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# The Game



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### 3 The Game

#### 3.1 Gameplay Rules

##### 3.1.1 Pre-Match

[G01]

When placed on the Court, each Robot must be in compliance with all Robot rules, may not exceed 60 in. tall, and have all appendages within its Frame Perimeter. The Robot must be in contact with its Key, and may contain up to two Basketballs.

*Violation: Disabled for the Match and re-Inspection if an illegal Robot*

[G02]

Alignment devices such as templates, tape measures, laser pointers, etc. that are not part of the Robot and fully contained within the starting volume may not be used to assist with positioning the Robot.

*Violation: Robot will be arbitrarily repositioned by a Referee prior to the start of the Match.*

### [G03]

Items other than Robots and Basketballs shall not be placed on the Court prior to or during the Match.

*Violation: Match will not start until the situation is corrected.*

### [G04]

Each FRC team provides up to four Players (a Coach, two Drivers and an Inbounder). Prior to Match start, each Player must be in their Alliance Station and behind their Starting Line, except Alliances may elect to have an Inbounder in the Kinect Station during Hybrid. The Coach must wear the designated "Coach" pin or button during the Match.

*Violation: Match will not start until the situation is corrected.*

### [G05]

Each Bridge will be preset with two Basketballs. Basketballs allotted to Robots that are not used, will be preset on the Coopertition Bridge.

*Violation: Match will not start until the situation is corrected.*

## 3.1.2 General Rules

### [G06]

A Match is 2 minutes and 15 seconds long. The Hybrid period (Hybrid) is the first 15 seconds of the Match. The Teleoperated period (Teleop) is the remaining 2-minute period. Each period ends when the Arena timer displays zero seconds.

During Hybrid, the Bridges will be illuminated in yellow. At the end of the Match, they will be illuminated with the matching color if the Bridge is Balanced and has one or more Robot(s) on it. When it is safe to enter the field after the Match, the Bridges will be illuminated green.

## [G07]

If at any time a Robot's operation or design is deemed unsafe, the Robot will be disabled for the remainder of the Match. If the safety violation is due to the Robot design, the Head Referee has the option to not allow the Robot back onto the Court until the design has been corrected.

*Violation: Foul and disablement*

An example of unsafe operation would be uncontrolled motion that cannot be stopped by the Drivers.

## [G08]

Robots may not touch anything outside the Court boundary.

*Violation: Disablement; however if it occurs during Hybrid, and there is no safety concern, the Head Referee will allow a 10-second grace period at the beginning of Teleop for the Robot to return to the Court.*

## [G09]

Robots may not intentionally detach parts or leave mechanisms on the Court.

*Violation: Foul*

## [G10]

Robots may not grab, grasp, grapple, or attach to any Arena structure. Robots may not push or react against the top of the Fender. (Robots may push or react against any element of the Arena that is not protected by another rule.)

*Violation: Foul*

## [G11]

Robots may not become entangled in the Arena elements.

*Violation: May be disabled and will not be freed until after the Match has finished.*

## [G12]

Robots may not damage any part of the Arena, including Basketballs.

*Violation: Potential Disablement if the Head Referee determines that further damage is likely to occur. Corrective action (such as eliminating sharp edges, removing the damaging mechanism, and/or re-Inspection) may be required before the Robot will be allowed to compete in subsequent Matches.*

Basketballs are expected to undergo a reasonable amount of wear and tear as they are handled by Robots, such as scratches and occasional marks. Robots that gouge, tear off pieces, or routinely mark Basketballs will be charged with Arena damage and will be required to rectify the situation.

## [G13]

Basketballs may not be intentionally placed out of bounds. Basketballs that inadvertently exit the Court will be placed back on the Court approximately at the point of exit, at the earliest safe opportunity, by Court staff.

*Violation: Foul*

## [G14]

Strategies that use Basketballs to either aid or inhibit Balancing of any Bridge are not allowed.

*Violation: Technical-Foul, and counting or discounting the affected Bridge as Balanced, as appropriate.*

## [G15]

While in the Arena, including before and after a Match, Players must be civil towards other Players, competition personnel, and event attendees.

*Violation: Potential Red Card if during a Match. Teams will not receive fouls for off-Arena actions; however designated competition personnel will hold them accountable for their off-Arena actions.*

### 3.1.3 Hybrid Rules

#### [G16]

During Hybrid, Robots may not contact the carpet on their Alliance Station end of the Court.

*Violation: Foul*

#### [G17]

During Hybrid, Players must remain in their assigned starting positions.

*Violation: Foul*

#### [G18]

During Hybrid, Players may not touch Basketballs.

*Violation: Foul*

#### [G19]

During Hybrid, any control devices worn or held by the Drivers must be disconnected from the Operator Console, and not connected until Teleop.

*Violation: Foul*

### 3.1.4 Robot Actions

#### [G20]

Robots in contact with the carpet on their Alliance Station end of the Court are limited to 60 in tall. Otherwise, Robots are limited to 84 in tall.

*Violation: Foul; or Technical-Foul for repeated or continuous violation.*

#### [G21]

Robots may extend one appendage up to 14 in. beyond a single edge of their frame perimeter at any time.

*Violation: Foul for exceeding size allotments; Technical-Foul for continuous or repeated violations.*

These appendages are intended for use in manipulating Basketballs and/or Bridges. A Robot may have multiple extension devices onboard, but only one may be deployed at a given time.

[G22]

Robots may only actively control three Basketballs at any time.

*Violation: Foul per extra Basketball*

Moving or positioning a Basketball to gain advantage is considered actively controlling. Examples are “carrying” (holding Basketballs in the Robot), “herding” (intentionally pushing or impelling Basketballs to a desired location or direction) and “trapping” (pressing one or more Basketballs against a Court element in an attempt to shield them).

Examples of Basketball interaction that are not actively controlling are “bulldozing” (inadvertently coming in contact with Basketballs that happen to be in the path of the Robot as it drives down the Court) and “deflecting” (being hit by a propelled Basketball that bounces or rolls off the Robot).

A Basketball that becomes unintentionally lodged on a Robot will be considered controlled by the Robot. It is important to design your Robot so that it is impossible to inadvertently or intentionally control more than three Basketballs at a time.

[G23]



Robots on the same Alliance may not work together to blockade the Court in an attempt to stop the flow of the Match. This rule has no effect on individual Robot-to-Robot defense.

*Violation: Technical-Foul*

[G24]

Intentionally falling down or tipping over to block the Court is not allowed.

*Violation: Technical-Foul*

[G25]

Robots may not contact or otherwise interfere with the opposing Alliance Bridge.

*Violation: Technical-Foul. If the act of Balancing is interfered with, also a Red Card and the Bridge will be counted as Balanced.*

### 3.1.5 Robot-Robot Interaction

[G26]

Strategies aimed at the destruction or inhibition of Robots via attachment, damage, tipping or entanglement of Robots are not in the spirit of the FRC and are not allowed.

*Violation: Technical-Foul plus Yellow Card*

For example, use of wedge-like mechanisms to flip Robots would be considered a violation.

[G27]

Deliberate or damaging contact with an opponent Robot on or inside its Frame Perimeter is not allowed.

*Violation: Technical-Foul and potential Yellow Card*

High speed accidental collisions may occur during the Match and are an expected part of the game. Robots place mechanisms outside of the Frame Perimeter at their own risk; no penalties will be assigned for contact between two such extended mechanisms.

A Robot with a mechanism outside of its Frame Perimeter may be penalized under this rule if it appears they are using that mechanism to purposefully contact another Robot inside its Frame Perimeter. Regardless of intent, a Robot with a mechanism outside its Frame Perimeter that causes damage to another Robot inside of its Frame Perimeter will be penalized.

Repeated or egregious violations of this rule will earn the offending Robot a Yellow Card.

#### [G28]

Robots may not touch an opponent Robot in contact with its Key, Alley, or Bridge.

*Violation: Foul; Technical-Foul for purposeful, consequential contact.*

This rule applied at all times, no matter who initiates the contact, see [\[G44\]](#).

#### [G29]

An Alliance may not pin an opponent Robot that is in contact with a Court border, Fender, Barrier or Bridge for more than 5 seconds. A Robot will be considered pinned until the Robots have separated by at least 6 feet. The pinning Robot(s) must then wait for at least 3 seconds before attempting to pin the same Robot again. Pinning is transitory through other objects.

*Violation: Technical-Foul*

If the pinned Robot chases the pinning Robot upon retreat, the pinning Robot will not be penalized per [\[G44\]](#), and the pin will be considered complete. Pinning a Robot against Basketballs that are being pushed against the Court border is an example of pinning being considered transitory.

## [G30]

Fallen (i.e. tipped over) Robots attempting to right themselves (either by themselves or with assistance from an Alliance partner) have one 10-second grace period per fallen Robot in which they may not be contacted by an opposing Robot. This protection lasts for either 10 seconds or until the protected Robots have completed the righting operation, whichever comes first.

*Violation: Foul for inadvertent contact; Technical-Foul for obviously intentional contact.*

Once the 10-second grace period for righting a fallen Robot has expired, opposing Robots may interact with a fallen Robot with no Foul assessed as long as [\[G27\]](#) is not violated (as applied to the fallen over Robot).

## [G30-1]

A Robot may only be supported (fully or partially) by another Robot if one of the Robots is in contact with a Bridge.

*Violation: Technical Foul for extended, strategic, or repeated loss of contact.*

Robots supporting other Robots will invite scrutiny regarding the safety inherent in the design, per Rule [\[G07\]](#). It behooves a team employing such a strategy to take precautionary action to mitigate any risk of Robots falling outside the Court.

### 3.1.6 Human Actions

#### [G31]

Only Inbounders may contact Basketballs; each Inbounder may hold a maximum of two Basketballs. During Teleop, Inbounders must remove Basketballs from the Corral immediately upon arrival. All Basketballs in the Alliance Station must be held by Inbounders once removed from the Corral.

*Violation: Foul*

#### [G32]

During Teleop, Inbounders may enter Basketballs back onto the Court by:

- a. passing through the Inbound Slots at any time;
- b. throwing over the Inbound Station during the final 30 seconds of Teleop.

*Violation: Foul*

#### [G33]

During Teleop, Players must be within their Alliance Station. Inbounders who were in the Kinect Station during Hybrid must return safely and expediently to their Alliance Station at the start of Teleop. Inbounders must remain behind the Starting Line during the Match. Exceptions will be allowed in cases involving Player safety.

*Violation: Foul*

#### [G34]

Players may not extend any part of their body into the Court or contact any Robot at any time during the Match.

*Violation: Technical-Foul*

#### [G35]

If a Robot becomes unsafe (e.g. the Robot begins to smoke, the battery falls out, etc.) it may be disabled for the remainder of the Match by any player by pressing the E-Stop button. The E-Stop buttons are intended for remote shutdown in the event of safety hazards and will not otherwise affect Match score or duration.

*Violation: Technical-Foul if used for any other reason.*

[G36]

During a Match, the operator console shall be operated solely by the Drivers of that team.

*Violation: Technical-Foul*

## 3.2 Scoring

[G37]

Final scores will be assessed 5 seconds after the Arena timer hits zero.

[G38]

Alliances will be immediately awarded points for each Basketball that passes completely through their Hoops as follows:

Hoop	Points
Top	3
Middle	2
Bottom	1

[G39]

During Hybrid, an additional 3 point bonus will be added for each Basketball that passes completely through any Hoop.

[G40]

When the final score is assessed per [\[G37\]](#), a Balanced Alliance Bridge will earn points based on the number of Alliance Robots completely supported by the Bridge, per [Section 2.2.5](#), as follows:

# of Robots	Qualification	Elimination
1	10	10
2	20	20
3	20	40

As the level of competition at the *FIRST* Championship is typically very different than during the competition season, the Game Design Committee will possibly alter the value of Balancing at the *FIRST* Championship within the range of 5 to 15 points per Robot.

#### [G41]

If a Robot from each Alliance is Balanced on the Coopertition Bridge when the final score for a Qualification Match is assessed per Rule [\[G37\]](#), each Alliance earns 2 Coopertition Points. If the Coopertition Bridge is not Balanced, but a Robot from each Alliance is fully supported by the Coopertition Bridge, each Alliance will earn 1 Coopertition Point.

### 3.3 Fouls

#### [G42]

Whenever a Foul is committed, 3 points will be credited to the opposing Alliance immediately.

#### [G43]

Whenever a Technical-Foul is committed, 9 points will be credited to the opposing Alliance immediately.

#### [G44]

Generally, a rule violation by an Alliance that was directly caused by actions of the opposing Alliance will not be penalized. Rule [\[G28\]](#) is an exception to this rule.

[G45]

Strategies exploiting Rule [\[G44\]](#) are not in the spirit of the FRC and are not allowed.

*Violation: Technical-Foul and Red Card*

### 3.4 Revision History

Revision	Release Date	Changes
-	1/3/12	Initial Release
A	1/10/12	Fixed spelling and grammatical errors  [G10] - Added note on Fender  [G40] - Added "Robots completely supported by"
B	1/13/12	[G26] - Added "or inhibition of Robots via"  [G38] - Changed to make Hoops Alliance specific  [G40] - Clarified details on Bridge Balance points