Activity Hazard Analysis (AHA)

Activity/Work Task: Boat Operators License Training Course	Overall Risk Assessment Code (RAC) (of the highest hazard): **M**
Project Location:	
Contract Number:	
Date Prepared:	
Prepared by (Name/Title):	
Reviewed by (Name/Title):	
Notes: (Field Notes, Review Comments, etc.)	

Risk Assessment Code (RAC) Matrix

Severity \ Probability	Frequent	Likely	Occasional	Seldom	Unlikely
Catastrophic	E	E	H	H	M
Critical	E	H	H	M	L
Marginal	H	M	M	L	L
Negligible	M	L	L	L	L

Step 1: Determine and enter RAC codes for each **"Hazard"** with safety **"Controls"** (E, H, M, or L)

"Probability" is the likelihood to cause an incident, near miss, or accident and identified as: Frequent, Likely, Occasional, Seldom or Unlikely.

"Severity" is the outcome/degree if an incident, near miss, or accident did occur and identified as: Catastrophic, Critical, Marginal, or Negligible

Step 2: Use the highest individual RAC of the Hazards + Controls below as the overall RAC for the Activity, and enter at the top of the AHA sheet.

RAC Chart

- E = Extremely High Risk
- H = High Risk
- M = Moderate Risk
- L = Low Risk

Job Steps	Hazards	Controls	RAC
1. Boat Operations	1. Personnel	1. The emergency stop maneuvering course shall be conducted with one instructor and one student on each vessel	L
A) Maneuvering Courses (serpentine, slalom, emergency stop, star)	2. Drowning	2. Wear Personal Flotation Device (PFD). Know location and proper use of lifesaving devices (throw ring, throw bag, reach poles, ladder, cargo net)	M
	3. Collisions	3. Follow and obey boating rules/laws, recognize aids to navigation, maintain safe speeds, keep proper lookout	L
	4. Falls Overboard	4. Wear PFD, know proper rescue procedures and wear proper footwear to maintain balance and footing. Make sure kill switch is operational and lanyard is attached to operator. Pay close attention to all other boats operating on maneuvering courses.	M
	5. Fires/Explosions	5. Follow proper venting and starting procedures. Know location of fire extinguisher and proper suppression techniques.	L
	6. Sun/Heat	6. Wear proper clothing/hat to limit sun exposure. Use sunscreen and drink plenty of water.	L
	7. Dehydration	7. Rehydrate with water/Gatorade	L
	8. Eye Fatigue	8. Wear proper eyewear/sunglasses	L
	9. Dust/Debris/Material in Eye	9. Wear proper eye protection	L
	10. Damaged/Sinking Vessel	10. Obey navigation rules and heed weather warnings. Get to safe harbor as soon as possible. Stay with vessel until rescue. Wear PFD.	L
	11. Entanglement in Lines	11. Keep vessel deck clear and properly coil or stow dock lines. Avoid pinch points and stay clear of lines under strain.	L

	12. Lacerations, Cuts, Punctures and Abrasions	12. Inspect deck area and equipment for hazardous conditions and correct before operating. Wear proper Personal Protective equipment (PPE). Have first aid kit readily accessible and know proper first aid treatment.	**L**
	13. Bruises and Broken Bones	13. Keep steering wheel, throttle control and vessel interior as dry as possible. Maintain three point body contact with vessel.	**L**
B) Docking/Alongside Maneuvering	1. Entanglement in Lines	1. Keep vessel deck clear and properly coil or stow dock lines. Avoid pinch points and stay clear of lines under strain.	**L**
	2. Pinch Points	2. Deploy boat fenders. Keep all body parts inside vessel.	**L**
	3. Falls	3. Remain seated or in a stationary position until vessel is stopped. Maintain three points body contact with vessel.	**L**
2. Trailering/Launching Boats	1. Trailering Vessels	1. Drive defensively. Obey traffic laws. Verify trailer is properly connected to tow vehicle and trailer lights are operational. Do not eat, drink, smoke, use cell phone or perform other tasks that interfere with attention to driving.	**L**
	2. Launching/Retrieving Vessels	2. Make sure boat ramp is clear of obstructions and make note of ramp conditions (wet, algae, etc.). Engage 4-wheel drive if necessary. Lower driver's side window, remove seat belt and turn off radio. Prepare the vessel in staging area. Use a spotter when available to back down ramp. Set parking brake when trailer is lowered to proper launch depth. Start vessel engine before disconnecting winch strap being aware of strap tension, pinch points and winch handle. Maintain communication with vehicle operator as well as boat operator understanding signals given.	**L**
3. Vehicle Operations	1. Transportation	1. Drive defensively. Obey traffic laws. Perform walk around of vehicle prior to driving and make sure all lights are operational. Check fluid levels, condition of tires and perform preventative maintenance as needed. Do not eat, drink, smoke, use cell phone or perform other tasks that interfere with attention to driving.	**L**
	2. Vehicle Enters the Water	2. Stay calm, unfasten seat belt and lower window(s) to equalize pressure and offer an escape route. Use automatic center punch to break window if necessary.	**L**
4. Refueling Boats	1. General	1. a) Before fueling: close all compartments, hatches. Turn off electrical system and extinguish any open flames. No smoking. Remove portable fuel tanks from boat b) During fueling: maintain a ground between the fuel nozzle and the gas tank. Fill slowly to avoid spillage. Do not fill tank to brim. Leave room for fuel to expand c) After fueling: Replace fuel cap tightly, open all compartments, hatches. If equipped, run blower motor for four minutes to vent bilge	**L**

5. Using Auto Inflatable PFD's	1. General	1. Employees must be 16 years of age and weigh at least 90lbs to wear this PFD. Employee must have water tested PFD prior to everyday use and must be trained in the use, maintenance, care, storage and inspection as per manufacturer's instructions.	**L**
	2. PFD Worn Improperly or Improperly Assembled	2. Employees must follow manufacturer's instructions for wearing and properly installing re-charge kit. Verify indicator gauge reads "green".	**L**
	3. PFD damaged from storage	3. PFD must be thoroughly inspected by disassembling PFD and manually inflating bladder to check its integrity. Inspect arming mechanism for damage. Any deficiencies must be corrected before the PFD can be put back in service.	**L**
	4. Drowning	4. Employees wearing this PFD must have basic ability to tread water and be physically able to swim. Employee must be trained in the manual operation of this PFD should automatic inflation fail.	**M**
6. Using PFD's	1. General	1. Before use make sure PFD is in serviceable condition and is not ripped or torn and all buckles, zippers or other fasteners are working properly. Make sure PFD is the right size and type for the task at hand and fits snugly.	**L**
7. Self-Rescue	1. General	1. Employees must demonstrate ability to self-rescue themselves back into the vessel by one of four methods: a. Cavitation Plate on vessel engine b. Chin bounce c. Stirrup d. Ladder	**L**
8. Victim Rescue	1. General	1. Employees must demonstrate ability to rescue a conscious and unconscious victim back to the vessel: A. Conscious Victim – use rescue procedure of Talk-Reach-Throw-Go and elevate procedure to the proper step depending on circumstances. B. Unconscious Victim – use any means (throw ring, cargo net, dock lines, reach pole, etc. to get victim astride of the boat. If possible retrieve victim back into boat. If not possible secure victim astride vessel until help arrives.	**M**
9. Classroom Work	1. Eye Strain	1. Provide proper lighting	**L**
	2. Tripping/ Slipping	2. Maintain good housekeeping. Secure any loose cords to floor.	**L**
	3. Electrical Shock	3. Proper grounding and maintenance of equipment. Repair or replace any damaged cords, switches, etc. or remove from service.	**L**
	4. Office Machinery	4. Heed and obey caution signs on machinery. Prevent jewelry, loose clothing and hair from getting caught in machine.	**L**

10. Reserved			

Equipment to be Used	Inspection Requirements	Training Requirements & Competent or Qualified Personnel name(s)
1. Motorboats less than 26' in length with outboard engines. 2. Corresponding trailer matched to the motorboat. 3. Pick-up trucks 4. Safety rescue devices such as throw rings, throw bags, reach poles, ladders, cargo net and lines, first aid kit. 5. Classroom equipment to include: computers, projector and copy machine.	1. Small Boat and Equipment Checklist from ER 385-1-91 2. Small Boat and Equipment Checklist from ER 385-1-91 3. Small Boat and Equipment Checklist from ER 385-1-91 4 & 5 Requirements vary to each particular piece of equipment as outlined in US Army Corps of Engineers Safety Manual EM 385-1-1 or as per manufacturer's instructions	<u>Employees participating in this training must:</u> A. Have completed a NASBLA or equivalent boaters safety education course B. Be able to swim 100 yards with a PFD C. Be able to self-rescue themselves back into the vessel. D. Pass the written exam with a minimum score of 80% E. Be tethered to the kill switch via a lanyard when operating the vessel F. Wear a Type III or better inherently buoyant PFD G. Demonstrate the ability to handle the boat and operate correctly through the maneuvering courses H. Be able to trailer, launch and retrieve the boat I. Demonstrate the ability to correctly dock the boat J. Closed toed and closed heeled shoes will be worn during entire training including all water exercises <u>Boat License Examiners:</u> A. A minimum of two examiners are required to perform the 24 hour motorboat training course B. Must be trained and certified in CPR/First Aid/AED C. Option to use a second lanyard attached to the students kill switch lanyard when student is operating the vessel <u>Qualified Examiners:</u>