KIT AIRCRAFT PROFILE

THE CHRISTEN EAGLE

You get what you pay for.

One of the old aviation saws that often has been proven true is that aviation is a business in which small fortunes frequently are made. . .from formerly large ones.

Frank Christensen made a fairly good one for himself in semiconductors. It was good enough for him to fly a Cavalier converted P-51 Mustang for a while as a business airplane. But he has a practical streak. Some time ago, he told me that it was a marvelous airplane and one in which he had complete confidence. There came a day, however, when, as he put it, ". . . the sound of the fuel gushing through the lines began to make more noise than the Merlin engine. . . ."

The first time I met Christensen, he already had left Silicon Valley (center of the semiconductor industry) and had established Christen Industries in Hollister, California. The Mustang was gone, but he still had an active interest in sport aviation. His company was offering a potpourri of accessories for sport aircraft: an inverted oil system for Lycoming engines, a manual fuel pump/selector/strainer, safety harnesses, goggles and a lubricating oil dubbed Blue Max.

Hollister is a bit south and east of San Jose, a once-beautiful and largely agricultural valley town that, by the late sixties, had been walled-up with houses, shopping centers and other cultural detritus. Hollister was an oasis on my first visit, because it retained much of the flavor of what had been cherished about that part of California.

If Hollister was an oasis, Christensen's spread was a pilot's nirvana—in the country, with a paved and very clean strip, a solid and very clean hangar containing a variety of delights for dreamers. There were a sparkling ramp and hangar floor upon which stood an immaculate T-34 with a 285-hp engine and a two-place, modified Pitts. Other parts of the hangar held manufacturing and warehouse sections for Christen products and a machine shop that was as complete as anything in Wichita. In the surrounding airspace was an approved aerobatic practice area.

It was all very clean and seemed an ideal way for a successful enthusiast to dabble and enjoy the fruits of success.

But Christensen had other ideas. He wanted to try the sport aviation market to see if people would respond to good marketing, good products and good packaging, since he did not think there was much quality or sophistication in that market. That, he said, was the reason for the accessory business; if it was well received, there was something else he wanted to try.

The something else, as it turned out, was the Eagle. If sport aviation is a subset of aviation, then aerobatics is a subset of a subset. Many within the aerobatic group consider the Eagle to be a copy of the Pitts. To the insiders, it may be so, just as any biplane is a copy of another to those unacquainted with biplanes.

The Eagle II is a two-place design. (The I actually came later. It is a single-place version, designed with air shows and competition in mind.) The Eagle II is a roomy two-place as small biplanes go. (Frank Christensen is big, so it stands to reason that he would develop something that can accommodate pilots who are more than six feet tall.)

CHRISTEN EAGLE II

Kit price $35,000

Construction	Wood, steel tube, fabric, aluminum and fiberglass
Time to build (est)	1,800-2,000 hr
Specifications	
Engine	Lycoming AEIO-360 A1D 200 hp
Propeller	Hartzell two-bladed, constant speed, 74 in
Wingspan	19 ft 11 in
Length	18 ft 6 in
Height	6 ft 6 in
Wing area	125 sq ft
Wing loading	12.62 lb/sq ft
Power loading	5.13 lb/hp
Passengers and crew	2
Empty weight	1,025 lb
Useful load	553 lb
Gross weight	1,578 lb
Fuel capacity	25 gal
Structural limits	+9 Gs, −6 Gs
Performance	
Rate of climb	2,100 fpm
Maximum speed	156 kt
Cruise speed	143 kt
Range (75% power w/30-min res)	330 nm
Stall speed	50 kt
Information packet	$10

Based on designer's figures.

As a kit plane, the Eagle is something else. It is well engineered and very well packaged; it has been called the ultimate kit airplane, because of the completeness of the concept. Actually, 33 separate kits are offered, in logical building sequence.

The progressive sequence of kits, which need not be paid for until the builder is ready to order and build each consecutive step, starts with the four ailerons and ends with an aerobatic training kit. In between are packages of logically arranged pieces and detailed instructions (which are lesson plans in conventional wood, tube and fabric construction). They include an avionics kit (nav/com, intercom, transponder and emergency locator transmitter) and one for applying the copyrighted, trademarked Eagle paint design.

The detailed design of the airplane itself is as carefully and completely worked out as the individual construction kits. The airfoil sections are symmetric, with minimum dihedral on the lower wing, for good inverted flight characteristics and a high (187 degrees per second) roll rate. Control linkage is by ball bearing, and the trim tabs are servo-type for minimum pressure.

The engine compartment and all parts of the airframe and the control systems that require frequent inspection and/or maintenance are easy to reach, thanks to quickly removable panels.

Full electrical system, including a starter, an alternator and a battery, are part of the kit. About all that is not included are gyro instruments and night lighting. The company feels that the reflections in the bubble canopy, which covers both pilot positions, can be very troublesome to a pilot. After all, it is a fun airplane, not an air taxi.

The desire to deter pilots from shooting inverted instrument landing system approaches at night is based on considerations of safety; so are the design details that are a result of operational experience with aerobatic aircraft. These include cockpits that are sealed completely from the bowels of the aircraft. Controls can jam when foreign objects fall into the bottom of the fuselage or back into the tailcone, or come tumbling out to strike the pilot in more open designs.

Not much has been left to chance with the Eagle in terms of the design, the kits or the instructions. It is stressed for nine positive and six negative Gs, and the materials supplied are high quality.

It all has a price, of course. The $35,000 for a complete airplane kit, including engine, puts the Eagle into the luxury category as kit aircraft go.

Quite a few years ago, Frank Christensen mused over the willingness of sport aviation enthusiasts to buy what he considered quality. More than 400 of those enthusiasts have purchased Eagle kits since they first were introduced three years ago. There are 25 aircraft now flying.

The response should go a long way towards answering his question. —*EGT*