

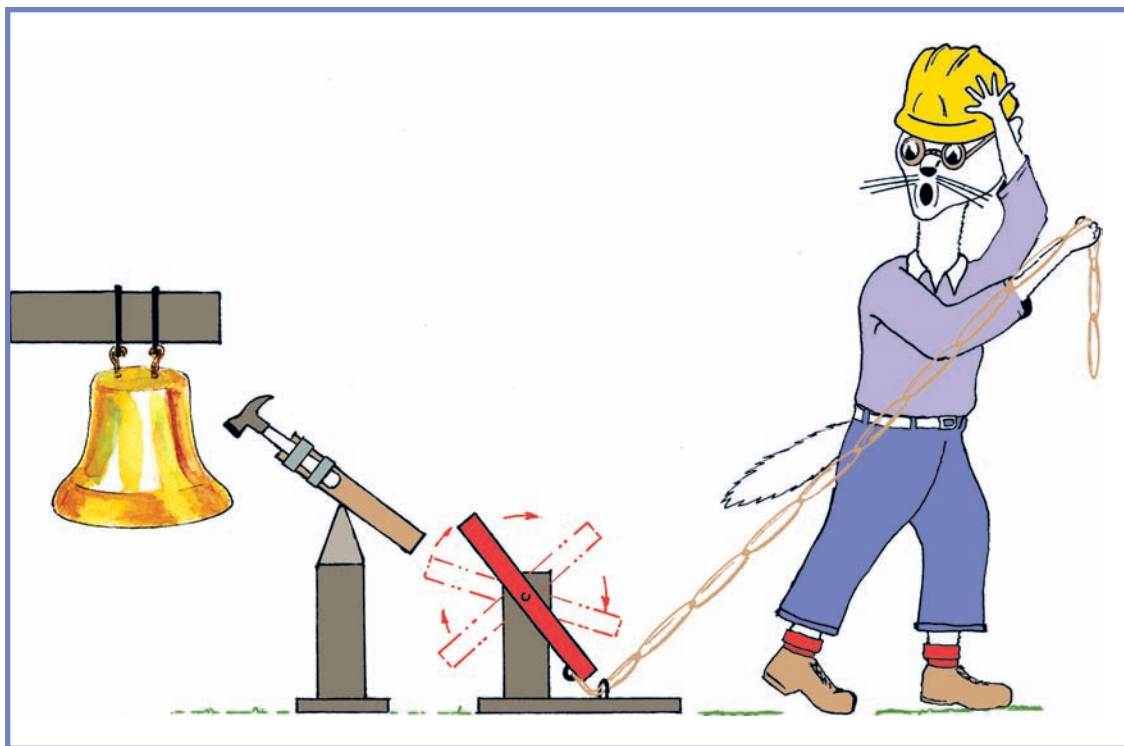


Odyssey of the Mind™

2014-2015

Problem No. 2:

Experiencing Technical Difficulties



Experiencing Technical Difficulties

Problem No. 2: Divisions I, II, III & IV

Introduction

Relatively speaking, cellphones are a recent technology, but imagine a day or a week without having one! The more technical our world becomes, the more disrupted our lives are when we experience technical difficulties. When any part of a complex system fails and a task cannot be performed, a repair or a replacement needs to be made quickly. Sometimes, the replacement is better than the original. Cellphones are a great example: if a one-year-old phone breaks the replacement is likely to have been updated with more capabilities than the broken model. In this problem teams will complete a variety of tasks using devices; and the energy used will come from rubber bands.

A. The Problem

The problem is to design, build, and use devices that are powered by rubber bands to complete tasks. The team will create a theme where a technical failure must be fixed by completing tasks. Teams will choose the tasks from a given list, but will also include two team-created tasks. The presentation will also include a mysterious engineer character. The team must also fit their entire solution in two suitcases!

The **creative emphases** of this problem are on the performance, the devices and how the team uses rubber bands to power them, the technical failure, and the mysterious engineer character.

The **Spirit of the Problem** is for the team to create and present an original performance that includes a minimum of three rubber-band-powered devices that complete five tasks from a list, plus two team-created tasks. No two tasks will be completed in the same way. The completion of the tasks will help fix a technical failure of some sort as shown in the performance. The team will create a theme for the presentation that includes a mysterious engineer character and a technical failure. Also, everything the team uses in the solution, including the devices, props, etc., must fit into two suitcases.

B. Limitations (Italicized words/terms are defined on Page 5 in the Problem Glossary or in the *2014-2015 Odyssey of the Mind Program Guide*.)

1. **General Rules:** Read the *2014-2015 Odyssey of the Mind Program Guide*. This manual includes basic limitations for this problem and the forms required for competition. This problem cannot be solved without referring to the Program Rules section of the guide.
2. **Problem Clarifications:** The *Odyssey of the Mind Program Guide* explains the types of questions about the rules that will be clarified and the ways to submit those questions. General problem clarifications can be accessed at odysseyofthemind.com/clarifications/. Problem clarifications submitted after February 15, 2015, will not be answered. CCI may find it necessary to issue clarifications after that date, so continue to check for them after February 15 and before each competition.
3. The time limit for this problem is 8 minutes. Time starts when the Timekeeper says, "Team begin" and includes setup, Style, and presentation of the problem solution.
4. The cost limit for this problem is \$145 (U.S.). The combined value of the materials used during the demonstration of the team's solution, including Style, cannot exceed this amount. The *Odyssey of the Mind Program Guide* explains the cost limit and lists items that are exempt from cost.
5. The team will create an original performance that includes:
 - a. a minimum of three team-created devices that are designed to complete seven required tasks, each device with different *functional engineering*, that are powered by one or more rubber bands.
 - b. something real or imaginary in the performance that suffers a technical failure at some point and is fixed through completing the tasks.
 - c. a theme for the performance that includes the technical failure and a mysterious engineer.
 - d. all the items used fitting in two suitcases.

6. The **team-created devices**:

- must be original creations; however, they may include *commercially produced* parts. The team must use a minimum of three separate devices to complete the tasks; however, teams may use as many as they wish, and all will be scored in D. Scoring.
- must each operate and function in a different way from the other devices.
- must be powered only by rubber bands. *Indirect human power* used to trigger a device such as throwing a switch, turning a crank, pressing a button on a remote, etc. may be used but indirect human power must not help the device perform the task.
- can be used simultaneously; however, no two tasks may start at the same time and no two tasks may be completed at the same time. If this occurs, only one will be eligible for score. The other may be attempted again.
- must be designed to operate safely and to not cause damage to the competition site or harm to anyone.
- may make as many attempts as time permits to complete the tasks.

7. The **rubber bands used in the devices**:

- must provide all of the power used by the devices to complete the tasks. Team members may wind, wrap or prepare the rubber bands at any time.
- must originally be a continuous loop of thin elastic or rubber, which is typically used for holding together papers and other items. For the purpose of this problem, teams must use commercially produced rubber bands of standard size that are typically found in office supply stores.
- when not under tension, cannot exceed 6" in length when whole, $\frac{1}{4}$ " in width, and $\frac{1}{16}$ " in thickness. See Fig. A & B. These rubber band restrictions apply only to the devices, nothing else including the membership sign, costumes, etc.
- will be verified. Teams should bring a sample of each type of rubber band used to power a device for measuring in the Staging Area; otherwise it will be checked on the device *after* the performance. If measuring a sample, judges may verify after the solution is performed the same rubber bands were used.

8. The **tasks** to be completed by the devices:

- must include any five of the following:
 - ring a bell
 - change the wording on something
 - sound an alarm
 - move something into a container
 - cause something to travel on its own
 - raise a flag
 - play music
 - make something appear
 - open a book
 - remove a lid from a box
 - separate one item into two items
 - stand something on end

Figure A: Rubber Band Sample

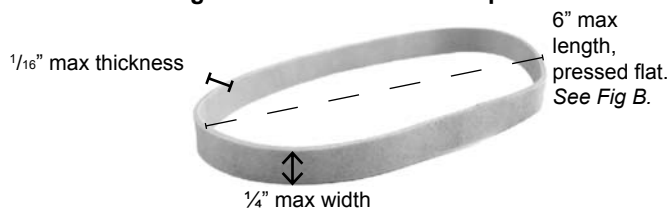
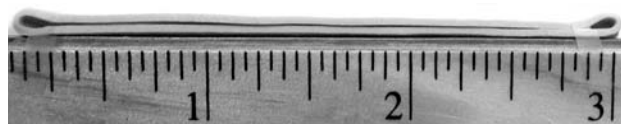


Figure B: Measuring

Whole rubber band, pressed flat & measured.



- must include two team-created tasks. These can be anything.
- must be visible to the judges and audience while being attempted.
- in the context of the performance must all contribute to resolving or fixing some type of technical failure(s). The technical failure can be a real one or a perceived one, such as dialogue in a script might reveal.

9. The **mysterious engineer character**:

- can be anything, but must be portrayed by *one or more team members*.
- will narrate the devices' attempts to complete the tasks to resolve the technical failure.
- will include an element of mystery. This can be anything the team wishes; for example, unknown origin, method of communication, difficult to clearly see or understand, etc. "Mysterious" can be anything as portrayed by the team in the performance, even if it wouldn't typically be considered mysterious.

10. The **technical failure**:

- will be one (or more) failure that is fixed through completing all of the tasks. If there is more than one failure, all will be scored as one.
- can be anything the team wishes. However, it must be shown or explained in the performance as something not operating as intended. The devices will fix or be portrayed to fix what failed and bring something back into regular operation by completing the tasks.

11. The team must have a theme for its performance. The mysterious engineer character and the technical failure being fixed through completing the tasks must be part of the theme.
12. Everything the team wishes to use in the solution must be inside two suitcases, including the devices, stage set, props, etc. The team may use two suitcases, or any type of enclosed container or box, each with a maximum outside linear dimension of 62" (linear dimension = length + width + height at the widest points excluding any wheels or handles.) The cost of the suitcases (or containers) does not count towards the problem's cost limit, however, if there is any decoration or Style element added to the suitcases for use in the solution, the cost of those additions must be added to the Cost Form. The suitcases will not be opened or unpacked until Time begins. There are only two things that do not have to fit inside the suitcases:
 - a. The membership sign.
 - b. Costumes. However, anything worn as a costume can only be used and scored as a costume and nothing else. For example, a costume cannot be used as a backdrop, prop, hold or be part of a device that will be scored for a task, etc.
13. The team should present the Staging Area Judge with four copies of the Team's Required List Form found in the forms section at www.odysseyofthemind.com/members/ or four copies of a list on one side of one or two sheets of 8 1/2" x 11" or A4 paper. This list must be hand-printed, typed, or computer generated. It is for reference only. The list must include:
 - a. the team's membership name and number, the problem and division.
 - b. a brief description of the mysterious engineer character and the element of mystery.
 - c. a brief description of the technical failure and how it is fixed.
 - d. the seven tasks to be scored, and the order the team will attempt to perform them.
 - e. a brief description of the devices and how they use rubber bands to power them.
 - f. the signal the team will use to indicate it has finished its performance.

C. Site, Setup and Competition

1. A stage or floor area a minimum of 10' x 15' (3 m x 4.6 m) will be used, but a larger area is desirable. This will not be marked. Teams must be prepared to perform in a 10' x 15' area and to place their devices in that area as well. If space permits, the team may perform and/or place equipment, props, etc. outside the 10' x 15' area. If a drop-off exists beyond the 10' x 15' dimensions, a caution line may be taped 30" (76.2 cm) from the edge of the drop-off. This will serve as a warning, not a boundary.
2. A three-prong electrical outlet will be available. Teams must bring their own extension cords and adapters, if needed.
3. The team members should report to the competition site with all items for the presentation of their solution at least 15 minutes before they are scheduled to compete.
4. At the end of the 8-minute time period, the Timekeeper will call "Time" and all activity must stop. The team may end before the 8 minutes, but must signal the judges when it is finished.
5. As part of the Staging Area process, the team will place each of its suitcases (or whatever type of enclosed container being used) in a measuring area to check for size. If any suitcase exceeds these limitations, if time allows, the team will be able to bring it into specification. Anything that does not fit within the 62" maximum linear dimension requirement will not be allowed to be used in the presentation of the solution.
6. The team can place its devices anywhere on the competition site after time begins.
7. Teams should bring cleaning utensils to clean up any mess. Should a team take an unreasonable amount of time to clean the site, or leave a mess, the judges will assess an Unsportsmanlike Conduct penalty. Others not on the team's roster can help the team clear the site and remove the team's props. The competition area must be left clean and dry for the next competing team.

D. Scoring

1. Creativity of the overall performance (originality, effectiveness, theme).....1 to 20 points
2. Quality of the performance (audibility, movement, stage presence).....1 to 15 points
3. Successful task completion (0 or 5 for each of the 7 tasks).....0 to 35 points
4. Overall risk-taking of designs for the devices.....1 to 15 points
5. How well the tasks fit in with the theme.....1 to 15 points
6. Creativity of the team-created tasks (1 to 5 per task)2 to 10 points
7. The devices 2 to 30 points
 - a. Degree of difference of how they function from the other devices 1 to 15 points
 - b. Overall creativity of their design.....1 to 15 points
8. The rubber bands in the devices 2 to 30 points
 - a. Variety of ways rubber bands were used 1 to 15 points
 - b. Creativity of how the rubber bands powered the devices 1 to 15 points
9. Technical failure..... 1 to 15 points
 - a. Adheres to criteria in B10 0 or 5 points
 - b. Overall creativity of how the failure is depicted..... 1 to 10 points
10. The mysterious engineer character 3 to 15 points
 - a. How well its narration presents the tasks 1 to 5 points
 - b. Creativity of its portrayal 1 to 5 points
 - c. Effectiveness of its mysterious nature 1 to 5 points

Maximum possible: 200 points

E. Penalties (Deducted from percentaged scores.)

1. "Spirit of the Problem" violation (each offense)-1 to -100 points
2. Unsportsmanlike conduct (each offense) -1 to -100 points
3. Incorrect or missing membership sign.....-1 to -15 points
4. Outside assistance (each offense)-1 to -100 points
5. Over cost limit.....-1 to -100 points
6. A device is deemed to be unsafe by the judges device will be eliminated from the presentation
7. Device uses oversized rubber bands or other elastic not allowed in the problem.....-1 to -20 points

Omission of scored problem requirements carries no penalty except loss of score.

F. Style (Elaboration of the problem solution; use four copies of the Style Form from the *Odyssey of the Mind Program Guide*.)

1. Creativity of materials used in the mysterious engineer's costume..... 1 to 10 points
2. Creative use of rubber bands on the membership sign..... 1 to 10 points
3. (Free choice of team) 1 to 10 points
4. (Free choice of team) 1 to 10 points
5. Overall effect of the four Style elements in the performance..... 1 to 10 points

Maximum possible: 50 points

G. Tournament Director Will Provide

1. A 10' x 15' (3 m x 4.5 m) presentation area (larger, if possible).
2. A three-prong electrical outlet.
3. A judging team and materials necessary to judge this problem.

NOTE: Contact your Tournament Director for information regarding site specifications, e.g., actual dimensions, whether lights may be dimmed, etc. Do not submit a clarification request for this information.

H. The Team Must Provide

1. Four copies of its Style Form, one Cost Form, one Outside Assistance Form, and all team-specific clarifications.
2. Four copies of its list as stated in B13. This list is to assist the judges. If the team fails to provide the list, there will be no penalty.
3. All items required to complete its problem solution, including rubber bands.
4. Any necessary extension cords or outlet adapters.
5. Cleanup materials as needed.

Problem by Samuel W. Micklus and Dr. C. Samuel Micklus.

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