



Science Olympiad 2021 National Tournament Mousetrap Vehicle Additional Information

- For the 2021 National Tournament, Mousetrap Vehicle Trial Event not counting towards overall team standing and will be conducted through document and video submission.
- The Target Distance for this event will be between 3 and 6 meters. (Note: This is a modification from the published 2021 Rules).
- The exact Target Distance for the Event, the link to the Google Form to submit all materials, and the “Event Code Word” that must be spoken at the start of the video will be available through Scilympiad on Friday, May 14th at 4:00 AM PDT/MST.
- All logs, materials, and the video, must be uploaded by 11:59 PM PDT/MST on May 19th.
- Participants should follow all public health guidelines in effect for their community.
- An adult (parent, coach, etc.) should be in the room with the participant during their competition time. This adult should avoid coaching the participants during the event.
- The coach is advised to review his or her team’s video prior to submission to ensure that all the items presented here are covered and all rules have been followed.
- All rules published in the 2021 Science Olympiad Division B Rules Manual for Mousetrap Vehicle apply, except for the Target Distance and the fact that the teams will be providing measuring devices and doing the measurements on video to demonstrate compliance.
- Teams will submit logs as proscribed in **4. Practice Log** as a separate file in Excel, Word, plain text or PDF format along with the video. It is the team’s responsibility to ensure that all documentation submitted is legible. Illegible Logs (due to miniscule size or poorly handwritten) **may be deemed incomplete**.
- Practice Log must contain all information as specified in the rules. This includes:
 - Target Distance - Must be between 3.0 and 6.0 meters
 - Vehicle Distance from Target - See diagram below on how to measure
 - 3rd Parameter - Read examples and comment below
 - Team name and number must appear on the Practice Log
 - The Practice Log must contain at least 10 runs with the current 3m to 6m Target Distance parameters.
 - The 3rd parameter CANNOT be time or speed as they are not valid data for this tournament.

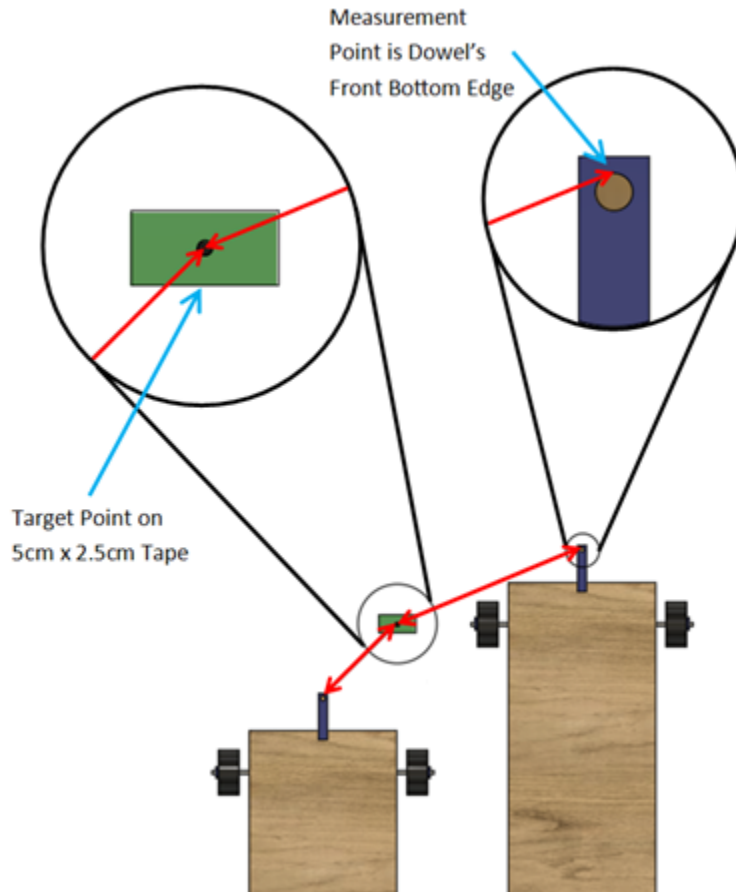
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- Teams will provide a series of pictures to conformance to rule **3. Construction Parameters**. These pictures should include:
 - A ruler/tape measure must be visible in each picture to clearly verify dimensions; Failure to provide good images may result in construction violations
 - At least one picture taken from above showing entire Vehicle
 - At least one picture taken from side showing entire Vehicle
 - At least one picture taken showing each of the following: Vehicle's dowel's height, dowel's bottom distance from floor, and dowel's attachment
- Teams will submit a single continuous video (e.g.; no editing, no multiple takes) of the team's 10-minute run time.
- The video should start just before the team's 10-minute run time begins.
- There should be no pre-work performed before the video starts including setting the brakes or mousetrap and placing the Vehicle on the Start Point.
- The video needs to show the following content:
 - Participants should introduce themselves and the adult present.
 - Participants should state the "Event Code Word" found by logging into the event in Scilympiad.
 - Participant(s) actions including but not limited to working on Vehicle, placing Vehicle on Start Point, aligning Vehicle, starting Vehicle should be shown in the video.
 - Distance measurements must be included in the video but the time for measurements will not count toward the team's 10-minute time. Video must clearly show the Target Point and Vehicle's Measurement Point during measurements.
 - The video should **not** include the track setup process but needs to show the Start and Target Points and the Distance between the Start Point and the Target Point. A diagram of the track is included with these instructions and can also be found online at https://www.soinc.org/sites/default/files/uploaded_files/21Mousetrap.Vehicle.Track.v2.pdf. Please configure your track to match the Target Distance posted in Scilympiad. Start Point and Target Point must be clearly marked and visible on the track.
- Participant(s) are allowed to follow the Vehicle as long as they do not touch the Vehicle prior to it coming to a complete stop.
- The video should not be taken from the Target Point toward the Starting Point.
- A **competition violation** will be awarded for each run if a non-continuous individual videos are submitted.

- A **competition violation** will be awarded if students are not wearing or remove their eye protection as per the eye protection policy ([Link](#)).
- As part of the data verification for your plane, please complete the Mousetrap Vehicle checklist found in these resources (or on the National website, soinc.org) . The complete checklist should be submitted with your video and other documentation.
 - All sections must be completed on the checklist. This includes all constructions checks. Incomplete sections could penalize your team
 - Record all distances in centimeters. Refer to the 2nd page of the team checklist for measurement instructions

How to Take Measurements

The Vehicle Distance is the point-to-point distance from the Measurement Point to the Target Point in centimeters measured to the nearest 0.1cm as shown below.



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TEAM NUMBER B TEAM NAME _____

STUDENT NAMES _____ FINAL SCORE _____

INSTRUCTIONS: This Checklist provides a list of possible violations to aid in inspection and running of the event

Violation Found

Event Parameters Mark Violations with 'X' Below; Circle 'Y' to the right if a Violation is found for matching rule **\\ /**

2.a. Impounded	Not Impounded: [] Vehicle [] Alignment Device(s), if any [] Spare parts, if any	1	Y	N
2.c. Eye Protection	[] Not Available [] Improper Protection [] Missing Z87+ Mark	2	Y	N
2.d. Design Questions	[] Cannot Answer [] Built by others [] _____	3	Y	N

Practice Log

4.a. Parameters	Missing: [] Target Distance [] Vehicle Distance from Target [] 3rd Parameter (e.g. # of axle turns, drive arm length, alignment angle, ...) [] Fewer than 10 practice runs recorded [] Missing Team Name [] Missing Team Number	4	Y	N
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4.b. Impounded	[] Log not Impounded	5	Y	N
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Construction Parameters

		RUN #1	RUN #2	RUN #3
3.a. Mousetrap	[1] [2] [3] More than one trap [1] [2] [3] Base > 6cm x 12cm [1] [2] [3] Jaw/Hammer extend beyond base (> 1cm) [1] [2] [3] More than 4 holes in trap [1] [2] [3] Not original parts [1] [2] [3] Altered beyond rules allowances [1] [2] [3] Potential energy increased beyond unmodified trap [1] [2] [3] _____	Y N	Y N	Y N
3.b. Energy Converters	[1] [2] [3] Energy Converter(s) for propulsion not at lowest energy state in ready to run	Y N	Y N	Y N
3.c. Electronic/Electric	[1] [2] [3] Electronic or Electric Device(s) Used (except calculator)	Y N	Y N	Y N
3.d. Dowel Rod	[1] [2] [3] Not approximately 1/4" round [1] [2] [3] Not approximately perpendicular [1] [2] [3] > 1cm from floor [1] [2] [3] < 20cm above floor [1] [2] [3] Parts (excluding drive arm/string) extending > 0.5cm beyond dowel	Y N	Y N	Y N
3.e. Vehicle Size	[1] [2] [3] Wheels/Treads extend outside of 40cm by 40cm box	Y N	Y N	Y N
3.f. Vehicle Parts	[1] [2] [3] All parts do not move as a whole [1] [2] [3] Parts fell off [1] [2] [3] Additional parts contacted ground after start (other than drive string)	Y N	Y N	Y N

DOES THE VEHICLE HAVE A CONSTRUCTION VIOLATION ABOVE? (ANY 'YES' ABOVE IS A 'YES') **6** Y N **10** Y N **14** Y N

The Competition

5.a. Outside Help	[1] [2] [3] Competitors left after starting to compete [1] [2] [3] or received outside assistance, materials, or communication	Y N	Y N	Y N
5.c. Electric Tools	[1] [2] [3] Used electric tools (except calculator)	Y N	Y N	Y N
5.d. Start Point	[1] [2] [3] Dowel not over Start Point [1] [2] [3] Vehicle will not remain in place untouched	Y N	Y N	Y N
5.f. Sighting Device	[1] [2] [3] Electric sighting/aiming used [1] [2] [3] Sighting/aiming left on track during run	Y N	Y N	Y N
5.g. Rolling On Floor	[1] [2] [3] Vehicle was rolled on floor of the track	Y N	Y N	Y N
5.h. Cleaning	[1] [2] [3] Substances applied to vehicle without ES prior approval [1] [2] [3] Substances damage or left residue on the floor or floor wet	Y N	Y N	Y N
5.i. Pencil/Followed	[1] [2] [3] Pencil not used to start [1] [2] [3] Vehicle was pushed or held [1] [2] [3] Starting motion not vertical [1] [2] [3] Competitors did not wait to be called to retrieve their vehicle	Y N	Y N	Y N

DOES THE VEHICLE HAVE A COMPETITION VIOLATION ABOVE? (ANY 'YES' ABOVE IS A 'YES') **7** Y N **11** Y N **15** Y N

Run Parameters

7.d. Distance	Distance (point to point) from the Measurement Point to the Target Point measured to the nearest 0.1 cm	8 _____	12 _____	16 _____
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5.k. Failed Run	[1] [2] [3] Does not occur in 10 minutes [1] [2] [3] Started before ES is ready [1] [2] [3] Picked up before measurement [1] [2] [3] Team pushes the vehicle down the track [1] [2] [3] Time and/or distance cannot be measured	9 Y N	13 Y N	17 Y N
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Competitors informed of run's violations at end of run and before next run [] [] []

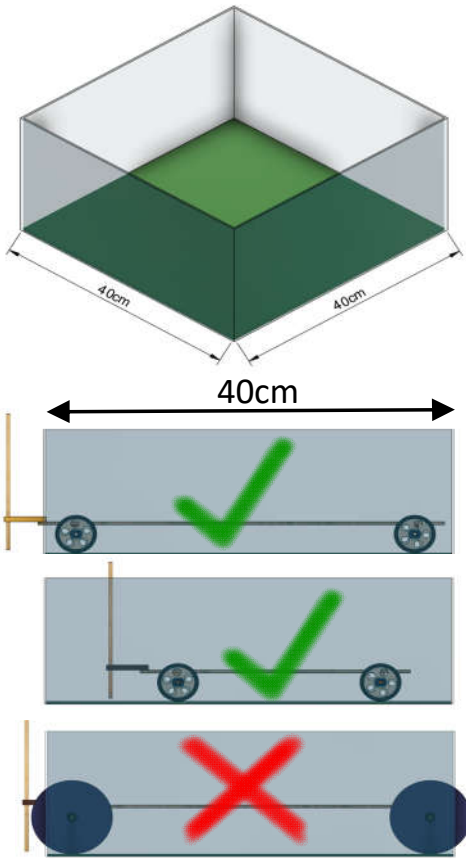
General Rule	Disqualified (notify the team and their coach as soon as possible) Reason _____	18	Y	N
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Lane Boss _____ [Competitors] Acknowledgement of Recorded Values _____ 20201218

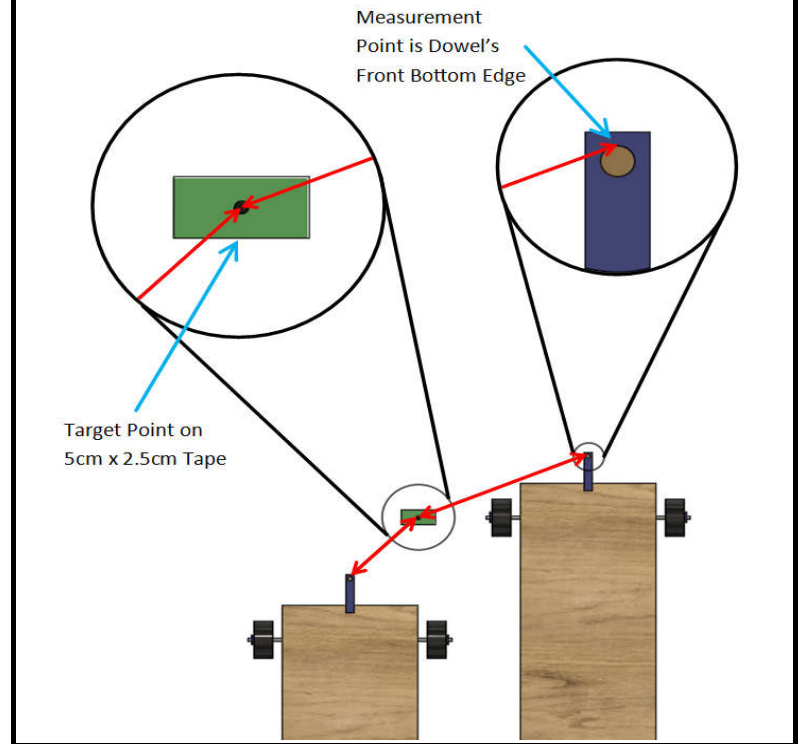
THE INFORMATION HERE SHOULD NOT BE INTERPRETED AS AN EXTENSION OF THE RULES. THE OFFICIAL RULES IN THE CURRENT RULE MANUAL TAKE PRECEDENCE

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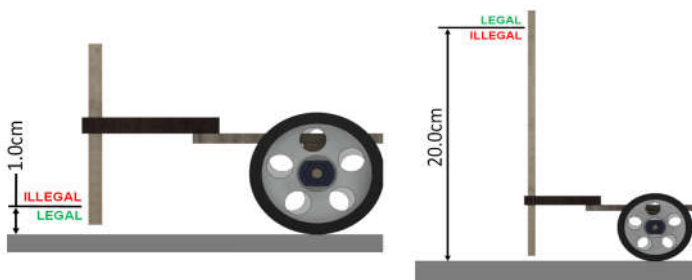
Rule 3.e - All wheels/treads (in their entirety) must fit in a 40.0cm x 40.0cm space of any height and orientation



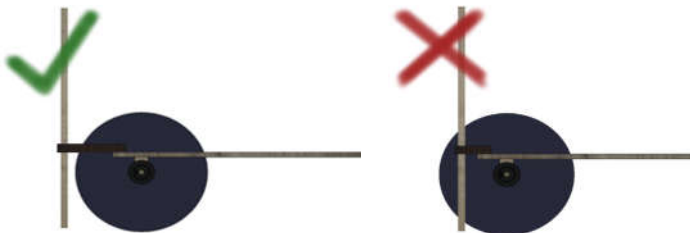
Rule 7.d - Vehicle Distance is a point-to-point distance from the Measurement Point to the Target Point



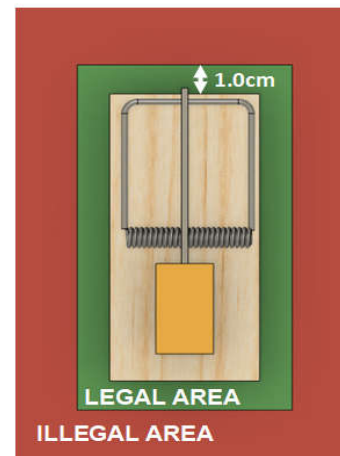
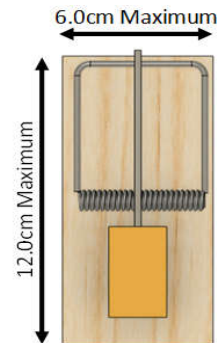
Rule 3.d - 1/4" round wooden dowel requirements



No part of the Vehicle, except drive arm may extend 0.5cm beyond the front of the dowel



Rule 3.a - Mousetrap with base 6.0cm x 12.0cm or smaller. No part of jaw/hammer extend more than 1.0cm from base.



MOUSETRAP VEHICLE



Track Layout for the Competition – 2021

To illustrate smaller details, this diagram is not drawn to scale.

