

Human Powered Vehicle Progress Report

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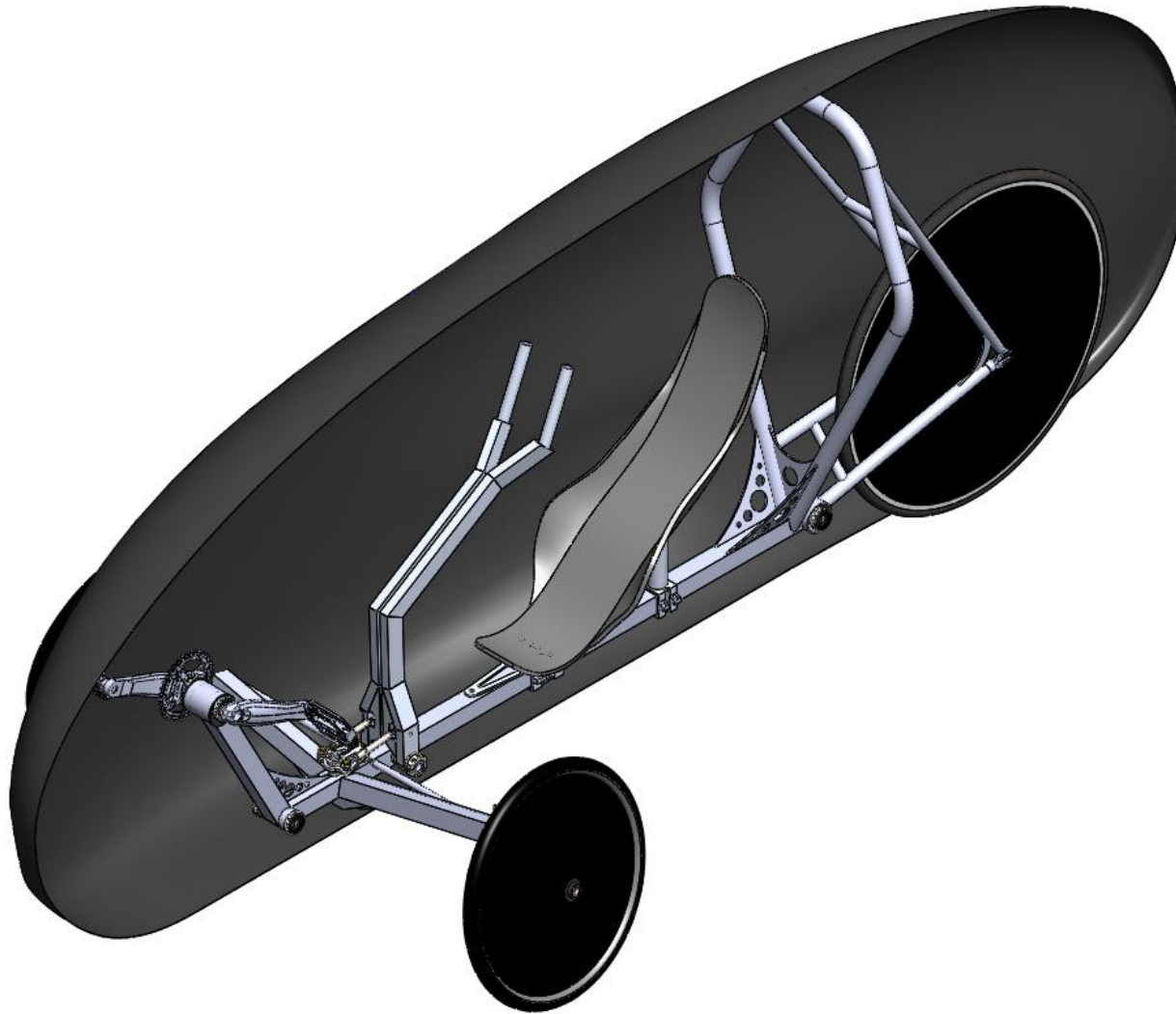
Overview

- Project Description
- Frame
- Steering
- Ergonomics
- Drivetrain
- Fairing
- Innovation
- Project Plan
- Conclusion

Project Description

- ASME Human Powered Vehicle Challenge
- Clients- Perry Wood, ASME
- Objectives
 - High speeds
 - Maneuverability
 - Lightweight
- There is no current form of transportation that provides the benefits of bicycle commuting, while offering the practicality of automobiles.

Figure 1- Full Assembly With Fairing



Frame

- Progress
 - Roll bar bent
 - Test frame welded
 - Frame completely welded including outriggers
- Next step
 - Heat treatment

Figure 2- Final Frame



Figure 3- Test Frame



Steering

- Progress
 - Welded
 - Knuckles
 - Steering arms
 - Steering Linkages
 - Bell cranks
- Next Step
 - Heat treatment
 - Manufacture bushings

Figure 4- Steering Arms



Figure 5- Bell Cranks



Figure 6- Knuckles



Ergonomics

- Modifications
 - Design change
- Progress
 - All pieces made
 - Welded
 - Seat belt ordered
- Next step
 - Heat treatment
 - Seat belt attachments
 - Manufacture headrest

Figure 7- Seat Mount



Drivetrain

- Progress
 - Gear mounts fabricated
 - Reverse gear fabrication in process
- Next step
 - Finish reverse gear fabrication
 - Test-fit components

Figure 8- Drivetrain Components



Fairing

- Progress
 - Foam plug sanded
 - Wrapped in fiberglass
 - Bondo applied
 - Primer applied and sanded
- Next Step
 - Final paint
 - Negative molds
 - Carbon fiber layup

Figure 9- Foam Plug



Figure 10- Fiberglass Wrap



Figure 11- Plug with Bondo



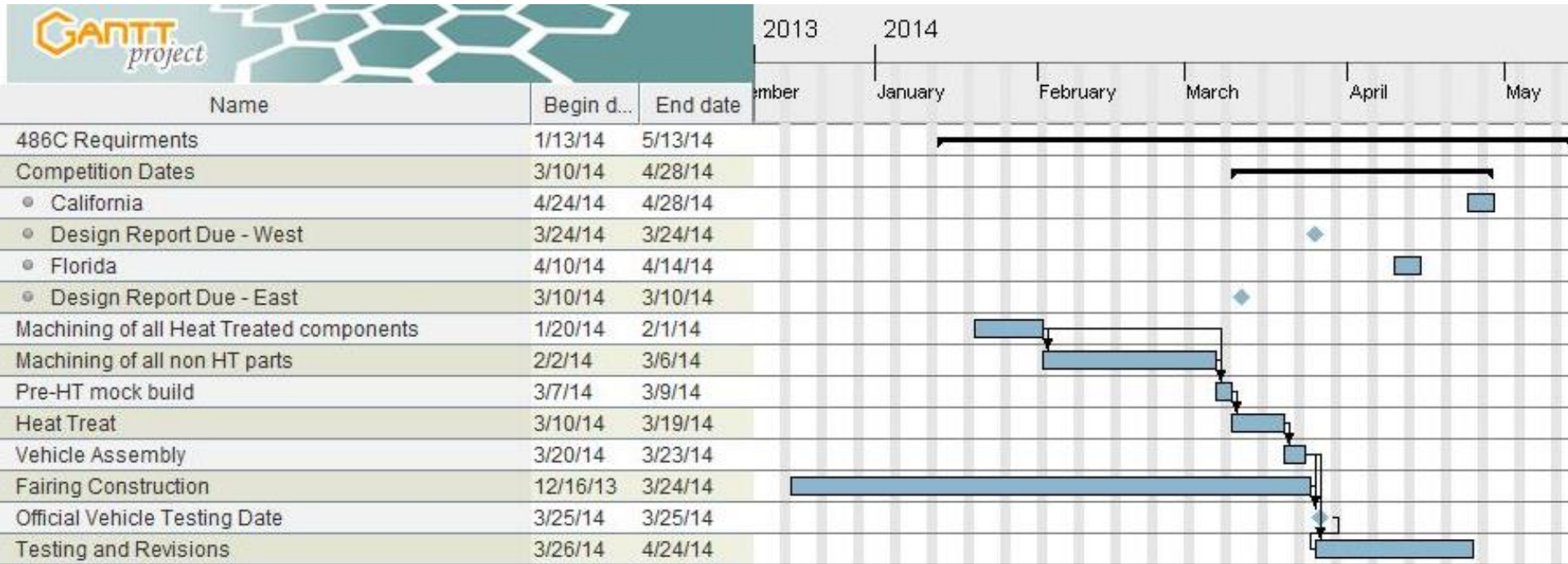
Figure 12- Plug with Primer and Filler



Innovation

- Progress
 - All components delivered
 - Micro-controller logic
- Next Step
 - Servo-controller programming
 - Fabricate final circuit board
 - Mirror development
 - Components integrated into fairing

Figure 13- Spring Semester Project Plan



Important Dates

- 3/5-7 – Mock vehicle assembly and disassembly
- 3/8 – Heat Treatment
- 3/15 – Carbon fiber layup begins
- 3/24 – Vehicle testing begins
- 3/26 – RPS testing
- 4/24 – Depart for competition

Conclusion

- All welding has been completed and components are ready for heat treatment.
- All final materials and components have been ordered.
- Vehicle will be fully assembled and operable by March 24th.
- Physical testing will occur after March 24th up until competition in April.

Questions?