



Daedalus II

Sea-Tech 4-H Club Located in Mt. Vernon, WA, USA
150 km from Federal Way, WA, USA



Job Site Safety Analysis

2017-2018 Competition Safety Procedures

All members must wear safety glasses, and closed-toed shoes; remove loose clothing and items; tie up long hair; use caution, clear communication, and maintain a well-organized working environment during construction, operation, transportation, testing and repair of the ROV.

In case of an emergency involving the ROV, shut off of all power with emergency switch.

In case of fire and serious injury, call 911.

In all cases, remain calm and prioritize safety.

Construction and Testing Protocol

TASK	POSSIBLE HAZARDS	SAFETY PROCEDURE	RESPONSIBLE Members
Using drill press	Entanglement; Eye injury; Safe working environment; Impact injury	Clamping down working parts	All members
Using power tools	Lacerations; Entanglement; Electric shock	Operation in dry areas	All members
Using hand tools	Burns; Pinching; Cuts	Cutting away from oneself; Keeping hands away from pinch points on tools; Organized tools	All members
Testing thrusters	Lacerations from propellers	Keeping hands away from thrusters	All members
Testing electrical systems	Electric shock; Burns (electronic short)	Avoiding open electronics near water; Double checking all polarity; Check for power to ground	All members
Testing mechanical systems	Pinching from gears; Crushing injuries	Covering and labeling of pinch points	All members

Testing pneumatic systems	Crushing injuries from flying connectors	Confirmation of secured connectors; Use caution moving around the tubing	Spencer
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Transportation Protocol

TASK	POSSIBLE HAZARDS	SAFETY PROCEDURE	RESPONSIBLE MEMBERS
Transportation of the ROV	Crushing injuries from dropping the ROV	Securing good grip on ROV; Two members lift	All members
Transportation of the tether	Entanglement in the tether	Coiled tether	All members
Transportation of the control station	Crushing injuries from dropping components	Secure packing of screens and transmitters	Pilots
Transportation of travel crate	Dropping components	Two members lift	All members

Operational Protocol

TASK	POSSIBLE HAZARDS	SAFETY PROCEDURE	RESPONSIBLE MEMBERS
Preparing ROV for deployment	Tripping hazards	Clear Communication of tether location	All members
Deploying control station	Crushing injuries from falling components	Carefully uncoiling wires and connections	Cooper
Uncoiling tether	Entanglement or tripping	Coordinating the tether by two members	Lazlo and Satone
Powering ROV	Electrical shock	Double checking polarity; Clear communication	Spencer and Cooper
Testing thrusters	Laceration	Clear communication	All members
Testing mechanical actuations	Pinching from gears, Crushing injuries	Covering and labeling of pinch points	All members
Testing cameras	Unknown safety issues	Clear communication	All members
Deployment of ROV	Slipping into pool entanglement with tether	Clear communication	Lazlo and Satone
Pneumatic connection	crushing injuries from flying connectors	Confirmation of secure tubes/connectors	Spencer