American Society of Mechanical Engineers
MSOE Student Chapter

CO_2 RACE CAR COMPETITION 2008

Race Information:

Date: Thursday, March 13th, 2008
Time: 6:00pm Check –In and Food
6:30pm Race Begins

Note: Both team members **must** be present at 6:00pm for race officials to perform a safety check on your race car. No late entries will be accepted.

Safety:

In this document "reasonable" will be determined by race officials and is included for safety reasons. All of the terms and conditions herein will fall subject to a "reasonable person clause." Designs which may pose a safety concern to other drag cars or to any bystander may be deemed "unreasonable" and be disqualified. The race officials will be conducting a SAFETY CHECK on EVERY car before the race. If your car is deemed unsafe for ANY reason, it will not be permitted to race. If you have any questions about the safety of your design, please contact Nicholas J. Zepnick via e-mail at zepnickn@msoe.edu . Race officials will not be held responsible for any damages, hurt feelings, or disappointment which may result from a disqualified vehicle. Safety is our paramount concern.

Race Regulations:

1. Each team of 2 or 3 must create a racecar using the supplied kit. You must have at least TWO group members who CAN ATTEND THE RACE EVENT!

2. One group member will launch the car, while the other will be at the finish to verify the winner of each race. TWO people per group MUST ATTEND!

3. The competition will be a **double elimination** bracketed style tournament.

Race Regulations: (Continued)

4. ONLY 12 gram CO_2 Tanks will be used for the official race. The 8 gram tanks that come with your kit can be used for your test purposes or as a fun run on the night of the race.

5. The race track will be 100 feet in length.

Drag Car Construction Requirements:

1. The wheels supplied must be used. No other wheels of any kind may be used. Feel free to modify the wheels provided within "reasonable" limits.

2. Accessories should be kept to a minimum and be effectively secured to the car. Again, keep the safety regulations in mind. It is always better to ASK rather than build and get disqualified on race night!

3. Painting is allowed and encouraged.

4. The clearance space from the ground to the bottom of the car must be 1/4 of an inch to allow from clearance of eye hooks on the bottom of the car. Please design axle height with this in mind.

5. The predrilled CO_2 cartridge position MUST be used and cannot be altered.

6. A MINIMUM of 0.250 inches of balsa wood material MUST completely encompass the CO_2 cartridge in ALL DIRECTIONS. THIS IS A SAFETY PRECAUTION!

7. Your car must follow regulations 4 and 6. The launcher is built to ONLY launch with these guidelines in mind. IF YOUR CAR DOES NOT MEET THESE REGULATIONS, IT WILL NOT LAUNCH. No modifications will be made to the launcher assembly and your car will be disqualified if these requirements are not met.

8. All cars will be placed on the ground and launched. The use of launching platforms or spacers for under the wheels is strictly prohibited.

9. There are no weight or length regulations.

Drag Car Construction Requirements: (Continued)

10. There are no rules regarding lubrication of wheel or axles. Use of the axles provided is not required.

11. No stability wings of any kind may be utilized on the car.

12. The design of your car must be solid wood from front to back. The minimum cross sectional area at ANY POINT in the main body design may not be less than 0.25 in^2.

13. A minimum front to back wheel base of 6.0 inches will be strictly enforced.

14. A minimum front to back eyelet distance of 6.0 inches will be strictly enforced.

Prizes and Judging:

- $20 First Place Overall Race Position Prize
- $10 Second Overall Race Position Prize
- $20 For Most Innovative Design (As Determined by Impartial Race Official)
- $10 For Best Craftsmanship and Overall Aesthetic Appeal

Please Refer to **Figure 1** for an engineering drawing of critical guideline for the CO_2 cars.
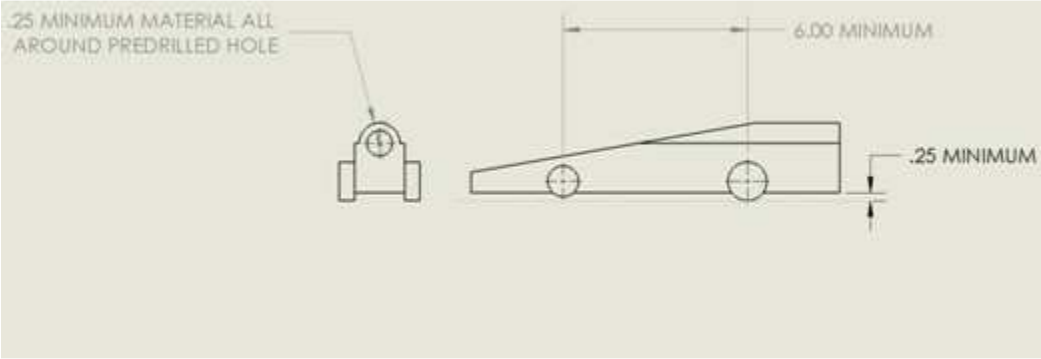
Figure 1: Drawing View of Example CO_2 Car