

THE AERONCA STORY

The Birth of the Personal Plane

By Richard Harris

A Boy and His Planes

Jean Roche (pronounced “row-SHAY”), born in Royan, France, 1894, came to the U.S. three years after the Wright brothers’ first flight, at age 12, settling with his parents in New York City. He spent much of his boyhood experimenting with model aircraft — a growing fad of the times. Active in model-aviation clubs in the New York area, he won awards for his planes, and earned money carving propellers. He spent hours with other model aviators on Long Island, and around the *real* aviators who frequented the island — like pioneer barnstormer John B. Moisant, and aircraft-designer Gieuseppe Bellanca.

Young Jean absorbed all the aviation knowledge he could from this hub of experts. His mother tolerated (with varying degrees of displeasure) his cluttering the house with various aircraft subassemblies. In 1910, Jean helped build a stubby-winged clone of the delicate French Demoiselle monoplane. Where do you test-fly a homebuilt airplane in New York City? First time, its owner tried to fly it from home plate at Yankee Stadium. It flew eight inches high for about 10 feet, hitting a ladder before making outfield. But Roche, 16,

was arguably now a co-creator of a real man-carrying flying machine. At 17, he even applied for a patent on an aircraft-stabilizing airfoil idea. (Too advanced for its day, it found no takers, but Roche would land a patent on it two years later.) He wisely attended Columbia University, earning a mechanical engineering degree.

These were the years of frantic attempts by many people — and many new enterprises — to match and top the successes of the Wright Brothers, and (more importantly) catch up to the French and British aircraft designers who had quickly leaped far ahead of them. As aircraft companies sprouted like weeds, Roche quickly turned his plane-making expertise into money. He landed a job on Long Island at Huntington Aircraft Co. in 1915, followed by a 1916 stint as airplane designer at Polson Iron Works, Toronto, Canada. Neither company produced a successful plane.

Nevertheless, the bright young engineer wrangled a substantial job as the Assistant Chief Engineer of Standard Airplane Co., in Plainfield, N.J., just as the U.S. headed into World War I. The government needed training planes to prepare Americans to fly the advanced biplane fighters of France and Britain. While



Aeronca's long design evolution stretched from the early "flying bathtub" C-3, (left) to the modern, aluminum, tricycle geared Chum (right). While the rest of general aviation headed towards the "modern" design -- Aeronca would wind up returning to basic design ideas of the C-3, eventually producing one of the most popular personal planes ever. (From Aeronca: A Photo History, by Hollenbaugh & Houser)



Three Greats of Aviation (Dohse, Roche, and Morehouse), in front of their landmark creation, the first personal plane. Harold Morehouse's engine design was first of several pivotal general aviation engines he would pioneer. Craftsman John H. Quentin Dohse's skills would later put him in charge of the detail design of the world's first modern airliner. Meanwhile, designer Jean Roche would remain stuck in his "day job" -- chief civilian engineer of U.S. military aviation -- for four decades. (From *Aeronca: A Photo History*, by Hollenbaugh & Houser)

Curtiss Aeroplane Co. got the lion's share of orders (for 8,000 of its JN-4 *Jenny*), Standard got the next biggest order, for 1,000 Standard J-1s. At only 22, young Roche was the number two designer in the number two airplane company in America.

By America's second year of war, 1917, Jean had found his way to McCook Field, Dayton, Ohio. There, the Army had built its center of aeronautical research, next-door to Wright Field and the Wright Aeronautical

Corp. If one wanted to be at the center of American aeronautical developments, this was the place. Roche promptly became Chief of Airplane Design and Technical Advisor to the Materiel Division (the provider of planes) of the Army Air Corps — a post he would keep (through the Air Corps, then the Army Air Forces, then the U.S. Air Force) until his retirement 43 years later. Arguably, Roche was the official main brain of U.S. military aircraft design.

Flivver Fever

Already, though, he was imagining a simple, small, light plane for the common man — stable and stall-resistant, with good glide efficiency. By the 1920s, he began getting the itch to build such a plane, on his own time, but lacked the cash (few military engineers were rich in those days). In 1923, he got a shot at designing a glider for the U.S. Army, and

began fabricating a simple monoplane glider out of surplus Curtiss *Jenny* parts. Eventually, it flew rather well, and the military was intrigued, but hardly thrilled. After all, it was just a glider — with little apparent military application.

Roche, though, imagined it could be the basis for his imaginary personal "flivver" plane. He believed sound engineering, simplicity and functionality were the keys to good airplane design, and saw the glider as



Rare photo of first Aeronca (more or less): the Roché-Dohse Flying Flivver, shortly after modification to the Aeronca C-2 form intended for mass-production. Incredibly, it was flown to over 20,000 feet by a test pilot, yet was first flown by someone who'd never flown a plane before. This tiny landmark plane now hangs in the Smithsonian's National Air & Space Museum, in the huge new Udvar-Hazy Annex, at Dulles Airport, Washington, D.C. -- a testament to its giant role in shaping personal aviation. (From *Aeronca: A Photo History*, by Hollenbaugh & Houser)



1937 Aeronca C-3, showing off the Aeronca E-113 engine, derived from the E-106, in turn crafted by Roy Poole and Robert Galloway from Morehouse's original, but quickly destroyed, design. Two-cylinder, four-stroke, single-ignition, Y-shaped exhaust, and a whopping 36 hp. In this later model, a single shock absorber is concealed inside the fuselage. Note the kingpin and wires holding the wing in place. (From *Aeronca: A Photo History*, by Hollenbaugh & Houser)

the perfect outlet for these ideas. Improving the GL-2 on his own time, he considered various airfoil shapes for the wing, settling on a new design, called the "Clark Y" which seemed to offer good behavior and performance at a wide range of speeds.

Now to simply build a whole glider of his own.

Enter John Q. Dohse. Having seen Orville Wright fly, Dohse was captivated by flight at an early age. He'd become a master craftsman and machinist, and found work at McCook Field. He donated spare time to Roche's project, and the glider began to take shape in a Dayton garage at 28 Watts Street.

But gliders required a launch. Providing a small motor would hopefully eliminate the costly, risky and cumbersome process of aerial towing. However, Roche couldn't find an engine small enough for the job, until March 1924, when he saw a test at McCook Field. Harold Morehouse was demonstrating a little engine he'd devised, with two air-cooled cylinders mounted opposite each other ("horizontally opposed"), to spin fan blades to help inflate a blimp. Roche knew

at once this little engine was perfect for his motorized glider. Though it produced only 15 hp, with a single magneto, Roche realized this 42 cu. in. engine could be enlarged, yet fit within the 80 cu. in. engine-class specified for tiny "flivver" planes by the National Air Race Committee. Race victories would bring sales. Morehouse agreed, and by mid-1925 had developed (on his own time) a tiny, 2-cylinder engine, fabricated largely out of sheet metal, that belted out a whopping 29 hp.

September 1, 1925, craftsman Dohse was conducting taxi tests, and gave it too much throttle. The powered glider leaped into the air. Having handled the stick on others' planes before, non-pilot Dohse decided to take a chance and fly the thing. According to *Aerofiles.com*, and Aeronca historians Hollenbaugh and Houser, quoting the McCook Field newsletter *Slipstream*, this was the first time, since the 1903 Wright brothers' flight, that a plane, a pilot, and a powerplant shared their first flight. Dohse and his colleagues were thrilled as he successfully climbed away, swept a 5-mile circuit of the field, and landed perfectly. Roche, particularly, felt supremely vindicated in his design: it had been so simple and safe that even a non-pilot could fly it!

In over 200 subsequent tests, the tiny Roché-Dohse *Flying Flivver* flew well — even topping 20,000 feet. Roche would later tell historian Paul Matt that it seemed a "safe, fair-weather economical airplane." Wright Aeronautical Corp, too, was interested — at least in the engine — hiring Morehouse to duplicate it at their Patterson, N.J., factory (he would go on to manage design of the Wright J-5, which powered Lindbergh's "Spirit of St. Louis" and later design some of Continental's and Lycoming's most important smaller engines). His resulting absence posed a problem, though, when Dohse got over-ambitious — loading his brother in the space behind the pilot's seat, and taking off — with a resulting crash that (though the men survived well) destroyed the precious engine.

Roche turned to McCook engineers Roy Poole and Robert Galloway, who crafted an imitation of Morehouse's engine, using some of its surviving parts. Their first "E-107" engine, though a bit heavier than the original, still managed 26 hp, and was remarkably reliable compared to engines of the times. Over the years, it would prove to have a TBO (Time Between Overhauls) of about 400 hours. (Half a century later, the nascent ultralight movement would flourish with engines of similar longevity.)

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Aeronca C-2, the single-seat "flivver" plane that effectively created personal aviation. A tiny 2-cylinder, single-ignition Aeronca engine provided enough horsepower to get you aloft, and having fun. The 3-longeron, triangular fuselage cross-section is visible at the back of the open cockpit; An extra wooden "stringer" on each side rounds out the fuselage shape more aerodynamically. The prototype's single-axle, big-wheel landing gear replaced in this later version by tripod landing gear with small rubber tires. For about a year's salary, you could own a C-2 -- a real airplane -- an amazing thing at the end of the 1920s! (Photo by K.M. Molson from the AAHS photo archives, #4642)

Now, they had it all: a fine-handling little glider for the common man (capable of gliding 11 miles, engine-off, for every mile of altitude), with the capability of launching itself and even cruising as a simple, single-seat light plane. It landed at a gentle 30 mph. It used stout, simple, steel-tube construction for the fabric-skinned fuselage, and a wooden-framed wing. And it was so small that it could probably be made cheaply, if only the money could be raised for mass-production.



(From the EAA, Vintage Aircraft Division)

Long Name Meets Little Plane

Charles Lindbergh would help, so to speak. His heroic 1927 solo crossing of the Atlantic, on a single wing and engine (designed by Morehouse), had created a frenzy of aviation optimism in the U.S. Everyone wanted to get into the airplane business. November 1928, 60 miles to the south, in Cincinnati, some aviation-enthused businessmen (including Senator Robert Taft, son of a U.S. president) had pooled a half-million bucks to start the audaciously named "Aeronautical Corporation of

America" - without anything "Aeronautical" to sell.

Local aviation promoter Conrad Dietz had pitched them on buying a stout "C-4" biplane design, and got them to set up shop to produce it at Cincinnati's Lunken Municipal Airport. But they preferred the monoplane idea (made fashionable by Lindbergh's *Spirit of St. Louis*). Dietz knew of Jean Roche's tiny monoplane, and connected the inventor and his colleagues with the Cincinnati company.

While the company looked about for a place to mass-produce the *Flivver*, Roche began tweaking it into a production aircraft. June 6, 1928, in a 3-and-a-half-hour first

flight by a McCook Field test pilot, the 26-hp *Flivver* flew with a gross weight of 700 pounds. It managed to fly at speeds from 35 to 85 mph, and climbed to 5,000 feet in only 13 minutes — remarkable feats on a tiny 2-cylinder, single-magneto engine. It even recovered from a hard spin in only a turn and a half, after controls were released.

The satisfied Aeronautical Corporation of America (later abbreviated to "Aeronca") traded Roche 220 shares of stock for his design. Roche returned to his high-powered military-aviation responsibilities at McCook. Dohse, by now, had headed west to find his fortune with a biplane-maker building its first airliners: Boeing (where he would eventually make his mark on heavy iron, charged with detail design work on the world's first "modern" airliner: the Boeing 247). So, now, who would be Chief Engineer at Lunken? Replacement-engine crafter Robert Galloway. Aeronautically inexperienced, he hired a University of Cincinnati aeronautics instructor, Roger Schlemmer, who added a windshield and top windows to the design, and optimized its structure for mass-production. Later Schlemmer added wheel brakes.

The resulting C-2 *Sport* (or *Scout*) was ready for market. And across the field, Aeronca had found a place to manufacture it: the shop of the Metal Airplane Company — whose over-built, inefficient, expensive *Flamingo* (a 7-passenger, metal-skinned, cabin monoplane) was just not selling. Its failings were compounded by the devastation of the Great Depression, which had just sprung upon the nation, and

devoured the fortunes of almost every industry, while crushing the market for expensive aircraft. Space was available in Metal's plant, and there the Aeronca factory sprang to life.

The C-2 was unveiled next month at the Western Aircraft Show, in Los Angeles, with a stunningly cheap price tag of \$1,495 — just a year's wages for an ordinary man! It was an immediate hit at the show. Aviation journals of the day lavished attention on luxurious big planes by Travel Air, Waco and Stinson, and turned up their noses at Aeronca's homely little "Flying Bathtub" (so nicknamed for its ungainly shape). But the aviation-starved, Depression-era public saw the C-2 as an accessible blessing.

With marketing help from former Ryan Aircraft sales-boss A.J. Edwards, the plane appeared at aviation shows all around the country, racking up orders. Superstar racing pilots Jimmy Doolittle and Roscoe Turner flew and praised it. But best of all, stunt-pilot Forrest "Iron Hat" Johnson (so named for his bowler hat, always worn in flight), liked it — enough to make a scene with it at every possible aviation event nationwide: air shows, barnstorming exhibitions, and even the National Air Races — flying wild aerobatics, including a handkerchief pick-up and the first in-flight aircraft-refueling from a speeding boat. The homely, humble, cheap little plane seemed amazingly exciting and capable in Iron Hat's hands.

'Personal' becomes Popular

At only \$1,495 (cut to \$1,245 in 1931) one could actually own and fly a gentle, capable little plane! With its tiny engine, gas and oil (together) cost only a penny a mile — while cruising 50-60 mph. While most larger planes vanished from the market, and the rest struggled through the Depression, over 160 copies of the popular C-2 would come popping out of Lunken Airport over the next few years. C.G. Taylor was still fussing with Bill Piper over whether their *Cub* should be a powerful, expensive sportplane or a cheap, basic lightplane — while Aeronca's C-2 inaugurated



Jean Roche's own, personal 1931 Aeronca C-3. Two seats, 60-70 mph, gentle handling, mediocre visibility, and great fun on just pennies. It arrived as the cheapest brand-new trainer and sport plane in the world -- to own or operate -- except for its single-seat predecessor, the C-2. Roche fitted his with Edo 1070 floats -- and kept it until 1966. Here, in its element, it is piloted by Jim Hammond -- only its third owner in three-quarters of a century. (Photo by Jim Koepnick from the EAA Vintage Aircraft Association)

personal aviation for the common man. It quickly became America's first popular, truly "personal" airplane, fueling a "flivver plane" movement.

This was flying that people could afford in the depths of the Depression, and the C-2 was right for the times. Many other flimsy "flivvers" arose in its wake: the American *Eaglet*, Buhl *BullPup*, Cessna EC-2 (using an Aeronca engine), Curtiss-Wright CW-1 *Junior*, and others, sold by the dozens or even hundreds. For enterprising do-it-yourselfers, Heath, the radio-kit people, offered the first popular kitplane, the tiny Heath *Parasol*. To overcome the cost of airplane engines, Bernard Pietenpol's *Air Camper* offered a design using a Ford Model-A car engine (it's still popular today).

Finally, with a beefed-up Aeronca engine, harnessing 36-40 hp, the C-2 grew into the Aeronca C-3 *Collegian* (nicknamed "Razorback" for its triangular fuselage), with "cozy" side-by-side seating for two. Roche, a single-seat flivver purist, objected. But flown for a purported "nickel a mile," at about 55-65 mph (officially topping 85 mph), the C-3 created opportunity for struggling flying services. They now had affordable trainers to offer the public. The C-3, though, required daring instructors to teach slow flight and crosswind landings: student pilot and instructor shared



Late-1930s Aeronca C-3: adding windows, doors, and a bit less wintertime draft. The slightly reduced noise made instructing easier, long flights more tolerable. Notice the refined shape, with stringers rounding the formerly triangular fuselage. On top (blocked from view by the wing) are the twin kingposts and wires supporting the wing. (Photo by William Steeneck from the AAHS photo archives, #4644)



More cylinders, more power, more conventional design, more speed, more room, better visibility, better landing gear. The Taylor/Piper Cub would soon overtake the Aeronca "flying bathtubs" as the preferred trainer and personal "flivver" plane -- forcing major changes in Aeronca designs. In time, though, Aeronca would best the Cub, with its own postwar trainer specifically designed around the Cub's many shortcomings. (Photo from AAHS archives, #2733, Taylor J-2 manufactured in 1936)

a single joystick, with rudder pedals only for the pilot. An engine cylinder blocked each man's forward view, and between was the 8-gallon fuel tank, in the cabin behind the panel. But its cheap and gentle qualities lured over 400 buyers for the popularly nicknamed "Aironcker."

Later the C-3 *Duplex* or *Master* added doors and side windows. Nicknamed the "bathtub" (in both single-seat and two-seaters) it virtually created the personal airplane concept for America. But Aeronca grew too comfortable with their popular design, and was too slow to change.

Superior competitors were appearing. By 1935, the Piper *Cub* was overtaking the C-3. Though starting out slowly, the *Cub* was a cleaner, roomier plane, with better visibility, more power, and more speed. Its longer landing gear allowed safer, easier operation from rough fields (as most flying fields were in those days). As the Taylor Brothers *Cub E-2* evolved into the efficient, comfy Piper J-3 *Cub*, with dependable dual ignition in a 50-hp engine, cruising 65-75 mph, it finally began to overtake Aeronca as leader of the personal plane movement, and by 1935 Piper was in the lead. With Bill Piper's serious focus on efficient mass-production techniques, Piper would continue to offer the most conspicuous bargain in personal flying for over a decade.

The little, single-ignition, 2-cylinder Morehouse/Aeronca engine design had reached its practical limits at 40 hp — while the *Cub's* Continental 4-cylinder, dual-ignition A-40, though cantankerous, had plenty of room to grow. Further, the "bathtub" Aeroncas used

external wire bracing as the main support for the wing. In-flight wing collapses of stunting Aeroncas (and the similar Buhl *Bull-Pup*) had led to an outlawing of their wire-braced, pylon-supported wing design in 1934. Any new designs would have to be fundamentally different.

Beyond the Bathtub

By the end of 1935, Aeronca, pioneer in the personal plane parade, had lost its premier position to Piper. As the personal/trainer market shifted to the *Cub*, Aeronca knew it needed to change. The C-1 *Cadet* - an attempt to put pizzazz into the single-seat C-2 by giving it the bigger engine of the C-3 - was too little, too late. Worse, Aeronca promoter Conrad Dietz died in a crash of the prototype. The rest of the original Aeronca designers, Roche and his helpers, had nearly all gone separate ways, too.

Aeronca's aging owners handed off the company to an Ohio real estate tycoon, Walter Friedlander, who wanted to set his sons up in the airplane industry. The new family management, basically devoid of aviation experience, made up for it with enthusiasm, passionate attention to the company, and sensitivity to the changing market.

Roger Schlemmer, now Aeronca's chief engineer, faced the challenge of modernization. For easier landings on rough fields, he stretched the C-3's landing gear out, on separate "oleo" (air-oil) shocks. With the Aeronca wing design (externally wire-braced with supporting kingposts) now outlawed, Schlemmer switched to a wireless, internally-strong, strut-braced



Same engine, same performance, as the C-3, but better visibility, better landing gear, better looks. The upright-seating, side-by-side, conventional-looking Model K - using solid metal wing struts in place of kingposts and flying wires - was the beginning of good-looking Aeroncas, and would set the style for future designs. (Photo by William Steeneck from the AAHS photo archives, # 4646)

wing - and raised it (and the pilot) to a more conventional position. The resulting Model K was a far more attractive, easy-flying and comfortable plane, managing performance similar to the C-3, using the same little Aeronca E-113 engine. Niggling detail problems, though, kept the K from production for over a year.

L is for “Low-Wing,” and “Lunken, Sunken”

Meanwhile, as “cantilever” (unbraced) wings were becoming the state-of-the-art in airplane design, Schlemmer decided to also try building one of those. The resulting Model L was a sleek, sophisticated-looking plane for the times, with its tapered, strutless, low wing. But it couldn't get two folks off the ground, using Aeronca's dinky E-113 engine. Turning to the local LeBlond engine company, Schlemmer installed one of their 70-hp radials, and suddenly the L performed. With a 90-hp LeBlond (or Warner), it was truly respectable. Aeronca expert Bob Hollenbaugh (later chief of Aeronca's experimental shop) describes it as “hotter than the C-3” but still manageable with a landing speed of “about 45 mph.” But, alas, the public was slow to embrace unbraced wings - and the LeBlond radials raised the L's price higher than its market. Then Kansas City competitor Rearwin Aircraft bought LeBlond.

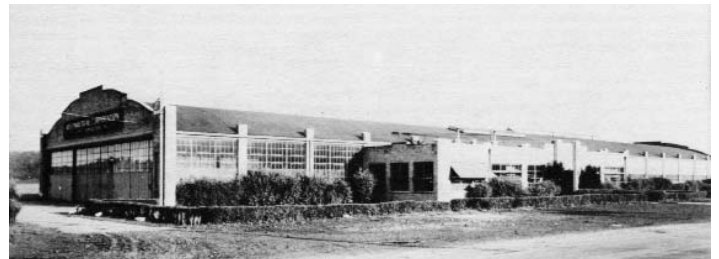
And before more than a few dozen Ls were sold, the nearby Ohio River — in one of its worst floods in history — overflowed the dikes that kept Lunken Airport dry — burying it (and Aeronca's entire factory) under 30 feet of water. There had been some warning, and workers had scrambled to salvage everything possible from the factory - like inspector Tom Kidd who



Clean, cantilever-wing Aeronca LB, underpowered with Aeronca's tiny engines, and a radical departure for Aeronca, didn't turn out so well - until the two-seater was fitted with a stout 90-horse LeBlond radial. Suddenly the streamlined, tapered-wing L became a 120-mph (105-mph cruise) personal speedster. But LeBlond sold out to an Aeronca competitor, Rearwin. While production continued briefly with Warner radials (in the L-C, shown here), the L-series faded before it blossomed. Only a few dozen were built before a flood washed away the remains of the program. (Photo by Charles E. Stewart)

frantically filled his car with magnetos and carburetors, and raced for higher ground, while test pilot Lou Wehrung used a board for a seat, and rope for a safety belt, to fly out an unfinished “L.” But there wasn't enough time to save it all, and the new Aeronca buildings - with their unfinished airframes, fragile and expensive machinery, precious supplies and the detailed blueprints for the Model L - were ravaged.

Though Aeronca managed to get things going again, the Friedlanders decided that expansion was best on higher, dryer ground, away from increasingly busy Lunken. The factory was moved 30 miles away - to Hook Field at tiny Middletown (midway between Dayton and Cincinnati), with much of the staff following along. There Aeronca prospered. But the beleaguered L was soon abandoned, and Aeronca retreated to the traditional design of the K.



Aeronca's big factory at Cincinnati's Lunken Airport -- one of the busiest airplane factories in America, turning out hundreds of personal airplanes in the middle of the Great Depression. A massive flood would suddenly stop everything, putting this general aviation institution -- and its progress -- under 30 feet of water. (From Aeronca: A Photo History, by Hollenbaugh & Houser)

Conventional Chief

Returning to the high-wing puddle-jumper, Schlemmer finished the Aeronca K, a competitor to the Piper *Cub*, with side-by-side seating comparable to the J-4 *Cub Coupe* and Taylorcraft BC-12D. Side-by-side seating in a personal plane had great appeal. Not only was it a much more sociable way to fly, it had obvious advantages for training - a major market for tiny two-seaters.

The K had a lethal flaw, however: while *Cubs* and Taylorcrafts boasted 50-hp Continentals, the similar-sized K tried to fly on nothing more than a 40-hp version of the C-3's tiny 2-cylinder Aeronca engine. Though Aeronca claimed it was as fast as the C-3 (70 mph, officially), official payload dropped 30 lbs., to 390 lbs. Fully loaded, the K couldn't even get off the ground from hot, high, humid airfields, and it ranged just 175 miles. Worse, Aeronca's prices grew with inflation - while Taylor and Piper offered steadily lower prices, as they mastered efficient mass-production. Only about 340 Ks sold, against 2,400 Taylorcrafts, 1,200 *Cub Coupes*, and literally thousands upon thousands of the tandem-seat Piper J-3 *Cub*.

Aeronca faced the inevitable, and gave up trying to build its own engines, once and for all. They bought the same engines that most other light-plane makers were using: Continental, Lycoming, and Franklin (Aeronca thereafter added C, L, or F, to model

numbers, indicating engine brand). Now powered by 50- to 65-hp 4-cylinder engines with dual ignition, the K became the 470-lb payload KCA *Chief*, evolving into the faster, roomier 50 *Chief*, with 84-mph speed and 230-mile range. Aeronca finally had a practical plane again.

Aeronca underscored that value, November 29, 1938, when a Continental-powered 50C *Chief* - with extra fuel replacing the passenger - became the first light plane to fly non-stop from Los Angeles to New York City. Averaging 90 mph, pilot Johnnie Jones covered 2,785 miles in 30 hours, 47 minutes, for under a penny a mile — proving the value of Aeroncas for travel. Aeroncas became quite popular, and around 400 of the 50-hp *Chiefs* sold. With 65-hp engines, resulting in the 65 *Chief*, another 270 sold. With an extra 8-gallon tank, the 85-mph, 300-mile-range 65 *Super Chief* became really popular. Over 850 sold. Piper stayed ahead with the tandem-seat *Cub*, but Aeronca wasn't ignoring the challenge.

Two in Tandem

Switching to tandem seats for a low-drag, narrow profile, and to compete directly with the Piper J-3 *Cub*, Aeronca engineer James Weagle converted a 50 *Chief* into the 50 *Tandem*, which evolved into the 65 *Tandem*. The resulting T-series - distinguished from all other Aeroncas by tandem seating and the use of a square, fuselage-truss cross-section (with a fourth longeron) - offered the strongest competition yet to the Piper *Cub*.

With World War II already ablaze in Europe and the Pacific, it seemed only a matter of time before the U.S. would enter.

The nation needed 60,000 more pilots to face a similar number of combat pilots already trained in Germany and Japan. The U.S. government set up the Civilian Pilot Training Program (CPTP) to meet the challenge, and civilian-staffed CPTP flying schools popped up all over the country. They mostly bought Piper *Cubs*, but the demand was so great, so suddenly, that every company that offered a decent, cheap light plane was guaranteed plenty of sales. Aeronca was second only to Piper in the number of its planes used by CPTP. Over 1,000 Aeroncas - purchased new, loaned from the Army, or bought on the used market - trained thousands of U.S. pilots. Another 253, with an extra seat in place of the engine, became TG-5 glider trainers for future pilots of giant invasion gliders.

As the U.S. entered the war, again the puddle-



Finally, with other manufacturers' 4-cylinder engines, Aeronca had enough horsepower to make a decent traveling machine: the original (pre-war) Aeronca Chief. In several models -- ranging from 50-65 hp -- Chiefs sold quite well in the Great Depression, with the top-of-the-line 65CA Super Chief topping 600 units sold. The early Continental-powered KC and 50C (shown here) had no cowling around the cylinders, but later models introduced a sophisticated, modern cowling, matching streamlining to engine power to produce -- in the 65 CA Super Chief - up to 85-mph cruise, across a 300-mile range, with 520 pounds of people and fuel. (Photo from Hollenbaugh & Houser collection, via Brian Matz, Aerial Aspect Photo)



Aeronca 65-Tandem: the prewar trainer that Aeronca sold by the hundreds for government-sponsored pilot training. (Photo from Hollenbaugh & Houser collection, via Brian Matz, Aerial Aspect Photo)

jumpers proved invaluable as close-support aircraft, performing battlefield reconnaissance, medical evacuation, emergency resupply, and other critical errands, and all artillery spotting. Capable of landing in small, primitive surfaces near the front, these “grasshopper” planes - mostly Piper *Cubs*, Taylorcrafts, Stinsons and Aeroncas - gave Army ground forces immediate, flexible air mobility and close birds-eye views of the battlefield, unmatched by anything bigger and faster. The priceless, commanding view from the various makes of grasshopper planes - in far greater supply among American forces than anything comparable among enemy forces - were credited with much of the precision effect of American ground forces, and by war’s end, nearly all artillery fire was directed by them. Aeronca managed to sell over 1,500 of its 65 Tandem to the Army as the O-58/L-3 *Grasshopper*.

The wartime sales greatly boosted Aeronca’s fortunes, and its manufacturing capacity. However, it would also keep Aeronca pigeonholed as an old-fashioned “tube-and-fabric” airplane maker, while other light plane makers (most notably Beech and Cessna) would branch into modern aluminum-shell plane manufacturing during the war. Under engineer Edward Burn, in 1943, Aeronca tried to venture into modern aircraft with its plywood-shell, retractable-gear, low-wing *Arrow*, which zipped at over 120 mph on a 90-hp Franklin. Monocoque planes were usually made of aluminum sheet metal. But aluminum was in short supply during the war - rationed by the government, who kept nearly all of it for combat aircraft production. So Aeronca made do with thin sheets of plywood - so thin that young Bob Hollenbaugh, on his first day at Aeronca, accidentally put his finger right through it, creating a noticeable hole in the prototype.



Aeronca L-3 Grasshopper: Whether flying out of tiny jungle clearings or launched from ships, Aeronca’s simple, practical, glass-enclosed “observation” plane brought exceptional utility to the war -- moving supplies to the front, and wounded to the rear, spotting for artillery and allowing field commanders easy observation of the entire battlefield. Over 1,200 were built. This one sports the “greenhouse” canopy for easy observing, and a wind-driven generator between the gear-legs, to power a radio. (U.S. Army photo from the Army Aviation History Web site)

Nevertheless, the *Arrow* prototype - remarkably similar to Al Mooney’s *Culver Cadet* (a wooden two-seat retractable sport plane, used by the thousands as wartime target drones) - became a sleek, speedy little two-seater. “There was a lot of hope that the plane would go into production after the war,” says Hollenbaugh. But Aeronca’s sleek *Arrow* prototype was destroyed in a crash when a propeller failed during a demonstration flight. The monocoque idea would have to wait for another day - a fateful postponement that would ultimately delay Aeronca’s entry into the



Under license, Aeronca built about 1,000 Fairchild PT-19/PT-23 Cornell trainers for the Army -- big trainers with 200-hp engines. They helped keep Aeronca busy. But the wood-winged, tube-and-fabric Fairchilds also kept Aeronca pigeonholed as an old-fashioned “tube-and-fabric” airplane maker -- while other wartime light-plane makers (notably Beech and Cessna) were allowed to make modern aluminum-shell airplanes or major aluminum subassemblies, with government-funded machines -- handing those companies a huge head-start for postwar lightplane dominance. Aeronca barely got its feet wet in the sheet-metal trade, making a few parts for the Boeing B-17 and Curtiss C-46 plane. (Photo from AAHS archives, #6270)

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Aeronca Arrow prototype, NX39581, was powered by a 90-hp Franklin 4-AC-199-3. This aircraft, constructed of thin plywood, was lost in a crash after a propeller failure during a demonstration flight. (Photos from *Aeronca: A Photo History*, by Hollenbaugh & Houser)

competition for the increasingly modern, metal-skinned, light plane market of the 1950s.

When the war ended, a sudden surge in civilian demand, held at bay throughout the war, exploded. Promptly, all light plane makers made a quick fortune with their existing designs — and promptly blew it when the 1946 boom dissolved into the 1947 bust. Faced with a huge inventory of unsold planes, and an even bigger supply of war-surplus light planes being dumped on the market by the government, most light plane makers collapsed. Aeronca pushed on, though, with a budget plane similar to the 65 *Tandem*, which would begin to close the gap between Aeronca and Piper.



Aeronca's 7AC Champ would flood the postwar trainer market, posing the most direct and powerful competition to Piper Cub until the emergence of the side-by-side, all-metal 1959 Cessna 150. This was the beginning of one of the most popular and enduring aircraft designs ever created — still manufactured today in variations by American Champion Aircraft. (Photo by Charles E. Stewart)

Postwar Perfection

In 1944, as the war was winding down, Aeronca engineer Ray Hermes designed the definitive Aeronca taildragger, the 7AC *Champion* — better known simply as the “Champ.” Roomier than the Piper *Cub*, it had the gentle flying manners and economy of the *Cub*, with most of the speed of the *Chief*. Unlike the *Cub*, which required soloing from the back seat (to counterbalance the weight of the engine) the *Champ* accommodated front-seat soloists. It was a quick hit with flyers and flight schools everywhere. Over the next several years, over 8,000 would sell worldwide. While Aeronca would eventually disappear from the ranks of plane-makers, the delightful, affordable *Champ* would live on, in countless revivals, well into the 21st century.

The *Champ* returned Aeronca to its design roots, reviving the triangular (three-longeron) fuselage truss that had long been the defining internal shape of all Aeroncas but the wartime *Defender* and L-3. And, of course it was old-fashioned tube-and-rag construction. And soon that began to be a costly design choice, as Cessna began eating up the market with its sleek, modern aluminum-shell Cessna 120 and 140. While Aeronca, Piper, Taylorcraft and others continued to weld and stitch, Cessna was efficiently stamping out aluminum airplane sections from its giant wartime metal hydro presses, like cookies from a cookie cutter.

Most *Champs* built (over 7,200 of 8,000 total) were of the original 7AC version, with the 65-hp Continental. The Cessnas, with an 85-hp Continental and cleaner lines, became the better traveling machine,



In 1946, turning out even more planes than during the war, Aeronca's frantically busy workers kicked out an incredible number of airplanes in the postwar rush to be first on the market with the most planes -- almost matching top rival Piper. (Photo from Hollenbaugh & Houser collection, via Brian Matz, Aerial Aspect Photo)



To meet preferences of personal flyers, Aeronca returned to the idea of the socialable side-by-side cruiser, with its 11AC Chief - capitalizing on Aeronca's popularity, dealer network, and the efficient matching of many of the 7AC's parts and much of its design. A lot of fun airplane on a little bit of money and engine, the postwar Chiefs were the last great gasp of two-seat, side-by-side, tube-and-fabric taildraggers -- soon to be outclassed by the faster all-metal Cessna 120/140, and by the emergence of the 4-seat "family sedan of the air." (Photo by Charles E. Stewart)

capable of faster climb and cruise. And the side-by-side seating of the 120/140 appealed to flight schools who found it made for easier, safer instruction. The public preferred the side-by-side seating, too, for obvious social reasons (q.v., Cessna 120/140 article, p. 153).

So Hermes responded with a side-by-side seating version of the *Champ*. Looking around for a suitable name, the company decided to capitalize on the popularity of its prewar *Chief*, and named this plane, the Model 11 *Chief*. As with the "Champ," the original Continental-powered 11AC *Chief* was the most popular. Later models of both aircraft featured more powerful engines, allowing bigger loads, more fuel (longer range) or greater speed. As Cessna had already

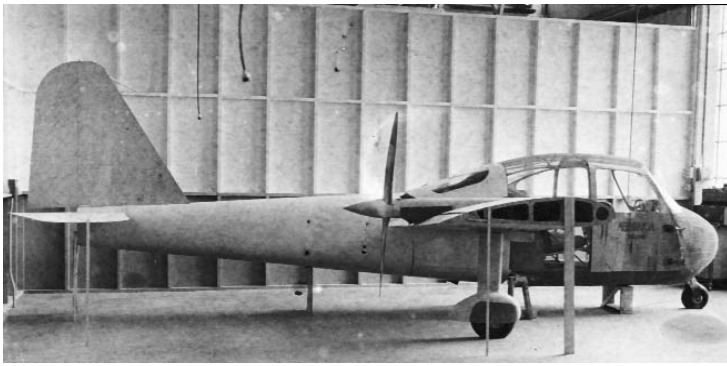
done with their 140, later Aeroncas would eventually add electric systems with starters, lights and radios - as the public began to demand more convenience and versatility from aircraft. Aeronca's main lines peaked with the 7EC *Champ* (with electrical system), and the 11CC *Super Chief*. Both had 85-90-hp Continentals yielding the Cessna 140's 85-90 mph cruise speed, and ranging 350-480 miles. The military even bought a few modified *Champs* as the L-16, a spotter plane, but soon switched to the modern Cessna L-19/O-1 *Bird Dog*, based on Cessna's 170.

Other Designs

Though the *Chief* and *Champ* accounted for the vast majority of sales, Aeronca had poked around with



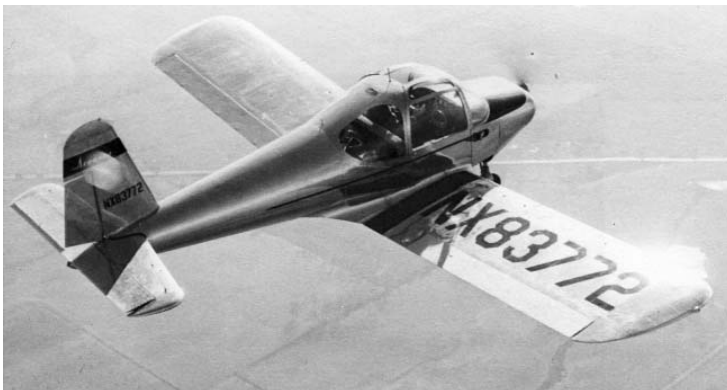
Mass production perfected in puddlejumper: Aeronca introduced the first automotive-factory-style mechanically moving assembly line in general aviation, using a chain on a track in the floor to continuously move fuselage airframes - tail-end-first - from first welds to final fabric covering, and out the door, at a record pace, producing an average of 30 planes a day - once building an astonishing 56 planes in a single day! (Photo from Hollenbaugh & Houser collection, via Brian Matz, Aerial Aspect Photo)



The personal "safe and easy" tricycle-pusher airplane idea was widely predicted to be the "wave of the future" in personal flight. Aeronca's variation on the theme was 4-seat, aluminum-shell, "family sedan of the air," the Aeronca Model 10, with twin pusher props driven by a single-engine in the fuselage. The long, complex power-driveshaft systems induced extreme vibration, though, and in a few hours of testing, the prototype literally tore itself up. Except for the Republic SeaBee amphibian, no variation on this popular 1940s theme, by any manufacturer, ever succeeded - though many (including Piper and Cessna) tried. Various design difficulties, and the painfully learned early 1900s aviation lesson about the hazards of rear-engine planes, brought nearly everyone back to front-mounted (tractor) engines, including Aeronca. (Photo from *Aeronca: A Photo History*, by Hollenbaugh & Houser)

other ideas. The Model 9 *Arrow* had gone up in smoke, but the postwar "family car of the air" kept coming back as a theme in airplane development. One of the more exciting ideas had been an aluminum-shell, pusher-prop aerial car, with seating for four, and tricycle landing gear. Twin tail-booms would end in twin tails, and the plane would be blessed with exceptionally gentle, easy handling.

The Stearman-Hammond Y-1 had proved the concept (though crudely) and many others raced to imi-



Aeronca Chum - By 1947, general aviation's postwar boom had collapsed into the postwar bust, and Aeronca -- like most other planemakers -- was in deep financial trouble. A creditor's committee refused to support the costly retooling needed for Aeronca's revolutionary transition to aluminum-shell aircraft, and insisted, instead, that Aeronca build a 4-place plane, using traditional methods and existing tooling. (Photo from *Aeronca: A Photo History*, by Hollenbaugh & Houser)

tate it, including Aeronca, who decided to use a single tail instead, with twin pusher props on the wings, hooked to the plane's rear-fuselage engine by long drive shafts and complicated gears. Not wise. In the first engine trials, according to experimental mechanic Bob Hollenbaugh, "the engine tore itself up" from the vibrations created by the complex power-transmission linkages, failing after less than 10 hours operation. The project was abandoned.

A more promising idea was the modern tricycle-geared, aluminum-shell ERCO *Ercoupe*, pioneered by Fred Weick before the war. It was proving a popular design. Aeronca, under license from ERCO, developed their own version of the plane - the 12AC *Chum* - with a conventional tail and three-axis controls replacing the Ercoupe's twin tails and two-axis controls. (Ercoupe rudders and ailerons were interconnected to automatically coordinate turns and prevent spins.) But, again, says design engineer John Houser, there were too many problems. Though "not as bad as the strut-winged *Champ*," says Houser, the *Chum* was "stubby, had a lot of drag," including a bulbous canopy (which afforded great visibility for a big price in drag) and landing gear troubles. The postwar two-seater market was beginning to collapse. After building two prototypes, Aeronca abandoned the *Chum*, returning to traditional steel tube and fabric.

In 1949, Aeronca won a contract from Helio Corp. for subassembly of their new STOL (Short Takeoff and Landing) single-engine, light *Helioplane*. But the plane, pitched to the airplane-hungry cold-war military as a liaison aircraft - was rejected by the military, and the deal folded. (Later, when the early stages of the Vietnam War created a need for small planes that could land on mountainsides and in jungle clearings, Helio would win military sales of several of its planes, as the *Helio Courier* and *Helio Stallion*, but would build them in its own Pittsburg, Kansas, facility.)

Finally, with the growing demand for "family" airplanes, in 1948 the *Chief* was stretched into the 4-seat 15AC *Sedan*. With a 145-hp Continental, the *Sedan* could lift a full load of four people *and* full fuel, and chug along at up to 105 mph, for up to 430 miles. A 165-hp engine was an option, offering somewhat better performance, at a price, and seaplane floats were an option, also. The *Sedan's* substantial load and range, on modest horsepower, would keep it popular among bush pilots well into the present day, but its modest speed and antiquated design would falter in the face of a modern competitor.



Answering the growing demand for practical -- rather than playful -- personal planes, Aeronca (like other light-plane makers) fashioned a four-seat "family sedan of the air" -- the 145-hp Aeronca 15AC Sedan, the biggest "Aeronca" ever, and the first production Aeronca with more than two seats. Rugged and roomy, and capable of hauling a full load out of very short strips, it became desired among bush pilots, who liked its quickly-removable rear seats, making it a very practical, versatile cargo/passenger plane (a role in which it still excels today). A mix of old and new, with modern aluminum wings, the rest of the plane was traditional tube-and-rag construction, liberally festooned with wires and struts. The widest-in-class cabin made for a comfortable, but slow, ride -- cruising at 105 mph -- roughly on a par with competing "sedans" from Luscombe, Taylorcraft and Stinson. Piper would eventually ease ahead with its faster Pacer, until the sleek, efficient, aluminum-shell Cessna 170 - cruising at 120 mph on the same 145 horses -- stole the show, and the market. But many sturdy Sedans survive, including the first -- still flying after half a century. (Photo by Jim Koepnick via the EAA Vintage Aircraft Association)

America had been seduced by the sleek lines and speed of the modern, aluminum-shell ("semi-monocoque") Cessna 170 (basically a 4-seat Cessna 140). The Cessna 4-seater traded useful load for speed, meaning that you had to leave one seat empty, or reduce the fuel load. But, with the same engine as the *Sedan*, it rewarded pilots with 125-130 mph speed, greatly improving its appeal. The *Sedan* (like the comparable Stinson 108 series) was a tube-and-rag plane, (except for aluminum wings), but the all-metal Cessna offered cleaner lines, greater efficiency and the all-metal promise of lower maintenance - eclipsing the *Sedan*, as well as a comparable "Sedan" from Luscombe, and the tube-and-rag 4-seaters developed by Piper, Stinson and Taylorcraft. In 1951, Bob Hollenbaugh and a handful of workers assembled the 561st Aeronca *Sedan* - officially the last Aeronca airplane.

Subcontracting

Aeronca's new management had seen the handwriting on the wall: their planes were having a tough time in the new postwar market. And more importantly,

they had discovered gold in the business of subcontracting - making parts for other companies' airplanes.

In the early Cold War panic over possible Russian intentions and military capability, America flushed unbelievable sums of money into weaponry. Military aircraft were eagerly sought by the Pentagon, at any price. Boeing faced such high demand for its B-47 jet bomber, that it offered to farm out some of the work to other companies - and Aeronca responded. Thereafter, Aeronca built radomes, landing gear doors, flaptrack fairings, control surfaces, wing ribs and other key parts for various planes, including the Boeing's B-47, B-52 and 747 jetliner, Lockheed's C-130 *Hercules* transport and Boeing-Vertol's CH-47 *Chinook* helicopter. Aeronca soon became the expert in bonded and brazed metal parts, especially for high-temperature applications like the wings of the Mach 3 XB-70 *Valkyrie*, thrust-reversers (particularly on the Falcon 20 and Learjet Model 35), the outer shell of the *Apollo* space capsules, and parts of the Space Shuttle.

Aeronca was also approached to build two other aircraft: the *FoxJet*, a budget-bizjet idea of the 1980s (cancelled amid various problems), and Jim Bede's famous/infamous BD-5 *Micro* - a tiny single-seat homebuilt, originally designed as a pusher-prop kit-plane. Around 1975, Bede planned a production version, and sent a BD-5 kit to Aeronca to evaluate the possibility of putting it into production at Aeronca. Aeronca actually assembled the kit, into a prototype of the BD-5J *Microjet*, but it took twice as long as Bede had claimed, Hollenbaugh



Arguably the first real attempt at a "VLJ" -- very light jet -- for the owner-pilot, the *FoxJet* was the brainchild of Tony Fox, who cut deals with Aeronca and engine-maker Williams (then only building tiny jet engines for cruise missiles and drones) to produce a radically new, sexy, small jet. Quite ahead of its time, it didn't get off the ground -- literally or figuratively. Only last year, the Eclipse 500 and Cessna's Citation Mustang were finally certified as the first very light jets to reach the market niche the *FoxJet* was meant to create. (Photo from C.H. Hamilton collection)

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Body by Aeronca? You better believe it! Aeronca decided it was better to be a little fish in a big pond, and traded in personal plane manufacturing for the chance to be "part of something bigger"... Aeronca has succeeded in the manufacture of specialized sub-assemblies. including radomes and landing gear doors for B-47s and B-52s , rudders, larger than some Aeronca wings, for B-52s and large sub-assemblies of Boeing and Lockheed jetliners. Mastering high-temperature metals, Aeronca built sections of the wings of the Mach 3 XB-70 Valkyrie, the whole outer shell of the Apollo lunar space capsule, and the tail of the Space Shuttle. Once unable to venture beyond tube and rag in its own little planes, Aeronca now takes others' huge flying machines to the exotic edge of aerospace metalcraft. (Photos from AAHS archives, Apollo command module and Shuttle from NASA)

recalls, leaving doubts about its viability.

Given the hot, little BD-5's flying manners and the pilot's vulnerability in the tiny egg-like fuselage, Aeronca management feared crash lawsuits, and decided the plane was too risky to bet the company's future on - stripping the prototype of all Aeronca identification, before shipping it back to Bede (in fact, Aeronca had not even registered it as an Aeronca plane, preferring instead to have it registered, as N501AE (as in AEronca), but as a "homebuilt" BD-5J, with manufacturing attributed to Bob Hollenbaugh and colleague James F. Murphy. (After Aeronca returned the craft to Bede, it was later taken as payment for debts by the French jet-engine manufacturer.) Aeronca, though, kept building parts of bigger planes. Today, Aeronca remains a leading expert in bonded and brazed metals, and many of today's modern airliners fly with major parts by Aeronca.

But Aeronca remains famous in aviation circles for its plethora of puddle-jumpers. According to an Aeronca, Inc. Web site document, "between 1945 and

1950, thousands of Aeronca aircraft, including the popular *Champ*, the *Chief* and *Super Chief*...were manufactured, with production reaching a peak of 50 aircraft per day. The production of light aircraft ceased at Aeronca in 1951. In the span of 23 years of aircraft production there were a total of 17,408 airplanes of some 55 different models that rolled off Aeronca assembly lines." It's not precisely clear how many



Aeronca flirted with other aircraft designs including building what eventually was the prototype Bede BD-5J. The experience led to a decision to pursue other opportunities. (Photo from the C.H. Hamilton collection)



A tricycle Aeronca? Only one 7FC Tri-Traveler was built under the Aeronca name. It took Champion Aircraft to put a tandem Champ on tricycle wheels and sell them that way -- many of them -- in the rapidly changing trainer market of the 1950s, where touchy tailwheels were being replaced by safer, more popular tricycle gear. (Photo by Robert Burns)



1963 Champion 402 Lancer, N9931Y, s/n 9, shows the complex gear and strut arrangement required to support the twin engine design. (Photo taken in 2003 at EAA Sun 'n' Fun by Timothy Aanerud)

thousands were built before 1945, but hundreds still fly.

Champ revived

In 1954, though, Ray Hermes arranged for the *Champ* design to be sold off to Flyers Service Inc, of Ocoee, Wisconsin, (founder Robert Brown), who used it to create Champion Aircraft Co.

Champion revived the 7EC *Champ*, and put it back in production in 1955, with a 90-hp Continental producing an alleged 100-mph cruise. In 1957, with tricycle-gear enthusiasm sweeping the light plane world, Champion tried adding tricycle gear to the 7EC, for the 7FC *TriTraveler*, but the extra weight and drag left the plane rather uncompetitive - particularly so against the side-by-side seating Cessna 150, which became the dominant trainer of the '60s.

Still, the *TriTraveler* was built in substantial quantities, and trained many pilots.

The 7GC *Sky-Trac* was a more serious attempt at making the 7EC a traveling machine, by strapping on 140-hp Lycoming to the taildragger, making it capable of hauling up to three people, at cruise speeds up to 120 mph. Various other design modifications were tried, including versions with tricycle gear, 150-hp engines, longer wings, flaps, and IFR instruments. None sold very well. Seaplane floats and crop dusting equipment, though, helped sell a few.

Another idea was to put twin engines on the tandem-seat, tricycle 7FC's wings - to create the cheapest multi-engine trainer, by far, on the market in 1961. The twin 125-hp engines were supported by long

landing gear legs and complex struts - creating enough drag to hold the tiny twin down to *Champ* speeds. The resulting 402 *Lancer* twin was a dreadful performer with a single engine out (in one-engine-out situations, some said it was only a glider, that fought you for control). Without a full-feathering prop to cut the drag of the dead engine, the plane was a hazardous handful in engine-out situations. And the Federal Aviation Administration (FAA) insisted on multiengine check rides in twins with feathering props, making the *Lancer* a poor choice for twin training (as if tandem seating wasn't enough). A couple of dozen Lancers were all that were built.

Citabria — the Champ as a proper akro plane

Champion Aircraft's big success came in 1964, when they evolved the 7EC into the stronger, acrobatic-class 7ECA *Citabria* (pronounced "sa-TOBB-ree-a" - "airbatic" spelled backwards). Modified for limited aerobatics with a foot less span at each wingtip and a smartly squared tail, the sharper-looking *Citabria* quickly fueled a boom in aerobatic flying begun in the late '50s, boosting it through the early '70s. Unusual among acrobatic planes (most of which were open-cockpit biplanes), the enclosed-cockpit, high-wing *Citabria* became popular for its enticing blend of basic acrobatic capability with easy handling, great visibility, and comfortable, practical traveling. A choice of 100-hp Continental or 108-hp Lycoming offered cruise speeds of 107 or 112 mph, respectively.

Various versions evolved, with larger engines, stronger wings. A 150-hp version, the 7GCBC,



Showman Daryl Lowey's 1975 Bellanca-Champion Citabria 7KCAB, rated to +5 and -2 Gs with fuel and oil systems modified for inverted flight. (Photo courtesy of Daryl Lowey, www.livingskyaerobatics.com)

appeared. The line culminated in the 8KCAB *Citabria Pro*, a much hotter acrobatic performer, with shorter, stronger wings sporting a 200-hp Lycoming (modified for sustained inverted flight).

Eventually, though, Champion - struggling financially - gave up the business around 1970, and vanished.

Bellanca-Champion Era

But Bellanca Aircraft Corp. / Bellanca Sales Corp., Alexandria, Minnesota, (alias InterAir) - who built and sold the speedy, wood-winged, tube-and-fabric Bellanca *Viking* 4-seat retractable - were looking to expand their line. Brand loyalty from folks starting out in smaller planes had been key to the success of the Viking's competitors from Beech (the *Bonanza*), Cessna (the 210 *Centurion*), and Piper (the *Comanche*). All these companies had a line of smaller "starter" planes, establishing brand loyalty at the student-pilot level, and Bellanca felt it needed a starter line, too. Uniquely qualified among major general aviation manufacturers to continue a tube-and-fabric design, they bought Champion's assets - and the Aeronca Champion line became the Bellanca-Champion series.



American Champion Aircraft 8KCAB Super Decathlon, N181RA, s/n 719-93, seen at Lock Haven, Pa., in June 1997. (Photo by Charles E. Stewart)

In 1970-1971, Bellanca attempted to re-market the 7AC as the 7ACA *Champ* - a bare-bones "cheapest plane in America [at] \$4,995." Modified from the original 7AC with a 60-hp, two-cylinder Franklin engine (the original 65-hp Continentals and Lycomings had gone out of production), and simpler spring-leaf landing gear, it nevertheless failed. Buyers could get a lot more airplane for the money by buying a used craft (a faster, more socialable three-year-old Cessna 150, or 10-year-old, four-seat, 120-mph Cessna 172 *Skyhawk*, for instance - both with tricycle gear - or a comparable, but iconic, old Piper J-3 *Cub*, or a *real* 25-year-old Aeronca 7AC *Champ*, for half the price). Most flight-training schools had long abandoned tandem-seat taildraggers, so the plane simply found no market.

But the 7ECA *Citabria* was revived successfully, and other versions followed with stronger wings and engines, including engines designed for sustained inverted flight. A rugged utility/bush plane version, the 150-hp 7GCBC *Scout*, appeared, aimed at farmers and ranchers, with crop dusting options. It was soon followed by a 180-hp 8GCBC *Scout*, with payloads, comfort and performance rivaling the popular Piper PA-18 *Super Cub*. The line culminated in the 8KCAB *Decathlon*, a much hotter acrobatic performer, with shorter, stronger wings sporting a 150-hp Lycoming (modified for sustained inverted flight), and a symmetrical airfoil (same curvatures top and bottom) - both features allowing superior inverted maneuvers, and finally yielding a "competition-grade" akro aircraft.

Bellanca, though - whether simply suffering declining sales, or burdened by lawsuits (the sporty Champion taildraggers, and their bush plane variants, were involved in a lot of accidents) - decided in 1982 to unload the Champion line. It was bought by entrepreneur Jack Burden, and his B&B Aviation, who established a new Champion Aircraft Co. at Houston's Hooks field. Alas, the operation yielded just one *Citabria* and one *Scout*.

American Champion Aircraft — and old Aeroncas with new appeal

In 1990, the line was acquired by American Champion Aircraft (also known as "ACA"), of Rochester, Wisconsin, who today produces several modified versions of the Bellanca-Champion fixed-gear planes (under new names like 7ECA *Aurora*, 7GCAA *Adventurer*, 7GCBC *Explorer*, 8GCBC *Scout/Scout CS*, the 180-hp, constant-speed prop, 8KCAB *Super Decathlon* and others) for the flyer who

likes the freedom, flexibility and fun of tandem two-seaters, which can cruise in and out of almost any field, with great visibility and enclosed-cabin comfort, and stunt through the afternoon sky enroute.

The old Aeronca designs, too, still around in numbers hinting at their bygone days of prolific production, while often selling as “bargain planes” remain very popular. Recently, the FAA developed a popular new class of general aviation pilot, officially termed “Sport Pilot,” allowing a pilot to get his license without a medical exam, and as little as 20 hours of training — in exchange for severe restrictions on the type and location of flying, and limitations on which planes may be flown. Sport pilots are restricted to specific eligible “Light Sport Aircraft” (LSA) - lightweight, fixed-gear, small-engine, one- and two-seaters. Of the few dozen models of existing, older airplanes that the FAA has declared eligible to be flown as LSAs by sport pilots, one of the most prolific bunch are Aeroncas - several early Aeronca two-seaters - reviving interest in them once more.

Various organizations and individuals, many with Web sites, sustain the saga of Aeronca’s legendary light planes. Every other June, in even-numbered years, hundreds of vintage Aeroncas, and their brethren, converge in Aeronca’s hometown - Middletown, Ohio, - for the biannual Aeronca Fly-In, sponsored by the National Aeronca Association. And every weekend afternoon, at small airfields all around America - and in far corners of the world - pilots are happily putting about in Aeroncas and their descendants, enjoying the simplest, and most basic, of flying pleasures. Though it’s been more than 75 years since the first Aeronca flew, the simple, fun, Aeronca style is still in demand.

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