

# Aeronca Sedan

*Gentlemanly post-WW 2 American four-seater with exceptional STOL performance and notably sweet and honest handling. By Bob Grimstead.*

**I**n the heady, happy days of rejoicing after the Second World War folks universally believed that the world would be changed forever to become a better, happier, freer place. Caught up in this universal mood of euphoria, half-a-dozen American lightplane makers came to the same conclusion: hundreds of thousands of trained pilots returning to civilian life would want their own personal aircraft to continue flying and experiencing the freedom they had fought for.

Alas, this was not to be, and sales dwindled after an initial enthusiastic spurt; so although several fine aeroplanes were designed and a few produced, only the well-financed stayed the course of post-war economic depression. One of the better designs that fell by the wayside was the Aeronautical Corporation of America's (Aeronca's) Sedan.

During the War several manufacturers, including Aeronca, Piper, Stinson and Taylor, had set up large factories at the Government's expense, running big trained workforces to produce multitudes of 'Grasshoppers' — Army spotter derivatives of their simple steel-tube-and-fabric pre-war designs. They reasoned that by continuing to use production-line methods they could easily supply lots of slightly improved 'civilianised' aircraft at low research-free prices to fulfil this perceived need for an 'everyman's aeroplane'.

Cessna did not build singles in the War, concentrating on making over 6,000 UC-78 Crane 'Bamboo Bomber' twins, but they, too, were prepared for the cessation of hostilities, launching back into contention in 1945 with their

new 120 and 140. Luscombe spent the war making components for other companies, but came back on to the scene soon afterwards, re-introducing an improved all-aluminium version of their pre-war Model 8 with the inspired name of 'Silvaire'.

At first all of them did well. In 1946 Piper sold 7,817 aircraft, and Aeronca, then the second biggest manufacturer, delivered 7,555; but it soon became obvious that near-new military surplus airframes would swamp the two-seat market at prices way below cost. So they all quickly turned to developing new four-seat family-tourer descendants.

Piper stretched its side-by-side Vagabond into the Clipper (later to become the Pacer and, given a nose-wheel, the easily-driven Tri-Pacer), and Taylor introduced the similarly rag-and-tube but slotted and flapped Model 15. Stinson's 108 already had four seats. Cessna developed the sleek, all-metal 170 by a simple stretch of their two-seater 140 fuselage, while Luscombe, in an attempt at innovation, designed the ugly, broken-backed family Model 11 Silvaire Sedan. Determined not to be overtaken by events, Aeronca, the first American company to make a true lightplane, also quickly came out with a four-seater — even adopting the same unimaginative family-car name of 'Sedan' for their offering.

Of course the eventual market victor was Cessna, whose 170 begat the nose-wheel offspring 172 — the most popular lightplane ever. Piper came next, but it took them ten years

to realise the public felt that fabric covering was outmoded and replace the Tri-Pacer with John Thorp's Cherokee. Meanwhile they bought out Stinson, dropped the 108 and developed Stinson's twin into the Apache, later to become the Aztec.

Luscombe, Taylor and Aeronca faded from the scene, the former two to bankruptcies and a succession of licence builders, and the latter to quit the private aircraft scene to concentrate on the more lucrative and less risky business of sub-contracting for big manufacturers. Today they make flap parts for Boeing's 747 and exec jet thrust reversers.

This is a shame, because Aeronca's Champ, Chief and Sedan were a good family of efficient aircraft, optimised for the rural American owner but now also ideal for the British farm strip operator, with short take-off and landing capability and soft, strong undercarriages. They were rugged, easy to maintain and inexpensive to operate, while their low wing-loadings and



**Aeronca's rivals in the four-seat market: the Cessna 170 above, Luscombe Sedan below. Bottom: pages from a 1948 sales brochure.**



**WIN LANDING LIGHTS** rated 400,000 candle power—one glide path, one taxi, mounted outboard in the left wing leading edge—eliminating propeller arc glare in night flying.

**ENGINE ACCESSIBILITY** — for big 145 HP 6 cylinder engine.

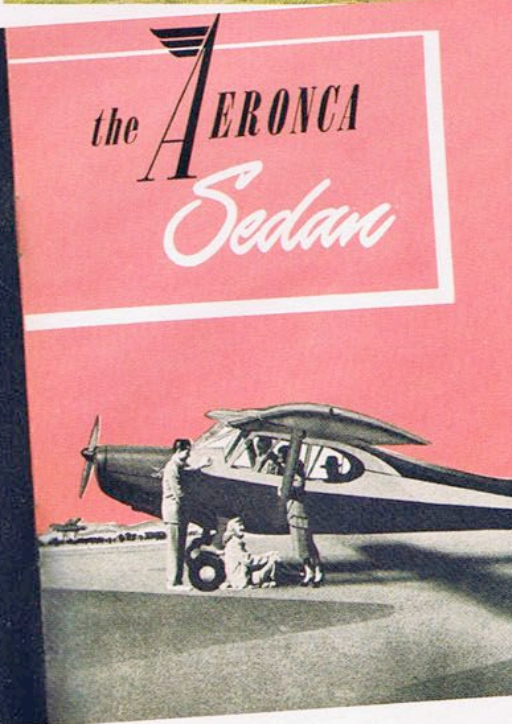
**EXCEPTIONAL** all direction visibility.

**important features of the new four place AERONCA Sedan**

**120 L.B. baggage compartment.**

**FOLDING FRONT SEAT** for easy entrance. Roominess—more head room, leg room, width.

**ALL STANDARD instruments.** Radio and Primary Blind Flight group, optional.







#### specifications—model 15AC

Wing span	37' 6"
Height (3 point attitude)	7' 0"
Length	25' 3"
Power Plant	145 Horsepower Continental
Cruising speed (at 75% power, full gross weight)	105MPH
At sea level	112MPH
At optimum altitude	120MPH
Top Speed (sea level full gross weight)	53MPH
Stalling speed (power off)	650FPM
Rate of climb (at full gross weight)	2050 pounds
Gross weight	120 pounds
Baggage allowance	900 pounds
Useful load	200 sq. ft.
Wing area	10.2 pounds
Wing loading	14.1 pounds
Power loading	36 gallons
Gas capacity	430 miles
Range at 105 MPH	1150 pounds
Empty weight	12 volt engine driven
Electrical System	Candle power 400,000
Landing Lights	

Paul Tornlin



Aeronca Sedan main photo, side-by-side Chief left, tandem Champion above—"a good family of efficient aircraft".



lightweight construction enabled good climb rates on low horsepower with economical cruising. Probably more importantly, they are all easy to fly.

In many ways their Sedan was the best of those competing family aircraft. Initially, attempting to keep within their cheap (\$4,500) target price, Aeronca tried to make their four-seat 15AC a simple stretch of the pre-War side-by-side 11AC Chief, incorporating as many parts as possible from it and the tandem 7AC Champ. However, with development and a watchful eye on the competition they finally made their new aeroplane mainly from specialised components, using only door, control wheels and a few small fittings from its forebears.

Fuselage and tail were of the then-traditional welded steel tube with shape-forming wooden frames and stringers covered in grade A cotton fabric, but the long wings were more innovative. Aeronca originally wanted to make them folding, both to save hangar space and to allow their rural target customer to store his new toy in the barn, so they designed an aluminium-skinned all-metal single-spar structure braced by a sole aluminium-faired steel strut immediately below it, around which the wing would pivot. Sadly, only 562 Sedans were built, so, busy fighting for their corporate life, Aeronca were never able to finish development of this useful mod.

True to the company's belief in minimum engine size, their four-seater was initially planned for a modest 125 horsepower, eschewing frills and creature comforts in the quest for maximum economy; but the other manufacturers all opted for bigger engines and better appointments, so Aeronca again followed their lead.

The final powerplant chosen was Continen-

tal's C-145, which was little more than half-a-dozen cylinders from their trusty and ubiquitous C-90 bolted to a new six-cylinder crankcase to increase power by fifty per cent. A side benefit of the extended engine was to get rid of the previous snub-snouted Aeroncas' tendency to look as if they had run into a hangar wall, and make the Sedan's nose long and sleek.

There are now perhaps 300 Sedans left, a rather higher proportion of the original batch than its rivals can boast — a testament to both its ruggedness and the demand among connoisseurs. In fact most of these survivors are in the tough bush country of Alaska and Northern Canada, and many of them operate on floats — the harshest environment of all.

One Canadian seaplane that got away was the sixty-first made, CF-FNM, owned by Ferro-Nickel Metals and bearing their initials. It arrived in the UK in September 1960, when the floats were sold to the Seaplane Club for their Tiger Moth (which later became the Tiger Club's Sea

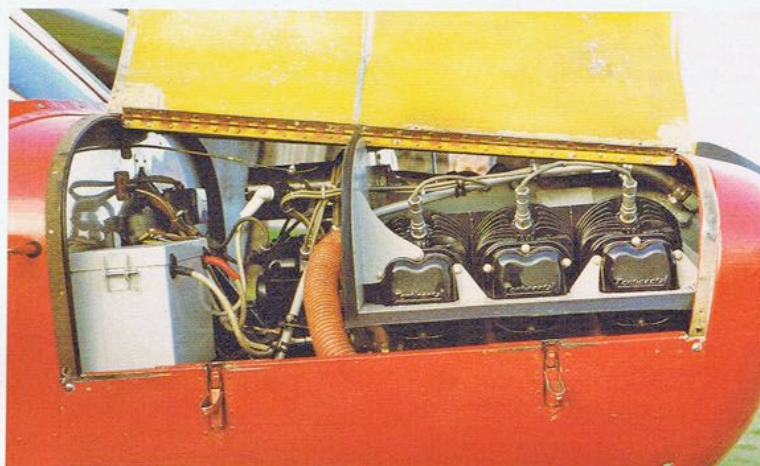
Tiger and for a long time was this *supposedly* maritime nation's only floatplane).

Refitted with the standard landplane belly-recessed bungee suspension but retaining its useful left-side seaplane door, it is one of only three in the British Isles, and was operated for a long time by a keen group of BOAC pilots and flight engineers. These days one of them, Bob Turnbull, now a 747-400 captain, is its proud and very caring sole owner.

He is one of those few lucky and enviable pilots who have their own established airstrip in the Home Counties, and keeps this in the same excellent condition as his aeroplane, with neat fences, carefully trimmed hedges, tree screens and immaculate regularly-mown grass that would make a bowling-green keeper proud.

His Sedan itself is pristine, finished in deep red long-lasting 'Razorback' fibreglass fabric with glossy white wings, tailplane and customised trim details. The engine compartment positively gleams, while the interior is much

**Access is easy to the 145-hp 5½-litre six-cylinder Continental. Airliner-grey panel is well furnished; the kidney-shaped yokes were the style of the day.**







more opulent than the original too, with deep pile hard-wearing royal blue carpeting throughout (even in the roomy 120-pound luggage compartment), similar navy vinyl seats and contrasting light grey sidewalls and headliner.

The airliner-grey panel is well furnished, the instruments including venturi-driven horizon, DG and turn-and-slip. Above the glareshield is a vertical card compass which I was particularly interested to see in action, having watched one demonstrated on a rig in the USA. The radio is a 720-channel Edo, coupled to a four-socket voice-activated intercom, and backed-up by the least expensive of hand-helds, the DelCom 720.

The spacious cabin is vaunted in a contemporary brochure as having a one hundred cubic foot interior, with the high roof and wide windscreen inherited from the Champ. Although the big divided screen suffers from the diagonal bracing struts so common to its period, these are slim and, lost against its panorama, do little



**A long propeller for good low-speed thrust and wide splayed main gear legs for easy ground handling. Cabin area is generous and the wide doors make passenger-loading easy. (James Grimstead photos.)**



to obscure the view. The left front seat is adjustable, while the right folds forward to allow access to the rear bench which can be removed to open up a really useful cargo space — an aspect not lost on the bush operators.

Being a member of the first generation to have a proper twelve-volt electrical system the Sedan proclaims it by sporting a pair of landing lights in the left wing leading-edge, but the master switch is still the early plunger type. Fuel is gravity-fed, with each wing-root tank having its simple sight-glass gauge and the combined selector is below the left panel. The tanks are foam-filled for post-crash safety — which Bob says does not noticeably reduce their total thirty-gallon capacity — enough for a range of nearly 400 miles.

With full tanks and three men aboard for our flight, the Sedan was close to its maximum weight of 2,050 pounds, but the delightfully smooth, quiet and powerful-sounding 5½ litre C-145 (the same engine as fitted to early Cessna 172s) lifted us off effortlessly at 55 mph in just over three hundred yards — a STOL performance that some aircraft with much higher horsepower cannot touch. This is due entirely to light empty-weight and good aerodynamics. The generous 200 square foot wing area with its 10.2 pound per square foot maximum loading was deliberately an important part of Aeronca's specification.

This capability optimises the aircraft for the family man who flies from a short strip, as Bob does, and has made the type increasingly sought-after in recent years. It means that two adults and a pair of teenagers can travel with full

tanks, or four adults can be carried 150 miles.

Throughout the take-off the aeroplane keeps completely straight, runway heading being easily maintained by steerable tailwheel and big, horn-balanced rudder without needing the brakes. The Sedan's Cessna 170 and Piper Pacer rivals are slightly more sensitive directionally, and although I have not yet flown the Luscombe four-seater, if its little sister is anything to go by that would require concentration too.

Climb rate at seventy mph is nearly 600 feet per minute, and visibility in the air is very good for a high-winged aircraft, especially in level flight, thanks to a nose-down cruise attitude and the deep, wide screen which curves up over the pilots' heads back to the spar. At 1,500 feet the maker's recommended power of 2,400 rpm returns 105 mph indicated for a fuel consumption of around seven gallons per hour. The 1950 issue of *Jane's* quoted a 75 per cent cruise of 114 mph at sea level with a maximum speed of 129 mph (although  $V_{ne}$  is 139 mph with a max cruise of 110 mph), but Bob likes to treat his newly-rebuilt engine as gently as possible, normally flying at a very quiet and super-economical 2,200 rpm.

For an aeroplane with such a big, lightly-loaded wing the Sedan's handling is really quite sprightly. Elevators and rudder are aerodynamically balanced and nicely light, while roll control is surprisingly easy, thanks to low-geared control wheels and Mr Frise's ailerons' offset hinges and extended aileron leading edges which protrude below the wing's underside as each aileron rises.

This reduces air loads and increases drag on the down-going wing while creating a boundary layer-rejuvenating slot to keep the airflow attached over the other, lowered aileron on the rising wing. They combat aileron drag, diminishing the need for rudder co-ordination and producing good roll rates.

Despite its lightness and excellent manoeuvrability, the Sedan is one of the easiest taildraggers to fly — not at all skittish, with good stability in all axes that makes it easy to maintain height and heading hands-off for long periods.

Its low speed handling is just as docile and predictable as its forbears'. Like them, it has no flaps, but with a 55 mph stall, none are necessary. 1,500 rpm depresses it to 50 mph — in both cases the nose is only five or so degrees above the horizon and just falls a little below it. There is never any sign of a wing-drop or other untoward behaviour, and recovery with a little power uses less than a hundred feet.

With its faired-in gear legs and cuffed single struts, the aircraft is surprisingly clean aerodynamically, so it glides very well with a height loss of only 600 feet per minute at 70 mph. Enthusiastic sideslipping will increase this to 900 fpm and further improve the already-excellent view of the touchdown point, but despite the good speed stability care has to be taken on the necessarily power-off approach not to let it build up to eighty, because this will cause a long float in the reduced drag of ground effect after the flare.

The landing has to be made with the control wheel fully back, or the aeroplane will skip and bounce on those undamped bungees after touchdown. If the rear seats are unoccupied a trickle of power helps elevator effectiveness to get the nose right up for that perfect three-point touchdown.

Again it is easy to keep straight on the roll-out thanks to the wide main gear legs, steerable tailwheel and slightly fade-prone hydraulic drum brakes — which, I am pleased to report,





are applied through proper pivoting rudder pedals rather than those dreadfully cheap fixed floor-mounted, postage stamp-sized heel brakes so common in American light aircraft of the time.

Even in the calm and without brakes the Sedan will always stop within 300 yards of the touchdown point, and having watched Bob land on numerous occasions, he usually does it in well under 200 from his strip's hedged threshold.

Altogether this is a gentle, gentlemanly, docile, safe and versatile machine — much more of an aeroplane than its saloon-car name would suggest. It is not a lightning-fast long-distance cruiser, but makes up for that by having exceptional short-field performance and much sweeter and more honest handling than other American lightplanes of the time.

I make no secret of being an Aeronca fan; that is why I bought my Champ. Thorough research showed me that the company made tough, simple, practical and inexpensive aeroplanes ideally suited to Britain's limited distances and the short, grass strips that pepper this country, making flying still affordable, now that so many airfields have priced themselves out of the reach of the ordinary man like me.

Bob Turnbull is a lucky chap to one own of the few coveted four-seat Sedans, enabling his whole family to join in this sort of safe fun-flying. What a shame that Aeronca turned away from the financial risks of building these charming aircraft to settle for the dull obscurity of sub-contracting for airliner makers!



**"... a gentle, gentlemanly, docile, safe and versatile machine, ideally suited to Britain's limited distances and short grass strips ... (Mike A'Court photos.)"**

#### Aeronca Sedan

##### Dimensions

Wing span	37 ft 6 in
Wing area	200 sq ft
Length	25 ft 3 in
Height	7 ft
Cabin volume	100 cu ft

##### Weights & loadings

Max take-off	2,050 lb
Equipped empty	1,250 lb
Useful load	619 lb
Max fuel	30 gal
Max baggage	120 lb
Max wing loading	10 lb/sq ft
Max power loading	14 lb/hp

##### Performance

Max speed	129 mph
Normal cruise	112 mph
Stall speed	55 mph
Range at normal cruise	430 sm
Rate of climb	580 ft/min

**Engine:** Continental C-145 delivering 145 hp at 2,700 rpm. TBO: 1,800 hours.

**Manufacturer:** Aeronautical Corporation of America, Middletown, Ohio, USA. ✈