

USED-AIRCRAFT FLIGHT CHECK:



Bellanca's Tri-Tailed Classic — The Cruisemaster

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■ ■ One writer called it “the Bugatti of airplanes.” Another referred to it as a “GT of the air.” Both were describing a Bellanca.

From the Cruisair Jr. to the Viking 300A, Bellancas have generated a peculiar charisma beyond mere considerations of quality and performance. Over the years, the airplane has remained an enthusiast's machine—not always better than the rest, but always a winner to those pilots who rate an airplane for what it is as well as what it does.

Bellancas have always been nonconformists, wood and fabric anachronisms in an aluminum age. Even today, Bellanca Aircraft Corp., the small company hidden in the backwoods of Minnesota, continues to sand and glue, dope and sew its airplanes together.

For those of us who own Bellancas, especially the older ones, our airplanes have become aeronautical oddities, standouts from the crowd for better or for worse. My 1950 Cruisemaster is perhaps typical of many vintage Bel-

lancas. The model 14-19 Cruisemaster was the third step in the evolutionary chain, preceded by the Cruisair Junior and Senior. As such, it incorporated much of the best of what went before and added a few twists of its own.

Interior design is typical late forties. Accommodations are adequate, if snug, for four souls. Elbow and hip room is probably the most limited, though it's adequate for normal-sized people. Other areas aren't so lucky.

The panel looks like something out of a South American locomotive. Instruments are packed tightly and apparently at random onto a narrow, sloping panel that barely has room for the essentials. The original installation allows for only eight 3½-inch dials, four 2-inch instruments, and one nav/com. A comparable modern lightplane, such as a Cardinal RG or Cherokee Arrow, will accommodate at least twelve large dials, six small ones, four to five radios, and have enough room left for a glove box.

Fortunately, the Bellanca panel can be expanded downward, and that's the only practical answer to IFR requirements, short of a complete rebuild. I've seen several Cruisairs and a few Cruisemasters with "full" panels, and all included radios slung under the panel.

Avionics inevitably extract a weight penalty. According to factory specs, the Cruisemaster is a full-fuel, four-passenger-plus-baggage airplane. With mains topped at 40 gallons, plus 21 pounds of oil, the 14-19 theoretically has 764 pounds of payload. Fill the 14-gallon aux tank and payload drops to 680 pounds, an exact four-passenger allowance. In other words, a pilot has a choice between the 84 pounds of baggage and a full aux tank.

In practice, the numbers aren't quite so generous. Airplanes, like some pilots, seem to gain weight as they age. With what is probably a fairly typical IFR package on the panel, my airplane can carry full mains and 670 pounds of people, not quite four full-sized passengers' worth.

Takeoffs over a 50-foot obstacle require about 1,500 horizontal feet. Rotation is automatic if the airplane is correctly trimmed and flown off three-point. Some pilots prefer "wheel" takeoffs, but the majority favor a tail-low attitude.

With a thousand pounds of hydraulic pressure available to pump the gear up, retraction takes only about five seconds. "Retraction" is a misnomer, since the mains don't fully retract, and the tail-wheel doesn't even move. The gear legs merely fold straight back against the bottom of each wing, levering the tires into half recesses near the trailing edge.

Though the wing is fairly thick, its teardrop design slims down quickly toward the rear, and there's not nearly enough room to fully enclose the gear. The new Vikings lever the wheels forward toward the thicker leading edge but still leave several inches of tread hanging below the wing. (Bellanca claims the protruding rubber minimizes

damage during a gear-up landing and supposedly had one factory pilot who could shut down the engine, sparking the prop to horizontal with the starter, and set the Cruisemaster on its retracted gear with no damage to the airplane. Hmmm?)

Protruding wheels or not, Cruisemasters are aggressive climbers on only 190 hp. I can count on 750 fpm for the first 4,000 or 5,000 feet at full gross; 900 fpm with only two passengers up front. Cruise climb doesn't seem to work as well for a 14-19 as for its successor, the Viking, probably a function of the latter's considerable horsepower advantage.

It certainly isn't the wing. That hasn't changed in nearly 40 years. The Bellanca B airfoil was introduced on the 1,650-pound Cruisair Jr. in 1937, and basically the same wing supports 3,325 pounds of Viking 300 in 1975. The design may be antediluvian, but it has served the airplane well. It is, by any measure, a good all-purpose lifting surface.

It's also a comparatively clean wing, though not as drag-free as Bellanca hoped. The company published some spectacular performance numbers for the Cruisemaster, many of which look ridiculously optimistic in light of the airplane's true capabilities. The listed 180-mph cruise was little more than a PR man's dream, attractive in print but unattainable on a stock grossed-out Cruisemaster. I've owned two 14-19s and have flown five others, and have yet to see one that will cruise within 10 mph of 180.

This isn't to say that the Cruisemaster's real numbers aren't respectable. My airplane will true 160 mph in smooth air with a perfectly balanced CG. The older Cruisemasters are particularly susceptible to aft loading and turbulence, and lose speed as the balance point moves toward the tail or the air gets rougher. A fuel capacity of 54 gallons in combination with the engine's voracious appetite (12 gallons an

hour) allows cross-countries of not over four hours plus reserve, at 75% power.

That inefficient old slug of an engine up front may be heavy and expensive to feed, but it's also a well-proven, reliable powerplant. During World War II, the O-435 Lycoming received its baptism of fire on the nose of the Army's L-5 reconnaissance aircraft. Blown and geared, it's also suffered years of torture in helicopters, and a pumped-up GO-435A powers Art Scholl's aerobatic Chipmunk. Not many pilots know that the O-435A powered one of the first experimental Bonanzas, some early Navions and even the original Aero Commander twin. It's not uncommon for an O-435A to run 1,200 hours between overhauls, and that's an accomplishment for an engine designed prior to World War II.

More common knowledge is Bellanca's reputation for building super-strong airplanes. The wooden wing's structural integrity is legend well-supported by fact. I know of one Cruise-master that collapsed a gear on landing at a rough dirt strip. The airplane promptly turned sideways, involuntarily retracting the opposite gear sideways through the belly fabric (they're supposed to retract straight back). The gear leg, oleo and all, was bent like a pretzel, but the front spar it was attached to wasn't damaged. The attach bolts didn't even elongate the bolt holes.

This kind of strength in contact with the ground is reassuring in flight. Somehow, the airplane *feels* strong and solid. Stability around every axis is excellent.

Ailerons are fast and effective without being super light. Turn coordination at cruise isn't required for banks to 30 degrees. Stabilize the turn, release the controls and the Bellanca will continue turning circles as if on a rail.

The airplane flies with neutral stability, neither assisting nor resisting a turn. Bump the yoke hard left from straight and level flight, and the Cruise-master will roll right through vertical and obligingly onto its back. (Bellancas were never licensed as aerobatic machines, but Bobby Bishop made quite a name for himself several years ago flying airshows in a stock Viking 300. I rode with Bobby during two performances, and he had nothing but praise for the Viking's aerobatic manners.)

Yaw disturbance in turbulence is damped by the Cruise-master's clownlike

outboard vertical stabilizers (called "elephant ears" by Bellanca pilots), so there's very little sideways movement. Roll and pitch displacement is similarly rare until things really get rough.

Besides strength and maneuverability, Bellancas always have been known for their range of useful speed, and the Cruise-master is certainly exemplary of the breed. Stall, down and dirty, is listed at 54 mph. That may be slightly lower than the real number, but there's no doubting the airplane's slow-flight capability. G. M. Bellanca was one of the first to use tip washout to improve aileron response near the stall, and the result is an unusually docile, wings-level break with aileron control through the pitchdown.

This combination of good low-speed handling and gentle stall makes Cruise-masters among the easiest-landing tail-draggers in the world. Because maximum flap extension speed is only 86 mph, it's difficult to approach much faster than 80. The book recommends a full-flap final at 70, a 1.3 multiple of the stall speed. Flared at 70, it's no problem at all to stop the aircraft in 500 feet.

Crosswinds present another problem. The slabsided fuselage and small rudder make Cruise-masters great fun in strong, gusty crosswinds. Slips are frustrating since the airplane runs out of top rudder with little more than 20 degrees of bank. I've found that a combination slip/crab technique gives reasonable control to the flare.

For its time, the Cruise-master was in the same general performance class as the Bonanza but was considerably less expensive, both to buy and to maintain. Base price for a 1950 Bellanca 14-19 was \$11,985 compared with \$14,500 for a B-model Bonanza. Significantly, both airplanes still bring prices near their original list. With a typical IFR panel installed, a sharp, low-time Cruise-master can cost \$9,000 or more. A high-time runout dog in need of fabric and radios demands about \$5,500.

Every aircraft design represents a series of compromises between what the designer would like and what he's willing to settle for. In the case of the Cruise-master, G. M. Bellanca's goals were strength and aerodynamic efficiency, and he, like Al Mooney, achieved them by trading a certain amount of passenger comfort. In most other respects, Bellanca optimized his design to the best of his considerable ability. □