2025 *FIRST*® Tech Challenge Off-Season

Hyper Hurdle

Competition Manual Modifications (V1.0.2 14/06/2025)

ENGLISH

0 NOTES

Hello! We're back with the second update of the manual, and we're getting closer and closer to the off-season! We hope you are as excited to participate as we are to be organizing it.

In this update you will find clarifications of some of the rules of the game and changes to a Remember that any comments or questions can be made through the official social media of our team, either through Instagram (@hbirds16818), our email contacto@hypebirds.com, our Discord channel located in the Unofficial FIRST Tech Challenge server, and soon you'll be able to write on the very same website where you found this manual =).

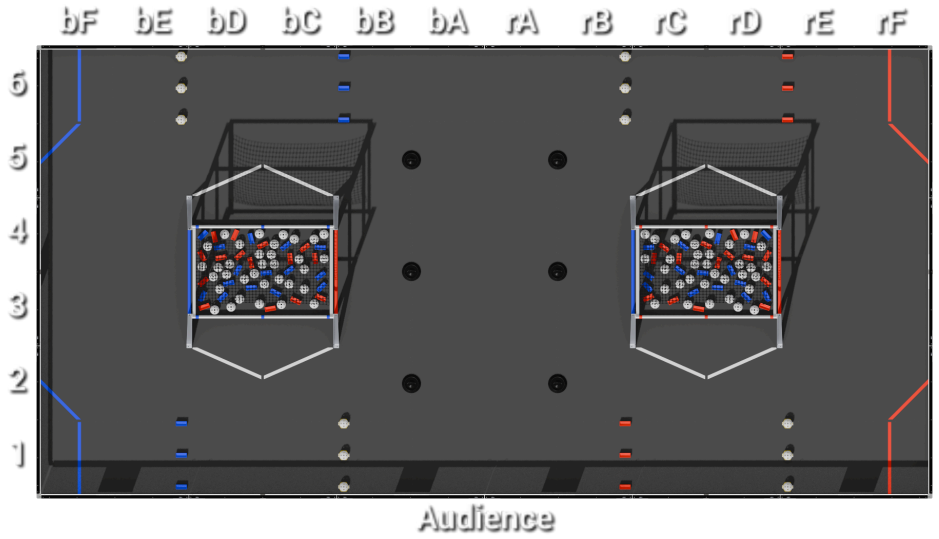
Likewise, our interest form is still open for those teams that want to participate in the event. With your support we can continue to prepare for this event more effectively.

See you next week. We appreciate your interest in the event and your support. Together we will fly higher!

-Ximena H., Game Co-designer.

Changes:

- Updated one of the images in chapter 10: Game Details to reflect the inclusion of different field elements utilized during a MATCH:



- Rule "G410" was re-written to add more clarity on the maximum amount of SCORING ELEMENTS that may be controlled simultaneously.

  Previous description:
  "A ROBOT may not CONTROL more than 1 SAMPLE, 1 SPECIMEN, or 1 TEAM BANNER at a time, and may not CONTROL more than 3 DEBRIS at a time, either directly or transitively through other objects. There is no limit to the number of CLIPS a ROBOT may possess."

Updated description:
“A ROBOT may CONTROL no more than 1 SAMPLE/SPECIMEN, 1 TEAM BANNER, AND 3 DEBRIS simultaneously, either directly or transitively through other objects. This means that, for example, a ROBOT may transport a SAMPLE/SPECIMEN, and DEBRIS simultaneously”

There is still no limit as to how many CLIPS may be possessed.

1 INTRODUCTION

1.7 About this document and its conventions

This document is based on the official FIRST Tech Challenge manual for the 2024-2025 Into The Deep season. It was originally written primarily in Spanish, but to accommodate international non-Spanish-speaking teams, we've created this re-translation. If you find any potential discrepancies between both documents, please notify us as soon as possible either through Instagram @hbirds16818 or through email at contacto@hypebirds.com

1.8 Important Changes

We removed the following: NET ZONE, BASKETS (high BASKET and low BASKET) and neutral SAMPLES.
We added the new SCORING ELEMENT **DEBRIS** TEAM BANNERS (optional), a second OBSERVATION ZONE, a second SUBMERSIBLE, CLEANUP NETS and we **increased the size** of the FIELD.

6 Awards (HH-A)

FIRST Tech Challenge celebrates the excitement of competition both on and off the field. Traditionally, awards are given at several events to recognize the efforts and achievements of teams throughout the season. We'd like to continue that tradition by recognizing teams with a different set of awards.

It is important to note that awards themselves, as well as award nomination criteria and the judging process for this event, differs heavily from traditional events. As such, *chapter 6: Awards (A)* of the original manual will not be considered, and will be overridden by this section entirely. Sub-chapters may not match.

More information about volunteers that will judge the awards and the judging process will be shared in future team updates.

6.1 Team Judged Award Process Overview

TBA.

6.2 Team Judged Award Descriptions

6.2.1 Gracious Professionalism Award

The team that receives this award strongly demonstrates *FIRST* Core Values such as continuous *Gracious Professionalism* and working together both on and off the playing FIELD. This team shares their experiences, enthusiasm, and knowledge with other teams, sponsors, and their community.

Tentative Gracious Professionalism Award Criteria

- **RESPECT AND COURTESY**
  - The team treats the event attendants (such as other students, or volunteers) with respect
  - Shows a good attitude, even in hard moments
  - Communicates positively, avoiding negative or conflictive situations
- **COLLABORATION AND HELP**
  - The team offers technical knowledge or emotional support to other teams
  - Shares resources, tools, and knowledge without expecting anything in return or a competitive/strategic advantage
  - Engages in a coopertition and learning culture during the event
- **FAIR GAME AND ETHICS**
  - The team follows the rules and acts with integrity
  - Avoids tactics that take advantage of gray areas in the rules
  - Avoids negative commentaries towards the competition staff and attendants

    - Shows a spirit of *Gracious Professionalism* during technical or strategical difficulties.
- **POSITIVE SPIRIT**
    - Teammates support each other and celebrate their achievements
    - Show enthusiasm and positive energy
    - Avoided unnecessary confrontations and endorsed team solutions
    - Looked out for team well-being above personal interests
    - Supported each other in pressing/difficult moments
    - Created an inclusive environment where everyone could contribute
- **HUMILITY AND RECOGNITION**
    - Celebrated other teams' achievements with enthusiasm and respect
    - Accept both positive and negative feedback with maturity
    - Handle both success and misfortunes with humility and *Gracious Professionalism*
- **COMMUNITY INSPIRATION AND IMPACT**
    - The team promotes FIRST's *Core Values* both in and out of the competition
    - Participated in mentoring or STEAM divulgation activities
    - Share their innovations and findings openly and collaboratively
    - Are an example to follow in terms of ethics and professional conduct
- **PRESENTATION AND COMMUNICATION**
    - Explains what *Gracious Professionalism* means to the team
    - Share practical examples of how they apply FIRST's philosophy
    - Show a deep understanding of FIRST's *Core Values*

6.2.2 Software Award

The Software Award celebrates a team that develops and utilizes effective software that differentiates an outstanding robot that's effective on the field no matter what conditions are presented.

Tentative Software Award Criteria.

- **TELEOPERATED SOFTWARE**
    - Controls are intuitive and efficient for drivers to use
    - Advanced functionality such as speed control, macros, or partial automatization is utilized
    - ROBOT response is precise and instant in relation to the driver's actions.
- **AUTONOMOUS SOFTWARE**
    - The ROBOT performs precise and consistent trajectories in multiple matches.
    - Sensors are utilized to make decisions autonomously
    - The ROBOT adapts to different scenarios, including unexpected situations
- **SENSORS AND FIELD LOCATION**
    - Sensors are integrated in an effective and strategic way
    - Visual Machine Learning is utilized in an effective and strategic way (such as, OpenCV, Tensorflow, Limelight, etc) in different environments to detect FIELD ELEMENTS or positioning in the FIELD itself, among other things.
- **ALGORITHMIC INNOVATION**
    - Strategic algorithms and controllers are utilized

    - Software solves game challenges in a creative way
- **TESTING, DEBUGGING, AND TELEMETRY**
    - The team demonstrates the capability to test, search, identify, and solve problems in the code.
    - The team integrates error handling in the code
    - Useful telemetry during testing and development
    - Creative solutions to communicate telemetry to drivers during a match
- **TECHNICAL PRESENTATION**
    - The team communicates their program design and development techniques with clarity
    - The team demonstrates comprehension of their code's inner workings
    - The team documents functionality with understandable methods outside of the code itself (such as a flux diagram)

6.2.3 Hardware Award

The Hardware Award celebrates a team that throughout the season, designed and manufactured a functional ROBOT, complemented by aesthetic and innovative elements.

Tentative Hardware Award Criteria:

- **MECHANICAL DESIGN**
    - Design is robust, efficient, and well-thought
    - ROBOT parts are distributed efficiently
    - The ROBOT is easy to repair, maintain, and/or modify
- **BUILD QUALITY**
    - Build materials are chosen and utilized with its purpose in mind
    - Wiring is ordered and protected
- **HARDWARE INNOVATION**
    - The ROBOT includes unique and creative mechanisms
    - Application of intelligent engineering principles
    - The design solves challenges from the game in an original manner
- **SYSTEMS INTEGRATION**
    - Hardware is well integrated with sensors and actuators
    - Software became facilitated through physical design
- **FIELD PERFORMANCE**
    - The ROBOT moves in a precise, stable, and fluid manner.
    - Mechanisms perform consistently throughout the competition
    - Hardware withstands the wear and tear that is expected of a competition.
- **SAFETY AND MAINTENANCE**
    - Design minimizes potential risks for operators and the ROBOT itself
    - Critical components are accessible for repair
    - The team follows mechanic and electric safety practices and measures effectively.
- **TECHNICAL PRESENTATION**
    - The team communicates their ROBOT design with clarity
    - The team demonstrates their engineering knowledge and decision-making.

6.3 Tournament ALLIANCE Awards

6.3.1 Winning Alliance Award

This award will be given to the winning ALLIANCE represented in the final MATCH of the playoffs of the event. It is divided in three tiers:

- Alliance Captain
- First Partner
- Second Partner

6.3.2 Finalist Alliance Award

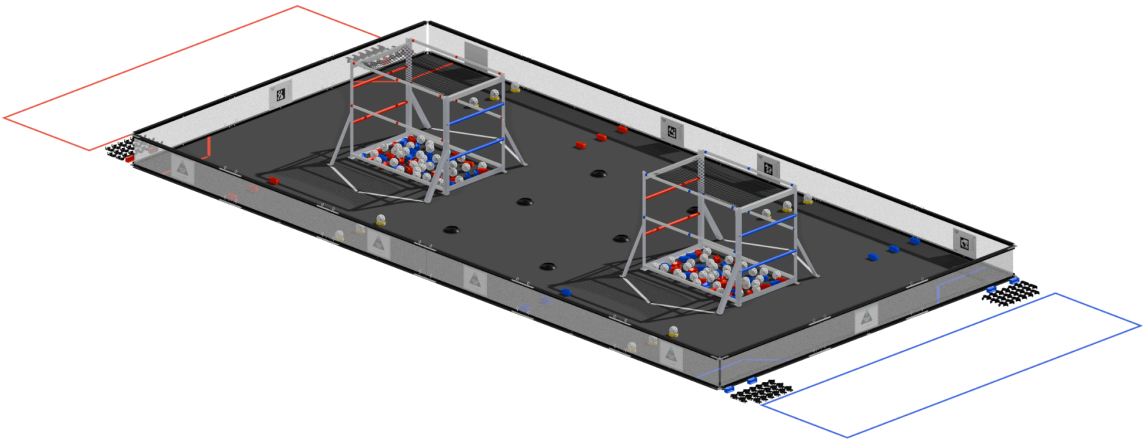
This award will be given to the finalist ALLIANCE represented in the final MATCH of the playoffs of the event. Much like the previous award, it is also divided by:

- Alliance Captain
- First Partner
- Second Partner

9 ARENA

The ARENA includes all elements of the game infrastructure that are required to play during HYPER HURDLE 2025: the FIELD, SCORING ELEMENTS, queue area, team media area, and all equipment needed for event management.

Modified HYPER HURDLE ARENA (queue area, field display, and optional media area not pictured)



9.1 FIELD

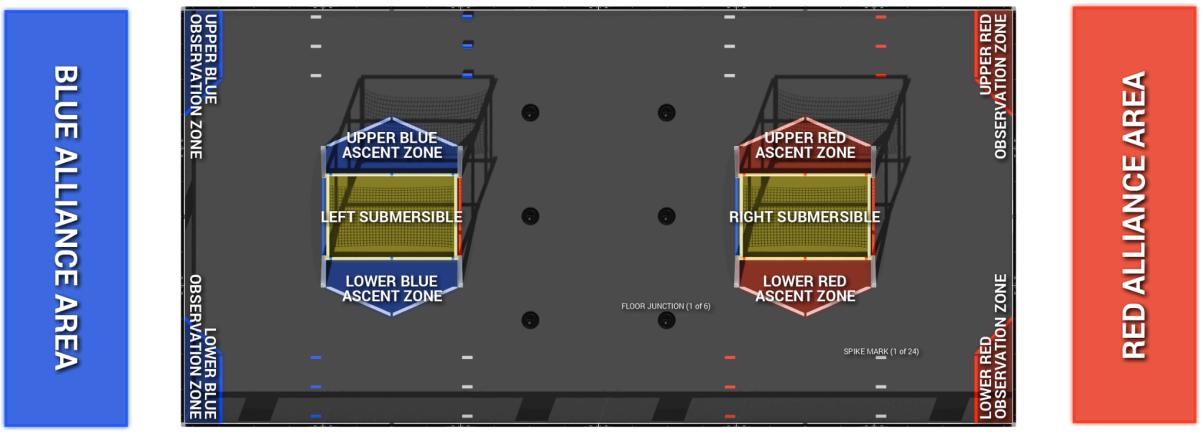
Each FIELD for HYPER HURDLE 2025 is an approximately 12 ft. (3.66m) by **24 ft. (7.32)** area bounded by the outside edge of the extrusion that frames the walls of the FIELD perimeter. The flooring surface of the FIELD is made of 72 (nominal) 24 in. x 24 in. x 5/8 in. interlocking soft foam TILES.

The FIELD is populated with the following elements:

- **2 SUBMERSIBLES per FIELD, 1 designated per ALLIANCE**

9.2 Areas, Zones, & Markings

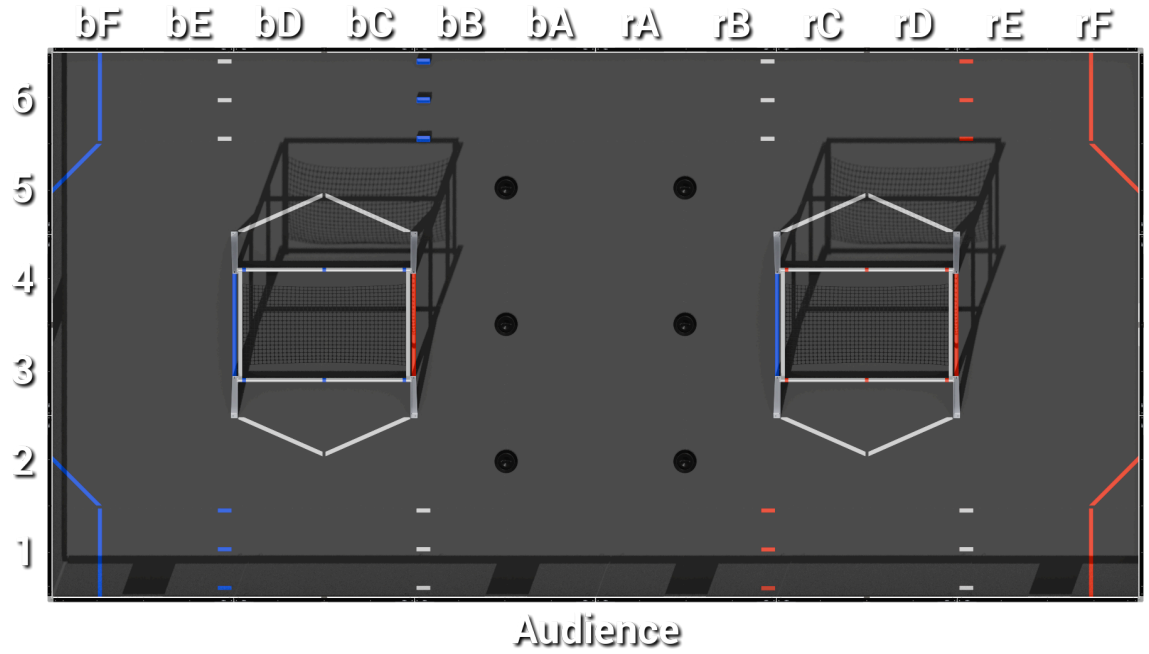
FIELD areas, zones, and markings of consequence are described below. Zones identify spaces within the FIELD, while areas are spaces outside of the FIELD. Unless otherwise specified, the tape used to mark lines and zones throughout the FIELD is 1-in. (25 mm) wide 3M™ Premium Matte Cloth (Gaffers) Tape (GT1), ProGaff® Premium Professional Grade Gaffer Tape, or comparable gaffers tape.



- ALLIANCE AREA: a 120 in. (~304.8 cm) wide by 42 in. (~106.7 cm) deep by infinitely tall volume formed by placing ALLIANCE colored tape onto the flooring surface outside of the FIELD. The ALLIANCE AREA includes the taped lines.
- ASCENT ZONE: an infinitely tall 5-sided polygon that is formed from two 9.25 in. (~23.5 cm) long sides bounded by the SUBMERSIBLE outriggers, one 44.75 in. (~113.7 cm) long side bounded by the barrier of the SUBMERSIBLE, and the two 26 in. (~66 cm) long sides bounded by white tape that extend from the outriggers to a point 20 in. (~50.8 cm) from the barrier. The ASCENT ZONE includes the taped lines. ASCENT ZONES are only ALLIANCE SPECIFIC ZONES during the last 30 seconds of a MATCH.
- OBSERVATION ZONE: an infinitely tall 4-sided polygon which is 36.6 in. (~92.9 cm) at the widest point by 13.1 in. (~33.3 cm) long bounded by ALLIANCE colored tape and the adjoining FIELD wall. The OBSERVATION ZONE includes the taped lines.
- SPIKE MARK: one of twenty-four 3.5 in. (~8.9 cm) long marks used to identify the placement of SAMPLES before the MATCH. The 3 marks in front of the (from the ALLIANCE AREA's point of view) right-side OBSERVATION ZONES are of ALLIANCE colored tape and the 3 marks in front of each left-side OBSERVATION ZONES are made of white tape.
- SUBMERSIBLE ZONE: a 27.5 in. (~69.9 cm) wide by 42.75 in. (~108.6 cm) long, infinitely tall volume bounded by the inner most edge of the barriers of the SUBMERSIBLE.
- **CLEANUP NET: located on top of the SUBMERSIBLE ZONE. The alliance is indicated by the nearby ASCENT ZONE alliance colors.**

9.3 TILE Coordinates

TILE coordinates are used to assist with FIELD setup, as well as localization of other elements in the FIELD.



9.6 BASKETS

BASKETS have been removed as part of the modifications for HYPER HURDLE 2025.

9.7 SCORING ELEMENTS

In HYPER HURDLE 2025, different physical pieces may be used:

- SAMPLE (for the RED and BLUE alliance)
- CLIP
- **DEBRIS**
- **TEAM BANNER**

CLIPS may be attached to a SAMPLE to create a SPECIMEN that may be used to score more points.

9.7.4 DEBRIS

DEBRIS is represented by a pickleball sphere of an approximate diameter of 2.9 inches (7.3 cm). In the FIELD, there are eighty (80) alliance neutral DEBRIS, with twelve (12) of those positioned outside of the SUBMERSIBLE on top of SPIKE MARKS, four (4) positioned randomly on top of the FLOOR JUNCTIONS, and thirty (30) per SUBMERSIBLE randomly positioned within.

9.7.5 TEAM BANNER

A TEAM BANNER is composed of several sub-pieces:

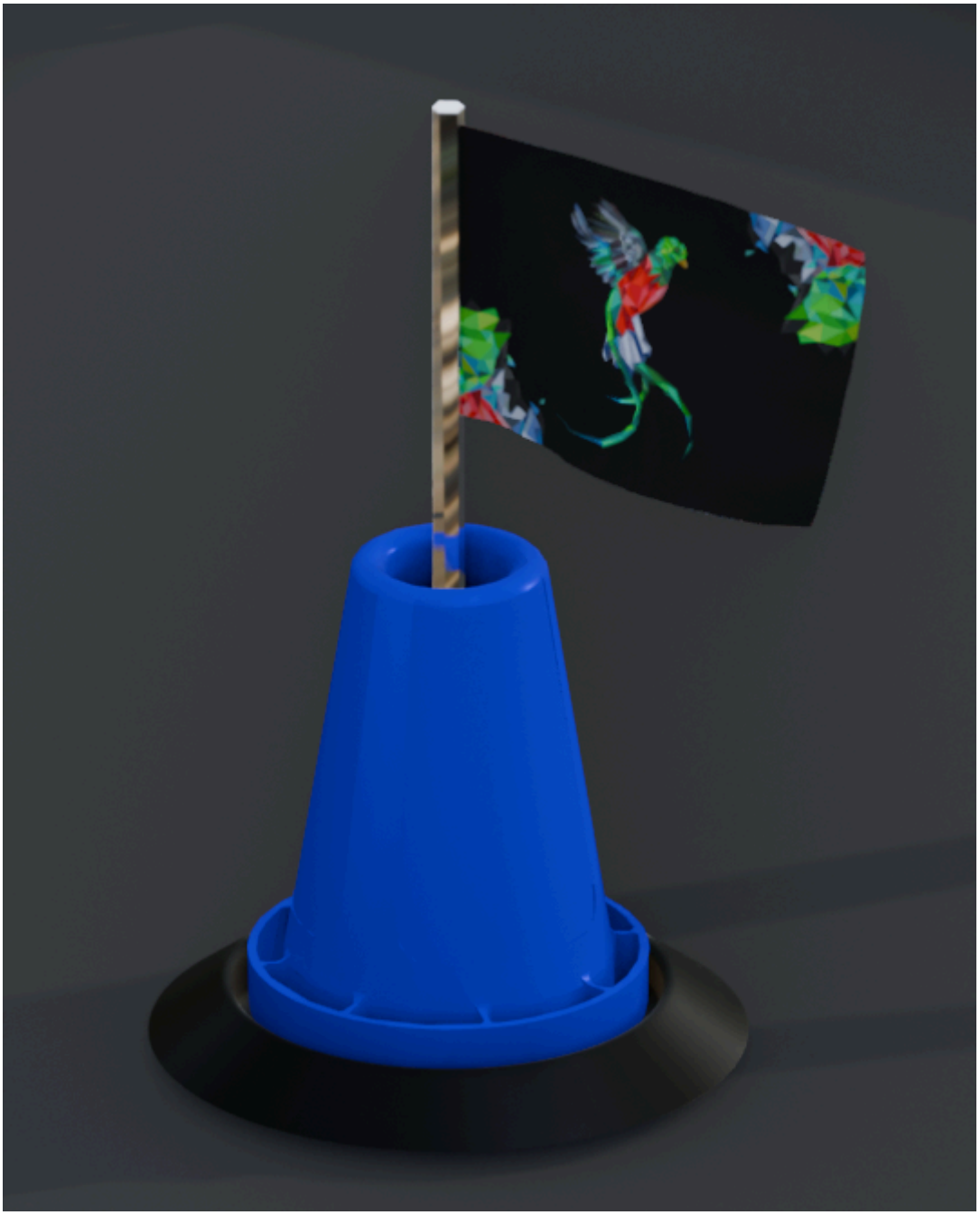
A. A 4 inch (10.16 cm) diameter and 5 inch tall (12.7) alliance-specific cone provided in the FIELD by the field staff.
B. A banner designed by teams. To qualify as a full banner it must have the following elements as a requirement:
    a. A flagpole
    b. The banner itself, which may be made of a flexible material such as cloth or paper.
    c. A piece that attaches the flagpole to the cone that remains sturdy during a MATCH, but that may be removed afterwards.

In case any of these elements are separated or broken during a MATCH, it will stop being considered a TEAM BANNER and any associated scoring will be nullified.
A TEAM BANNER must not exceed its cone base diameter at the start of a MATCH (4 inches/10.6 cm), and must not exceed the height of 5 inches (25.4 cm) at all times.

TEAM BANNER designs MUST consider the following guidelines:

- Designs MUST NOT contain copyrighted material, unless there is evidence of ownership/control of the protected material, or explicit consent from the owners of the protected material.
    - Examples include but are not limited to images belonging to sport teams, brand/organization logotypes, fictitious characters from TV or movies, or any other image of which there is no ownership, license, or explicit permission for its use.
- Designs must be created contemplating the spirit of *FIRST®* and *Gracious Professionalism®*. In other words, it MUST follow the *FIRST®* code of conduct.
- Much like TEAM AVATARS, event STAFF reserves the right to reject designs at their discretion at any time.

Example of a TEAM BANNER scored in a FLOOR JUNCTION



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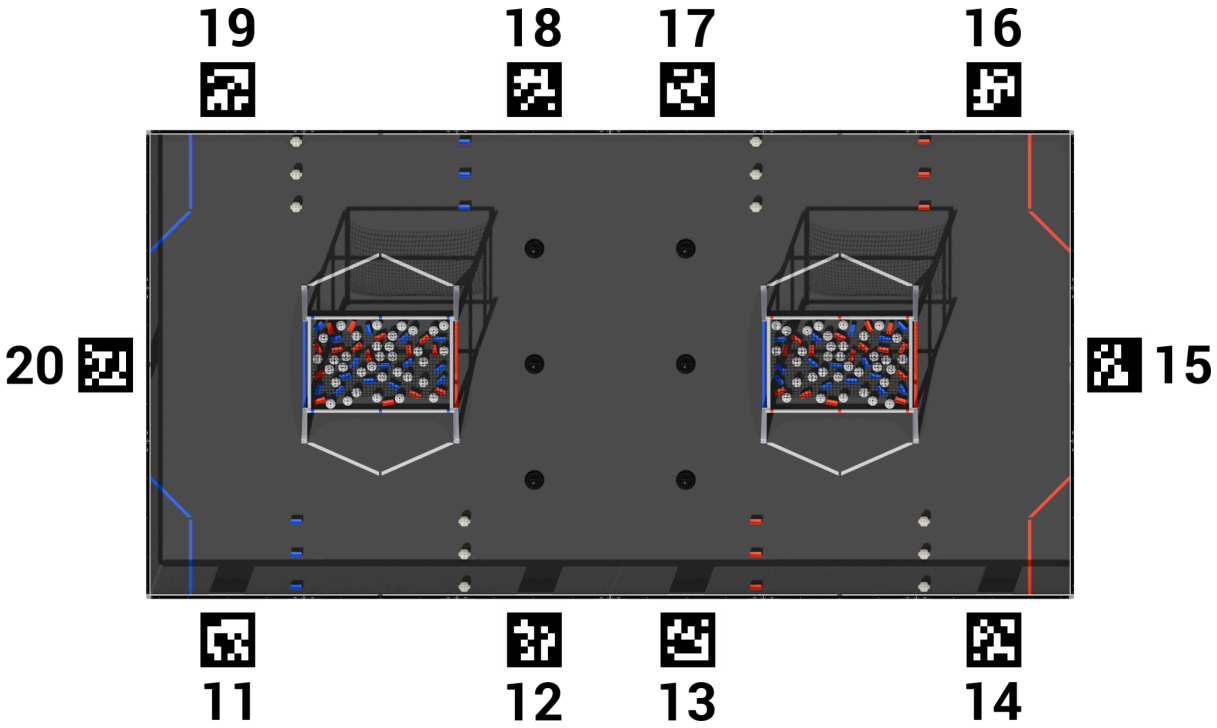
9.8 AprilTags

AprilTags are placed outside of the FIELD perimeter walls facing inward to help aid in ROBOT navigation. AprilTags for HYPER HURDLE 2025 are twelve 4 in. (~10.16 cm) square targets from the 36h11 tag family, IDs 11-20. Each marker has an identifying “TAG ID” text label.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10 Game Details

In HYPER HURDLE 2025, 2 ALLIANCES (a cooperative of 3 FIRST Tech Challenge teams) play MATCHES, set up and implemented per the details described below.

10.1 MATCH Overview

MATCHES run on a typical 6-10-minute cycle time per FIELD, which consists of pre-MATCH setup, a 30 second AUTO period, an 8 second transition period between AUTO and TELEOP, and a 2-minute TELEOP period, followed by the post-MATCH reset.

During the MATCH, ROBOTS score DEBRIS into CLEANUP NETS and SPECIMENS on the CHAMBERS. ALLIANCE colored SAMPLES can be turned into SPECIMENS by returning them to an OBSERVATION ZONE where the HUMAN PLAYER can add a CLIP. ROBOTS conclude the MATCH by placing their TEAM BANNER anywhere in the field outside of OBSERVATION ZONES or ASCENT ZONES, or in a FLOOR JUNCTION for added points, and then either PARKING in their OBSERVATION ZONE or ASCENDING the RUNGS of the SUBMERSIBLE.

10.2 DRIVE TEAM

A DRIVE TEAM is a set of up to 4 people from the same FIRST Tech Challenge team responsible for team performance for a specific MATCH. There are 3 specific roles on a DRIVE TEAM which ALLIANCES can use to assist ROBOTS, and no more than 1 member of the DRIVE TEAM is allowed to be a non-STUDENT.

The intent of the definition of DRIVE TEAM and DRIVE TEAM related rules is that, barring extenuating circumstances, the DRIVE TEAM consists of people who arrived at the event affiliated with that team and are responsible for their team's and ROBOT'S performance at the event (this means a person may be affiliated with more than 1 team). The intent is not to allow teams to "adopt" members of other teams for strategic advantage for the loaning team, borrowing team, and/or their ALLIANCE (e.g., an ALLIANCE CAPTAIN believes 1 of their DRIVERS has more experience than a DRIVER of their ALLIANCE partner, and the teams agree the first pick team will "adopt" that DRIVER and make them a member of their DRIVE TEAM for playoffs). **This also applies for teams belonging to the same school/organization.**

The definition is not stricter for two main reasons. First, to avoid additional bureaucratic burden on teams and event volunteers (e.g., requiring that teams submit official rosters that Queuing must check before allowing a DRIVE TEAM into the ARENA). Second, to provide space for exceptional circumstances that give teams the opportunity to display Gracious Professionalism (e.g., a bus is delayed, a DRIVE COACH has no DRIVERS, and their pit neighbors agree to help by loaning DRIVERS as temporary members of the team until their bus arrives).

Role	Description	Max.	Criteria
DRIVE COACH	a guide or advisor	1	any team member and may be an adult, must wear “DRIVE COACH” badge
DRIVER	an operator and controller of the robot	2	STUDENT, must wear a “DRIVER” badge
HUMAN PLAYER	a SCORING ELEMENT manager	1*	STUDENT, must wear a “HUMAN PLAYER” badge

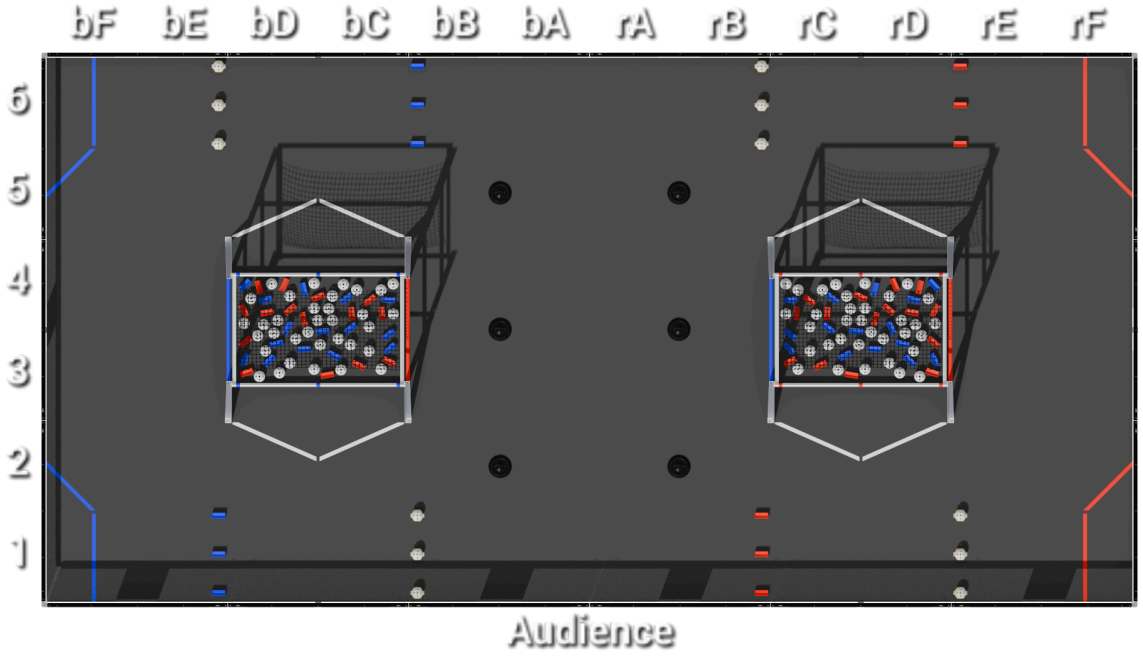
*Only **TWO** HUMAN PLAYERS will represent an ALLIANCE in a MATCH. If an ALLIANCE cannot agree on which team's HUMAN PLAYERS will participate in a MATCH, The HUMAN PLAYER from the team listed as "Red 1" or "Blue 1" in the MATCH schedule will be used
A STUDENT is a person who has not completed high-school, secondary school, or the comparable level in their home region as of September 1st of the current season (2024-2025).

10.3 SETUP

Before the start of each MATCH, the FIELD PERSONNEL will place the SCORING ELEMENTS (as per section 10.3.1 SCORING ELEMENTS). The DRIVE TEAMS prepare their ROBOTS (as per section 10.3.4 ROBOTS). and OPERATOR CONSOLES (as per section 10.3.3 OPERATOR CONSOLES). Then, the DIVE TEA;S take tier places as per section 10.3.2 DIVE TEAMS.

10.3.1 SCORING ELEMENTS

Before the start of each MATCH, the FIELD PERSONNEL places the scoring element as per the following figure:



80 DEBIRS, 80 SAMPLES (40 red and 40 blue), and 80 CLIPS are placed as follows:

A. Blue ALLIANCE SAMPLES - 6 blue SAMPLES in total are placed in each of the 6 SPIKE MARKS on the TILES bE1 and bB6.
B. Red ALLIANCE SAMPLES - 6 red ALLIANCE SAMPLES in total are placed in each of the 6 SPIKE MARKS on the TILES rB1 and rE6.
C. DEBIRS - 6 DERIS are placed in each of the 6 PIXELS on the TILES bE6 , bB1, rB6 and rE1.
D. DEBIRS - 4 DEBIRS are placed randomly 4 FLOOR JUNCTIONS, 2 in the bA column and 2 in the rA column.
E. 2 ALLIANCE specific SAMPLES are placed in the floor outside the wall of the FIELD between the ALLIANCE ÁREA and the wall per each OBSERVATION ZONE 4 in total per ALLIANCE).
F. 80 CLIPS are placed in the floor outside the wall of the FIELD between the ALLIANCE ÁREA and the wall, distributed equitably between the OBSERVATION ZONES of each ALLIANCE.
G. SAMPLES and DEBRIS are placed randomly inside each SUBMERSIBLE ZONE: 15 red ALLIANCE SAMPLES, 15 blue ALLIANCE samples and 30 DEBIRS.
H. TEAM BANNER - It is placed on the floor outside the wall of the FIELD between the ALLIANCE ÁREA and the wall of the FIELD.

From the SCORING ELEMENTS provided in E and F, each ROBOT can preload up to 1 SPECIMEN so that it is in contact with the ROBOT and it is not in an OBSERVATION ZONE. SPECIMIENT not preloaded will remain in the setup positions in E and F.
All of the positions of the SPIKE MARKS are measured in relation to the inside border of the TILE teeth towards the center of the FIELD.

The SAMPLES must be placed on the SPIKE MARKS such that the SPIKE MARKS are covered completely by the SAMPLE. The teams may adjust the position of the SAMPLE on the SPIKE MARKS in front of their DRIVE TEAM as long as the SAMPLE covers the SPIKE MARK completely and there is no delay in the MATCH start.

The DEBIRS must be placed on the center of the PIXELS where the original SPIKE MARKS for the ALLIANCE NEUTRAL SAMPLES were. The teams may adjust the position of the DEBORS over the PIXELS to inform of their DIVE TEAM as long as the DEBRIS is centered on top of the PIXEL and there is no delay in the MATCH start.

As well, 4 DEBIRS will be randomized to establish which will be their initial position at the FLOOR JUNCTIONS.

In the case of the SAMPLE, when the SPIKE MARK is bigger, the best effort to cover the SPIKE MARK must be done. The PIXEL must be placed in the middle of the SPIKE MARK.

The GAME BANNERS must not be introduced into the FIELD until the END GAME

10.3.2 DRIVE TEAMS

No changes.

10.3.3 OPERATOR CONSOLES

No changes.

10.5.6 Score values

		MATCH points			RANKING POINTS
		AUTO	TELEOP	ENDGAME	
PARKING	OBSERVATION ZONE 1 o 2	3	3		
DEBRIS	CLEARUP NET	4	4		
SPECIMEN	NEAR LOW CHAMBER	6	6		
	NEAR HIGH CHAMBER	10	10		
	FAR LOW CHAMBER	12	12		
	FAR HIGH CHAMBER	20	20		
TEAM BANNER	Within FIELD			8	
	FLOOR JUNCTION			16	
ASCENT	LEVEL 1	3		3	
	LEVEL 2			15	
	LEVEL 3			30	
Tie	complete a MATCH with the same MATCH score as an opponent alliance				1
Victory	complete a MATCH with more MATCH score than the opponent alliance				2

11 Game Rules (G)

11.4 In-MATCH

11.4.3 SCORING ELEMENT

G410 1 SAMPLE or SPECIMEN at a time.

A ROBOT may CONTROL no more than 1 SAMPLE/SPECIMEN, 1 TEAM BANNER, AND 3 DEBRIS simultaneously, either directly or transitively through other objects. This means that, for example, a ROBOT may transport a SAMPLE/SPECIMEN, and DEBRIS simultaneously

A ROBOT is in CONTROL of a SCORING ELEMENT if:

A. the SCORING ELEMENT is fully supported by the ROBOT or
B. it intentionally pushes a SCORING ELEMENT to a desired location or in a preferred direction (i.e., herding, often with a concave surface)

Exceptions to this rule are as follows:

A. ROBOTS may MOMENTARILY exceed CONTROL limits while collecting SAMPLES that are in the SUBMERSIBLE ZONE.
B. scored SAMPLES or SPECIMENS for the corresponding ALLIANCE are exempt from the CONTROL limit

Violation: MINOR FOUL per additional SCORING ELEMENT plus YELLOW CARD if excessive

Examples of interaction with a SCORING ELEMENT that are not “CONTROL” include, but are not limited to:

A. PLOWING or “bulldozing” (inadvertent contact with a SCORING ELEMENT, typically via a flat or convex surface, while in the path of the ROBOT moving about the FIELD).
B. “deflecting” (being hit by a SCORING ELEMENT that bounces off a ROBOT).

Excessive violations of CONTROL limits include, but are not limited to, simultaneous CONTROL of 3 or more SAMPLES and/or SPECIMENS, or frequent, greater-than MOMENTARY CONTROL (i.e., more than twice in a MATCH) of 2 or more SAMPLES and/or SPECIMENS. REPEATED excessive violations of this rule do not result in additional YELLOW CARDS unless the violation reaches the level of egregious to trigger a *G201* violation

G411 ROBOTS may not CONTROL the opposing ALLIANCE’S SPECIFIC SCORING ELEMENTS

ROBOTS may only have MOMENTARY CONTROL of opposing ALLIANCE SPECIFIC SCORING ELEMENTS.

Violation: MINOR FOUL per SCORING ELEMENT plus an additional MINOR FOUL per opposing SCORING ELEMENT for each 5-second interval that the situation continues. A MAJOR FOUL is applied for each SCORING ELEMENT that is scored while in CONTROL.

G412 ROBOTS may not de-score opposing ALLIANCE SCORING ELEMENTS.

ROBOTS may not affect the following opposing ALLIANCE achievements.

A. removal of SPECIMENS that are fully clipped onto the CHAMBERS
B. removal of DEBRIS that are within the CLEANUP NET
C. removal/tip over of TEAM BANNERS.

SPECIMENS that are not fully clipped onto a CHAMBER and are de-scored from a CHAMBER during normal ROBOT interactions with the SUBMERSIBLE are not penalized. A SPECIMEN that is taken apart while scored onto the CHAMBER is a violation of this rule and does incur a FOUL

ROBOTS may score TEAM BANNERS anywhere in the FIELD outside of the OBSERVATION ZONES and the ASCENT ZONES. However, they may not strategically abuse this rule to score TEAM BANNERS in places that are blocking the opposing alliance from scoring, and/or that inevitably forces them to tip over a TEAM BANNER as specified by rule *G424*.

Violation: MAJOR FOUL per SCORING ELEMENT that is de-scored.

11.4.4 ROBOT

G417 Stay in CONTROL of your SCORING ELEMENTS

SCORING ELEMENTS may not be LAUNCHED, EXCEPT for DEBRIS with specific limitations.

Violation: MINOR FOUL per SCORING ELEMENT LAUNCHED.

This rule is intended to prevent designs which use LAUNCHING to strategically play the game. Actions that can be perceived as strategically playing the game include, but are not limited to:

A. Moving SCORING ELEMENTS from the ROBOT from outside of an AREA or ZONE to inside another AREA or ZONE with significant force/traveling more than a short distance.

This is not intended to penalize teams with active manipulators which are expelling SCORING ELEMENTS through normal operation, such as

A. Running an intake in reverse causing a SCORING ELEMENT to travel a short distance from the ROBOT.
B. A ROBOT pushing a SCORING ELEMENT a short distance away in the process of herding it across the FIELD.

Considering these rules were previously designed without DEBRIS in mind, DEBRIS has added liberties and limitations from SAMPLES, SPECIMENS, and TEAM BANNERS.

A. All SCORING ELEMENTS must remain within the boundaries of the FIELD, except for SAMPLES and SPECIMENS through the OBSERVATION ZONE with assistance of the HUMAN PLAYER.
B. ROBOTS may not intentionally launch ANY SCORING ELEMENT out of the boundaries of the FIELD, either directly aiming outwards the FIELD or bouncing the SCORING ELEMENT with a FIELD ELEMENT or another ROBOT.
C. ROBOTS may not intentionally launch SCORING ELEMENTS towards other ROBOTS or human participants nearby the FIELD.

11.4.5 Opponent Interaction

G424 *Do not use strategies intended to shut down major parts of gameplay.

A ROBOT or ROBOTS may not, in the judgment of a REFEREE, isolate or close off any major element of MATCH play for a greater-than MOMENTARY duration.

Violation: MINOR FOUL plus an additional MINOR FOUL for every 5 seconds in which the situation is not corrected.

Examples of violations of this rule include, but are not limited to:

A. shutting down access to all SCORING ELEMENTS,
B. quarantining an opponent to a small area of the FIELD
C. quarantining SCORING ELEMENTS out of the opposing ALLIANCE'S reach,
D. blocking all access to the opponent's SCORING AREAS (such as CHAMBERS, or OBSERVATION ZONES), and
E. blocking all access to SCORING ELEMENTS in the SUBMERSIBLE ZONE

Examples of blocking a ROBOT include, but are not limited to:

A. A ROBOT remaining stationary or oscillating in place preventing the opposing ROBOT from accessing major parts of gameplay.
B. Strategically positioning a SCORING ELEMENT such as a TEAM BANNER in a way that blocks paths to other major elements. ROBOTS must be able to access any type of SCORING ELEMENTS that they may be able to manipulate during a MATCH.