Saberwing Aircraft Kit

By
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Kit Information
THE PURPOSE behind the DESIGN

The SABERWING is a new aircraft designed and purpose built as an answer to many problems and challenges that we have seen in the kit built, two place, aircraft market. We will address some of these points before we get into the technical and flight characteristics of the airplane itself.

The Pilot  First, it has to fit. We began with a 43" wide fuselage at the shoulders. This is wider that a Cessna 152/172. Next we designed in plenty of leg room and headroom for the taller people. Many pilots no longer meet the 150 lb standard so we made our design flexible in that it can be set up for various weights of pilots and builders.

The Builder  One of our main mottos for building the Saberwing is MVP -- "Maximum Visual Progress". Our kit allows the builder to be sitting in the fuselage and making airplane noises within just a few hours of work after opening the kit. For the majority of the time you work around the fuselage installing components "into" it. No having to hang upside down or laying on your back trying to work on it. Because progress is visible it keeps the builder motivated to finish it and get flying!

The Mechanic: This design also takes into consideration maintenance after the completion. All serviceable areas are very easily accessible once completed and allow for easier inspection and repair. The foreword deck is completely removable for work on header tank/fuel pumps/ electrical/ instrumentation and rudder pedals. The kit also uses the least number of parts necessary and we make most wear items common and inexpensive to replace or repair.

The Wife: If you are a guy and married, the airplane has to meet her criteria as well. Meet a budget, look good, have plenty of room for luggage, be comfortable, quiet, and so on. It also should not take 10 years of your life to build (time away from your family) so we kept our kit in the 500-1000 hour build time (depending on skill level ) It also has to maintain its value because we are all concerned about where our money goes.

The Budget: Our plane can meet several goals that people have. If you are looking for a budget plane then a finished SABERWING can be completed for around $45,000.00 (engine and instrumentation included) . Most will see a final cost of @50,000.00 with nice extras. We plan to provide the kit in sections as well to spread out the costs where that may be desired.

Flexibility: The Saberwing is designed for a variety of purposes and desires. There are ways in which the airplane can be customized by the builder for his own needs. We are developing more products and adding capabilities to this kit as we speak. Still in development are the higher horsepower versions for a very fast cross country aircraft.
THE AIRPLANE

The Saberwing was designed to be an amateur-built experimental aircraft with the capability of operating within a wide speed range. The use of different power plants will allow this range to grow and increase the capabilities of the design. The following numbers are the current design and tested data for a 100 HP Spyder Conversion Engine installation. As new variants of the Saberwing are tested we will show that information.

The 100 HP SABERWING

Empty weight  750 – 850 Lbs.
Gross Weight  1500 Lbs. – 1600 lbs with 120 HP+  1320 lbs (LSA max)
Useable weight  650 - 750 Lbs.
Top Speed (Vne)  200 MPH  (higher with the newer XF model)
Stall Speed - Clean  52 MPH  (at LSA weight)
Stall Speed - Flaps  46 MPH  (at LSA weight)
Horsepower  100 HP / 120 HP with Spyder Corvair Conversions
Fuel Capacity  40 Gallons  14 Gal per wing/ 12 Gallon Header
Cruise  150 MPH at 5.0 Gal/Hr.  165 MPH at 6.0 gal/hr  175 MPH Top Speed
(Estimated with 120HP and Clean aircraft)
LSA Version 135 MPH at 4.5 gal/hr.
XF Model  175 mph at 8.0 gal hr.
Length  20 Feet
Wingspan  27 Feet  9 Feet of Flap area
Wing Area  94 Sq.Ft.  16.0 lbs./sq.ft at gross
Best Climb  90 MPH
Cruise Climb  120 MPH
Approach speed  80 MPH
Takeoff distances are being checked at this time but 750-1000' is nominal. Takeoff distance is more of a propeller selection issue. There is good rudder control as soon at the tail is in the air (taildragger version) Takeoff speed on the Taildragger is @65-75mph and rotate to 120mph climb attitude.

Landing distances with 30 degrees of flap are less than 1000 feet. Touchdown is around 75 mph in the taildragger version - will be less on the tricycle version because of higher relative angle of attack that can be achieved. We designed for a 60 mph touchdown minimum with full flaps. Rollout is very short due to very effective brakes and good stability.

Cabin information: The cabin is 43” wide at the shoulders and has enough room for people well over 6 feet tall. The rudder pedals are adjustable for a variety of builders/pilots. The seats can be configured as bucket (prototype) with or without a console, and as a bench seat arrangement. The visibility is amazing with a large opening canopy for easy egress. The canopy can be configured to open a variety of ways according to builder taste. The prototype is set up with dual rudders and brakes to accommodate right seat pilots. The cabin is very quiet because of the design. In-flight checks show an average of 85- 90 Decibels.

Controls: The controls are set up a dual, stick with a removable right stick if requested. The aileron and elevator operate via a push-pull arrangement of pushrods. The rudder and tailwheel operated via cables. Flight loads are fairly light but increase as speed builds up.

Our 100/120 HP Spyder Engine installation is very simple, clean and easy to maintain. We have classes on building your own engine and on maintenance. The installation follows the principles of the airplane. It is clean, smooth, nice to look at, and functional with a bit of class.
Philosophy: **KISS** (Keep It Simply Silly) and **MVP** (Maximum Visual Progress) are at the heart of this design. Although not a quick build it will go together very quickly but gives you a lot of room for your own input.

"Build into the plane..."

The fuselage kit comes as a "boat" that you build into. The first order of business once you receive the kit is to install the main spar (7 feet long) and bolt on the landing gear, or set up on blocks. The seats can then be installed and the major bulkheads cut and put into place. It is all done with very simple mixing of basic epoxy and flox, and very simple reinforcements. The progress will be quick and the visual results encouraging simple overview of major parts:
Fuselage going together:

Spars installed and main controls...

Installing seats and dreaming about panel....
Hanging rudder pedals ...console designing

Horizontal/Elevator Assembly - skin in background

Gear installation and beginning stub wings
Installing controls/wiring/antennas

Installing panel/wiring/fuel/FWF
Wing assembled - bodywork prior to top skin

It is easy to walk around and build "into" the plane.
Final bodywork on Fuselage before primer

Final Primer and paint
Ready for First Flight!

THE PRICE and PROCESS

The Sabering Kit cost : 28,00.00

We have met our initial goals of finding our First Five builder that are helping us fine tune products, improve build manual information and gain experience. They are critical in making your build go together more easily. We have delivered all the components to most of these builders to date and continue
to improve our capabilities. At Cook County Airport in GA we have begun building a new manufacturing facility and future builder’s center that will add new dimensions to our company.

**How do you get a Kit?**

There are two main ways to purchase your kit.

1) **Full Payment.** If you pay for your kit in full you will receive a 15% discount on a Spyder Engine and FWF kit. This is a saving of about 3000.00

2) **Quarter Payments:** You will pay four payments of 7000.00 each. (total of 28,000.00)

3) **Third Payments:** Initial payment of 9,000.00. You will receive the Horizontal and Composite Kit. Second payment of 10,000.00 and we ship out the Fuselage kit. Third and final payment of 9,000.00 and we send out the wing kit.

The kit can be delivered in a couple different ways. It comes in three stages.

**Horizontal/Composite Kit** – Usually on hand and delivered within a couple weeks/month depending on schedule.

**Fuselage Kit** – Delivered once the third quarter is paid or when ready for full payment customers

**Wing Kit** – Shipped after last quarter payment made or when ready for full paying customers

Note: Overseas customers are encouraged to wait for all components to be crated and readied for shipping. You will be responsible for arranging shipping and any documentation necessary on your end. It will take longer to get everything in the complete kit because we stage our product production.

**Shipping of Kit:**
Shipping cost will be the responsibility of the purchaser. We can accommodate helping you load the kit onto a trailer or setting up shipping needs. Sometimes we can drop off a kit or components for a minimum charge if during one of our trips or shows.

**What else will I Need?**

The Saberwing Kit will come with all the premolded parts, premade spars, brackets, hardware, controls and more. A composite kit will arrive in the first Package that included the epoxy, cups, instructions and fiberglass tapes that you will require for the build. What you will need is to have some basic construction tools, such as sanding blocks, a jig saw or small band saw. Rulers, a digital level, scissors (for glass work), drill and drill bits, hand tools and wrenches. You will want to build a nice 4 foot by 8 foot table to begin the horizontal build. You will be surprised how little in specialty tools you will need. Safety equipment such as airborne respirator, glasses and such would be good for certain stages of the work.

**Payments:**

We accept most forms of payment such as credit cards, Paypal, wire transfer and checks. Receipts and documents can be emailed or mailed to you as requested.

Please contact us at:

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