

RANGER CLASS DEMONSTRATION – NOTE CHANGES IN 2018!!!

RANGER class companies that are determined by the MATE Center to be prohibitively far from a regional event are required to submit a video that:

- Demonstrates the ability of their vehicle to perform specific tasks;
- Shows compliance with MATE’s design and build specifications.

Video specifications: The video MUST show the following ROV features for the specified amount of time. Companies can choose to narrate the video to help explain how their vehicle meets these required specifications.

The video MUST show in this order:

1. 15 seconds (or more) showing a properly sized fuse. The company MUST use a ruler to show that this fuse is within 30 cm of Anderson Powerpole connectors. **(ELEC-008R, ELEC-010R).**
2. 30 seconds (or more) of the inside of the control box showing the wiring and components. MATE will be looking for:
 - No exposed wiring **(ELEC-017R).**
 - That the control box is neatly laid out with attention to workmanship. **(ELEC-022R).**
 - Separation and identification of 120VAC wiring from DC and control voltages. **(ELEC-023R).** If 120VAC is not used in the control box, you should video a slide stating that AC power is not used in the control box.
3. 15 seconds (or more) showing wires entering and leaving control systems and strain reliefs for those wires and tether. 15 seconds (or more) showing wires and tether entering and leaving the ROV and strain reliefs for the tether or wires. **(ELEC-024R)**
4. 30 seconds (or more) showing any hydraulic/pneumatic systems including a pressure release valve and regulator in the system **(FLUID-007, FLUID-011)**, and that any pressurized cylinder, pressure storage device meets the MATE specifications of **(FLUID-012, FLUID-013)**. In addition, the type of fluid should be clearly stated in the video **(FLUID-002, FLUID-003, FLUID-004)** If the vehicle does not use fluid power, **you should video a slide stating that Fluid Power is not used on this ROV for 10 seconds.**
5. 60 seconds (or more) total, 10 seconds (or more) per side of the ROV (4 sides plus top and bottom) showing that all motors are waterproofed and propellers are shrouded and protected with guards. There are no sharp edges or elements of the ROV that could cause damage **(MECH-006, ELEC-017R).**

Video demonstrating specific tasks: Following those requirements, the video must demonstrate that the ROV can complete the following product demonstration task. The ROV must complete the entire task within 15 minutes.

The UNCUT video must show the vehicle:

1. Launching safely from the side of the pool and maneuvering to the platform.
See specifications (**MECH-004 & MECH-005**).
2. Completing the required tasks. This includes:
 - a. Step 3 of the AIRCRAFT task: Removing debris from the engine.
For this demonstration, the debris must be on the bottom of the pool, and a designated area located at least 1.5 meters away. Companies must:
 - i. Attach their lift bag to the debris
 - ii. Inflate the lift bag
 - iii. Move the debris to the designated area
 - iv. Release the lift bag from the debris
 - b. Step 4 of the EARTHQUAKES task: Release the OBS from the anchor.
For this demonstration companies must rotate the leveling mechanism on two corners of the OBS 1080° (3 times around). Companies do not actually need to level the OBS, just rotate two of the four leveling mechanisms.
 - c. Step 5.2 of the ENERGY task: Attach the ADV to the mooring line.
For this demonstration, companies must attach their velocimeter to a #310 U-bolt located partway up the chain of the mooring. Companies are not required to place the mooring; it may be set up in the demonstration pool already.

The camera angle must demonstrate that the ROV is under its own power and not being guided by human assistance when in the water. The MATE Center requires that the camera show the complete ROV in the field of view at all times. A video that cuts between camera angles will not pass the demonstration requirement of “uncut” footage. The video is permitted to show a split screen or may incorporate a separate window showing the ROV camera or other footage. However, the video **MUST** show an uncut view of the vehicle from launch to completion of the task. The task must be completed within 15 minutes.

Companies may complete the tasks in any order they wish.

Videos must be submitted no later than 11:59 PM, Hawaii time, May 11th, 2018. Videos must be submitted via the form located here – <https://www.emailmeform.com/builder/form/cU50v6e90Xd2G6FEOaec8P>, using the following naming convention: School or organization name_ company name_ video demonstration_2018.

Videos must be submitted as links to a YouTube or Vimeo post. Companies may submit the specification and product demonstration as two separate videos. Note that the product demonstration portion must be a complete, uncut video.

MATE competition organizers will review the videos and respond by May 25th. Video submissions will **NOT** be accepted after May 11th – **NO EXCEPTIONS**. If the video does not clearly demonstrate that the company’s vehicle meets the specifications and accomplishes the tasks, the company is not eligible to

participate in the international competition. No extensions past the due date will be given for any reason.

MATE strongly encourages companies to submit their videos well before May 11th. That way, if an issue is found, companies will have the opportunity to address the issue and submit an updated video before the May 11th deadline. Note that it may take MATE up to 5 working days to evaluate a video submission.