ARF Rebuild

by

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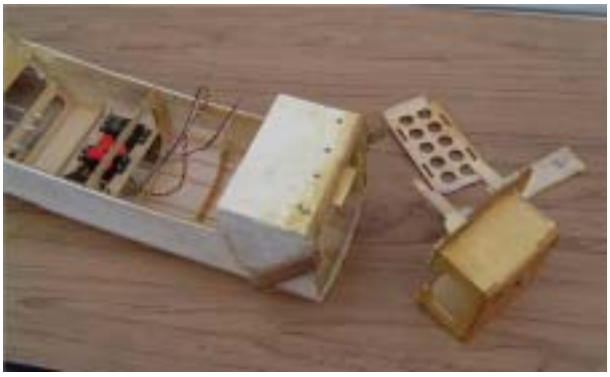
I crashed my Hobbico Sukhoi SU-31 on takeoff when the airplane rolled hard to the left in a gust. Having forgot to reset low rate on the ailerons I over corrected rolling the airplane inverted without enough airspace to fly out of trouble. Grrrrr!

After examining the wreckage the next day once the shock of the crash had passed, I elected to do a rebuild. The wing was in good shape with just one crack in the left aileron and minimal crushing in the wing bolt area an easy fix. The fuselage was a different story, the old covering stripped away so the extent of the damage was easily seen. The firewall separated with the engine, gear stripped away, and the left side of the fuel compartment torn loose, the wing bolt attachment plate broken in half, and a number of and cracks, bulkhead and panel separations. All in all a mess! Yet well worth the time in repairing.

The tail area of the fuselage had a number of fractures, some of the internal bulkheads were also separated in need of repair and gluing.

The left side of the fuel compartment was re-attached along with the plywood gear plate using Epo-Grip Clear Paste fast set epoxy adhesive. The firewall, receiver/battery plate, and wing attachment plate are yet to be repaired.



This shot shows some of the damage to the cockpit area and the right side of the fuselage.

A hatch was cut in the bottom of the fuselage to allow access to bulkheads and sheeting that needed repair and gluing. Broken bulkheads were sistered with scrap balsa and glued with non-sag Epo-Grip #30 Paste epoxy to the sheeting.

A new wing attachment plate was fashioned and attached in place with #30 Paste epoxy. The access hatch glued back into place with CA.

The battery/receiver plate re-attached, the bulkheads are glued and strengthened by the use of fillets made with the non-sag Epo-Grip #30 Paste making the task easy.

The firewall was attached last to have easy access to the gear plate and fuel compartment so those areas could be reinforced before the last gluing.

Once the firewall was attached and all the repairs completed the fuselage was filled and sanded smooth removing most scars before covering.

The engine cowling (fiberglass) was repaired using Epo-Grip Model Matrix fiber reinforced adhesive to glue any breaks and stiffen any cracks. Then sanded, primed and refinished to match the airplanes covering. The cowl ring was reinforced using a piece of stiff wire bent into a ring and embedded into the Model Matrix adhesive

The cracked areas of the cowl skin were stiffened using the fiber reinforced Model Matrix.

The model was recovered using Monokote adding trim for extra color and interest. The repair weight gain with the strengthening was minimal, since the airplane has plenty of power the addition is not even noticeable.

Materials used:

Epo-Grip #30 Paste epoxy
Epo-Grip Clear Paste fast set adhesive
Thin CA
Scrap plywood, wire, and balsa
Monokote

Here’s the finished airplane ready to fly again! The haggard looking Sukhoi pilot has a new look to his ride!