h.p. "Hornet B" engine in December, 1932, and redesignated F-14B. Licensed for eight passengers under Memo 2-435, then exported to Costa Rica.

MILITARY F-14's — After test of F-14 NC-327N /c/n 1408) at Wright Field, sales of the F-14 to the Army Air Corps were better than sales to civilians. The Air Corps designations assigned were C-14 (a coincidence) and C-15. In spite of the company name change from Fokker to General, the Army regarded these as Fokker aircraft and had that name painted on the side of the fuselage in the standard designation block in use at the time. The C-14's apparently continued the established Fokker practice of using the military serial number in place of a c/n on military models. If c/n's were actually used, these might have been in two groups (one between 1412 and 1421 and one at 1423 and subsequent). Since the original 20 military models were ordered in a single group, this seems unlikely.





The eighth F-14, Air Corps Y1C-14, A.C. 31-388, at March Field, December 1931.

(Photo — March Field #G-22IN-23)

Y1C-14 — The Air Corps order was for 20 Y1C-14's, A.C. Serial numbers 31-381 through 31-400. Engines were the larger R-1750-3 "Hornet B" of 575 h.p. Aside from conversions, these airplanes became plain C-14 upon completion of the service test period. The "Y1" designation indicated a service test model purchased from F-1 funds rather than the regular Air Corps appropriation and was therefore a budgetary, rather than a technical, distinction from the usual "Y" service test designation.

Y1C-14A — The last Y1C-14, 31-400, was completed in September, 1931, as Y1C-14A with a 575 h.p. Wright R-1820-7 "Cyclone" engine. It later became C-14A.

C-14B — The first C-14, 31-381, was redesignated following a change to an improved 575 h.p. version of the smaller

R-1690-S "Hornet A" engine.

Y1C-15 — The ninth Y1C-14, 31-389, was especially fitted as a four-litter ambulance with enough interior and equipment changes to justify a designation change. It was painted all white instead of the standard olive drab and orange-yellow and carried large red crosses in addition to the standard Air Corps markings. It was later redesignated C-15.

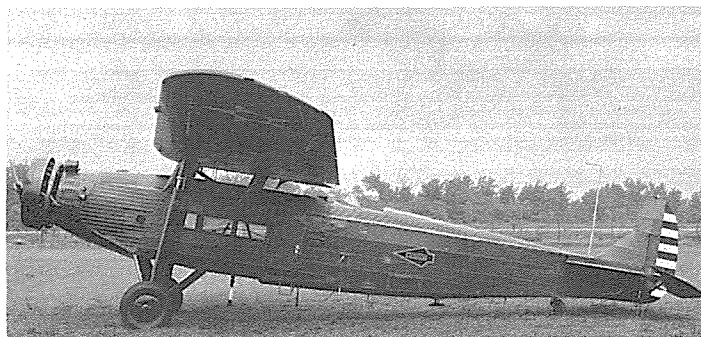
C-15A — On March 3, 1932, the Air Corps took delivery of an existing civil F-14, registered 10775 (c/n 1422). As a civil model, this used the Wright "Cyclone" R-1750 instead of the Pratt & Whitney Hornet "A." However, Air Corps records indicate that it was delivered with the larger "Cyclone" R-1820-5, similar to that used in the Y1C-14A.

American Fokker Model No.	Sold as	Span	Length	Wing Area (sq. ft)	Original engine and h.p.	Gross Weight (lbs)	High Speed (mph)	Remarks
11	H-51				Siemens-Halske 115 h.p.			All-metal X-job with several engine changes
12	F-32	99'	73'	1350	4 x P&W "Hornet B", 575 h.p. @1950 r.p.m.	24,250	157	One tested by Army as YC-20; FAA records do not verify report in (2) of "Wasp" engines used originally.
13		35'	21'	175	Anzani 80	1,500		X-job with several engines; gross weight increased to 1800 lbs.
14	14 C-14, C-15	59' 5"	43' 4"	550	P&W "Hornet A" 525 h.p. @1900 r.p.m.	7,200	137.2	Data for civil F-14; Army models had larger engines.

Following service tests Y1C-14's were redesignated C-14. This one assigned to 91st Obs. Sq. (William Mommer)



The first Y1C-14, 31-381, was converted to C-14B by replacement of engine with R-1690-5 Hornet "A." (Wright Field #58234)





The last Y1C-14 was completed as Y1C-14A with 575 hp R-1820 Cyclone engine and three-bladed propeller.

(Fokker #548, 9-22-31)

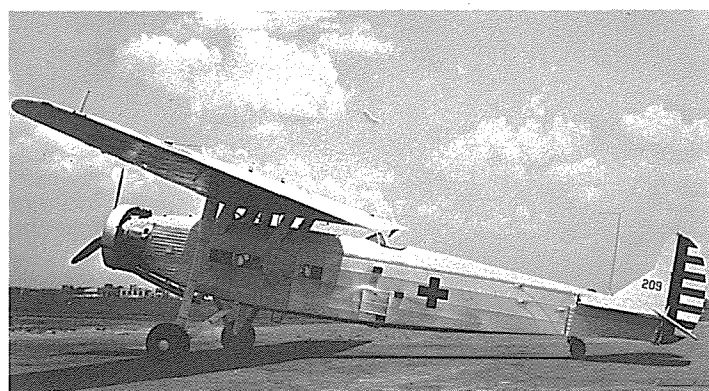
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ABOUT THE AUTHOR

To Members of the Society, Peter M. Bowers will certainly need no introduction; most of the Volumes of the *JOURNAL* have shown pictures taken or collected by this most prolific of writer/photographers, and indeed most of the popular aviation magazines of the past quarter century have seen his works. In addition, his "Boeing Aircraft Since 1916" is the authoritative work on that company. Between writing, picture-taking, helping others, and holding down a position at Boeing, he has also designed and markets plans for the Skybaby, a popular homebuilt type, either mono- or biplane.



C-15A with three-bladed propeller. (I.A.A.P.E., courtesy of author)
The ninth Y1C-14 was completed as a four-litter ambulance, painted white with red crosses, burnished cowl. (Air Corps 15973 A.C.)



IMPORTANT NOTICE

The Fourth Quarter *NEWSLETTER*, No. 20, will carry announcements of the forthcoming annual awards selection procedure, the method of renewal of annual dues and other mundane, but very important, functions of your Society. Don't overlook reading these items, for they affect the timely delivery of the *JOURNAL* and *NEWSLETTER* to you each year.

To those who did overlook a significant point, dues are on a calendar year basis, thus anyone joining the Society, or renewing annual dues at anytime during the year, even on December 31st, will receive all issues of the *JOURNAL* published during that calendar year. So for those who do renew late in the year, it may seem that annual dues time rolls around again very fast.

The *NEWSLETTER* is another matter, though. As a courtesy we mail the First Quarter *NEWSLETTER*, usually in January each year, to all Members of record as of the last preceding 31st of December, but as the year rolls on, we can mail to the new Members, and the late renewers, only those *NEWSLETTERS* published after joining or after renewing. There is some flexibility in this, as we do have some extra copies.