

SE5a Overview

Rev 1.0

Brief

Congratulations, you have decided to build the finest 3rd scale SE5a kit available today. This kit will test your skills and the love of this subject. It has all the characteristics typical of British WW1 aircraft. The kit models the later SE5a version using the infamous Hispano Suiza V8 engine with the standard long exhaust. The late wooden landing gear and the square radiator with dual shutter banks are present as well. Using a PDF in lieu of paper for this manual saves box weight, paper and enables better photos. This is a wonderful building kit / flying plane. It deserves your best efforts and attention. Please contact us if you have questions or concerns. Our website is www.flygtm.com.

Overview

The SE5a is the most involved kit we have produced; therefore, it is not a beginner's kit. There are over a 4500 pieces in this kit. We recommend that you do an inventory of the parts against the BOM (Bill of Materials). If you find that something is missing and /or damaged contact us. It is possible that we missed some. We have tried to keep the assembly and field transportation as simple as possible. Realize you are recreating a full scale plane in 3rd scale. A lot of parts rely on other parts. The best advice we can offer - take your time and ensure you understand how the parts get assembled. It would be prudent to dry assemble some parts prior to gluing ensuring the correct assembly.

The kit consists of several main components - wings, fuselage, landing gear and tail area. The recommended building sequence would be the wing panels, fuselage, landing gear, radiator, center wing and tail components. This is not absolute but some components will require other parts to be completed first, such as, the wings need to be completed so the outer wooden interplane struts can be installed. Bottom line; take your time and check your work twice before gluing.

GENERAL NOTES

Glues

Several different glues are needed throughout the build. Here's a list of what was used during the prototype build →

1. Titebond (red bottle) wood glue - plywood, hardwoods
2. ZAP CA (Thick, thin) - balsa wood, control horns
3. Epoxy 15 minute - control horns, carbon fiber attachments
4. JB-Weld epoxy (included in kit) - music wire / struts
5. Gorilla glue or ZAP hinge glue - hinges
6. Loctite threadlocker Blue - screw threads

Engines

Once you decide if your model will use electric or gas engine or be static you can start analysing the fit and location. The prototype used the DA-85 gas engine with a 1-1/4-inch propeller extension as well as a custom muffler. All these components are shown on the plans referencing part numbers. The firewall can slide back-n-forth to help accommodate different engines. Areas of concern are - prop shaft length as it has to pass through the radiator and clear the shutters; dummy engine clearance; engine hood clearances and exhaust exiting. Note - there is no need to offset the engine for down or right thrust.

FLYING WIRES

The kit does not come with flat wires. A table on the plans show the location of each wire and their respective length. The prototype used AeroScale flat wires. They offer a complete set of wires, clevis and pins for this kit. You can contact them asking for the GTM SE5a wire package. Their website is www.flying-wires.ch. The SE5a kit includes all the metal fittings needed for the flat wires. Being the model is scale these flat wires truly work as designed and such need to be inspected, maintained like the full scale subject. Wire cable is not recommended in lieu of flat wires although it could be used. Mick Reeves Models sells the components to build your own flat wires if so desired. Their website is www.mickreevesmodels.co.uk.

Pulleys

Functioning pulleys are used for all control surfaces. If you rather not depend on pulleys, you can just make the pulleys static using a different system to control those surfaces. Just note that pulley inspection windows exist in the wings and stabilizer so the pulley / hardware will need to be present. The pulley hardware and cabling is supplied in the kit. Servo locations for the rudder and elevator are below the pilot seat. The kit includes the mounting tray for the three servos. To assist you in field assembly / dis-assembly the wings use pre-bent music wire to hold wings in place as you can disconnect the pulley cables and flat wires.

Covering

The original was covered with 100% linen fabric so was the prototype to this kit. Some SE5a's used bleached and unbleached linen fabric. The prototype used bleached. You can buy plain linen by the yard from www.fabrics-store.com. The linen you should consider is either all natural softened or bleached softened. Their part number for the lightweight fabric is IL020. You would need 7 yards to complete this plane. Naturally, you do NOT have to use linen. There are other solutions which you can consider. At the end of the day you should use what you're comfortable with. It's your project. Note some components such as ailerons, rudder and elevators will be covered first prior to be permanently installed. Covering some other components will have to be done on the plane itself such as the bottom wing saddle where the bottom wings attached to.

USING LINEN TIPS

Some basics - don't paint or work in direct sunlight. Try to paint in 65-80 degrees with the humidity around 50-70% if possible. Wait for better weather if you need to. Cut fabric about an inch past the area you are covering. Iron the fabric dry, no misting. Try to get any wrinkles out. A fabric glue (Aileene's original tacky glue) should only be used on the perimeter outline of the area you're working on. For wings this means the centerline of the leading and trailing edges; fuselage and side plywood areas just the top and bottom longerons. Try not to get glue in the open fabric area as that creates a different look than plain fabric. No need to go wild with glue. Start in the center and work to one end pulling the fabric snug. Then go back and do the other side. You should have snug fabric and no wrinkles or loose areas. Lightly mist the fabric with water before adding any dope. Run your hand on the fabric smoothing out the water; pull fabric snug and re-glue if needed. Set aside to dry.

You can brush or spray the dope on. Some builders brush the dope on and then spray the PC10 and remaining colors. Prototyped used spraying and brushing. A brushing concern is the fabric sticking to spars or other undesired locations. Do what works well for you as you will be adding nitrate, butyrate and the final colors. Spray using a HVLP system 60-40 dope / thinner or brush on. Do two decent coats; one going left to right and the later going up and down. Let dry for a day / night. Lightly wet sand with 600 grit paper. Let dry. If using SIG products make sure you are using butyrate **Super** coat clear. Spray 60-40 with butyrate/thinner. Let dry for a night. Add several coats (maybe 2-3) of butyrate to the desired shine. Finally, spray the colors. You might consider misting the overall fabric with semi-gloss polyurethane to even the colors out.

Suggested extras -

1. Mick Reeves unthreaded fork ends - 32 each
(ailerons-8, elevators-4, fuselage-24)
2. Brodak BH-717 cable connectors (undoing pulley cables)
3. Balsa USA - small brass turnbuckles - 4 each (rudder bar)