The 2002 FIRST Robotics Competition

TEAM UPDATE #6

Date: February 12, 2002

FINANCE

For all teams that registered for Regional and Championship events **prior to 2/4/02**, please note that **your payments are due to FIRST prior to 2/15/02.** We must receive your check or credit card info as payment. PO's are NOT considered payment.

If unsure as to what your team has outstanding, please go to your web registration site for the latest payment status. Your team finance data is updated daily as we receive payments.

Any questions concerning your payment please direct to monica@usfirst.org

FED-EX

The FedEx airbills you received in your kit of parts, for shipping your robots, has an error in **Box 4a**. This box is **incorrectly** checked. The correct box is **4b - FedEx 3Day Freight**. Our thanks to those teams that have found this situation and notified us of it.

All that is required to correct this is to cross out via pen/marker the designation in Box 4a, and mark Box 4b clearly as the right selection.

We apologize for the inconvenience. Please let us know if you have any questions.

CONSENT AND RELEASE

As FIRST grows and matures, we are constantly establishing new relationships with new partners. As a result, we now need to document that Competition Event participants grant us photography rights and claims release. So, starting in 2002, FIRST is asking all Robotics Competition team participants to sign the event participation consent and release form.

A parent or legal guardian needs to sign the form if the individual is under 18 years of age. Please create one paper copy of the form for each team member who will be attending any event. The team leader needs to collect one signed form per person for the season. The team leader should collect all forms and submit them at the Pit Administration table at the first Regional Event the team attends.

Please do not send the forms directly to FIRST, by either email or mail. Team members only need to sign one form for the season - there is no need to sign one form for each event, if the team is participating in multiple events. There is, however a separate Disney release form required for those teams attending the Championship, which will be posted shortly.

The form can be downloaded from http://www.usfirst.org/robotics/consent.htm

RULES UPDATE

In order to better allow teams to replace robot components that fail or do not work well at competition events, FIRST has decided to alter it's policy regarding fabrication of parts when the robot is out of team hands.

Previously, the policy was that all fabrication of parts and mechanisms must stop when the robot is out of team hands. The new policy is that after each event in which a team participates, the team has until the end of the following Wednesday (midnight local time) to fabricate new parts and mechanisms, and may bring these parts and mechanisms to any subsequent events. As before, we must rely on the gracious professionalism of teams to adhere to the rules of the FIRST Robotics Competition.

Unchanged is the policy that teams may not perform part fabrication or repair of parts off-site when the robot is at an event (i.e. no taking parts back to your hotel), and that teams must ship all robot parts at an event site directly to any subsequent sites. Also, teams are allowed to purchase raw materials (wheels, gears, metal stock, etc.) and bring them to event sites in preparation to fabricate custom parts or mechanisms on-site at events.

Example: Team A is attending two regional events. At their first event, their robot breaks a gearbox. Team A must ship their robot and all it's parts directly to the next event site they will be competing at. However, Team A has until midnight Wednesday following the event to fabricate a new gearbox and bring it with them to their next event.

Q & A FROM YAHOO MESSAGE BOARDS

Post 114: Entanglement Details and Clarifications

If your team designs a robot that is meant to pull or push other robots, or otherwise manipulate them, the pulling mechanism must not present a risk of becoming entangled in the other robot (such that the other robot could not be easily released), and must not be interpreted by the referees as intended to damage a robot. Also, the platform must not be intended to tip the robot over or be so high that a reasonably constructed robot would be damaged by falling off the platform. See Rules GM17, DQ3, & M4.

ON TETHERED / EXTENDED OBJECTS BEING AN ENTANGLEMENT RISK The TIMING of the release of a mechanism IS NOT CONSIDERED when evaluating its risk of entanglement because the actions of other robots and position of the goals on the field cannot be predicted with certainty. Even if you only release the mechanism in the last few seconds of the match, if it presents an entanglement risk, it will be evaluated that way. When designing your robot, please consider the environment on the playing field during a match and use your common wisdom to evaluate the likelihood of your mechanism getting wrapped around an axle, caught on a bolt or arm or other robot feature, or even hung up on part of a goal. Tape measure tape, while less likely to be caught on a sharp edge than an piece of string, is still a relatively flexible material when used in long lengths, and might easily be run over and snagged by another robot or a goal that is being moved. A telescoping arm, given sufficient rigidity, lack of sharp features, etc., would likely not present a risk of entanglement, but might prove flimsy and unreliable. The ultimate determination of what presents a risk of entanglement is subjective and will be made by inspectors at each competition event, and by the referees in each match (in the event that something passes inspection but later becomes a problem during a match).

Post 439: Interaction with the goals
The goal can be grabbed in the area between the upper and lower plywood decks by grabbing the pipe nipples. The flanges are considered part of the nipples. The lower surface of the upper deck and the upper surface of the lower deck can be incidentally touched. By this, we mean that it can be touched but if you apply enough pressure to either or both surfaces such that the goal can be pulled or pushed, we consider you attached to this/these surface(s) and this is not allowed.

The upper and lower decks have stainless steel edges. These edges cannot be grabbed but the vertical surfaces of these edges can be pushed on in order to move the goal. The goal can be lifted by grabbing the nipples. The goal can leave the playing field surface but upending (tipping over) of the goal is not allowed.

Q) I was wondering if you could clarify the term used in the kickoff of "tethered". What type/ size connection would constitute a tethered part or the robot to get credit for being in another zone?
A) FIRST will not try to define a size for a "tethered" device, nor will FIRST define a "tethered" device. Remember that it does not matter if it is "tethered" or not, if any part of a robot is touching in zones 1 or 5 it counts, please refer to rule SC4.

Q) Is it allowed for a robot to release a tethered device prior to or at the end of the two-minute match?
A) Yes as long as the device does not present a risk of entanglement. See Rules DQ3 and M16.

Q) Is this device allowed if it is: fired pneumatically; released and propelled using stored energy in springs/tubing; released and propelled using electrical energy from the battery?
A) Per Rule S6, the only projectiles that are allowed are balls. Rule M1 governs energy sources that may be used to power the robot.

Q) I know a similar question has already been asked, but what constitutes a projectile? If a part of the robot that is tethered is launched, is it still a projectile even though it has a tether (assuming it possessed no risk of entanglement)?
A) We are using a "common sense" definition of what constitutes a projectile. The exact determination will be up to the robot inspectors and referees at the competition events. Here is an attempt to provide a formal definition: “A projectile is any object, whether attached or not, that is launched from the robot and continues moving away from the robot by its momentum, typically following a parabolic path as it falls to the surface of the playing field.” Note that something launched at floor level, such that it never truly falls, but rolls or slides across the floor could still be considered a projectile.

Q) If we launch a tethered (with a 3/8"rope) tennis ball sized projectile at the last second of the game- perhaps linked to the power shutdown at the end- would it be considered an entanglement hazard? We're thinking not since robot movement will be stopped (or almost stopped).
A) Actually, it would be. See post #114.

Q) Suppose there is a robot that can split down the middle. Suppose that at the start of the match, the robot splits with only a 30 ft bundle of wires connecting them. Assume that it is a bundle of four 10 gauge wires and four 16 gauge wires. Also assume that they are strain relieved and bundled appropriately. Is it legal for such a robot to drive around the entire match in this fashion?
A) No, because the wires would present a risk of entanglement.

Q) Would the above answer change if the tether was longer or shorter?
A) If the tether was short enough that it did not present a risk of becoming entangled in a robot or a goal, then it would be allowed.

Q) Would the answer change if the robots did not split until the last few seconds of a match?
A) No. Timing is not considered.

Q) Would the answer change if the bundle of wires was made of more bigger wires, more wires, smaller wires or fewer wires?
A) The bundle will be evaluated by the robot inspectors at each event, and by the referees on the field during each match. If at any point it is deemed to present a risk of entanglement, then it will be disallowed.

Q) If there is some situation that such a case would be legal, would such a robot be found in violation of rule that prohibits going under the goal (GM20) if the goal was pushed up over the tether by another robot?
A) This would not be a violation of GM20, because the robot did not intentionally put the tether under the goal. However, the alliance pushing the goal over the robot could be penalized if damage to the goal was deemed likely to occur as a result of passing the goal over a robot.

Q) If there is some situation that such a case would be legal, would such a robot be found in violation of rule that prohibits going under the goal (GM20) if one half of robot went around a goal one way and the other half went around the robot the other way and the bundle went under the lower plywood base?
A) Intentionally passing a part of the robot under the goal would be considered a violation of Rule GM20.

Q) I recall in previous messages that loose strings for tethers and such extended across the floor will be considered entanglement under all situations. My question concerns whether wire or string running along a rigid object that is continuous with the robot but extended across the playing field (not a projectile) will be considered in this ruling of entanglement. I have not seen anything against a rigid object blocking off portions of the field as long as it is part of the robot, so am I correct in assuming that that is allowed?
A) It depends. The rigid object and the wire or string could get hung up on another robot or a goal during the match. What if it detaches during the match? The people inspecting it and the referees will use common sense. The final decision will be up to them.

Q) Can we design an "Obstructavision" (TM) module, which allows us to block the vision of the opposing drivers, so that they cannot see the playing field?
A) No, it is not in the spirit of the competition.

Q) Is it allowed to let the robot "shoot" a small piece of metal or wood across the playing field during a match if it is attached to a piece of string? Would a team be disqualified for the fact that they shot it or only if any robot gets stuck / entangled in the cord or metal / wood piece? (For example would it be considered okay if it is shot precisely in a straight line 5 seconds before a match ends and all other robots are far enough away so that they can't get entangled because they can't move so far in the last seconds to get entangled or if the cord lies flat on the ground so that every robot would drive over it without getting entangled? We are aware of rules DQ3 and M16.
A) Under the entanglement rules, a piece of string would present a risk of entanglement - regardless of when it is shot across the field. So the team would be disqualified. (This was answered separately but only posted today, and this is a good example for clarification. Please refer to Entanglement Clarification post.)

Q) If a robot would be able to be in both home zones at a time, would both alliances get 10 points for this robot?
A) Yes.

Q) If a robot were able to extend itself in a way so that it touches both zone 1 and zone 5, will both alliances gain 10 points for that particular robot at the end of the match?
A) If your team can design a robot that does this, without violating entanglement rules, yes, both alliances would get the points

Q) Rule S6 states that soccer balls are the only projectiles that the robot can launch. May the robot launch soccer balls over the wall between the field and the alliance station to team members (so they can then throw them into the goal)?
A) Yes.

Q) If the robot is allowed to lift or lob balls into the alliance station and, subsequently, a ball rolls out of the alliance station, may the student retrieve it or is it considered lost-and-gone-forever.
A) Lost and gone until the next match when the field is reset.

Q) My team and I were wondering if it was legal to put a device on our robot the would use pneumatics to propel an object into our robot zone area in the last few seconds of the match to count as our robot in our area and be award pointes for the accomplish feat.
A) The only projectiles can be soccer balls with nothing attached. As for propelling (let's say an arm) from your robot, then it would be a referee determination as to whether it posses a threat of entanglement. Also remember that a robot must stay whole as per rule DQ7.

Q) Can the robot push against the goal on the wooden or plastic parts? This would be deliberate reacting, rather than incidental pushing while jockeying around. I.e. is a "push bot" allowed?
A) You can use a "push bot" to move the goal, however pushing against the plastic risks permanently deforming it and would be a violation of rule GM22.

Q) Can part of the robot project under the goal as long as it is not (deliberately) attaching or reacting against the lower platform or casters?
A) No, see rule GM20 bullet 3.

Q) A similar question: can the robot pull the goal up onto itself (imagine a wedge and pulling one caster onto the edge of the wedge).
A) No, nothing from a robot should be projecting under the goal, see rule GM20 bullet 3.

Q) Is it legal to DRAG an opposing alliance robot against its will into your home zone for an additional 10 points?
A) Yes, be careful that the mechanism you are using to attach (or drag) a robot can be easily released. Also remember that the 1-minute setup and resetting period will apply, see rule GM6.

Q) Will this violate "PINNING" rules?
A) No. Pinning refers to holding a robot against the edge of the field or against the side of the goal. See Team Update #1 for rule DQ8.

Q) What happens if you damage their robot while dragging them?
A) If the referees determine it was caused by malicious behavior, the alliance causing the damage will be disqualified. If the referees determine that the damage was due to "poor Robot design", then there will be no penalty. In all cases, it will be a referee judgment call.

Q) Rule GM20 clarification regarding upending goal. Can we transfer some of the goal dead load to the bot by attaching to the 1 1/4" pipes by lifting one side?
A) Yes.

Q) I have a question regarding GM20 bullet 3. It states that "a robot may not intentionally deploy any sort of mechanism below the bottom plywood base of the goal". Would it be acceptable for a robot to deploy something under the goal (let's say a string) whose sole purpose is for zone scoring but does not touch any part of the underside of the goal?
A) No, this would not be acceptable under either entanglement or rule GM20.

Q) Recently you answered a question which asked: If balls are in a goal which straddles both zones 1 & 2, are they counted as scoring for only one of the zones, or are they counted as scoring in both zones. Your answer was BOTH. Do you mean if a goal has 10 balls in it and it straddles zones 1 & 2, an alliance gets 10 pts for the goal in zone 2 + 10 pts for the balls in the goal in zone 2 + 10 pts for the balls being in zone 1 totaling 30 points??? I was under the impression that if you straddled those two zones, the "kinder, gentler FIRST" would give you credit for the #2 zone (goal + balls count) as opposed to the #1 (balls only count) zone. Would you please clarify your answer? Thank you.
A) Both means zones 1&2 "together" count as the red "ball" zone. By extension that means zones 4&5 "together" count as the blue "ball" zone. The alliance wouldn't get 30 points as set up above; it would get 20 points.

Q) If an opposing alliance has balls in their score zones, say if red has a goal in zone 2, can the blue alliance human players throw balls into it to make the score closer for a better qualifying score??
A) Yes.