

January 6, 2009

## TEAM UPDATE #1

### GENERAL NOTICES

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#### General Notes from *FIRST* Headquarters:

- 1) We would like to remind teams that illustrative resources, such as the Kickoff video, the game animation, etc. are intended to provide overviews of the game. The ultimate authority regarding game rules is the 2009 *FIRST* Robotics Competition Game Manual posted on the *FIRST* website (<http://www.usfirst.org/community/frc/content.aspx?id=452>).
- 2) The Game Design Committee would like to elaborate on the restriction about robot size during match play. Specifically, it's important to read and understand the statement in Rule <R08>, referring to the bumpers:

*"...If implemented as intended, a ROBOT that is driven into a vertical wall in any normal PLAYING CONFIGURATION will always have the BUMPER be the first thing to contact the wall."*

This rule restricts any arms, mechanisms, hoods, etc from extending beyond the BUMPER PERIMETER. Among other things, some associated intentions of this rule are to prevent teams from having manipulators which extend outside the BUMPER PERIMETER, and to prevent teams from being able to de-score game pieces or block/disrupt trailers. While the current belief is that rule changes or additions are not needed to prevent such robot behavior, if teams are pursue this type of strategy by employing a loophole, or by other means, an amendment to the rules will be made.

#### Section 0 - Introduction

No changes.

#### Section 1 - Communication

No changes.

#### Section 2 – Team Organization

No changes.

#### Section 3 – At the Events

No changes.

## Section 4 – Robot Transportation

No changes.

## Section 5 – The Awards

No changes.

## Section 6 – The Arena

No changes.

## Section 7 – The Game

The Game Design Committee would like to elaborate on the restriction concerning disruption of the ARENA as it applies to the TRAILER. The purpose of the trailer is to serve as an open collection site for MOON ROCKS, EMPTY CELLS, and SUPER CELLS. As such, an attempt to cover the open top of any trailer or remove scored balls would be considered a disruption of ARENA elements and not be allowed per <G29>.

## Section 8 – The Robot

Section 8 – The Robot has been updated as follows:

- The definition of Bumper Perimeter has been updated as follows:

*BUMPER PERIMETER – the polygon defined by the outer-most set of exterior vertices on the ROBOT (without the BUMPERS or Trailer Hitch attached) that are within the BUMPER ZONE. To determine the BUMPER PERIMETER, wrap a piece of string around the ROBOT at the level of the BUMPER ZONE - the string describes this polygon. The BUMPER PERIMETER may extend up to, but cannot exceed, the maximum ROBOT volume constraints defined in Rule <R11>.*

- Rule <R11> has been updated. The change in language removes the implied restriction on robot width and length. The intent of the rule is not to designate one particular orientation over another, but simply to limit the overall volume of the robot. The change also clarifies that the Trailer Hitch is allowed (expected) to extend beyond the BUMPER PERIMETER and ROBOT volume limitations.

*At the start of, and during, the MATCH the ROBOT shall fit within the orthogonal dimensions listed below:*

<u>Dimension 1</u> <u>(horizontal)</u>	<u>Dimension 2</u> <u>(horizontal)</u>	<u>Dimension 3</u> <u>(vertical)</u>	<u>Maximum</u> <u>Weight</u>
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28 inches (71.12cm)	38 inches (96.52cm)	60 inches (152.40cm)	120 pounds (54.43Kg)
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- A. Exception: solely for the purposes of determining compliance with the weight and volume limitations, these items are NOT considered part of the ROBOT and are NOT included in the weight and volume assessment:
- The 12V battery and its associated half of the Anderson cable quick connect/disconnect pair (including no more than 12 inches of cable per leg, the associated cable lugs, connecting bolts, and insulating electrical tape),
  - BUMPER assemblies that are in compliance with Rule <R08>,
  - The TRAILER,
  - **The Trailer Hitch (as defined in Rule <R18>),**
  - The OPERATOR CONSOLE.
- To clarify the intended effect of keeping all parts of the Robot within the BUMPER PERIMETER, Rule <R16> has been updated as follows:

*Once the MATCH has started, the ROBOT may assume a PLAYING CONFIGURATION that is different from the STARTING CONFIGURATION. The ROBOT must be designed such that the PLAYING CONFIGURATION of the ROBOT shall not exceed the dimensions specified in Rule <R11>. **When in the PLAYING CONFIGURATION, no part of the ROBOT may extend outside the vertical projection of the BUMPER PERIMETER.***
  - In Rule <R18>, Part D “outer edge” has been changed to “BUMPER PERIMETER”. It now reads as follows:

*The Trailer Hitch must be located on the **BUMPER PERIMETER** of the ROBOT structure such that it may easily connect with the tongue of the TRAILER (attached to the TRAILER).*
  - The 2009 Parts Use Flowchart has been edited to include a “NO” path for the “Electronics” block. Also, “2008” has been changed to “2009” in the block below.

Is the part or material off-the-shelf or is it custom made by the team after the start of the 2009 Kickoff?  
(See Robot Section)

## Section 9 – The Tournament

No changes.

## Section 10 – The Kit of Parts

No changes.