# Allen Meyers and the OTW

**by Fred Maupin**
2625 Hillshire Drive
Deer Park, Texas 77536

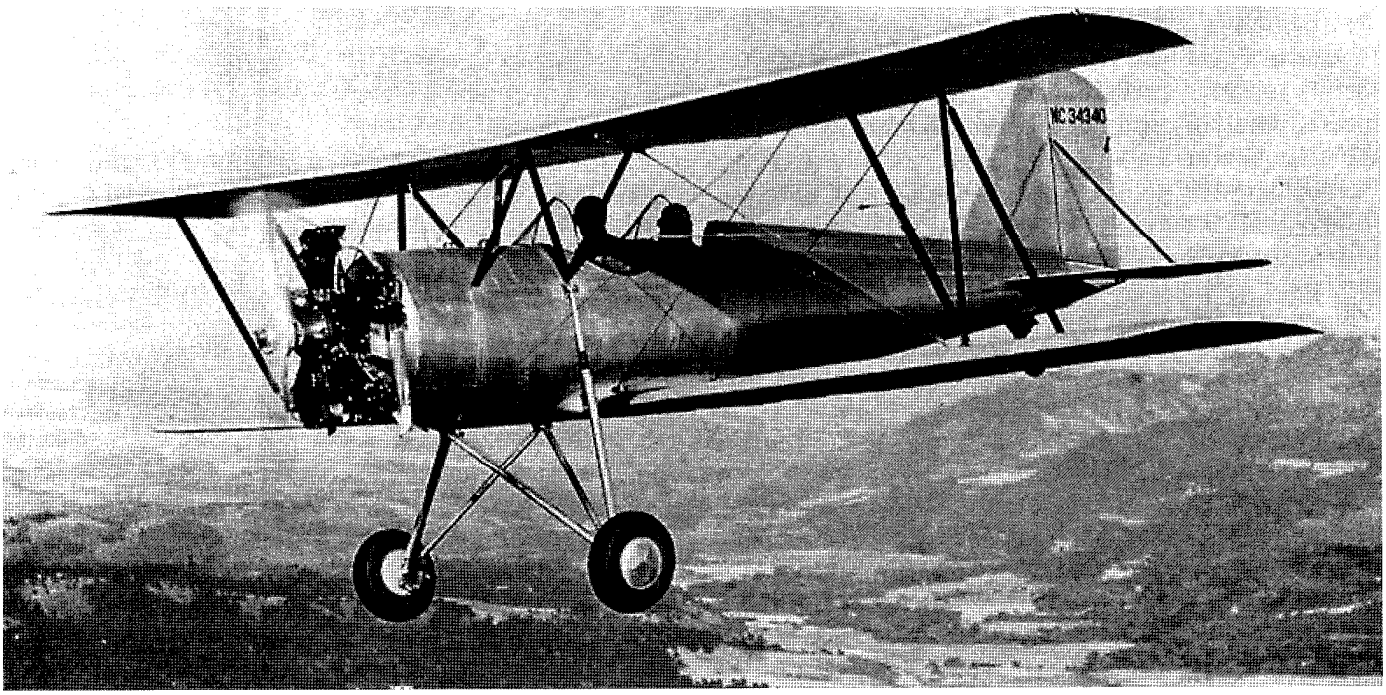


Photo Author's Collection

**The Meyers OTW, the gentle lady from Tecumseh.**

From birth, aviation has been husbanded by those who came to it bringing with them traditional skills of other trades. The Wright Brothers were bicycle makers. They employed a mechanician, Charles Taylor, who was a machinist for the Dayton Light and Power Company. Glenn Curtiss was a motorcycle rider and engine mechanic. Sydney Carnm was a wood worker and self taught draughtsman from the WWI era who designed the Hawker Hurricane of WWII. Among those, one of the many, came Allen H. (AI) Meyers, farm boy, school teacher, sheet metal man and aircraft designer and manufacturer.

Meyers, born in Allenhurst, New Jersey on September 4, 1908 was a first generation American born of Swiss immigrants. His father was a graduate mechanical engineer from the premier Swiss technical school ETH (Eldgenossische Technische Hochschule) of Zurich. From his paternal side he inherited the work ethic and technical logic that would serve him throughout his life.

From his early impressionable years he grew up on a farm near Middleburg, New York. That farm was below one of the earliest air routes. From the sights and sounds of the passage of the flights over his home, Meyers developed a love of the idea of flight. But flying has always been an expensive venture for all those who choose to enter it and money for it was not in the Meyers farm financial plan. Before our society's dependency on liability insurance and its resultant legal impact killed the breed, the *Kid at the Airport* or, as they were more frequently known, *rail birds,* gravitated to the local airports. That was the magical place where airplanes flew that smelled of banana oil and burnt castor oil. One of the most addictive environmental and chemical combinations on the face of the earth, it changed the lives of many a young man and woman and Al Meyers was one of them.

Before he graduated from high school, Meyers joined the New York National Guard. While high blood pressure and Asthma cut his military career short, the summer encampment of 1925 did give him the chance to take his first airplane ride. He was seventeen years old but from then on the die was cast. Aviation was to be AI's way of life. But to get there he first had to earn a living so he took a job teaching in a one-room schoolhouse eight miles from the farm. In the mean time he wrote to every college he could find but none that taught flying or

any other course on aviation. Then, along came the magic year of 1927. Charles Lindbergh captured the Ortiz prize for flight from New York-to-Paris on May 20 and 21,1927 creating a national atmosphere identified as *Lindbergh fever.* Very shortly thereafter Al Meyers left the schoolhouse and entered the aviation industry through the back door, the labor force.

Meyers became, what was then called, a *tinsmith.* In modern parlance he would be called a sheet-metal man. To learn and perfect the trade, he worked at those places that offered the best experience for the time spent. Places such as Chance Vought's Long Island City plant, Glenn L. Martin's facility at Baltimore and the Stinson Aircraft factory at Wayne, Michigan. These facilities provided the east's best opportunities for him to learn the state-ofthe-art at the time.

In 1928, while employed at Vought, He began to learn to fly at Curtiss Field, Long Island. He soloed there in an OX-5-powered Curtiss IN-4. In the process he received pilot certificate number 30844. By 1932 he had logged 140 hours. By 1933 Al was flying as a barnstormer with Martin (Marty) Jensen of Dole Race fame in an airplane designed by Marty, the Jensen Trainer Model 2. Meyers toured with Jensen until 1936 when he went to Tecumseh, Michigan and set himself up as Meyers Aircraft Company.

The year 1933 saw Meyers continue his eclectic schedule of barnstorming, flight instruction and working in aircraft production. The work ethic he had inherited from his Swiss father provided the impetus for the build ing of the skills and knowledge it would take to support his dream of designing and building an airplane of his own. That year saw his first serious efforts in finalizing the details of design for *his* airplane. In 1934 he began construction of the fIrst of the components in a one-car garage in Wayne, Michigan. Later he relocated his build ing activities to space available in the Paul Keehl Foundry in Romulus, Michigan, a few miles west of Wayne.

During this period Al Meyers was, by today's standards, a homebuilder. Then, as now, the self-construction of an airplane was a study in the coordination and consumption of time and money. When the two ingredients became simultaneously available the production of the machine progressed. Finally, on May 10, 1936 the prototype was given its first flight at the old Wayne County Airport. Flight tests and corrections took over two years to meet the Department of Commerce requirements for any kind of certification. This resulted in the granting of Group 2 Memoranda number 2-550 for the design. Under the limitations of Group 2, every airplane built had to be physically inspected and accepted for flight by a Department of Commerce inspector. While not being granted the coveted Approved Type Certificate (ATC) the machine had been found safe for flight and eligible for sale and use. As a result, the aircraft began to sell and develop a reputation of a safe and stable trainer.

With the Civil Aeronautics Act of 1938 came support for the Civilian Pilot Training Program (CPTP). Allen Meyers' big chance at success was the demands the program placed on the aviation community to produce a primary trainer to meet the anticipated student loads of the program. With the granting of the Group 2 Memorandum the Meyers Aircraft Company became competitive in that market and set out to capture part of it. Meyers selected an appropriate model number based on the requirement to be picked as one of those trainers. The model number was OTW.. .*Out To Win.* In the end, the OTW was one of the three aircraft selected specifically to support the CPTP. The other two were the Ryan PT-21/22 and the WACO UPF- 7.

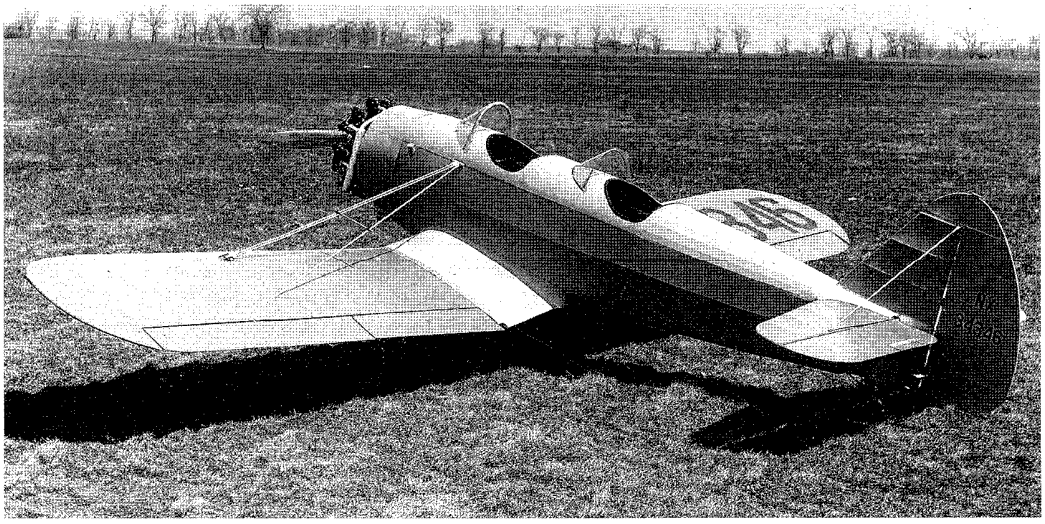
The OTW received its full type certificate (A- 736) on February 18, 1941. According to Meyers' publications, the OTW was in production until war-time demand for engines and materials caused production to be ceased after September 1942. Sufficient materials were made available to maintain production of spares for the existing fleet.

**Meyers OTW #1 (X-15784)**
***The Old Gray Mare* prototype.**

Photo: Author's Collection



**Reprinted with pemission of Skyways Magazine**



**The Meyers ME-165 unsuccessful military trainer design.**

Photo: Author's Collection

existing fleet. Soon after the events of December 7, 1941, the CPTP as a mechanism for training civilians passed into history. Even then the training continued under the guise of the CAA War Training Service which itself passed into history in January 1944. By then the military training establishments had been developed well past the need to support the supplemental training programs.

The OTW served well on the home front during the Second World War; perhaps the closest it came to being in harm's way was when an OTW was one of eight civilian airplanes in the air near Pearl Harbor at the time of the Japanese attack.

Simultaneous with the production of the OTW, Meyers designed and built a prototype of another trainer. The ME-165 (NX-34346) was configured as a tandem seated monoplane and manufactured from non-strategic materials. The most obvious design feature of the airplane was the inverted-gull center section providing mounting for the strut braced outer wing panels. The machine had a length overall of 21 feet 8 inches and a wing span of 30 feet. By the time the prototype flew the major aircraft production companies were producing machines such as the PT -19 and PT -23 in sufficient numbers as to make the selection of another development aircraft unlikely at that stage of the game.

Pending the development of his advanced follow-on aircraft design, the Model 126, Al Meyers kept the company alive by using its aluminum forming capabilities. The firm built a well-received aluminum boat and winterization tops and heaters for Jeep vehicles. This was not a rare circumstance during the post World War II years. When war production died, Vought built washing machines. After the Korean War, Bell Helicopter built motorized wheel-barrows for the construction industry. Never employing more that 200 people, Meyers did his best to keep them employed until the new airplane could be made marketable.

The ME-126 (NX-34358) of 1947 represented a paradigm shift in Meyers design. The machine was a streamlined, all metal low-winged monoplane featuring side-by-side seating and a retractable landing gear. On August 8, 1947, Al Meyers was performing spin recovery tests required for certification. One of the tests resulted in the aircraft entering into an umecoverable flat spin. Eventually, failure to gain control and loss of altitude forced Meyers to bailout of the prototype which crashed in a field not far from the factory. Meyers, in a surplus military parachute, came down hard, not far away, badly shattering his ankle in the process. The injury was so severe that by 1947 standards it was determined he might never walk again. With typical Meyers will and drive, he did recover. The prototype did not.

A second prototype was built within six months of the crash. With the design changes resulting from the addition of a larger engine and the aerodynamic reconfiguring of the vertical fin the airplane emerged as the MAC-145. Type Certificate 3A1 was issued on November 2,1948. Simultaneous with the development of the two place 145 was the four place MAC-200. The Meyers Aircraft Company built 22 MAC-145s and 45 of the MAC-200 series of airplanes before the design was sold to North American Rockwell iri1965.

Meyers produced a major design change every ten years he was in the business. Ship #1 of the OTW series was given the name *The Old Gray Mare* during her life at the factory. Although museum bound, at the Combat Air Museum of Topeka, Kansas, the airplane still exists. Given that analogy, in its production life the little factory at Tecumseh, Michigan produced a great stable. Its products ranged from a good and honest dray horse to real Derby winners. The 200 series airplanes were worldclass winners in closed-course racing and set a world's around-the-world record for its class.

The aviation industry is not always kind to the creators of great designs. The Meyers organization was never large enough by industry standards to be truly competitive. It lacked the tooling and production capabilities of the major manufacturers. As a result its

production was limited to the building of essentially custom-built airplanes. The system worked as long as a small, highly skilled and motivated work force was available to bring it off. The genius of the man and the success of the firm were built on the craftsmanship they built into their products. The skill that was missing was the industrial engineering it took to build the infrastructure and support systems it would take to allow a lesser skilled and motivated organization to build the same machine in volume. It would be of little comfort to Al Meyers to know he shared many of the same limiting factors that plagued such greats as Bellanca, Bowlus and Northrop. Bellanca and Bowlus were both builders of beautiful and complicated custom-built airplanes but were not great industrial engineers. They never developed the skills it took to mass produce their products. Northrop dreamed of and built fantastic designs that did not come to fruition for decades. He lacked the political skills to create the political machinery to beat the system into submission.

One other limiting factor was the health of Allen Meyers. As a child he was stricken with Asthma and required frequent rest when walking or exercising. At an early age he had developed hypertension and dealt with its effects all of his adult life. The injuries suffered in the 1947 crash of the ME-126 resulted in a long and exhausting recovery period. The fact that he did regain his mobility and return to flight was an inspiration to all who knew him. In 1971 he underwent surgery for complications resulting from the hypertension that hospitalized him for months. When he emerged from it he was partially disabled, had difficulty speaking, and required frequent assistance for the next five years. Al Meyers met destiny in his sleep in March 15, 1976.

Prior to his death he was inducted into the Pioneer Aviation Hall of Fame and the hall of honors of the Curtiss Aviation Museum where he is honored along with Lindbergh, Earhart, Stinson and Rickenbacker. He is further memorialized by the Al Meyers Airport and the Allen H. Meyers Foundation that supports grants-in-aid for students in the sciences and aviation.

May God grant him clear approaches, gentle cross winds, long flat runways and soft grass.

## The Meyers OTW (Out To Win)

The post-World War One era of the traveling air-show added the term *Barnstormer* to the American lexicon. It was the era of Lindbergh, Earhart, Post and every pilot who could be billed as *The Ace of the Lafayette Escadrille* or just *Daredevil Aviator.* For some it meant fame and fortune. For others it was just a way to what they loved best... to fly! Whatever the individual calling, barnstorming required the skills and daring of a breed apart. Martin Jensen, the pilot of the Vance Breese-designed *Aloha* which placed second in the Dole Race to Hawaii in 1927, was one of that breed. Another young pilot of the calling that traveled with Jensen was Allen Meyers. He flew with Jensen from 1933 to 1936.

During that time frame Jensen campaigned in an airplane he had designed and built for that purpose. For most of his designs Jensen chose to use the wings of the Curtiss *JN* series of airplanes. The reason for this might have been simple economics. There were a lot of *Jenny* wings available in the twenties and thirties and they were cheap. One benefit the thin Curtiss airfoil did provide was good penetration with a low power requirement. The airplane in use by Jensen during his association with Al Meyers was the Jensen Trainer Model 2, also known as the Jensen Sport. The design was one of *the new* mixed with features of *the old.* The *old* was epitomized by the use of the already-obsolete Curtiss airfoil. The *new* of the design was of the use of Grover Loening's struts designed in the shape of the letter N and the fabrication of the semi-monocoque fuselage.

The Jensen Trainer utilized a fuselage structure of bulkheads and stringers covered by a thin outer skin of

**The Jensen Trainer Model 2, X/NR-11680, designed by Martin Jensen and barnstormed by him and Al Meyers in the early '30s, it became the inspiration *for* the airplane designed later by Meyers, the Meyers OTW.**

Photo Editor's Collection

**Reprinted with permnission of Skyways magazine**

aluminum. This design eventually became identified as semi-monocoque meaning one of partially stressed skin. With those innovations the Jensen Trainer was definitely a trend-setter. In that time period the design was generally limited to aircraft for the military. Without a doubt it impressed Al Meyers enough to result in those characteristics being translated into the features of his design eventually to become known at the OTW. The variations of the Jensen Trainer theme resulting in the OTW were in engine choice, airfoil selection and further refinement of the fuselage design.

Allen Meyers once wrote he had designed the OTW series airplanes to fill five criteria:

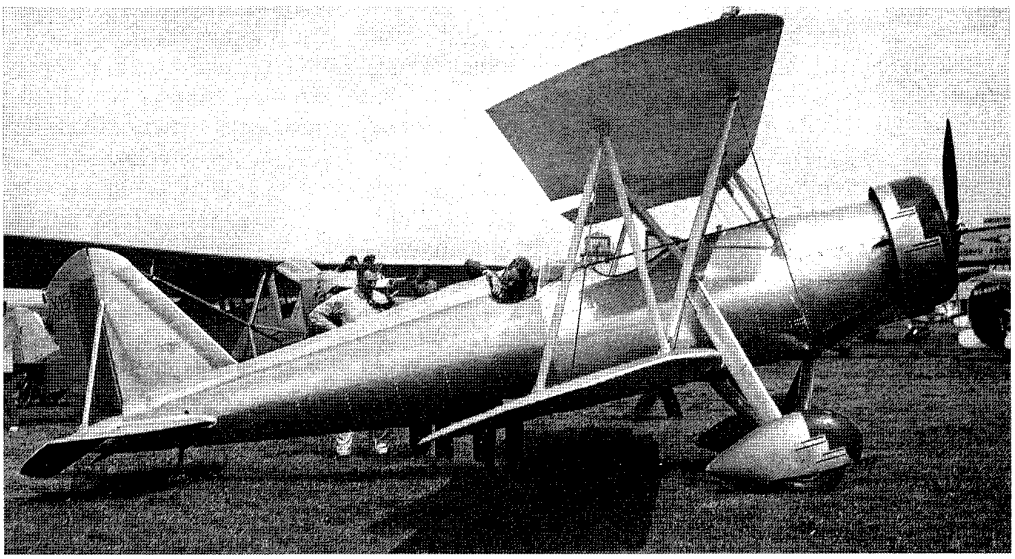
1. Simplicity of manufacture.
2. Excellent flying characteristics.
3. Economy of operation.
4. Primary and acrobatic training.
S. Minimum of maintenance in service.

The history of the airplane tells us he did meet all of those goals. Only the exigencies of time and the inability to mass-produce limited the success of the OTW. However, success can be measured in many ways. It is likely the Meyers OTW is the only prewar commercially produced airplane in the world with over half of the fleet still flyable five decades after production ceased.

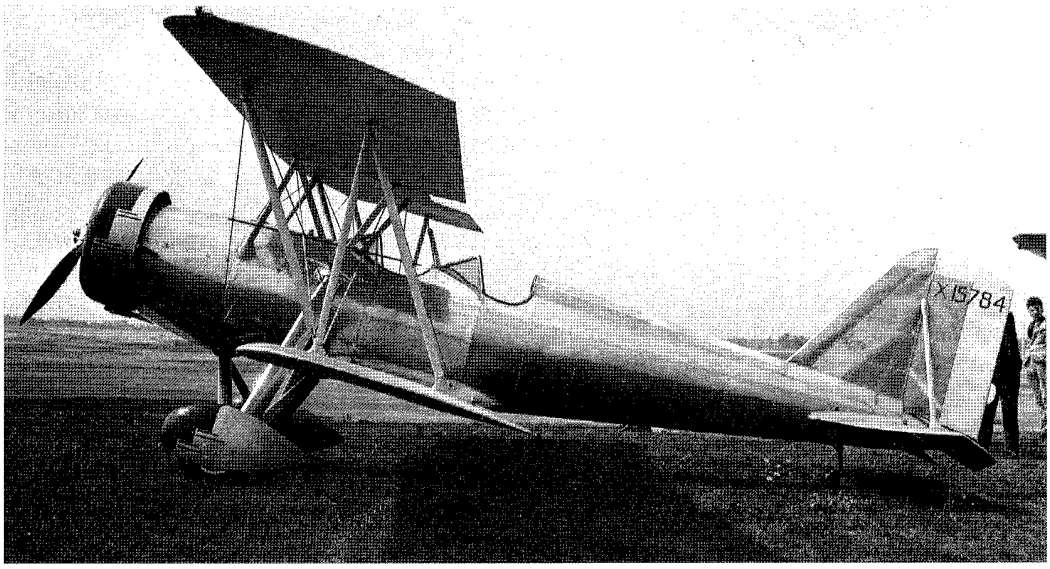
All three series of the Meyers OTW are classified as two place, Open cockpit, Land, Biplanes (2pOLB). Basically, they are all two place, tandem seated, open cockpit, land based, single bay, wire and strut braced biplanes. The differences are in the details.

## Fuselage

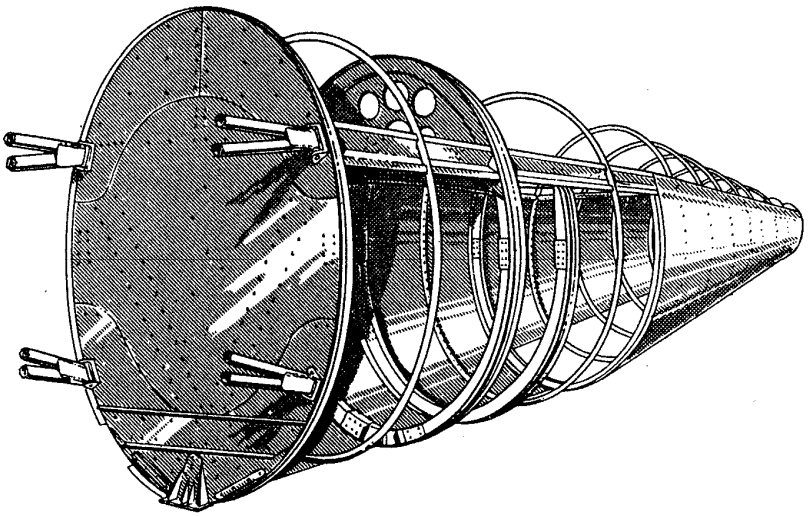
With minor detailed exceptions, all of the Meyers biplanes shared a common fuselage. Unlike the Jensen Trainer, the Meyers utilized two different styles of construction in the fuselage. From the firewall aft to immediately aft of the rear cockpit, the fuselage is semi-monocoque being reinforced with longerons. From the



**The Meyers OTW prototype in 1938 looking sharp with its wheel pants and landing gear fairings.**
Photo: Don Kauer, Editor's Coliection




**Still shiny and bright in 1938, we suspect the OTW prototype's name *Old Gray Mare* came into being later when it became old and gray! Note the very thin RAF 15 airfoil on the lower wing.**
Photo Don Kauer, Editor's Coliection



**Meyers OTW fuselage construction.**
Credit: *Aviations Sketch Book oi Aircraft Detaii Design*

rear cockpit aft to the tail post, the fuselage is full mono coque with the skin and formers bearing all loads. The fuselage has fourteen numbered bulkheads. Unlike industry standard, instead of inches from a datum point, Meyers lists their positions as the fuselage stations. Of those, five provide support for the main structural loads. The fuselage is protected from engine heat and any resultant fire by the firewall which is nested in the bulkhead at Station 1. Bulkheads at Stations 1 and 3 accept and distribute the loads from the engine mount, landing gear and upper wing. Numbers 4 and 6 transfer the lower wing loads to the fuselage. Number 13 provides attachment and load transfer for the tail wheel and strut. The remainder of the bulkheads provide configuration stability and stress distribution along the length of the fuselage. From numbers 8 through 12 the bulkheads serve as the configuration stabilizers for the full monococque aft fuselage. Number 14 performs that same task and acts as the closure for the fuselage structure. A formed aluminum tail cone finishes out the fuse - lage contours from Number 14 bulkhead to a line corresponding to the trailing edge of the rudder.

While listed as bulkheads, those at stations 6.5 and aft of 7 are of peculiar Meyers design. Their primary function is to maintain the oval shape of the monococque section. Fabricated from formed aluminum tube, the inner face is drilled allowing rivets to be driven on the inner face and not all the way through the tube. Light weight and strong, they are typical of Meyers design philosophy.

A simple tapered five-sided head-rest style fairing is attached to the upper centerline of the fuselage from the rear edge of the rear cockpit to the leading edge of the vertical fin. Between this component and the lower wing center section fairings are the only notable attempts at streamlining of the fuselage of the OTW.

Interior fuselage structure supporting the cockpit is comprised of two aluminum channels running from station 1 through 7. These channels provide attachment for the seats, rudder and brake pedals. Between the two floor channels are bolted two pillow blocks, one at Station 3 and 6. Those two blocks provide attachment and support for the control stick torque tube.

The center section for the lower wing, called a stub wing by Meyers, is bolted to the fuselage channels at bulkheads 4 and 6. Once the fuselage skins are in place and the lower center section fairings are riveted in place, the stub wing becomes a structural part of the fuselage.

The monococoque aluminum vertical fin is bolted to the fuselage in three places. The fin loads are carried into the fuselage at Stations 13 and 14 as well as through the skin at approximately station 12.5.

The welded steel, fabric covered, horizontal stabilizer consists of right and left halves. The rear spar slips into an anchor point at the bulkhead at Station 14 providing a pivot for stabilizer trim. The forward spar is mated to an anchor at bulkhead 13. The anchor is then bolted to the stabilizer trim nut providing pitch trim to the aircraft controls.

The vertical and horizontal stabilizers are supported by two steel brace struts. The struts are provided with adjustment clevises at the upper end where they connect to the rear spar of the vertical fin. The lower end of the strut attaches to the trailing edge of the horizontal stabilizer. Additional stability of the empennage installation is provided by streamline wires connecting the lower surface of the horizontal stabilizer to the fuselage at Station 13.

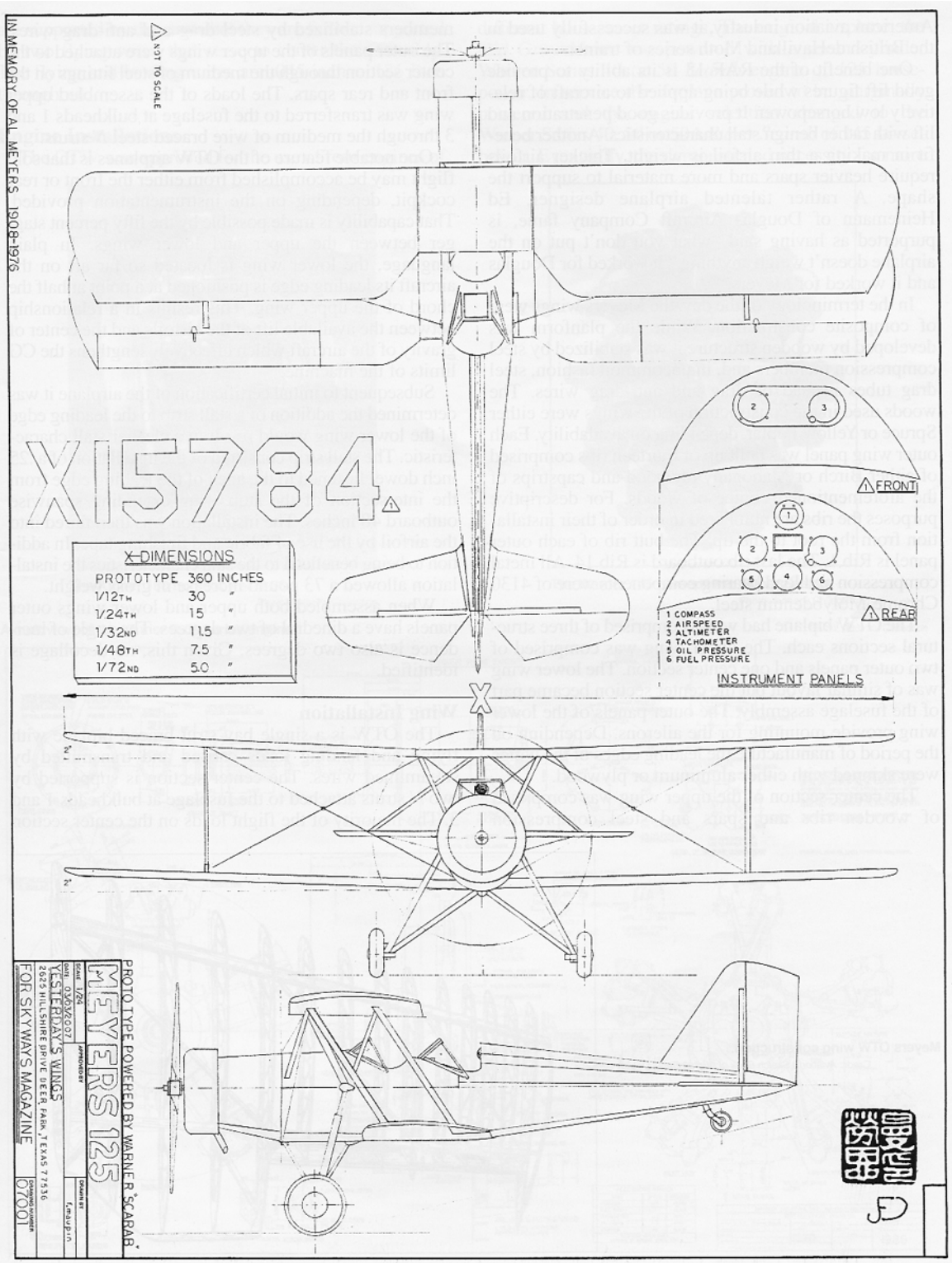
Eight sections of aluminum skin form the covering of the fuselage and are riveted to the bulkheads and other supporting structure with A17ST aluminum alloy rivets. The skin thickness forward of Station 4.5 is .060 inch. From Station 4.5 aft the material is .032 inch.

## Wings

Unlike the Jensen, Allen Meyers did not select the Curtiss JN airfoil. However, he did choose one dating back to WWI, the RAF 15. That airfoil has a very thin camber over chord ratio. While not in common use in the



**Reprinted with permission of Skyways Magazine**


IN MEMORY OF AL MEYERS 1908-1976
NOT TO SCALE
X15784
X-DIMENSIONS
PROTOTYPE 360 INCHES
1/12TH 30 "
1/24TH 15 "
1/32ND 11.5 "
1/48TH 7.5 "
1/72ND 5.0 "
FRONT
REAR
1 COMPASS
2 AIRSPEED
3 ALTIMETER
4 TACHOMETER
5 OIL PRESSURE
6 FUEL PRESSURE
INSTRUMENT PANELS
PROTOTYPE POWERED BY WARNER "SCARAB"
MEYERS 125
SCALE 1/24
DATE 03/03/2007
APPROVED BY
DRAWN BY
YESTERDAY'S WINGS
2625 HILLSHIRE DRIVE DEER PARK, TEXAS 77536
FOR SKYWAYS MAGAZINE
DRAWING NUMBER
07001

American aviation industry, it was successfully used in the British deHavilland Moth series of trainers.

One benefit of the RAF 15 is its ability to provide good lift figures while being applied to aircraft of relatively low horsepower. It provides good penetration and lift with rather benign stall characteristics. Another benefit in making a thin airfoil is weight. Thicker airfoils require heavier spars and more material to support the shape. A rather talented airplane designer, Ed Heinemann of Douglas Aircraft Company fame, is purported as having said "what you don't put on the airplane doesn't weigh anything." It worked for Douglas and it worked for Meyers.

In the terminology of the day, the Meyers wings were of composite construction. While the planform was developed by wooden structure it was stabilized by steel compression members and, in uncommon fashion, steel drag tubes instead of drag and anti-drag wires. The woods used in the construction of the wings were either Spruce or Yellow Poplar, depending on availability. Each outer wing panel was built up of fourteen ribs comprised of either Birch or Mahogany plywood and capstrips of the aforementioned choice of woods. For descriptive purposes the ribs are numbered in order of their installation from the root to the tip. The butt rib of each outer panel is Rib 1. The last rib outboard is Rib 14. All metal compression and load bearing components were of 4130 Chrome-Molybdenum steel.

The OTW biplane had wings comprised of three structural sections each. The upper wing was comprised of two outer panels and one center section. The lower wing was of similar layout but the center section became part of the fuselage assembly. The outer panels of the lower wing provide mounting for the ailerons. Depending on the period of manufacture the leading edges of the wings were skinned with either aluminum or plywood.

The center section of the upper wing was comprised of wooden ribs and spars and steel compression members stabilized by steel drag and anti-drag wires. The outer panels of the upper wings were attached to the center section through the medium of steel fittings on the front and rear spars. The loads of the assembled upper wing was transferred to the fuselage at bulkheads 1 and 3 through the medium of wire braced steel *N* struts.

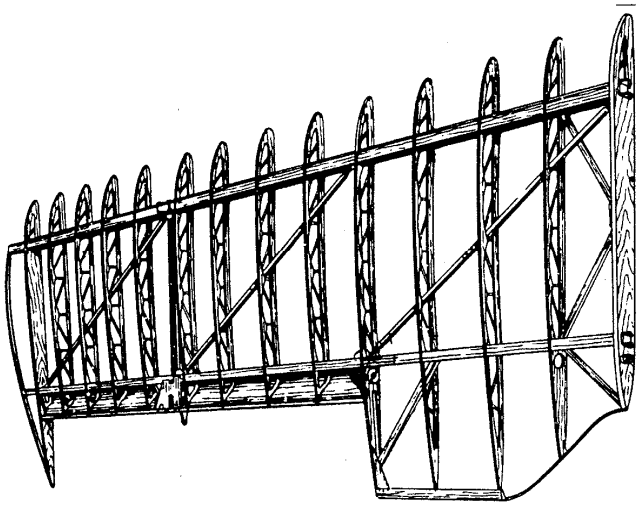
One notable feature of the OTW airplanes is that solo flight may be accomplished from either the front or rear cockpit, depending on the instrumentation provided. That capability is made possible by the fifty percent stagger between the upper and lower wings. In plain language, the lower wing is located so far aft on the aircraft its leading edge is positioned at a point at half the chord of the upper wing. This results in a relationship between the available lift of the airfoils and the center of gravity of the aircraft which effectively lengthens the CO limits of the machine.

Subsequent to initial certification of the airplane it was determined the addition of a stall strip to the leading edge of the lower wing would result in a cleaner stall characteristic. The stall strip consisted of the installation of a .25 inch dowel fastened to the apex of the leading edge from the intersection of the stub wing extending spanwise outboard 48 inches. The installation was then faired into the airfoil by the use of fabric and finishing tape. In addition to being beneficial to the stall characteristics the installation allowed a 73 pound increase in gross weight.

When assembled both upper and lower wings outer panels have a dihedral of two degrees. The angle of incidence is also two degrees. Given this, no decollage is identified.

## Wing Installation

The OTW is a single bay strut braced biplane with flying and landing loads carried and transmitted by streamlined wires. The center section is supported by two *N* struts attached to the fuselage at bulkheads 1 and 3. The majority of the flight loads on the center section



**Meyers OTW wing construction**.
Credit *Aviation's Sketch Book of Aircraft Detaii Design*

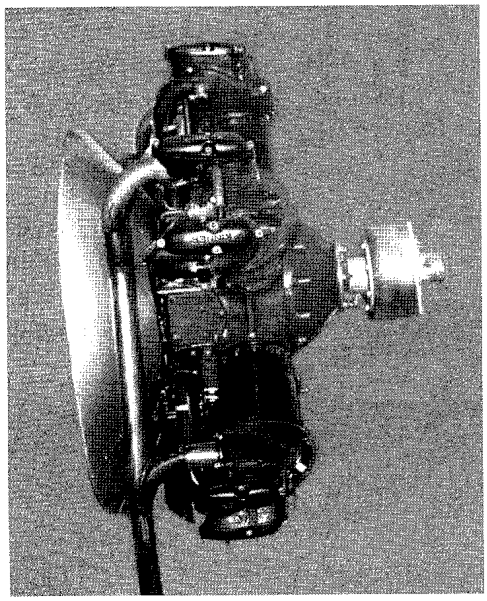


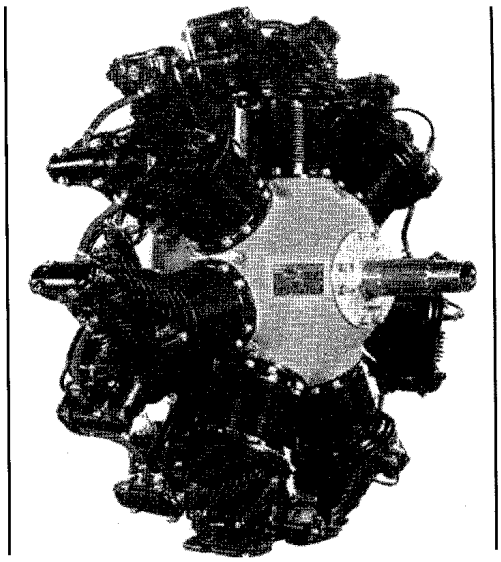
**Reprinted with permission of Skyways magazine**

are supported by the struts but they are further supported by two flying wires that serve to center the assembly. The flying and landing wires are .045 inch x .126 inch throughout.

## Engine Installations

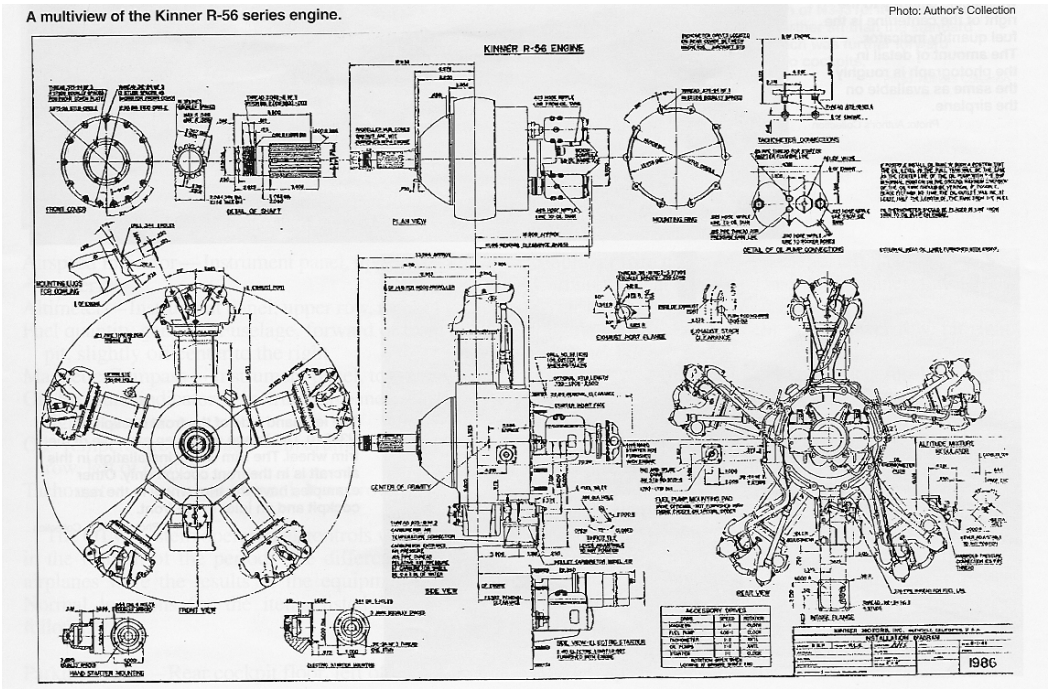
The OTW was approved for the use of four engines of different horsepower ratings. The original airplane, the *Old Gray Mare,* was powered with a seven cylinder Warner Series 40 or 50 *Scarab* engine of 125 horsepower. In service the airplane proved to be marginally powered and the engine selection changed to the Warner Series 40, 50 or 50A *Super Scarab* of 145 horsepower. Eventually, the demonstrated necessity for more





A multiview of the Kinner R-56 series engine.

Photo: Author's Collection






**Reprinted with permission of Skyways Magazine**

horsepower was filled by the installation of the five cylinder Kinner R-56 engine of 160 horsepower. One OTW, the one-of-a-kind OTGW-KR, was equipped with a Ken-Royce model 7G engine of 120 horsepower in 1942. Since the airplane was marginally powered at 125 horsepower, the reason for the selection of the KenRoyce version is not clear. The one obvious benefit to the Ken-Royce was its modest appetite for fuel.

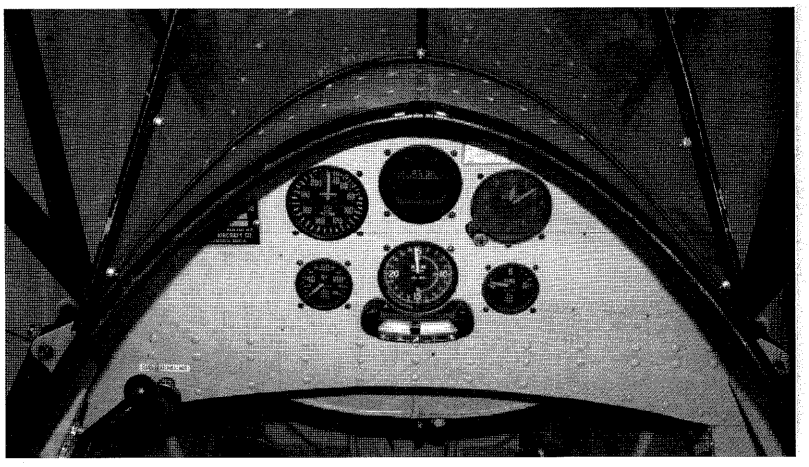
Meyers Aircraft Company Service Bulletin Number 6 provided instructions for the conversion of Models OTW, OTW-145 and OTW-KR to Model OTW-160 through installation of the Kinner R-56 engine.

Propeller selections for the OTW were varied with the engines selected. The *Old Gray Mare* was equipped with a Hamilton-Standard, two-bladed, adjustable pitch installation with a H-S 1595 hub. The remainder of production received wooden propellers 87 to 94 inches in length. As horsepower increased and propeller length developed, specific rpm restrictions resulted during engine operations. Those limitations are included in the Type Certificate Data Specification (TCDS) for each model.

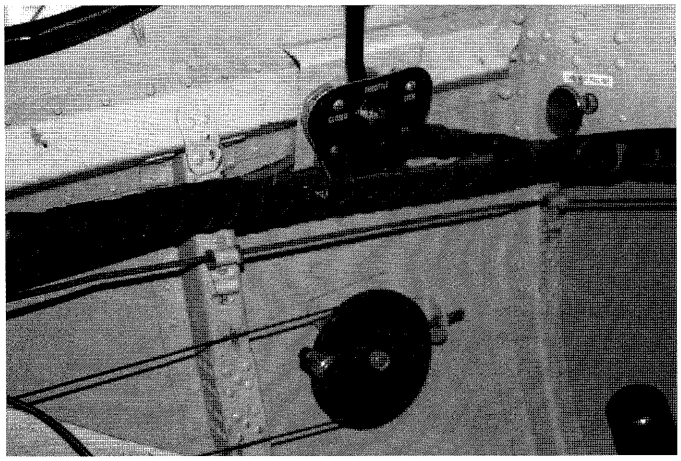
## Cockpit

Solo operation of the OTW could be limited by the instrument and equipment selections depending on the selection of the customer. Early models of the airplane had very limited instrumentation in the front cockpit. As a result, solo flight was limited to the rear cockpit only. The majority of the trainer versions of the aircraft were equipped with duplicate installations in both cockpits.

Standard instrumentation for the OTW was Altimeter, Airspeed Indicator, Tachometer, Oil Pressure, Oil Temperature and Magnetic Compass. The Fuel Gauge is mounted forward of the forward cockpit slightly aft of Station 3. Vision of the gauge from the rear cockpit"" leaves something to be desired. Instrument general arrangement and location was as follows:



A view of the front instrument panel of N34310 looking forward. Barely visible through the windshield, slightly to the right of the centerline is the fuel quantity indicator.
The amount of detail in the photograph is roughly the same as available on the airplane.
Photo Author's Collection



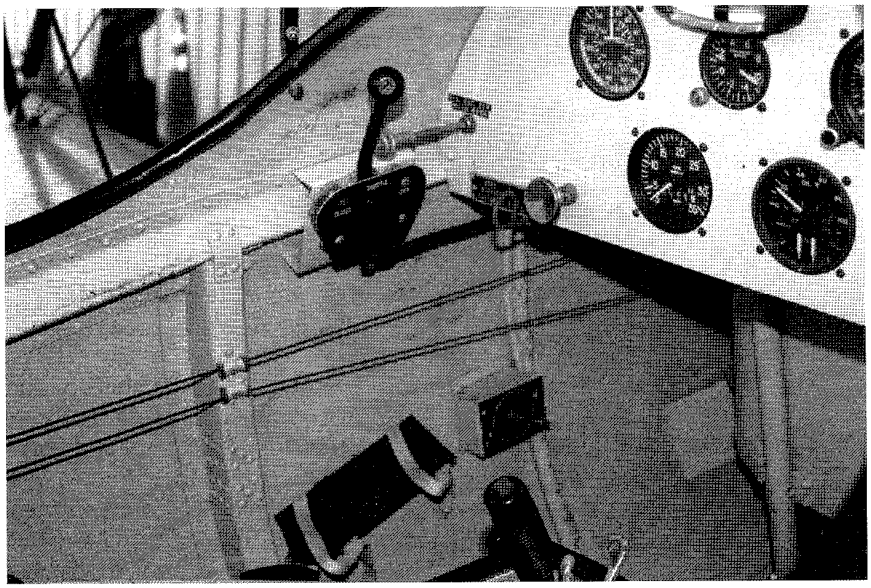
The left hand side of the front cockpit of N34310. The image shows an example of the trim wheel. The trim wheel installation in this aircraft is in the front cockpit only. Other examples have the trim wheel in the rear cockpit and an idler in the front.
Photo Author's Collection



**Reprinted with permission of Skywats Magazine**

**This is a view over the headrest showing the rear instrument panel of N34310. The Panel has been modified over the years to include a turn and slip indicator below the centrally mounted compass.**

Photo Author's Collection



**The left hand side of the rear cockpit showing the throttle installation, the fuel shutoff and carburetor heat controls as well as the magneto switch of N34310. It should be noted the switch is further aft than the standard installation which was further forward between the two cockpits.**

Photo Author's Collection

Airspeed Indicator- Instrument panel, upper row, left of center
Altimeter- Instrument panel, upper row, right of center
Fuel quantity gauge-Fuselage, forward of front cock pit, slightly off center to the right Magnetic Compass-Instrument panel, top center Oil Pressure indicator-Instrument panel, lower row, right of center
Oil Temperature indicator-Instrument panel, lower row, left of center
Tachometer- Instrument panel, lower row, center

The OTW system operational controls were arranged in the fashion of the period. The differences between airplanes were the results of the equipment installed. Normal locations for the items listed below are as follows:

Parking brake- Rear cockpit floor, left of center
Stabilizer trim control- Fuselage, left hand side
Carburetor heat control- Instrument panel, lower row, far left comer
Engine primer- Instrument panel, lower row, far right comer
Fire extinguisher-Between cockpits, fuselage, right side
Fuel strainer control- Instrument panel, lower edge, far left comer
Fuel tank shut-off control-Instrument panel (below), lower edge, far left comer
Magneto switch -Between cockpits, fuselage, left side
Throttle (Left side of fuselage) and Mixture control (if available) -Instrument panel, lower row, far left comer, or Throttle quadrant (including mixture control) -Left side of fuselage.

The baggage compartment was located aft of the rear cockpit.

The cockpits were adequate for slight to average sized pilots and students but rather tight for two hundred pounders. With consideration for safety in aerobatic training, both cockpits were equipped with formed aluminum seats designed to take seat pack parachutes.

## The Gentle Lady from Tecumseh

The OTW has been described as being a rather game little old lady. She will try just about anything but none of it will be done well. She is as plain as potato soup and just a little bit ugly. To one observer she was described the same way as Florence Ziegfield once described the face of his musical comedy star Fannie Brice: "All the right parts are there but the damned thing just doesn't come out right!"

Another observer described the OTW as being "slow and extremely forgiving. The airplane doesn't do anything real well. It does a lot of things, well enough. The OTW is one of the finest aerobatic trainers around. But it is difficult to fly well; it's just so damned sloppy."

However, the old girl has been with us a long time and is much loved by those who have her around. If you happen upon her in the twilight on the airfield with a gentle breeze blowing across the grass you may even swear you get a touch of lavender scent in the air.

**Dimensions (OTW-125) ***

| | |
|---|---|
| Length overall | 22 ft, 8 in |
| Wing Span | 30 ft |
| Wing chord | 58 in |
| Wing area | 262 sq ft |
| Wing loading | 6.5 lbs/sq ft |
| Power loading | l4.2lbs per hp (125 hp Warner Scarab Engine) |
| Height overall (level attitude) | 8ft6in |
| Horizontal stabilizer span | 128 in |
| Wheel tread | 93 in |
| Gross weight | 1770 lbs |
| Empty weight | 1190 lbs 580 |
| U sefulload | lbs 200 lbs |
| Payload | 10 lbs |
| Baggage Fuel | 24 to 30 gals |
| Oil | 4 gals |

## Performance

| | |
|---|---|
| Maximum speed | 120 mph |
| Cruising speed | 105 mph |
| Landing speed | 40 mph |
| Climb (1st minute) | 1200 ft |
| Cruising range | 400 mi |
| Service ceiling | 17,500 ft |

**Maneuver Entry Speeds**

| | |
|---|---|
| Chandelle | 110 mph |
| Loop | 120 mph |
| Slow roll | 110 to l20 mph |
| Immelman | 120 to 130 mph |
| Snap roll | 85 mph |

## Endurance

| Model | | 24 gal Tank | 30 gal Tank |
|---|---|---|---|
| OTW | 125 hp Warner Scarab | 2.5hrs | 3.0 hrs |
| OTW-145 | 145 hp Warner Super Scarab | 2.0hrls | 2.5 hrs |
| OTW-KR | 120 hp Ken-Royce | 3.0 hrs | 4.0 hrs |

** All data from Meyers sales and maintenance data.*

**Acknowledgements**

To the historians, artists, editors and publishers of our industry who have given of their talents and skills to perpetuation of our aviation history I offer my apprecia tion. Without them and the practice of their trades, till article could not have been achieved. Research source resulting in this piece are, but not limited to: *U.S.* Civil *Aircraft,* Joseph C. Juptner; Meyers Aircraft Compan:

**Sometimes owners preferred to operate without the landing gear fairings as shown in this photo.**
Photo: George Goodhead, Jr, Editor's Collection

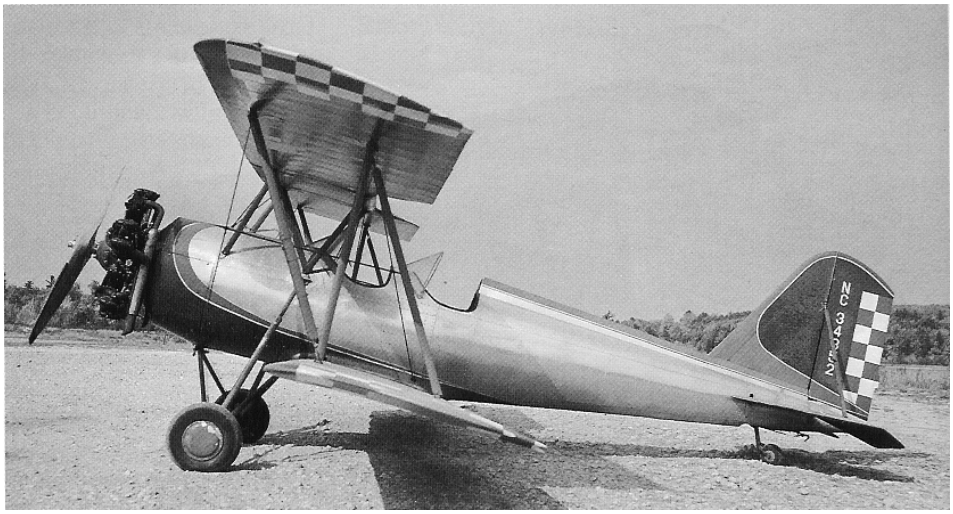


**Reprinted with permission of Skyways magazine**

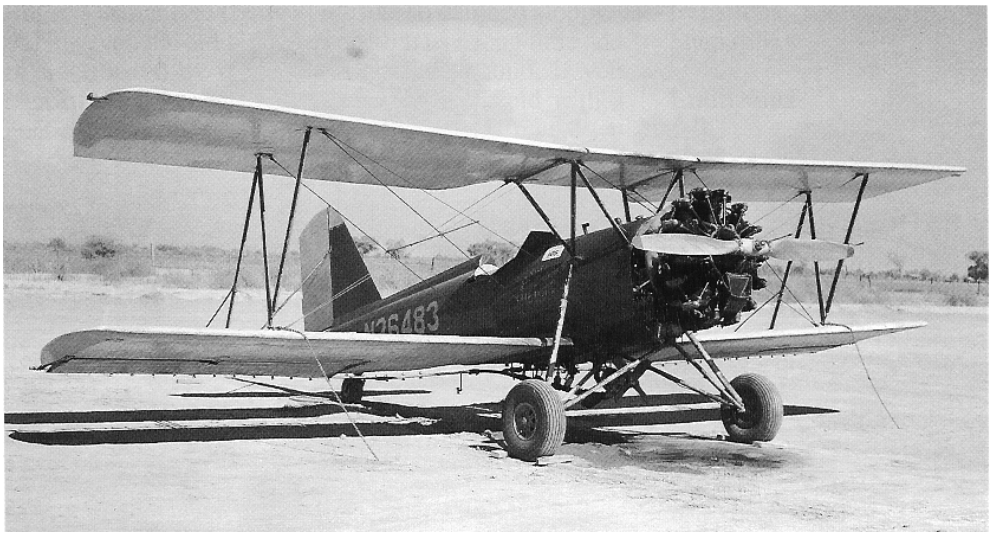
A **fancy paint job and wheel pants give whole new look to the plain-Jane OTW. This bird was photographed at the 1970AAA Fly-In in Ottumwa, Iowa.**
Photo: Art Krieger,
Editor's Coiiection


**The prototype OTW in a military trainer style paint scheme at the 1971 AAA Fly-In at Blakesburg, Iowa.**
Photo Art Krieger,
Editor's Coilection

**A line-up of OTWs at AAA Blakesburg in 1971. The prototype is in the foreground.**
Photo Art Krieger,
Editor's Collection



**A fancy paint job helps an otherwise plain airplane.**
**Photo: Editors Collection**



**Some OTWs like this sprayer were put to work after WWII**
**Photo: Gene Sommerich, Editors Collection**

sales and maintenance publications, The eulogy "Allen H. Meyers" by Nadia Meyers, PhD, Del Denly; *Sport Flying,* March 1968, "Meyers OTW, Great Airplane, Great Man," by Ken Smith; "The Meyers OTW," *AOPA Pilot,* December 1977 by Peter M. Bowers; "The Last Meyers Donated," *Sport Aviation,* November 1977, by Mrs. Allen H. Meyers and Ev. Payette, Meyers Aircraft; *Custom Airplanes,* February 2004, by Marcia "Sparky" Barnes; "Meyers OTW," *Flypast,* February 1953; "Shiney Wallflower With a Big Nose," *Air Progress,* March 1974 by Gene Smith; Meyers Club news letters and Chapter News; and "Meyers OTW," *Sportsman Pilot,* Winter 1991 by Gary and Marti Hays. I also wish to thank Doug Eshelman and the Meyers OTW faithful for their assistance in the project. Last, but not least, I offer my special appreciation to Roger Freeman and Vintage Aviation Services Inc. of Old Kingsbury Aerodrome, Kingsbury, Texas for their technical help and the use of OTW #53 (N34310).

## Postscript

Allen Meyers is a difficult man to write about. It is not because little has been written about him but rather that so much has. Another facet of the matter is so many of the people who have written about him knew him well. Some are parts of father-and-son teams who had been associated with Meyers since the late 1930s. By the same token, a collection of articles and pieces written about him makes a sizeable volume in their own right. Therein lies the problem. The collection and comparison of records and memories of the man result in variations which make it very hard to separate the wheat-from-thechaff. Given those circumstances, if the reader discovers anomalies in this text, he can rest assured that another reader, in another place and time, will find them accurate. One of the great truths of writing is, if somebody needs to learn something about a subject, the first thing he or she should do is write about it; then get it published; then sit back and wait. . ■

**Reprinted with permission of Skyways Magazine**