

# OREGON TECH RACING

**Monthly Newsletter****December 2013**

## Manufacturing Has Started!

Frame construction has officially started. Several team members came back from winter break early to start manufacturing our steel space frame.

We cut, cope, bend and weld 100% of our frame in house. This process is very time consuming and tedious when trying to hold tight tolerances.

Other members of the team spent a significant amount of time over the break doing carbon prototyping which will be revealed in a later issue after everything has been validated.

## Business and Cost Event Preparation:

As a part of our new approach to operate more professionally and as a business we have began to create our business event strategy and start crafting our presentation material. For us, this is remarkable as these two events usually get neglected until later.

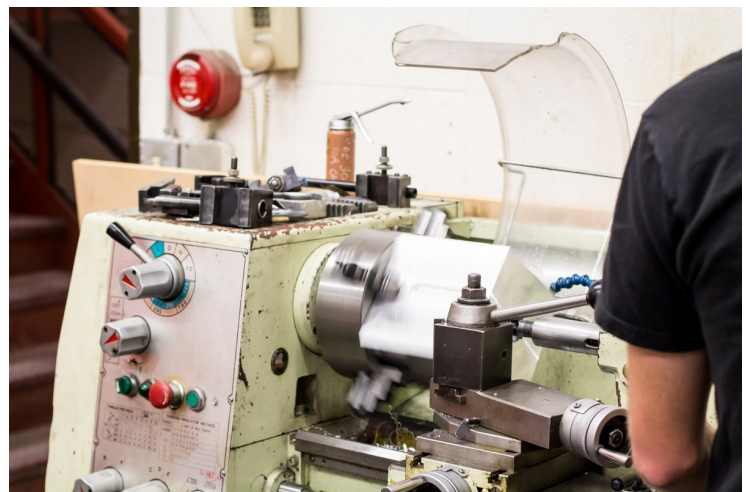
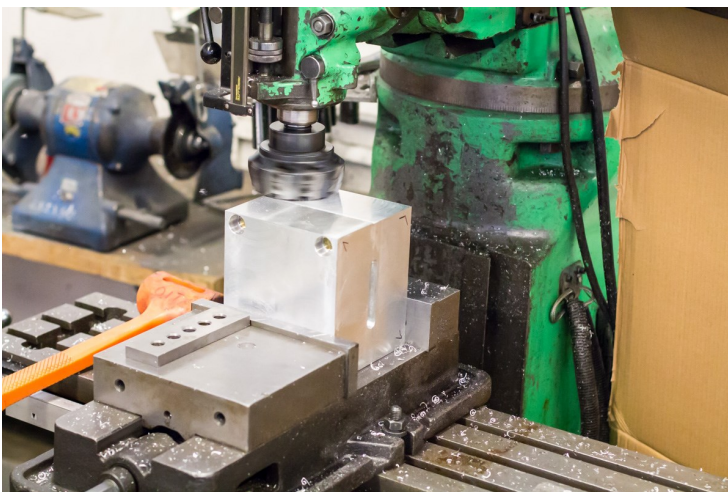
Fortunately, we realized that in order to be more successful in overall placement at competition we must place higher in static events. We are confident that with more preparation and attention to detail given to these two events we will gain a substantial amount of valuable points.

## In This Issue

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## Upcoming Events:

- Manufacturing (ongoing)
- More Testing of F2013 (ongoing as weather permits)
- First Drive March 29
- FSAE WEST 2014 June 18-21



Above Left and Right: Mold Machining for F2014 in Progress

## Sponsorships:

One of the many obstacles that every formula team faces is finances.

These cars cost a lot of money to produce. Everything including raw material such as steel, aluminum and composites is expensive.

Testing the car requires the use of tires which are consumed at a rapid rate and are also extremely expensive.

We are always looking for new sponsors in any form, such as machining time, purchased parts, materials, apparel etc.

If you would like information about our sponsorship program please contact us.

We would not be anywhere without sponsors and donations.

To our existing and future sponsors:

## Thank You!



Donate Today! With the above QR Code.

## Tech Snapshot: Electronics

For data acquisition, we are refining our system from last year and adding over 30 data points to log. The system was custom built last year by a software engineering junior project group at Oregon Tech. The system uses an Arduino mega microcontroller on the car. This board reads in data from sensors that are on the car, and wirelessly transmits them to a laptop via an XBee antenna (The XBee's have a one mile range in clear air). The data that is sent to the laptop is then displayed in real-time through a custom user interface developed by the software team. At the same time the data is being displayed on the user interface, it is also being stored. At the end of each race, the data is automatically uploaded to a custom tailored website where we can view all of the data.

This year we will be developing a custom digital display that will aid the driver with information during races. It will be a 4.3" LCD screen that is powered by a Nexys 3 FPGA. The screen will display an RPM band, as well as the current gear position. It will also flash the background blue when to shift, yellow when the engine is getting hot, and red when the car needs to be immediately shut down due to an issue.



F2014 Frame Fabrication in Progress

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