

ANCESTOR AIRCRAFT OF TWA, Part 3



by **EDWARD PECK**

THE TEXAN, NC-7888, the only Fokker F.VII (or F-7) used by Standard Air Lines. (Fokker Aircraft Corp. photo via S.J. Hudek)

Probably no other aircraft names are more intimately associated with early airlines in the United States than Fokker and Ford. The trimotored models of these manufacturers came into very wide use during the late 1920s when independent and mail-subsidized carriers began to plumb the potential of transporting passengers in volume. Cramped, drafty airplanes were altogether adequate for flying canvas mail bags heaped one upon the other, a pilot bundled in fleece-lined leather, and the occasional hardy adventurer who traveled by air. Ladies and gentlemen who ventured aloft preferred something a bit less rustic. Thus arose the need for airplanes that one could enter gracefully, sit in with reasonable comfort, and ride into the sky surrounded by the reassuring roar of three big engines.

Before the vogue in trimotored airplanes gained momentum, Fokker was building smaller, single-engine aircraft that found favor with many scheduled operators of that day. Its Universal and Super Universal monoplanes accommodated only a half dozen or so passengers but blazed a trail soon followed by the larger F-10 and F-10 Trimotors. In the mistaken belief that a still larger airplane would automatically lure even more passengers into the air, the four-engine F-32 was developed. It was an eye-popper. It also ate deeply into an airline's operating budget and posed such troublesome technical problems that it quickly became something of a "white elephant" and was discarded.

The trimotored Fords had an even greater impact on early airline development in America. By blending a proven overall design concept with the obvious advantages of all-metal construction, they were attractive airplanes to operators and passengers alike. From the smaller 4-AT Ford a more imposing 5-AT model evolved in much the same fashion as Fokker had enlarged its earlier version of the Trimotor.

The Fokkers and Fords will long be remembered for their roles in helping an infant airline industry secure a firm footing. There were other airplanes of similar size and appearance that did not fare so well. Among these was the stately Keystone Patrician. Like a nova star, it burst into momentary brilliance then quickly faded into oblivion.

TWA or its predecessors used all of these aircraft. Their grouping together here is a coincidence of the alphabetical approach adopted for this study but may also facilitate a direct comparison of similar types.

Airline abbreviations as used in the tabular sections are:

AAL - American Airlines
ACC - Aero Corp. of California
MAE - Midcontinent Air Express
MDX - Maddux Air Lines
PAT - Pacific Air Transport
PMA - Pacific Marine Airways
STD - Standard Air Lines
TAT — Transcontinental Air Transport
TWA - Transcontinental & Western Air
WAE - Western Air Express
WCT — West Coast Air Transport

FOKKER UNIVERSAL (ATC 9)

It might have been conservative business judgment that motivated Aero Corporation to begin its Los Angeles - Phoenix - Tucson schedules with a very modest "fleet" of two single-engine Universals. It is more likely that the airline commanded insufficient capital to start on a larger scale. In either event, ACC enjoyed enough prosperity to supplement this initial pair of Fokkers with two more of the same type.

In the absence of reliable documentation, how long these aircraft were used by Aero Corporation of California, and later its subsidiary Standard Air Lines, can only be surmised from related evidence. C/n 416 was sold to Pacific Air Transport - probably in late 1928 or early 1929. Another Universal was photographed in early-style Standard Air Lines markings, thus it was in service at mid-1928 or later. Indications are that c/n 438 was subsequently operated by Mid-Continent Air Express, although whether obtained directly from Standard Air Lines or later from

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NC-8011, the earliest Super Universal used by Standard Air Lines, later went to WAE and in turn to MAE. (Fokker Aircraft Corp. photo via Hudek)

Western Air Express is not clear. Whatever the disposition of these Universals might have been, they soon took a back seat to the larger Fokker Super Universal. F.VII and F-10A aircraft that Standard acquired. Apparently Aero Corporation/Standard did not assign fleet numbers.

<u>C/N</u>	<u>Registration</u>	<u>Airline</u>	<u>Fleet No.</u>
416	696	ACC	Unknown
426	NC3317	ACC/STD	Unknown
438	NC128M	ACC & MAE	Unknown
523	NC3193	ACC	Unknown

FOKKER F.VII* TRIMOTOR (ATC - none)

Sometimes referred to as the F.VIIA/3m, this airplane, which accommodated eight passengers, was a three-engine adaptation of the single-engine Fokker F.VII discussed below. Neither an Approved Type Certificate (ATC) nor a Category 2 memo approval was issued for this machine, and it appears that its commercial operation in the United States was sanctioned under a reciprocal airworthiness agreement with the Netherlands. Both F.VII types were Dutch-built whereas all of the other Fokkers covered by this study were products of the American Fokker factory.²

Where Western Air Express obtained its only F.VII Trimotor is uncertain, but the most informed guess is that it was one of two such aircraft operated in 1926 by Philadelphia Rapid Transit Air Service.³ It carried no registration number while in use by the PRT line. Western Air Express had begun to use the larger, more advanced F-10 Trimotor by mid-1928 and the airplane had in fact already been repainted in Continental Air Express markings by June 19.⁴

<u>C/N</u>	<u>Registration</u>	<u>Airline</u>	<u>Fleet No.</u>
602	C3908	WAE	100

[*Editor's note: Dutch-built Fokker models were designated by Roman numerals with a decimal separating the "F" and number until roughly the model 14. American-built Fokker models were designated with a numeric number and a dash separating the "F" and the model number. This convention was on occasion not rigorously followed in the United States, causing confusion for writers and historians.]

FOKKER F.VII (ATC -Memo 2-34)

Model designation F.VII appeared on the rudder of this Dutch-built Fokker, elsewhere called the F.VIIA, nevertheless, it was most commonly referred to as simply F-7. Standard Air Lines flew it from 1928 until Standard was purchased in May 1930 by Western Air Express. That it was then integrated into the WAE fleet is doubtful because all Standard Air Lines routes and equipment were resold to Universal Air Lines (later American Airways) before the year was out.

<u>C/N</u>	<u>Registration</u>	<u>Airline</u>	<u>Fleet No.</u>
617	NC7888	STD	Unknown

FOKKER SUPER UNIVERSAL (ATC 52)

Similar in appearance to the slightly smaller Universal but with seating for six plus crew, the Super Universal featured a fully cantilevered wing and enclosed cockpit. It also was normally fitted with a 400-hp Pratt & Whitney Wasp engine whereas the Universal was powered by a 200-hp Wright Whirlwind.

Western Air Express probably used the "Super-U" first in late 1928 or early 1929, assigning them to its Contract Air Mail Route 12 between Cheyenne and Pueblo. All five of these, in addition to the three acquired with Standard Air Lines, were then turned over to Mid-Continent Air Express when WAE organized that airline in September 1929.

Standard Air Lines is said to have operated its Super Universals during 1928 (ATC 52 was awarded to the type as of July 9 of that year).⁵ Then, having purchased the much larger Fokker F-10As, Standard discontinued its use of them in August 1929 and they were then passed on to Western Air Express and ultimately to Mid-Continent Air Express. There is, however, some ambiguity in this sequence of events because all the Super Universals involved had at one time carried WAE fleet numbers in ascending order directly related to their constructors' numbers.

<u>C/N</u>	<u>Registration</u>	<u>Airline</u>	<u>Fleet No.</u>
812	NC8011	STD	Unknown
	"	WAE	211
	"	MAE	Unknown
826	NC9724	STD	Unknown
	"	WAE	212
	"	MAE	Unknown



Originally owned by Standard, this Super Universal was assigned to the Cheyenne-Pueblo route of WAE. (Photo from the Gordon S. Williams collection)



The Fokker Universal used by Aero Corp. of California, and later by Standard, was based at Dycer Airport, Los Angeles. (TWA photo)

830	NC9789	STD	Unknown
	"	WAE	213
	"	MAE	Unknown
861	NC99K	WAE	214
	"	MAE	Unknown
862	NC121M	WAE	215
	"	MAE	Unknown
863	NC122M	WAE	216
	"	MAE	Unknown
864	NC123M	WAE	217
	"	MAE	Unknown
865	NC126M	WAE	218
	"	MAE	Unknown

FOKKER F-10 (ATC 56)

Unlike the Dutch-built F.VII Trimotor described above, the F-10 was essentially an American Fokker design developed for Western Air Express. With three of these 12-passenger trimotors WAE opened its "Model Airway" route between Los Angeles and San Francisco's Mills Field (now San Francisco International Airport) in May 1928. Shortly thereafter, and for reasons not spelled out, its northern terminal was moved across San Francisco Bay to Oakland.⁶ Two more F-10s, c/n 1005 and 1006, subsequently joined Western's fleet, later being modified to become F-10A aircraft.

NC5358, in the hands of pilot Laass, was damaged beyond

repair at Oakland on December 26, 1929. Photographs of the wrecked F-10 indicate that its left main wheel came off, throwing the airplane into a ground loop violent enough to crack its wooden wing and carry away the landing gear.

The other four F-10s eventually went over to TWA, and fleet numbers remained unchanged, as was the case with other aircraft transferred from WAE to TWA in late 1930. In many cases, TWA also retained the original Indianhead/arrow emblem of Western Air Express, changing only the company name lettered beneath. This has led to some confusion in later years, the same style of insignia having appeared on TWA's Northrop, Lockheed, and Ford aircraft although these were never operated by Western Air Express.

The four F-10s (including the two converted to F-10A) appear to have eluded serious mishap and were among the Fokkers discarded in early 1934. Only a minor damage is reported to NC5170 in an accident at Alhambra while being flown by Eddie Bellande on January 26, 1931.

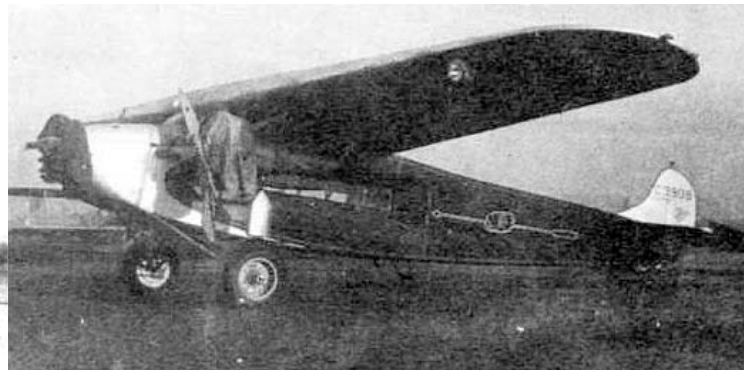
<u>C/N</u>	<u>Registration</u>	<u>Airline</u>	<u>Fleet No.</u>
1000	NC4458	WAE & TWA	101
1001	NC5170	WAE & TWA	102
1002	NC5358	WAE	103
1005	NC8048	WAE & TWA	104
1006	NC8047	WAE & TWA	105

Fokker F7A/3m, of Philadelphia Rapid Transit Service, possibly the one acquired by WAE. (Fokker Aircraft Corp. photo #392, courtesy of North American)





First Fokker F-10, five of which were used by WAE. TWA fell heir to four. (Ford Motor Co. photo- #5562, courtesy of Hudek)



Western's lone Fokker F-7 (F7A/3m), rarely photographed. This view was taken June 9, 1928. (Photo - Rev. B.C. Reed)

FOKKER F-10A (ATC 96)

No other airplanes, except the trimotored Fords, were as broadly involved in the genesis of TWA as were the Fokker F-10As, first put into service by Western Air Express on April 30, 1929. Closely resembling the earlier F-10, the F-10A was heavier and featured a larger wing — although still carrying 10 passengers. These became the front rank aircraft of WAE, operating over all its major routes fanning out from Los Angeles to Oakland, Salt Lake City, Kansas City, and into the southwest. One of them, NC215M, had been acquired from Pacific Air Transport.

The first loss of a Western Air Express F-10A occurred at Wichita, Kan., on June 2, 1929. Standing idle on a layover, NC393E was overturned in a cyclone and completely demolished. On February 23 of the following year, NC279E commanded by James Doles, was inbound to Los Angeles from Albuquerque when engulfed by a severe snowstorm. Twelve days later its wreckage was spotted seven miles from Lake Arrowhead in the San Bernardino Mountains, all three crew members dead; there were no passengers aboard. That same night, February 23/24, Western lost a Boeing 95, cracked-up a Fokker F-14, and had another pilot unreported due to a forced landing.⁷ NC591E was destroyed at Alhambra on December 22, 1930, while being flown by Bart Cox; this Fokker had not yet been transferred to TWA. Western Air Express handed over six F-10As to Transcontinental & Western Air, which together with the four F-10s, four F-14s and two F-32s (of WAE), and 21 Ford Trimotors acquired from TAT-Maddux, formed TWA's fleet of 37 airplanes when it went into business on October 25, 1930. The names, "THE TEXAN" (NC9169) and "THE ARIZONAN" (NC581K) did not carry over into Western Air operations or later with TWA.

The Fokkers were soon to fall into disrepute and ultimate

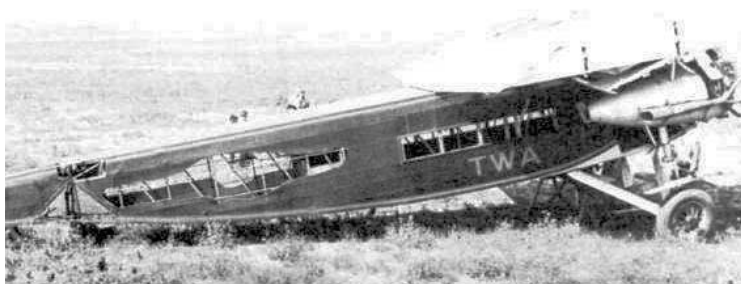


THE ARIZONAN, NC-581K, Fokker F-10A with a third variation of Standard's livery. (Standard Air Lines photo - courtesy of S.J. Hudek)

disuse. Seldom had any airliner crash had as far-reaching implications at the loss of NC999E, the F-10A that broke up in a storm near Bazaar, Kan., on March 31, 1931. The resulting death of Notre Dame University's famous and popular football coach Knute Rockne assured intensive publicity, and grave doubts were aroused concerning the integrity of the Fokker wooden wing. Frequent, and expensive, inspections of all Fokker wings were thereafter required, making them uneconomical to operate.

TWA continued their use a while longer though, converting three to all-freight schedules begun on August 5, 1931. One by one the Fokkers were stripped of useable parts and turned out of their hangars to make room for the DC-2s and on February 2, 1934, the last of TWA's F-10A airplanes were withdrawn from service. NC9169, NC580K and NC9716 had been sold to American Airways, NC489E went to Universal in October 1930, and NC582K went to General Air Lines.

<u>C/N</u>	<u>Registration</u>	<u>Airline</u>	<u>Fleet No.</u>
1007	NC392E	WAE & TWA	109
1009	NC9716	WAE	106
1011	NC279E	WAE	107
1013	NC393E	WAE	108
1015	NC394E	WAE	125
1017	NC455E	WAE	110
1019	NC456E	WAE & TWA	111
1020	NC489E	WAE & TWA	112
1021	NC591E	WAE	113
1028	NC39N	WAE	117
1038	NC9169	STD	Unknown
	"	WAE	120
1042	NC582K	WAE	114
1043	NC583K	WAE & TWA	115
1044	NC215M	WAE	123
	"	WCT	Unknown
1045	NC584K	WAE	122
	"	WCT	Unknown
1054	NC580K	STD	Unknown
	"	WAE	118
1055	NC581K	STD	Unknown
	"	WAE	119
1056	NC585K	WCT	Unknown
1057	NC586K	WAE	124
1058	NC528M	WAE & TWA	121
1063	NC999E	WAE & TWA	116



Fokker F-10A, one of several literally turned out to pasture by TWA, circa 1934. (Photo from the Peter M. Bowers collection)



The enigmatic Fokker F-11A with WAE emblem. Though registered as NC-843W, no official airline record has been found. (Photo from the author's collection)

FOKKER F-11A (ATC 222)

The accompanying photograph is the only known evidence that Western Air Express might have used this airplane. In view of the airline's close association with Fokker through interlocking ownership, it is entirely possible that the F-11A appeared in WAE colors only to publicize the name — as seems to have been the case with one of the F-14s and two F-32s. However, because Western did fly the Wilmington-to-Catalina route with other amphibian types, one might suppose that the F-11A was under consideration for that operation.

To compound the mystery, its registration number 843W does not appear in any known Department of Commerce or other listings for that period. Since the photograph is said to have been taken at McCook Field, perhaps the airplane was in fact turned over to the military before its civil registration was officially recorded. Though it does not wholly qualify under previously stated criteria for inclusion in this study, it has been given brief mention here in the hope that some reader might be able to provide additional details regarding its connection, if any, with Western Air Express.

<u>C/N</u>	<u>Registration</u>	<u>Airline</u>	<u>Fleet No.</u>
906 or 907	843W	WAE?	Unknown

FOKKER F-14 (ATC 234)

The prototype Fokker F-14, registered NC150H, was sometimes photographed in Western Air Express markings but the airline never used it. It may have originally been allocated to WAE but it is more likely that only joint publicity for Fokker and the airline was intended. A machination to confound future historians!

Western Air Express did operate four other F-14s, however. These six-passenger monoplanes were placed in service on February 15, 1930 — apparently on the Los Angeles to Salt Lake City route chiefly as mail and express carriers, and on other routes occasionally. A little more than a week after the type was introduced, Western's number 400 met with misfortune at Cedar City, Utah. Piloted by Bart Cox, it cracked up on takeoff but was repaired and returned to duty. There is no record of other F-14 accidents and all four were transferred to TWA in late 1930. They were withdrawn from service on June 29, 1933.

Antarctica may yet hold the remains of one of these Fokkers, if not carried out to sea on drifting shelf ice. NC331N was among the aircraft that Admiral Byrd took on his second expedition in 1933. Although said to have been loaned by General Motors, the airplane still carried TWA insignia when filmed during unloading operations at shipside in the Antarctic. On its first flight the

Block letters, "TWA," marked this F-10A, NC-583K. Most carried the Indianhead emblem inherited from WAE. (Photo from the Gordon S. Williams collection)





Fokker F-14, NC-129M, operated by Western Air Express and later by TWA, at Western's base at Alhambra Airport. (From the AAHS photo archives, AAHS-11483)



Western Air Express Fokker F-32, NC334N, at the Grand Central Air Terminal, Glendale, California. (Photo from the C.H. Hamilton collection)

following March, pilot Ike Schlossbach demolished it when he stalled on takeoff.⁹

C/N	Registration	Airline	Fleet No.
1404	NC129M	WAE & TWA	400
1408	NC327N	WAE & TWA	Unknown
1409	NC328N	WAE & TWA	401
1411	NC331N	WAE & TWA	402

FOKKER F-32 (ATC 281)

For sheer bulk, the F-32 commanded as much awe in 1930 as the giant jets do today. This four-engine Fokker was quite the largest transport airplane that America had produced up to that time — or would produce until the Sikorsky S-40 appeared a few years later. Four of them wore Western Air Express markings but only the two listed below were used by that airline or carried its fleet numbers. As with an F-11A and one F-14, the WAE insignia may have been applied to the other two machines as a publicity gesture — consistent with the affiliation of the two companies.

The F-32s were delivered to Western Air Express in March 1930 and entered scheduled service on April 14, flying between Alhambra Airport in Los Angeles, Calif., and the Alameda terminal near Oakland, California. They were plagued with troubles from the beginning, not the least of which was the overheating of the aft engines, and various remedies were tried, including baffles and ring cowlings. But nothing could overcome its unpleasant habit of shedding loose engine fittings and slinging these through the cabin wall via the aft propeller.¹⁰

When TWA was organized, the F-32s were among those aircraft that Western Air Express contributed to the transcontinental line. Doubtless WAE was delighted to find a new home for the four-engine monsters. They proved no more efficient in the hands of TWA but were retained in service on the intra-California route, an attention getter of the first order. As a money-maker it failed dismally and was withdrawn from use on June 15, 1931. Perhaps its most fitting epitaph was that composed by Ralph Damon, longtime president of TWA:

“... these [the F-32s] were kin to our present streamlined, pressurized airliners in about the same ratio as a dinosaur would be to a Derby winner - and just about as clumsy and inefficient. One of them ended its days as a gas station on Los Angeles' Wilshire Boulevard — and in that capacity probably rendered its finest service.”¹¹

Only the perspective of time could afford such a critical view of this once-celebrated airliner. It is interesting to note, however, that the Fokker F-32s were the only four-engine landplanes in airline service in America until TWA introduced the Boeing 307B Stratoliner almost a decade later.

C/N	Registration	Airline	Fleet No.
1203	NC333N	WAE & TWA	500
1204	NC334N	WAE & TWA	501

FORD 4-AT-A, B and E (ATC 87 and 132)

Because the Ford 4-AT-A and 4-AT-B Trimotors were operated under the same ATC 87, they are regarded here as a single group. Maddux Air Lines replaced the Wright J-5 engines on three of its B model Fords with the more powerful J-6, hence these became E models qualifying for ATC 132 but to the casual observer these three variants were identical. Most details of the Ford Trimotor series are well known through William Larkins' *The Ford Story*; little can be added here.¹²

Jack Maddux was the first to bring a trimotored Ford to the West Coast. On its delivery flight to California in June 1927, NC1102 was forced by gathering darkness and low fuel reserves to land in a ball park at Williams, Arizona. Among those aboard were William B. Mayo, chief engineer at Ford, and pilots Larry Fritz and LaMar Nelson. In the words of Nelson: “We took off the next day after removing extra gas tanks from the cabin, all but two passengers, and the fence from left field.”¹³

Maddux Air Lines acquired eight Ford 4-ATs and all of these were in service when it merged with Transcontinental Air Transport in late 1929. Although several were disposed of soon thereafter, the remaining airplanes were re-painted to display the combined TAT-Maddux insignia.

When Transcontinental & Western Air was formed in 1930, four of them were transferred to that company, including Jack Maddux's first, NC1102. Having inherited a fleet of the larger, newer Fords 5-AT and the 12 multi-engine Fokkers, TWA did not use the 4-AT models in first-line service. Their role became primarily that of reserve equipment, pressed into duty as traffic volume, mechanical problems, or special operations dictates. Whether or not they were ever re-painted in TWA colors has not been determined; one is known to have been given a new fleet number. One was lost in 1931 when it crashed and burned at Oklahoma City.



Ford 4-AT-B, Wright 200 hp engines, in early style Maddux markings at Ford Airport. 4532 appeared on upper right wing also. (Photo from the Ford archives)



Ex-TAT Ford 5-AT-B, NC9651, City of Philadelphia, was transferred to the TWA fleet as #605.

In observance of the 20th anniversary of TAT's inaugural, TWA flew a rented Ford 4-AT on a nationwide tour in 1949, painted with combined TAT/TWA identification for the occasion. The airplane, NC9612, had never actually been owned by TWA or any of its predecessors. In more recent years it was used as a "smoke jumper" transport by Johnson Flying Service in Montana, is now at Dolph Overton's Wings and Wheels Museum at Santee, S.C., reportedly again to receive TAT markings.¹⁴ (editor: Restored by Overton to TAT colors and is now owned by Collectible Aircraft, Missoula, Montana),

FORD 5-AT-B and C (ATC 156 and 165)

Before its merger with TAT in late 1929, Maddux Air Lines added eight Ford 5-AT airplanes to the fleet. TAT had founded its own operations with the same type of airplane, so the two fleets were easily integrated when these companies combined. The 5-AT-B and -C models were so nearly identical that they are treated here as one principal type. These are somewhat larger than the earlier 4-AT; a full account of their differences can be found in Larkins.¹⁵

C/N	Registration	Airline	Fleet No.
7	NC1102	MDX	1
"	"	TAT-MDX	Unknown
"	"	TWA	Unknown
12	NC1781	MDX	2
16	NC4532	MDX	3
23	NC5577	MDX	4
31	NC7117	MDX	5
"	"	TAT-MDX	Unknown
"	"	TWA	700
32	NC7118	MDX	6
33	NC7119	MDX	7
"	"	TAT-MDX	Unknown
"	"	TWA	Unknown
36	NC7582	MDX	8
"	"	TAT-MDX	Unknown
"	"	TWA	Unknown

C/N	Registration	Airline	Fleet No.
4	NC9606	TAT City of Columbus	A-9*
"	"	TWA	614
5	NC9607	TAT The Kansas City	A-2
"	"	TWA	607
6	NC9643	TAT City of Albuquerque	A-6
"	"	TWA	612
7	NC9644	TAT City of Washington	A-7 & 18
"	"	TWA	603
8	NC9645	TAT City of Wichita	A-3
"	"	TWA	608
9	NC9646	TAT City of Los Angeles	A-8 & 19
"	"	TWA	604
10	NC9636	MDX	9
16	NC9638	MDX	10
"	"	TAT	A-10
"	"	TWA	615
17	NC9639	MDX	11
"	"	TAT City of Waynoka	A-6
"	"	TWA	611
18	NC9640	MDX	11
"	"	TAT	A-8
"	"	TWA	613
19	NC9641	MDX	14
"	"	TAT	Unknown
"	"	TWA	602
20	NC9649	TAT City of San Francisco	A-9
21	NC9647	TAT City of Indianapolis	A-4
"	"	TWA	609
24	NC9665	TWA	618
25	NC9666	TWA	617
34	NC9651	TAT City of Philadelphia	A-10
"	"	TWA	605



Though TWA "retired" all their Fords in August 1934, several, such as 5-AT-B NC9648, were reinstated for cargo runs between New York and Chicago for a couple of months in 1936. (Photo from the C.H. Hamilton collection)

37	NC9650	TAT <i>City of Saint Louis</i>	A-5
	"	TWA	610
41	NC9686	MDX	9**
	"	TAT	Unknown
	"	TWA	600
46	NC9689	MDX	15
49	NC8411	TAT	A-11
	"	TWA	616
51	NC8413	MDX	16
	"	TAT	Unknown
	"	TWA	601
57	NC9648	TAT	A-1
	"	TWA	606
69	NC410H	TWA	620
90	NC430H	TWA	Unknown

* TAT discontinued alpha-numeric fleet numbers in favor of simple sequential numbering shortly before the formation of TWA.

** Second MDX Number 9

Upon the formation of TWA, all of the existing TAT/Maddux 5-AT models were taken over by the new company, and TWA added four more later, bringing the total to 21, the mainstay of its operations until the advent of the DC-2 in 1934. Even before they were displaced in passenger service they were employed in all-freight operations as early as 1931. On August 31, 1934, all remaining Fords — freighters and passenger airplanes alike — were retired, but the "Tin Goose" was hard to kill; in October and November 1936 TWA resurrected some of them for cargo flights between New York and Chicago for a short time.

Maddux's NC9636 had been destroyed at San Diego on April 21, 1929, and NC9689 at Oceanside, Calif., on January 19, 1930. TAT destroyed the *City of San Francisco* at Mt. Taylor, N.M., on September 4, 1929. TWA destroyed the *City of Indianapolis* at Harrisburg, Penn., on February 2, 1931, and the ST. LOUIS at Amarillo, Tex., on October 16, 1932. Also destroyed were TWA's NC9665 and NC9666, the first at Pittsburgh, Penn., on August 19, 1931, and the latter at Bakersfield, Calif., on October 2, 1933.

A notable recognition feature of the TWA Ford Trimotors was the slightly aft-sloping windshield. All of the 5-AT models flown by Maddux and TAT had a vertical windshield, and early pictures of the same machines in TWA markings show this original configuration; the cockpit enclosures were modified later in 1932.

Most, if not all, of TAT's Fords carried the names of cities either linked by its route system or closely associated with it. The names shown here are based on photographic evidence. Maddux Air Lines named at least two of its Fords, though which one was called *The Golden Gate* has not been learned. The practice was discontinued and the city names removed when TWA took over the trimotors.¹⁶

A city's name was sometimes temporarily displayed on an airplane being used for inauguration ceremonies at that community. Thus, the "name-game" can quickly lead one into endless and confusing circles. The same is true of fleet numbers. Maddux, for example, assigned the number 9 to both NC9636 and NC9686 due to the loss of the former. Other instances of conflicting fleet numbers are not as easily explained, even

pilot's log book entries are sometimes at variance with fleet and registration numbers photographed together. Some duplication of TAT fleet numbers will be noted in the following list — further evidence that otherwise reliable sources of information do not always agree.

TWA again rented a Ford Trimotor in 1963 for a coast-to-coast promotional tour. 5-AT-165, N414H, was used, but it also was never actually in TWA's fleet. It is now owned by Sopwith Ltd. of Las Vegas, Nevada. Two of the TAT/TWA Trimotors survive. 5-AT-8 has now been entirely re-built by the Harrah Collection in Reno (*editor: now with Evergreen Aviation and Space Museum in Oregon*) and is said to be the most authentic Ford restoration in existence, complete with a new corrugated skin, old-style passenger seats, and TAT finish inside and out. 5-AT-34, NC9651, formerly the *City of Philadelphia*, is now owned by Kermit Weeks' Fantasy of Flight Museum in Florida, and has undergone extensive refurbishing.➔

Part Four, conclusion, will deal with the Keystone, Lockheed, Loening, Northrop, Sikorsky and Stearman types in service with TWA and predecessors up to 1935.

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4. *Air Transportation* Directory included this as WAE.
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12. Larkins, William T. *The Ford Story*, Wichita: Robert R. Longo, 1957.
13. Nelson, LaMar, Letter to Ruth Reinhold dated February 19, 1969.
14. "Aeronews," *Air Progress*, Vol. 25, No. 5, (November 1969), pp. 14, 16.
15. Larkins, *op. cit.*
16. TWA later resumed naming its airplanes. Some DC-2s were so christened, as were a few Northrop Alphas. After WWII all of its line aircraft except DC-3s were given individual names — up to and including the 1049G Super Constellation. Since then the practice has again been dropped.