

2005 FIRST Robotics Competition

January 18, 2005

Team Update

03

→ Special Notices ←

No Special Notices for this update.

→ General Notices ←

Documents and Updates

FIRST will provide important information to teams via the FIRST web site at:

http://www.usfirst.org/robotics/doc_updt.htm

Please check the team updates portion of the web site on a regular basis to insure that your team does not miss critical information about the 2005 FIRST Robotics Competition.

Our schedule to publish Team Updates is:

- Tuesday by 5PM and Friday by 10AM. We work hard to meet these commitments. Unexpected circumstances may, on occasions, delay their publication.
- Additional updates may be released if required.

Question & Answer System

The Question & Answer System can be found at:

<http://www.usfirst.org/robotics/2005/qa.htm>

1. Please ask one question at a time.
2. Questions are limited to 240 characters.

To **SEARCH** for questions answered after a certain date, do the following:

1. Leave **Section** set to **All**
2. Set **Date** to **After**
3. Enter the appropriate date in the next field
4. Leave **Search** blank
5. Set **Status** to **Answered**
6. Press Update Filter

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Section 0 - Introduction

No changes.

Section 1 - Communication

No changes.

Section 2 – Team Organization

No changes.

Section 3 - The Arena

➤ MODIFICATION to: The Competition Field Border

The access gates on both sides of the field will be moved from the 3rd six-foot border section [from the diamond plate] to the 2nd six-foot border section. This will eliminate traffic between the loading stations. Any blueprints will be updated.

Section 4 - The Game

➤ MODIFY: Rule <G18>

New text is bolded and italicized; removed text is lined out

<G18> ROBOTS can remove or displace TETRAS CONTAINED in a goal, but cannot remove *the opposing alliance's STACKED TETRAS* ~~STACKED~~ on a goal. If an alliance ROBOT removes any STACKED TETRA of the opposing alliance, the TETRA will be SCORED (3 points) and the opposing alliance automatically OWNS the GOAL for the remainder of the match regardless of what color TETRAS are on the goal. There is no penalty for removing a TETRA that is precariously positioned on a GOAL or TETRA, but not fully STACKED.

➤ ADD: new Rule <G28>

<G28> An alliance that dislodges, knocks or, in any way, removes an opposing alliance's tetra off a loading platform will be assessed a 10-point penalty for each occurrence.

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Section 5. The Robot (includes the Kit of Parts)

ROBOT

No changes.

KIT

➤ INFORMATION about: CMUcam2

FIRST has made every effort to make the CMUcam2 setup and calibration as robust as possible but does not have control over the varied environments in which the camera may be operated. Since the vision sensor deals specifically with the nature of light and color in a more precise manner than the human eye-to-brain system, it requires a stable operating environment. Below is some useful information to help you get positive results with your use of the vision sensor.

As you experiment with the CMUcam2 camera from the Kit of Parts, make sure that you pay attention to the lighting environment in which you test. Most, if not all, of the competition venues will be very well lit and the light levels will be much higher than you might expect. This will have an affect on the illumination levels received by the camera. But perhaps even more important, the type of lighting used in the competition venues will significantly affect the response of the camera. If you are testing your camera in a lighting environment that is markedly different, you may want to take steps to adjust the lighting to be more closely aligned with the competition lighting.

Most gymnasium and coliseum locations use sodium vapor or mercury vapor lights. These lights usually have a color temperature of around 2000-2100 Kelvin, and have a noticeable yellow tone. This yellow tone will shift the color of the vision tetras as they are perceived by the camera. As most of the competitions will be held in these types of lighting environments, you will need to be aware of - and compensate for - this warmer lighting.

If your development environment is lit with standard florescent lighting as is found in most school rooms and shop environments, be aware of the heavy blue bias in the lighting. Florescent tubes have a color temperature of around 6500 Kelvin (standard broken spectrum tubes). This is noticeably bluer/cooler than typical daylight at midday (around 5500 Kelvin) or bright metal halide lighting (around 4500 Kelvin). If you tightly calibrate your camera for this type of environment, you may run into problems when you get into competition lighting.

If you have access to a lighting colorimeter or spectroradiometer, you can measure the precise color temperature of your environment and make appropriate adjustments. But there are less involved, and less expensive, ways to get a reasonable approximation of

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what you can expect in the competition venues. One of the best ways to compensate for the differences in the lighting environments will be to get a 500 watt halogen work light (available at Home Depot and similar locations) and use it to light your test environment. Halogen lamps have a color temperature around 3200 Kelvin. One or two of these will dump a lot more lumens and a lot more warmth into your lighting. Add one or two targeted incandescent tungsten lamps (color temperature 2850 Kelvin for a typical 100 watt bulb), and you will be getting close to where you want to be.

➤ **CLARIFICATION on: Exide Battery**

The battery in the 2005 Kit of Parts is the Exide EX18-12. The Exide ES18-12 is the same battery and is competition legal.

You can bring as many legal batteries as you wish to an event, however, you may only have one battery on your robot while competing.

Section 6 – Robot Transportation

No changes.

Section 7 – At the Events

No changes.

Section 8 – The Tournament

No changes.

Section 9 – The Awards

No changes.

Section 10 - Scholarships

No changes.

E-Mail Blasts Sent Previously

None.

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Question & Answer Items of Note

➤ #966

We apologize for any confusion on this question. The reference of a revised G18 in Team Update #02 should be in Team Update #03.

➤ #976

The original answer to this question was "**no**" and it was mistakenly changed to "**yes**" on 1/16/2005. The answer "yes" was incorrect. The answer has been revised to "**no**" to be consistent with the rules, including new Rule <G28> in this update. We apologize for any confusion that may have been caused by this error.

➤ #1007

You may use a 2nd vision camera on your robot.