

## MARC 2010 Rule Changes

A number of suggestions were made for changes to the Breakaway rules for MARC. Most of these were good suggestions, and in retrospect some would have been good to have from Kickoff. But at this time they would have the effect of changing the game, sometimes dramatically. While some teams have the capability to change or rebuild their robot in response to a rule change, others do not have access to workshop or tools year-round. In fairness to all teams, the only changes for MARC are those that would improve the game without specifically benefitting any design decisions teams made during build season.

Key to changes:

Deletions: ~~strike through~~

Additions: underlined

Rationale for change, or an interpretation of how a rule will be called: *italicized*

**<G05>** Scoring Determination - Scores will be assessed after all objects ~~in motion, when the ARENA timer displays zero seconds,~~ come to rest, or 10 seconds after the timer displays zero seconds, whichever comes first. The final score of a MATCH is the total of points assigned under Rule <G04> less any assigned PENALTIES.

*This eliminates the need to determine whether an elevated or suspended robot was or was not in motion at the exact end of the match. If it does not remain elevated / suspended for 10 seconds after the clock goes to zero, the bonus points do not count.*

**<G30>** ROBOT Volume – During a MATCH, no part of the ROBOT shall extend outside the vertical projection of the FRAME PERIMETER, except as follows:

a. BALL Interaction Volume – ~~Solely for the purposes of interacting with a BALL,~~ MECHANISMS that are below the BUMPER may extend up to the BUMPER PERIMETER, for a period not exceeding two seconds. After returning inside the FRAMER PERIMETER, such MECHANISMS are not permitted to re-extend beyond the FRAME PERIMETER for at least two seconds.

*This eliminates a referee having to decide whether the MECHANISM below the BUMPER was activated for the purpose of interacting with a ball.*

b. ROBOT Righting Volume - ROBOTS attempting to right themselves or their ALLIANCE partners may expand up to the FINALE CONFIGURATION maximum volume while, and only while, performing the righting operation. While beyond the NORMAL CONFIGURATION volume and righting, ROBOTS may not actively interact with BALLS or opponent ROBOTS.

c. TOWER Contact ROBOT Volume - During a MATCH, ROBOTS in contact with their ALLIANCE TOWER may extend beyond their NORMAL CONFIGURATION volume but may not exceed the FINALE CONFIGURATION maximum volume. Robots exceeding the NORMAL CONFIGURATION after having touched their TOWER may lose contact with the tower for 2 seconds without penalty.

*This allows robots a reasonable opportunity to expand before the FINALE period.*

d. FINALE ROBOT Volume - During the FINALE, ROBOTS may extend up to the limits of the FINALE CONFIGURATION maximum volume.

e. BUMPERS may extend outside the FRAME PERIMETER, within the constraints defined in Rule <R07>.

f. Robot parts that accidentally become loose and extend outside the FRAME PERIMETER will not be penalized.

*Robots have been subjected to the rigors of many matches; they should not be unduly penalized for parts becoming loose. This also eliminates the incongruity of a piece that unintentionally falls completely off getting no penalty, but a piece that drags behind the robot getting a penalty.*

Violation: PENALTY and potential YELLOW CARD.

**<G34>** FINALE PERIOD ROBOT Protection - During the FINALE, ROBOTS in contact with their TOWER or in contact with an ELEVATED ALLIANCE partner may not be contacted by an opponent. Violation: PENALTY for inadvertent contact; plus a RED CARD for obviously intentional contact with a robot that has the capability to elevate or suspend itself.

*This provision was intended to protect robots that could be damaged if contacted while off the floor. If the robot does not have that capability, the extra protection beyond normal robot-to-robot contact is not needed.*

**<G36>** ROBOT to ROBOT Interaction - Strategies aimed solely at the destruction, damage, tipping over, or entanglement of ROBOTS are not in the spirit of the FRC and are not allowed. Continuing to interact with a robot that is tipping will be considered a strategy aimed at tipping. Violation: PENALTY and YELLOW CARD; possible RED CARD for egregious behavior

*This strengthens the incentive to refrain from tipping another robot.*

**<G39>** Pinning

*If a robot that has been pinning is moving away from the pinned robot when the 5 second count is reached, and moves at least 6 feet away, no penalty will be assessed.*

**<G44>** BALL CARRYING

*There will be no penalty for carrying a ball so slightly above the floor that a referee must take extraordinary measures to see it.*

**<G46>** BALL Penetration Restriction - Blue box: Examples of game play include, but are not limited to, actively engaging with another ROBOT, navigating toward a GOAL, controlling the position or direction of another BALL (e.g. kicking or herding), and changing regions (~~crossing a BUMP or~~ under a TOWER).

*Crossing a bump in an attempt to dislodge a ball trapped underneath the robot will not be penalized, as long as other actions taken by the robot are not resuming game play.*