University of Louisiana - Lafayette
Department of Mechanical Engineering
MCHE 484: Engineering Projects II

Weekly Progress Report (6)

To: Dr. Yonas Niguse

Cc: Yonas Niguse, Katie Kaliszeski, Matthew Dubea, Andre Signoret

From: **Full Throttle Engineers** | Katie Kaliszeski, Matthew Dubea, and Andre Signoret

Date: March 19, 2025

Sub: Weekly Progress/Plans

1. **Targets Planned Last Week**
    a. Work on Mid-Term Presentation
        i. Wednesday - March 12, 2025 at 10:30am
    b. Prepare Mid-Term Report for Submission
        i. Sunday – March 16, 2025 by 11:59pm
    c. Seat and Seat Tube Support Modification
        i. The seat and its tube support will need to be redesigned or modified and welded.

2. **Targets Completed**
    a. Machined Parts Using Lathe
        i. Completed machining of rear axle ‘center tube’, ‘center bushing’, and rear axle ‘wheel bushing’ using different grades of steel rods machined by the lathe to reduce weight and adjust diameters to fit in frame. These parts can be seen in **Figure 1** and are crucial for the overall stability of the rear wheel assembly and design overall.

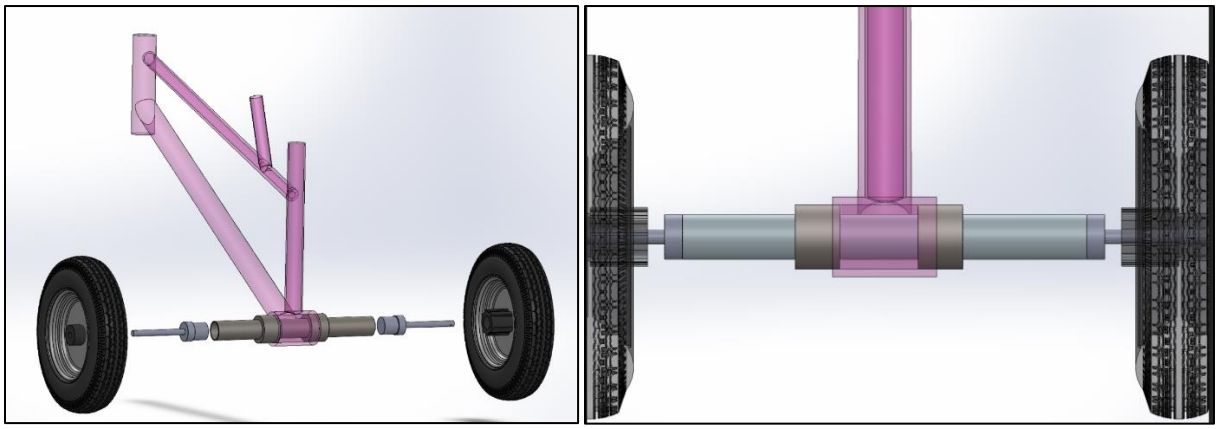

Figure 1: *Tricycle Rear Axle Exploited and Back Views*

b. Race Team Members Updated and Signed
    i. All team members that will be racing on April 26th have reviewed and signed the updated roster sign-up sheet.
c. Designed and manufactured a part that connects the front fork to the front wheel. This part will go directly on the bearings of the front tire to allow the tire to spin freely. It will be fir into the fork tube to make sure that it is strong and sturdy. This part was manufactured from a 2" diameter rod and the drawing can be seen in **Figure 2**.

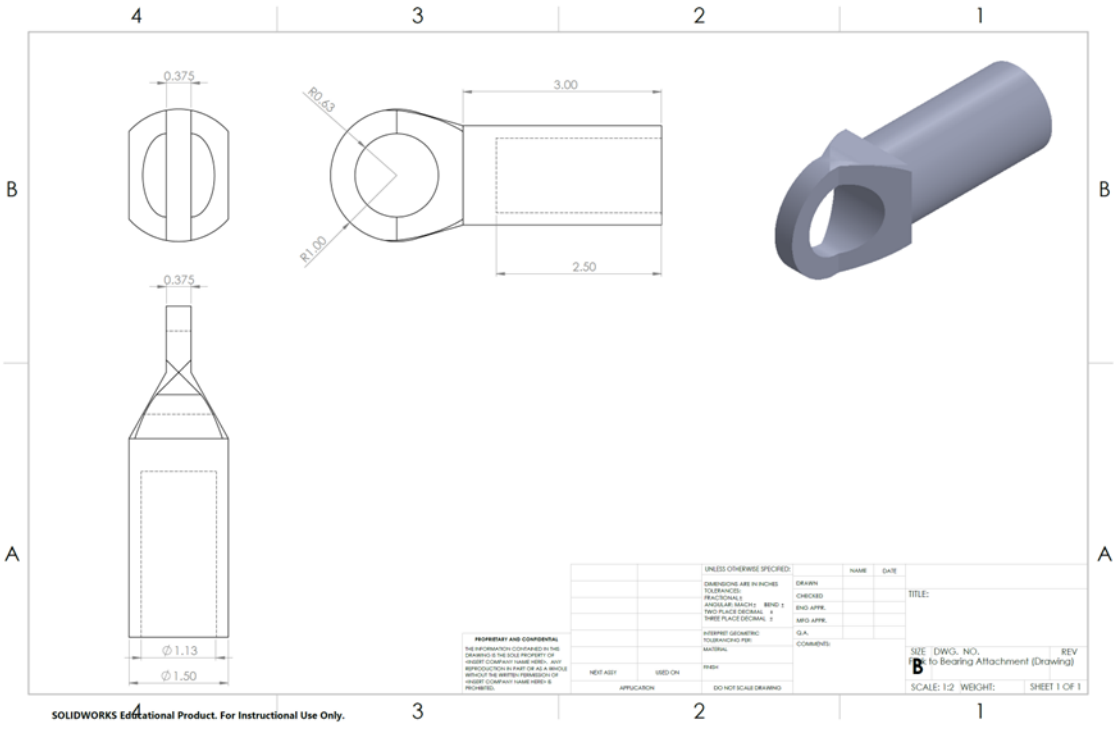

Figure 2: *Front Fork to Tire Bearing Drawing*

3. **Targets Not Completed; Actions Needed to Prevent Incompletion of Future Targets**
    a. Seat and Seat Tube Support Modification
        i. The seat and its tube support will need to be redesigned or modified and welded; behind the target completion date due to schedule conflicts with shop access. The team needs to keep on going to Mr. Jeff's every day to make sure that the tricycle assembly process is not behind schedule.

4. **Plan of Action for the Next Week**
    a. Welding with Mr. Jeff

i. Coordinate with Mr. Jeff to complete the welding portion of all machined parts. Ensure all team members are involved in the welding process.

b. Kinematics' of Trike: Validation for Rider Fit
    i. Conduct tests and simulations to validate the kinematics of the tricycles design, focusing on riders' comfort with respect to pedaling under the handlebars. This includes adjustments to be made based on the feedback from team roster riders.

5. **Notable Achievements/Success; Problems/Concerns to Address**
    a. Achievements/Success:
        i. Machining of critical parts has put us ahead in the anticipated assembly timeline. This potentially can help by allowing early testing and adjustments for team.
        ii. Successful submission of the Mid-Term Report. The presentation was well received, providing a concise update on our project's progress.
    b. Problems/Concerns to Address
        i. The delay in modifying cnc-machined parts and the welding operations needs close monitoring.