AOE DEPARTMENT SAFETY REVIEW FORM FOR
EXPERIMENTAL RIGS

In the context of this form 'rig' refers to any potentially hazardous piece of equipment whose safe operation requires more detailed instructions and procedures than can be included in the Experimental Workspace Safety Review form for the area in which the rig is housed. Examples include a wind tunnel, laser system, high pressure tank, material testing machine, rotating system.

Before any such rig in the Department of Aerospace and Ocean Engineering is brought into operation, and **at least once per year** thereafter, a copy of this form must be completed, signed and submitted by the responsible faculty/staff member (usually the principal investigator). When an existing rig undergoes modifications which could affect its safety, a new copy of this form must been submitted by the responsible faculty/staff member at that time, and before it is operated again.

Completed forms should be submitted to the AOE Assistant Department Head for Facilities (Michael Philen) and should also be made available to other faculty/staff with relevant expertise, or with direct involvement in the rig or space where it is housed. Any advice resulting from this interaction should be copied to the Assistant Department Head, as well as being transmitted back to the responsible faculty/staff member. Once the responsible faculty/staff member is satisfied that all safety concerns have been met the final version of the form should be signed and submitted and a copy displayed in a prominent position on or adjacent to the rig and on the department safety website. The responsible faculty/staff member may then authorize its operation. Under no circumstances may a rig be operated without a completed, current copy of this form prominently displayed.

Date of form: 08/16/2025 Form expires (no more than 1 year after form date): 08/15/2026

Name of Rig: Vertical Planar Motion Mechanism

Location of rig: VT Tow Tank and Hydroelasticity Laboratory Location: Norris 005

Name of the EHSS SMS Workspace*:* Norris Hall, 5 - Tow Tank

Link to the SMS Workspace: https://ehss.vt.edu/sms/space.php?id=1652

Faculty/staff member responsible for the rig and its safety: Christine Gilbert

Office Address	Phone	Email
620 McBryde Hall	540-231-9428	cmgilbert@vt.edu

1. An evaluation of the above rig has been performed and the following safety risks have been identified (append details where necessary):

The water tank presents a drowning risk and electrocution risk.
NO ONE MAY BE ON THE CARRIAGE WHEN IT IS IN MOTION AT ANY TIME FOR ANY REASON!
Overvoltage of the linear actuators can occur, and the linear actuators will stop moving. This can cause flooding of the model.

2. The following actions have been taken to minimize those risks (append details where necessary):

The VPMM will be used by trained PIs and graduate students. Undergraduate students may use the VPMM under supervision only. No one will go into the kayak while the VPMM is moving.

4. Check one and include a list: ☒ *The rig may only be operated by the following individuals.*
☒ *The rig may only be operated under the supervision of the following individuals.*

Christine Gilbert
Ben Darden
Olivia Roach

5. The above individuals are all registered on the EHS training website at https://secure.hosting.vt.edu/www.ehss.vt.edu/training/training_report.php and have taken all appropriate safety training courses. Their training is current and is recorded on the EHS website, under the above workspace name. The appropriate safety courses are (list here):

1. Electrical Awareness
2. General Laboratory Safety
3. HAZCOM RTK
4. Portable Fire Extinguishers
5. Lockout/Tagout Awareness
6. Personal Protective Equipment (PPE) Awareness
7. Laser Safety
8. Confined Space Awareness
9. Hand and Power Tool Safety
10. Ladder Safety
11. Tow Tank Training (Canvas)
12. Vertical Planar Motion Mechanism Training (Canvas)

Signature of faculty/staff member responsible for the rig and its safety  Date 08/16/2025