



A company photograph of the second prototype in 1948 used by the Sales Department.

The early part of 1947 was a turning point in the production of two-place aircraft at Aeronca. The sales of both the Champ and Chief were falling off. The Model 12 was floundering in development and inventories were exceeding shipments. Popularity of four-place models was rapidly increasing although there appeared to be little concern for anything in the \$5,000 class. Following an evaluation of the market situation, a preliminary specification for the Model 15 was approved by Ray Hermes on June 30, 1947. As originally planned, it was to be powered with a Continental C-125 and constructed in the conventional tube and fabric manner at a selling price of \$4,500. Every effort was made to plan and design the upcoming 15AC (fifteenth type, first model, powered by Continental) around existing material inventory in the shortest time possible.

The engine layout and cowling were adapted to and developed from a trial installation on a Model 7 airframe. Contemporary competition made it necessary to increase the power to 145 hp to match the anticipated 2,050 pound gross weight. The metal single strut wing was configured to facilitate design of folding provisions on later models of the 15. The Model 7 cabin door was to be used on the right side only.

The first prototype, NX39800, was completed November 20, 1947, first flown November 22 and subsequently flight tested from January through March. From March 10 through March 17, the second Sedan (NX39801) was subjected to accelerated service tests consisting of no less than 313 landings at locations ranging from Wheeling, Virginia, to Milwaukee, Wisconsin. At least 40 airports were visited both at night and during the days. All of the systems, including 20 hours of radio operation, were extensively cycled as much as 200 times. Aside from a 20% increase in elevator and stabilizer area required to satisfy longitudinal stability requirements, the flight characteristics were "exceedingly reassuring" and performance figures were better than anticipated.

In early May, NX29801 was flown to Lake St. Mary, Ohio, for flight testing on Edo 89-2000 floats as an S15AC. The 15AC received its normal and utility certification to CAR 03 as ATC 802 on September 23, 1948. Approval for the S15AC followed on the same date.

The make-up of the 15 was unique in some respects. Fuselage structure followed the pattern of many prior models with 4130 steel tubing used in the rectangular cabin section and triangular aft section with integral fin. Plywood bulkheads and several stringers served to round out the triangular form. Empennage components were simple flat tubular frames with an all metal tab inset on the left elevator and a ground adjustable tab attached to the rudder. Round tie rods served to brace the



Testing the second prototype as an S15AC.

fabric-covered tail group. The all metal wings, with an area of 200 square feet, contained a single stressed spar and a light gage sheet-metal channel member to support the metal framed, fabric-covered aileron. Narrow sheetmetal extensions in each wing tip served as adjustable tabs for lateral trim. A single extruded aluminum tubular strut supported each wing. The landing gear was a rigid tripod structure centerline. The steerable tail wheel was also provided with bungees to absorb shock.

Although the majority of Sedans were used on wheels, several were fitted with floats and skis—especially those in Canada and Alaska. Early in 1949, the landing gear frame was strengthened by replacing the lateral tension strap with oval tubing capable of sustaining side loads imposed when skis were installed.

The Continental C-145-2 engine was normally teamed up with a McCauley 1A170 propeller of 76 inch diameter. However, several Sedans left the factory with wood Sensenich props. An oil cooler was required, although as late as November 1949, testing of various ducting arrangements were tried on NX39801 to permit its removal. Although marginally necessary, it is still required. The fuel system was designed for use with two 18 gallon Goodyear duocell bladder tanks. The unusual pressurized system required understanding and proper maintenance. Otherwise, it could become a potential problem.

The first two prototypes were used for testing and certification of various options through 1949. NX39800 had a Cessna-type spring-type landing gear installed and concealed within a sheetmetal wrap-around fairing. NX39801 had simple split trailing edge flaps installed in 1948 which did not appear to justify the added expense in performance gains and were abandoned for production. Controllable pitch propellers and cross wind gear were also installed.

Performance at 2050 pounds gross was not outstanding but quite adequate for the 145 hp aircraft. Normal cruising speed was 105 mph and tops was 117 mph. Early flight tests for the 15AC at 2100 lbs. with a McCauley prop recorded an average take off distance of 745 ft. (at S.L.) and average landing distance, 1826 ft. (at S.L.). The initial rate of climb was approximately 720 ft./min. and service ceiling was 13,500 feet. These values are, of course, subject to many variables.

Production of the Sedan commenced with N1000H (15AC) in March 1948 and terminated in March 1951. The following October, N1491H was created from parts and assemblies drawn out of various locations throughout the plant and so was born s/n 561, the last production aircraft assembled at Aeronca. Interior styling and external painting varied and each year minor improve-

ments were incorporated. The early Sedans combined straw and dark red on the fabric covered surfaces with bare metal wings. In 1949 the wings were also painted red. A new trim scheme incorporating dark blue with straw was introduced in 1950 through the remainder of production.

Consideration was given to the development of a 15BC. It was planned to gross at 2450 lbs. and cruise at 130 mph. Power required was nearly 250 hp and would have required several structural modifications and possible use of a spring gear and flaps. As late as 1953 some thought was also given to a twin engine arrangement and tricycle retractable gear. For lack of funds and diversion into the production of components for the B-47 and B-52, these paper plans were abandoned while the last two sedans were retained at the factory for company and flying club use.



Second prototype in 1950 paint scheme.



Courtesy of Aviation Heritage Research Center

Abbot and Costello with the first Prototype Aeronca Sedan, NC39800.