

March 13, 2007

TEAM UPDATE #17

GENERAL NOTICES

Sources for Official *FIRST* Rules

The *FIRST* staff and GDC members are aware that there have been a number of bumps in the road during the first two weeks of Regional Competitions, and apologize for any negative impact this may have had on teams. Overall, the feedback has been positive from each and every regional; this is a testament to the hard work that so many dedicated volunteers donate selflessly to help pull off the competition season without hitches. The volunteer referees, inspectors, masters of ceremonies, announcers, administrators, scorekeepers, coordinators, judges, field crews, queuers, and innumerable others, have all done amazing jobs and we cannot thank them enough. Unfortunately, we have had a few isolated incidents of event volunteers imposing unauthorized rules in the pits, on the robots, and on the field. We appreciate everyone's Gracious Professionalism in accepting these decisions on-site when they have happened. But we want to let everyone know we have heard your reports, and will be acting immediately to correct these situations.

We are committed to ensuring that *FIRST* rules and policies are applied consistently and predictably at all FRC competition events. The lead volunteers are there to administer the implementation of the rules and policies, not to create new ones. We will continue to work with all event volunteers to ensure that they have the training and preparation necessary to be good custodians of these rules and policies. We ask the volunteers and the entire *FIRST* community to help us keep the experience consistent and positive across all events. And if we slip up and make mistakes, please continue to let us know (in a gracious manner) so that we may correct them.

Match Scheduling Algorithm

We indicated last week that we understood the problems that existed with the match schedule generation software. The match generation process was improved for Week 2. We take full responsibility for addressing the match generation issue, and in the spirit of continuous improvement, will work on the issue for future events.

Section 0 - Introduction

No changes.

Section 1 - Communication

No changes.

Section 2 – Team Organization

No changes.

Section 3 – At the Events

Machine Tools at Events

We want to more thoroughly address the topic of mobile machine shops and mobile power tools mentioned in last week's update. The discussion in Update #16 was issued in response to a potential liability coverage issue that was brought to our attention. Now that we have had the opportunity to more thoroughly review the appropriate guidelines, we are issuing the following clarifications:

- a) Electric welders, bench grinders, angle grinders, and all other tools that throw sparks continue to be prohibited from the Pits.
- b) Gas welders, propane/MAPP gas torches, and all other tools that produce open flames continue to be prohibited from the Pits.
- c) Small, portable bench-top power tools (e.g. band saws, drill presses, sanders, etc.) with appropriate safety guards are permitted in the Pits.
- d) Floor-standing power tools (e.g. full size drill presses, band saws, table saws, etc.) are prohibited in the Pits.
- e) Small, desktop machining centers (e.g. desktop CNC mills) will be permitted in the Pits as long as they are of a reasonable size (e.g. easily lifted by one person) and appropriately covered to prevent throwing of chips during operation.
- f) ALL tools used in the Pits (hand tools, power tools, and bench top tools) must be used in a proper, safe and controlled manner. Unsafe operations, particularly those that may endanger those around you, will be subject to review by the event staff and may result in anything from a caution advisory up to expulsion from the event.

Mobile Machine Shops at Events

FIRST welcomes team-provided mobile machine shops at events. But in order to comply with *FIRST* and local venue requirements, teams bringing/sponsoring mobile machine shops must comply with the following:

- a) Team-provided mobile machine shop facilities (e.g. machine shop trailers) must be approved and cleared prior to each event by *FIRST*. Notify *FIRST* that you intend to have your mobile machine shop at an event by e-mailing frcteams@usfirst.org to request approval.
- b) Team-provided mobile machine shops must provide their own liability coverage. You must provide *FIRST* with proof of insurance for the local machine shop, naming *FIRST* as an additional insured; you must fax the certificate to 603-666-3907, Attn, Team Support; AND you must present a copy of the certificate to the Event Manager. Without a proper insurance certificate, the mobile machine shop may not be used at the event, *FIRST*'s liability coverage does not provide for this type of risk.
- c) Services provided through team-provided mobile machine shops must be accessible and available to all teams participating at an event. They may not provide services to an exclusive subset of teams.
- d) Job requests for the mobile machine shop must be handled through the same counter and process as the *FIRST*-provided machine shop services. This will

include job requests by the sponsoring team.

- e) Each team-provided mobile machine shop must include its own electrical source and each shop request must provide for any security requirements. Neither *FIRST* nor the venue will provide these services.
- f) Team-provided mobile machine shops may only operate during event hours (i.e. when the Pits are open). No after-hours operations are permitted.
- g) Team-provided mobile machine shops must include an appropriate team-provided staff (covered under the liability coverage) to perform the requested work. The shop cannot operate as an “open workshop” that allows anyone from any other team to use any tool/machine without certification or checkout.
- h) Note that the liability coverage at each event venues will vary, and specific venue policies may further restrict the use of team-provided mobile machine shops. If you intend to bring a team-provided mobile machine shop, please check for these restrictions BEFORE the start of the event.

Inspection Process

FIRST strongly recommends that teams begin the inspection early on the first day of their Regional. Please note that you can get partially inspected early on and then finish the process later in the day.

Section 4 – Robot Transportation

No changes.

Section 5 - The Awards

No changes.

Section 6 – The Arena

No changes.

Section 7 – The Game

Keepers/Ringers on Bottom Row

Once a Game Piece has been released by the possessing Robot (even momentarily) and is Hanging (e.g. it is fully supported by the Spider Leg), it is considered to be Hanging until the end of the match (unless it is a Spoiler that is legally removed). A Game Piece that is Hanging and then re-contacted by the Robot is still considered Hanging. A Game Piece that is Hanging and then contacted by another Game Piece is still considered Hanging. A Game Piece that is Hanging and then dislodged from its position by any other object is still considered Hanging.

The Rack was originally designed such that a Game Piece Hanging on the lowest Spider would not contact any Game Pieces lying on the floor. However, we have discovered that

variations in Game Piece inflation, minor differences in construction of individual field elements, and deviations in the assembly of the Rack from site to site can preclude this from happening. Therefore, if a Game Piece on the floor against the Rack is preventing a Game Piece that has been hung on a bottom Spider Leg from becoming fully supported (that is, if the floor Game Piece was not there, the hung Game Piece would be Scored) then that Spider Leg will still be counted as Scored.

Section 8 – The Robot

We have received numerous requests regarding application of passive electrical filtering for motor power feeds and servo control signals in order to suppress noise. We acknowledge this as standard good design practice and will allow the application of passive components to these signals as follows.

- A one microfarad (1 μF) non-polarized capacitor may be applied across the power leads of any motor on your Robot (as close to the actual motor leads as reasonably possible)
- A ten kilo-ohm (10 $\text{k}\Omega$) or larger resistor may be used as a shunt resistor in-line with the control signal feeding a servo

This should help you troubleshoot and solve electromagnetic interference (EMI) issues you may be experiencing on your Robot.

Section 9 – The Tournament

No changes.

Section 10 – Kit of Parts

No changes.

Documents and Updates

No changes.

2007 *FIRST* Guidelines, Tips, and Good Practices

No changes.

The Question & Answer System

No changes.