COMPANY NAME:_____ **COMPANY NUMBER:**_____

2013 MATE ROV COMPETITION

Ocean Observing Systems: Launching a New Era of Ocean Science & Discovery

RANGER CLASS SAFETY CHECK LIST

Companies must bring this check list, the ROV, tether, surface controls and any other item used in the deployment and operation of the ROV. They will all be inspected as part of the safety check. In addition, documentation listed below must be provided to the Safety Inspectors during the inspection process.

1.0 Documentation	
	Electrical schematics & power distribution diagrams
	Technical report
	Fuse shown in electrical schematics?
	Pneumatics or Hydraulics Used? See item 4.0
2.0 Physical	
	All items attached to ROV are secure and will not fall off.
	Hazardous items are identified and protection provided.
	Propellers are enclosed inside the frame of the ROV or shrouded such that they will not make contact with items outside of the ROV.
	No sharp edges or elements of ROV design that could cause injury to personnel or damage to pool surface.
3.0 Electrical	
	Single attachment point to power source.
	Standard male Banana plugs to connect to MATE power source.
	25 amp Single Inline fuse or circuit breaker within 30cm of attachment point.
	No exposed copper or bare wire.
	No exposed motors.
	All wiring securely fastened and properly sealed*.
	Tether is properly secured at surface control point and at ROV.
	Any splices in tether are properly sealed*.
	Surface controls: All wiring and devices properly secured.
	Surface controls: All control elements are mounted with wiring inside an enclosure.

***Properly sealed means that the wires cannot be exposed to water. Tape only sealing will allow the conduction of electricity through water.**

At minimum joints must be soldered, then sealed with silicone sealant and then finally taped. For in water taping, silicone self-vulcanizing tape is preferred over thermoplastic tape. Male to male connectors are not allowed.

PASS/FAIL STAMP

4.0 Pneumatic / Hydraulic (if using)	
	Passed pneumatics/hydraulics test.
	Pneumatic or Hydraulic diagrams present?
	Pneumatic and/or Hydraulic component documentation provided?
	Hydraulic fluid MSDS (if used) Fluid is compatible with the Biodegradable Food-Grade specification. Teams using water do not need to provide an MSDS.
	All pressure lines have minimum pressure rating 100psi (pneumatic) or 300psi (hydraulic) stamped on line or verified with specifications
	Valves meet the minimum pressure of 100 psi pneumatic or 300 psi hydraulic
	Attachment to pressure source is secure.
	Pressure is regulated to 40psi max for pneumatics and 150 psi max for hydraulics.
	Pressure vessels have a stamped pressure rating or verification by specification.
	Pressure vessels have current inspection sticker.
	Pressure vessels can be secured on pool deck.
	Company fabricated pressure accumulator test results are provided (if used).
	No hydraulic fluids are leaking.
	Pneumatics utilize compressed air or inert gas

INSPECTION #1 **PASSED:** **30 POINTS**
FAILED: Items to correct:

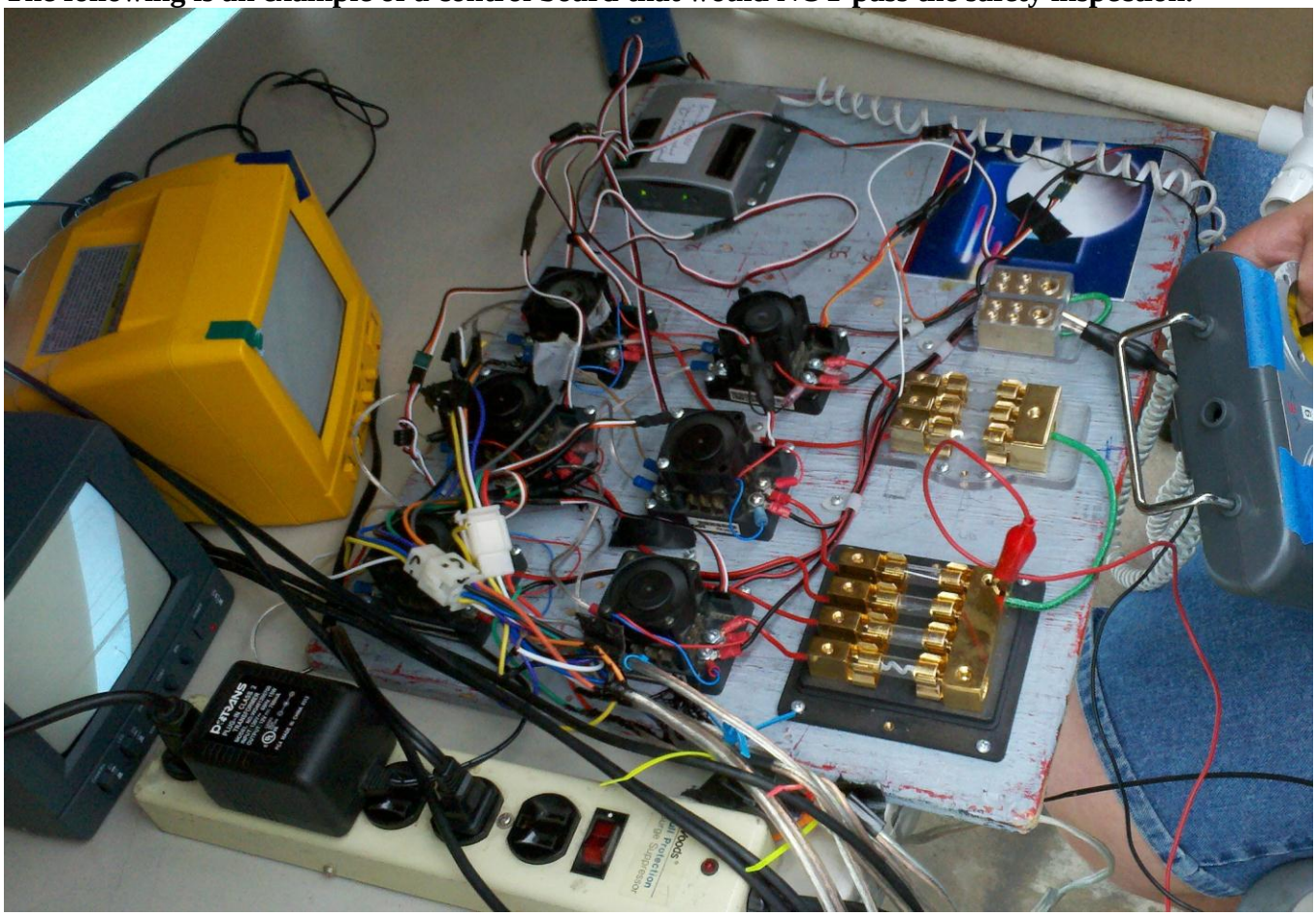
INSPECTION #2 **PASSED:** **20 POINTS**
FAILED: Items to correct:

INSPECTION #3 **PASSED:** **10 POINTS**
FAILED: Reason

Cleared to enter the water:

_____
Signature of competition official

The following is an example of a control board that would NOT pass the safety inspection.



Problems include but are not limited to:

1. **Does not have a single fuse to the power supply**
2. **Wires are loose. No method for securing wires leaving the control board.**
3. **Clip leads for attaching to power supply.**
4. **Electrical terminals are exposed on the fuse block and H-Bridges.**

Any of the above items would cause this controller to fail safety inspection.

Corrections needed.

1. One power cord going from power supply to control box with inline fuse.
2. Power cord is physically attached to the control box to provide adequate strain relief.
3. Power cord has proper banana lead terminations (Ranger) or eye terminal (Explorer)
4. All electronics installed into a control box to shield the exposed electrical from inadvertent contact.
5. All wires leaving/entering the control box go through a connector to provide termination and strain relief.