

## *Ocean Observing Systems* Score Sheet – Round 2

School/Team: \_\_\_\_\_

Team captain: \_\_\_\_\_

Mission station officials: \_\_\_\_\_

### Set-Up and Safety Check

- All power cords, power bars, pressurized cylinders, etc. are secured.
- A fuse is present in the vehicle's electrical system.
- No hazardous materials are leaking onto the pool deck.
- Vehicle is hand-launched by team members in a safe manner.
- No team member has entered the water in order to prepare and/or launch vehicle.
- Vehicle is in the water near the side of the control shack at the end of the 5-minute set-up period.

**Note:** Teams may attach the electronics module (see Task #1 below) to the ROV on the pool deck or when the ROV is in the water at the side of the pool. The attachment should be completed during the teams 5 minute set up time.

Mission official's notes: \_\_\_\_\_

- Team is ready for the mission:** \_\_\_\_\_ (official's initials)

*Note: An official's decision to disqualify a team due to safety concerns is final. If there is a safety concern, please contact the lead official or competition coordinator.*

### Fuses

The mission time clock does NOT stop in the case of a blown fuse. If a RANGER class team blows MATE's in-line 25-amp fuse, they are allowed one replacement fuse. If the vehicle blows the second MATE fuse, their mission performance period is over. The team will receive points for the mission tasks they have completed up to that point, but will not receive a time bonus score.

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### Task #1 – Complete the central node.

#### Scoring – 110 points

- \_\_\_\_\_ Transport the electronics module from the surface control shack to the frame under the control of the ROV – **20 points**
- \_\_\_\_\_ Place the electronics module in the hole located on the top, horizontal surface of the trawl-resistant frame so that it fits completely in the hole and remains there once the ROV has released it – **30 points**
- \_\_\_\_\_ Open the door of the trawl-resistant frame to gain access to the open ports located on the electronics module – **20 points**
- \_\_\_\_\_ Retrieve the power/communications connector from its stand on the seafloor – **20 points**

\_\_\_\_\_ Insert the power/communications connector into the correct open port on the electronics module so that it remains in the port and attached to the closed end of the port once your ROV has released it – **20 points\***

\*No partial points are given for a partial insertion. If the power/comms connector is inserted but comes out of the port once the ROV has released it, no points are awarded. Teams are permitted to retrieve the power/comms connector and try the insertion as many times as needed to achieve a successful connection. The door of the trawl-resistant frame does NOT need to be closed once the power/comms connector is inserted.

No points are awarded if the power/comms connector is inserted into the instrument port.

**Total Task 1 score:** \_\_\_\_\_

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**Task #2 – Trigger a malfunctioned acoustic release transponder to release an instrument package.**

**Scoring – 60 points**

\_\_\_\_\_ Locate the instrument package and attach the ROV to or through the acoustic transponder's release loop– **30 points**

\_\_\_\_\_ Remove the release loop from the acoustic transponder so that it frees the instrument\* – **30 points**

\*The instrument package does not need to break the surface in order to receive points. Points are awarded when it is evident that the release loop is removed completely from the housing base and the package is rising above the outcropping.

**Total Task 2 score:** \_\_\_\_\_

**TIME BONUS**

**1 point for every minute & 0.01 point for every second under 20 minutes remaining**

For example, the duration of the mission is 15 minutes, 27 seconds. Minutes under 20 remaining = 4; seconds = 33. 4 minutes x 1 point = 4 points; 33 seconds x 0.01 points = 0.33. Therefore, the total time bonus = 4.33 points.

Duration of mission: \_\_\_\_\_

Minutes under 30 remaining: \_\_\_\_\_ x 1 point = \_\_\_\_\_

Seconds remaining \_\_\_\_\_ x 0.01 points = \_\_\_\_\_

**TIME BONUS:** \_\_\_\_\_

Note: The mission performance period ends when the ROV has 1) successfully completed the two mission tasks; 2) returned to the surface; and 3) physically touched the side of the pool in front of the control shack under its own power.

The ROV does not need to return to the surface between tasks.

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**PENALTY POINTS**

- \_\_\_\_\_ Illegal pulling on tether (second infraction) – minus 5 points\*
- \_\_\_\_\_ Illegal communication (second infraction) – minus 5 points
- \_\_\_\_\_ Modifications made to the electronics module or other props – minus 5 points
- \_\_\_\_\_ Flotation or other materials left attached to the electronics module – minus 5 points
- \_\_\_\_\_ Severing the power/comms cable connector – minus 5 points
- \_\_\_\_\_ Minus 1 point per each additional minute above 5-minute demobilization period

\*Pulling on the tether to retrieve a disabled vehicle, including those disabled by a blown fuse, is an automatic penalty of 5 points.

**TOTAL PENALTY POINTS:** \_\_\_\_\_

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**SUMMARY – ROUND 2**

TOTAL SCORE = TOTAL TASK SCORE + TIME BONUS – penalty points

Task #1 \_\_\_\_\_ + Task #2 \_\_\_\_\_ =

TOTAL TASK SCORE \_\_\_\_\_ + TIME BONUS \_\_\_\_\_ – penalty points \_\_\_\_\_ =

**TOTAL MISSION SCORE** \_\_\_\_\_

**Mission official's initials:** \_\_\_\_\_ **Team captain's initials:** \_\_\_\_\_