****Northern Virginia’s Regional SeaPerch Challenge****

****Recovery Challenge****

The team with the highest score and the fastest time will win the Recovery Challenge.

Time Limit is **5 minutes** for this challenge.

****Structure of the Game:****

Underwater vehicles are often used to retrieve things from the sea floor, or the floor of a harbor or port. The ability to recover objects off the sea floor depends on the vehicle’s ability to grasp or manipulate the object, and also to lift or carry it to some destination. If the object is too heavy, or it unbalances the craft, or the craft cannot get control of the object, then the vehicle cannot successfully perform its mission.

For this round, the SeaPerch ROVs must have a rod or hook of some sort fitted to their vehicle to retrieve objects from the bottom of the pool. The objects for this challenge are called a triangle. The triangles are formed by three 6” circular dive rings that are zip tied together to form a three-dimensional triangle.

The triangles can be picked up and dropped into the team’s submerged collection bucket. This round will be scored based on the number of triangles recovered and in the shortest amount of time.

****Strategy Examples:****

Considerations of buoyancy, thrust, hook placement and attachment, and ballasting in your ROV design become very important in this round. There will be 10 triangles of the same color. Each triangle retrieved is worth 2 points. If teams retrieve all 10 triangles, then a bonus of 5 points is calculated into the total team score. *A tie breaker for teams with the same total team score and time will be the team that acquired the first triangle in the shortest amount of time*.

**Example Scoring:**

|  |  |
| --- | --- |
| **Triangles Recovered** | **Points** |
| 2 | 4 |
| Total Score | 4 |

**Tie Breaker Example:**

**This team won!**

Although the points were the same value; this team had a lower time for all 10 triangles.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Triangles Recovered** | **Points** |  | **Triangles Recovered** | **Points** |
|  10 | 20 |  |  10 | 20 |
| Bonus  | 5 |  | Bonus  | 5 |
| Total Score | 25 |  | Total Score | 25 |
| Time for 10th Triangle | 4:59.12 |  | Time for 10th Triangle | 3:12.12 |

****Things to Keep in Mind:****

* Teams may compete multiple times as allowed within the given rotation period.
* The course will consist of a collection bucket and a collection of 10 triangles of the same color to recover. **Each triangle collected is worth 2 points.**
* The Recovery Challenge will be scored by adding the total points for all triangles collected.
* A **bonus of 5 points** will be added if all 10 triangles are recovered in the allotted 5 minutes.
* The team that scored the most points will win the Recovery Challenge.
* The Recovery Challenge will last no more than **5 minutes** andjudge will signal the team when the time is up. Operators must then place the ROV objects they are holding on the ground.
* The **tie breaker** for this challenge will be the team with the fastest time for **all 10 triangles** are placed into the bucket. If a second tie-breaker is needed, the fastest time for the 1st triangle to be placed in the bucket will be used.

**Game Rules:**

* The ROV MUST touch the wall at the start of the game; an operator should hold the ROV in place until the start signal is sounded. (penalty item – false start)
* The ROV Control Box must be on the ground at the start of each game; when the start signal is sound, an operator may pick up the controls. (penalty item – false start)
* The tether may NOT be pulled on during the game. (penalty item – pulling on tether)
	+ A team member may “manage” the amount of tether cable in the water, feeding and retracting length as desired, but the tether cable must be slack at all times; the team member may not use the tether cable to assist the ROV’s movement in any way.
	+ Subject to the lane referee’s discretion.

****Provision for False Start and Tether Pull:****

* If a team has a “false start” defined as the ROV left the wall before the start signal; 5 points will be subtracted from that team’s score.
* If a team has a “false start” defined as an operator has the controller in possession prior to the start signal; 5 points will be subtracted from that team’s score.
* If a team has pulled on the tether cable to change the ROV’s movement; 5 points will be subtracted from that team’s score.