

January 30, 2009

## TEAM UPDATE #8

### GENERAL NOTICES

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General Notes from *FIRST* Headquarters:

#### Section 0 – Introduction through Section 6 – The Arena

No changes.

#### Section 7 – The Game

##### Orbit Ball containers for PAYLOAD SPECIALISTS:

Two containers are provided for the temporary storage of Game Pieces at each PAYLOAD SPECIALIST location. Each container is approximately 26 x 14 x 12 inches (large enough to hold approximately 10 GAME PIECES). In the FUELING STATION, they are located behind the PAYLOAD SPECIALIST as they are facing the field; in the OUTPOST they are located to either side of the seat.

*Section 7 – The Game, Rev E* has been updated as follows:

<R11.1> The provided MOON ROCK storage containers may be moved around, within the FUELING STATION or OUTPOST in order to accommodate the PAYLOAD SPECIALIST, but they must remain on the ground and upright throughout the MATCH.

#### Section 8 – The Robot

##### Bumper Rules Clarification:

Teams, we acknowledge that in our attempt to clarify the bumper rules over the past three weeks, the complexity of options grew. We underestimated this outcome and realize it has led to confusion for some teams trying to exercise their creativity in frame design. We would like to remind all teams that the bumper rules have not changed since the initial release of the manual, and upon careful analysis we have determined that there is not a need to modify any of the rules.

In case you have not seen the guidance given by the FRC Director in his blog two weeks ago, we repeat it here for your benefit:

*“Since there seem to be several intense Team discussions about bumper rules, here is a “flow chart” for determining bumper legality -- at least the gross geometry part of the bumper.*

*1. Estimate carefully how wide the bumper gap around the trailer hitch must be to*

- comply with the "bumper to bumper" trailer-robot contact illustrated in Figure 8-6.
2. Wrap a string around the robot to determine the BUMPER PERIMETER.
  3. Mark the string to indicate the non-bumper regions, (including the TRAILER HITCH gap) being careful to insure that six inches of BUMPER are provided on each side of each vertex of the BUMPER PERIMETER.
  4. Check to ensure that 2/3 of the BUMPER PERIMETER is covered by BUMPERS."

Additionally, we would like to restate the fact that Figure 8-2 in the manual is meant to show four examples, which are indicated with an "OK" and associated arrow; no other information is communicated in that figure, and no interpretations should be taken from anything else in the figure.

Finally, we have started to receive a number of questions about "curves" vs. "corners". The guidance that will be provided to the Robot Inspectors is as follows: Curves are considered infinite vertices or corners, thus any exterior curve must be completely protected by bumpers and be flanked by two six-inch segments of straight bumper.

We hope this guidance has helped in your understanding of the rules and the Game Design Committee's intent. If you have any other specific questions about specific bumper rules, please continue to request clarification of those specific rules in the Q&A. We remind teams that the purpose of the Q&A is not to perform design review, and we are not able to approve or disapprove specific designs on that forum.

Required cRIO modules:

Please note, while the rules explicitly require only the 9201 module to be installed in the cRIO (in slot 1), the rules also imply that the 9403 must be in slot 4 (Rule <R58>). The 9403, installed in slot 4, enables the Robot Signal Light via the Digital Sidecar.

Required software versions:

Section 8 – The Robot, Rev G has been updated as follows:

<R56> The cRIO Mobile Device Controller, Driver Station, wireless bridge, and wireless router must be configured to correspond to the correct team number (assigned to the team by FIRST). The procedures for configuring these devices are contained in the FRC control system documentation. Software and firmware used during the competition must be at the appropriate revision in order to pass inspection and compete. The software/firmware and permitted revisions are listed in the table below.

Software/Firmware	Revision
LabVIEW for FRC	Update 3.0a and newer
cRIO FPGA Image	FRC_2009_v11.zip and newer
WPI Robotics Library	TBD and newer
Driver Station	2008-10-29a and newer

**Section 9 – The Tournament through Section 10 – The Kit of Parts**

No changes.