

## **“Underwater Olympics” Mission Challenges Score Sheet – Round 1**

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

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

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

### **5-Minute 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. Note: MATE will also place a 25-amp fuse in-line between the positive battery terminal and the vehicle.
- 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.

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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### **EVENT #1 – Cap an oil well in the Gulf of Mexico.**

#### **Mission scoring – 30 points**

- \_\_\_\_ Vehicle operating (props turning) under its own power – 5 points
- \_\_\_\_ Descend to and physically touch the valve – 5 points
- \_\_\_\_ Successful mission (the water stops flowing from the sprinkler nozzle) – 20 points

#### **Time bonus – 0.1 point for every second under 5 minutes remaining**

Note: The mission performance period ends when the ROV has turned off the valve, returned to the surface, and physically touched the edge of the pool in front of the control shack under its own power. Award time bonus points only upon completion of these mission requirements.

Duration of mission: \_\_\_\_\_ Translated into seconds = \_\_\_\_\_ →

300 seconds – \_\_\_\_\_ mission time in seconds = \_\_\_\_\_ x 0.1 points = \_\_\_\_\_

**TOTAL EVENT #1 SCORE: MISSION SCORING + TIME BONUS = \_\_\_\_\_**

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**EVENT #2 – Repair a damaged fiber optic cable connection to re-establish a communications link.**

**Mission scoring – 30 points**

- \_\_\_\_ Vehicle operating (props turning) under its own power – 5 points
- \_\_\_\_ Deliver & physically touch the communications probe to the junction box – 5 points
- \_\_\_\_ Successful connection (bulb lights topside) – 20 points

**Time bonus – 0.1 point for every second under 5 minutes remaining**

Note: The mission performance period ends when the ROV has made a successful connection, returned to the surface, and physically touched the edge of the pool in front of the control shack under its own power. Award time bonus points only upon completion of these mission requirements.

Duration of mission: \_\_\_\_\_ Translated into seconds = \_\_\_\_\_

300 seconds – \_\_\_\_\_ mission time in seconds = \_\_\_\_\_ x 0.1 points = \_\_\_\_\_

**TOTAL EVENT #2 SCORE: MISSION SCORING + TIME BONUS = \_\_\_\_\_**

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**EVENT #3 – Install a new instrument module on the Hubble space telescope.**

**Mission scoring – 30 points**

- \_\_\_\_ Vehicle operating (props turning) under its own power – 5 points
- \_\_\_\_ Deliver & physically touch the instrument module to the telescope – 5 points
- \_\_\_\_ Successful insertion (module completely attached, bulb lights topside) – 20 points\*

\*5 points are also awarded for delivering & partially attaching the module to telescope (i.e., module attached to the Velcro but not completely covering the circular Velcro patch, therefore no bulb lights topside)

**Time bonus – 0.1 point for every second under 5 minutes remaining**

Note: The mission performance period ends when the ROV has made a successful (or partial) attachment, returned to the surface, and physically touched the edge of the pool in front of the control shack under its own power. Teams that achieve a partial attachment may try to detach and reposition the instrument module to achieve a successful insertion

(and 20 points). However, time bonus points are only awarded upon completion of these mission requirements.

Duration of mission: \_\_\_\_\_ Translated into seconds = \_\_\_\_\_

300 seconds – \_\_\_\_\_ mission time in seconds = \_\_\_\_\_ x 0.1 points = \_\_\_\_\_

**TOTAL EVENT #3 SCORE: MISSION SCORING + TIME BONUS = \_\_\_\_\_**

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### **PENALTY POINTS**

\_\_\_\_\_ Illegal pulling on tether (second infraction) – minus 5 points\*\*\*

\_\_\_\_\_ Illegal communication (second infraction) – minus 5 points

\_\_\_\_\_ Severing the communications probe cable – 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 1**

**Event #1 total score \_\_\_\_\_ – penalty points = \_\_\_\_\_**

**Event #2 total score \_\_\_\_\_ – penalty points = \_\_\_\_\_**

**Event #3 total score \_\_\_\_\_ – penalty points = \_\_\_\_\_**

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

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