

<b>ENGINEERING EVALUATION - NAVIGATOR</b>		<b>MAX SCORE = 50</b>	
<b>School name and # AS IT APPEARS ON THE OFFICIAL LIST:</b>			
<b>Judge's name:</b>			
<b>1 0 = Yes (1) or No (0)</b>			
<b>4 3 2 1 0 = 4: Outstanding, 3: Exceptional, 2: Excellent, 1: Good, 0: Poor or missing</b>			<b>SCORE</b>
<b>Teamwork/Presentation</b>		<b>15 pts max</b>	
Company was prepared for the presentation and Q&A session		1 0	
Presentation covered the design, building, troubleshooting, and testing process		2 1 0	
Presentation highlighted design innovations/creative ideas		2 1 0	
Presentation described how the company brainstormed ideas to solve the mission and evaluated those ideas against competing alternatives		2 1 0	
Company demonstrates an understanding of the ROV systems, including the science behind them, and operations		2 1 0	
Each member participated and understands the basics of the vehicle plus details about at least one system		2 1 0	
Company demonstrates an understanding of the role that ROVs play in the mission theme		1 0	
Company effectively describes how the ROV was built to accomplish mission		2 1 0	
Company describes a lesson learned, either technical or non-technical		1 0	
<b>Overall Design and Workmanship</b>		<b>7 pts max</b>	
Vehicle was tested prior to the event and is ready for the water		2 1 0	
Company describes a troubleshooting technique(s) that demonstrates an understanding of the technical issues and presents a step-by-step process for addressing them		2 1 0	
Components easy to access for maintenance & troubleshooting		1 0	
Is robust; constructed for durability with attention to craftsmanship and marketability to potential customers		2 1 0	
<b>Safety</b>		<b>4 pts max</b>	
Vehicle visually displays warning labels and safeguards		1 0	
Fuse(s) in place on the positive side		1 0	
Company describes safety precautions necessary while handling/operating the vehicle		1 0	
Vehicle built according to the competition safety requirements and has passed the safety inspection (inspection sheet presented to judges)		1 0	
<b>Systems Design and Operation</b>			
<b>Control and Electrical System</b>		<b>6 pts max</b>	
Control system is thought through and designed logically		2 1 0	
Components logically and neatly incorporated		2 1 0	
Company demonstrates an understanding of how the control/electrical system works		2 1 0	
<b>Propulsion</b>		<b>4 pts max</b>	
Thrusters are securely attached		1 0	
Thrusters do no obstruct water flow		1 0	
Thrusters are waterproofed and protected		2 1 0	
<b>Buoyancy and Ballast</b>		<b>4 pts max</b>	
Company describes how buoyancy/ballast system takes missions into account		2 1 0	
Company demonstrates application and knowledge of skills in selection and usage of particular buoyancy system		2 1 0	
<b>Payload Tools</b>		<b>4 pts max</b>	
Payload tools are appropriate for accomplishing the mission		1 0	
Payload tools are unique in design and/or demonstrate creativity		1 0	
Company describes rationale for design and how those features contribute to accomplishing the mission		2 1 0	

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<b>Tether</b>		<b>4 pts max</b>
Tether is securely attached to and appropriately positioned on the ROV		1 0
Strain relief present at the control box		1 0
Tether is neatly bundled and protected and not a tripping hazard		1 0
Company developed a tether management protocol		1 0
<b>Budget</b>		<b>2 pts max</b>
Company describes a budget		1 0
Companies acknowledges organizations and/or individuals who contributed funds, equipment, and/or technical/moral support		1 0
<b>ENGINEERING EVALUATION SCORE:</b>		
<b>Discretionary Points</b>		<b>2 pts max</b>
Bonus points for a job well done		2 1 0
<b>Deductions</b>		<b>-6 pts max</b>
Company mentions that work was done by commercial companies and/or instructors or mentors and not able to provide a valid justification why		0 -1 -3
Interference or coaching by mentors, parents, etc. during presentation (beyond helping with language barrier issues)		0 -1 -3
<b>TOTAL ENGINEERING EVALUATION SCORE:</b>		

**Comments:**