

Driver Selection for FRC

FRC1114 – Simbotics
Karthik Kanagasabapathy
December 7th, 2013



Karthik Kanagasabapathy

- 16 years of *FIRST* experience
 - First ever drive coach of a Canadian team (1998 – Team 188)
- Lead Mentor for Team 1114, 2004-present
 - 22 Regional Championships
 - 2008 World Champions, 2010 World Finalists
 - 2012 Championship Chairman's Award
- 2005 Waterloo Regional Woodie Flowers Finalist Award Winner
- Emcee for the Canadian Regionals
- TEDx Speaker - <http://youtu.be/MfC3JdkEVgQ>
- Regional Manager, Innovation First International, Canada



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Outline

- Driver Selection
 - Driveteam Roles
 - One Driver or Two?
 - Driver Qualities
 - Coach Qualities
 - Decision Time
 - Questions



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Driver Selection

- *FIRST* is like auto racing, events are not always won by the best robots; it's often the best drivers
- Too important to be left to the last minute
 - Drivers need time to practice, and adjust to the pressure of the role
 - I prefer to have drivers picked before kickoff, but never any later than day 14
 - I prefer a lot of things in life that don't always end up happening...



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Driveteam Roles

- Driver (x2?)
 - Responsible for all robot operation
 - Roles are usually divided with a Pilot and a Operator (Controls arms, pickup systems, etc)
 - Overlap can exist
- Field Coach
 - Responsible for planning match strategy, and communicating the strategy during the match
 - The overall decision maker on the field
 - Needs to understand the game inside and out



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One Driver or Two?

- Robot specific decision
- Simple robots can easily be done with one driver
 - A simple robot with two drivers can result in redundancy that leads to slowness
- Complex robots typically necessitate a second driver
- Communication between drivers is critical!



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Driver Qualities

- Maturity
- Communication Skills
- Passion/Enthusiasm/Dedication
- Driving Skill



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Driver Qualities

- Maturity
 - FIRST competition are stressful events; your driver must be able to handle pressure!
 - Dependability comes with maturity. You cannot afford to have a driver who will bail on you at the last minute
 - Consider students who've been through high level competitions – e.g. varsity athletes
 - Remember, maturity cannot be taught



Driver Qualities

- Communication Skills
 - Must be able to listen to instructions from the co-driver, and more importantly the coach
 - The inability to follow pre and in match strategies will result in losses
 - This is another skill that can't be instantly taught in a season



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Driver Qualities

- Dedication/Passion/Enthusiasm
 - *“Nothing great was ever achieved without enthusiasm”*
 - The drivers need to be fully invested in the team
 - They have to be willing to make the team the priority
 - Become a top driver takes hundreds of hours of practice
 - An intense competitive spirit
 - Hey look, another skill that can’t be easily taught in a season...



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Driver Qualities

- Skill
 - Driving a FIRST robot requires top flight hand-eye coordination
 - A good understanding of spatial relations
 - The ability to see lanes; vision
 - Aggression – you cannot be afraid to mix it up
- Notice how skill comes after the other three?
 - With enough practice, anyone can develop driver skill
 - With the prevalence of video games, lots of people know how to manipulate a joystick...



Drive Coach Qualities

- Fast Thinking
 - Drivers have to be watching the robot at all times, they can't watch the whole field
 - Up to the coach to be aware of everything happening on the field
 - Like the offensive coordinator of a football team, the coach calls the plays
 - Needs to be aware of and calculate the score quickly
 - Can't always rely on the real-time scoring
 - Many matches have been won and lost by good and bad coaching



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Drive Coach Qualities

- Authoritative
 - Drive coach must have the respect of his/her drivers
 - Drivers have to listen to the field coach without question
 - Crucial in short 2-minute matches
 - Drive coach must be able to get the team's point across in the pre-match strategy sessions
 - Teams can be pushy in these sessions, without a strong field coach, you'll end up with a plan that does not suit your team
 - I highly recommend that you choose an adult as a field coach
 - The only alternative is your most mature, strong willed and intelligent high school student, who has the respect of his teammates



Decision Time

- How do we decide who makes the driveteam?
 - Choose your drive coach first
 - This person needs to be involved in the choice of the drivers
 - Base your decision on the aforementioned criteria
 - Also, chemistry matters; they need to get along
- Should we have tryouts?
 - Of the four major qualities, how many of them can be evaluated via a tryout?



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Questions

- Questions on any topics!
- Resources:
 - www.simbotics.org/workshops
 - www.simbotics.org/app
- Contact
 - Email: karthik@simbotics.org
 - Twitter: [@kkanagas](https://twitter.com/kkanagas)
 - Facebook: [/karthik.kanagasabapathy](https://facebook.com/karthik.kanagasabapathy)
 - Feel free to ask questions, I actually enjoy this stuff!

