



Appendix E

Mobile Robotics

SECONDARY

Appendix E: Safety Criteria and Scoresheet for Judging

Safety will be a scored component of the competition.

Scoring will be based on the following criteria:

A. Robot Safety

a. Safety Inspection

- i. Robots contains easily accessible “Kill Switch”
- ii. Robots do not contain any non-permitted materials
- iii. Robots contain all required fuses/breakers
- iv. Batteries are all securely mounted.
- v. Wiring diagram is provided.
- vi. Wiring diagram is accurate
- vii. Wiring diagram is appropriate and complete
- viii. Safety Data Sheets are provided for all required materials.
- ix. Table-top Robot stand(s) is/are present and sufficient.
- x. All pressure based systems are safe (pass inspection).

b. Robot Operation

- i. Robots remain in compliance with all safety restrictions at all times.
- ii. Robots are not operated in such a manner that compromises the safety of anyone.

B. Pit Area

- i. Pit area is free from any tripping hazards.
- ii. All equipment being used is in good working order.
- iii. No equipment being used contains exposed/frayed wires.
- iv. Surge protectors are being used

C. Competitor Safety

- i. Competitors are wearing safety glasses at all times.
- ii. Competitors are wearing appropriate footwear at all times.
- iii. Competitors are not endangering themselves or anyone else around them.
- iv. Competitors are using table-top robot stands when working on robots.
- v. Competitors are following all safety rules at all times.
- vi. All fabrication work involving processes such as grinding, welding, soldering, etc. are completed in the appropriate safety booth area.

The following scoresheets will be used to record the “Safety Points”:

Skills Canada Mobile Robotics Safety Scoresheet:

Robot Safety:

The following points will be determined based on the safety inspection prior to the beginning of the competition.

All items listed here are worth 1 "Safety Point".

Category	Criteria	Note	Score
Safety Inspection All items here worth 1 "Safety Point" each	Robots contains easily accessible "Kill Switch"		
	Robots do not contain any non-permitted materials		
	Robots contain all required fuses/breakers		
	Batteries are all securely mounted.		
	Wiring diagram is provided.		
	Wiring diagram is accurate		
	Wiring diagram is appropriate and complete		
	Safety Data Sheets are provided for all required materials.		
	Table-top Robot stand(s) is/are present and sufficient.		
	All pressure-based systems are safe (pass inspection).		
TOTAL SAFETY INSPECTION "SAFETY POINTS"			

The following points will be based on the safe operation of the robot(s) throughout the competition days.

Teams will start with 2 points each day. Each violation will deduct one point, for a maximum of 2 deducted points per day.

Category	Criteria	Day 1 Notes	Day 1 Score	Day 2 Notes	Day 2 Score
Robot Operation	Robots remain in compliance with all safety restrictions at all times.				
	Robots are not operated in such a manner that compromises the safety of anyone.				
TOTAL ROBOT OPERATION "SAFETY POINTS"					

The following points will be awarded based on the safety of each team's pit area.

Pit areas will be inspected 3 times a day (beginning of the day, lunch time, end of the day) using the following criteria. Each inspection will be worth one point, for a total of 3 points per day.

All criteria must be met to receive the "Safety Point" for the inspection. If any criteria is not being met, no "Safety Point" will be awarded for the inspection.

Category	Competition Day 1			Competition Day 2		
	Beginning	Lunch	End	Beginning	Lunch	End
Pit Area Pit area is free from any tripping hazards. All equipment being used is in good working order. No equipment being used contains exposed/frayed wires. Surge protectors are being used	Notes:	Notes:	Notes:	Notes:	Notes	Notes
	Score:	Score:	Score:	Score:	Score:	Score:
TOTAL PIT INSPECTION "SAFETY POINTS"						

The following points will be awarded based on the competitors' safe practices.

Teams will start with 10 points per day. Each violation will deduct one point, for a maximum of 10 deducted points per day.

Category	Criteria	Day 1 Notes	Day 1 Score	Day 2 Notes	Day 2 Score
Competitor Safety	Competitors are wearing safety glasses at all times.				
	Competitors are wearing appropriate footwear at all times.				
	Competitors are not endangering themselves or anyone else around them.				
	Competitors are using table-top robot stands when working on robots.				
	Competitors are following all safety rules at all times.				
	All fabrication work involving processes such as grinding, welding, soldering, etc. are completed in the appropriate safety booth area.				

TOTAL COMPETITOR SAFETY "SAFETY POINTS"			
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"Safety Points" will be monitored and recorded by 4 designated NTC members. Each of these NTC members will be a record of all noted violations, with the following information:

- Team in violation
- Time of violation
- Nature of the violation
- NTC notification to the Team of the violation

NOTES:

- If the NTC notices a violation, and the team in violation is not notified of the violation, points will not be deducted.
- If 2 (or more) NTC notice the same violation event (same team, same specific violation at the same time), teams will only be deducted points as if it is a single violation. For example, if NTC A notices a team not wearing their safety glasses, they will note the violation and time as required. If NTC B also notices the same violation at the same time, they will also note the violation as required. When determining the "Safety Points" for that day, the team will only be noted once for that violation.
- Teams may be deducted points for the same type of violation throughout the day, as long as the teams have been notified of each violation.

At the end of each competition day, the designated NTC members will meet to determine the "Safety Points" for each team for the day.

Overall "Safety Points" Summary:

Safety Inspection: 10 points available.

Robot Operation: 2 points available on Competition Day 1, 2 points available on Competition Day 2

Pit Area: 3 points available on Competition Day 1, 3 points available on Competition Day 2

Competitor Safety: 10 points available on Competition Day 1, 10 points available on Competition Day 2

Total "Safety Points" available: 40

This will then be weighted as the "Safety Score".