

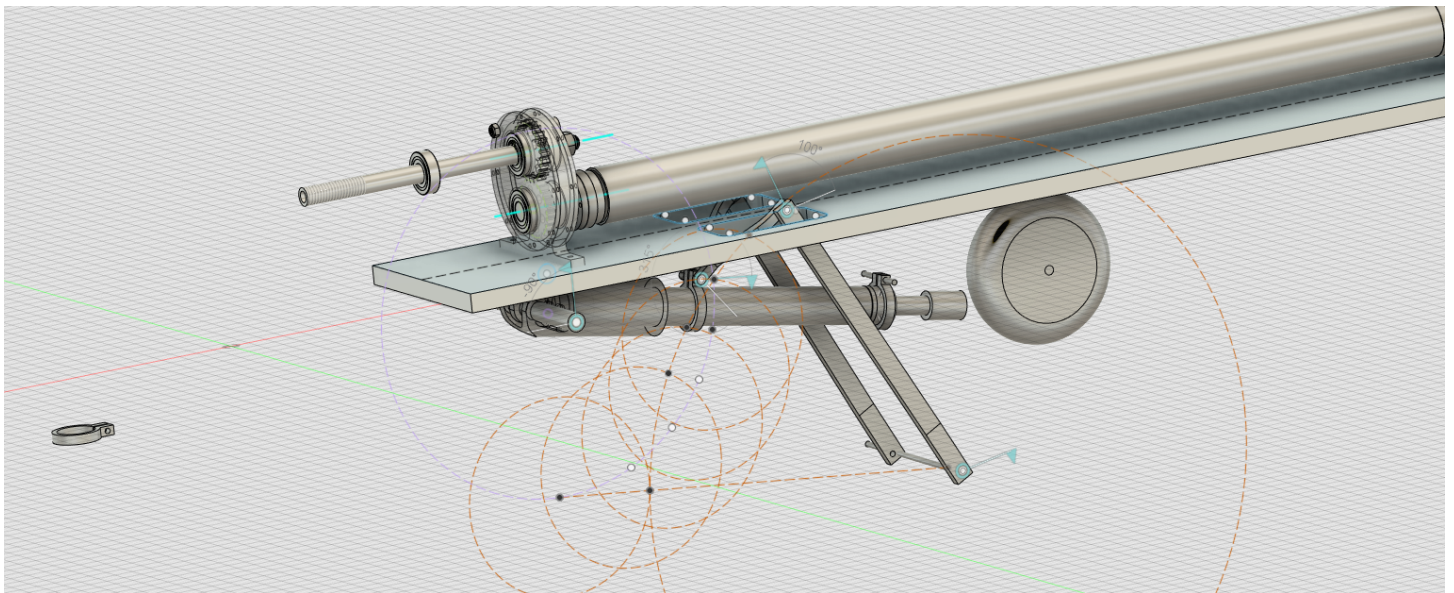
1/4 Scale P-39 Build.

4

Paul Fleming and Jim Lake
1/14/2022

Here is a link to visit all previous issues of this build. http://kitsaparcs.org/construction_fleming_quarter-scale_p-39.html

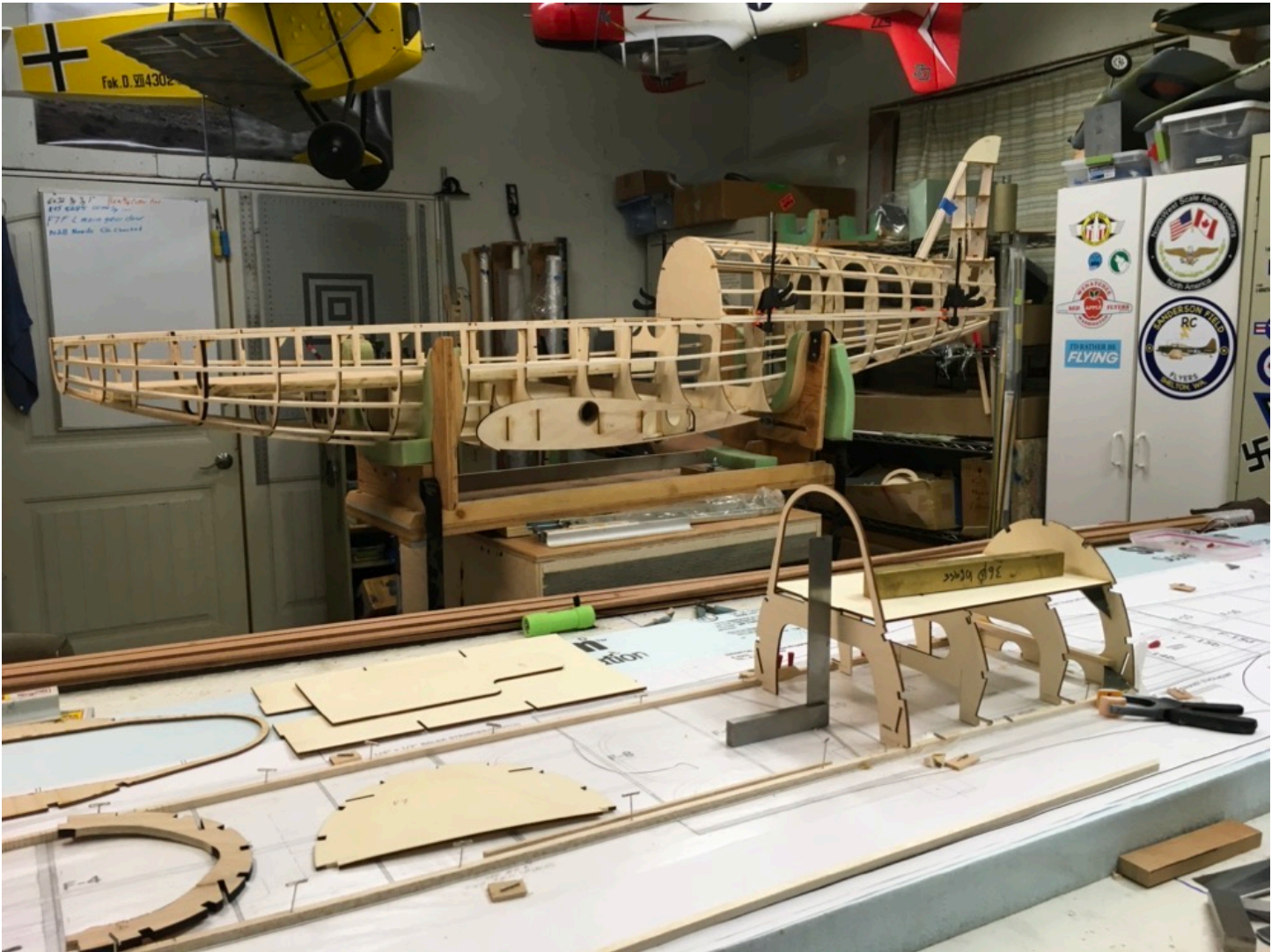
Jim is making good progress on the nose gear. The most difficult problem is working out the exact lengths of the Fore Link and the Drag Strut. Unless you get the correct length of each of the moving parts their pivot points will not be correct. Resulting in the landing gear not folding up correctly. It is amazing how a minor movement of a pivot point results in a gross exaggeration in component movement. We are slowly closing in on the problem. There is a good chance we will be getting some actual measurements off a California based P-39.



In the last update we showed the mock up Torque Plate. We have come to the conclusion we should get the foundations started and start trueing up the fuselage. We will reinstall the bottom half of the fuselage back on the building board with the Torque Plate inside. Since we will need the gearbox with the propeller shaft installed we will have to allow the gearbox to drop through the building board to allow the fuselage to sit flat. Once the fuselage is fixed to the building board we can raise the Torque Plate into position, line up the propeller shaft and start installing its foundations. It is our intention to use the Torque Plate to keep the bottom forward half of the fuselage true so we can

see through the sides while working on the nose gear and gear doors. Also, it will be most helpful installing the top half fuselage guide pins.

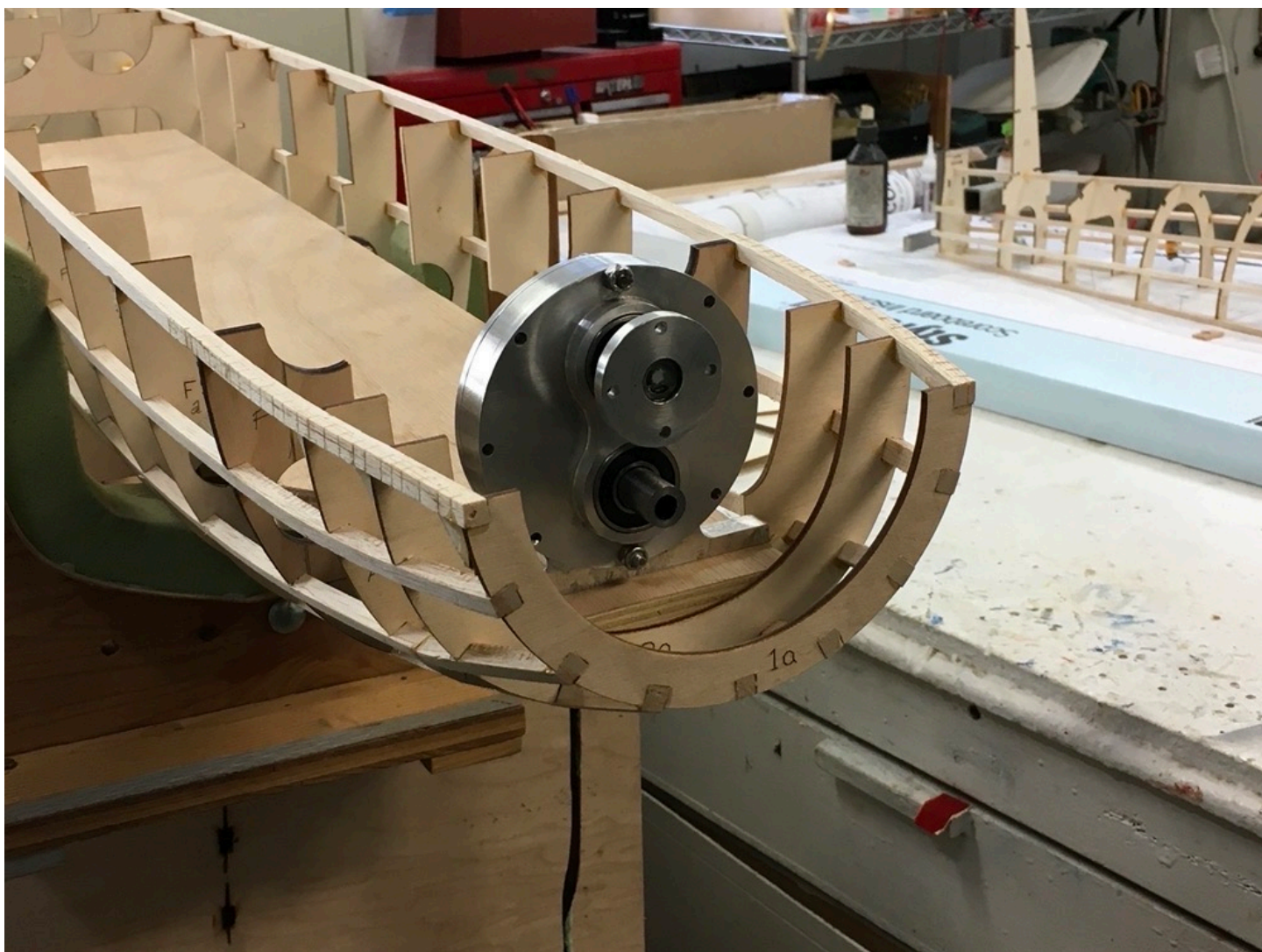
At this point we start to make some radical departures from Jerry's plans. The top side of the fuselage from the air scoop forward will be removable. I followed the plans and when I got to frame 13, I installed a reinforced bulkhead.



Building the airframe this way the propulsion system is easily removable. Any and all servicing or adjusting can be done on the bench. To stiffen things up a bit the removable section of the fuselage has a 1/4" hardwood stringer attached.



Hindsight being what it is I wish I had added the hardwood to the bottom half also. A problem that is going to get very interesting is the hinging of the nose gear doors. The doors are curved in both the X and Y axis. I logged into aircorpslibrary.com and opened The "Dummy Strut and Door Assemblies to Front Fuselage on Airacobra Airplanes" manual by Bell Aircraft. I found several pictures of the nose door hinge brackets. This is going to be more complicated than I thought. The only thing I am certain of is the hinge pivot lines rotate on the same plane. I think I will lay up three sets of fiberglass fuselage bottoms to practice on. I will try to build and hinge the doors then install them. What I am really enjoying about the project is we don't have a time line we need to meet and there are some really interesting problems to solve.



Jim had built the mock up torque plate out of some nice looking 7/16" ply. It was slightly thicker than the Torque Plate design. We understood that would need to be corrected later. We are getting ready to install the Torque Plate foundations. As things stand now the centerline of the propeller shaft is 1/16" above the aircraft centerline. Ok, easy fix, my one of my sons has a thickness planer. We had the plywood to size in a few minutes. We positioned it in the fuselage, everything looked good. We dropped it in the fuselage and went on to other things. A few hours later I was sitting in the shop and I thought the Torque plate looked slightly bent. I put a straight edge steel rule on it and sure enough it was bending. We had only planed one side. We had completely removed the outer layer, the full piece that containing no breaks. It apparently was holding the board straight. Only Aircraft Grade plywood has no voids or laminations allowed on the interior ply layers. Our plywood was Furniture Grade with two nice outer plys, but not so rigid inside. Jim decided to cut the new temporary Torque Plate out of 1/2" PVC. It should be here in a day or so.

The rest of the fuselage is mostly completed except in the cockpit area. I am thinking of making the canopy section removable or maybe just the canopy itself.



The two forward battery hatch and the aft radio compartment hatch are also finished.

Last entry:1/17/2022