

The Traveler





Traveler

A shiny new Traveler cruises the Ohio skies, probably in search of a Cessna Skyhawk to take on. Like the cobra and the mongoose, these two will become natural competitors, both scrapping for the same lucrative market.

LIKE A DEPRESSION baby who grew up to know the value of a dollar and the virtue of honest work, the American Aviation Traveler is the fortuitous offspring of Hard Times: If it weren't for the recent economic collapse and the emergency descent of aviation's fiscal affairs, the new Traveler would never have seen the light of day.

The gleam in American's corporate eye, back in those halcyon pre-1970 days when the sales curves were still climbing, was the Patriot—a four-place airplane, like the Traveler, but a rather fancier one, with a 180-hp engine to the Traveler's 150: Most important, in light of events to come, it was an all-new design, having in common with American's little Yankee only the fact that it was constructed around an aluminum honeycomb cockpit and bonded with glue.

The Patriot was announced with sounding brass, golden words and a full-color cover in the June 1970 issue of *FLYING*, demonstrating once again that the aviation press is no better at foreseeing the future than are politicians, airplane companies or tarot-card readers. This was not only the first but just about the last that anybody heard of the Patriot. Not that there's anything wrong with the airplane (even today, AA President Russell Meyer is taken to occasionally gazing dreamily into the distance and saying things like "damn, that was a nice-flying airplane . . ."), but it would have cost American something like \$2,500,000 to develop, certificate and begin to manufacture the machine.

Once they had done so, the new model would enter the sales dogfight smack in the middle of a squadron of competing airplanes that had already shown themselves to be at best soft sellers and at worst utter losers: the Cardinal, the 180-hp Musketeer, the Cherokee 180 and the Lark Commander. It was a lot of competition for what seemed to be a diminishing market, and it would soon be increased by the introduction of the fixed-gear Commander 111.

American needed a four-place airplane, though, and they needed one fast and without bankrupting the company. They had decided there was nothing they could do about stretching the Yankee, since the little airplane's laminar airfoil would not meet the FAA requirement that the new design have a rate of climb at least 10 times the flaps-down stall speed (at least not without increasing the wingspan unduly).

In April of 1970, however, the Trainer version of the Yankee began flying, and the simple modification of the Yankee's leading edge that the Trainer carried tamed the airfoil, dropped the stall speed and made the wing more efficient. A stretched Trainer *would* climb with four people, and it would do it with a span increase of only four feet on each side, and a lengthening of the chord that was accomplished simply by making the flaps and ailerons four inches deeper.

Chief Engineer William C. Seidel immediately began roughing out a stretched four-place Trainer on his own, got permission in June 1970 to build a wooden mockup to demonstrate that access to a rear seat

through a Yankee-type canopy was not only possible but comfortable, and by August, had a cobbled-up Traveler prototype flying.

That's the sort of schedule you can keep only with an airplane based largely upon an existing design (or, of course, if you're Dutch Kindelberger designing a P-51 under the press of a war), and it's the sort of schedule that American needed, hard-pressed by its lack of a four-place competitor as well as by the accelerating disappearance of the two-place market.

American admits that the prototype was indeed "cobbled up," and Russ Meyer says that if there's one thing that company learned from rushing the Traveler to completion, it is that it's silly to build a shiny, sanitary, unscarred prototype, as they did with the Patriot; as long as you get the aerodynamic information you need, forget the cosmetics. (The Patriot prototype looked like a fashion model ready to go right to the Reading Show; the first Traveler looked like a lady who just woke up, with patches and putty showing everywhere, bare skin here and some makeup there, a freehand N number on one side and a different paint scheme on the other. It got the job done, though, and left it up to the number-two airplane—the one on our cover—to be the beauty queen.)

Many companies indignantly insist that their "new" airplane is an entirely new design just because it has an extra pair of seats, or counterrotating propellers or a lengthened fuselage, but American makes no apologies for the fact that the Traveler is nothing more than an artfully stretched Trainer. This is why they'll be able to sell you the finished product for several hundred dollars less than the Cessna 172. Seventy-five percent of the Traveler's parts are either exactly the same as the Trainer's or very similar; the original design goal was 80-percent exact commonality, which turned out to be a bit unrealistic. The aircraft will be assembled by workers doing almost exactly the same jobs they've been doing on Trainers and Yankees; the first production Travelers should take about one-fourth the man-hours to build that the Patriot would have. Finally, the Traveler's systems and subassemblies are almost identical to the Trainer's, except for minor surface differences—the instrument panel and the entire wiring harness, for example.

The Traveler is, obviously, a direct competitor for the 172—so direct that when you ask Bill Seidel for performance figures, he opens his desk drawer and whips out a 172 owner's manual, referring to it to show you how the Traveler meets or exceeds almost every 172 performance parameter. One reason the 172/Skyhawk has always sold so well is that there's no alternative to it: The cheapest four-place Musketeer is too expensive, and the four-place Cherokee 140 doesn't have enough room or load-carrying ability. "When you count all those guys coming out of flight schools," Russ Meyer says, "hot and sweaty with enthusiasm, clutching their new licenses and all set to buy an airplane they can carry their friends around in, no wonder Cessna has sold 18,000 172s since 1955."

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American hopes to notch its share of those sales by making the Traveler travel six to eight mph faster than the 172—a 148-mph top speed and 138-mph cruise for the Traveler, versus the Skyhawk's 140 and 132 mph. (Both planes use the same 150-hp Lycoming engine, except that the Traveler has a rear-mounted carburetor and the 172's carb is up front.)

Both airplanes have a 1,000-pound useful load, though the smaller-winged, more simply constructed Traveler is 100 pounds lighter, empty, than the 1,300-pound 172. The Traveler does have a higher stall speed (58 mph) than the 172 (49 mph), and lacks the Cessna's superb flaps; the Traveler's plain, unslotted flaps lower the stall speed only four mph, although they are said to add a helpful amount of drag when needed. An early Traveler prototype did experiment with large-span flaps and small ailerons, which gave a good seven- to eight-mph drop in the stall speed, but at the expense of the good aileron response that has been a feature of American Aviation products. Since American has decided to stick with the small flaps and large ailerons, we can assume that the Traveler will have a pronounced roll-response advantage over the rather stolid 172.

It can't be ignored, however—much as we might like to—that it's a revealing commentary upon the exigencies of aircraft design and manufacture that a just-announced 1972 airplane attests to its success by meeting the standards set 15 years ago by a machine that was even then an elaboration upon a 1947 design (the Cessna 170).

Though American was relieved to discover that none of the thousands of people who clambered around the non-flying Traveler prototype exhibited at the Reading Show last June commented upon the difficulty of getting into the rear seat, the 172 will almost certainly have an advantage over the Traveler in terms of loading comfort, it being an inescapable fact that it's easier to board a high-wing airplane than it is a low-wing machine.

There's more than meets the eye, though, for American has capitalized upon the immense "door" opening that the Traveler affords with the canopy rolled all the way aft by making it possible to fold flat the rear seat-backs, to provide an unbroken cargo floor all the way from the back of the pilot's seat to the baggage-compartment rear bulkhead. (The copilot's seat-back can also be folded down.) Seidel plans to christen the first available production Traveler by taking it to Florida with his wife, pulling up to a beach, swimming during the day and sleeping in the airplane at night; it's just big enough to be turned into a double bed with wings, with all four seats folded flat.

The Traveler may be the first lightplane to be licensed under the new, more strict FAA certification requirements, if the Aero Commander 112 doesn't beat it. The most important thing this means to the consumer is that for the first time, lightplane wings will actual-

ly be tested to determine their fatigue life. Until now, wings have simply been tested to prove they were strong enough to withstand the required G loads, which is essentially a matter of putting weights on the wings to determine when they bend or break. From now on, though, a sample wing will have to be put in a test jig and run through months and months of almost continuous load cycles—up and down, back and forth, simulating severe turbulence and normal cruise, soft landings and brutal touch-and-goes, with an occasional slam right up to the airplane's design limits thrown in.

American will be continuing the test until they have safely cycled the wing through the equivalent of 10,000 or perhaps even 20,000 hours of flight. And when was the last time you saw a light airplane with 20,000 hours on the tach—the equivalent of a car with almost 3,000,000 miles on the odometer?

Another interesting step in the new certification procedures is the requirement that henceforth, light aircraft be protected against the potentially catastrophic effects of lightning strikes. Only God and common sense can keep the pilot from going close enough to a thunderstorm to be hit by lightning in the first place, but engineers can make it easier for the lightning to then travel across the surface of the airplane rather than internally, and can provide the lightning with resistance-free paths to follow so that it doesn't jump across gaps—from aileron to wing, say—and fuse control pivots, or melt cables, or even ignite fuel vapors. (Since the pilot and passengers are not grounded to the earth, they will be unaffected by the lightning no matter how many millions of volts may be flowing around them, as long as the airplane stays structurally sound. They'll be as safe as sparrows perched on a high-tension wire, though vastly more frightened.)

Look carefully at a Traveler and you'll see that every single part of the aircraft is grounded to the main structure with short lengths of wire, so that no matter where a bolt strikes, it can travel the length and breadth of the airplane without arcing. The one place that lightning *would* arc across a gap on the Traveler is if it struck one of the wingtip position lights; since the tip cap itself is fiberglass—a nonconductor—the bolt would leap from the light fixture to the metal wing structure, doubtless blowing the tip to pieces. No matter, though: The Traveler has been flown with a large hole in one wingtip, with the wingtip completely gone, and with one wingtip shredded into as large a drag-producing element as might be expected under a lightning-strike situation.

Like a beautiful woman with ugly feet, the Traveler would be better off if its tail surfaces didn't show. Because as much Yankee/Trainer tooling as possible was utilized in constructing the Traveler—and because the design requires a lightweight empennage for CG control—the airplane has what appears to be

a disproportionately small tail, with tip extensions rather primitively fastened on to the horizontal stabilizer with not one but two lap joints, a tacked-on dorsal fin, and a ventral fin that was not yet a part of our cover airplane when the photographs of it were taken. Spin tests showed the need for it, however.

Remember, though, it could easily have cost the company \$40,000 just to build new horizontal-stabilizer tooling for the Traveler—to say nothing of the rudder, fin and elevators—and that's a lot of money for a company that makes two airplanes a day; spread out over a production run of 500 Travelers, that's an automatic \$80 increase in the list price. (One of Cessna's immense advantages is that the tooling costs for its two most popular airplanes—the 172, selling since 1955, and the 150, on the market since 1958—were written off so long ago that nobody even remembers what they were.)

The Traveler might well be regarded as a sign of the American Aviation Company's coming of age. (The Patriot program? We can call that a false pregnancy, if you don't mind confusing the metaphor.) After all, there's only so far you can go with two-seat aerial runabouts, as each of the half-dozen companies that tried to build the Ercoupe/Aircoupe eventually learned, and the real profits in light-aircraft manufacture come not from training planes or two-seat toys but from traveling machines. After all, where would Piper be without its twins and Cherokee Sixes and Arrows, and why is Beech so successful even though it really doesn't sell much of anything smaller than a Bonanza? And don't forget Cessna, which would be an entirely different company today if it weren't for the 172.

Despite the fact that American Aviation originally started out to build Everyman's airplane for \$5,000, the company is not in business today to make a lot of money from the sales of two-seat Yankees and Trainers, for the profit margin simply isn't that big; the little airplanes are there to build a base for American's *real* market—four-seat machines like the Traveler, and even more sophisticated airplanes now in the planning stage—by teaching students who will assumedly continue to show that strange, lemming-like brand loyalty that pilots have always exhibited. They buy the brand in which they learned to fly, and, to an even more impressive extent, stick with the brand they first owned throughout their airplane-buying career.

There's no doubt that American has begun to build the base with its appealing little Yankee and the tamer Trainer. Now, with their new four-place machine, they're about to go after the big market—the traveling machine. †