

A.T.C. # 396
(1-31-31)
AERONCA "DUPLEX", C-3 (PC-3)



Fig. 299. Aeronca C-3 with 36 h.p. Aeronca E-113 engine.

The enthusiastic acceptance of the "Aeronca" model C-2 during the latter half of 1930, more or less assured the low-powered light airplane a bright, promising future and paved the way for further development. The avid interest that centered around the single-seated C-2 brought occasional comment that pointed to a dire need for a similar airplane with ample seating for two. Of course the folks at "Aeronca" had this in mind all along and several of the earlier models C-2 had been converted to 2-seaters in the initial development of extra seating. By the dawning of 1931, two prototypes of the new model C-3 had been through exhaustive testing and by March of 1931, production lines were beginning to roll. A factory demonstrator was sent off on a 13,000 mile tour through 17 states and the cordial reception enjoyed by the new C-3 was very gratifying. Being a more practical type of airplane for the average private flyer, and an economical boon to the many small flying schools that found their operations at a near stand-still, orders for the new C-3 two-seater were piling in like fan-mail. By the end of 1931 nearly 100 examples of the "Duplex" and the "Collegian" had already been built.

Despite the added capacity for another passenger, with only the addition of 10 more horsepower to handle the larger load, the model C-3 was every bit as good as the earlier C-2 and many

liked it even better. Private-owner fliers now found that they could actually afford their own airplane with which to continue regular flying and the flying schools, due to the reduced charges now possible, were finding their enrollments swelling by leaps and bounds. Soon many of the flying schools were offering "learn to fly for \$65.00" and solo-flying time was about \$5.00 to \$7.00 an hour. Participation in this new way of flying brought some of the enthusiasm back to flying in general and some of this enthusiastic energy was naturally converted to record attempts of all sorts; like the C-2, the "Aeronca" C-3 was also the holder of many records that included distance, load, duration, height and the like. To show off the new C-3 country-wide in a gala affair and to prove to the multitudes that it was not just a putt-putt plaything restricted to the visible boundaries of the home port, "Aeronca" entered the new "Collegian" in the 1931 National Air Tour. With George Dickson flying, the hustling C-3 averaged 64 m.p.h. for the 4858 mile grind and became the first light airplane ever to complete this grueling test of performance and stamina. Whether authentic or not, the following story has been told regarding the "Aeronca" in the 1931 "tour". In the formula for performance, additional points were based on "Stick" time (time for landing roll to a stop) so the eager pilot, not having any wheel brakes,



Fig. 300. Aeronca C-3 for 1934.

would reach out and grab his spinning tires with both hands (gloved) to give him brake effect and lessen his ground roll!

Happily, the "Aeronca" C-3 enjoyed much success and lasting popularity so it was able to continue in production for many years. The company always kept careful note on repeated criticism and kept pace with each demand by introducing new and improved versions of the C-3 quite frequently. For 1932 the open-cockpit

"Aeronca" was fitted with a detachable cabin enclosure that was snug enough for foul weather flying and could be easily removed for balmy summer flying; numerous other detailed improvements were added too. For 1933 the cockpit of the C-3 was made somewhat wider, more leg-room was provided and the seat-back was higher for extra comfort; an improved motor mount and the new E-113A series engine cut down on vibration. For 1934 the cabin enclos-



Fig. 301. Aeronca "Collegian" showing optional cabin enclosure.

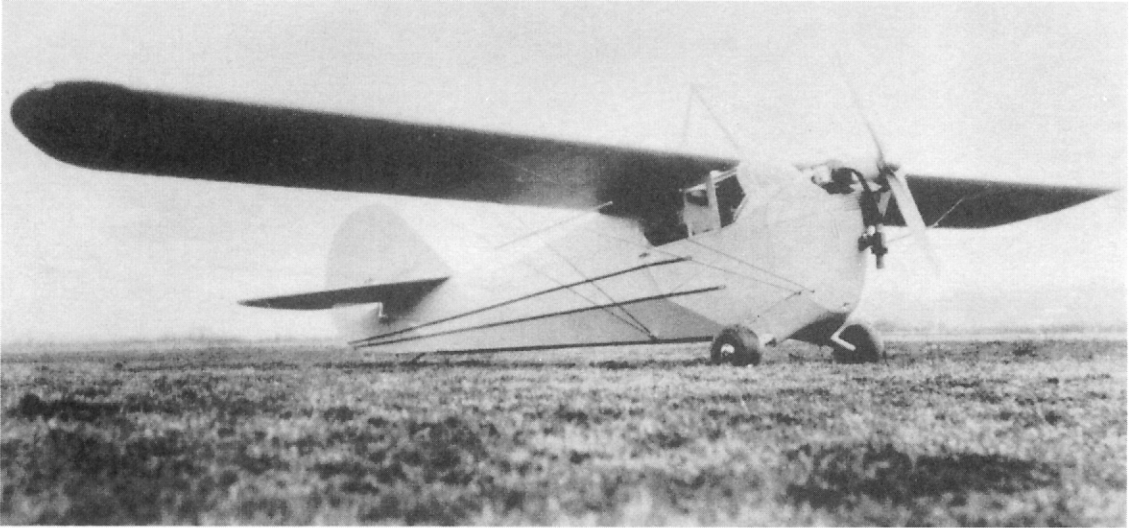


Fig. 302. Aeronca C-3 for 1935.

ure was somewhat improved, upholstery was now of leather and a new cantilever single-strut landing gear was introduced; the new E-113B series engine also incorporated several improvements. In 1935 the fuselage lines of the "Aeronca" were almost drastically changed to eliminate the long-familiar "razor back" shape and a full cabin layout was now offered for year-round flying; added too was a cabin heater and wheel brakes. During this time "Aeronca" was also developing the sporty LA-LB-LC series of low-winged cabin monoplanes. For 1936 the "Aeronca" C-3 was improved only in some details and now mounted the improved E-113C series engine, an engine that was by now recognized as one of the finest available for the light airplane. Production of the C-3 still held up well into 1937 but by then the new "Aeronca" K had

been groomed for the market and the faithful model C-3 was finally discontinued. For more than 6 years the "Aeronca" C-3 was a favorite all over the land and even in many other parts of the world; it was not often that an airplane enjoyed such a long span of popularity.

The "Aeronca" model C-3 was a high wing wire-braced light monoplane arranged in somewhat comical lines that could never be mistaken for any other. With side-by-side seating quite ample for two, the cockpit was first arranged in a semi-cabin layout with panels offered later that could be added to enclose the sides for cold-weather flying. Blessed with a popularity that sponsored a production run of some 6 years, improvements were continually added to make it a better airplane and by 1935 the C-3 was sporting a full cabin enclosure that

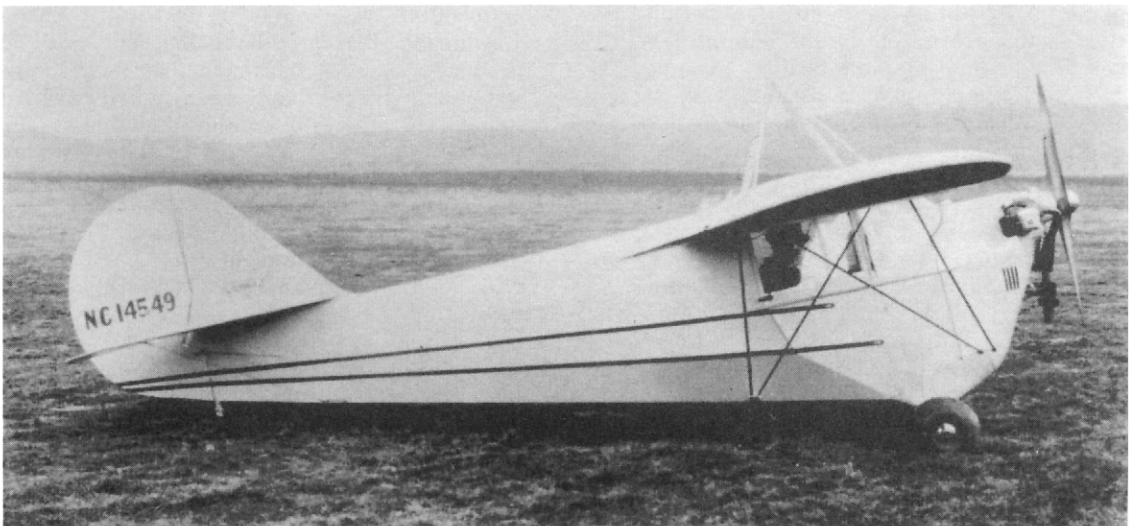


Fig. 303. Cabin C-3 had now lost its razor-back fuselage, providing all-weather comfort and better performance.

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fabric covered. The triangular portion of the fuselage aft of the wing had its apex at the top and this earned the earlier C-3 the nick-name of "razor-back"; in 1934-35 additional fairing was fitted to eliminate this triangular portion and the fuselage now had near-normal lines. The cockpit had side-by-side seating with a large windshield in front that formed a semi-cabin with open sides; in 1932 an add-on cabin enclosure was available to close in the drafty sides and models of 1935 and up offered a full cabin with open sides; in 1932 an add-on cabin ment with allowance for 25 lbs. was behind the seat-back. The wing framework, its attachment and bracing was typical as described in the chapter for ATC # 351. The landing gear on 1931 models of the C-3 was of the stiff-legged tripod type fitted with soft-cushion airwheels; due to various complaints of "porpoising" during landings, the tripod gear was fitted with "Aeronca" oleo-struts; 1934 models introduced the cantilever single-strut landing gear with the shock absorbing mechanism housed in the lower fuselage. The fabric covered tail group of varying shapes throughout the series, was built up of welded steel tubing; the fin was an integral part of the fuselage and the horizontal stabilizer was ground adjustable for load trim. 1935 models introduced the cabin heater and wheel brakes; other standard equipment included 16x7 Goodyear airwheels, first-aid kit and fire extinguisher. All models of the C-3 were available as seaplanes on APC or Edo twin-float gear; the installation amounting to an increase of 86 lbs. The next "Aeronca" development was the single-seated "Cadet" described in the chapter for ATC # 447.

Listed below is partial tally of "Aeronca" C-3 entries as gleaned from registration records: X-657Y; Aeronca C-3 (# A-99) Aeronca E-113. X-658Y; " (# A-102) " NC-11277; " (# A-107) " NC-11284; " (# A-116) " NC-11285; " (# A-117) "

NC-11286;	"	(# A-118)	"
NC-11287;	"	(# A-119)	"
NC-11288;	"	(# A-120)	"
NC-11289;	"	(# A-121)	"
NC-11291;	"	(# A-123)	"
NC-11292;	"	(# A-124)	"
NC-11293;	"	(# A-125)	"
NC-11294;	"	(# A-126)	"
NC-11295;	"	(# A-127)	"
NC-11296;	"	(# A-128)	"
NC-11297;	"	(# A-129)	"
NC-11298;	"	(# A-130)	"
NC-11400;	"	(# A-131)	"
NC-11401;	"	(# A-132)	"
NC-11402;	"	(# A-135)	"
NC-11403;	"	(# A-136)	"
NC-11404;	"	(# A-137)	"
NC-11405;	"	(# A-138)	"

Serial # A-122 was prototype C-1 "Cadet"; ser. # A-128, A-131 unverified; no listing for ser. # A-133, A-134, A-139; NC-11406 was ser. # A-140 and numbers ran consecutively to NC-11416 which was ser. # A-150; ser. # A-151 was a C-1 "Cadet"; NC-11418 was ser. # A-152 and numbers ran consecutively to NC-11424 which was ser. # A-158; no listing for ser. # A-159; NC-11425 was ser. # A-160; NC-11491 was ser. # A-161 and numbers ran consecutively to NC-11495 which was ser. # A-165; NC-12400 was ser. # A-166 and numbers ran consecutively to NC-12421 which was ser. # A-187; ser. # A-185 was a PC-3 on floats; no other listings checked beyond 1931 aircraft register. Serial numbers roughly coincide with A-200 for 1932, A-300 for 1933, A-400 for 1934, and A-500 for 1935 and so on. There was no accurate record or tally easily available on the number of C-3 examples built in the period from 1931 to 1937 but serial numbers above A-500 had been recorded so we can assume that at least 400 or more had been built. Four of the C-3 were operating in Brazil, one as a landplane and 3 were on floats.