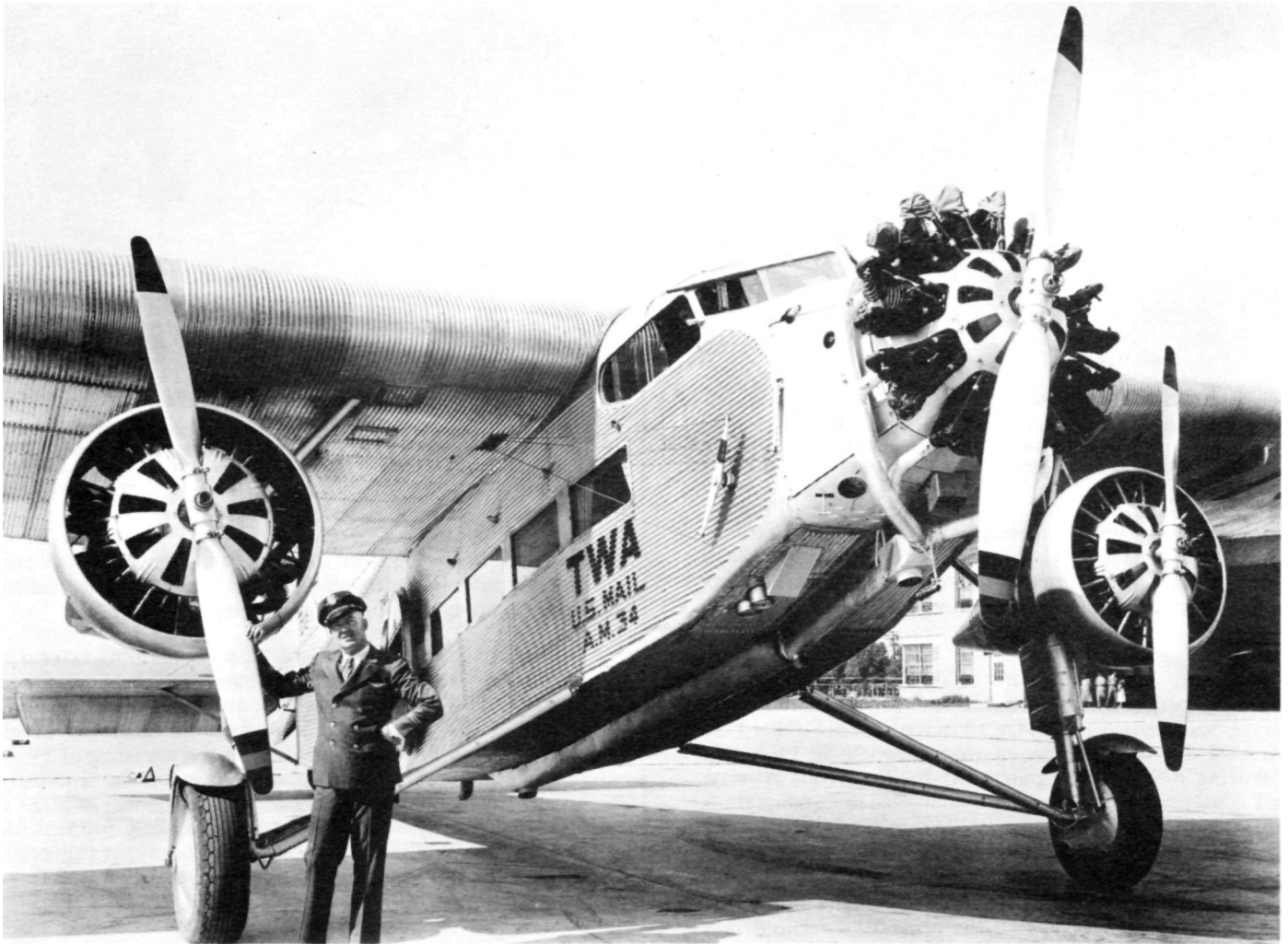




Transcontinental & Western Air pilot Arthur C. (Art) Burns poses with one of the airline's Ford Tri-motors at Kansas City — circa 1932. The rearward-sloping windshield was characteristic of all TWA 5-AT Fords, whereas most others had vertical glass. (Photo —TWA)

ANCESTOR AIRCRAFT OF TWA 1925-1936

By EDWARD PECK

PART ONE - CORPORATE ORIGINS

In contrast to the standardized fleets they now operate, America's oldest airlines came through their first decade on the wings of a wide variety of aircraft. Almost everything from small, open biplanes to "luxurious" four-engine transports found their way into service with these early companies. It was, of course, a time of uncertain trial-and-error and it appears that everyone had a different idea about which airplanes were best suited to commercial schedules. Because their equipment was so diversified, these pioneer airlines afford a sweeping view of the many aircraft types then available.

With a history extending back to 1925 and embracing several prominent predecessor companies. Trans World Airlines' formative years epitomize that casting about for machines which were both reliable and profitable to operate and might even offer some measure of passenger comfort. To better understand the relationships among the airplanes to be considered in this study and the roles they played in the genesis of TWA, it will be helpful to begin

with a concise review of the airline's origins and corporate evolution.

First among TWA's four principal ancestors was Western Air Express, headed by Harris M. "Pop" Hanshue - who was also destined to become TWA's first president. Incorporated on 13 July 1925, WAE began scheduled operations on Contract Air Mail route 4 between Los Angeles, Las Vegas and Salt City on April 17th of the following year. Thus, for the first time, southern California was included in the nation's expanding airmail network. Through this service to Salt Lake City it was connected to the government-operated transcontinental route which terminated at San Francisco.

Within a few weeks WAE squeezed its first passengers into the forward cockpit of a Douglas M-2, with sacks of outbound mail. In December, 1927 the fledgling airline assumed operation of airmail route 12 from Cheyenne to Denver and Pueblo, previously flown by Colorado Airways.



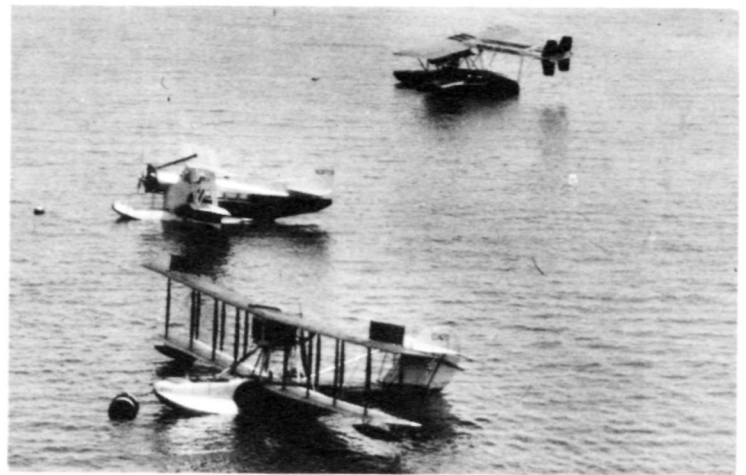
From Vail Field in Los Angeles, Western Air Express begins scheduled service on its airmail route to Las Vegas and Salt Lake City with Douglas M-2 biplanes on 17 April 1926. This was the earliest of TWA's ancestors. (Photo-Western Air Lines)

Although it was this growing volume of postal revenue which really made WAE a success, the company waited only a short time before confidently expanding onto other routes which earned no mail payments.

The Guggenheim Foundation granted funds to assist Western Air Express in the establishment of a "Model Airway" between Los Angeles and San Francisco. This service was begun on 26 May 1928 with three Fokker F-10 trimotor aircraft, the first of that design to be built. The following month WAE purchased Pacific Marine Airways and continued to operate the Wilmington to Catalina route which PMA had flown since 1922, it in turn the successor to Sid Chaplin's airline founded in 1919. Three Curtiss HS-2L flying boats were inherited from PMA, although these were soon replaced with more up-to-date equipment. It was during this period that the principal stockholders of Western Air Express secured control of Fokker Aircraft Corporation of America. This was in the spirit of the times. Groupings of aircraft manufacturers and airlines were not only then permitted under law but became a favorite tactic within the blossoming aviation industry. This bond between WAE and Fokker had the expected influence upon the airline's choice of equipment. Then, in January, 1929 WAE

Home/base for Standard Air Lines was this Los Angeles facility at 96th Street and Western Avenue.

(Photo -National Air&Space Museum)



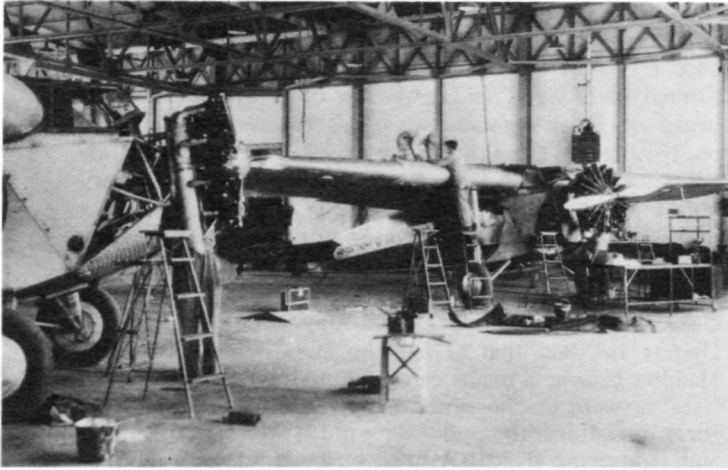
Western Air Express equipment used on Wilmington to Catalina Island route during 1928 - 1931 period. Top to bottom: Sikorsky S-38A, Loening C-2, Curtiss HS-2L. A single Boeing 204 flying boat was also operated. (Photo - Trans World Airlines)

acquired control of West Coast Air Transport, a small company operating over the San Francisco, Portland, and Seattle route. It continued under that name however, rather than becoming an appendage of Western Air Express.

In more than one sense, the most far-reaching extension of Western Air Express was its inauguration of passenger flights from Los Angeles to Albuquerque and Kansas City in May, 1929. It was WAE's presence on this route which eventually led to its participation in the founding of TWA. Before that event took place however, the company broadened its holdings even more. In September of 1929 it organized and financed an airline named Mid-Continent Air Express, a passenger line operating Fokker Super Universals between Denver, Pueblo, Albuquerque and El Paso. Thus, through this affiliated company, Western Air Express bridged the gap between its own operations through Albuquerque to Kansas City on the one hand and its Cheyenne - Denver - Pueblo route farther north. Mid-Continent's system was later extended to include Amarillo, Wichita Falls, Ft. Worth, and Dallas.

Western Air Express enjoyed one final fling at expansion before its aerial empire was nearly dismembered. Its





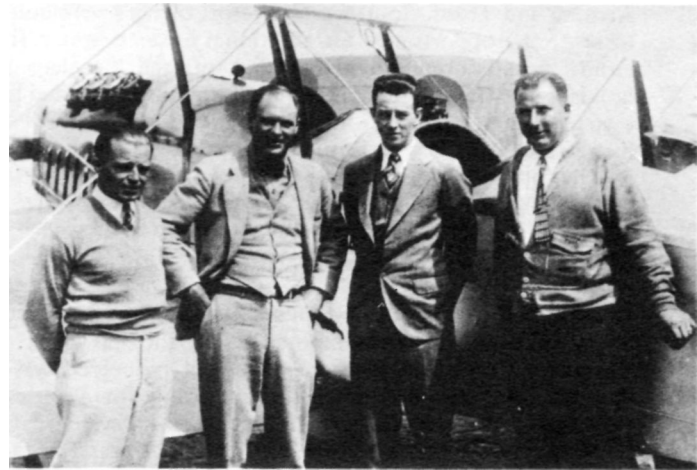
Two Fokker Super Universal aircraft operated by Mid-Continent Air Express over its Denver-El Paso route. Right, D.W. Tomlinson visits Aero Corporation of California, June 1928. At left is Paul Richter while Jack Frye and Walter Hamilton, partners, stand third and fourth

purchase of Standard Air Lines in May, 1930 was not of long duration, that company being re-sold to AVCO (American Airways) later the same year. The significance of WAE's brief ownership is that it brought Jack Frye into their fold - the man who was to one day become "Mr TWA."

Standard Air Lines was the outgrowth of a general aviation enterprise named Aero Corporation of California, formed on February 15, 1926 as an aviation sales agency and flight school. Frye, Paul Richter, and Walter Hamilton were the principal officers, all of whom later became TWA executives. One of their former flight students recalls a story told at that time about the birth of Frye's airline operation:

"A yarn that circulated among the students was that a Fokker salesman brought a plane out to Los Angeles looking for a dealer and approached Aero Corporation to represent them. Frye and his partners were willing but had no money — so the yarn goes — however, they wanted the Fokker. While the pilot salesman was being entertained, his plane made a few border crossings to Mexico on a very profitable arrangement — so profitable,

Vail Field, Alhambra, was the West Coast (interim maintenance) terminal of T&WA.



from left. Tomlinson, then a Navy Lieutenant, later joined Maddux Air Lines and through its union with TAT ultimately became a TWA executive. Righter, Frye and Hamilton came into TWA through Standard Air Lines and Western Air Express. (Photo-TWA)

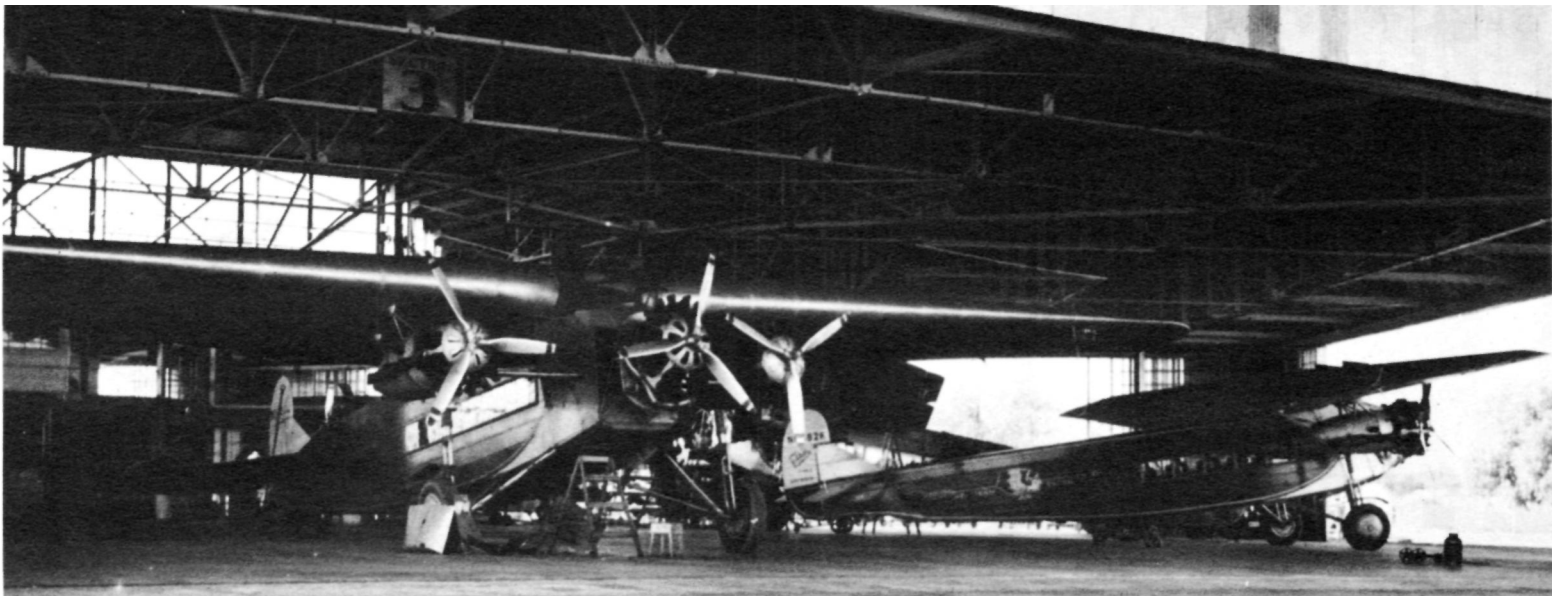
in fact, that Aero Corporation was able to buy the Fokker."²

Another student at this flight school was Lee Flanagin. Having joined Aero Corporation of California as a mechanic in February, 1926, his salary was taken in flying lessons. During 1928 he was made chief flight instructor and eventually went on to become a pilot with TWA. In 1969 Flanagin held number one on the company's active seniority list and was Manager of Flight Dispatch in Los Angeles.

Hopeful of turning a profit on the dude ranch and resort traffic out of the Los Angeles area, Aero Corporation of California began a regular service to Tucson on 28 November 1927, later extending its run to El Paso. Fokker Universals were initially used in this operation, although the company's ambition was reflected in the Fokker Super Universal, F-7A, and F-10A equipment which it later acquired.

On May 1st, 1928 Standard Air Lines was organized as a subsidiary of Aero Corporation of California and thereafter became the operating company on its established route to

(Photo—James J. Sloan Collection)



Arizona and Texas. Southwestern resort owners were quick to sense the opportunity for additional business which the airline could bring them. Several offered "packaged" holidays for flying vacationers and at least one provided his own airplane to transport them from the terminal airport to his retreat in the desert. Business proved to be equally good in the opposite direction. Residents of the arid ranch country soon found that southern California's watering places were now within tempting reach and they beat a path to the Pacific shores.³

Although Standard Air Lines was not as widely known as some of its contemporaries in the fast-growing commercial network, the route which it pioneered was a very desirable property when the time came for American Airways to forge a southern transcontinental system.⁴ Of greater importance to the yet unborn TWA was the fact that Standard served as a kind of airline prep school for Frye and his associates. Then, having joined forces with Western Air Express, they would ultimately move with a large contingent of that company's personnel into a newly formed TWA.

Meanwhile, there came into being a second pair of airlines which, after a round of growth and consolidation, became TWA's other immediate parent. Maddux Air Lines, formed on 2 Sept. 1927, was the older of these two. It began scheduled flights between Los Angeles and San Diego on November 1st and on 14 April 1928 extended its operations northward to San Francisco. From the very outset Maddux used Ford 4-AT trimotors, thus marking itself a truly progressive, well-equipped organization. Jack Maddux, the company's founder-president, had bought his first "Tin Goose" as something of a plaything and conceived the airline as a self-supporting afterthought. Despite the fact that he held no lucrative mail contract, Maddux became a major carrier along the Pacific coast and later eastward to Phoenix. To supplement its income from these operations, the airline gave much attention to charter and sightseeing flights. A brisk business was also enjoyed with "racetrack specials" to Tijuana and Agua Caliente in Mexico.

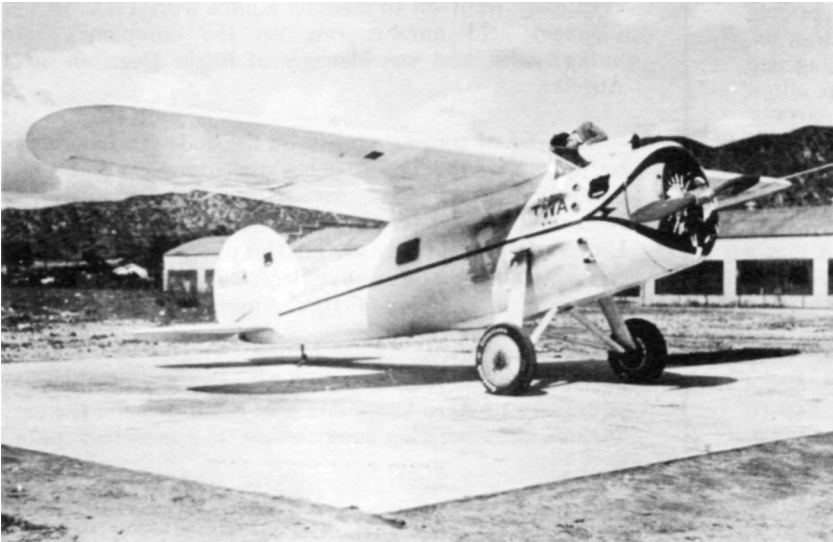
One of Maddux Air Lines' most obvious contributions to the later success of TWA was in the person of D.W.

photos-

Adolpho Villaseñor

National Air & Space Museum 32380

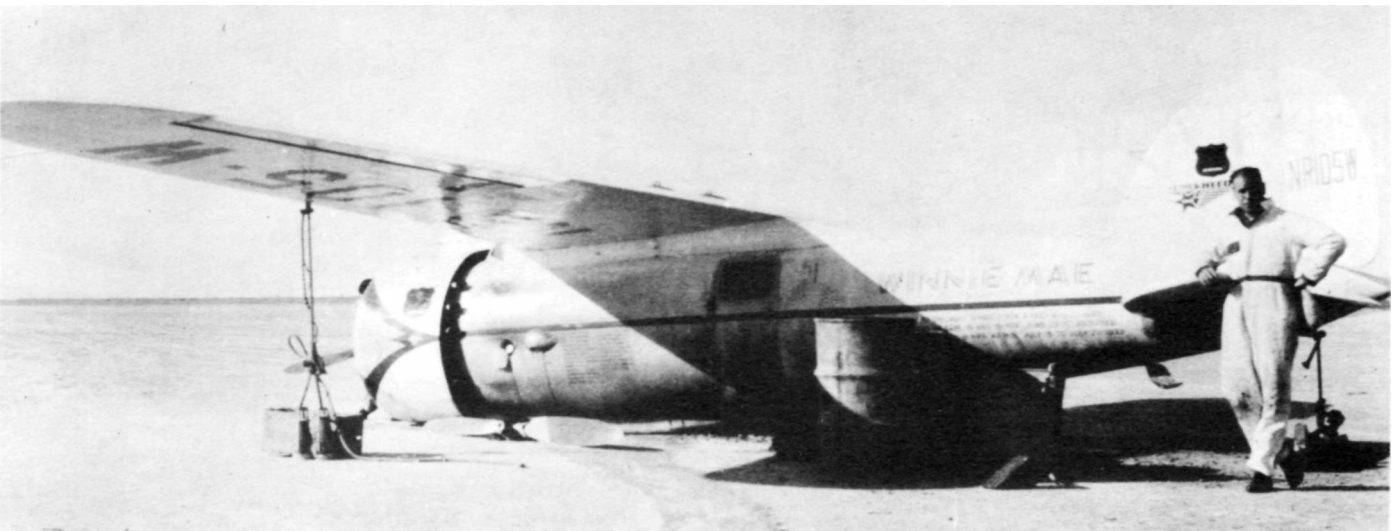
A TWA Vignette-



By 1935 the WINNIE MAE was already a veteran of nearly six years' hard flying. As shown here, it was the second of the WINNIE MAE's bought by Oilman F.C. Hall and named for his daughter. Wiley Post had taken delivery of the first in 1939 and flew it as the private airplane of Mr. Hall until it was sold back to Lockheed, later to become Col. Roscoe Turner's SIRIUS, then Arthur Goebel's, and finally Laura Ingalls' airplane, destroyed in a crash at Albuquerque in 1941.

Post took delivery of the second WINNIE MAE in 1930 and flew it from Los Angeles to Chicago in 9 hours 9 minutes in the National Air Races non-stop derby, winning over four other Lockheeds, Turner's Gilmore Air Express, Goebel's No. 62 (ex-WINNIE MAE, ex-SIRIUS), Lee Schoenhair's MISS SILVERTOWN, and William Brock's NEW CINCINNATI.

In June 1931 Wiley Post and Harold Gatty took off from Roosevelt Field on the WINNIE MAE's first



"Tommy" Tomlinson. Giving up a promising career in naval aviation to take on the job of operations manager for Maddux in 1929, he immediately set about to improve the line's efficiency and to test his ideas about instrument and over-weather flying.⁵ Through the chain of mergers which shortly occurred, Tomlinson became Assistant to the President of TWA and later Vice President of Engineering. In these capacities he spearheaded the company's vigorous flight research programs which led to the DC-1 and DC-2.

Despite good technical performance and high load factors, Maddux Air Lines found it impossible to prosper without a mail contract. It was therefore forced to seek survival in an alliance with another carrier. On 16 Nov. 1929 it merged with a recently born giant of the airways — Transcontinental Air Transport.

With very substantial backing from eastern capitalists and the participation of such notable figures as Charles Lindbergh and Amelia Earhart, Transcontinental Air Transport was probably the most thoroughly organized, equipped, and promoted airline of its period. TAT's

incorporation papers were filed on May 14th, 1928 but it devoted more than a year to meticulous preparations for the coast-to-coast service which it inaugurated on 7 July 1929. In concert with the Pennsylvania and Santa Fe railroads, a combined air/rail route was laid out which would whisk passengers from Los Angeles to New York in 48 hours.⁶ All flying was done during the daytime, while overnight portions of the trip were made by connecting Pullman trains. From New York TAT passengers began their journey on the Pennsylvania Railroad's AIRWAY LIMITED, departing Penn Station shortly after six in the evening and arriving at a special platform adjacent to the Columbus, Ohio airport on the following morning. Transferring directly to a waiting plane, they flew on to Indianapolis, St. Louis, Kansas City, and Wichita, reaching Waynoka, Oklahoma before nightfall. Here they boarded a sleeping car already set-out for them and were joined to the Santa Fe's crack train THE MISSIONARY as it came through late that night.

At Clovis, New Mexico on the second morning these hardy travelers again exchanged their train for a TAT flight via refueling stops Albuquerque, New Mexico, Winslow, and

photos-

NASM 32291E

Richard Sanders Allen Collection

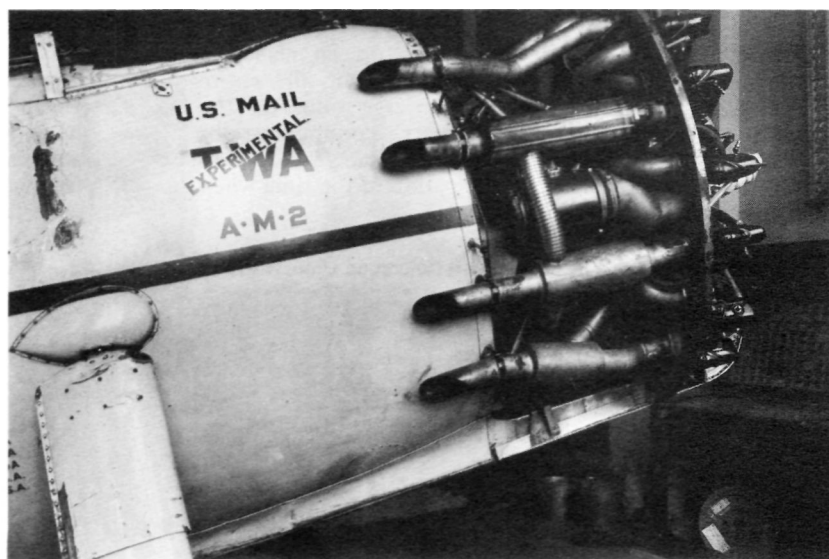
Stephen Hudek

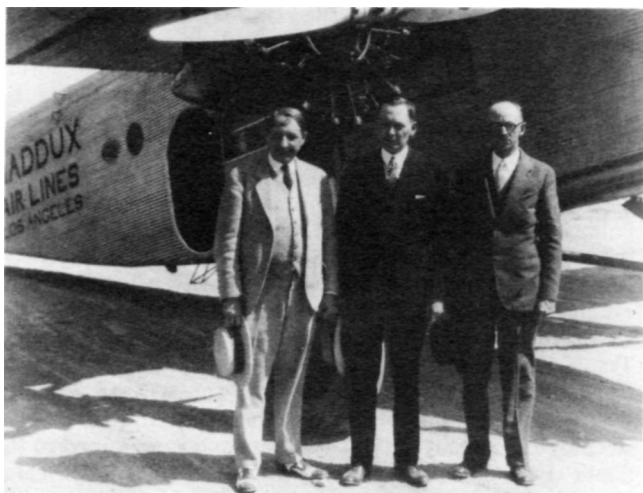
The WINNIE MAE

globe-circling flights, backed by F.C. Hall. With Gatty's flawless navigation they made it to Harbour Grace, RAF Sealand, Berlin, Moscow, Khabarovsk, Solomon, Fairbanks, Edmonton, Cleveland and Roosevelt Field in 8 days, 15 hours, 51 minutes.

Post went round-the-world again in 1933, this time alone, with the then new Sperry Autopilot, a special rocker-arm greasing arrangement for his Pratt & Whitney Wasp C engine, and a fuel and advertising agreement with Socony Vacuum Corp. His trip from Floyd Bennett Field over a similar route was made in 7 days, 18 hours, 43 minutes.

In 1935, backed by Phillips Petroleum Corp., and in a special pressure suit developed with B.F. Goodrich Co., Post began his high altitude research. On his first trans-continental attempt he was forced down on Muroc Dry Lake in a belly landing, later went on three more unsuccessful tries while carrying special air mail loads for TWA.





Jack L. Maddux, flanked at left by his traffic manager Ralph Diggins and on the right by general superintendent W.E. LaFollette, stands before one of the Ford 4-AT-A trimotors with which he operated Maddux Air Lines. (Photo-Nat'l Air & Space Museum A2365) Upon creation of TWA, the former TAT route was extended from

Kingman to Los Angeles. For those who had not yet succumbed to total exhaustion, a Maddux flight to San Francisco could be arranged for the third morning. Thus was established a route which is essentially the same as one served by TWA today.

Transcontinental Air Transport set up an elaborate network of weather reporting stations along the entire length of its system. It also spent large sums on the construction of runways, hangars, communications facilities, and comfortable passenger lounges. Airway lighting was even installed in anticipation of the time when night flying would be possible.

TAT dedicated its terminal facilities at Port Columbus, Ohio, with an open house. At right, a Fledgling and two Davis.

(Photo - Capt. Edward Betts)



Columbus, Ohio to Newark. Charles Lindbergh, Chairman of TAT's Technical Committee, is shown at Camden, N.J. in late 1930 while leading the route survey group. At left is John Collings, TAT Division Supt. and later a TWA vice president. In uniform is Western Air Express pilot Robert Leroy. (Photo —TWA)

Launching its ambitious enterprise without the benefit of a mail contract, TAT depended entirely upon the passengers it could attract with a reliable service and the very finest accommodations. A fleet of Ford 5-AT trimotors formed the backbone of its flight operations, although a few Curtiss B-20 Condor aircraft were also used for a short time. The Keystone K-78D Patrician was apparently service tested but not adopted. From a profit viewpoint, TAT was hardly a smashing success. It did, nevertheless, establish new standards of technical excellence and passenger convenience in an industry which was still largely characterized by somewhat primitive facilities and uncertain performance.



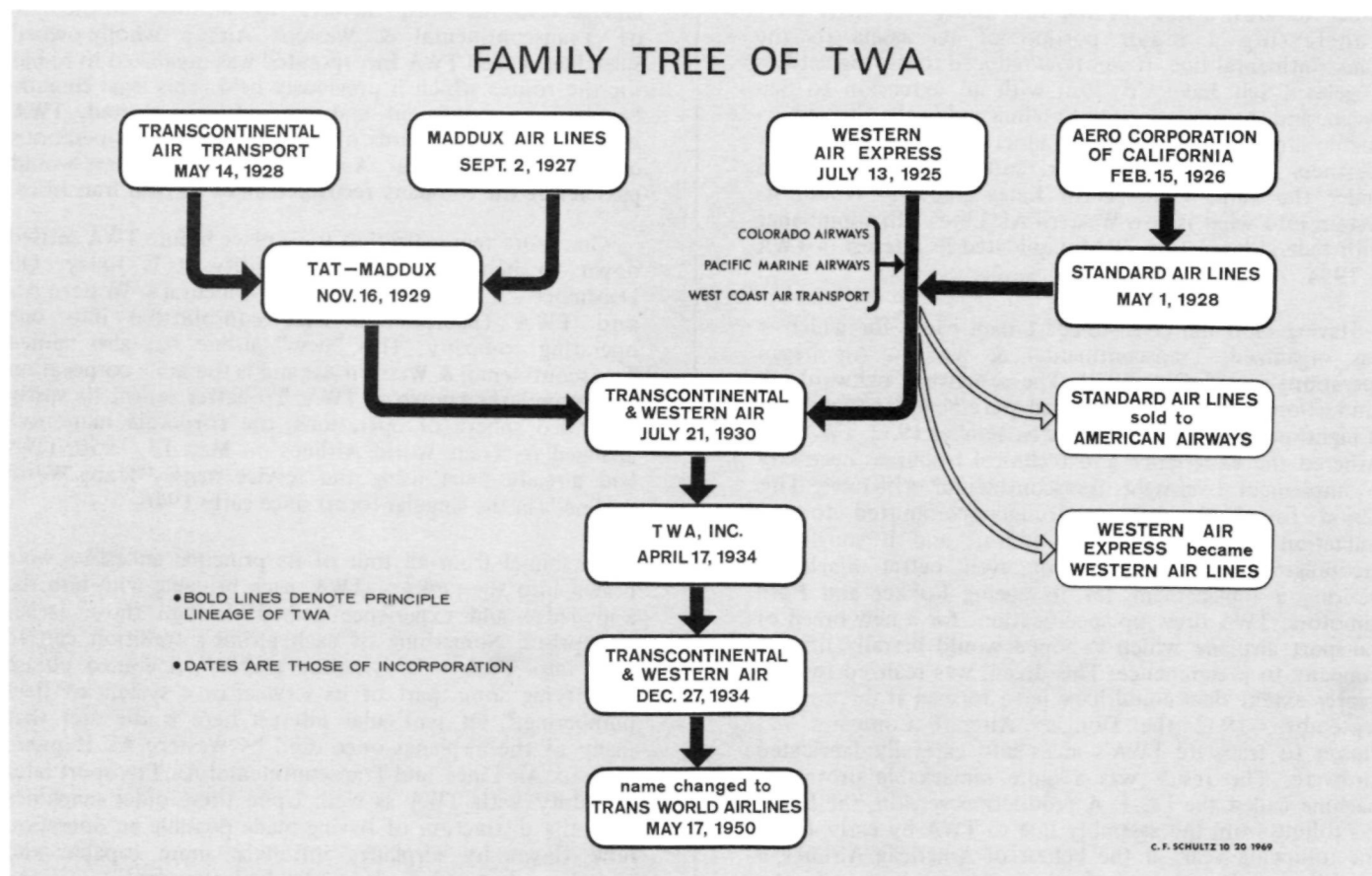
Flying family tree! A Fokker F-10A at Alhambra, inaugurating TWA's eastbound service on 25 Oct. 1930. Below the legend "Transcontinental & Western Air Inc." appear the names of its founders: Transcontinental Air Transport — Maddux Air Lines — Western Air Express. (Photo -Western Air Lines)

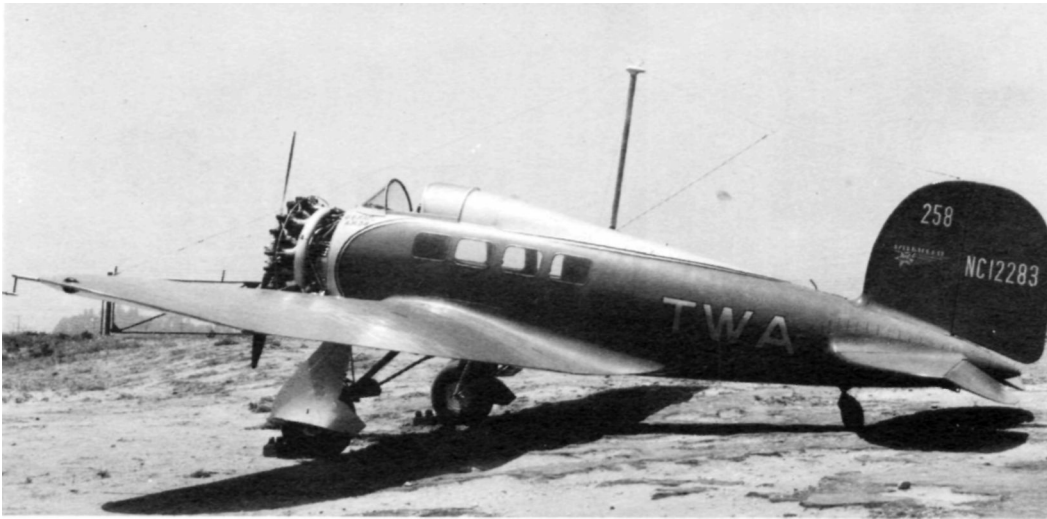


The first scheduled flight of Transcontinental Air Transport prepares to leave Port Columbus, Ohio on July 8, 1929. This coast-to-coast air/rail service was inaugurated the previous evening with the departure of the Pennsylvania Railroad's "Airway Limited" from New York. In background is rail platform. (Photo —TWA)

This, in brief, was the evolution of TWA's forebearers. By 1930 the stage had been set for a major upheaval in the air transport industry — a mad scramble for the newly revised mail routes which would be vital to the success of any struggling airline. The Post Office Department precipitated loud cries of protest when it announced that it would be inclined to respond favorably to certain realignments and alliances among the then existing airlines. The full meaning of this official position was not lost upon either Transcontinental Air Transport-Maddux or Western Air Express, both of whom had been informed in unmistakable language that the central transcontinental route which they shared would receive but a single mail

contract. In other words, the two companies were expected to submit a joint bid for the contract or be left out of the awards entirely. Because TAT-Maddux had little night flying experience, it alone was not considered to be a fully suitable recipient of the mail run. Although Western Air Express had logged many hours of night operations and was an airmail contractor from its inception, it had never operated east of Kansas City and thus had no experience with the very adverse weather conditions often encountered in the eastern quarter of the nation. Therefore, it also was not viewed as being wholly qualified on its own merits for the transcontinental award.⁷ Faced with such a situation, the two companies had no choice but to organize a jointly





Orion 9E, T & WA's fleet No. 258, later Wiley Post's. C/n 195 (Photo- Lockheed)

owned operating subsidiary which would, in the government's eyes, qualify for the coveted mail contract. This enforced merging of interests resulted in the formation of Transcontinental & Western Air on July 21, 1930, the name combining elements of those of its founders. In common usage this was shortened to simply TWA, the same as is in use today.

Strictly interpreted. TAT-Maddux and Western Air Express did not merge because each continued its existence as a separate entity. Instead, with Pittsburgh Aviation Industries Corporation as a minority partner, they had spawned an offspring which would soon far outstrip its parents in size and viability. TAT, then controlled by North American Aviation, remained as a holding company until finally dissolved in 1935. Western Air Express, while retaining a large investment in TWA, continued to operate under its own name on the one route left to it after transferring a major portion of its assets to the transcontinental line. It was now reduced to its original Los Angeles - Salt Lake City run with an extension to San Diego, and the operations to Catalina and in the Cheyenne - Pueblo area. WAE had become a mere shadow of its former greatness. It survived however, and after a brief period under the name General Air Lines gradually rebuilt its system into what is now Western Air Lines.⁸ In compliance with federal legislation, WAE liquidated its interest in TWA in 1934.

Having won the coast-to-coast mail route for which it was organized. Transcontinental & Western Air began operations on 25 Oct. 1930. The somewhat awkward rail connections which TAT had used were abandoned in favor of nighttime layovers. Finally, by November 1932, TWA had gathered the experience and technical resources necessary to implement overnight transcontinental schedules. This period found the airline strongly committed to the evaluation of more advanced aircraft and it sought to encourage the manufacture of even better machines. Desiring a replacement for its ageing Fokker and Ford trimotors, TWA drew up specifications for a new breed of transport airplane which it hoped would literally lift the company to preeminence. This dream was realized to a far greater extent than could have been foreseen at the time. In September, 1932 the Douglas Aircraft Company was chosen to translate TWA's ideas into carefully fabricated hardware. The result was a quite remarkable prototype machine called the DC-1. A production version, the DC-2, was rolling from the assembly line to TWA by early 1934. The following year, at the behest of American Airlines, a somewhat enlarged and further improved model, the

DST/DC-3, made its debut and a living legend had been born. After more than a decade of improvisation and experiment, the airlines at last had the basic tool they needed to get on a sound footing.

Just as TWA was preparing to take full advantage of the competitive breakthrough embodied in its new DC-2, the air transport industry was rocked to its foundations by the cancellation of all airmail contracts as of 19 Feb. 1934. Once again the airlines were forced into reorganizations and legal maneuvers to qualify for the new route certificates which were to be issued. Because none of the airmail carriers as then constituted would be eligible for the pending route awards, new corporations had to be set up as qualified bidders. To preserve their carefully cultivated identities, the affected airlines established new companies with almost identical names — some making a simple change from the word "airways" to "airlines." In the case of Transcontinental & Western Air, a wholly-owned subsidiary called TWA Incorporated was organized to re-bid for the routes which it previously held. This legal charade having been acted out and new officers elected, TWA regained some two-thirds of its profitable mail operations on May 13th that year. Another six or seven years would pass before the company recovered all of its mail franchises.

One more reorganization took place before TWA settled down to being the corporate entity it is today. On December 27, 1934 the old Transcontinental & Western Air and TWA Incorporated were consolidated into one operating company. This "new" airline was also named Transcontinental & Western Air and is the same corporation now popularly known as TWA. To better reflect its vastly expanded sphere of operations, the corporate name was changed to Trans World Airlines on May 17, 1950. TWA had already been using the service mark "Trans World Airline" (in the singular form) since early 1946.

Personnel from all four of its principal ancestors were drawn into the ranks of TWA, each bringing with him the knowledge and experience gained through those earlier enterprises. Something of each airline's tradition carried over into TWA - a symbolic emblem, a coined phrase identifying some part of its service, or a system of fleet numbering.⁹ Of particular interest here is the fact that many of the airplanes once used by Western Air Express, Maddux Air Lines, and Transcontinental Air Transport later saw duty with TWA as well. Upon these older machines rests the distinction of having made possible an operation now flown by airplanes infinitely more capable and complex - but with far less individual personality.

The next part in this series will begin a detailed review of all aircraft operated by TWA and its predecessors up to 1935. For reasons noted later, these will each be treated in alphabetical rather than chronological order. In point of time however, a broad spectrum of aircraft will be covered, beginning with the De Havilland DH-4B and concluding with the DC-2.

ACKNOWLEDGEMENTS

Special thanks are due William T. Larkins who originally inspired and has since contributed much to this study and to Captain Edward Betts of TWA who has given generously of his expert knowledge of the airline's history. Others whose massive help has been of inestimable value include: Sydney J. Albright, Richard S. Allen, Edward A. Bellande, Peter M. Bowers, Fr. Boardman C. Reed, and D.W. Tomlinson. Personnel at the National Air and Space Museum and at TWA's staff headquarters have extended every courtesy and cooperation in allowing the author to search their files for suitable material.

REFERENCES:

1. All founding dates quoted are official filing of Articles of Incorporation, these documents having been consulted directly.
2. Holladay, H. Warren. Letter to author dated 13 Sept. 1967.
3. Boone, Andrew R. "Making the Desert Pay." *U.S. Air Services*, November, 1930. p. 52.
4. Acquisition of Standard completed the grouping of airlines which formed American Airways coast-to-coast system.
5. Tomlinson, D.W. *The Sky's the Limit*. Philadelphia, 1930. pp. 212-233.
6. The Santa Fe reappeared on the airline scene in 1946 when it organized Santa Fe Skyway, Inc. It operated four DC 4 and three DC-3 freighters as a contract carrier until liquidated in January, 1948.
7. Smith, Henry Ladd, *Airways*. New York, 1942. pp. 172-173. Early airline development in the United States.
8. Hereford, Jack and Peggy. *The Flying Years*. Los Angeles, 1946. Privately published by Western Air Lines, 114 pages, possibly the best single source of information on that company's early development.
9. The "Sky Chief" label, still applied to some of its special passenger services, harks back to TWA's western origins and the use of an Indianhead emblem by Western Air Express. Even the streamlined red arrow painted the length of TWA airplanes today is a vestige of the same idea incorporated in WAE and TAT insignia.

THE AUTHOR

Edward Peck is a former 15-year TWA employee. His airline assignments included two years in Saudi Arabia and a year as Sales Director in Libya. A graduate of Indiana University and Spartan School of Aeronautics, he now devotes full time to historical research. Apart from this series of articles on early TWA and related aircraft, Ed is organizing material for a full history of the company for its 50th anniversary in 1975. Readers are therefore invited to submit any corrections or additional information to him directly at 214 Lynnwood Drive, Jeffersonville, Indiana 47130 or to the *Journal* Editor for publication.

As described elsewhere in the *Journal* and *Newsletter*, Ed is also compiling a biography of Matthew Sellers, having recently arranged presentation of the pioneer's memorabilia to the National Air and Space Museum.



THE ARTIST

The products of the airplane factory out at "Turkey Crossing," Burbank, California, have always held a fascination for the artist, Terrance Geer. Recently he combined a life-long hobby of painting with historical research to create a series of paintings of Lockheed's history-making airplanes. The painting of Orion* NC 12283, shown on our rear cover, is one of these and endeavors to capture the Orion's sturdy but graceful lines, its fast, businesslike demeanor.

Terrance Geer, a native of California, began his career in aviation in 1941 when he joined Lockheed to work on the Hudson and P-38 assembly lines. He recalls that the factory had begun to spread out by then. Little evidence now remains of the corrugated iron, bricks, and chimney cones which helped to identify the Lockheed plant and the neighboring Empire China Company of the early 1930's.

The artist's subject is the Model 9E Orion, assigned constructor's number 195, and it rolled out of the factory in May, 1933. It was a "short nose" Orion made for TWA. (The engine was some 8" closer to the firewall than other versions.) With a high performance for its day, the Orion's 450 hp Pratt & Whitney Wasp pulled it along at 200 mph;

*Orion, *n.* A constellation on the equator south of Taurus, represented on charts by the figure of a hunter with belt and sword. (Webster).

nothing at the moment could touch it for speed and comfort.

NC 12283 served with TWA for almost two years, touching down at many of the mid-west route terminals, and ocean-to-ocean long hauls were common, too. The Orion series ended service with TWA in 1935.

January 1935 found NC 12283 in Glendale, California, in the hangar of Charles Babb, an airplane and parts dealer. One day a customer walked in - patch over his left eye - and inquired about the Orion. But that's another story.

