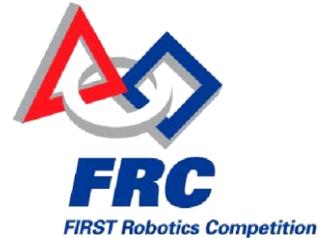


Section

3

The Game



1640 Robotics Competition Off-Season 2012

3 The Game

3.1 Gameplay Rules

3.1.1 Pre-Match

[G01]

When placed on the Field, 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 touching its Hurdle and fully supported by the carpet of its Scoring Zone, and must fully support one Football.

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 Footballs shall not be placed on the Field 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 a Special Team Player). Prior to Match start, each Player must be in their Alliance Station and behind their Starting. The Coach must wear the designated "Coach" pin or button during the Match.

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

[G05]

One Football will be present at corner of each End Zone (two per alliance) where it meets the Caution Line such that the Football's axis is perpendicular to the long axis of the Field.

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 Autonomous period (Autonomous) 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.

[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 Field 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 Field 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 Field.

[G09]

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

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 or any part of the Shelf. (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 Field, including Footballs.

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.

Footballs 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 Footballs will be charged with Arena damage and will be required to rectify the situation.

[G13]

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

Violation: Foul

[G14]

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

[G15]

During Autonomous, Robots may not contact any carpet outside of the Scoring Zone.

Violation: Foul

[G16]

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

Violation: Foul

[G17]

During Autonomous, Players may not touch Footballs.

Violation: Foul

[G18]

During Autonomous, 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

[G19]

Robots in their opponent's Scoring Zone are limited to 60 in tall. Otherwise, Robots are limited to 108 in tall.
Violation: Foul; or Technical-Foul for repeated or continuous violation.

[G20]

Robots may extend one appendage up to 14 in. beyond a single edge of their frame perimeter at any time. During the Endgame (last 30 seconds of a match), this maximum is raised to 36 in
Violation: Foul for exceeding size allotments; Technical-Foul for continuous or repeated violations.

These appendages are intended for use in interacting with Footballs and/or Field Goals. A Robot may have multiple extension devices onboard, but only one may be deployed at a given time.

[G21]

Robots may only actively control two Footballs at any time.
Violation: Foul per extra Football

Moving or positioning a Football to gain advantage is considered actively controlling. Examples are "carrying" (holding Footballs in the Robot), "herding" (intentionally pushing or impelling Footballs to a desired location or direction) and "trapping" (pressing one or more Footballs against a Field element (including Hurdles) in an attempt to shield them).

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

A Football 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 two Footballs at a time.

[G22]

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

[G23]

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

Violation: Technical-Foul

[G24]

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

Violation: Technical-Foul. If the act of Hanging is interfered with, also a Red Card and the Hanging will be counted as Hung with the maximum number of Robots possible for that Match.

3.1.5 Robot-Robot Interaction

[G25]

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.

[G26]

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

Violation: Yellow Card for repeated or egregious violations

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.

[G27]

Robots may not touch an opponent Robot in contact with its Fender.

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

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

[G28]

An Alliance may not pin an opponent Robot that is in contact with a Field border, Fender or Hurdle 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 Footballs that are being pushed against the Field border is an example of pinning being considered transitory.

[G29]

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).

3.1.6 Human Actions

[G30]

Only Special Teams may contact Footballs; each ST Player may hold a maximum of one Football. During Teleop, ST Players must catch or pick up Footballs from the Endline Return immediately upon arrival. All Footballs in the Alliance Sideline must be held by ST Players once removed from the Corral.

Violation: Foul

[G31]

During Teleop, only the Designated Kicker may enter Footballs back onto the Field, only by passing them through their Kicker Slot (without breaking the plane of the Field)

Violation: Foul

[G32]

During Teleop, Drivers and Coaches must be within their Alliance Station. ST Players must remain within the Alliance Sideline and/or Kicker Seat. Exceptions will be allowed in cases involving Player safety.

Violation: Foul

[G33]

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

Violation: Technical-Foul

[G34]

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

[G36]

Final scores will be assessed 10 seconds after the Arena timer hits zero.

[G37]

Alliances will be immediately awarded 1 point for each Football that passes completely through their Field Goal and does not bounce out.

[G38]

During Hybrid, an additional 1 point bonus will be added for each Football that passes completely through any Field Goal.

[G40]

An Alliance will receive 3 points for each football which is not in contact with an alliance robot and is fully supported by one of their Field Goals or Shelves at the end of the match.

[G40]

When the final score is assessed per [\[G37\]](#), each Robot Hanging (completely supported by their Field Goal and above their Fender) will earn 5 points. An Alliance will receive a bonus 2 points for each additional robot Hung on a single Field Goal (e.g. two alliance robots Hanging on the same Field Goal receive a total of 12 points while two alliance robots Hanging on different Field Goals receive a total of 10 points.)

3.3 Fouls

[G41]

Whenever a Foul is committed, 1 point will be credited to the opposing Alliance immediately.

[G42]

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

[G43]

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

[G44]

Strategies exploiting Rule [\[G44\]](#) are not in the spirit of the FRC and are not allowed.
Violation: Technical-Foul and Red Card