

Vehicle Proposal Packet

Poynette High School, Poynette WI
Super Mileage 2008

Team Members

- 1 Advisor: Kraig Kalka
- 2 Advisor: Steven Koss
- 3 Deonta Backovitch
- 4 Scot Olson
- 5 Ryan Paskey
- 6 Logan Schmidt
- 7 Jeremy Tschupp

Log Book

- 1 Day 1-5: Started brainstorming
- 2 Day 5-7: Beginning rough sketches and materials list written down.
- 3 Day 8: Rough sketch chosen for development
- 4 Day 9-15: Sponsorship ideas and letters written and mailed out.
- 5 Day 16: Engine received
- 6 Day 16-20: Engine disassembly/re-assembly/engine cleaning and prepping, oiling.
- 7 Day 21: Cover sheet started and completed.
- 8 Day 22: Log Book started (day's completed 1-22)
- 9 Day 23: Engine throttle re-assembly (Throttle/carburetor spring problems) problems)
 - 1 Day 24: Supplies from sponsors received. Engine fabrication.
 - 2 Day 25: Engine mounting.
 - 3 Day 26: Engine spring/throttle fabrication.
 - 4 Day 27: Steel cutting/engine fabrication finally finished start-up complete.
 - 5 Day 28: Continue vehicle outer frame fabrication. (welding) practice weld.
 - 6 Day 29: Continue on welding for vehicle frame fabrication.
- 7 Day 30: Aluminum cutting/welding, engine

carburetor configuration continued... angle cuts are good.

- 8 Day 31: Aluminum cutting and vehicle frame fabrication.
- 9 Day 32: More aluminum cutting and welding fabrication process.
- 10 Day 33: More aluminum cutting and welding fabrication, grinding angle cuts.
- 11 Day 34: More aluminum cutting and welding fabrication.
- 12 Day 35: Even more aluminum frame welding fabrication.
- 13 Day 36: Rear compartment configuration, grinding weld spots, cross bar cuts)
- 14 Day 37: Engine compartment set-up. Finish welding main frame.
- 15 Day 38: Drilling support crossbars, proposal packet work.
- 16 Day 39: Drilling support crossbars, proposal packet work.
- 17 Day 40: Bolting and locking in cross-bars.
- 18 Day 41: Engine compartment angle cuts.
- 19 Day 42: Engine compartment angle cuts.
- 20 Day 43: Engine compartment angle cuts/welding to frame.
- 21 Day 44: Welding angle cuts to the frame.
- 22 Day 45: Engine plate bolt holes drilled, engine plate position set.
- 23 Day 46: Engine plate cutting for proper engine tightening.
- 24 Day 47: Engine plate/clutch work.

25Day 48: Spindle fabrication/ clutch work

26Day 49: Spindle/clutch work.

27Day 50: Go-kart part salvaging

28Day 51: Re-do welds on axels.

29Day 52: Same thing.

30Day 53: Axel work

Vehicle Configuration (B)

Our original design calls for a three wheel vehicle. The two front wheels will steer the car while the power train will drive the single rear wheel. The front of the car is narrow allowing for increased aerodynamics and wheel clearance. The car sits low with a wide front wheel base allowing for good stability. Our frame is about eight feet long made completely of aluminum to reduce weight. The engine is mounted behind the driver enclosed by a firewall. The rear wheel will be driven by a chain and sprocket system. There were minor changes made to the car during fabrication, however we stayed very close to our original design.

Power Train Configuration (C)

We decided to use a three-wheel setup, with one wheel in the back and two in the front. The rear wheel will be the wheel that is powered in order to drive. To connect the wheel to the engine we are using a chain and sprocket setup.

It will steer the front wheels. We are using a system that uses tie-rods and spindles. The accelerator is hand operated and located inside the cockpit. This simplifies the process of setting up our linkage. It will also help keep a steady speed, and make gentle throttle application easier.

We have tested our engine, other than that we have only done basic testing to make sure everything functions properly.

Performance Page (D)

There were many challenges we encountered in building the Super mileage vehicle, being the first time that Poynette is competing in a competition in which we had no past experience. Which meant that figuring out a design to go with, finding materials, finding an engine, and getting to the crew meetings on time are a lot of the problems we had to face until we either found them or worked out?

The first problems we had to sort out were no money and the missing engine. For the first few weeks we were trying to find out if anyone cared about helping our money difficulties but got no answer so we sent out requests and we finally got someone to help us. Then we went to the used motor graveyard and we looked for a while and found an engine to restore and here we are those were our most difficult problems to overcome.

Most of the other problems did not come up due to lack of time to test. We would have loved a lot more class time to complete the vehicle, test drive it and make adjustments but it just didn't happen. We learned not to take people by face value and to always expect the unexpected. We also learned that putting life into your ideas takes a lot of time, effort, and team cooperation to make things that you're proud of.

Brake System (E)

We will be using a reverse drum brake system. The drum will have a shoe on the outside that will squeeze the drum upon pressure being applied from the brake pedal. There will be a brake present on the rear axel of the vehicle. The brake will be a adjutable with a threaded linkage.

Safety Items (F)

The safety items required in the guidelines are included on the vehicle.

The cockpit is enclosed .0179" sheet metal; Witch meets the required thickness for the vehicle. The floor pan and firewall is made of the same material. The firewall is located right behind the driver. The roll bar is made of aluminum with added supports to increase the strength in case of rollover.

The safety of the driver is aided by rearview mirrors, two kill switches (one in the cockpit, and one on the outside), an extinguisher (in reach) , and a DOT helmet. The driver will be fully clothed. All crew members will wear safety glasses including the driver. The seat belt will be used by the driver. The entrance to the cockpit is big enough for a quick escape. The driver is safely secured in the enclosed cockpit. The vehicle is vented so the exhaust will exit the vehicle.

