

Super Scramble Light (SSA)

Effective December 3, 2017

- Code: SSA
 Control: Tethered or Autonomous
 Open to: All up to Senior 4
 Max Robot Size: 20 cm maximum width, Max 17.1 cm high to pass under "Ball Drop"
 Weight limit: under 750 grams
 Playing Field Size: 2 Ft x 16 Ft
 Playing Field Finish: No specific colour on the deck but the side walls are white and the ends are each red or blue.
 Playing Field Surface: Convoluted, comprising areas of steps, slopes, trenches, sand, ball bearings, marbles and tumbled dowels. Steps and trenches will have no more than a 0.75" rise and 2.0" run. Slopes will be no more than 1:3.
 Explanation: "Super Scramble" requires your robot to accept a payload of one 1" steel ball bearing and deliver this payload to the other end of the playing field crossing uneven terrain. This competition is open to wheeled, tracked or walking type robots.
- Robot Specifications: **Maximum** width of the robot shall be 20 cm with a maximum height of 17.1cm.
Any robot found losing its body parts will also lose the match except for screws or nuts (each no more than one cubic centimeter) falling off.
A homing beacon may be placed at the goal end prior to the start of the round.
- Restrictions: **Power** may be contained within the hand controller; but to a maximum 6 volts.
No Fuel Cells allowed.
Lithium Ion, Lithium Polymer may be used under strict conditions (see MRG General Rules p3).
All Lithium based batteries must be commercially available battery packs, unaltered, and identifiable to the judges (have the original label visible).
Only one Lithium based battery pack can be used at a time, although you may have replacement batteries if stored in a safe manner.(see General Rules)
Lithium based cells or battery packs(up to 6v) are to be secured in, or to, the hand held controller in such a way as to avoid direct contact by the operator.
The charging of all Lithium based batteries shall be performed in the charging area provided. A volunteer will be available to monitor for excessive heat, leakage or eruption of the batteries but will not be responsible for theft. If any charging battery is deemed to be in danger of eruption, the supervising volunteer will cover the battery with sand and remove it from the building, therefore we recommend the battery be removed from the controller for charging if possible.
Care must be taken to ensure that the tether conductors can safely handle the maximum current without heating either the conductors or hand controller to dangerous levels.
Tether control wires are limited to a maximum of 8 x 24 gauge conductors for the tether.
Radio controlled robots must use authorized RC land-use frequencies.
All radio controlled robots should have incorporated into their design the provision for a change of frequency without the use of soldering equipment.
The robot shall not contain parts that could break or damage the Playing field.
This competition is intended to challenge the robot designer/builder to build from scratch, therefore a commercially made robot/radio controlled or other tethered off-road vehicles must be significantly modified.
- Robot Identification: **The** MRG identification sticker(s) (as supplied while registering in the contest) must be easily readable on the robot's body while the robot is in competition.

Game Principles: **Both** robots will start at opposite ends upon being loaded with the 1" Steel Ball by an overhead Ball Drop.
Contestants will position themselves one on each side of the playing field and will try not to hinder their opponent.
If robot tethers become tangled, both contestants will stop their robot's progress to allow the controllers to be passed through until the tethers are free at which point the competition may resume.
The first robot to have reached "goal" (when any part of it touches the opposite end from which it started) will be considered the winner of that bout.
Each bout will be up to a maximum of 3 minutes in length or as dictated by the judge in charge.
Accidental bumping of the opposing robot is allowed, however intentional blocking is not allowed.

Game Procedure

Beginning of the Game: **At the** judge's instruction, the robots are placed in the playing field in a position to accept the steel ball.
When both contestants are ready, the judge will signal the start of the three minute match by releasing the balls.
The round ends when a robot contacts the other end of the playing field activating the lock-out switch and the judge announces so.
It is suggested that, for both tethered and autonomous robots, the start mechanism could be derived from the seating of the steel ball (payload).
A team may halt the start, just once, no later than 10 seconds upon the start. This allows for last moment emergencies like forgetting plugging in a battery. The start can be delayed not longer than 60 seconds.

End of the Game: **The match** ends when the winning robot wins 2 of 3 rounds.

MRG General Rules: Failure to follow the MRG General Rules may result in the following:
Warning being issued.
Disqualification and loss of round or match.
Disqualification from competition and or event.