



# Scouting and Strategy

Improving your chances after Bag Day

## Who Am I?

**Zac Young**

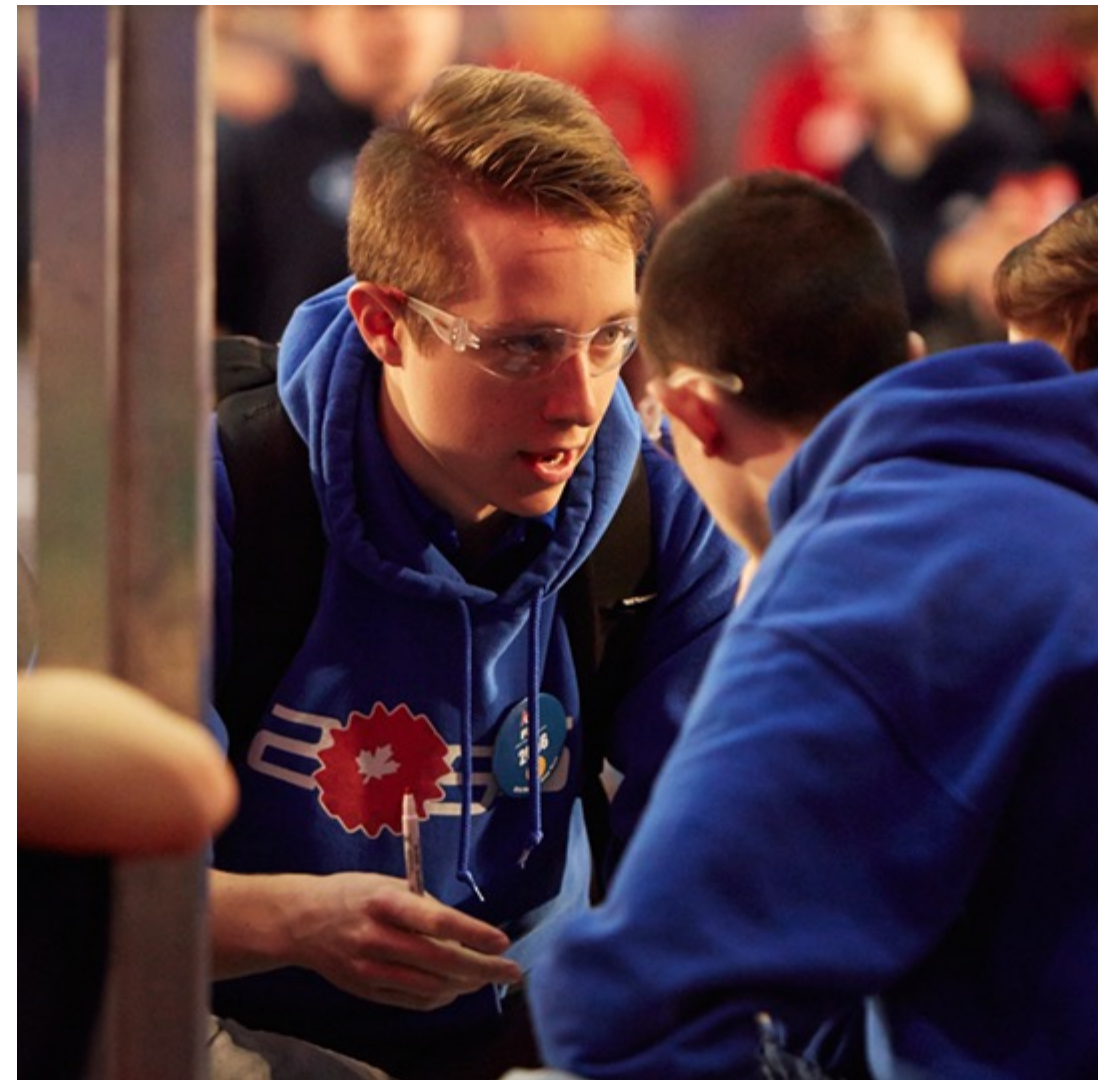
Team 2056 Alumnus

Student Member: 2007 - 2010

Alumni Mentor: 2011 - 2015

Drive Coach: 2014

Currently in Waterloo, ON



## What is Scouting?

- Recording of team's capabilities and performances before and during competition
- Insightful analysis of this information
- Allows educated decisions for:
  - Match strategy
  - Alliance Selections

## What is Strategy?

- How an alliance approaches a given match
  - A “game plan” of what team's want to do
- Micromanagement of driver operations

## Scouting

- Allows for educated decisions
  - Match Strategy
    - *Play around the capabilities and limitations of alliance members and opponents*
  - Alliance Selections:
    - *Form the best possible alliance for eliminations*

## Strategy

- Optimizes net score for your alliance through
  - Maximize alliance score
  - Minimize opponent score

## Scouting “Just Because”

- Don't scout because “good teams do it”; must consider end goal
  - Match Strategy
  - Alliance Selections
  - If information isn't useful for these situations, then don't record it!
- Team members should understand value
  - Disrespect leads to unreliable data
  - Self-fulfilling prophecy

## Do's

- Objective
- Easily determined
- Correlate with robot success

## Don'ts

- Subjective
- Low/no correlation

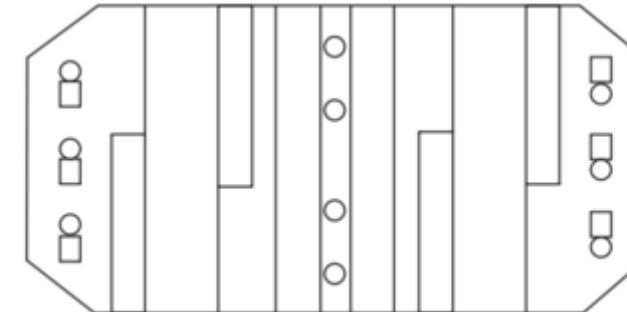
## Scouting Team

- Keep scouts sitting together
- Have a pre-planned rotation, leader to track and review

### 2056 Scouting Sheet 2015

Match: \_\_\_\_\_ Team: \_\_\_\_\_ Scout Initials: \_\_\_\_\_

**Autonomous** X - pickup ☐ - robot



Autozone (AZ): No Yes

Cans to AZ: 1 2 3

Totes to AZ: 1 2 3

AZ Totes Stack: No Yes

Step Cans: Fail 1 2 3 4

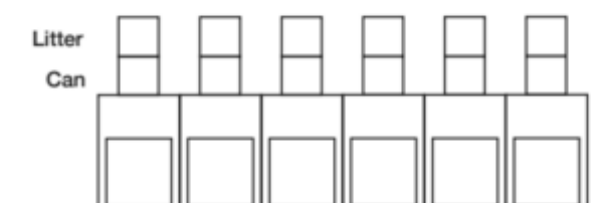
Time to Grab: \_\_\_\_\_

### Teleoperated

#### Pickups

Feeder Totes	Feeder Litter
<input type="checkbox"/>	<input type="checkbox"/>
Floor Totes	Floor Cans
<input type="checkbox"/>	<input type="checkbox"/>
	Step Cans
	<input type="checkbox"/>

#### Stacks on Stacks



#### Coopertatum

Attempted: No Yes

Arrival Position: 1 2

Totes added: 1 2 3

Points: 0 20 40

#### Errors

Tote Drops	Can Drops	Stack Smash
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

#### Final

##### Fouls

<input type="checkbox"/>
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##### Comments

<input type="text"/>
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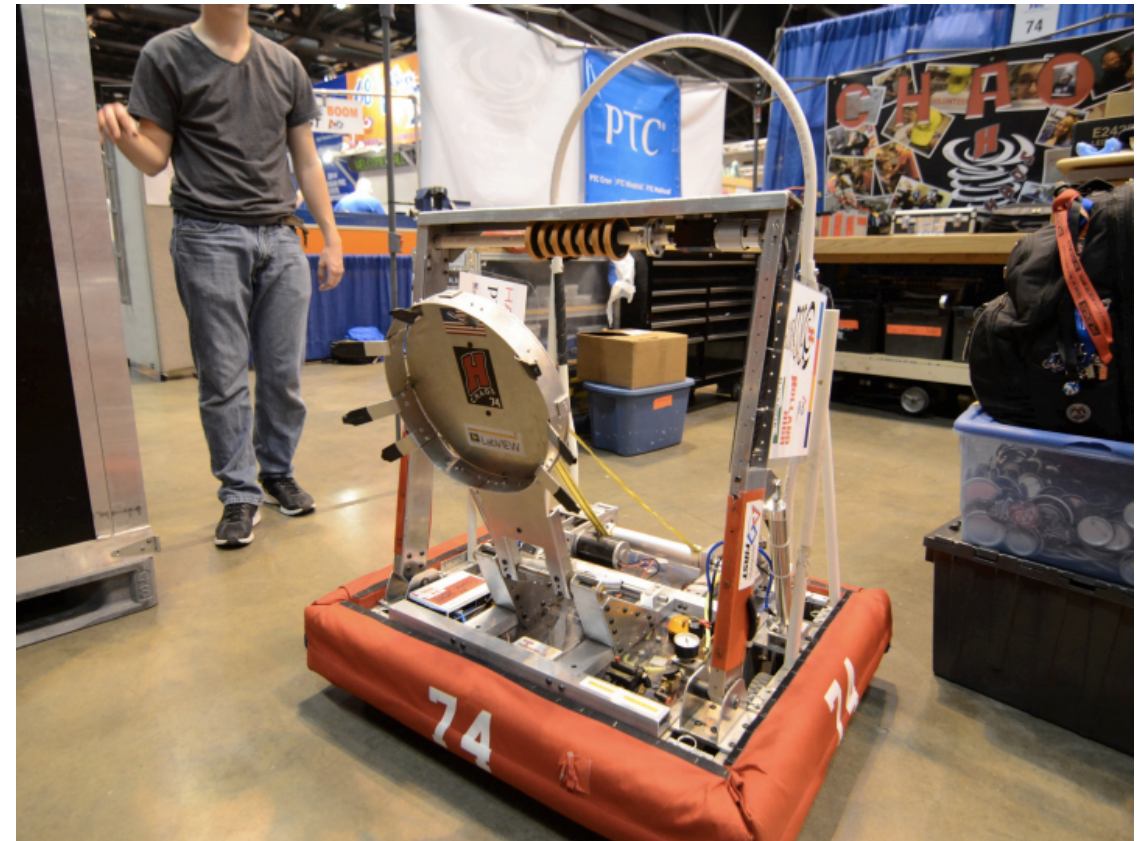
#### Human Plays

Own Zone	Own Landfill
<input type="checkbox"/>	<input type="checkbox"/>
Other Zone	Other Landfill
<input type="checkbox"/>	<input type="checkbox"/>



## Do's

- Familiarize with the robot
- Assess overall quality
- Understand key features
- Take reference photo
  - Number in view
  - Clear, full photo of robot



Example of a good 3/4 view picture

## Don'ts

- Ask about things you can learn by watching/looking
  - “How many wheels?”
- Ask too many questions

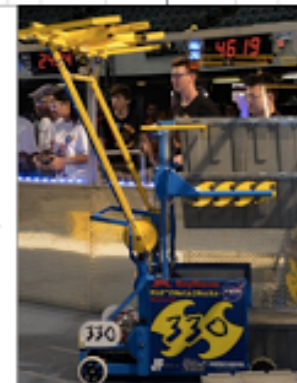
- Ties together all data collected
- Presents in an orderly an understandable fashion
- Without this, recording data is not helpful

		Avg. Co-op	Foul Pts	%Scored	Drivetrain	Stinga	Base	H Pts	Tele Pts	Ball Points	Bridge Pts	Pts/M
1												
2	2826	8	-	81	8WD Tank(8 IFI/AM, ) CIMs:4	No	L	12.0	22.9	34.9	18.8	53.6
3	2056	8	-	74	5WD Mechanum(3 Slick, 2 Mechanum, ) CIMs:5	No	W	15.0	20.5	35.5	12.5	48.0
4	67	12.8	0.3	84	8WD Tank(8 IFI/AM, ) CIMs:4	No	W	10.3	20.4	30.7	14.3	45.0
5	2415	15	-	82	8WD Tank(8 Other) CIMs:4	No	L	12.0	21.8	33.8	8.8	42.5
6	973	10.0	-	69	4WD Swerve(4 Other) CIMs:4	No	L	9.4	14.0	23.4	17.1	40.6
7	195	11.6	-	68	4WD Swerve(4 KOP 2012, ) CIMs:4	No	W	6.0	15.4	21.4	18.8	40.1
8	2590	14	-	78	4WD Tank(4 IFI/AM, ) CIMs:4	No	W	7.7	16.1	23.9	14.3	38.1
9	1114	11.0	0.4	81	2WD Swerve(2 Mechanum, ) CIMs:3	No	W	11.3	14.6	25.9	10.0	35.9
10	1796	12	-	86	6WD Tank(4 IFI/AM, 2 Omni) CIMs:4	No	L	8.6	12.9	21.4	12.9	34.3
11	1676	11	-	52	8WD Tank(8 IFI/AM, ) CIMs:4	No	L	9.4	13.3	22.7	11.4	34.1
12	1218	22	-	72	6WD Tank(6 IFI/AM, ) CIMs:2	No	L	6.0	14.6	20.6	12.5	33.1
13	781	16.0	-	87	6WD Tank(6 IFI/AM, ) CIMs:4	No	L	8.9	9.8	18.6	12.5	31.1
14	2949	16	-	81	6WD Tank(4 Pneumatics, 2 Other) CIMs:4	No	W	9.8	9.4	19.1	11.3	30.4
15	2557	14	-	56	6WD Tank(4 KOP 2012, 2 Omni) CIMs:4	No	W	4.0	6.0	10.0	18.6	28.6
16	2512	21	-	63	4WD Mechanum(2 IFI/AM, 4 Mechanum, ) CIMs:4	No	L	4.3	6.4	10.7	17.1	27.9
17	359	23.0	-	73	8WD Tank(8 IFI/AM, ) CIMs:4	No	L	7.4	15.4	22.8	5.0	27.8
18	245	13.0	-	74	6WD Tank(6 IFI/AM, ) CIMs:4	Yes	W	9.8	12.8	22.5	5.0	27.5
19	2614	11	0.9	69	6WD Tank(6 IFI/AM, ) CIMs:4	No	L	6.9	10.0	16.9	10.0	26.9
20	1592	8	-	63	6WD Tank(6 IFI/AM, ) CIMs:4	No	W	5.3	11.3	16.5	10.0	26.5
21	2046	15	0.4	80	10WD Tank(10 IFI/AM, ) CIMs:4	No	W	3.4	13.7	17.1	8.6	25.7
22	2898	16	-	61	6WD Tank(6 KOP 2012, ) CIMs:4	No	L	10.5	4.0	14.5	10.0	24.5
23	1311	16	0.4	61	6WD Tank(4 KOP Pre '12, 2 Omni) CIMs:4	No	L	6.8	7.1	13.9	10.0	23.9
24	1902	9	-	59	8WD Tank(8 IFI/AM, ) CIMs:4	No	L	7.9	5.9	13.8	10.0	23.8
25	2603	16	-	58	8WD Tank(4 IFI/AM, 4 Omni) CIMs:4	No	L	5.4	2.6	8.0	15.7	23.7
26	1987	24	-	71	6WD Tank(6 IFI/AM, ) CIMs:4	No	W	6.0	3.3	9.3	14.3	23.6
27	3968	37	-	88	6WD Tank(6 IFI/AM, ) CIMs:4	No	W	7.9	9.9	17.7	5.7	23.4
28	2974	14	-	56	4WD Mechanum(4 Mechanum, ) CIMs:4	No	L	7.7	2.9	10.6	12.9	23.4
29	2403	15	-	-	6WD Tank(2 IFI/AM, 4 Omni) CIMs:	No	L	5.9	-	5.9	17.1	23.0
30	2648	19	-	50	6WD Tank(6 KOP 2012, ) CIMs:4	No	SL	3.5	2.9	6.4	16.3	22.6

Summary
Picks-Sortable
List
Match Prescout
Match Summary
Pit Scout
Stats
Raw Data
TeamList
A ...
+
:
←



- [illegible]



## Pick-Lists

- **Always make a list!!**
  - Could become alliance captain from 15th seed
  - Gives you opinion on 3rd alliance member
  - Might be better informed than your alliance captain!

## Scouting Meetings (Friday Night)

- Have the whole team attend
- Discuss the competition so far, get funny stories out of the way
- One-person talks at a time, all opinions valid
- Have leader(s) organize info, query scouting data
- Emphasize the importance of good data

## Determines

- Starting autonomous positions
- Who crosses what defences
- Whether to try for tower capture or not
  - Need 8 balls scored and defences breached!
- Selection of opponent outer works
- Placement of own outer works
- Who plays defence (if any)

## Based on data that is

- Objective
- Reliable
- Current

## Pre-match Activities

- Gather other team's drive coaches and drivers
  - Make sure this includes team leaders
  - Have a field drawing handy
- Come with a proposed strategy in mind
  - What can you do that fits alliance's skill set?
  - What do you think others can do well?
- Agree on match plan including:
  - Auto set-up and human players
  - Roles during match (especially game piece use)
  - End game strategy

## Team Effort

- All teams on the alliance should agree
- Go into conversations unbiased
- Be willing to accept the suggestions of others

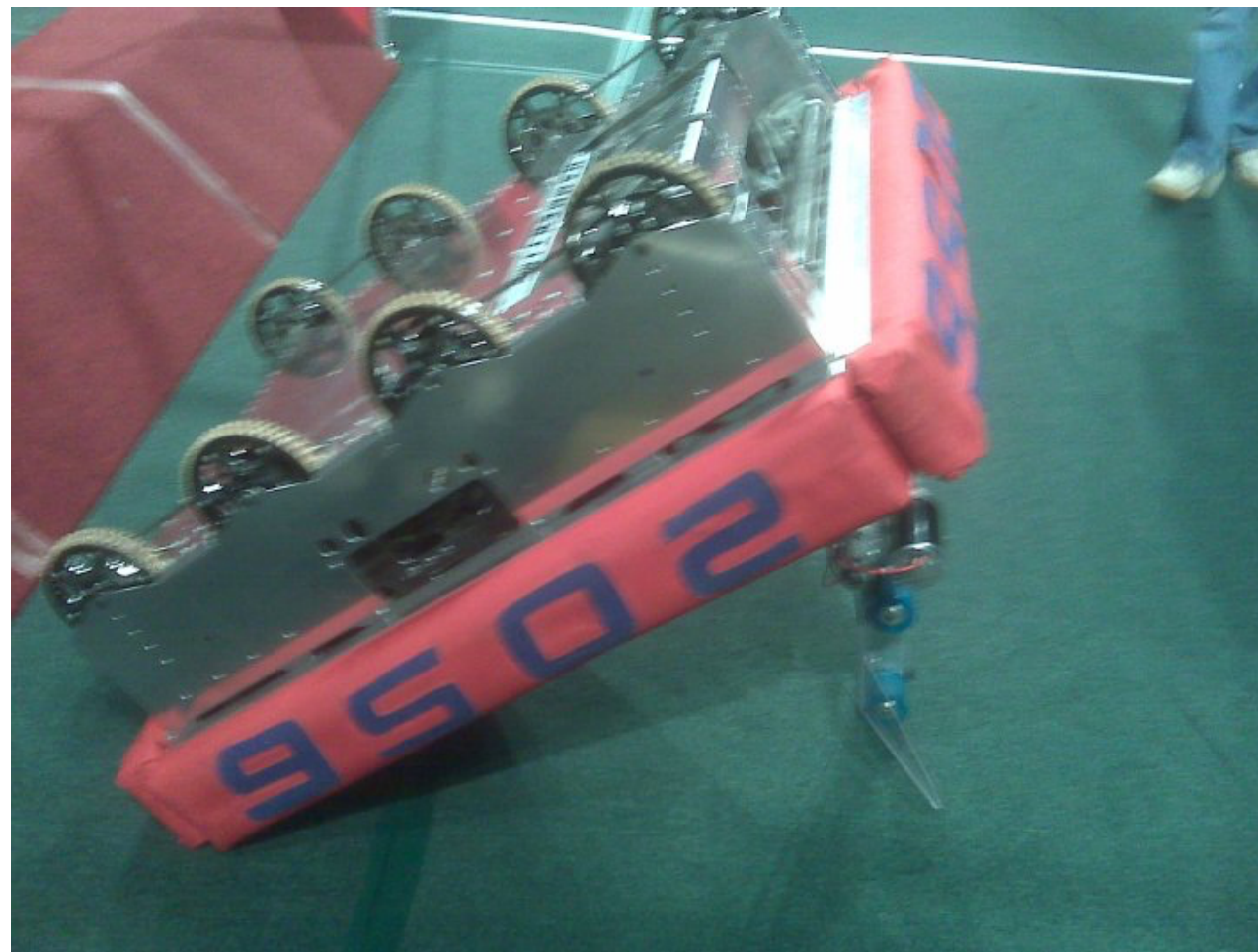
## Based on Ideal

- Strategies rarely accommodate catastrophic situations
- Be ready to change plans on the fly:
  - If an alliance member breaks/disconnects
  - “Ball is stuck”:
    - Don’t keep trying to shoot
    - Cross defences!



## Drive Team Match Review

- Not a requirement, but useful!
  - At minimum: verbal debrief comparing with plans
  - Better: review of match video (then or end of day)



## TheBlueAlliance

- Match Score, Live Feeds, etc.
  - Excellent scouting and research tool

## FRC-Links

- Shortcut page for FIRST's field feed as well as team information
  - Waterloo Regional ranking page
    - [frclinks.com/e/r/onwa](http://frclinks.com/e/r/onwa)
  - 2056's Blue Alliance Page
    - [frclinks.com/tba/2056](http://frclinks.com/tba/2056)

## Questions?

### Contact Information

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- Stan Hunter - [2056sh@gmail.com](mailto:2056sh@gmail.com)
- [2056.ca](http://2056.ca) - Resources like past scouting sheets online