**TRIAVIATHON TROPHY**



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CAFE FOUNDATION

AIRCRAFT PERFORMANCE REPORT

**Sponsored and Funded by the Experimental Aircraft Association and the Federal Aviation Administration**

# Falco F.8L

BY BRIEN A. SEELEY, C.J. STEPHENS AND THE CAFE BOARD


The Falco F.8L is an all-wood, low-wing, 2 place, side-by-side aircraft introduced in kit form in 1979 by Sequoia Aircraft of Richmond, Virginia. It was originally designed by noted Italian aeronautical designer Stelio Frati as a dual purpose aircraft for both aerobatics and cross-country use. The prototype first flew on June 15, 1955 with a C90 engine, the same year that the Tripacer was born. The Falco evolved through the Lycoming O-290 to the O-320 engine. Approximately 110 production Falco's were built, first by Aviamilano, then by Aeromere, and finally, in 1968, by Laverda, all Italian manufacturers.

Sequoia Aircraft in conjunction with aeronautical engineer David B. Thurston performed extensive and detailed systems modernization and re-engineering on the Falco. The kits, and the elaborate list of prefabricated parts, pre-configured systems, instructions, builder newsletters and other product support for this aircraft are exemplary among homebuilt designs. Sequoia Aircraft further distinguishes itself by offering their builders a thorough 40 page Falco Flight Test Guide and a very sophisticated performance analysis software program called Benchmark.

This wood aircraft is constructed using the adhesives Penacolite G-1131 (also used on the Bellanca's and French Robin aircraft) and/or the more popular Aerolite glue, originally used on the De Havilland Mosquito and later on production Falco's.

Larry Black offered his 160 hp Falco N572AB for this APR. His careful flight test preparations and enthusiasm were a major contribution to this report. Five test flights were made in all. The first two were subjective flying qualities evaluations, followed by 2 flights conducting zero thrust glides. The final flight determined the stall speeds. It should be noted that the climb rates demonstrated in these tests were performed at weights above those more commonly used for this aircraft and were made at a

higher speed than the nominal best rate of climb speed. The zero thrust glide results were incomplete due to some technical difficulties and are therefore omitted here.

The equipment list for N572AB included a Terra Tri-Nav C, dual Terra TX-720 comm's and dual Terra TN 200 nav's, an Apollo GPS 2001 NMS, a David Clark Isocom, a Terra TM-23 marker beacon receiver, a Davtron A301C digital OAT, a single channel Alcor EGT, 3 point belt/harnesses, electric flaps and landing gear, and a central throttle quadrant.

This aircraft exhibited a high level of refinement and completeness with systems that were all matured. The only modifications recommended by the CAFE Board were the addition of a restrictor orifice in the manifold pressure sensing connector, the addition of a recirculating fuel line from the engine driven pump to the fuel tank, an adjustment of the spinner bulkhead runout, and a linkage revision to the control stick to increase the stick forces.

In the performance tests, several different power settings were evaluated at approximately 10,000'density altitude as well as 8,000'and 6,000'density altitudes. The takeoff distance was that observed as the ground roll from brake release using a short field takeoff technique.

The CAFE Foundation was very impressed with the show quality workmanship and finish of this aircraft.

**C.J. Stephens**

## FLYING QUALITIES REPORT
### By C.J. Stephens
### CAFE Foundation Test Pilot

This was the first opportunity for the CAFE Foundation to conduct an APR on an all wood aircraft. From the moment of its arrival in Santa Rosa for testing, Falco N572AB's show-stopping qualities were obvious. Everything from the beautiful, taut fabric covering of the control surfaces to the gorgeous white finish was done with exact precision. Larry Black, the owner/builder, was justifiably proud of his work.

After a brief flight with the owner to go over the Falco's idiosyncrasies and cover special procedures, I performed the first of two subjective evaluation flights. Otis Holt (5'10", 150 lb) occupied the right seat for this flight, which was conducted at gross weight with the C.G. located 25% aft of the forward limit. I am 6'and 170 lb.

Keeping an open mind is important when evaluating an unfamiliar airplane. All rumors and prejudged ideas must be ignored; instead it is just what you see and what you think about your actual experience that are important. Even before the actual preflight where specific items are inspected it is helpful to walk around the plane taking in all of its lines, design features and quality of construction. Then it is time to go to work and learn facts and specifics.

All of the documentation and checklists that were presented with the airplane were excellent. Athrough checklist was laminated in plastic and was very useful. To someone in an unfamiliar airplane a quality checklist greatly increases the comfort level of operation.

Upon sitting in the cockpit we discovered the seats to be too high, putting our heads too close to the bubble canopy. This was quickly remedied by substituting 1" thick cushions for the installed 2.5" cushions. The problem thus solved, adequate headroom now existed for each of us. It should be noted that the headroom would be less than ideal for someone over 6' tall. On the second flight (with c.g. 25% for-

ward of the aft limit), Cris Hawkins (6'3", 190#) occupied the right seat and noted occasionally touching his head on the canopy. It did appear that room existed within the fuselage for lower seats to be installed with adequate cushions. The seats were on rails, adjusting easily fore and aft, allowing for varying leg length of different pilots.

The large bubble canopy also slid very easily on its rails and seemed to be an excellent installation. The locking mechanism was simple to understand and made a positive lock once in position. The instrument shroud and cowl as viewed from the cockpit sloped away nicely so as not to be a visual obstruction on the ground or in the air.

The cockpit had a conventional layout. The three power levers were of the center mounted, color coded, lever type. Instrumentation was the standard array with enough gyro instruments for comfortable instrument flying. The markings on the airspeed indicator were not to my liking, with large and small tick marks every 5kts, but with numerical references only every 50 kts (i.e. 50,100, 150). I found this took some getting used to because of the interpolation required. In time, I think a pilot would adapt to the sparseness of the numbers. The right side rudder pedals did not have brakes. Though not a problem, it would be a consideration should the aircraft be used for instruction from the right seat. The control stick was long and curved, which was a little unusual. The grip was in the natural position but the stick curved away to the floor mount to provide clearance for the seat and wing spar.

The fuel system, having a 20 gallon header tank well forward of the C.G., and another 20 gallon aft of the luggage area, required some active management on the part of the pilot. Depending on the aircraft's loading, it would be fairly easy to violate the allowable C.G. range by depleting most of the fuel in one tank before switching to the other. Normal procedure with N572AB is to take off and climb on the header tank, then switch back and forth as needed to maintain balance.

## THE SUBJECTIVE FLIGHTS

After priming the engine with the boost pump, it sprang to life with the enthusiasm of an Olympic athlete. Taxiing using the effective and positive steering during ground maneuvering was easy and natural. The toe brakes were very effective.

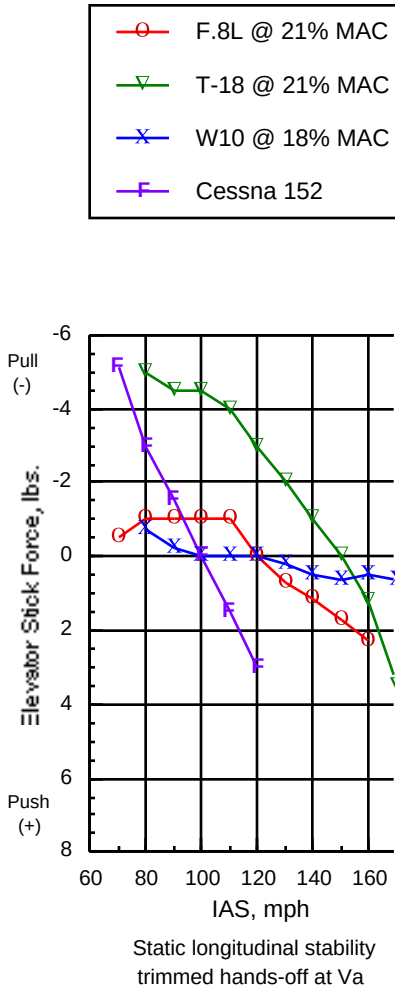
All of the ground operations seemed straight forward and proceeded in a logical

fashion in accordance with the written checklist. Flaps were set to 15 degrees for take off as recommended. Avery nice and well marked elevator trim wheel was set to the recommended position. The magnetos checked out OK with the only note being that the panel-mounted analog tachometer read 70-80 RPM below the accurate digital tachometer. Adual function volt/amp meter had been installed and worked well, providing an accurate indication of the condition of the electrical system.

Control during take off was positive and I had no difficulty tracking the Falco straight down the runway center line. Rotation was smooth and easily controllable to establish the 110 kts climb speed. As was recommended, the flaps were retracted first. However, upon doing so the airplane settled noticeably unless elevator was used to compensate. This probably explains the recommendation to retract the flaps first. Should runway contact be made in such a situation, it would then simply be a touch down and not a prop strike.

Landing gear retraction employs an electric motor driving a worm gear and flex cable arrangement. Once the up cycle was complete, it was recommended that the manual drive handle be engaged and given the last turn or two to firmly close the gear doors. This was a fairly cumbersome operation to perform just as the climb was being established and traffic pattern demands were high.

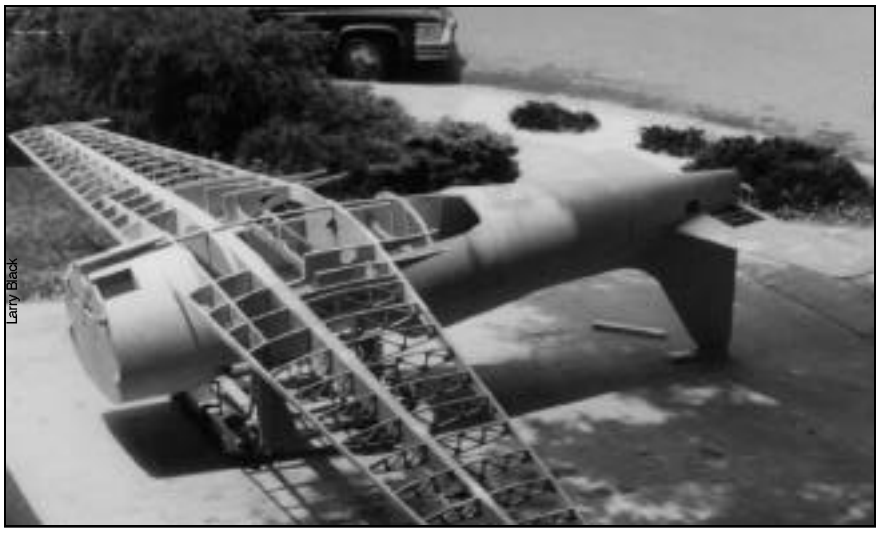
Field of view over the nose and in all directions during the climb was excellent. The outside air vent provided plenty of fresh air for cooling. The heater was excellent for cabin heat as well as providing two very nice outlets for windshield defog.




Static longitudinal stability
trimmed hands-off at Va

## STATIC LONGITUDINALSTABILITY

I used a hand held stick force gauge to take measurements throughout the entire level airspeed envelope. The results appear in the accompanying table. It was necessary to use a slight descent to obtain the data at 160 kts. Note the flattening




**Above: Larry Black built all of the wood parts in his Falco, compound curving the fuselage skins from flat plywood. Below: Clockwise from upper left, owner Larry Black, CAFE APR test crew: Otis Holt, Steve Williams, Brien Seeley and Ed Vetter.**


(then reversal) of stick force as the speed reached the slow end of the test. Each time the speed was reduced to below 100 knots an exhaust smell was observed in the cockpit.

## DYNAMIC STABILITY

Pitch doublets were induced with stick inputs to examine natural dynamic stability. The data was recorded using both the stick fixed and stick free method. The Falco, like all of the other homebuilt aircraft tested thus far by the CAFE Foundation, exhibited a very high level of dynamic stability, with excellent damping and no overshoots.

## TRIM

There were no provisions to trim the Falco for aileron or rudder in flight. However, there was a very adequate elevator trim system that provided sufficient control throughout the entire normal airspeed envelope.

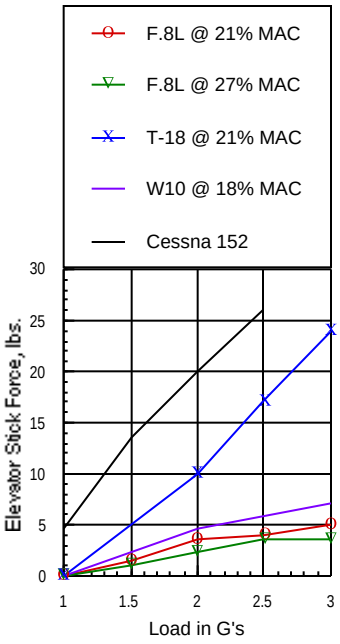
## MANEUVERING STABILITY

The maneuvering stability graph shows how the stick force compares to other airplanes analyzed by the CAFE Foundation. As you can see, the stick forces are very light. Although this makes the Falco a joy to fly, care must be taken to use very light elevator input force to prevent excessive G-loads during maneuvering flight.

The Wittman Tailwind W10 is the only other aircraft thusfar measured with similarly light stick forces.

## SPIRAL STABILITY

This was examined by setting up a level trimmed turn, releasing the controls, and recording the banking tendencies exhibited. During all attempts in both directions neutral spiral stability was experienced. The Falco requires such light control forces to change bank angle that the stick break-out force itself influenced roll response during




Maneuvering stability, Va, forward c.g.

## *CAFE* TEST SUMMARY

VMAX CRUISE *----------208.5 mph

RATE OF CLIMB**----------885 fpm

STALL SPEED***---------- 67.6 mph

TAKEOFF DISTANCE****----------990 feet

CABIN NOISE LEVEL, CRUISE----------96.0 dBA

*81.9% power, 11.9 gph, 2656 RPM, 23.2" M.P., 1895 lb, 8149' density altitude.

**2500'-3500' Std. Day, 2669 RPM, 125 CAS, full throttle, 1955 lb, see text.

***At 1960 lb

****44° F and 1974 lb takeoff weight, no wind

| ROLL RATE, degrees/second | | |
|---|---|---|
| Speed, IAS | Va | 1.3 Vso |
| RV-6A | 80 | 36 |
| Tailwind W10 | 47 | 45 |
| Cessna 152 | 47 | 34 |
| Mustang II | 72 | na |
| Thorp T-18 | na | 60 |
| Falco F.8L | 43 | na |

Rates include the aileron input time.

the spiral stability check. By that I mean that just the friction within the system was enough to influence which way the plane would bank when the controls were released.

## ROLLRATES

Roll rates and stick forces were recorded with full deflection at both 91 kts and 120 kts. The stick force increased noticeably from 4 lbs to 10 lbs as the IAS increased from 91kts to 120 kts. The feedback force was the same amount in both directions.

## STALLS

The stall characteristics demonstrated by the Falco were comfortable but quick, requiring a light touch on the part of the pilot. On each stall the right wing would drop slightly as the plane abruptly stalled and the nose dropped. Amild aerodynamic buffet could be felt through the control stick just prior to the stall itself. An electronic warning was installed and would activate at 8 kts prior to stall during clean stalls but did not activate at all during the landing configuration stalls. Stall recoveries were positive and immediate upon the relaxing of the back stick force and reducing the angle of attack. The airspeed indicator in N572AB's panel showed that the stalls to occur at the following IAS:

Fwd c.g., clean config: 65 Kts
Aft c.g., clean config: 66 Kts
Aft c.g., landing config: 60 Kts

These should be compared to the values measured by the CAFE Barograph in the table of CAFE Measured Performance. (Altitude loss during stall peaked at 78 feet per second with a worst case demonstrated total loss of 448 feet prior to recovery in stalls performed by the owner with the CAFE barograph monitoring altitude.)

## TRAFFIC PATTERN/LANDINGS

After a very busy hour and a half spent rigorously working through the flight test protocol, the return flight to the field finally offered a chance to relax, enjoy, and become one with the aircraft. By the time we reached the traffic pattern area, I had acquired a high comfort level with the Falco.

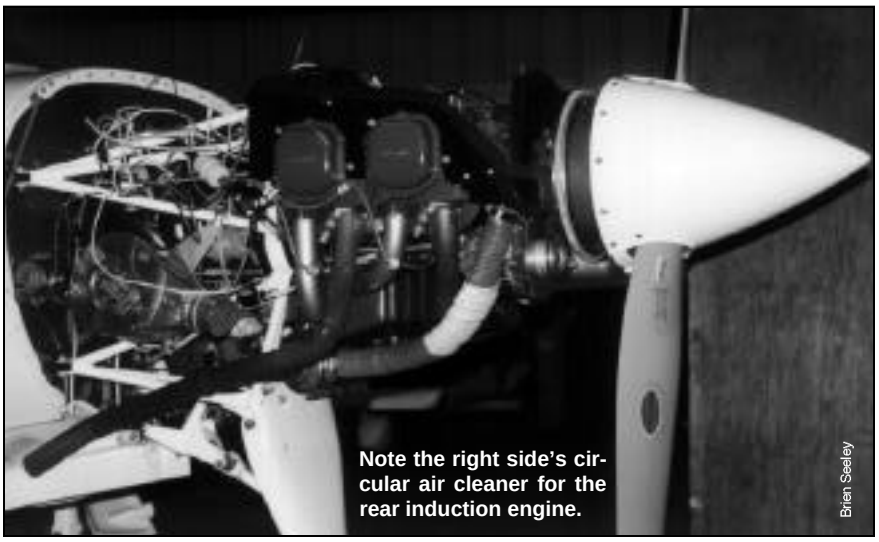
Field of view was excellent during the return and descent. The low wing and easy maneuvering made it exceptionally easy to see and avoid traffic while maneuvering for pattern entry. The Falco's clean aerodynamics allowed the plane to carry good speed throughout the descent.

Again during the gear extension it was recommended that the hand crank be operated to insure snug full extension. This is quite distracting during a time when the cockpit work load is the highest at a busy airport. One noticeable feature of the design is a rapid airspeed bleed-off when the gear and initial landing flaps are extended. As a consequence, the pilot is manually snugging the landing gear down the just as the airspeed is dissipating more rapidly than expected. I feel this would require special emphasis in training and rigid discipline to prevent difficulties, especially for a low-time pilot. Asignificant power increase is required when transitioning from level clean flight to landing configuration to overcome the added drag of flaps and gear.

All other events in the traffic pattern seemed to be well within the normal expectations. The approach and flare are very straightforward. I chose to carry a little power until just prior to touch down and found it very easy to consistently make nice landings. The landing gear has a firm feel when it touches down and it tracks very straight down the runway.

## CONCLUSIONS

The Falco presented to the CAFE Foundation through the generosity of Larry Black was an exceptionally well made airplane. It was built using quality materials and constructed in an outstanding fashion. The nose wheel feature offers a real advantage to pilots who prefer to avoid tail wheels and their inherent difficulties. The Falco is a relatively complex airplane with retractable gear, a constant speed propeller and a fore/aft fuel system that requires some management. Although it is not a difficult airplane to fly I believe it is best suited to the more experienced pilots.



## KIT SUPPLIER

Sequoia Aircraft Corporation
P.O. Box 6861
Richmond, VA. 23230
804-353-1713 FAX: 359-1618

## OWNER/BUILDER N572AB

Larry Black
3945 Bucknall Road
Campbell, CA. 95008.
408-378-4857

## DESIGNER'S INFORMATION

| | |
|---|---|
| **Cost of plans** | **$400** |
| **Plans sold to date** | **800** |
| **Number completed** | **50** |
| **Estimated hours to build, from prefab kits** | **2500-3500** |
| **Prototype first flew, date** | **1955** |
| **Normal empty weight, with IO-320 Lyc.** | **1212 lb** |
| **Design gross weight, with IO-320 Lyc.** | **2250 lb** |
| **Recommended engine(s)** | **Lyc. O-320, IO-320, O-360** |
| **Advice to builders:** | **Prefabricated kits strongly recommended, follow the plans, need 28'workshop table, aerobatics requires high level proficiency due to tendency for rapid speed build-up.** |

## CAFE FOUNDATION DATA, N572AB

| | |
|---|---|
| **Wingspan** | **26 ft 3 in** |
| **Wing chord, root/tip** | **65/32.5 in** |
| **Wing area** | **107.5 sq ft** |
| **Wing loading, 2250 lb/107.5 sq ft** | **20.9 lb/sq ft** |
| **Power loading, 2250 lb/160 hp** | **14 lb/hp** |
| **Span loading, 2250 lb/26 ft 3 in** | **85.7 lb/ft** |
| **Airfoil, main wing** | **$64_2$212-1/2 root, $64_2$210 tip** |
| **Airfoil, design lift coefficient** | **0.2** |
| **Airfoil, thickness to chord ratio** | **0.12-0.10** |
| **Aspect ratio, span$^2$/86 sq ft** | **6.4** |
| **Wing incidence** | **na** |
| **Thrust line incidence, crankshaft** | **na** |
| **Wing dihedral** | **5.5˚** |
| **Wing taper ratio, root/tip** | **2.0** |
| **Wing twist or washout** | **3˚** |
| **Steering** | **directly steerable nosewheel, toe brakes** |
| **Landing gear** | **electric retractable, tricycle** |
| **Horizontal stab: span/area incl rudder** | **106.5 in/23.4 sq ft** |
| **Horizontal stabilator chord, average** | **17.6 in** |
| **Elevator: total span/area** | **106.5/9 sq ft** |
| **Elevator chord: root/tip** | **14 in/10.5 in** |
| **Vertical stabilizer: span/area incl. rudder** | **50.6 in/10.9 sq ft** |
| **Vertical stabilizer chord: average** | **31 in** |
| **Rudder: average span/area** | **50.6 in/5.2 sq ft** |
| **Rudder chord: bottom/ top** | **18 in/11.5 in** |
| **Ailerons: span/average chord, each** | **58.2 in/10.9 in** |
| **Flaps: span/chord, each** | **59.6 in/12.8 in** |
| **Tail incidence** | **na** |
| **Total length** | **21 ft 9 in** |
| **Height, static with full fuel** | **7 ft 6 in** |
| **Minimum turning circle** | **est. 25 ft** |
| **Main gear track** | **6 ft 10 in** |
| **Wheelbase, nosewheel to main gear** | **59 in** |
| **Acceleration limits at 1650 lb** | **limit load +6/-3 G's** |
| **AIRSPEEDS PER OWNER'S P.O.H., IAS** | |
| **Never exceed, $V_{ne}$** | **208.5 kt/240 mph** |
| **Maneuvering, $V_a$** | **122 kt/140 mph** |
| **Best rate of climb, $V_y$** | **91 kt/105 mph** |
| **Best angle of climb, $V_x$** | **na** |
| **Stall, clean at 1500 lb GW, $V_s$*** | ***56 kt/65 mph** |
| **Stall, landing, 1500 lb GW, $V_{so}$*** | ***50 kt/58 mph** |
| **Flap speed, full 45°, $V_f$** | **87 kt/100 mph** |
| **Gear extended, $V_{le}$** | **108.5 kt/125 mph** |

* **Compare to *CAFE* measurements at 1900 lb.**

### ABOUT THE OWNER

Larry Black was born in Sault Saint Marie, Michigan in 1939. As a small child, he was fascinated with airplanes and spent many hours building models. He had his first airplane ride at age 5 in an Aeronca Champ.

In 1962 he began flying lessons in a J3 Cub. He bought his first airplane, a Piper PA-16 shortly after getting his pilot's license. After owning a Bellance 230 Cruisemaster, Larry built a Cavalier.

In 1972 he first learned of the Falco from an article in Air Progress magazine. He spent the next few years attempting to design his own version of the aircraft. After many drawings, trips to the library and study of existing designs, Larry rejoiced when Alfred Scott began marketing the Falco Kits in 1979. He quickly signed up as one of the first Falco builders and began his Falco project in 1980. Larry built his F.8L without the benefit of many of the pre-fabricated parts now available, having to build all his own jigs from drawings. This greatly added to the time spent on the project but was necessary to meet his strict budget requirements.

Larry spent many years working in the automobile body shop business as technician, manager and owner before going to work for State Farm Insurance Company as an instructor in claims evaluation. The many building skills he employed on the Falco were acquired during the years of experience in auto repair.

Larry's Falco won *Best Homebuilt Award* at Watsonville last year. When asked if he'll ever build another aircraft he replied, "Don't want to, don't need to. I just love this airplane."

# FALCO F.8L, N572AB

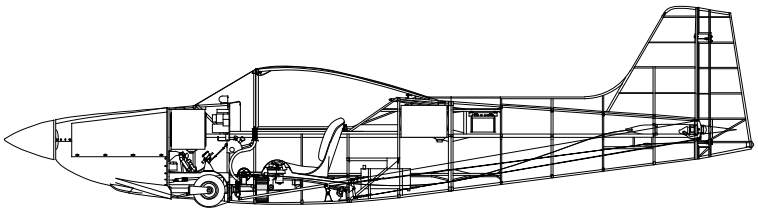
**Estimated Cost: $42,500 total cost including materials, engine, prop, instruments and radios.**
**Estimated hours to build: 6000 hours in 168 months**
**Completion date: 1994**

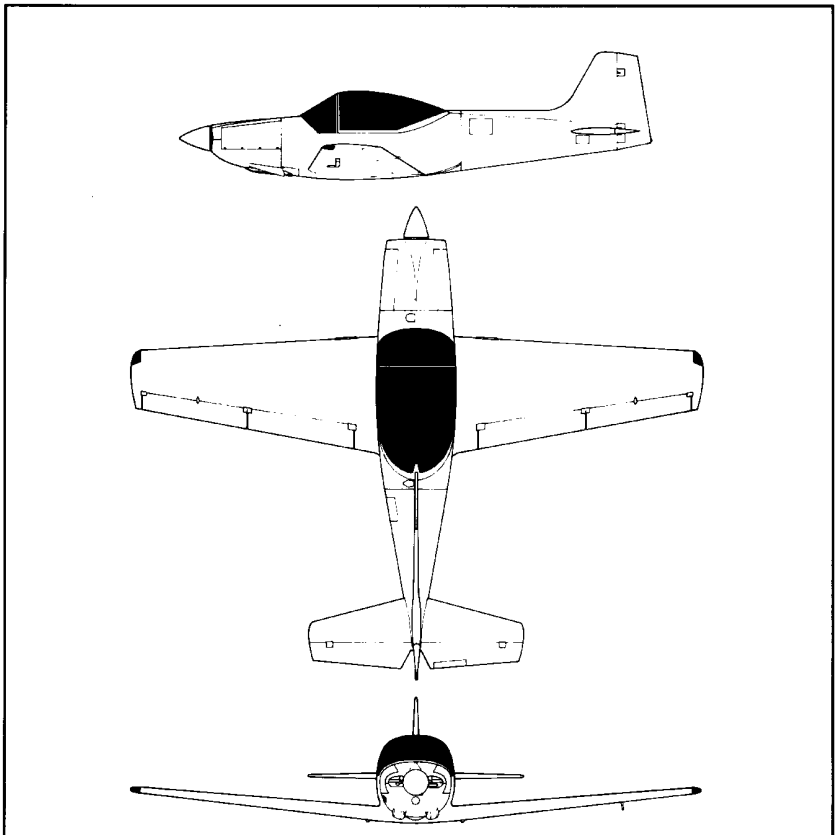
# SPECIFICATIONS

| | |
|---|---|
| **Empty weight, with oil/gross wt.** | **1321.05 lb/2250 lb, 1650 lb for aerobatics** |
| **Payload, full fuel, normal categ.** | **929 lb** |
| **Useful load, normal category** | **690.3 lb** |
| **ENGINE:** | |
| **Engine make, model** | **Lycoming, IO-320 B1A** |
| **Engine horsepower** | **160 BHP** |
| **Engine TBO** | **2000 hr** |
| **Engine RPM, maximum** | **2700 RPM** |
| **Man. pressure, maximum** | **29 in Hg** |
| **Turbine inlet, maximum** | **NA** |
| **Cyl head temp., maximum** | **500˚F** |
| **Oil pressure range** | **25-100 psi** |
| **Oil temp., maximum** | **245° F** |
| **Fuel pressure range, pump inlet** | **-2.0-35.0 psi** |
| **Weight of prop/spinner/crank** | **na** |
| **Induction system** | **Bendix RSA-5AD1 fuel injection, rear inlet** |
| **Induction inlet area** | **6.75 sq in** |
| **Exhaust system** | **2 into 1 crossover, stainless, 1.75" O.D.** |
| **Oil capacity, type** | **8 qt, 15W-50** |
| **Ignition system** | **Slick 4373 R and 4373 Lwith 25˚ advance** |
| **Cooling system** | **pitot inlets, downdraft** |
| **Cooling inlet area** | **90 sq in** |
| **Cooling outlet area** | **35.5 sq in** |
| **PROPELLER:** | **constant speed** |
| **Make** | **Hartzell HCC-2YL-1BF/F7663-4** |
| **Material** | **aluminum** |
| **Diameter** | **72 in** |
| **Prop extension, length** | **integral to hub** |
| **Prop ground clearance, full fuel** | **na** |
| **Spinner diameter** | **14 in** |
| **Electrical system** | **Prestolite: P/N ALY8403L5 alternator** |
| **Fuel system** | **1 tank in forward fuselage, 1 tank in rear** |
| **Fuel type** | **91 octane** |
| **Fuel capacity, by CAFE scales** | **fwd: 120.4 lb/20.06 gal, rear : 118.3 lb/19.72 gal** |
| **Fuel unusable** | **3 oz** |
| **Braking system** | **Cleveland discs, single caliper** |
| **Flight control system** | **sticks, push-pull tubes, rudder/elevator cables** |
| **Hydraulic system** | **na** |
| **Tire size, main/nose** | **5:00 x 5/ 11 x 4.00-5 Cheng Shen** |
| **CABIN DIMENSIONS:** | |
| **Seats** | **2** |
| **Cabin entry** | **sliding canopy** |
| **Width at hips** | **40 in** |
| **Width at shoulders** | **42 in** |
| **Height, seat to headliner** | **na** |
| **Baggage capacity, rear cabin** | **90 lb** |
| **Baggage door size** | **na** |
| **Approved maneuvers:** | **no negative g maneuvers. Chandelles and lazy 8's at 1880 lb. Rolls, , loops, Immelman's and spins can be done at approved speeds at 1650 lb weight. Snapped maneuvers if below 105 kts at 1650 lb or less.** |
| **CENTER OF GRAVITY:** | |
| **Range, % MAC** | **19% to 30% MAC** |
| **Range, in. from datum** | **68.5-74.8 in** |
| **Empty weight c.g., by *CAFE*** | **65 in** |
| **From datum location** | **front face of crank-prop flange** |
| **Main landing gear moment arm** | **84.75 in** |
| **Nosewheel moment arm** | **25.687 in** |
| **Fuel moment arms front/rear** | **44.8/128.4 in** |
| **Crew moment arm** | **85.2 in** |


# CAFE MEASURED PERFORMANCE

| | |
|---|---|
| Propeller static RPM, full throttle | 2668 RPM |
| Takeoff distance, ft, 120'MSL, no wind, 1974 lb., 44˚ F. | 990 ft. |
| Liftoff speed, per barograph data, CAS, 1974 lb., 44˚ F. | 77.9 mph |
| Touchdown speed, barograph, CAS, 1945 lb., 67.5˚ F. | 76.8 mph |
| Max. rate of climb, 2500ft-3500ft Std. day, 2669 RPM, 125 CAS, full throttle, 1955 lb (Note: Vy = 105 CAS) | 885 fpm |
| Max. rate of climb, 2650 RPM, 10,000 ft Std day 122 CAS, 1948 lb, 21.4" M.P., 11.2 gph | 552 fpm |
| Noise level, full power climb/75% cruise | 96 dBA/96 dBA |
| Cruise speeds: CAFE barograph # 3, 11/25/95 | |
| 8102'density, 75%, 21.8"/2588 RPM/10.4 gph/1907 lb | 195 mph |
| 8104'density, 65%, 20.7"/2298 RPM/9.0 gph/1903 lb | 178 mph |
| 8049'density, 55%, 19.9"/2011 RPM/8.0 gph/1899 lb | 158 mph |
| 8149'density, 81.9%, 23.2"/2656 RPM/11.9 gph/1895 lb | 208.5 mph |
| 10,022'density, 77%., 21.8"/2650 RPM/11.4 gph/1916 lb | 203 mph |
| 10,220'density, 67.5%, 20.1"/2365 RPM/9.5 gph/1913 lb | 177.8 mph |
| 10,319'density, 50.6%, 15.5"/2367 RPM/8.1 gph/1912 lb | 154.8 mph |
| 6,138'density, 81.3%, 25.3"/2650 RPM/11.0 gph/1884 lb | 212.6 mph |
| TRIAVIATHON score | 39.8 |
| Stall speed, Vso, CAS, 1 g, level, 1948 lb, 1530 RPM, dirty | 67.6 mph |
| Stall speed, Vs1, CAS, 1 g, level, 1950 lb, 1620 RPM, clean | 70.7 mph |
| Peak CHTin climb | 428 ° F |
| Peak oil temp in climb | 182.4 ° F |





## Dimensions

| | | | |
|---|---|---|---|
| Length | 21' 9" | Airfoil, wing root | 64,212-1/2 |
| Height | 7' 6" | Airfoil, wing tip | 64,210 |
| Wing span | 26' 3" | Airfoil, tail group | 65009 |
| Aspect ratio | 6.4 | Dihedral | 5° |
| Wing area | 107.5 sq ft | Wing washout | 3° |

| Aft sample item | Weight | Arm | Moment | Forward sample item | Weight | Arm | Moment |
|---|---|---|---|---|---|---|---|
| Main gear | 879.4 | 84.8 | 74529.2 | Main gear | 879.4 | 84.8 | 74529.2 |
| Nose gear | 441.7 | 25.7 | 11346.0 | Nose gear | 441.7 | 25.7 | 11346.0 |
| Pilot | 170.0 | 85.2 | 14484.0 | Pilot | 170.0 | 85.2 | 14484.0 |
| Passenger | 170.0 | 85.2 | 14484.0 | Passenger | 0.0 | 85.2 | 0.0 |
| Fuel, front tank | 12.0 | 44.8 | 537.6 | Fuel, lb | 125.0 | 44.8 | 5600.0 |
| Fuel, rear tank | 120.0 | 128.4 | 15408.0 | Fuel, rear tank | 60.0 | 128.4 | 7704.0 |
| Oil, included | 0.0 | 21.6 | 0.0 | Oil, included | 0.0 | 21.6 | 0.0 |
| Baggage | 65.0 | 109.9 | 7143.5 | Baggage | 0.0 | 109.9 | 0.0 |
| TOTALS | 1858.1 | 74.2 | 137932.3 | | 1656.1 | 68.6 | 113663.2 |
| | | | | | | | |
| Gross Weight | 2250 | | | Gross Weight | 2250 | | |
| Empty Weight | 1321.05 | | | Empty Weight | 1321.05 | | |
| Empty Weight c.g. | 65 | | | Empty Weight c.g. | 65 | | |
| c.g. range, inches | 68.5"-74.8" | | | c.g. range, in | 68.5"-74.8" | | |
| c.g. range, % MAC | 19%-30% | | | c.g. range, % MAC | 19%-30% | | |
| c.g. in inches | 74.2 in. | | | c.g. in inches | 68.6 in. | | |
| c.g. in % MAC | 29% | | | c.g. in % MAC | 19% | | |

### IMPORTANT NOTICE



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***A Non Profit, All Volunteer, Tax-exempt Educational Foundation***
***4370 Raymonde Way, Santa Rosa, CA. 95404.***
**FAX 544-2734.**
***Aircraft Performance Evaluation Center: 707-545-CAFE (hangar, message)***
***Internet: CAFE400@sonic.net***
***www.cafefoundation.org***