Jefferson Jyrodynes

"Git Thar Furstest with the Mostest"

Jefferson Jyrodynes, Inc. Newsletter
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Purpose of this Newsletter

This newsletter is now issued irregularly to keep everyone who's interested posted on the construction progress of the full-sized prototype of the Jefferson Jyrodyne. This is the first one for 2010; the newsletter is now issued on a more or less semi-annual basis.. Personal family issues this winter also slowed things down considerably, with my mother passing away. My workload at the office has increased, with an exceptional amount of travel this past fall, which further slowed down progress

I have to admit that part of this work has been particularly interesting, working with a client that makes a "green" version of aviation gasoline, but which is also unleaded. Since the EPA has decided to phase out the leaded aviation gasoline currently required by 30% of the aviation fleet that flies 70% of the hours by 2017 and perhaps earlier, there is a substantial amount of interest in this fuel.

I'm designing the first pilot plant for the client, to make 1000 gallons a day of the fuel for fleet testing.

However, the overall workload at the office is so low I've cut back to a 4 day, 32 hour week, and am taking most Fridays off. I'm using this time to spend on the jyrodyne, and it is making a difference.

Fourth Wing

Construction on the fourth and last wing is winding up! The flap is completed, and work on the wing to attach it to being mostly completed at the end of April. Work on this was started in December.

By the end of March, the rear spar assembly was complete, the main wing spar was completed, and the ribs have been reinforced and are ready for installation. The final assembly of the wing took place in late April.

Status in February.

Status of the last wing at the end of April.

Canard

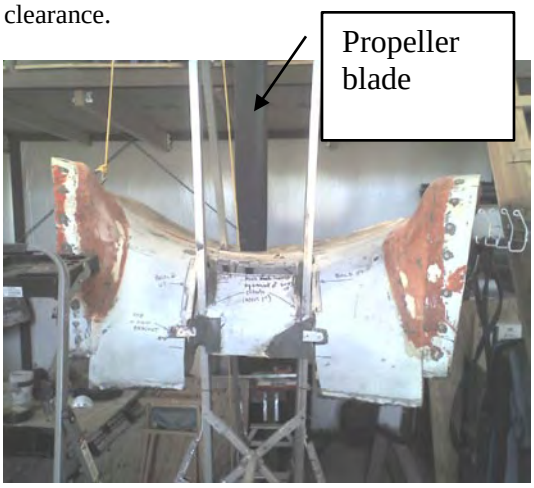
The canard continues to be modified as the X-Planes simulation is worked with. It is about double the original size. This solves a deep stall uncontrollable pitching problem with the smaller canard the simulation work uncovered, which is described in more detail below.

Bellmouth Mating to the drive train truss

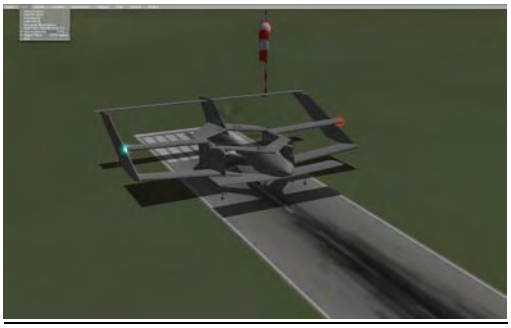
This work has started with extensive modifications being made to the bellmouth section that contains the drive train truss under it. The Kevlar belt which transmits the power to the tractor propeller comes through the center part of this section of the bellmouth. With this and the need to attach the bellmouth to the drive train truss, the original one piece section of the bellmouth is now in three pieces, connected together with a variety of fasteners.

The bottom carbon fiber blade of the tractor prop may be seen in the center top of the photo below.

This particular section also required some additional modifications to ensure tractor prop clearance.



X-Planes 9. 22 Simulation



The simulation has solved a handling problem which occurred only during long , rapid pure vertical descents, which has resulted in another modification to the canard. This modification is being kept secret until a decision is made on whether or not to submit this for another patent.

Drive Train Assembly

With the completion of the mating of the bellmouth to the drivetrain, drivetrain assembly will be started.

This involves extensive construction of a wooden supporting framework, to elevate the bellmouth to its actual position above the hangar floor. The top of the bellmouth circle will be approximately 8’ above the floor.

Rotor

About 15 coats of varnish have been put onto the pine rotor from Lonnie Prince, in preparation for making a mold for the rotor. The rotor itself has a slight error in the fabrication, but which can be blended out during the female mold construction.