Rookie Kit Bot Build Day (RQBS)
Jan 15th, 2011
Hosted by FRC3295 Poly Techs of Riverside, CA

Stats

6 rookie teams, 1 veteran team
4 room leaders
20 student helpers
70 students and mentors
7 fully functional 2011 drive trains
Started build at 9AM, finished by 7PM
First robot running by 530PM
Room leaders;

Frame & Transmissions: Chris Hussman, FRC330
Electrical: Sergiy Nesterenko, FRC3476
Programming: Rick Sisk, FRC2493
Main room: Danielle Sisk, FRC3295

Stuff you need for the day

- 1 Chop saw, must have a blade that can cut aluminum
- 2 quality chain breaks
- 2 soldering irons
- 2 quality wire crimpers
- spare set of basic tools (hammer, combination wrenches, screwdrivers, pliers, allen wrenchs)
- 3 USB hard drives or memory sticks with at least 4GB capacity
- video projector and computer for each of the rooms

Prep work

- Organize, organize, organize
- You need 3 classrooms that can hold at least 50 students with 7-10 robots. The rooms work best with tables, not desks. The three rooms are for Frame & Transmissions, Electrical, and Programming
- At least one additional room for opening, lunch, and a place for those who are not in one of the other three rooms to hang out.
- It's nice to have one additional room for volunteers, but not necessary
- Be sure to have plenty of food and water for your volunteers.
- Find your room leaders early. The leaders must have experience with FRC robot construction and you should find leaders who have experience in the particular room they will be leading; Frame & Transmissions, Electrical, Programming. The room leaders are key to a successful RQBS.
- Each room should have 4-5 student helpers to keep the teams focused and working. Pull from veteran teams in the area for help. Tell them it will make their regionals more competitive and looks good on Chairman's Award submissions
- Try to have lunch available on site for the teams. It helps build camaraderie with the teams and keeps everyone on site saving lots of time. You can also shorten the lunch break if you need to make up time. We had a local Rotary club donate $300 to purchase hot dogs, fruit, PB&J fixings, and drinks for estimated 150 students. 70 students arrived and all the food was eaten. We said

food would be available for purchase (see flyer) but ended up taking donations from the teams and made about $160.

- Starting in November, send emails to contacts for rookie teams in the area with a flyer (see attached) and any other information channel you can find. Regional Directors can help with the contact lists. Make contact several times between November and kickoff to get teams attention.
- Have teams register by the week before kickoff so you know who is coming. Use a Google Docs form for the registration, its fast and easy. Expect some teams to drop out, we had about 30% drop rate, but the teams did inform us in advance so we could adjust. Most dropped just before and right after kickoff.
- Be sure teams know what they need to bring (see flyer) and remind them multiple times, especially a couple days before RQBS
- Find a local hardware store to donate material for the RQBS. Some extra items are needed, see the attached Grainger order for what we purchased. Grainger donated $200 for the day.
- Make signs on butcher paper to direct teams to the build locations. Each room should have a sign for the room. We also made signs thanking our sponsors, Grainger and the Rotary club.
- This is a good opportunity to showcase FIRST. Invite people who you might be working on to support the program. Be sure to have someone that can spend time with them and describe what is going on. We had a couple well spoken students and a mentor handle visitors.
- Have a powerpoint for the main room to open the day. It should cover the agenda (see attached), rules (GP rules the day), and goals. Keep it short, there is plenty of work to do.
- Have someone give a brief (under 5 minutes) inspirational speech to the teams at the start of lunch in the main assembly room. Makes a great break to put everyone in lunch mode. We had the head of the Rotary club speak (they love this kind of stuff ;>)
- Communicate with the room leaders before the build to make sure they are ready for the day, know the schedule, and give you any special requests they might have.
- Search the FIRST website for RQBS. This will give you a good start on all the material you need for the day. Nancy Skerry, FRC Project Coordinator at FIRST, provided access to updated RQBS information before kickoff. You must sign an NDA to get it, but it helps to have the information early.

Observations

- We had 7 teams participate. Could probably have scaled to 10 teams, more than 12 teams would have been tough to handle efficiently.
- Having the RQBS after kickoff works well for us. It gives rookie teams some time to review the rules and strategize. Having it as early as Sunday could work, but no later than the Saturday after kickoff.
- The downside of waiting until after kickoff is you'll have to undo some of the work the teams may have already done. In the long run, they are better off, but it does complicate the day some what.
- We focused on rookie teams but this works OK for veteran teams as well.
- We found that many rookie teams are totally overwhelmed by the time they get to RQBS. It would be helpful to have some workshops available at the same time as the RQBS. Suggestions include, strategy, how to find information (ChiefDelphi, FIRST web site), and programming. The downside of this is the increase in the amount of students that need to be at the RQBS, some teams may not have enough team members. Each RQBS room should have at least two-three students for each team in it.

- Limit the day to Labview only. It is the easiest language to teach new and non programmers and you need to focus on one language to make the day have a chance of success. Teams that want to use other languages can re-image the cRIO on their own time.
- Make sure everyone follows the agenda for the day. If a team wants to do their own stuff, do not let them derail the other teams.
- Follow up with teams after the RQBS. Have them send thank you notes to the teams that ran the RQBS, it's a good habit to get them into.
- Be sure to thank your sponsors, we are building them photo books on SNAPFISH.COM using pictures from the day.
- Be sure to have one or more students focused on taking pictures of the day. Make sure to get a group photo, best time is at the end of the day with completed robots, but most teams will have to leave before everyone is done. We took a group photo at lunch. Get the pictures up on Facebook to share the day.

Memories

Here are some pictures from the day…