

JOB SAFETY ANALYSIS (JSA)



DEPTH 34

Walter Payton College Prep
MATE ROV Ranger 2019

ON-SITE TASKS (OPERATING THE ROV)

Tasks	Potential Hazards	Recommended Measures
Unloading ROV, power supply, control box, and tools	<ul style="list-style-type: none">Physical injuries from liftingDropping the ROV and components	<ul style="list-style-type: none">Members must lift objects by bending their knees and pulling the object toward their chest (reduces chance of strain/injury)All objects are organized into a box and items are removed from the cart one at a time
Tether unraveling	<ul style="list-style-type: none">Tripping over wiresDropping electronic equipmentWires breaking, wire strain	<ul style="list-style-type: none">Tether and wires are spread outTether is slowly unraveled and no excessive force is used
Checking tether and electrical connections	<ul style="list-style-type: none">ElectrocutionShort circuits	<ul style="list-style-type: none">All wires are fully insulated beforehandStrain relief is applied to weak connectionsAdditional hot glue and electrical tape is applied to exposed wires
Connecting to power supply	<ul style="list-style-type: none">ElectrocutionShort circuits	<ul style="list-style-type: none">Power supply is plugged into an outlet that is safely away from waterWires are connected to the correct terminalsFuse (20 amps) is reliable; if not, it will be replaced
Checking ROV for sharp edges and exposed motors	<ul style="list-style-type: none">Injury to diverDamage to test site	<ul style="list-style-type: none">Shrouds and motors are secure on the ROV; if not, appropriate glue and adhesives are appliedSharp edges are covered by tape or hot glue
Releasing and retrieving ROV, managing the tether	<ul style="list-style-type: none">Slipping on wet surfacesFalling into water	<ul style="list-style-type: none">Tether manager releases the ROV while squattingTether manager stands at least 2 feet away from the edge of the pool



OFF-SITE TASKS (BUILDING THE ROV)

Task	Potential Hazards	Recommended Measures
PVC Pipe Cutting/Drilling	<ul style="list-style-type: none"> ● Inhalation of PVC particles ● PVC particles entering eyes ● Hand injuries ● Environmental contamination 	<ul style="list-style-type: none"> ● Members complete task under the supervision of another student ● Members involved are wearing goggles and surgical masks ● Remaining residues and particles are disposed of, surfaces are wiped down
Soldering	<ul style="list-style-type: none"> ● Inhalation of gases ● Burns 	<ul style="list-style-type: none"> ● Soldering occurs inside a fume hood or well-ventilated area ● Members are wearing heavy-duty gloves and an apron ● Members involved are wearing goggles and surgical masks ● Ensuring that wires used are suitable for soldering
Tether Wiring	<ul style="list-style-type: none"> ● Short circuits ● Electrocutation 	<ul style="list-style-type: none"> ● Power source is turned off when working with wiring ● All live wires are sealed with electrical tape, hot glue, or shrink wrap
Tether Organization	<ul style="list-style-type: none"> ● Tripping over wires 	<ul style="list-style-type: none"> ● Tether and wires have been spread out ● No more than three members are allowed to work on the tether at once
Water Tests (Pools)	<ul style="list-style-type: none"> ● Tether person falling into pool ● Electrocutation 	<ul style="list-style-type: none"> ● All live wires are sealed with electrical tape, hot glue, or shrink wrap
Water Tests (Tubs)	<ul style="list-style-type: none"> ● Electrocutation ● Physical injuries from lifting 	<ul style="list-style-type: none"> ● All live wires are sealed with electrical tape, hot glue, or shrink wrap ● Members must lift objects by bending their knees and pulling the object toward their chest (reduces the chance of strain/injury)
Loading ROV and Boxes onto Vehicles	<ul style="list-style-type: none"> ● Physical injuries from lifting 	<ul style="list-style-type: none"> ● Members must lift objects by bending their knees and pulling the object toward their chest (reduces the chance of strain/injury)