

NAVIGATOR CLASS SCORE SHEET

Exploring the Great Lakes

SCHOOL NAME and # AS IT APPEARS ON THE OFFICIAL LIST: _____

Company CEO: _____ **Mission attempt #:** _____

Mission station officials: _____

Safety Check and Set-Up (up to 10 points total)

- ☐ 5 points – Company presents signed safety inspection sheet.
 - ☐ 5 points – Vehicle and control system present no safety hazards.
- Examples:
- All power cords, power bars, pressurized cylinders, etc. are secured.
 - No hazardous materials are leaking onto the pool deck.
 - Vehicle is hand-launched by team members in a safe manner.

Mission official's notes: _____

Company is cleared for the mission: _____ (official's initials) _____ **total points (out of 10)**

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

Organizational and Operational Effectiveness (up to 10 points total)

- | | | ✓ |
|---|---|-------|
| • Up to 2 points – Organization | | |
| ○ Chain of command evident | 1 | _____ |
| ○ Roles clear and executed well | 1 | _____ |
| • Up to 3 points – Task Plan | | |
| ○ Task plan is well thought out to maximize score | 1 | _____ |
| ○ Alternate plans available | 1 | _____ |
| ○ All team members are aware of the plan | 1 | _____ |
| • Up to 2 points – Time Management | | |
| ○ Awareness of time | 1 | _____ |
| ○ Adjusting timeline to adapt to situations | 1 | _____ |
| • Up to 3 points – Team Cooperation | | |
| ○ Composure under pressure | 1 | _____ |
| ○ Supportive of each other | 1 | _____ |
| ○ Team communicates well with each other | 1 | _____ |

Total points (out of 10)

Judges' Notes:

Penalty Points

Tether pulling: Issue a warning for the first infraction. Begin deducting points AFTER the first infraction. Companies may pull on the conductivity sensor wire to manipulate, move, or control the sensor. However, companies may not pull on their sensor wire to move, manipulate, turn, or retrieve their ROV.

Illegal communication: Company members at the side of the pool may not communicate visual evidence of the ROV status (location, need to turn, etc.).

Diver assistance: Companies will be penalized for diver assistance during a mission run. Diver assistance will be provided ONLY AFTER a company requests it. During a mission run, the clock will not stop for diver assistance. Companies WILL NOT be penalized for diver assistance once the mission time has ended. At this time the divers will assist the ROV to the surface as part of the company's 5-minute demobilization period.

Debris: Companies that leave debris (e.g. parts of their ROV, including weights and flotation) in the pool such that a diver must retrieve the debris will also receive penalty points. Mission props are NOT considered debris. A company constructed collection basket is considered debris.

Fuses

If a vehicle blows the MATE power supply in-line fuse, the company is allowed two spares. If the vehicle blows the third MATE fuse, the mission performance period is over. The company will receive points for the mission tasks that they have completed up to that point but will not receive a time bonus score.

NAVIGATOR Mission Task Scoring Breakdown:

Task #1: Shipwrecks (up to 100 points)

Task #2: Science (up to 50 points)

Task #3: Conservation (up to 50 points)

Task #1: Shipwrecks

Scoring – up to 100 points

Judges' Notes: Companies may complete the steps of Task #1 in any order and may alternate between this and the other tasks.

1.1 20 points – correctly “scanning” the ship at the target location _____

1.2 up to 40 points – determining the shipwreck’s cargo

- **5 points** – unlocking the cargo container _____
- **10 points** – opening the door of the cargo container _____
- **10 points** – determining the type of cargo carried by the ship _____
- **5 points** – closing the door of the cargo container _____
- **10 points** – locking the cargo container _____

1.3 10 points – locating and determining the date the ship was built _____

1.4 up to 20 points – recovering a ceramic dinner plate from inside the ship

- **5 points** – lifting the dinner plate from the floor of the shipwreck _____
- **10 points** – returning the dinner plate to the surface _____
- **5 points** – identifying the home port of the ship _____

1.5 10 points – identifying the ship using the four known features _____

TOTAL POINTS FOR TASK #1 _____

Task #2: Science**Scoring – up to 50 points**

Judges' Notes: Companies may complete the steps of Task #2 in any order and may alternate between this and the other tasks.

2.1 up to 20 points – recovering the old conductivity sensor and replacing it with a new one

- **10 points** – returning the old conductivity sensor to the surface _____
- **10 points** – deploying the new conductivity sensor _____

2.2 up to 30 points – estimating the number of zebra mussels on the wreck

- **10 points** – placing the quadrat into position on the top of the shipwreck _____
- **5 points** – counting the number of zebra mussels within the quadrat _____
- **up to 15 points** – estimating the # of zebra mussels on the shipwreck _____
 - 15 points – within 5% of total number of mussels
 - 5 points – between 5.01% and 10% of total number of mussels
 - 0 points – >10% of total number of mussels

TOTAL POINTS FOR TASK #2 _____

Task #3: Conservation**Scoring – 50 points**

Judges' Notes: Companies may complete the steps of Task #3 in any order and may alternate between this and the other tasks.

3.1 up to 30 points – removing two bottles

- **5 points** – removing the plastic water bottle _____
- **10 points** – returning the plastic water bottle to the surface _____
- **5 points** – removing the glass bottle _____
- **10 points** – returning the glass bottle to the surface _____

3.2 up to 20 points – removing the anchor line rope

- **5 points** – lifting the rope off the bottom _____
- **15 points** – returning the anchor line rope to the surface _____

TOTAL POINTS FOR TASK #3 _____

SCORING SUMMARY WORKSHEET

The purpose of this sheet is to allow you to verify and tally scores from the previous pages.

SAFETY CHECK & SET-UP	
Signed safety inspection sheet	0 5
Vehicle and control system present no hazards	0 5
ORGANIZATION	
Company is effectively organized to undertake the mission	0 1 2 3 4 5 6 7 8 9 10
Safety check, set-up, and organization point total:	
Task #1: Shipwrecks (up to 100 points)	
Correctly 'scanning' the ship at the target location	0 20
Determining the shipwreck's cargo	0 5 15 25 30 40
Locating and determining the date the ship was built	0 10
Recovering a ceramic dinner plate from inside the ship	0 5 15 20
Identifying the ship using the four known features	0 10
Task #1 point total:	
Task #2: Science (up to 50 points)	
Recovering the old conductivity sensor and replacing it with a new one	0 10 20
Estimating the number of zebra mussels on the wreck	0 10 15 20 30
Task #2 point total:	
Task #3: Conservation (up to 50 points)	
Removing two bottles	0 5 10 15 20 30
Removing the anchor line rope	0 5 20
Task #3 point total:	

PENALTY POINT DEDUCTIONS	
*Illegally pulling tether _____ infractions X - 5	
*Illegal communication _____ infractions X - 5	
**Diver assistance _____ infractions X - 5	
*** Leaving debris in the pool _____ infractions X - 5	
Exceeded 5-minute demobilization period _____ minutes X - 1 =	

TIME BONUS	
1 point for every minute and 0.01 point for every second under 15 minutes	
Duration of Mission: _____	
Minutes under 15 remaining: _____ X 1 point = _____	
Seconds remaining: _____ X 0.01 point = _____	
Time bonus	
TOTAL MISSION SCORE	

Mission official's initials: _____

Company CEO's initials: _____