# Gearloose

*Team Event, Open-To-All*

*Points: 30*

## Introduction

**An essential aspect of creativity is not being afraid to fail**

**~Edwin Land**

Have you ever as a child had an urge to make simple machines. Awaken that engineer from slumber and race your neurons to come up with that ingenious idea to astonish all. Put your thinking caps on andcome up with creative ideas for this year's problem statement of designing an "Amphibious WarVehicle" that not only can move on land but also on water performing certain task.


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## Mission Objective

To design a vehicle/mechanical system which can descend a ramp and reach the end of pool (as shown in the arena). The bot must complete this series of tasks in the shortest possible time.

## PROBLEM STATEMENT

The arena consists of an incline followed by bumps(3cm in height) on end of incline and a small water pool lying at its base. The bot/mechanism has to move down the incline cross breakers and land on water. Next, it must propel itself by means of some potential energy or acquired kinetic

energy to reach the end of pool. Design and fabricate a vehicle which is capable of moving on incline as well as floating on water.

**It must be capable of performing two tasks-**

- Firstly it must smoothly descend the incline.
- Secondly it must self-propel itself on water to travel up to the end of water pool whose total length is 6'.
- All the tasks must be done in minimum possible time.

**RULES AND REGULATIONS**

- A team may consist of a maximum of 3 members from the same pool.
- Maximum dimension of the vehicle must not exceed 25x25x25 (in cm).
- The vehicle must have at least 2 wheels.
- A maximum of 100 points will be awarded to a team .
- Vehicle should not damage the arena in anyway otherwise it might lead to disqualification of the team.
- No part of vehicle must be left behind while landing on water.
- Vehicle's energy sources should be purely mechanical in nature. No electrical sources (motors, batteries, explosives etc.) can be used.
- Teams may use spring, pulley systems, rubber bands, plastic paddles, balloons or any other such things.
- The chassis of the vehicle can be made from cardboard, plastic boxes, thermocol, etc.

## JUDGING CRITERIA

- There are 4 main tasks as mentioned in the problem statement. Point breakup is as given in scoring criteria.
    - Roll down the incline safely.
    - Cross 3 bumps.
    - Landing on water safely.
    - Reach the end of pool by propelling itself.

- 40 points will be awarded if vehicle moves stably on the incline. If vehicle falls no marks will be given.
- 20 points will be deducted for intervention on incline.
- 10 points are awarded if vehicle lands stably on water.
- 10 points will be awarded if vehicle floats on water.
- 20 points will be awarded if vehicle successfully crosses the breakers.
- 20 points will be awarded if vehicle successfully reaches the end point.
- Only one intervention is allowed in the rally, and it is allowed only when the vehicle completely stops in between the rally. 10 points will be deducted for each intervention in water.
- 5 points will be deducted for each delay in 5 seconds.
- All the teams shall be given only three trials to score maximum number of points. The best trial will be considered.
- **In case of any discrepancy, the judges and coordinators have the sole rights to take the final verdict.**

## CONTACT

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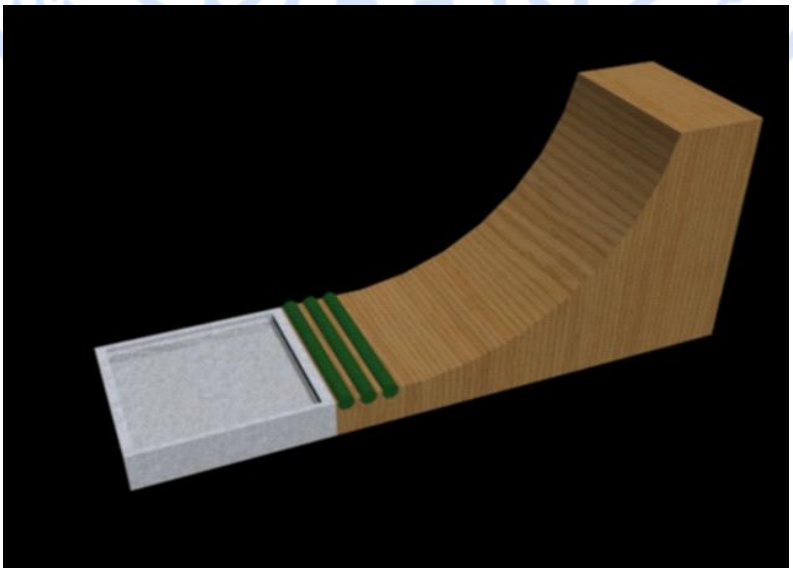

Sketch of the Arena