

Telemaster X

Test airplane for a counter rotating propeller garbox

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by Paul Fleming

In 2016 Jim Lake and myself were discussing the possibilities of building a Douglas XTB2D Sky Pirate as a plane to enter in scale competition. As far as we can tell the last time someone entered one was in 1960. The plane was a torpedo bomber that was designed late in WW II and only two prototypes were built before the project was cancelled.

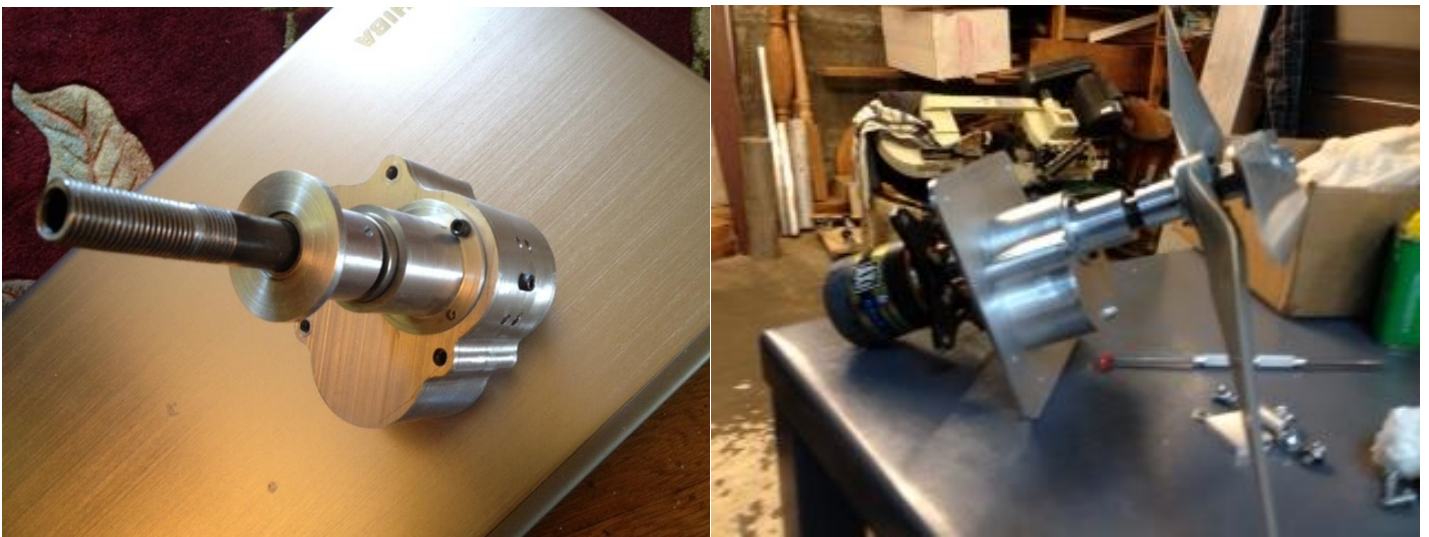
Three things make this a desirable plane to model. Tricycle landing gear, light wing loading and counter rotating propellers.



We want to build this plane with a 96" wingspan and a weight of no more than 28 pounds. I have the old Model Airplane News published plans and can convert them to modern materials and corrected for laser cutting. We decided the airframe would be the easy part. We know we can build the landing gear, but the power train was going to be the tough nut to crack.

We looked around on line to see what was available. There are some units available but the cost was prohibitive and there was no guarantee it could meet our specification. The only thing left was to build our own.

Jim undertook to build the gearbox. Over the next few months a gearbox came together.



We decided to use an AXI 5345/16 for power. Ok now we need to test this monster. Earlier we had built a test stand to test motor and propeller combinations. We conducted many tests at progressively higher power settings. The first time we ran it, it started rolling down the driveway.

We experienced a few problems had some bearing failures, loose gears that type of thing. We even had the propellers come in contact once.

Eventually Jim got it all worked out. Here is a link to a youtube video of one of our last test runs. https://youtu.be/Ypbw_v1RM0g After another teardown and finding no internal problems we decided it was time for flight testing.

We ordered a Telemaster as a flight platform. When the ARF arrived we determined it was too lightly built to function as a test bed. So we beefed up the forward fuselage with 1/8" lightply installed carbon fiber rods in each longitudinal stringers in the aft fuselage. For CG purposes due to the weight and size of the gearbox motor combination we moved the firewall back 4 1/2", moved the main gear aft and installed a nose gear.



To change the angle of attack on the fuselage we ordered a new wider, taller and stronger aluminum main gear from TNT Landing Gear. The aircraft is now ready for flight test.



Flight Testing will be the next installment on this article.