

THE VINTAGE AIRPLANE

OCTOBER 1980



Aeronca Sedan

by Gene Chase

GRAND CHAMPION CLASSIC



(Photo by Ted Koston)

Jim Thompson, Box 102, Roberts, IL 60962 had flown his Aeronca 15AC Sedan, N1491H to Oshkosh in previous years, but the only people who knew were those who parked near him in the transient aircraft parking area. Jim was well aware that he had a bona-fied classic aircraft, and one with an unusual background at that, but until it was worthy of being judged he chose to keep it out of the show plane area.

Jim's Model 15AC was not only the last Sedan built by Aeronca but also the last aircraft manufactured by them. It was completed on October 23, 1951 which was actually 7 months after the production line was shut down. It seems that enough spares still existed at the plant to assemble two more airframes, resulting in the creation of N1490H and N1491H. N1490H is no longer on the FAA registry and its fate is unknown.

Jim Thompson poses his Aeronca Sedan. This aircraft, N1491H was the final machine off Aeronca's production line.

The Aeronca Sedan originated from a sales/engineering specification completed in June, 1947. The construction was to be conventional tube and fabric and the powerplant, a Continental C-125. The proposed selling price was \$4500.

Every effort was made to plan and design the Model 15AC (15th type, 1st model, powered by Continental) around existing material inventory and in the least amount of time.

The engine layout and cowling was developed from the installation on the highly successful Model 7AC Champion. The Model 7AC cabin door was to be used, on the right side only, as on the Champ.

The all metal wing with the single lift strut was configured to facilitate the design of folding provisions on future models.

Competition with other four place aircraft of the period made it necessary to increase the engine size to the C-145. This also avoided the possibility of underpowering the airframe which grossed at 2050 pounds.

The prototype, NX39801 was first flown in January, 1948 with subsequent test flights in February. Accelerated service tests were conducted in mid-March consisting of 313 landings in less than one week at

This Aeronca factory photo is captioned, "Aeronca Flying Club. Findlay, Ohio. June, 1953." The Sedan is N1461H.

40 different locations. The Model S15AC seaplane version began acceptance testing in May and the Model 15 was approved under type certificate A-802 on September 23, 1948.

The Sedan was produced from mid-1948 through March, 1951 at which time light aircraft assembly was terminated at Aeronca's Middletown, Ohio plant. Including the two examples completed in October, 1951 a total of 561 Sedans were built. These ranged from N1000H through N1491H and included many which were exported throughout the world. Currently the FAA register lists 197 of the model, and it is believed that about 100 exist in Canada.

Three principal paint schemes were used. The 1948 models left the factory painted red with straw trim and unpainted, natural aluminum wings. In 1949, red paint was also applied to the wings. The 1950 variant was medium blue with straw trim in a revised pattern. Exceptions did exist however, such as the two bright orange and green examples sent to Canada in 1949.

Aeronca is currently engaged in the aerospace industry but they still hold the type certificate for the Model 15AC, and their files still contain the design drawings and reports as well as some pieces of sales data.

Jim Thompson's pride and joy is serial number 561 and he has owned it since January, 1967 when he purchased it from Aeronca. Remember, we said that this plane had an unusual background! Aeronca had retained title to N1491H for more than 15 years during which time it was used by company officials and a company flying club. It was also used as an instrument flight trainer as a full IFR panel had been installed.

When Jim decided to restore his Sedan, he had two choices. He could restore it to the configuration in which it actually left the factory in 1967, with the IFR panel and all, or he could duplicate the configuration of the plane on the date it was manufactured in 1951. Jim chose the latter.

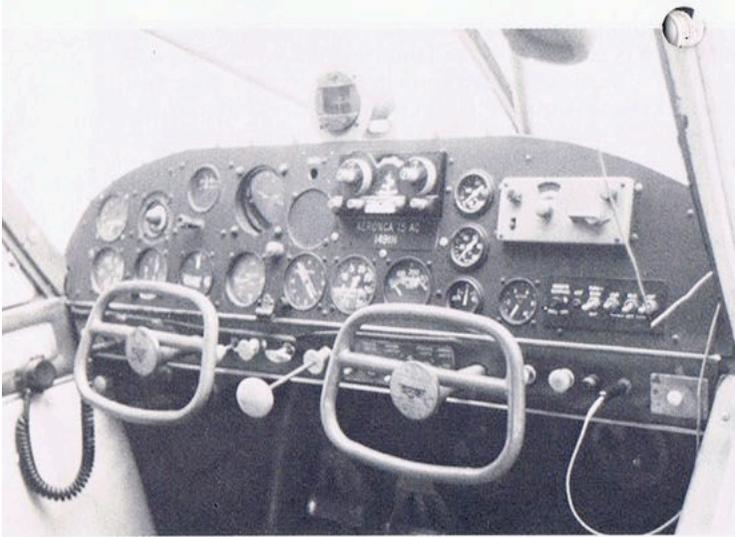
Restoration of the plane was started on April 8, 1978 when it was disassembled and taken to a friend's 40' x 24' garage where there was ample room to work. The owner of the garage, Don Alexander lived in Elliott, Illinois, 14 miles from Jim's home. Jim worked on the project nearly every night and weekend for 2½ years and figures he spent \$2,000 for auto gas alone.

Jim speaks very highly of Don Alexander's skill, especially in the area of sheet metal work and painting. Don had rebuilt several aircraft previously and

(Aeronca Factory Photo)

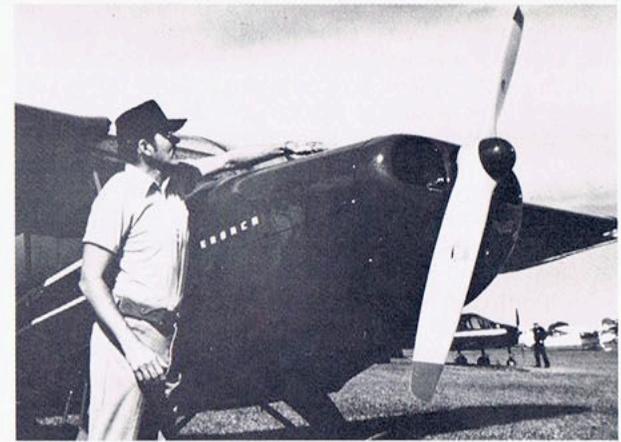
Late model Sedan panel with optional Bendix PATR-10 radio.





(Photo by Ted Koston)

Jim, Jimmy and Betty Thompson pose proudly beside their Grand Champion Classic Award winner.



(Photo by Ted Koston)

Jim removes that speck of dust.

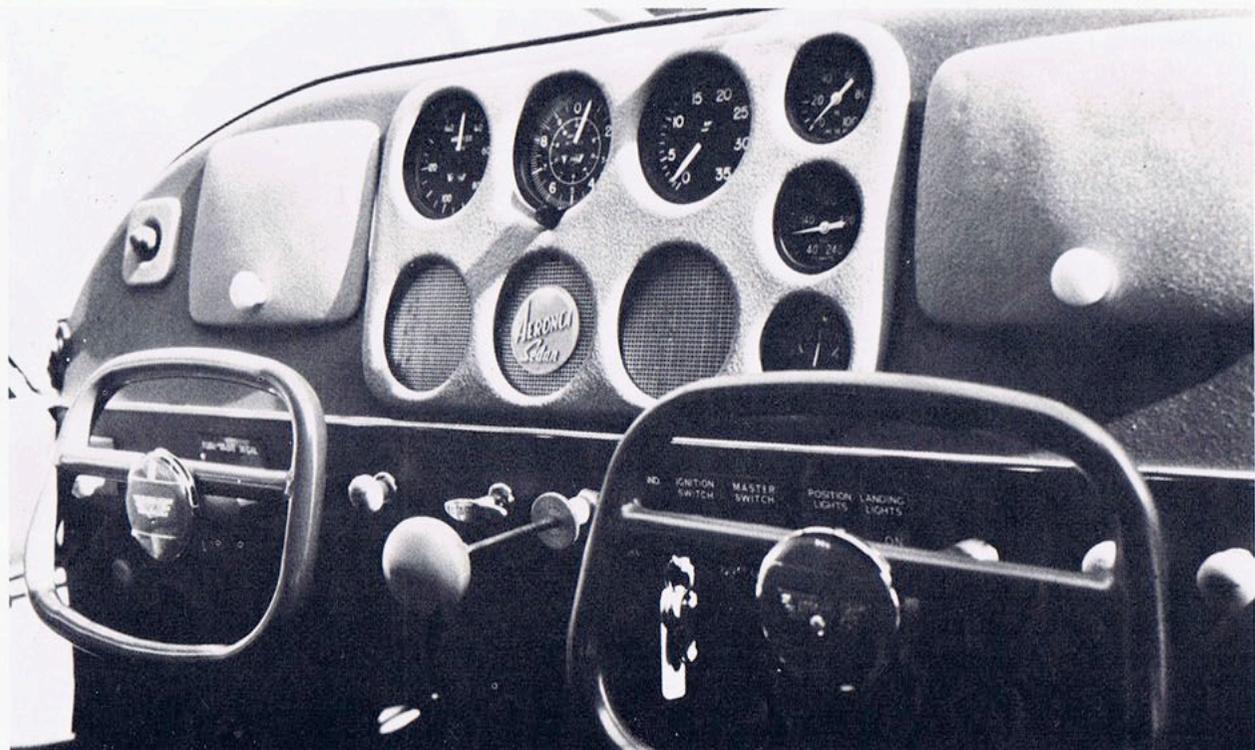


(Photos by Jim Thompson)

The Sedan looked like this when Jim bought it from Aeronca. Colors were white and red. Full IFR panel is shown in upper photo.

(Photo by Ted Koston)

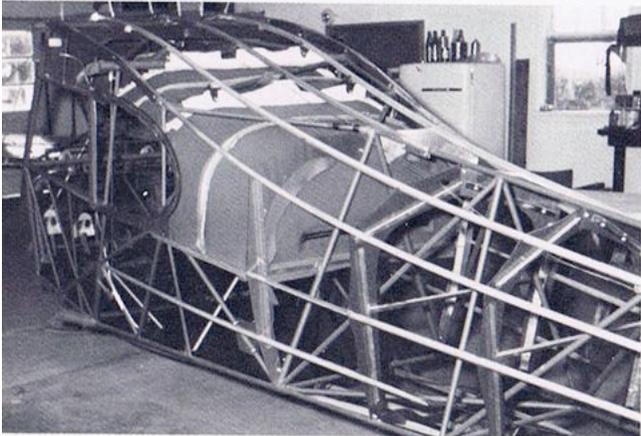
The instrument panel restored back to original. The modern radio hides behind the left glove box door. Note the interesting comparison of the control wheels with those in the factory photo. All production Sedans used Aeronca Chief control wheels, but none were available when the last two planes were built so special wheels were handcrafted at the factory as shown here.



was working on a Culver Cadet when work was started on the Sedan.

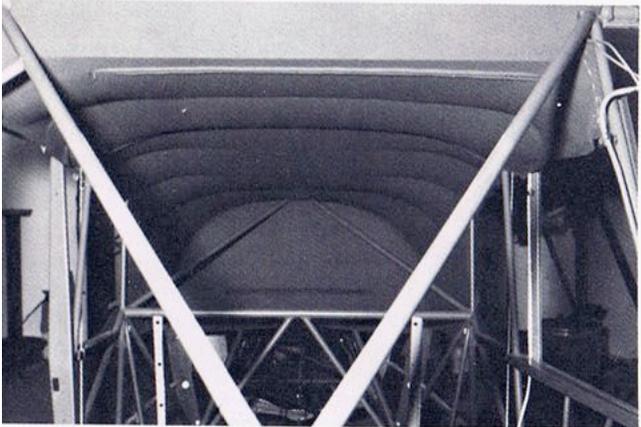
The fuselage, landing gear and tail surfaces were stripped down and sandblasted. Necessary repairs were made such as replacing 14" of both lower longerons at the tailpost. All tubing was then primed with a dark green, two part epoxy.

New formers and "T" type stringers were made of mahogany and pine, then coated with three applications of a polyethylene varnish. All formers were reinforced with aluminum angles for added strength.



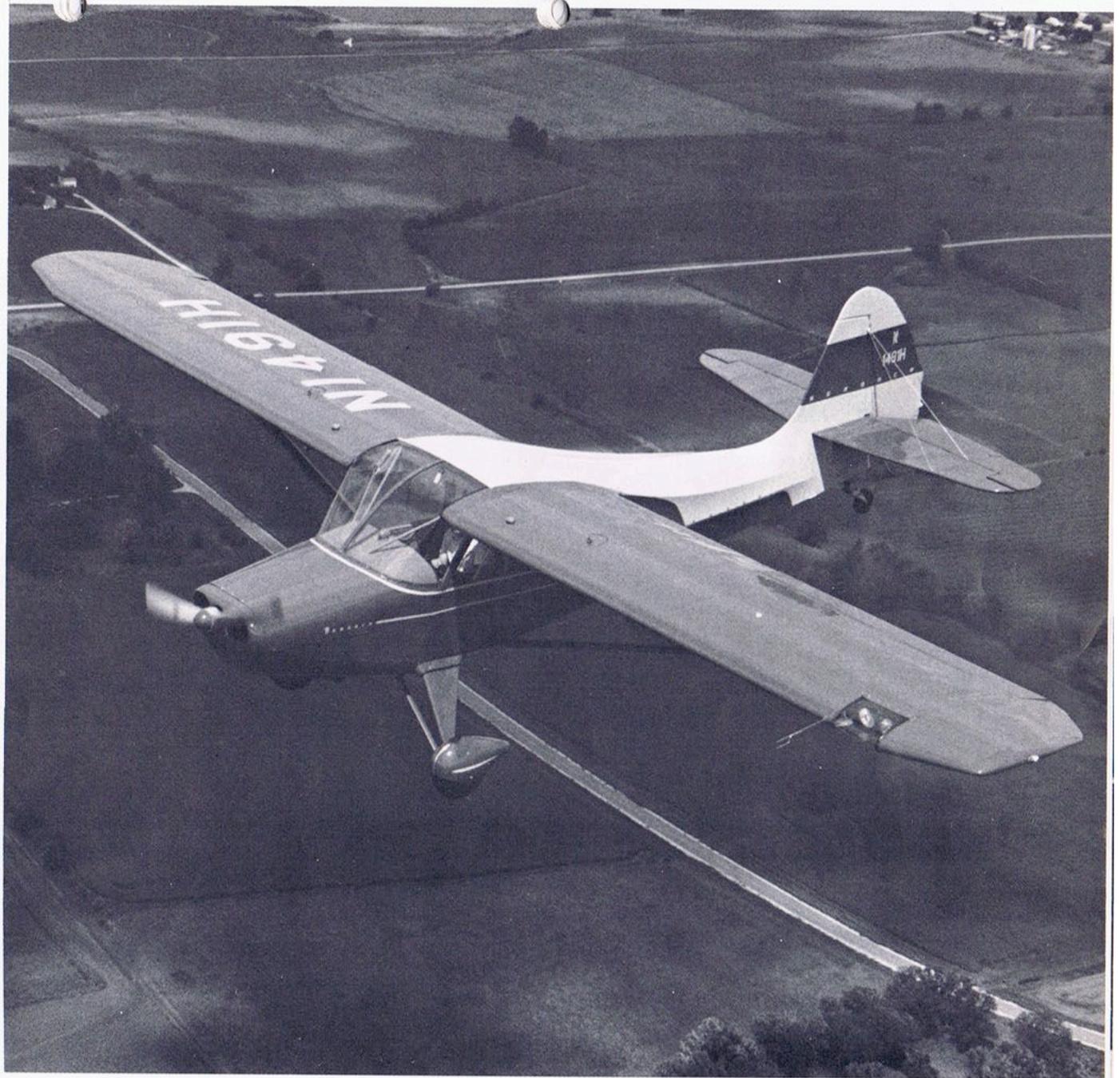
(Photo by Jim Thompson)

All new wood on the fuselage. Note the aluminum angle stiffeners on the formers.



(Photo by Jim Thompson)

Betty Thompson did a very professional-looking job of installing the headliner.



The Grand Champion Classic in flight over flat Wisconsin farm land.

(Photo by Ted Koston)



(Aeronca Factory Photo)

This was the second prototype Sedan. Colors were red and straw with unpainted metal wings. Note how the paint scheme differs from later models.

Jim credits his wife, Betty for the beautiful interior. She sewed all the panels including the headliner.

The materials for the interior were ordered from dealers who advertise in antique automobile publications. Jim requested samples of their products, then compared them with pieces of unfaded fabric slipped out from under the baggage compartment. Thus he was able to accurately match the original materials.

The woolen fabric for the headliner came from a company in Massachusetts and the "hog hair" type floor covering came from Bill Hirsch in Newark, New Jersey. Both of these items were also exact duplications of the original.

A stroke of luck occurred when Jim learned that Jerry Jackson of Tucker, Georgia owned a Sedan containing the magnetic compass still sporting the original factory paint. The original control wheels were also finished in this same color and Jerry offered to have paint mixed for Jim by having it matched to the color of the compass. Jerry also provided Jim with the proper paint for the door frames and exposed tubing in the cabin of N1491H.

The restoration of the interior included new identification plates for the electrical switches, fuel shut off and trim tab indicator. The glove box doors, ash tray faces, and the fascia panels around the instruments and stall warning light were stripped and re-painted with the appropriate wrinkle finish.

When Jim decided not to restore the fully instrumented version of the Sedan, he immediately created a problem for himself. He needed a new instrument panel with about half as many holes for gauges and radio equipment. As luck would have it, a friend, Mike Womack of Rescue, California had the exact panel needed for Jim's 1951 Sedan. It even sported the original wrinkle paint finish and had never been on an airplane!

Mike and Jim had been corresponding with each other for quite some time as Mike was restoring the first production model of the Sedan, N1000H. Mike

also needed an instrument panel for his early model Aeronca and Jim happened to have this rare item. Needless to say, an exchange was made which benefited both parties. Jim sadly added that Mike Womack passed away before the restoration of N1000H was completed.

The wheels were completely rebuilt with new brake shoes, drums, cylinders, O rings and wheel bolts. Most of the engine cowling was either newly fabricated or replaced with new factory pieces.

A new windshield was installed. This required more effort than what might be expected, when new nuts had to be manufactured from 7/16" hex stock for the bolts securing the windshield. Jim had been unable to locate the proper size nuts.

Back in 1972 a wind storm blew away the hangar which housed N1491H, resulting in damage to the left wing leading edge and tip. The tip was repaired at that time by John Marsh, of Springfield, Illinois, but the leading edge wasn't replaced until the recent restoration. Here again, Don Alexander used his sheet metal wizardry to make the wing panel like new. A new landing light lens was also made, to be installed later.

The fuel cells were sent to Goodyear, who originally manufactured them, where they were re-lined, had new nipples installed and were pressure tested.

The fuselage, tail surfaces, ailerons and landing gear legs were covered with ceconite. Jim chose to overlap all edges rather than to sew up envelopes. All tapes were pinked, grade A cotton and where the edges of two tapes were flush, the pinked edges were dovetailed to create a smooth junction. An example of this is where the tapes covering the screws on the tail surfaces meet the trailing edge tapes.

For the finish, two coats of clear nitrate dope were brushed on followed by 26 coats of butyrate applied with a spray gun. About every third coat of butyrate was completely rubbed out using #600 sandpaper.

A coat of insignia white was applied to the entire aircraft as a common base coat for both the enamel and color dope. All of the Sedans manufactured from late 1950 on, were painted blue with cream trim. Aeronca referred to the cream color as "straw". These are the colors of Jim's plane and the paint scheme is authentic as well.

Bill Pancake of Keyser, West Virginia overhauled the Continental C-145 engine and it looks super sharp painted in its original colors with black cylinders and gray case. Bill delivered and installed the engine on the Sedan. Bill owns an Aeronca Champ and is the person who restored Dave Long's Aeronca 11CC Super Chief which won Best of Type at Oshkosh '78.

To add to the authenticity of N1491H Jim applied the original-style McCauley decals on the propeller, and all hardware in the plane was replaced with new of the exact type as called for in the parts manual and drawings. Where there were discrepancies, Jim called on his friend John Houser, a service engineer with Aeronca, for help.

John has been with Aeronca since before the Sedans were manufactured and has a wealth of knowledge of Aeronca aircraft. John was a big help throughout this project, especially because of his personal knowledge and experience with Sedans in general, and with N1491H specifically. John also supplied much of the historical data as presented in this article, for which the author is greatly indebted.

As with many restoration projects, credit should be given to several people who became involved. For example, Tom Johnson, of Paxton, Illinois, helped with the re-wiring of the Sedan, including the clever installation of some modern equipment which in no way detracts from the original appearance of the plane. Many people have inspected the aircraft without realizing that it is equipped with a 720 channel Edo-Aire RT-563A radio, a Hush-A-Com, and Whelen wing tip strobe light system.

Some of the items which were no longer serviceable or available, were re-manufactured by Bob Barnes and his father, Woody of Gibson City, Illinois and Bob Young of Oakwood, Illinois. Dick Welsh of Issaquah, Washington manufactures fuel sight gauges for Aeronca Sedans and also publishes a newsletter for Aeronca Sedan Club members. Dick found the instrument and stall warning light fascia panels for N1491H.

During the two and a half year project, one person who lent a helping hand and kept a close eye on what was going on, was Jim Ross of Paxton, Illinois. Jim is the I.A. who signed off the Sedan, and this occurred just in time for Jim Thompson to make two 30 minute test flights on Sunday, the second day of Oshkosh '80.

On the following morning, Jim, Betty, and son Jimmy made the two hour flight to Oshkosh, landing with a total of three hours on the new restoration. Jim has always enjoyed flying his Sedan but now that it's an Oshkosh Grand Champion his enthusiasm for the plane knows no bounds.

Let's hope that some of that enthusiasm will be saved for his second restoration project, which is another Aeronca. Yes, this was Jim Thompson's first rebuild project, and if he does as well with his next one, he may take home a Grand Champion Antique award for his 1936 low wing Aeronca LC.