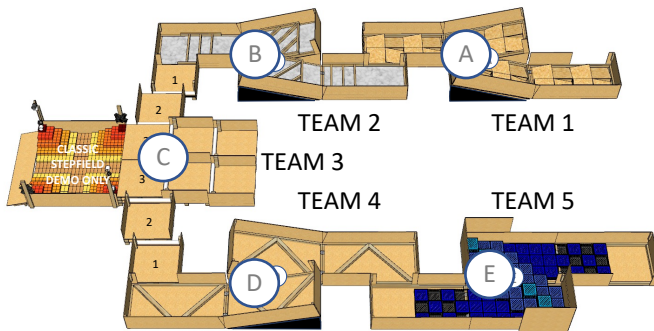


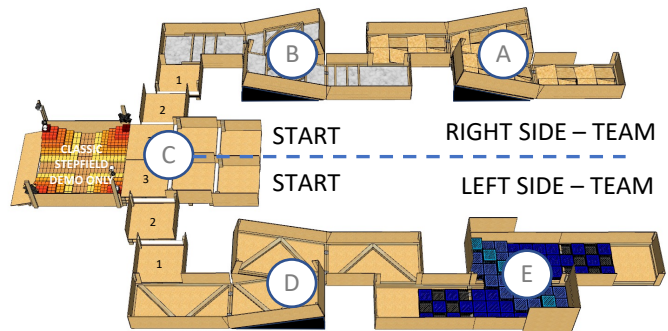
PRACTICE / PRELIMS



Prelims: Single Lane Trials (rotating schedule set by teams)

- Enables optimization for each challenge task to refine approaches and establish a baseline performance.
- 5 concurrent lanes with 20 min trials = 15 trials per hour
- Up to 15 teams can try all 5 lanes in 5 hours. That's 1 lane per hour for 5 hours. Repeat all in 10 hours.

SEQUENCES / SEMIS



Semis: Multi Lane Trials (left and right sequences)

- Requires balancing system configurations and software to perform different lanes sequences in the same trial.
- 2 sequences with 20 min trials = 6 trials per hour
- Perform lanes in any order according to the perceived risk, but drive a bit further to vary the sequence.

LANE OPTIONS

- A** CROSSING RAMPS
Square ramps (15 degrees) are slippery like dust covered concrete after a structure collapse. They can be rotated to form different terrains.

Easier: Flat

Harder: Sloped (15 degrees)

- B** SOFT FOAM
Thick foam floor allows robot feet to sink 10cm (4in) below the perceived ground plane like in sand, mud, or puddles. There are also step-over obstacles 10cm (4in) tall.

Easier: Flat

Harder: Sloped (15 degrees)

- C** PALLET STEPS WITH PIPES
Elevation changes using 15cm (6in) tall covered pallets with rolling pipe edges to step over, which make them hard for tracked and wheeled robots. **Easier:** Straight
Harder: Offset

- D** K-RAIL DIAGONALS
Smooth floors are slippery like dust covered concrete after a structure collapse plus diagonal rail obstacles to step over 10cm (4in) tall.

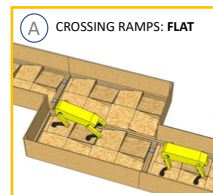
Easier : Flat

Harder: Sloped (15 degrees)

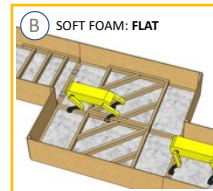
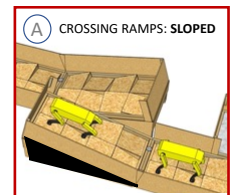
- E** CRATE STEPFIELD – 15cm (6in)
Stackable and sturdy crates form reconfigurable topographies with positive obstacles and negative obstacles (holes).

Easier : Diagonal Gap

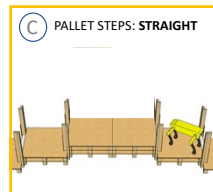
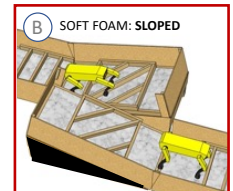
Harder: Diagonal Hill



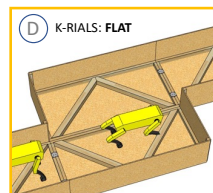
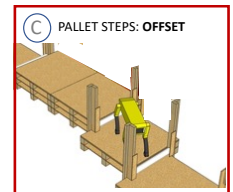
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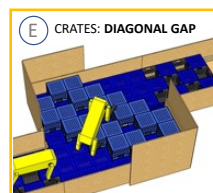
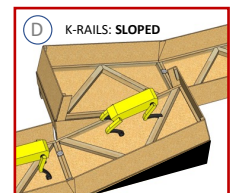
OR



OR



OR



OR





ROUND	DATE	COUNTRY	TEAM NAME	PROCTOR: FULL NAME (COUNTRY)
(CIRCLE ONE)	(MM/DD)	(AAA)	(FILL IN)	(FILL IN)

INSTRUCTIONS

- Trials start every 20 minutes at 00, 20, and 40 past the hour: **5 min set up – 10 min operation – 5 min exit.**
- Teams choose the test lane difficulty during set up time, either FLAT/EASIER or SLOPED/HARDER.
- Drive TELEOPERATIVELY or AUTONOMOUSLY (no hands on interface) end-to-end in each lane. Autonomous systems may revert to teleop in the end-zones to plan the next path, or anytime in between to score telop points.
- For single lane trials, circle the lane name and perform a maximum of 10 end-to-end repetitions within the lane.
- For multi lane trials, write the order the lanes are performed downrange, then return in reverse order.
- Circle successful task points when the robot makes it to the opposite end zone of the lane. Use the appropriate LINES AND COLUMNS for **Easier/Harder** and **Teleop/Auto**. Strike through unfinished repetitions at the end of trial.
- Record the scores and elapsed time as an efficiency measure in case of ties. Scores are zeroed to start each round.
- Teleop points count toward Teleop awards. Autonomous points count toward autonomous awards in a different class.
- A robot RESET requires at TWO MINUTE PENALTY to safely place the robot back at the start of the lane. Use a NEW FORM to start a new “mini-trial.” The best mini-trial counts. Keep both forms.

SCORING

NOTE: For continuous lane sequences performed in the order they are connected, skip the RETURN line for each lane until completed on the way back up range.

- A Crossing Ramps
 B Soft Foam
 C Pallet Steps
 D K-Rail Diagonals
 E Crate Stepfield

CIRCLE A SINGLE LANE IN THE LIST ABOVE OR WRITE SEQUENCE OF LANES IN ORDER		FLAT / EASIER		SLOPED / HARDER	
		TELEOP	AUTO (x4)	TELEOP	AUTO (x4)
DOWN RANGE SEQUENCE		1	4	2	8
	RETURN UP RANGE TO START POINT	1	4	2	8
		1	4	2	8
	RETURN UP RANGE TO START POINT	1	4	2	8
		1	4	2	8
	RETURN UP RANGE TO START POINT	1	4	2	8
		1	4	2	8
	RETURN UP RANGE TO START POINT	1	4	2	8
		1	4	2	8
	RETURN UP RANGE TO START POINT	1	4	2	8
RETURN SEQUENCE					

ELAPSED TIME

MM : SS

TELEOP POINTS

AUTO POINTS











- Teams are asked to provide a single dedicated Proctor to help score trials for other teams. This ensures that teams go home with experience in conducting standard test trials. Smaller teams may be exempt.
- Proctors simply keep elapsed time and fill out the form during the trial then ATTEST to the final score.
- Judges are nearby to oversee up to three concurrent lanes to answer questions and provide guidance.

0820 TEAM LEADER MEETING | START LANES IN FLAT / EASIER SETTINGS

1700 TEAM LEADER MEETING

1700 TEAM LEADER MEETING

- Roughly half the teams advanced to try more difficult test lane sequences.
- We typically look for a clear drop in scores across the teams (10-20% if possible) to make the cut.
- Judges perform the Proctor role for these multiple lane sequences. Team Proctors still have a role helping to set up the lanes as the team about to perform wants them.

			A		B		C		D		E	
DAY 2: Wednesday, May 31, 2023			CROSSING RAMPS		SOFT FOAM		PALLET STEPS		K-RAIL DIAGONALS		CRATE STEPFIELD	
SEMI-FINAL TRIALS - 4 Trials Per Team (Drop 1 Score) Multiple Lane Sequences (Right Lanes and Left Lanes) Drive down range and return to the start point			 		 		 		 		 	
TIME	3 SEQUENTIAL LANES IN 10 MINUTE TRIALS		FLAT	SLOPED	FLAT	SLOPED	OFFSET	OFFSET	FLAT	SLOPED	GAP	HILL
0820 TEAM LEADER MEETING (Highest Prelim score starts first (S-1) to lowest Prelim score starts last (S-6).												
0900	SEMIS TRIAL 1: FLAT / EASIER		ROBOT S-1						ROBOT S-4			
ROBOT S-2						ROBOT S-5						
0920			ROBOT S-3						ROBOT S-6			
0940												
1000	SEMIS TRIAL 2: FLAT / EASIER		ROBOT S-4						ROBOT S-1			
ROBOT S-5						ROBOT S-2						
1020			ROBOT S-6						ROBOT S-3			
1040												
1100	SWITCH LANES TO SLOPED / HARD SETTINGS											
1120												
1140	SEMIS TRIAL 3: SLOPED / HARDER		ROBOT S-1						ROBOT S-4			
1200			ROBOT S-2						ROBOT S-5			
1220			ROBOT S-3						ROBOT S-6			
1240 – 1320 LUNCH												
1320	SEMIS TRIAL 4: SLOPED / HARDER		ROBOT S-4						ROBOT S-1			
1340			ROBOT S-5						ROBOT S-2			
1400			ROBOT S-6						ROBOT S-3			
1420												
1440												
1500	FINAL TRIAL FOR TOP 3 OF 4 TRIAL SCORES IN SEMIS 20 minute trials. Scores reset to zero. Teams perform the entire circuit in any order down range and up range.		ROBOT F-3 (3rd SCORE FROM SEMIS)									
1530			ROBOT F-2 (2nd SCORE FROM SEMIS)									
1600			ROBOT F-1 (1st SCORE FROM SEMIS)									
1630												
1700 TEAM LEADER MEETING and AWARDS CEREMONY												