

TASK	HAZARDS	CONTROLS
Lifting Lazarus	<ul> <li>Slips / Trips / Falls</li> <li>Back strain</li> <li>Physical strain</li> <li>Foot Injury</li> <li>Hand injury</li> </ul>	<ul> <li>Wear closed toed non-slip footwear</li> <li>Require two company members to lift Lazarus</li> <li>Require an additional company member to direct path and watch for any obstacles</li> <li>Communicate with each company member if there is any strain and stop transport immediately</li> <li>Handles must be used to lift Lazarus</li> </ul>
Operating thrusters	<ul><li>Damage to fingers</li><li>Damage to limbs</li><li>Scalp injury</li></ul>	<ul> <li>Keep propellers shrouded</li> <li>Keep fingers away from thrusters at all times</li> <li>Put warning labels on the motor housings</li> <li>Wear tight fitting clothing</li> <li>Keep all long hair tied back when working near any moving parts</li> </ul>
Powering Lazarus on	Electric shock     Overvoltage	<ul> <li>Follow company Safety         Checklist Procedures when         powering any equipment or         machinery on</li> <li>Equipped Power supply         with fuses to prevent         overvoltage</li> <li>Use surge protector for         Lazarus power supply</li> <li>Always operate power         supply plugs and switches         with dry hands.</li> <li>Wear non-electrically         conducting gloves when</li> </ul>



		necessary  Always keep power supply safely away from any body of water  Follow proper Power Supply operational training
Powering Lazarus Down	<ul> <li>Electric shock</li> <li>Fire Hazard</li> </ul>	<ul> <li>Follow company Safety         Checklist Procedures when         powering any equipment or         machinery down</li> <li>Use surge protector for         Lazarus power supply</li> <li>Always operate power         supply plugs and switches         with dry hands.</li> <li>Wear non-electrically         conducting gloves when         necessary</li> <li>Always keep power supply         safely away from any body         of water</li> <li>Follow proper Power         Supply operational training</li> </ul>
Launching and retrieving Lazarus	<ul> <li>Slips / Trips / Falls</li> <li>Back strain</li> <li>Physical strain</li> <li>Foot injury</li> <li>Drowning</li> <li>Damage to limbs</li> <li>Hand injury</li> </ul>	<ul> <li>Wear closed toed non-slip footwear</li> <li>Require two company members to lift Lazarus</li> <li>Require an additional company member to direct path and watch for any obstacles</li> <li>Communicate with each company member if there is any strain and stop transport immediately</li> <li>Verify all company members operating near any body of water can swim or wear lifejackets</li> <li>Handles must be used to lift Lazarus</li> </ul>



Transporting Lazarus	<ul> <li>Slips / Trips / Falls</li> <li>Back strain</li> <li>Physical strain</li> <li>Foot injury</li> <li>Drowning</li> <li>Damage to limbs</li> <li>Hand injury</li> </ul>	<ul> <li>Wear closed toed non-slip footwear</li> <li>Require two company members to lift Lazarus</li> <li>Require an additional company member to direct path and watch for any obstacles</li> <li>Communicate with each company member if there is any strain and stop transport immediately</li> <li>Verify all company members operating near any body of water can swim or will wear lifejackets</li> <li>Handles must be used to lift Lazarus</li> </ul>
Managing the Tether	<ul> <li>Tripping</li> <li>Tangling tether</li> </ul>	<ul> <li>Follow proper Safety         Checklist Procedures when         managing the tether</li> <li>One company member is         assigned to maintaining         tether slack</li> <li>Maintain tether         organizational standards by         storing tether in "figure 8"         pattern on tether mount to         prevent the tether from         tangling.</li> <li>Maintain tether         organizational standards by         storing tether on tether         mount to prevent trips</li> </ul>
Operation piloting programs	<ul><li>Eye strain</li><li>Back strain</li></ul>	<ul> <li>Adjust the brightness of the screens to a comfortable level</li> <li>Maintain proper posture</li> </ul>
Using soldering equipment	Fire hazard	Verify all soldering equipment is powered off



	<ul><li>Respiratory irritation</li><li>Burns</li></ul>	when not in use  Use soldering equipment in well ventilated areas  Follow proper soldering operational safety training
Using epoxy	<ul><li>Skin irritation</li><li>Respiratory irritation</li><li>Eye irritation</li></ul>	<ul> <li>Use epoxy in well ventilated areas</li> <li>Always wear nitrile gloves when mixing, pouring, and working with epoxy</li> <li>Always follow product instructions and safety procedures on product label</li> <li>Wash hands after removing gloves</li> </ul>
Using heat shrink, heat gun, and hot glue	<ul><li>Fire hazard</li><li>Burns</li></ul>	<ul> <li>Verify heat gun and hot glue equipment is powered off when not in use</li> <li>When using heat gun near hands, wear heat resistant gloves</li> <li>Follow proper heat gun operational safety training</li> </ul>
Using hand tools (hacksaws, files, screwdrivers, hammers, etc.)	<ul><li>Eye injury</li><li>Respiratory irritation</li><li>Skin injury</li></ul>	<ul> <li>Wear safety goggles when using saws</li> <li>Wear gloves when using hand tools</li> <li>Wear masks when needed</li> </ul>
Using power saws and power tools (power drills, power saw, jigsaw, etc.)	<ul><li>Ear injury</li><li>Eye injury</li><li>Skin injury</li><li>Scalp injury</li></ul>	<ul> <li>Wear safety goggles when operating any power tools</li> <li>Wear gloves when operating any power tools</li> <li>Wear noise reducing earmuffs to reduce exposure to high sound levels</li> <li>Keep all body parts away from moving blades, use</li> </ul>

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		clamps when needed  Maintain necessary saw maintenance and check for any worn blades and malfunctions prior to use  Keep all long hair tied back when operating or near power tools  Follow all Miter saw, jigsaw, drill press, and power tool operations training
Using laser cutter	<ul> <li>Fire hazard</li> <li>Burns</li> <li>Skin injury</li> <li>Respiratory irritation</li> <li>Eye injury</li> </ul>	<ul> <li>Follow all safety guidelines from laser safety operations training</li> <li>Handle all freshly cut material with gloves</li> <li>Always use ventilation when operating laser cutter</li> <li>Always wear safety goggles when laser cutter is operational</li> </ul>
Housekeeping	Slips / Trips / Falls	<ul> <li>Keep work area clean and organized</li> <li>Keep walkways clear</li> <li>Tape down any cables</li> <li>Display wet floor signs when necessary</li> </ul>

#### Required Training:

- Safety Checklist Procedure training
- Miter saw operations training
- Laser cutter operations training
- Jigsaw operations training
- Heat gun operations training
- Soldering operations training
- Drill press operations training
- Power supply operations training

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- Proper posture and lifting form training
- Fire extinguisher locations and operations training

### Personal Protective Equipment (PPE):

- Life jacket (when needed)
- Closed toe, non-slip shoes
- Safety goggles
- Nitrile gloves
- Heat resistant gloves
- Non-electrically conductive gloves
- Noise reducing earmuffs
- Fire extinguisher

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afety Checklist Procedure:				
Pre-bootup and Start-up Procedure				
☐ Verify pressure seal is in place				
Verify bulkhead connectors are clean				
Verify propellers are shrouded				
Verify control core is mounted				
Verify manipulators are present				
Verify tether is attached to Lazarus and at the ready				
Verify Lazarus Data cable is plugged in				
Verify Anderson connectors are attached and secured				
Verify surge protector is plugged in				
Verify power supply is plugged into surge protector				
Check power supply fuses				
• Chief of Safety states "Stand by for Power on"; all company members within 5 feet of any				
equipment must respond with "standing by" before Power Supply is powered on.)				
<ul> <li>Chief of Safety states "Powering On".</li> </ul>				
<ul> <li>Bootup Sequence</li> </ul>				
Verify system boot				
Verify camera boot				
<ul> <li>Stand by for boot sequence to complete</li> </ul>				
Verify Lazarus green status				
Verify Camera yellow status				



- Chief of Safety states "Stand by for Power down"; all company members within 5 feet of any equipment must respond with "standing by" before the Power Supply is powered down.
- Chief of Safety states "Powering Down".