The Fieseler Storch

AN ELECTRIC-POWERED VERSION OF THE LUFTWAFFE’S FAMOUS WW II “STOL” WORKHORSE

For some unknown reason, the Fieseler Storch is my favorite aircraft. Perhaps this goes back to when I built a 1/6-scale model some years ago and became a student of the prototype. The plane has somewhat of a “cult” following and, although many argue about its aesthetics, the Storch was quite an advanced design in the mid-1930s. It was “the helicopter before they had the helicopter” and many still fly today, including replicas. The Luftwaffe employed the aircraft in all theaters of WW II and it was quite effective in its role of spotter, transport, rescue and liaison aircraft. As a model, it is surprisingly involved to build in any scale. It is these complexities, however, that make the aircraft unique.

My design goals were to keep power and radio equipment out of the massive cockpit, employ a functional landing gear, have easy battery and equipment access and to add lightness. I also searched far and wide for a cheap, but gutsy motor.

Backyard Flyer has graciously included my excruciatingly detailed construction notes and photos on their website, modelairplanenews.com and I recommend that you visit there for help with the trickier parts. For now, I’ll focus on some of the model’s idiosyncrasies along with finishing and setup. I recommend that the Storch be tackled by more experienced builders, but a determined newbie should not have too much trouble if he or she stays focused.

A laser-cut short kit, a vacu-formed windsheen and upper canopy along with a fiberglass cowl are all available from me.

CONSTRUCTION
The wing has a standard D-box design and is conventionally built on a flat board. Each wing includes flap and aileron micro servos and four mounting points for the functional struts. Build the ailerons and flaps with the wing. The tail surfaces are also very easy to build. The fixed surfaces are sheeted “stick” frameworks and the movable sections are built up over balsa core outlines.

The Storch’s fuselage is comprised of
ITALIAN STORCH?

Why did you pick an Italian paint scheme for your Storch?

Rob Caso: I already had built four or five Storchs, both RC and plastic models. Having painted them all in Luftwaffe camouflage, I was looking for something a bit different. My good friend, Vince Nigrelli, has been nagging me to design “something Italian” and I got to thinking that maybe I could paint my Storch in a Regia Aeronautica scheme. Like most of what the Italians do, their WWII schemes were almost artistic and I really wanted to do a lighter scheme since they show up better at the field. I plinked around on the Internet and discovered a Storch in an Italian museum that has a scheme very close to the one I did here. With the almost yellow base coat and the white wingtips, the model really shows up well in the air and is quite photogenic.
cross section. The buckle is quite sturdy
and may be used to support the slat
during sanding and finishing. I applied
multiple coats of thinned nitrate dope to
the slats; between this and the epoxy, the
balsa became very resilient.

LANDING GEAR
The stalky landing gear is a trademark of
the Storch and they really soak up
forward motion on touch down, thus
facilitating short landings. The sprung
“oleo” is made from sections of tubes,
springs and music wire, while the V-
struts are carbon-fiber tubing. The pivot
points that hold everything together are
flattened brass tube “lugs,” drilled to
accept 2-56 screws. The only real tricky
part is getting the upper struts to line up
side to side and making identical parts
for each side. Make a “kit” of cut tube,
mounts) do all the work and these must
be the strong components in the chain.
The toughest structure to make in
scale modeling is a leading edge slat or
spoiler, and the Storch has two of them. I
devised a “buck” system, which is
nothing more than a copy of the wing’s
leading edge over which two sheets of
soft 1/32-inch balsa are laminated together
to form a curve. Yes, it’s more work, but
it will yield a much more accurate part.
Apply packaging tape to prevent the slat
from adhering to the form. Wet the slat
laminates with ammonia-based window
cleaner until soggy, apply epoxy to each
and stack the pieces. Evenly position this
over the buck, bend it around the leading
edge and wrap the entire lamination with
tape. Allow the assembly to dry
overnight. Apply two soft strips of balsa
to the leading edge and sand to an airfoil
To order the full-size plan, visit RCStore.com.
take a deep breath and dive in while being stingy with the solder. It's actually a very simple assembly.

COVERING, DETAILS AND FINISHING
There are two canopies: an upper and a windscreen. Installing the upper one is easy. The windscreen requires a number of incremental cuts to coax it in between bulkheads no. 3 and 5 and around the landing gear struts.

The upper and lower cowls are affixed to the model with locating pins and magnets. The upper cowl is fitted using lite-ply mounts shown in the plans. Glue in the mounts to the upper with the cowl positioned on the model.

To fit the lower cowl, glue in crosswise pieces to each cowl at the nose. There is also an aft mounting point for lower cowl on the fuselage. Glue up the aft mount to the fuselage with its mating piece attached and flush with the bulkhead. Install the cowl and glue the aft mating piece to the cowl. Once lower cowl mounts are in place, its forward mounts are cut to clear the motor.

I used Sig Mfg. Koverall to cover the open framework, and I primed the covering with Minwax Polycrylic. Paint the model before attaching the clear glazing. I applied 0.75 ounce fiberglass cloth to the skinned areas with Polycrylic and then used a lot of auto body filler and primer on the cowl, slats, ailerons and flaps prior to painting. Go for a good surface prep and don't worry about the weight.

The Storch displayed a number of interesting paint schemes and I used plastic model paint and single- and dual-action airbrushes to apply the Italian air force scheme and markings. I generally choose lightly colored schemes for small models as darker schemes tend to make small models look even smaller. Aside from the standard RLM black green/green, there were also a number of tropical and winter schemes. The Storch also wore various national insignia other than German including Swedish, French, Italian, Spanish and even British and U.S. Eisenhower's personal transportation in Europe after the war included a Moraine-built Storch ("Criquet").

FINAL DETAILS
The forward bulkheads incorporate holes to run servo wiring beneath the cockpit floor in the event a full cockpit is to be installed. In this case, you must pre-wire the model as it's being built and make your own connectors. With respect to the wings, either run the servo wires during construction or make provisions to fish them through before the wings are skinned and covered. I ran long servo leads between each aileron and flap servo. Where these crossed the cabin, I separated sections of insulation without breaking the wires and soldered in the...
Even though I had seen many pictures of the Storch, nothing could possibly convey its size and general ungainliness. It stands so high off the ground that an average man can barely see in the side windows. In fact, we doubt that there’s a man alive who could step from the ground to the door sill, once the huge, multi-faceted door is pulled out and up and fastened to the bottom of the wing. This isn’t an airplane, it’s a three-dimensional, whimsical caricature of an airplane. Traditionally, the whole idea of aviation has centered on efficiency—getting the most speed from the least horsepower. This airplane, clearly, works on the opposite premise. If there is an airplane with more drag-producing protuberances, I’ve never seen it. Aerodynamically, the Storch makes a tumbleweed look slick. Maneuvering in the Storch is a real physical workout. The controls feel the way the airplane looks—gawky and loose. The stick forces are anything but light and to keep it completely coordinated, your feet have to thrash in and out as if you were working an old sewing machine.

What is it about a Fieseler Storch that appeals to something in all of us? It certainly isn’t the Storch’s blazing cruise of 70 knots or its 1600rpm full-throttle sound. Nor is it loved for its streamlined gracefulness. Maybe it’s the idea of having an airplane that converts your backyard into an airport, or maybe it’s the part the Storch has played in history. For me, the Storch has appeal because it doesn’t try to be pretty. It’s a good honest ugly and doesn’t seem to care.

— Budd Davisson

VISIT BUDD ON THE WEB AT AIRBUM.COM

leads that run to the receiver residing behind the instrument panel. Use “Liquid Electrical Tape” to insulate the solder joints. When I was done, I basically had two giant “Y” connectors. With the receiver so located, it’s an easy run for the ESC, rudder and elevator leads. Unless you use a dedicated channel for each flap servo, these must be oriented the same on each wing while the aileron servos are opposite.

IN THE AIR
My power system analysis using the MotoCalc program indicated that there were two possible props for the Storch; a 9x6 and 10x5. Each had good wattage figures, but the 10x5 had a significant advantage in static thrust—28 ounces vs. 22 ounces produced by the 9x6 prop, at the expense of some flying time and top speed. Install the 9x6 first to get a feel for the model and then go for the high-thrust setup.

Balance the model leaning towards nose heavy. The wing’s center of lift is more forward due to the slats, at about 25% of MAC. Also, don’t forget to balance the model laterally, wingtip to wingtip. Aileron throws should be about ¾ inch for each direction, with “all you can get” on the rudder and elevator. Use about 25% exponential on the ailerons and elevator as a start and add or decrease expo and throw depending on your flying style.

Slow flying will require a lot of control surface throw. Although it has trainer-like stats, the model will go only were you put it and will not self correct. Short landings take a little practice, the key to which is keeping the model pitched up and under power as you come in. Once the wheels touch, immediately cut the power. 🛡