

## 2002 CITY SIGHTS - TOURNAMENT TERMS AND RULES

1) **DOWNLOADING:** To avoid erased programs, downloading is only allowed in the pit area, download settings must be kept on short range, the process must be shielded from surrounding teams, and the RCX should be kept OFF when not in use.

2) **TOURNAMENT PROCEDURE:** At the tournament, two playing fields are joined together back to back, and each team is matched against another team. Each match lasts 2-1/2 minutes, and matches continue until every team has competed once. This process is known as a round. There are usually 3 rounds in a tournament, with matches being arranged to avoid repeat opponents and to preserve sequential order. During the time between a team's match in one round and that team's match in the next round, that team may go to the pit and fix or adjust the robot. Accomplishments and scores from one match do not carry over to other matches. When all rounds of regular matches are complete, each team's best score is considered for awards or advancement into final elimination matches, if eliminations are held.

3) **MISSION ATTEMPTS:** In any mission attempt, the team tries to accomplish whichever missions it wants, in whatever order it wants, but it does not have to try them all. A mission attempt is started when the team presses the green Run button on the RCX to start the program. While the program is running, the robot is considered to be attempting missions, whether it leaves Base or not, and the attempt is ended the instant the robot is touched, whether it's in Base or not.

4) **PARTICIPATION:** Only two team members at a time are allowed at the table while the robot is attempting missions. Several members may cycle through during a match, as long as there are only two up at a time. When emergency repairs are needed, extra team members may come to the table and help, but only two can remain when the robot starts again.

5) **ALLOWABLE PARTS:** The team may only use one robot in any match. One robot is defined as the sum of everything carried to the competition table, including the main body (the RCX and everything rigidly attached to it) and any intended add-ons, tethered units, satellites, projectiles, etc. The robot must be built entirely from LEGO elements in original factory condition, without restriction on type or quantity except as follows:

--The robot may not contain any electrical parts other than: 1 RCX, 1 rotation sensor, 2 touch sensors, 2 light sensors, 3 motors, 1 lamp, and 6 wires.

--The robot may not contain any non-LEGO materials or substances such as stickers, tape, glue, oil, etc.

6) **ALLOWABLE SOFTWARE:** The robot may only be programmed using unaltered LEGO MindStorms Robotics Invention System or RoboLab software of any release date.

7) **BASE:** Base is defined as the space enclosed by an imaginary box defined by the Base lines, the inside border walls, and by an invisible ceiling 50 centimeters high. Whenever the thickness of any line on the mat comes into question, the team will be given the benefit of the doubt.

8) **STARTING POSITION:** Every mission attempt must be started with all portions of the robot, which are being used for that mission completely within Base. All portions of any deliverables intended for that mission must also be completely within Base. At the time the green Run button is pressed, that button is the only portion of the robot that may be touched, and the team must demonstrate this clearly to the referee. The specifics in this rule apply to all starts, not just at the start of the match.

9) **WORKING ON THE ROBOT:** When the robot is in Base and not attempting missions, the team may reposition it, repair it, load or unload it, add or remove parts, switch the program, reset mechanisms, change the batteries, and so on.

10) **ROBOT CONTROL:** All robot action including the lowering of arms, the launching of projectiles, and the release of any other stored energy (in weight, springs, belts, etc.) must be programmed and initiated only by pressing the green

Run button on the RCX. This means it is illegal for the team to delay or cause the release of anything by hand. It is also illegal for the team to touch the robot or exert any other form of control over it while it's attempting missions. Whenever the team touches the robot, the current mission attempt is immediately ended. The team must shut the current program off and restart from completely within Base.

11) **ROBOT RETURN PENALTY:** If the team touches the robot while its MAIN BODY (the RCX and everything rigidly attached to it) is COMPLETELY out of Base, the referee will declare a Robot Return Penalty and remove one of the BONUS objects from the field. This happens only until the original BONUS is reduced to zero. \*Note that a robot returning to Base may be touched without penalty as soon as any portion of it crosses the Base line. Note also that there is no penalty for simply being outside of Base when the match ends.

12) **RETRIEVALS:** Points for an object retrieved back to Base are only awarded when some portion of the object itself crosses the Base line, whether or not the robot crosses too. If the team touches a robot, which is in control of a retrievable object before some portion of the object itself crosses the Base line, no points are awarded for the retrieval, and the object will be kept off the field by the referee. This is true even when there is no Robot Return Penalty. The team may unload successfully retrieved objects in Base by hand.

13) **DELIVERIES:** When a mission involves the delivery of objects from Base to a location on the field, the team may load the objects onto the robot by hand in Base. The objects may also be delivered in a container made of LEGO elements, but in that case all rules and scoring criteria then apply to the container. Points for an object delivered are only awarded, if the robot has completely let go of the object by the end of the match. Deliverables, which remain with the robot when the robot is picked up, will be given back to the team for future attempts.

14) **SCORE DETERMINED AT END OF MATCH:** To reduce controversy about what happened during a match, the score is determined at the END of the match, based on the condition of the field at that time only. This means that points won't be awarded for successful missions that the robot accidentally trashes before the match ends.

15) **TOUCHING OBJECTS ON THE FIELD:** Only the referee may touch objects, which are completely out of Base. If the robot moves any projectile, satellite, or loose field object to an undesirable location on the field, the team may request that the referee remove that object from the field, but it will not be reset, and it will not be given to the team. To make space in Base, the team may hand-hold deliverable objects prior to delivery and retrievable objects after retrieval.

16) **AIMING:** Jigs or other alignment devices may be used within Base to help aim the robot, but they must be made of LEGO elements.

17) **UNIQUE RULINGS:** The referee makes all judgment calls at the tournament, and can not consider protests, so if your team has a unique idea or strategy that you fear may violate either the letter or spirit of the missions or rules, you can keep it secret and risk having it declared illegal at a tournament, or you can get an early ruling preferably by e-mailing [evans@usfirst.org](mailto:evans@usfirst.org) , or by calling 1-800-871-8326, x118. In the community spirit of FLL, and in fairness, the question and the official ruling may be posted on the web, so word your question carefully. Whether using this resource for early rulings or for general questions about the Challenge, please be sure you have (truly) read the MISSIONS and the above TOURNAMENT TERMS AND RULES thoroughly first.