

# Super Scramble

Effective January 16, 2010

Code:	SSA < 750 grams, SSB < 3 kilograms
Control:	Tethered or Autonomous
Open to:	All up to Senior 4
Max Robot Size:	SSA - 20 cm maximum width. SSB - 1 meter perimeter, 20 cm maximum width.
Weight limit:	SSA - under 750 grams and SSB more than 750 grams but under 3 kilograms
Playing Field Size:	SSA - 2 Ft x 16 Ft
Playing Field Finish:	SSA - No specific colour on the deck but the side walls are white melamine and the ends are each red or blue.
Playing Field Surface:	SSA - 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. SSB playing field is not yet defined.
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:	<p><b>SSA</b> - The robot with a maximum width of 20 cm must be able to be constrained (surrounded) by a flexible sheath 60 cm in length.</p> <p><b>SSB</b> - The robot with a maximum width of 20 cm must be able to be constrained (surrounded) by a flexible sheath 1 meter length.</p> <p><b>There</b> are no restrictions on height with the exception that the robot must be able to accept the payload (Specification as listed on the MRG Website.).</p> <p><b>The</b> maximum weight including accessories must be less than or equal to that specified above as weighed on the scale provided by the MRG for registration for the competition. (It is highly recommended that a method be incorporated into the robot design to adjust the weight if the intention of the team is to attain the maximum weight at registration).</p> <p><b>Any robot</b> found losing its body parts will also lose the match except for screws or nuts (each no more than one cubic centimeter) falling off.</p> <p><b>A homing</b> beacon may be placed at the goal end prior to the start of the round.</p>
Restrictions:	<p><b>Power</b> may be contained within the hand controller; however it is restricted to a maximum 6 volts. No Lithium Ion, Lithium Polymer or Fuel Cells allowed.</p> <p><b>Care</b> 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.</p> <p><b>Tether</b> control wires are limited to a maximum of 8 x 24 gauge conductors for the tether.</p> <p><b>Radio</b> controlled robots must use authorized RC land-use frequencies.</p> <p><b>All</b> radio controlled robots should have incorporated into their design the provision for a change of frequency without the use of soldering equipment.</p> <p><b>The</b> robot shall not contain parts that could break or damage the Playing field.</p> <p><b>This</b> 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.</p>
Robot Identification:	<b>The</b> 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 payroll by an overhead loader.  
**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 3 minutes in length and spaced 5 minutes apart unless dictated by the judge in charge.  
**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 payload.  
**When** both contestants are ready, the judge will signal the start of the three minute match at by releasing the payload.  
**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 a robot contacts the other end of the playing field activating the lock-out switch and the judge announces so.
- MRG General Rules:** Failure to follow the MRG General Rules may result in the following:  
**Warning** being issued.  
**Disqualification** and loss of match.  
**Disqualification** from competition and or event.