



Second Fokker F-32 at Wright Field for testing by Army Air Corps. Speed rings on forward engines. (Stephen Hudek)

THE FOKKER F.32

By ROBERT H. SCHEPPLER

The Fokker F-32 was a huge, four-engine, high wing monoplane designed and built by the Fokker Aircraft Company in 1929. It was the first four engine Fokker design and the last Fokker designed in the United States before the company disbanded during the depression years,

Its engines were tandem-mounted in pairs beneath the wing. Directional control was effected originally by twin rudders and vertical stabilizers, but a third fin and rudder was added later to improve directional stability. The F-32 was an extremely advanced design for the late 1920s and early 1930s. Partially due to its advanced design and size, and partially due to the general depression into which it was born, it was doomed to failure. Only seven were built. The type number, F-32, was employed to indicate the plane's capacity. The model was originally begun as the F-12, and this is evidenced by the constructor numbers being in the 1200 series.

Development of the F-32 was on the basis of original orders for five each from Universal Air Lines and Western Air Express. Some plans were also made by KLM (Dutch Airlines) to use F-32s on their Amsterdam-Batavia run, but they were never carried out.

The prototype was test flown in the late summer of 1929 by Marshall Boggs, acting as test pilot. It was destined for Universal Air Lines and was originally flown with the two tail configuration and a horizontal stabilizer with typical Fokker aerodynamic balance areas. This arrangement was changed on all subsequent F-32s to the three tail configuration and an unbalanced horizontal stabilizer. From mid-1930, all aircraft also had V-struts bracing the vertical fins outboard rather than single struts.

Carrying the markings of the Universal Air Lines System in its early days, the prototype was demonstrated publicly at Teterboro Airport, New Jersey on September

27, 1929. By November 1929 it was serving as a demonstrator for Western Air Express and bore that airline's markings. Some most revealing comments about the aircraft were made on November 23, 1929 by Jim King of W.A.E. in a letter to the Los Angeles office of the airline. That letter reads as follows:

"I believe you know that we have a demonstrator F-32 here at the Fokker factory and now we have the Western Air Express insignia on the fuselage.... A description of the ship will be in order as you will be asked a lot of questions regarding how they will look--and can assure you that our ships will be a lot different from the first ship after we get through with it--and will give you a brief description of the entire ship.

"The passenger cabin is heated and also well ventilated. A double dome light in each compartment with side lights for each passenger to read by and step lights in the entrance door as in a bus.

"There are two conventional landing lights in the wings and an extra light in the nose of the ship, adjustable for taxiing up the runways. The instrument board has either indirect lighting or reostadt control. There are two galleys, one equipped with a dry ice refrigerator and running water and the other equipped for Thermos jugs, cups and plates; also a place to hang coats and wraps on hangers. Two lavatories, clean and efficient--with chemical toilets and well ventilated.

"The passenger cabin is divided into 8 compartments with the aisle down the center, each compartment having four chairs facing each other. The chairs have three different reclining positions, adjustable by the passenger at will, and this is where we are ahead of all other operating companies. The cushions are stuffed with rubber balls and the passenger actually rides on air. The rubber balls are guaranteed for two years. In case one gets punctured, you slip a Zipper fastener and insert

another ball costing three cents. Maybe in the future this will be standard equipment. Such chairs, as you know, reduce vibration to a minimum, and they are the most comfortable chairs I have ever sat on.

"Have been working on several samples and they are great. Sure glad that I got the idea while sitting in a very uncomfortable chair in a movie one night. The inserts are made by the Air Cruisers, Inc., of Hammondsport, N.Y. I got in touch with them right away and now they will have all the business they can handle as the engineering department is sold on the idea and are specifying this type of cushion for future ships.

"CABIN INTERIOR AND ENTRANCE: Knowing how hard it is to keep velour clean and how it wears at the edges and after a while looks cheap, we put plenty of thought on the matter and looked around at hundreds of samples before deciding for the interior and called Geo. Lord to help with the traffic end of the cabin.

"The entrance will be panelled up half way and the wall covering, snake skin, can be washed with gas and will keep clean. The compartments are numbered from the front 1, 2, 3, 4, and the rear two are as follows; panelled up to the window sills and the wall material is a special imported design that harmonizes with California's desert, mountains and Palm and Cactus trees. This fabric is the most wonderful design possible to see and exclusive to the Western Air Express as they only have one piece in the country--just enough for our ships, and it would take four months to get more from Germany where it is designed and made. The ceiling will be plain fabrikoid to harmonize with the wall scheme and can be cleaned with gas or water in case it gets dusty.

"This is the same for compartments 1, 3 and 4. Number 2 will be the smoking compartment; altho you can smoke in any compartment. The panelling in the smoking compartment is black up to the window sills. The wall material is a brocade of large tobacco leaves in black, silver and a color of red that is different. The ceiling is water silk effect in gray fabrikoid that harmonizes with the wall design.

"The covering of the chairs will be gray alligator skin and the edges of the leather will be piped with blue in the smoking compartment. The chairs will have black piping. All the decorations are nice, and efficient from the viewpoint of operation and maintenance. The interior looks rich, yet not too bright, but in excellent taste. The ship's interior is different from that of any ship around here, and I have been in them

all, including the new 18, 24 and 30 passenger ships, both here and at Roosevelt Field. The 'Patrician' is a night-mare in comparison and they paid some interior decorators 1000 bucks to design it. It looks terrible, both from seating arrangement and interior design. All the fabrics used in our ships will be procured from Schumaker of New York, and I even visited the new lie de France, and the Bremen, and looked at the interiors of these ships to get their angle, and you will see the result in our ships.

"Each compartment will have a folding table, as used in the deluxe ships, for writing or the serving of meals. The table can be taken out and folded away by the Steward. We are also putting in lights so the steward can be called by either the pilots or passengers. This will be a red light easily seen.

"We are putting in baggage racks in the two compartments. These racks will be 15 inches wide with netting to match the wall design.

"The safety features of the ships are that no gas is carried above the passengers and each engine can be sprayed with Pyrene under 100 pounds of pressure.

"Gasoline will be pumped into the tanks from the ground but the tanks are equipped with Protectoseal Patented Gas Cups which will prevent any chance of tank explosion as they automatically release for pressure and vacuum. You now can fill the tanks with gas and throw a lighted match in and the match will go out. Have done this myself on a test.

"The colors of the exterior will be standard W.A.E. red, with the edges of the fuselage panelled in black and gold stripes and aluminum wings. The ships will be ready for service when they arrive in Los Angeles, complete with insignia and the approved type markings. I intend coming back on the first ship, so hope to see you when the ship lands and see your eyes pop out when you see it.

"Our biggest problem is to cut out the noise, as when you increase the hp, the noise increases considerably. The ship will be insulated with Balsa wool. We estimated the weight the other day for this as 240 pounds of Balsa wool. We are also endeavoring to make silencers for the engines, which will make a lot of difference, and if we can get some that will not decrease the hp, will use them.

"One very good thing about the ship is, there is no center engine, there is absolutely no vibration in the passenger cabin and no noise is transferred back



The first Fokker F-32 during an early flight over the Washington, D.C. area in mid-1929. (Photo - Stephen Hudek)



The first F-32 on November 20, 1929 in the colors of and acting as a demonstrator for Western Air Express. (W.A.E.)

through the fuselage structure as in the F-10s.

"I am numbering in black and gold letters each chair starting from the left to right, so you can sell tickets for any compartment or any individual seat, which I think is a good idea. If some person wants a compartment to himself of four seats, they can be reserved at the time of the sale of the tickets.

"The ships will have 200 hp (more) with the use of Hornet B's and with the use of Timken roller bearings, which the first ship did not have. We will never have to worry about getting out of any place at any time. The ship sure gets off in a hurry with 32 passengers. Less time than the F-10 and much easier, and it is the most wonderful thing I have ever seen.

"Special attention will be given to the pilot's comfort, as anything that is not comfortable is reflected through the entire ship in flight, and the pilots will have upholstered seats like the passengers have, of cushioned air.

"It has been very trying for me the last five weeks, but am about at the stage now that everything is going along fine. I estimate the first ship to be ready for test about December 20th, and maybe a little later, but will keep you advised at a later date."

Four days after this letter was written, November 27th, the prototype crashed and was destroyed during takeoff tests at Carle Place near Roosevelt Field, Long Island, New York. One engine on the port side had been idled for three engine takeoff, and the second port engine failed during the takeoff. Marshall Boggs and one passenger were injured, and the plane was destroyed by fire. (Boggs was later killed in a Bellanca crash.)

Originally destined for Western Air Express, and finished in their colors and markings, the second F-32 remained in company ownership. It later went to Wright Field for test purposes only and was evaluated by the Army Air Corps as the YC-20, but the plane was never purchased and orders did not materialize. The third and fourth F-32s were delivered to Western Air Express in March 1930 and given airline numbers 500 and 501. From April 1st, Western operated the two planes on its scheduled route between Los Angeles and the San Francisco Bay area. Following the Western Air Express and Transcontinental Air Transport route merger, implemented on July 16, 1930 and completed during October 1930, the two F-32s were turned over to the newly-created Transcontinental and Western Air, Inc. (T.W.A.) on October 1, 1930.

In Western Air Express service, the two Fokkers flew one round trip per day (six days per week) between the Alhambra Airport (Los Angeles) and the Oakland-San Francisco Bay Airdrome. Flights departed Los Angeles at 8:50 A.M. and 5:00 P.M. and arrived at Oakland three

hours later. Passengers were then placed on a ferry-boat and arrived in San Francisco one hour after landing at Oakland. One way airfare was \$21.50, and round trips by air, and by water in conjunction with L. A. Steamship Company staterooms and accommodations, were as low as \$34.00. Flights from San Francisco originated in that city at 8:00 A.M. and 4:00 P.M., took one hour by ferry to Oakland and three hours by air to Los Angeles, Alhambra Airport.

During the six months the F-32s operated on this run for Western, number 500 compiled 720 hours and 39 minutes of flight time and number 501 totaled 844 hours. The planes, however, had one inherent fault and that was a cooling problem on the two rear engines. This problem was never solved and numerous delays were encountered due to spark plug fouling and other problems caused by excessive heat. At one time the seats in line with the rear engine propellers were not used due to the danger of engine failures and possible resultant disintegration of the engines. This accounts for the fact that Western operated the F-32s as 28 instead of 32 passenger planes, during a period of their service.

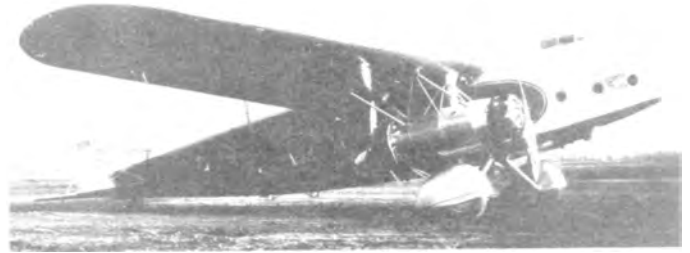
On one flight, approximately in June 1930 and piloted by Western's Number One Pilot, Fred W. Kelly, an alternate fitting from one of the front engines broke loose, tumbled rearward, was hit by the propeller and ricocheted through the fuselage fabric and struck a woman passenger on the leg. After helping her, the steward took the fitting forward to the pilot. There is a similar story, probably an apocryphal version of this one, concerning a woman passenger who walked up to the pilot's compartment and handed the pilot a rocker box cover from one of the engines, explaining that it had flown off the engine and landed in her lap.

Also in the sixth month of 1930, Fred Kelly experienced some moments reminiscent of the loss of the first F-32. On a northbound flight, he was over Coalinga when an engine went out. A short time later the other engine on the same side went out, and he found himself flying with just two engines on one side. However, he continued on to Oakland and landed without further incident. This was no mean achievement as the plane had proved not to be the easiest of aircraft to fly. Many pilots found it notoriously tail heavy so that they had to lean on the yoke to keep it in a level attitude. Nonetheless, the F-32s had a perfect safety record with W.A.E., and they averaged over five hours flying time per day where the previous average had been two hours per day.

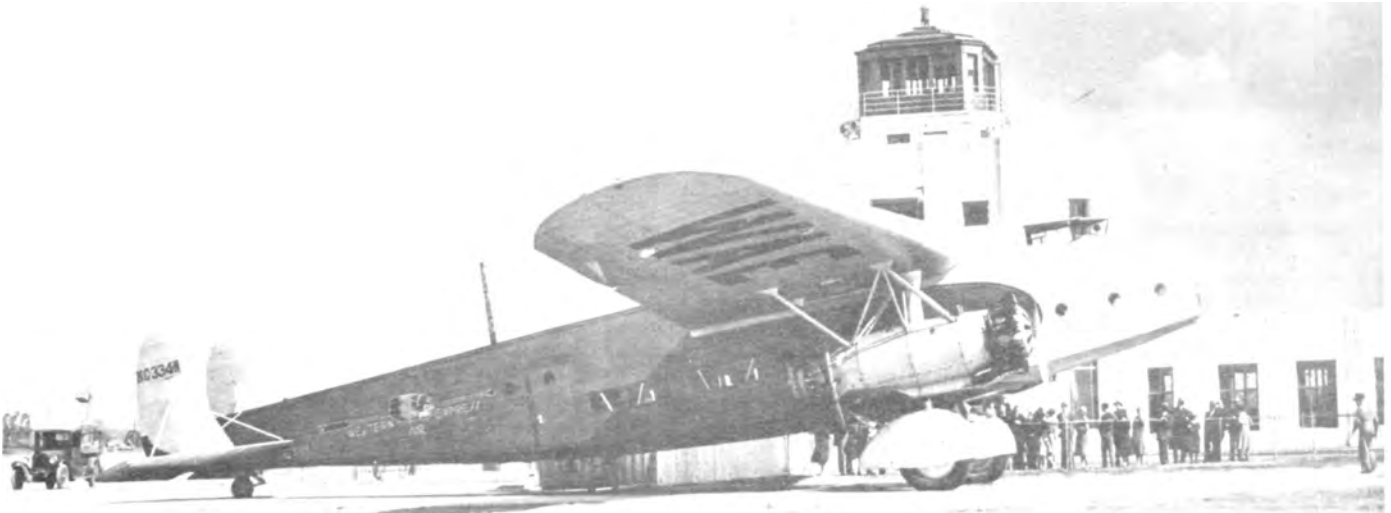
Following their transfer to T.W.A. (on October 1, 1930 although FAA records give the date as March 24, 1931), the two F-32s remained on the Los Angeles to San Francisco run at least through February 1931. Thereaft-



Second F-32 shortly after completion, January 22, 1930, and in Western Air Express markings. (James J. Sloan)



Third F-32, 333N, before delivery to W.A.E. with brace between vertical stabilizers, later removed. (S. Hudek)



NC334N, the fourth F-32, in service with Western Air Express and before terminal at Alhambra Airport. (Photo - TWA)



Both of Western's F-32s, 501 foreground, in flight over the Los Angeles City Hall in mid-1930. (Western Air Lines)



NC333N, still Number 500, in 1931 service for Transcontinental (and) Western Air. (Photo - Western Air Lines)

er, they were scheduled to be put into service on the Los Angeles to Albuquerque to Kansas City run operated by T.W.A. since the merger. At least one of the planes flew over this route, but neither ever operated over it on a scheduled basis. They were retired on June 15, 1931 as part of the retirement of other "wooden wing" Fokkers—an aftermath of the tragic death of Knute Rockne in a Fokker F-10 on March 31, 1931 and an order by the Civil Aeronautics Authority on May 4, 1931. Subsequently, on July 19, 1933, T.W.A. reported to the CAA that the planes had been retired and their useable parts salvaged. One of the two planes, however, became a gas station on Wilshire Boulevard in Los Angeles and remained so until 1938.

The fifth and sixth F-32s were completed in June of 1930 and remained in company hands thereafter. In November of 1931 their ownership was transferred to the U. S. successor of the Fokker Aircraft Corporation, the General Aviation Manufacturing Company of Baltimore, Maryland. Probably the most famous of the F-32s was the seventh one, built as a private air yacht for Anthony Fokker. This was the last F-32, and it was almost as colorful as Tony Fokker himself.

Interior decor, if anything, surpassed the exterior in elegance and contained probably the most luxurious furnishings of any transport ever built. There were four separate compartments. The first was an elaborately decorated smoking compartment, forward, the second a lounge, the third a bedroom with two upper and two lower berths, and the fourth contained eight lounge chairs. All compartments were attractively but rather gaudily finished with stained wood paneling covered with decorative designs.

Although it was built as a luxurious air yacht for Anthony Fokker, he later decided to sell it to Mr. Lawrence Fisher of the Fisher Body Corporation. The plane was delivered to Detroit in April 1930 by Joe Salzman and Oscar Rathlin for the Detroit Air Show and eventual sale. The deal fell through, however, when L. Fisher became angry after seeing the story in the newspapers. Subsequently, Fokker kept the plane in Fisher's hangar at Detroit on a loan basis, and Fisher stored it and paid the fuel bills. Fisher then used it frequently through 1931 until, in December 1931, the CAA discontinued all F-32s for license.

By that time ownership had been transferred to the General Aviation Manufacturing Corp., and the successor to the Fokker Aircraft Corp. attempted to sell it in Chicago but without success. It was returned to Detroit, and in June 1932, Fokker test pilot William DeWild flew it to the General Aviation factory in Wheeling, West Virginia. Engines, propellers and instruments were

removed, and it was left to rot in a field. It was later found at Wheeling, in June 1935, and photographed by Alex Hudek, late brother of Stephen Hudek, well-known aeronautical historian. Some people were using it as a house trailer, and they told Alex that the Fokker Aircraft Corp. had "built the plane so big it wouldn't fly." During the Ohio River Flood of January 1937, the plane was washed away and totally destroyed.

Besides the air yacht, c/n 1207, General Aviation also dismantled 1202, 1205 and 1206 (at Teterboro, New Jersey Airport or Wheeling, West Virginia) in 1932 and, of course, T.W.A. salvaged its two, 1203 and 1204. Thus ended the saga of the F-32. Their lives were short, from the summer of 1929 to 1932, but their impact on aeronautical design was great. They pioneered as the first truly large transport aircraft and helped prove that airplanes could reliably carry people and material. In airline service, too, their safety record was perfect.

Biggest problem faced by the F-32s, as with all true pioneers, was being ahead of their time. It remained for the DC-3 and a second World War to introduce the public to air transport on a large scale. Then the country needed 30 to 40 passenger planes but by that time it was too late. The F-32 had gone the way of all pioneers and had quietly been put to rest.

General specifications of the Fokker F-32 follows:

A.T.C. - 281	Issued November 1929.
Wing Span	99'
Length	70'2" to 73'
Height	16'2" to 16'8"
Elevator Span	26'1.5"
Wing Area	1350 sq. ft.
Tire Size	58 x 14
Weight Empty	14,206 to 15,080 lbs.
Useful Load	8,294 to 9,170 lbs.
Cargo	670 lbs.
Baggage Capacity	120 cu. ft.
Gross Weight	22,500 to 24,250 lbs.
Fuel Capacity	700 gallons
Power: Originally four Pratt & Whitney Wasps, 525 hp each with Eclipse starters, later (1202 and on) four P & W Hornets of 575 hp each. Two 10-foot, two blade, adjustable propellers on tractor engines. Two 9-foot, three blade, adjustable propellers on pusher engines. Engine rotation clockwise on tractors and counterclockwise on pushers to eliminate torque. Rear propellers were set at a higher pitch.	
Design Maximum Speed	140 mph
Actual Maximum Speed	157 mph
Design Landing Speed	60 mph
Actual Minimum Speed	47 mph

Cruising Speed	120 to 123 mph
Takeoff Time	15 seconds
Rate of Climb	850 to 1200 fpm
Service Ceiling	13,000 to 18,000 ft
Wing Loading	16.6 to 18.23 lbs/sq ft
Power Loading	10.7 to 11.5 lbs/hp
Range, Day	480 miles - 4 hours
Range, Night	850 miles - 7 hours

Construction: Wings - All wood, veneer covered, two spar, laminated spruce flanges and plywood ribs.

Ailerons - Frise type. Fuselage and Tail - Metal tubular, fabric covered, and balsa wood paneling in cabin for soundproofing. Landing Gear - Split axle type, Gruss shock absorber struts, Bendix brakes, Goodrich tires. Fixed landing gear with wheels covered at different times with pants, "spats", etc.

General Configuration: 30 passengers and two crew for day operations (later used three crew).

16 passengers and two crew for night operation (16 berths provided).

Also certified for 32 passengers and operated by Western Air Express with 28 passengers.

4 cabin sections, 4 windows per section, mahogany and light pile cabin interior.

2 lavatories at rear of cabin.

1 galley located in center separating cabin sections into two groups of two each.

Cabin size was 35 feet long, 8 feet wide, 8 feet high.

Four gas tanks in wing above engines.

Price: 1929 - Reportedly \$125,000 to Western Air Express 1929 - \$110,000.

1930 - \$90,000 (discounted due to depression).

Operating Cost in 1930: T.W.A. reports it at \$1.25/mile with average trip length of 325 miles.

Color Schemes: X-124M, Universal Air Lines. Wing, fuselage and tail surfaces - aluminum. Pants, wheel discs and struts - aluminum, natural, clear lacquered. Nacelles - aluminum, burnished, clear lacquered. Lettering - license numbers on wing and tail in black. Insignia - "Universal Air Lines, The Skyways our Highways" on

fuselage sides in black. "Fokker" and "F-32" on tip of nose and on sides of nose in black.

NC333N, NC334N, Western Air Express. Wing - aluminum (except in early service 333N had International orange diagonal stripes on outboard upper wing surfaces.) Fuselage - nose aluminum, major portion Fokker Red with gold stripe edged in black, and with windows edged in black on gold frames. Tail surfaces - aluminum except lower part of center rudder in Fokker Red with gold and black striping, same as fuselage. Pants and nacelles - aluminum, burnished, clear lacquered. Wheel discs and struts - aluminum, clear lacquered. Lettering - license numbers on wing and tail in black. Insignia - "WAE" on lower surface of wing in black; Western Air Express Indian Head and Arrow on both sides of fuselage in gold with white and black trim. "Fokker" and "F-32" on tip of nose and sides of nose in gold with Fokker Red striping (not on sides of nose of NC334N). Airline number, "500" and "501" on lower rear fuselage in white.

NC130M, NC335N, NC336N, Fokker Aircraft. Same coloring as Western Air Express NC333N except Fokker circular emblem replaced W.A.E. emblem on fuselage sides.

NC342N, Fokker Aircraft. Wing - aluminum with Curtiss Blue leading edge and Vermillion Red separating aluminum and blue. Fuselage - top and swept areas amidships Curtiss Blue, sides and bottom of forward and rear fuselage Diana Cream, edged by Vermillion Red. Window frames Vermillion Red and cabin windows Vermillion Red edging on Diana Cream frames. Rear fuselage has Curtiss Blue stripes tipped by Vermillion Red. Tail surfaces - Curtiss Blue with Diana Cream stripes on top with inner sides opposite of outer sides on two outboard units, and all vertical units edged in Vermillion Red. Pants and wheel discs - aluminum, clear lacquered with Curtiss Blue side panels edged with Vermillion Red on pants. Nacelles - aluminum, burnished, clear lacquered. Struts and wheels discs - aluminum, clear lacquered. Lettering - License numbers on wing in black; license numbers and "Fokker" on outboard tails in Diana Cream; "Fokker" and "F-32" on nose in gold; "Fokker" on sides of nose in



Sixth F-32 with speed rings on forward engines. (Hudek)



NC342N was Anthony Fokker's air yacht. (Photo - Hudek)



The air yacht as viewed from the other side. Standing under the nose is Tony Fokker. (Photo - Stephen Hudek)



NC342N at Wheeling, W. Va. in June 1935 as it was located by Alex Hudek, standing at right. (M. Simon/S. Hudek)

Royal Blue. Tractor propellers - Front surfaces had Red, Cream and Blue tip stripes while rear was flat black. Pusher propellers - Sametip stripes but both sides were dark brown.

Service history of each individual F-32:

C/N	LICENSE	OWNERS AND REMARKS
1201	124M X124M	Fokker Aircraft Corp, Teterboro, N. J. Prototype manufactured August 1929, license issued to expire 4-1-30. Twin tail configuration. Photographed in Universal Air Lines System markings in mid-1929 and in Western Air Express markings on November 20, 1929. Crashed on November 27, 1929 at Carle Place, Long Island, New York. Plane demolished by fire.
1202	130M NC130M	Fokker Aircraft Corp, Teterboro, N. J. Completed January 1930 and photographed in W.A.E. colors on January 22, 1930. Approved for license NC130M on April 1, 1930. Originally had P & W Hornet engines which were replaced for a short time in June 1930 with 450 hp P & W Wasps. Evaluated as YC-20 by Army Air Corps. Speed rings were installed on forward engines during Wright Field tests. Went into dead storage in 1931 and was disassembled in the Fall of 1931 and junked the following year.
1203	333N NC333N	Western Air Express, Inc, Los Angeles, California. Completed March 1930. Licensed March 26, 1930 to expire April 1, 1931. Originally flown with triple tail and large horizontal brace connecting outboard vertical fins. Brace later removed. Had slight accident during delivery flight at Albany, New York when fitting on left landing gear failed on landing, March 29th. Given Number 500 by W.A.E. In mid-1930 marked, "Fox Fan- chon Marco Via Air Express. Fox Flying House Party - New York to Hollywood." Sold to Transcontinental and Western Air, Inc, New York, New York on October 1, 1930 and retired on June 15, 1931. Salvaged by July 19, 1933.
1204	NC334N	Western Air Express, Inc, Los Angeles, California. Completed March 1930. Licensed to expire April 1, 1931. Given Number 501 by W.A.E. and entered service in April 1930. Sold to Transcontinental

and Western Air, Inc, New York, New York on October 1, 1930 and retired on June 15, 1931. Salvaged by July 19, 1933.

1205 NC335N	Fokker Aircraft Corp, Teterboro, N. J. Completed and licensed in June 1930 to expire July 1, 1931. Ownership transferred to General Aviation Manufacturing Corp, Baltimore Municipal Airport, Maryland (successor to Fokker Aircraft Corp) on November 12, 1931. Subsequently dismantled by manufacturer.
1206 NC336N	Fokker Aircraft Corp, Teterboro, N.J. Completed May or June 1930 and license issued to expire July 15, 1931. Relicensed to expire July 15, 1932. Probably originally scheduled for W.A.E. but never delivered. Photographed at one time with NACA speed rings on forward engines. Ownership transferred to General Aviation Manufacturing Corp, Baltimore Municipal Airport, Maryland on November 12, 1931. Dismantled by owner, probably in 1932.
1207 NC342N	Fokker Aircraft Corp, Teterboro, N. J. Completed March 1, 1930 and license issued to expire April 15, 1931. Relicensed to expire June 15, 1932. Originally built as luxurious air yacht for Anthony Fokker and then intended for Mr. Lawrence Fisher but not sold. Ownership transferred to General Aviation Manufacturing Corp, Baltimore Municipal Airport, Maryland on November 12, 1931. Per letter by General Aviation to CAA, dated March 9, 1934, this plane was dismantled at Wheeling, West Virginia. Subsequently used as a house trailer, and remains destroyed during the Ohio River Flood of January 1937.

THREE-VIEW DRAWING OF F-32: A scale drawing of the first Western Air Express F-32 by Dustin W. Carter appears inside the back cover of this issue. Dusty depicts the aircraft in its earliest known Western markings with the diagonal stripes on the upper wing.

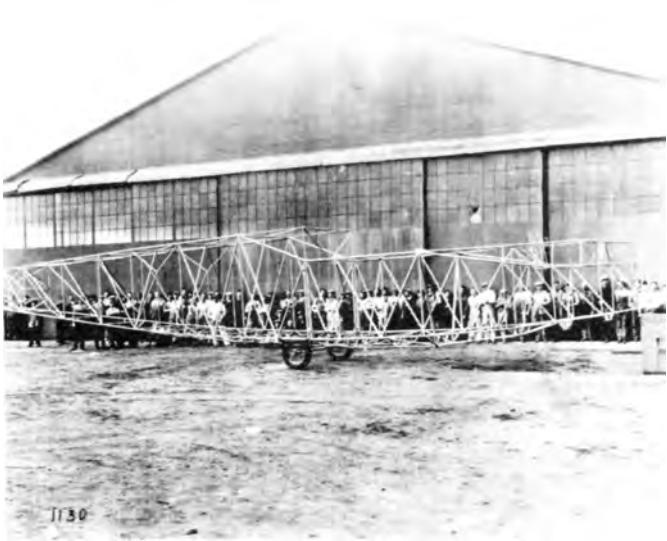
ACKNOWLEDGMENTS: The completion of this article was made possible by the outstanding help of a number of people and special thanks is due to Sydney Albright of Western Air Lines, Lee Flanagan of Trans World Airlines, Fred W. Kelly, Melvin O. Bowen, Gene Kropf, Dustin W. Carter and Stephen J. Hudek.



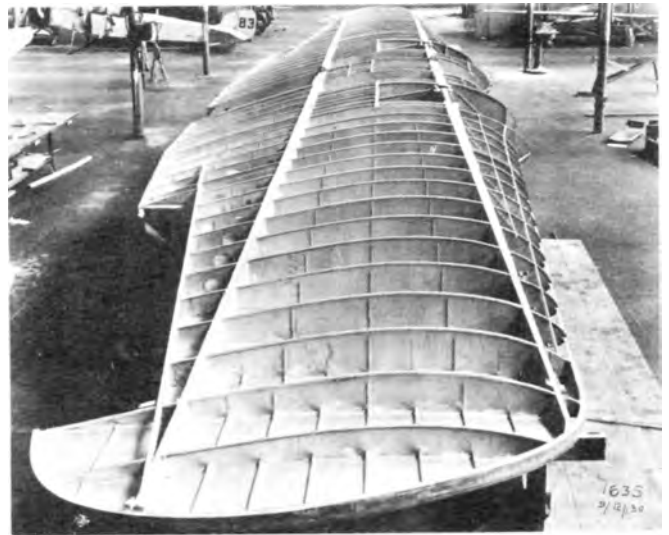
Empennage details of the first Fokker F-32 that show its two tail configuration. (Fokker via James J. Sloan)



Three tail configuration used on all but the first F-32 as seen on the third plane. (Western via Bob Hufford)



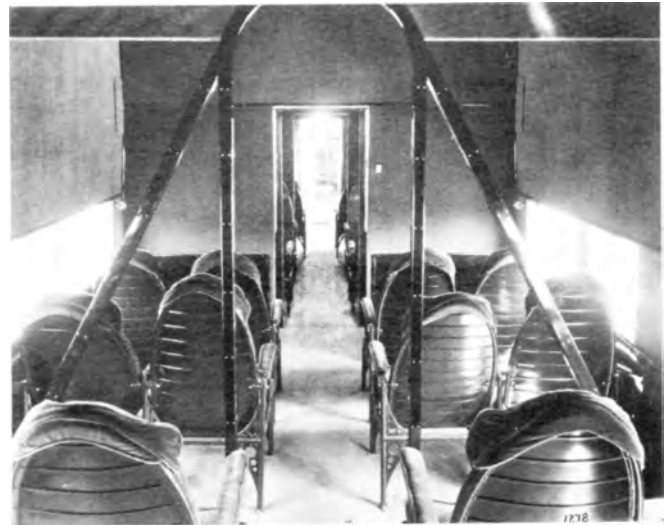
Welded tube fuselage skeleton of the Fokker F-32, probably at the New Jersey plant. (Photo - J. J. Sloan)



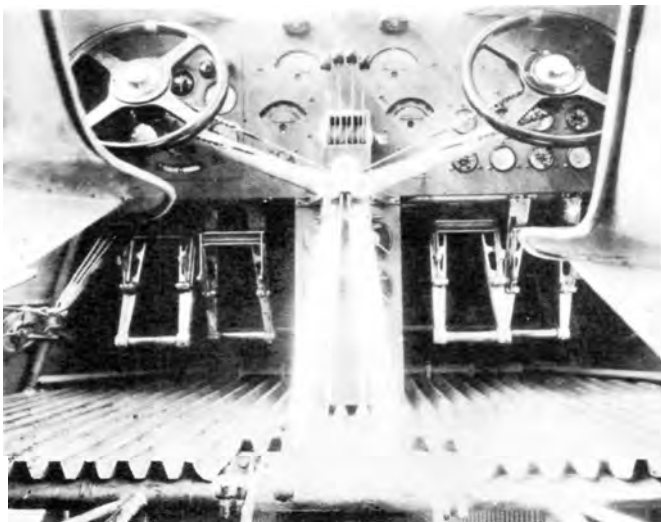
F-32 wing construction is clearly shown in this wing, with top covering removed at factory. (J. J. Sloan)



Interior view of cabin with folding table in position for serving a meal. (Photo - Trans World Airlines)



Interior of early F-32 showing the seats and parts of all four compartments. (Photo - James J. Sloan)



Floor level view of the cockpit and instrument panel of a Western Air Express F-32, 1930. (Western Air Lines)



Luxurious fittings of center cabin of Anthony Fokker's air yacht are clearly shown. (Photo - J. J. Sloan)