

Team Update 19

General

G415 and G416 Adjustments

G415 and G416 are intended to enforce the notion that BUMPERS are designed to protect the ROBOT, and ROBOTS should generally not have to design for contact within the ROBOT PERIMETER. The size of this year's SCORING ELEMENTS, the height of the BUMPER ZONE, and the nature of this year's game have combined to result in many teams frequently interacting inside the ROBOT PERIMETER of opposing ROBOTS. The frequency of these calls puts intense scrutiny on REFEREES to observe every interaction to perceive even the smallest illegal contact.

The edits to G415 and G416 in this Team Update (as well as the previous edits for those rules in AUTO) seek to retain some level of protection for ROBOTS within their own ROBOT PERIMETER while reducing the number of FOULS occurring for contact that doesn't affect the outcome of the MATCH and increasing the ability for teams to play the game in their own ALLIANCE ZONE without as much risk of serious penalty. As we work on future season's games, we will strive to do a better job of not putting teams and REFEREES in this same difficult position.

Q&A

Questions 9, 177, 182, 186, and 197 have been corrected to align with this Team Update.

Game Manual

6.3 Setup

6.3.4 SCORING ELEMENTS

Note: The quantity of FUEL staged in a MATCH will not be changed for District Championships.

6.5 Scoring

6.5.3 Point Values

Table 6-5: REBUILT BONUS RP thresholds

BONUS RP Type	Regional/ District Events	District Championships	FIRST Championship
ENERGIZED RP	100	240	TBA
SUPERCHARGED RP	360	360	TBA
TRAVERSAL RP	50	50	TBA

7.4 In-MATCH

7.4.4 Opponent Interaction

The original G415 & G416 have been replaced with the following. Track changes are explicitly not shown below due to the extensive nature of the changes.

G415 ***Stay out of other ROBOTS.** A ROBOT with BUMPERS completely outside of their ALLIANCE ZONE may not damage or functionally impair an opponent ROBOT by initiating contact, either directly or transitively via a SCORING ELEMENT CONTROLLED by the ROBOT:

- A. inside the vertical projection of an opponent's ROBOT PERIMETER, or
- B. with the opponent's BUMPER backing or mounting.

Exceptions to this rule:

- C. Contact between the ROBOT'S BUMPERS or COMPONENTS inside the ROBOT PERIMETER and COMPONENTS inside an opening of an opponent's BUMPERS or in the space above the BUMPER opening
- D. Damage or functional impairment because of contact with a tipped-over opponent ROBOT
- E. A ROBOT that is not in violation of [G403](#) making contact with an opponent ROBOT during AUTO
- F. Damage that appears to the REFEREE as cosmetic only

Violation: MAJOR FOUL and YELLOW CARD, or if opponent ROBOT is unable to drive, then MAJOR FOUL and RED CARD.

FIRST Robotics Competition can be a full-contact competition and may include rigorous game play. While this rule aims to limit severe damage to ROBOTS, teams should design their ROBOTS to be robust.

Examples for this rule include, but are not limited to:

- A. A ROBOT leaves an arm extended and hits an opponent ROBOT inside their ROBOT PERIMETER in the NEUTRAL ZONE. No damage is seen so no violation is assigned.
- B. A RED ROBOT in their ALLIANCE ZONE hits a BLUE ROBOT inside their ROBOT PERIMETER. As this occurred inside the RED ALLIANCE ZONE, no violation is assigned.
- C. A ROBOT leaves an arm extended, spins around to change course, and unintentionally hits and damages a COMPONENT inside the ROBOT PERIMETER of a nearby opponent ROBOT in the NEUTRAL ZONE. This would result in a MAJOR FOUL + YELLOW CARD.
- D. A ROBOT, in the process of trying to quickly reverse direction, tips up on a single pair of wheels, lands atop an opponent ROBOT in the NEUTRAL ZONE, and damages a COMPONENT inside that opponent's ROBOT PERIMETER. This would result in a MAJOR FOUL + YELLOW CARD.
- E. Accidentally opening an opponent's relief valve in the NEUTRAL ZONE such that the opponent's air pressure drops and they can no longer use their intake. This is seen as functionally impairing the ROBOT so would result in a MAJOR FOUL + YELLOW CARD.

F. Accidentally powering off an opponent ROBOT in the NEUTRAL ZONE. This is seen as functionally impairing the ROBOT and results in a MAJOR FOUL + RED CARD as the ROBOT is no longer able to drive.

At the conclusion of the MATCH, the Head REFEREE may elect to visually inspect a ROBOT to confirm violations of this rule made during a MATCH and remove the violation if the damage cannot be verified.

For the purposes of this rule, “initiating contact” is a judgement call as to which ROBOT(s) in any interaction were responsible for the contact occurring based on direction of travel and relative speeds of both ROBOTS. Generally, for a ROBOT to have initiated contact, at minimum they have to be both moving towards the opponent ROBOT and have reasonable possibility to have avoided the contact.

In a collision, it’s possible for both ROBOTS to initiate contact.

"Unable to drive" means that because of the incident, for approximately ~20+ seconds, the DRIVER can no longer drive to a desired location in a reasonable time (generally). For example, if a ROBOT can only move in circles, or can only move extremely slowly, the ROBOT is considered unable to drive.

The exception in [G415-C](#) effectively means that ROBOTS with BUMPER gaps are at their own risk regarding damaging contact in these areas.

G416 ***This isn’t combat robotics.** A ROBOT may not intentionally and/or recklessly damage or functionally impair an opponent ROBOT.

Violation: MAJOR FOUL and YELLOW CARD, or if opponent ROBOT is unable to drive, then MAJOR FOUL and RED CARD.

The intent of this rule is to cover situations where a ROBOT intentionally and/or recklessly, as perceived by the REFEREE, damages another ROBOT anywhere on the FIELD.

Situations where a REFEREE is likely to infer are intentional and would be a violation if they caused damage include, but are not limited to:

- A. A ROBOT REPEATEDLY smashing into an opponent ROBOT intake.
- B. A ROBOT REPEATEDLY hitting another ROBOT with their extension.

Examples that would be reckless and would be a violation if they cause damage, include, but are not limited to:

- C. A ROBOT driving at high speed, across the FIELD, rams into an opponent ROBOT with their extension.
- D. A ROBOT rams into an opponent with their extension REPEATEDLY.
- E. A ROBOT violently driving into an opponent that is already firmly against a FIELD element.

Examples that are not reckless include, but are not limited to:

- F. A ROBOT making REPEATED BUMPER to BUMPER contact with an opponent.

- G. A ROBOT driving at high speed makes BUMPER to BUMPER contact with an opponent.
- H. A red ROBOT is driving around and picking up FUEL in the NEUTRAL ZONE with an extension out. Blue ROBOT is playing defense and moves into their path at the last second resulting in a collision. The red ROBOT is not considered reckless and there is no call because the red ROBOT did not have an opportunity to avoid the contact.
- I. A red ROBOT is travelling slowly and picking up FUEL in the NEUTRAL ZONE with an extension out. A blue ROBOT races towards the red ROBOT such that the red ROBOT's extension contacts the blue ROBOT causing damage. The red ROBOT is not considered reckless and there is no call because the blue ROBOT initiated the contact because the blue ROBOT was travelling much faster.

At the conclusion of the MATCH, the Head REFEREE may elect to visually inspect a ROBOT to confirm violations of this rule made during a MATCH and remove the violation if the damage cannot be verified.

"Unable to drive" means that because of the incident, for approximately ~20+ seconds, the DRIVER can no longer drive to a desired location in a reasonable time (generally). For example, if a ROBOT can only move in circles, or can only move extremely slowly, the ROBOT is considered unable to drive.

Due to the prevalence of FUEL around the FIELD during gameplay, it is highly unlikely that a REFEREE could determine if an interaction causing an opponent ROBOT to be "beached" on FUEL is intentional versus regular defensive play.