Scouting

This book contains information on how YETI effectively scouts at competitions.

- What is Scouting?
  - Why Not Use The Blue Alliance?
  - Scouting Treatise 24/25

What is Scouting?

Scouting in robotics competitions involves gathering and analyzing data on other teams' robots. This data collection is crucial for developing strategies and making informed decisions during the competition.

There are two primary types of scouting:

Stand Scouting: In this method, students observe robots' performances from the stands. They watch matches closely, noting key aspects such as speed, agility, accuracy, and overall effectiveness. This information is then entered into a specialized scouting website, which aggregates the data for further analysis. Stand scouting helps the team understand the competitive landscape and identify strong and weak performers.

Pit Scouting: This approach involves students visiting the pits where teams maintain and repair their robots. Here, they gather detailed information about the robots' design, capabilities, and any unique features. Students may ask team members specific questions about their robots' mechanisms, programming, and strategies. This data helps the team understand the technical aspects and potential of other robots.

Both types of scouting are essential for creating a comprehensive understanding of the competition, allowing the team to strategize effectively and make informed decisions about alliances and match tactics.

Why Not Use The Blue Alliance?

While The Blue Alliance is a valuable resource for robotics teams, it has limitations. The site provides comprehensive data on match results, rankings, and statistics, but it focuses on alliance performance rather than individual robots. This makes it challenging to assess the specific contributions of each robot in a match.

Additionally, data on The Blue Alliance can sometimes be inaccurate due to errors in entry, discrepancies in match reporting, or delays in updates. As a result, teams should not solely rely on this data and must complement it with their own scouting efforts.

Teams often use stand scouting to observe and record individual robot performance during matches and pit scouting to gather detailed information directly from teams. By combining The Blue Alliance data with firsthand scouting information, teams can develop a more accurate and comprehensive understanding of the competition, leading to better strategic decisions.

Scouting Treatise 24/25

Introduction

Scouting in the FIRST Robotics Competition is a critical process that allows teams to gather, analyse, and apply data to improve performance in qualification matches and strategize for alliance selection. Effective scouting provides an advantage in match planning, alliance selection, and understanding the evolving meta-game of the competition. This treatise aims to outline comprehensive strategies for collecting, managing, and utilizing scouting data efficiently.

The Importance of Scouting

Scouting serves multiple purposes:

1. Match Strategy: Analysing opponents' strengths and weaknesses allows teams to adjust tactics accordingly.
2. Alliance Selection: Ensuring informed decisions when selecting alliance partners for playoffs.
3. Understanding Trends: Identifying how the game is being played across different teams and competitions.
4. Self-Improvement: Tracking your own team's performance to identify areas of improvement.

AD_4nXe7iwL_-qR0129QCYm44udRS8py7dxK5qTVR9HeYc-q6FdfLDWyevWtBI-4EfJ-oWP(

Field Areas

Stand Scouting

Stand scouting involves observing and recording data on robot performance from the audience stands during matches, focusing on objective metrics like scoring efficiency, defensive capabilities, and strategy execution.

Auto Stand Scouting Involves:

1. Choosing the starting position of the robot, keep in mind this is in respect to those standing in the corresponding alliance zone.
2. Select if the robot is preloaded - is equipped with a piece of coral before starting
3. Analyse if the robot passes the black line during the start of the game, located directly in front of it (towards the alliance’s driver section).
4. Check if the algae has been removed (from the reef), processed (put inside the side processor chute), and put in the barge. Put the number of times the event occurred by the robot.
5. Select whether the coral was placed on level 1, 2, 3, or 4. The levels are corresponding to height, where 4 is the tallest and one is at the base reef level. Include the number of times this has been accomplished by the robot in question.

Tele-op Stand Scouting Involves:

1. Check if the algae has been removed (from the reef), processed (put inside the side processor chute), and put in the barge. Put the number of times the event occurred by the robot.
2. Select whether the coral was placed on level 1, 2, 3, or 4. The levels are corresponding to height, where 4 is the tallest and one is at the base reef level. Include the number of times this has been accomplished by the robot in question.

Endgame Stand Scouting Involves:

1. Check if the robot climbs on the deep climb, shallow climb, parking or outside of the barge.

Deep if the robot is hanging from the lower barge.

Shallow if the robot is hanging from the higher barge.

Parked if the robot is touching the barge zone (the tape of the own team's color between the tape and the barge).

Out of the barge if the robot is not in the barge zone (not parked).

Misc. Stand Scouting Involves:

Noting down how well the robot’s defence is compared to other robots on the field. A rating of 0 is no defence and a rating of 5 is lockdown (being able to consistently pin robots with no penalties or block of significant opportunities to score)

Notes are an important way to describe details on the robot and elaborate on its strengths and weaknesses; What to write for Notes Section of Stand Scouting:

1. Robot Performance – How well the robot scores, defends, or supports its alliance.
2. Consistency – Does the robot perform the same way every match or struggle with reliability?
3. Strategy and play style – Does the team focus on offence, defence, or assisting others?
4. Driver Skill – Is their driving smooth, aggressive, or hesitant?
5. Coordination with Alliances – Do they work well with partners or play solo?
6. Penalties and Fouls – Do they frequently commit rule violations?
7. Mechanical Issues – Did their robot break down or show signs of failure?

What not to write about:

1. Don’t write bad abbreviations such as DNP (Do not pick).
2. Personal Opinions About the Team – Avoid comments like "This team is annoying" or "They are bad."
3. Overly Vague Notes – Avoid writing "good" or "bad" without explanation—be specific about what was good or bad.
4. Unverified Information – Don't write things like "They said they can climb but didn't try." Only record what you see.

What not to write about	What to write about (reword based on specific scenario)
Don’t write bad abbreviations such as DNP (Do not pick).	"Their robot struggled to pick up game pieces, missing multiple attempts, and had difficulty manoeuvring around defence."
Personal Opinions About the Team – Avoid comments like "This team is annoying" or "They are bad."	“The team had difficulty coordinating with alliance partners and often acted independently rather than following a single set strategy."

Overly Vague Notes – Avoid writing "good" or "bad" without explanation—be specific about what was good or bad.	"They consistently scored 5+ game pieces per match and had a fast cycle time of ~10 seconds per piece."
Unverified Information – Don't write things like "They said they can climb but didn't try." Only record what you see.	“This team did not attempt to climb in the matches observed, so their endgame ability is unclear."

Pit Scouting

Pit Scouting is where teams visit the workspace of other teams in the competition area and gather information regarding the overall robot and its functionality on the field.

Pit Scouting Involves:

1. Writing Number - the name will autofill for the set team.
2. Preferred Starting Position, can be left, right or centre. This can
3. The amount of coral the robot can score in one autonomous position. This is not the amount of points the team can score on autonomous, but the number of coral specifically.
4. Check off the capabilities for Tele-op performance, based on whether the team in question says they can complete the given task.
5. Add the cycle time of coral, the team states they can do.
6. Select a climbing option that the team can complete, keep in mind most robots should be able to park.

What to write for Notes Section of Pit Scouting:

- One of the key things you could write down would be any unique features, like is there anything special or innovative about their design that stands out.
- Another thing you could write down could be their weaknesses. For example, if their intake jams or if they are having drivetrain struggles. Additionally, you could highlight vulnerabilities in the robot, such as an exposed intake.
  - Something that you should keep in mind is to always be respectful when typing your notes out, just like with stand scouting as they are also public on the team's profile.

- Something else you could write about would be the team's strategy and play style like whether they plan to play offence, defence, or support in matches. Additionally, you could see what part of the game they plan to do well in like Autonomous, Tele-op, or Endgame.
- Another thing you could write about could be whether they have any sensors that could help them, like creating a pre-planned autonomous path. You can also check whether they are using vision tracking or sensor-based automation.