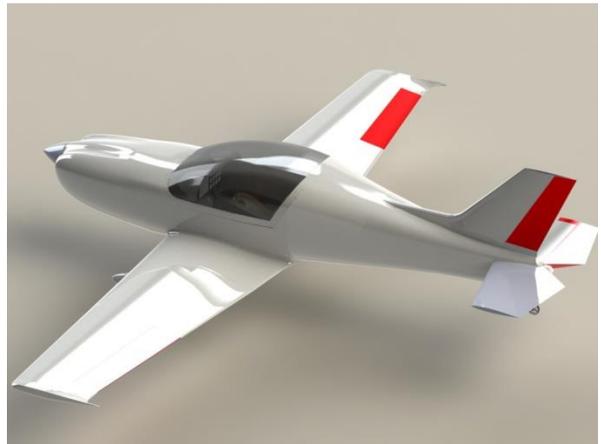




Saberwing Aircraft Kit

By
Azalea Aviation, LLC.



Kit Information



THE PURPOSE behind the DESIGN

The **SABERWING** is an 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 than a Cessna 152/172. Next, we designed in plenty of leg room and headroom for taller people up to 6'6". Many pilots no longer meet the 150 lb so we made our design flexible in that it can be customized for individual 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 days 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 800-1200 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 \$55,000.00 (engine and instrumentation included). Most will see a final cost of @65,000.00 with nice extras. An IFR panel or options such as retracts, BRS, and certified powerplants will cost you much more. 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. It 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 is the XF model (Xtra Fast – For higher Horsepower, Retractable Gear and other options)



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 powerplants 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 100/120 HP Spyder Conversion Engine installation in the prototype. As new variants of the Saberwing are tested we will show that information.

The 100/120 HP SABERWING

Empty weight	850 – 950 Lbs. (average)	LSA: 800-850 lbs
Gross Weight	1500 Lbs./1600 Lbs (depends on engine)	LSA: 1320 lbs
Useful Load	700 - 800 Lbs	(@500 lbsfor LSA Model)
Top Speed (Vne)	200 MPH (Flutter Tested to 225mph)	
Stall Speed - Clean	50 MPH (1320 lbs for LSA)	65 mph (1600 lbs)
Stall Speed - Flaps	48 MPH (LSA weights)	
Horsepower	100 HP or 120 HP with Spyder Corvair Conversion	
	Other Engine such as Rotax, Lycoming up to 160 HP	
Fuel Capacity	40 Gallons	14 Gal per wing/ 12 Gallon Header (other options)
Cruise	150 MPH at 5.0 – 5.5 Gal/Hr.	165 MPH at 6.0-6.5 gal/hr
Limitations	+4 Gs and -2 Gs (no aerobatics or spins allowed)	
Length	20 Feet	
Wingspan	26 Feet	9 Feet of Flap area
Wing Area	92 Sq.Ft.	16.2 lbs./sq.ft at gross
Best Climb	90 MPH	
Cruise Climb	120 MPH	
Approach speed	80 MPH	



Takeoff distances of 750-1000' is nominal. Takeoff distance is more of a propeller and engine selection issue. There is good rudder control as soon as the tail is in the air (taildragger version) Takeoff speed on the Taildragger is @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 90- 95 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.

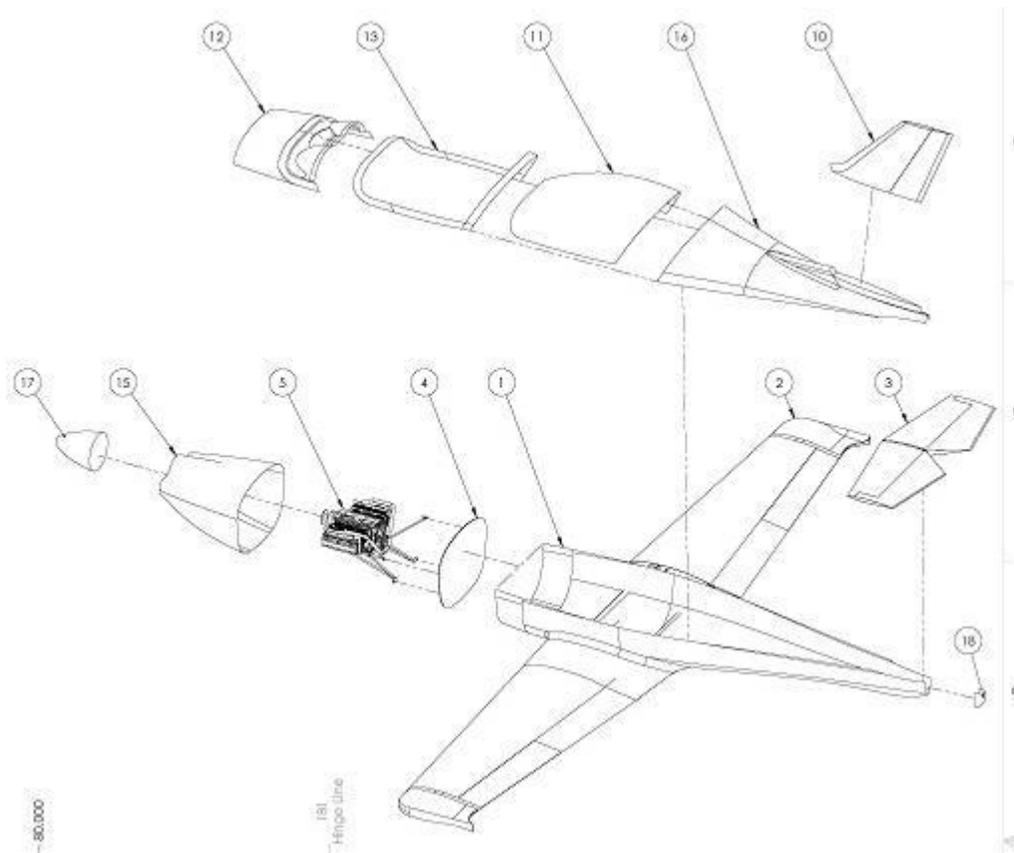


THE KIT

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. A simple overview of major parts:





Fuselage going together:



Spars installed and main controls...



Installing seats and dreaming about panel....



Hanging rudder pedals ...forward floors...



Horizontal/Elevator Assembly - skin in background

SABERWINGTM AIRCRAFT



Gear installation and beginning stub wings



Installing controls/wiring/antennas



Installing panel/wiring/fuel/FWF



Wing assembly – prior to closing



It is easy to walk around and build "into" the plane.



Final bodywork on Fuselage before primer

SABERWING™ AIRCRAFT



Final Primer and paint





Ready for First Flight !

The Saberwing Kit will come with all the structures and controls for the airframe, all the composite parts including cowling, motor mount for Spyder Engine Conversions, Fuel tank hardware and pumps, Header tank of choice, Pedal assembly of choice, controls, wheel and brakes, nose gear or tailwheel kit, canopy, composite starter kit, and much more. You will need to provide minor tools and labor. Firewall Forward components for other engine options are becoming available. Instruments, props, and more can be discussed and ordered from us if desired. Body work, paint, and upholstery are up to the buyer. Call us about any questions concerning kit components and options.



THE PRICE and PROCESS

The Sabering Kit Cost : \$35,500.00 2022-2023

Get in Line! - Place Your Deposit Now \$5000.00

At Azalea Aviation we are working on getting our kits out as quickly as possible. We are limited on how many we can produce in a year however our capabilities are improving. Your deposit of \$5000 will get you on the list for your kit. As soon as we are ready to begin your kit number we will contact you and make sure you are ready to pay the first quarter payment or full kit payment. If you are not ready for your kit we will bump you down to the next spot and let the next person who is ready have that spot. If you pay the quarter or full payment your kit number is permanently reserved.

How do you get a Kit?

There are three ways to purchase your kit.

- 1) Full Payment. If you pay for your kit in full you will receive a discount on the Kit. (Total of 33,000.00 for a savings of about 2500.00) You may also be eligible for discount on Engine and FWF packages.
- 2) Quarter Payments: You will pay four payments of \$8,750.00 each. (total of 32,500.00) (\$7500 payments if \$5000 deposit was made)
- 3) Custom Payments : after initial deposit we can take agreed payments until enough covers a stage and then that stage can be shipped.

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

Horizontal/Composite Kit – Usually on hand and delivered within 30 days



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.

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.

As a customer you will also have limited access to other opportunities such as contact with other builders (according to their discretion) and other online or personal tech consultation. Builders who are currently flying have made opportunities for you to meet them and get a ride in their Saberwing as well. Contact us to take advantage of this perk.



Azalea Aviation is currently preparing instructors and planes to help you with final transition training that you may require.

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.

If you have any questions please contact us at:

Azalea Aviation LLC
1301 W. Rountree St. Quitman, GA 31643
(229) 834-8996
mail@azaleaaviation.com



Kyoung and Bill Clapp in Saberwing Prototype