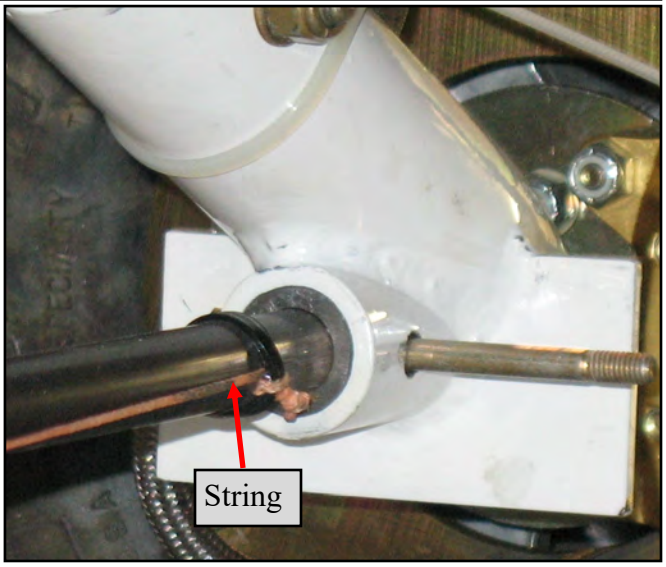
40. Setting Main Gear Toe: Classic / LSA

Section Objective: Main gear alignment
Required Parts: Main Gear with lower sockets installed.
Required Hardware: AN4-17A, AN960-428, AN365-428
Required Tools: Drill, Various size drill bits from 1/8" to 1/4", drill lube, 2 hollow steel pipes 1/2"dia and 24" long or a 3/4"dia pipe 24" long, bright colored string,
Required Conditions: N/A
Required skills or Training: Hand tool use

With a new build it is easiest to set the toe with the spar box out of the aircraft. This is not required but makes drilling the spar box much easier. The main gear legs and lower sockets need to be assembled before starting. If you have assembled the axles as well, then a 1/2" dia 24"long steel pipe will be needed to insert in the axle. If the axles are not installed a 3/4"dia and 24"long steel pipe can be installed into the socket. Pictures depict the axles installed.

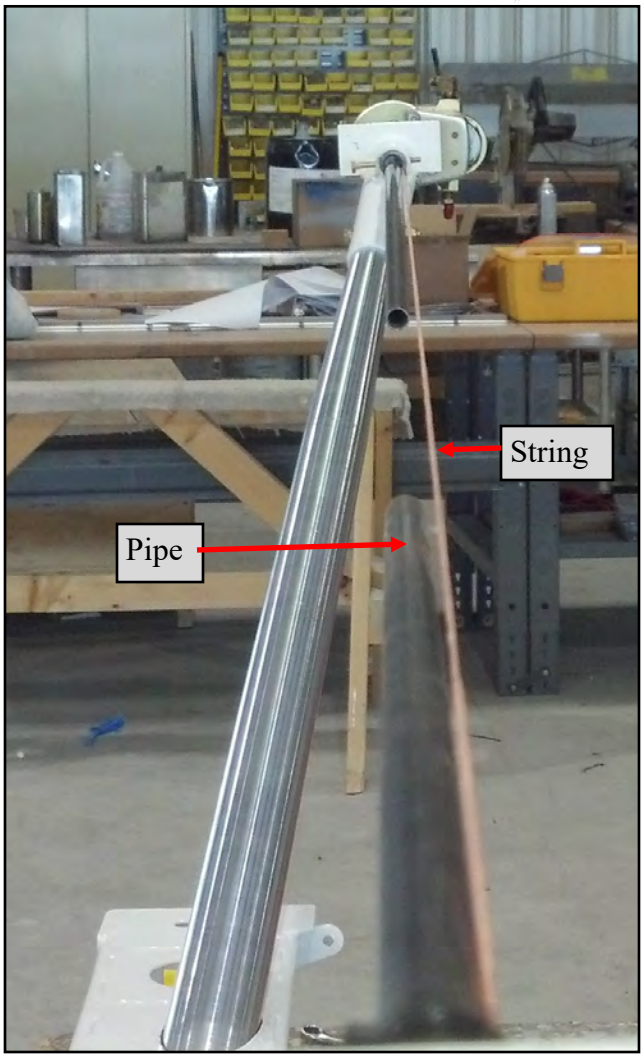
Completed

1. ☐ Make sure the main gear legs fit snugly into the spar box and fully seat in the pocket.
2. ☐ Applying some form of anti-seize to the end of the gear leg helps with rotation when trying to set toe.
3. ☐ Insert a steel pipe into each socket. Note in the picture that we have drilled a hole in the tube to help hold it in place.
4. ☐ Run a string from one axle to the other on the back side of the pipe. We have zip tied the string in place to keep it taught.



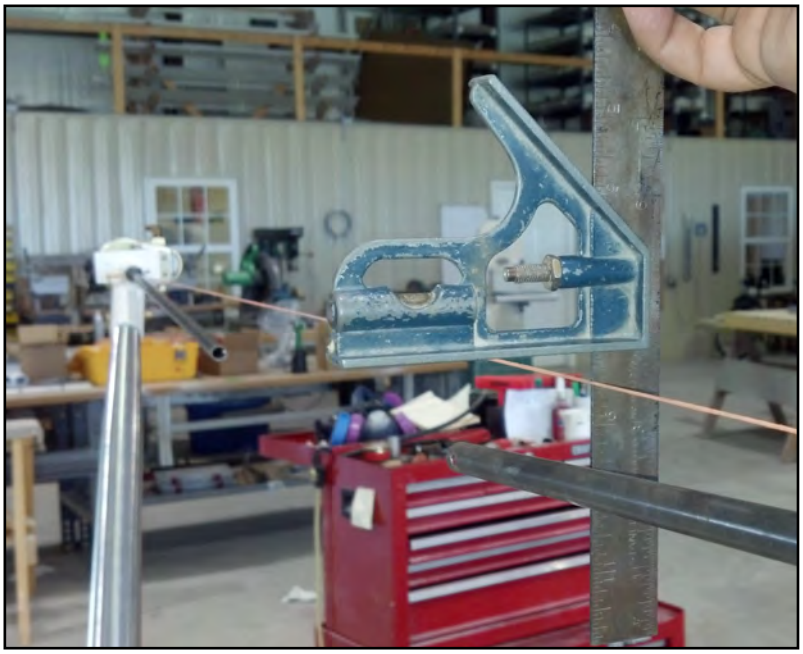
Completed

☐ 5. Rotate each gear leg until the string matches the tubes on the back side. You may have a small amount of light between it and that's fine but be sure the tube is not pushing on the sting, the string should float freely.



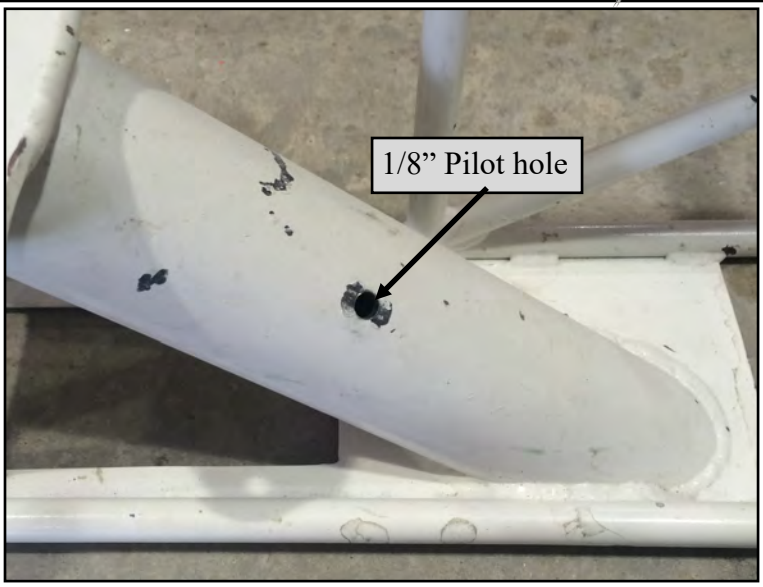
☐ 6. Because of the camber in the gear the string may not be at the same level as the tubes.

☐ 7. Use a square or plumb bob until the string lines up.

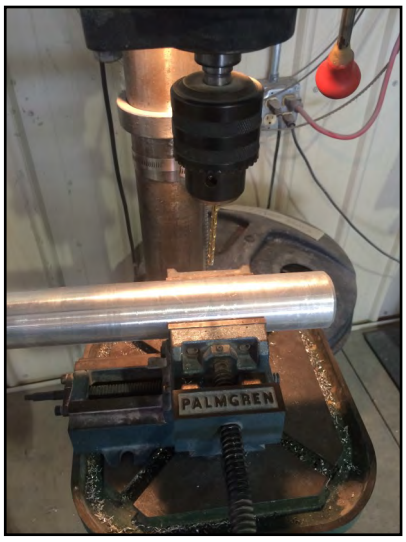


Completed

8. The placement of the 1/4” hole in the main gear tube doesn't really matter. Although splitting eh difference from the top to the bottom is fine.
9. Do not attempt to drill thru the entire tube and aluminum gear leg.
10. Start with a 1/3” or #30 drill bit.
11. Drill thru the tube and far enough into the gear to mark it.
12. Remove the gear and drill out the hole in the spar box to 3/16”



13. Using a drill press, drill a hole all the way thru to 3/16”. Use drill bits starting with 1/8” and working your way up to ensure it is correct.
14. Install the gear back into the spar box.
15. Using the gear leg as a guide drill thru the other side of the box with a 3/16” drill bit
16. Drill thru the entire assembly now (gear leg and spar box tube) to its final size of 1/4”.
17. Insert a bolt to fix the gear position.
18. Check the alignment.
19. Repeat the Process for the other gear leg.



20. Final assembly will require a AN4 bolt of correct length, and a washer under the Elastic stop nut.
21. The procedure is exactly the same if setting alignment with the box installed.
22. A saw horse or structure can be used under the wing side you are working on to be able to remove the gear.
23. Or you can drill all the way thru the assembly working from the 1/8” drill bit to 1/4”