Job Safety Analysis

Safety information for the North Paulding High School Robotics, North Paulding High School.

Task	Potential Hazards	Controls	Responsible Member
Required training	1. Back injury from lifting ROV in and out of pool. 2. Physical injury from improper use. 3. Electrical shock from touching ROV while still connected to power source.	1. All mission members will practice launching/recovering ROV from pool 2. Utilize pool command checklist when operating pool side. 3. Practice transporting/handling/servicing ROV	Initial: M. Stephens (Head Safety Officer)
Required Personal Protective clothing	1. Long hair or loose clothing could get trapped by machine. 2. Tools may slip and fall to ground and land on member's foot. 3. Material may dislodge and fly across the room and hit someone in the eye.	1. Covered and non-slip shoes 2. Safety gloves Safety glasses 3. Long hair tied up 4. Sun protection	Initial: M. Stephens (Head Safety Officer)

	Potential Hazards	Controls	Responsible Member
Electronic Engineering	1.Electrical Fire 2.Electric Shock 3.Injury while using tools	1. Have a fire extinguisher nearby when working 2. Make sure the ROV isn't on and when testing voltage and electronic components the engineer takes proper safety precautions 3. The engineer uses the tools in a safe and responsible way. Insulating gloves are worn. All soldering irons while in use are placed in their soldering stands while the user is doing something else.	Initial: G. Lewis (Head Electrical Manager)
Mechanical Engineering	1.Injury while using tools 2.Slipping 3.Toxic fumes and dangerous chemicals	1.Proper safety equipment worn (ex. Goggles, Gloves) and using the tools without risking physical harm. The use of damaged equipment is prohibited and while striking with tools, goggles are worn when striking and hands are clear, proper blades and bits are used based on the material. When not using tool the tool is unplugged and/or stored away. Long hair is tied up to prevent it from being caught in the tools 2. Floor is kept clean and spills are cleaned up. 3. A respirator is worn to prevent inhalation of toxic fumes and gloves to prevent contact with chemicals while pouring the polyurethane foam mix. Excess waste is disposed of properly.	Initial: B. Rodriquez (Head Mechanical Manager)

WORKING OFF SITE			
ROV transportation and unpacking	1. Injury or destruction while of ROV packing 2. Injury or destruction of ROV while unpacking 3. Back injury	1. The ROV is loaded securely in the container. The tether is coiled up and put next to the ROV in the container. Everything is disconnected from the control box and monitors and other peripherals are placed into containers. Afterwards the containers are loaded on to trailer and tied down. Heavy things are loaded with 2 or more people 2. When unpacking caution is taken so as not to break anything. Heavy things are unloaded with multiple people. The control box, ROV, and peripherals are brought to the site where it is needed. 3.Proper procedure is used when lifting the ROV. The ROV container has wheels so back injury is minimized because less lifting is needed.	Initial: M. Lees (CEO)

ROV setup	1. Destruction of components or electrical otherwise 2. Electrocution 3. Injury to personnel	1. The monitors, keyboards, joysticks, and other peripherals are hooked up properly and with caution. A fuse is connected to the power wire to protect against power surges. The tether is connected before power is connected to protect the ROV 2. When hooking up power only one cable is hooked up at a time. The control box is closed when power is on. 3. Sharp edges of the ROV are sanded down to protect the person who is removing it from the container. Multiple people take the ROV out together so as not to accidentally drop the ROV. Proper shoes are worn to mitigate the chance of slipping at poolside.	Initial: G. Lewis (Head Electrical Manager) Initial: B. Rodriquez (Head Electrical Manager)
Pre-operation inspection	1. Damaged components due to transportation (broken glass)	1. Team members will wear proper attire and safety goggles when setting up the ROV and the work site 2. Team members will complete a pre-operation check list to make sure all electrical and mechanical parts are operational before the ROV is placed into the water.	Initial: M. Stephens (Head Safety Officer) Initial: G. Lewis (Head Electrical Manager)
Missions	1.Laceration 2.Slipping 3.Injury because of not knowing area safety procedures.	1. When ROV is placed in or removed from water signals are used so the pilot knows when to not cut on motors to prevent the ROV in out person	Initial:

		from being injured from moving propeller blades. 2. Tennis shoes must be worn by all poolside personnel. 3. Knowing the sites HSE (Health and Safety Executive), PPE (Personal Protective Equipment), and reporting processes to remain safe while working away from home.	M. Stephens (Head Safety Officer)

Safety Equipment: Gloves, Goggles, Closed toed slip resistant shoes, respirators, face shields, fire extinguishers, and a first aid box.

Required Training:

1. All team members will be trained on all safety procedures and protocol while working in the following locations:
    - Robotics workroom
    - Poolside mission practices
    - Deck commands for pool side missions
    - General First aid practices

2. All team members will be trained on the correct use of ALL power tools used in the robotics workroom.

For further safety issues or concerns, please feel free to contact our Head safety officer:

Matthew Stevens at NorthPauldingRobotics@comcast.com