

Installing Retracts

So the tail is done, and on to the wing!

First things first: Plan the retract installation.

She's going to be a tail dragger, with mechanical retracts on the mains. Therefore, the mains need to go ahead of the wing spar. One limitation that this introduces is wheel size. Anything larger than 2.25" won't be able to retract into the wing between the spar and leading edge. Luckily, we have one of the best kept grass fields I've ever flown off of, so the small wheels should be ok.

The retracts will be installed in the same rib bay that the mains normally are. I traced the front of the ribs onto a piece of heavy card stock, to make a template for some 1/8" ply doublers. I positioned the retract over the template to get a general idea of the angle it would need to sit at, and drew a baseline where the tops of the mounting rails would be. I then marked a centerline, re-positioned the retract assembly on the centerline, and marked the exact position for the rails. Then I noticed that these retracts were going to throw a wrench in the works....

I'm using the Great Planes 60-size retracts, and discovered (luckily **before** I had the rails installed) that when they retract, the coils in the strut would interfere with a rail mounted flat across the mounting flange of the retract assembly. So, one of the rails had to be moved upward, so a shim can be used that is just the length of the mounting flange. A 3/8" shim is needed, and since I'm using 3/8x1/2 maple rails, I just moved the one rail up by 3/8", and will cut a short section for that side of the retract. Hard to describe, but in later pictures, you'll see what I mean.

Finally having my template marked out, I cut it from the card stock, cut four rectangles of ply, drilled some holes where the rail mounts would be cut out anyway, and bolted them together to cut and sand to shape all at once. Once shaped, the bolts were removed, and the slots for the mounting rails cut individually with a Dremel. (Is there anything it can't do?)

These are currently clamped onto the front of 4 ribs while the wood glue dries. Once dry, the slots will be cut for the rails, and the rails will later slide right in, spanning the entire rib bay.

This was my first time installing retracts, and that seemed like a logical way to do it. Any tips/tricks/things you would've done differently are appreciated.

In a scratch built kit or home built kit, attention to the mounting rails is critical. Good gear can bind after attachment based on slight difference in the rails. I add plastic balsa over the rails, then saran wrap while the PL Balsa is still wet, then press the gear in place over the saran wrap. Wait 24 hours, remove gear and wrap and presto you have a perfect fit custom molded bases for the rail to fit into to. remember the plastic balsa is only added sparingly, just a little to make a nice

base over the rails .It's a flawless finished and the gear always moves freely

Plastic balsa is simple wood filler; you can also use Elmers -Wood filler. My very first attempt with Robart was on my original red box P40. I did know how to fly a warbird but always consider myself a good builder.

All was well until I tried to cycle the retracts .They were fine before I tightened the screws into the rails. So I unscrewed the gear and they moved fine. IN-tern when tight I assumed the gear was flexing to conform to the uneven rails.

So I added the balsa filler to the top of the rails , put down saran wrap and pressed the gear in , wait 24 hours and the re-drilled my holes and re-mounted the gear . They worked great. Now remember if the rails are perfect to begin with your gear should not bind but my rails were off just a bit. The addition of the rails was a "Bash" to the design and in-tern I was off in my angle. Best part was - I sold the plane because at that time I could not fly WW2, over \$800 on eBay but it was a very nice plane!!!!

rcu video on Robart Retracts

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