

**PDQ** CAR WASH

**TEAM PDQ**

**2009-10**

**PREBLE HIGH SCHOOL**





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Team PDQ putting in another great time on race day

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## TEAM PDQ



### **Team PDQ (From Left to Right)**

**Brandon Gunderson, Senior:** This was Brandon's only year in the Formula High School program

**Colin Nelson, Senior:** This was Colin's second and final year in the Formula High School program, last year he was a member of Team Venom

**Connor Tassoul, Junior:** This is Connor's first year in Formula High School

**James DeTemple, Junior:** This was James first year of Formula High School, he too will continue in the program next year

**Chad Prevost, Junior:** This was Chad's first year in Formula High School







## ABOUT FORMULA HIGH SCHOOL

Formula High School is a program created by Preble High School's technology and engineering teacher Jeremie Meyer. The Formula High School Program is designed for students who are interested in using engineering skills learned in previous classes to create a functional racecar in only eight months, the cars are then raced on an actual race track. Throughout the year students use their engineering skills and resourcefulness to overcome problems in the design and construction process. When students do encounter problems the instructor is there to help. While the instructor may point out problems, it is up to the students to find and create the solutions. Through the program, students learn important skills such as using a CAD program, welding, milling, fabricating, dealing with deadlines, and working with sponsors.



THE ORIGINAL  
FORMULA FIRST M5



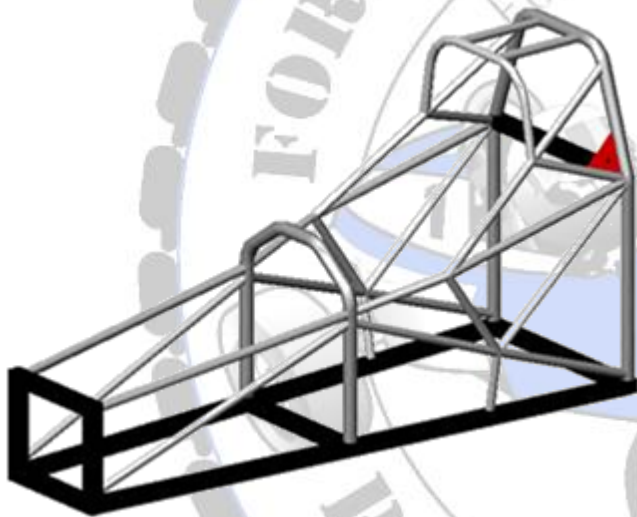
THE TEAM PDQ RACECAR

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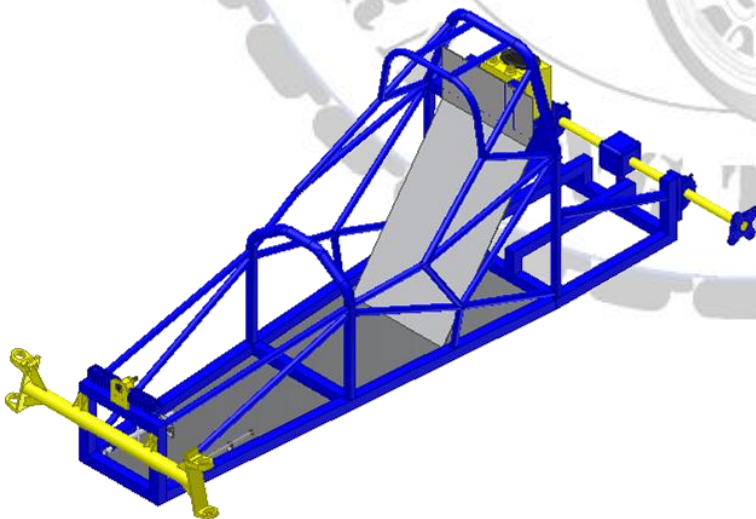


## DESIGN PROCESS

At the beginning of the year, after picking teams, we were required to finish a chassis design following certain guidelines. The required chassis consisted of the roll bars, halo, and supports. Using Autodesk Inventor, we drew the remaining parts of the chassis, such as the front axle, engine mount, seat, pedals, rear axle, and rear brake disc. Once the whole chassis was designed and we had the metal, we were ready to start building.



This is the design for the required chassis. The roll bars were added for maximum driver safety



This is the Team PDQ chassis; it was designed using the required chassis. In addition, the front and rear axles, seat, gearbox, fuel cell and floor are added

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## CONSTRUCTION

The most important, and longest part of the build process was constructing the chassis. After finishing the design, we began building the chassis by taking square tubing and welding the pieces together based on our blueprint. Once the base was created, we added the roll bars and side supports. The side supports were made by bending circular tubing and then milling the ends to fit on the chassis. After finishing the chassis, we made the front and rear axles.

A picture of the chassis with the roll bars and a few of the side supports attached. The picture on the right was taken on October 13, 2009. The bottom picture was taken on November 12, 2009



A picture of the chassis with all of the side supports added and the engine mounts attached to the back of the chassis



## CONSTRUCTION CONTINUED

Once the chassis was built and the axles were attached, we began to install our parts. To maximize productivity, we split up into two groups and worked on constructing different parts of the car. For example, while two of us worked on the spindles, the other two or three were worked on the engine mounting plate and the pedals. After installing the pedals, we were able to install the throttle cable and brake lines; and we were able to measure where we would install our seat and mount the steering system. After all of the parts were installed, we began wiring all electrical components on the vehicle. Once all necessary components were installed, we took apart the chassis and began prepping the car for paint. To prep for paint, we had to degrease and sand all metal parts; work out any imperfections found in the fiberglass, and send all the parts out. Our chassis was painted by Renco Machine, our exhaust was ceramic coated by Spence Industries, and our fiberglass body was painted by NWTc. The other parts were painted here at Preble in the spray booth. When all parts, chassis, and body were finished being painted we reassembled the car this involved applying our sponsors logos to the fiberglass body. After all of that we were ready to race.



Fitting in one of the side supports on the chassis





## RACE DAY

On April 25, 2010; nine of the eleven cars involved in the Formula High School program drove down to Road America in Elkhart Lake, Wisconsin. All of the cars participated in time trials at the Briggs & Stratton Motorplex on the grounds of Road America. Although the weather refused to cooperate throughout the majority of the day, the teams persevered and hoped for the best. Even with the driving rain and gusting wind, all teams registered at least two times on the three track variations. The first track we ran was a simple oval; the second variation was a long road course which included several tight turns, and a final shorter variation of the road course.



Team PDQ racing at the Briggs & Stratton Motorplex

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## PHS TECHNOLOGY & ENGINEERING HISTORY

The picture to the right is the first vehicle created by Preble High School. Created in the 1999-2000 school year, this was a supermilage vehicle that was raced at UW-Stout



This CAD drawing of an XRV car was created by Preble students using Autodesk Inventor



This was the Mini Chopper that Preble High School built for a competition at Fox Valley Technical College





## PICTURES



The chassis early in the year



The gas and brake pedals with the master cylinder attached to the brake

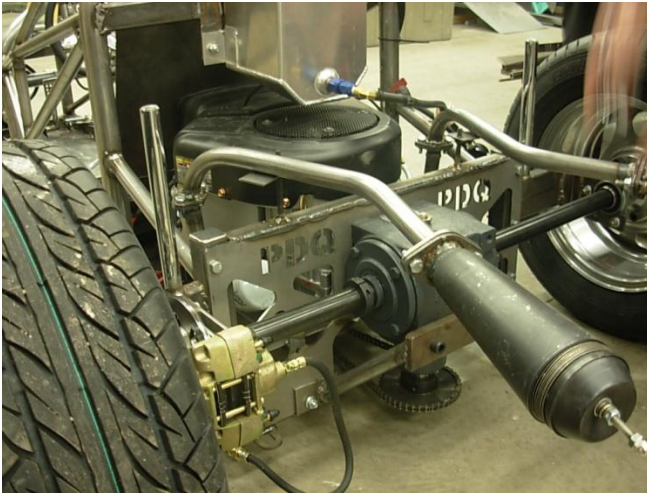


The steering system is mounted under the starter





## PICTURES



The final dual exhaust system attached to the engine with one of the mufflers installed



The car fully assembled and prepped for paint



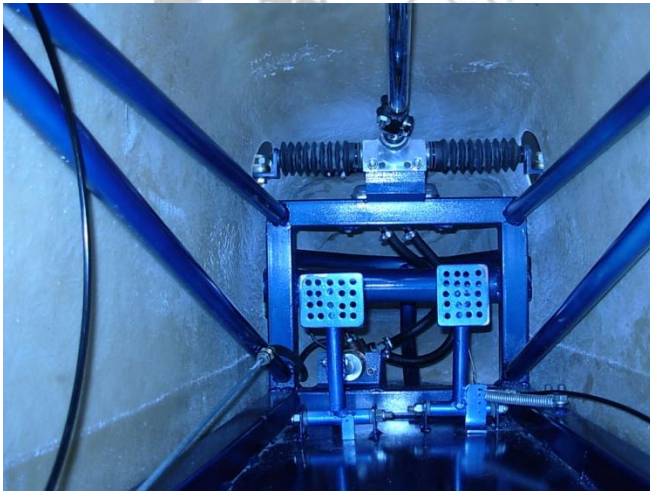
The car after being painted, with the spindle assemblies reinstalled



## PICTURES



A front view of the finished racecar



The rack & pinion and pedals installed and ready to race



The back of the car with the exhaust, fuel tank, and rear axle installed





## PICTURES



Two pictures showing the reassembled and painted front axle, spindle assemblies, tie rods, and brakes



Team PDQ on race day in pit road

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## PICTURES



Two pictures of Team PDQ on race day, the top picture shows the wet weather during the morning, but towards the afternoon things began to dry out



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TO THANK ITS  
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SOLUTIONS**  
Inc.



**RENCO**  
MACHINE COMPANY, INC.



Wisconsin Public Service Corporation

**New Tech Metals**



PROJECT LEAD THE WAY

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