

The Interstate Cadet

by PETER M. BOWERS / AOPA 54408

■ ■ At times, certain airplane configurations seem to come along in bunches. The first one gives its name to the whole group, and a late-comer has a serious identity problem.

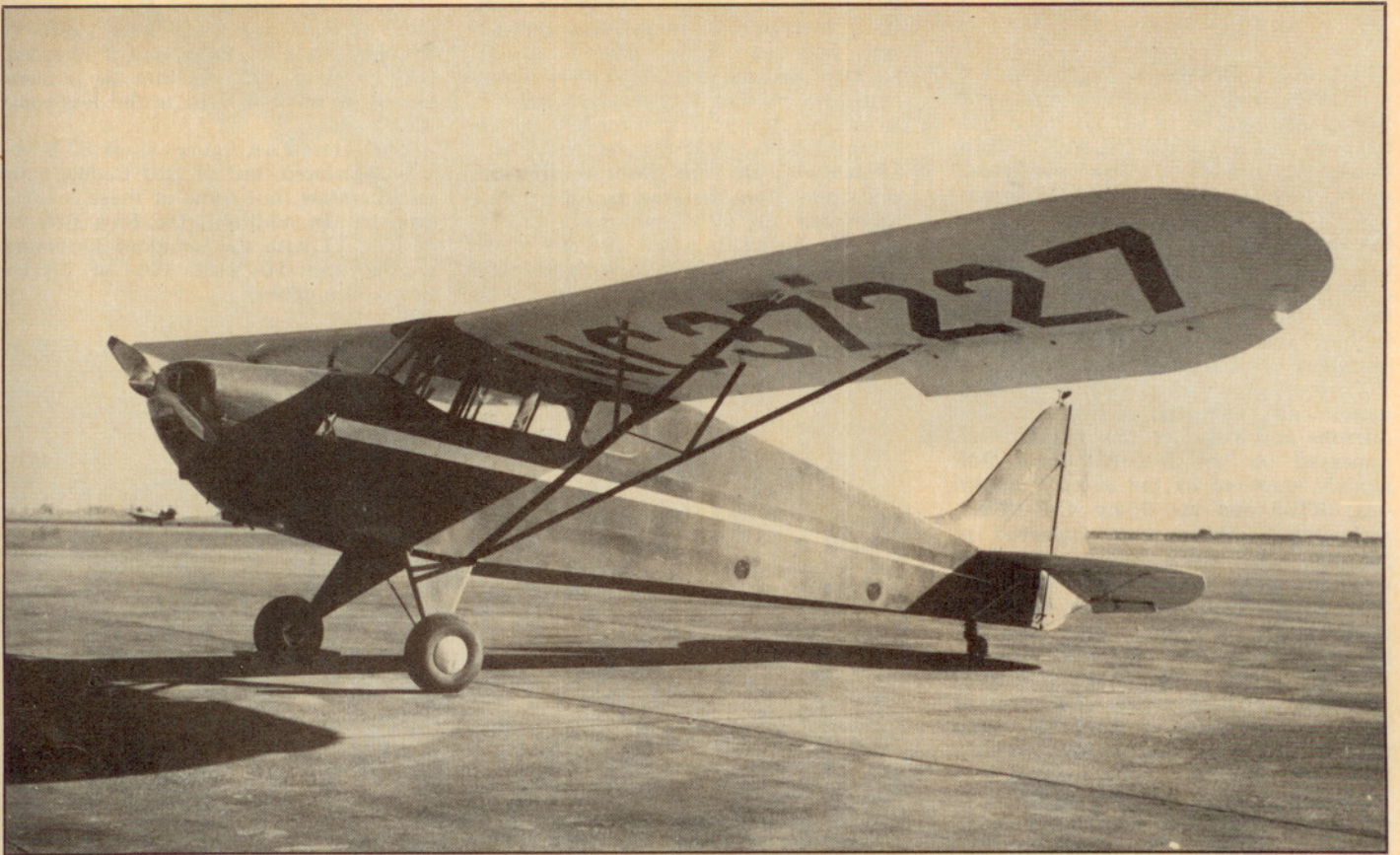
Such is the case of the Interstate Cadet, a small, tandem-seat, high-wing, monoplane introduced in 1940 by the Interstate Aircraft and Engineering Corp., of El Segundo, Calif. For several years, the light trainer field had been dominated by the Taylor/Piper Cub. Both Taylorcraft and Aeronca were also in the field, but with side-by-side models that were notably different and free of recognition problems.

In 1941, however, both Taylor and Aeronca introduced new tandem models to cash in on the civil pilot training program then being dominated by the Cub, in which tandem seating was preferred to side-by-side. Both these new models had V-struts, filled-in landing gear Vs, and enough other similarities to the ubiquitous Cub to require a close second look for positive identification. This was just about the time that Interstate's little trainer was reaching airports in numbers, and it became tail-end Charlie in the Cub parade. Its identity problem was further complicated by the fact that the contemporary and very flashy Culver LFA/LCA monoplane also used the name "Cadet."

Given enough time, the Interstate might have earned a reputation for itself, but the industry's conversion to war work and the diversion of most Cadets to the contract flying schools removed the design from the public eye. Many examples of the "Big Three" of the grasshopper fleet (Taylorcraft, Aeronca, and Piper) are with the antiquers today, while the Cadet is a rare and practically forgotten bird.

As could be expected of a late-comer, the Cadet had some improvements in details over the earlier designs and turned in a somewhat better performance for the same power. Construction was entirely conventional, with welded steel tube fuselage and tail, wood-spar wings with metal ribs, and fabric cover. The main landing gear improved on the Taylor-Aeronca-Piper style of rubbercord rings by using a single internal oleo unit for shock absorbing. The steerable tailwheel was a post type, as on larger planes, rather than being pivoted on the end of a spring-leaf tailskid. The air-cooled, flat-four engine was enclosed in a neat cowling similar to that of the contemporary side-by-side Taylorcraft and the Aeronca Chief. (Neither of these manufacturers used closed cowlings on their 1941 tandem models.)

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Interstate S-1A Cadet fresh out of the factory in 1941. Strong resemblance to the contemporary Taylorcraft-Aeronca-Piper tandem trainers complicated the Cadet's identity problem.

An Interstate S-1A-90F Cadet, photographed early in 1942. Note the considerably higher vertical tail and the balanced rudder. Civil planes in the West Coast Defense Zone had to carry the star insignia on the upper left and lower right wings, in addition to the letters "US" on the fuselage.



The first Cadet model, designated S-1, used the 50-hp Continental A.50 with the 50-hp Franklin as an alternate. The next version was the S-1A, with a 65-hp Continental, which received its approved type certificate (ATC-747) in February 1941. This model originally featured the same small vertical tail as the S-1, but an approved modification allowed a 50-pound increase in gross weight if the tail was enlarged. The same applied to the Franklin-powered S-1A-65F model, approved the following October.

Further refinements, such as an aerodynamically balanced rudder, modified ailerons and elevators, and more power, appeared on the S-1A-85F and -90F models, powered by the 85-hp Franklin 4AC-199D2 and the 90-hp 4AC-199E3, respectively. These were approved in January 1942, when civil aviation had effectively been shut down for the duration, so the only customers were the contract schools. There were also approved 75-hp and 90-hp Continental installations, but these were apparently regarded as S-1A conversions rather than as separate factory-designated models, since no specific designations identifying them are in the records.

The Cadet went out of production in the spring of 1942 as Interstate concentrated on war work, but a military liai-

son variant, the L-6, was developed. This was a heavier and more advanced design, powered by a geared 115-hp Franklin, and did not enjoy the postwar popularity of the far more numerous Taylorcraft-Aeronca-Piper models, which became L-2, L-3 and L-4, respectively.

Interstate did not resume airplane production after the war, but the Cadet design did not die. The prewar design was purchased by CallAir, of Afton, Wyo., in the early 1950s, and very limited production was resumed. In

1956 CallAir introduced the two/three-place SI-B1 Super Cadet with a 150-hp Lycoming engine, flaps, and a 40-gallon fuel capacity, features that tie it more closely to the L-6 than to the less complex Cadet.

The latest FAA figures show 80 S-1As still registered, out of 310 Cadets built by Interstate, but some of these may be CallAirs. In addition, the FAA lists 21 S1-B1s, 11 with the standard Lycoming engine and 10 with 150- or 165-hp Franklin engines. □

THE INTERSTATE CADET

Specifications and Performance

	S-1	S-1A	S-1A-90F
Wingspan	35 ft 6 in	35 ft 6 in	35 ft 6 in
Length	24 ft 0 in	24 ft 0 in	24 ft 0 in
Wing area	173.8 sq ft	173.8 sq ft	173.8 sq ft
Powerplant	Continental A.50, 50 hp @ 1,900 rpm	Continental A.65, 65 hp @ 2,300 rpm	Franklin 4AC-199E3, 90 hp @ 2,500 rpm
Empty weight	657 lb	720 lb	790 lb **
Gross weight	1,200 lb	1,200 lb *	1,300 lb
High speed	105 mph	109 mph	116 mph
Cruise speed	95 mph	100 mph	108 mph
Landing speed	34 mph	36 mph	—
Rate of climb	500 fpm	700 fpm	1,000 fpm
Service ceiling	13,000 ft	14,500 ft	16,000 ft
Range	425 mi	375 mi	250 mi (15 gal)

* Can increase 50 pounds after enlargement of vertical tail.

** Including lead weight in tail when using 85-90 hp engines.