British Divers Marine Life Rescue Risk Assessment

Risk Assessment Title: Large whale disentanglement and training

Risk Assessment Date 12/11/21 Risk Assessment Review Date 12/11/23

Risk Assessment Author: M Boon

How this Risk Assessment works

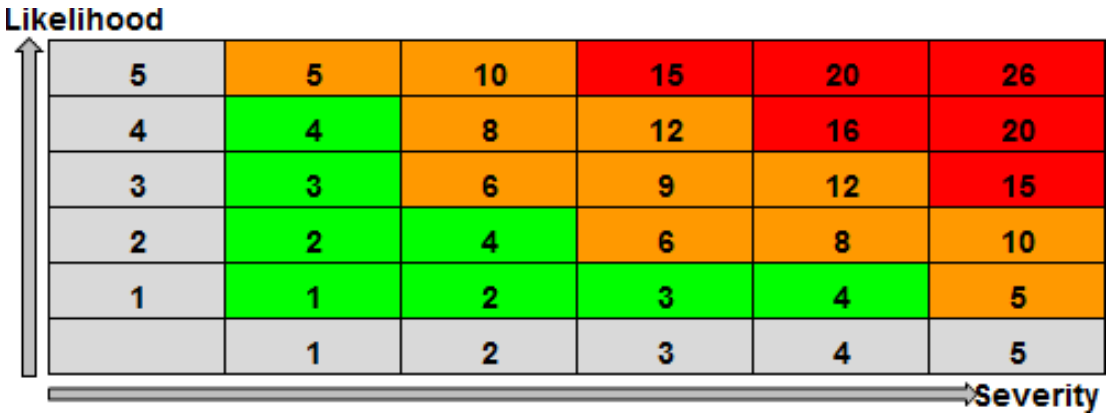
Risk is a combination *of the potential accident SEVERITY* resulting in *death, serious injury, minor injury etc. and the likelihood of that accident* occurring *i.e. very unlikely up to almost certain.*

The risks are calculated using the 5 Gate Risk Matrix below where Hazards are identified and an ***INITIAL RISK*** *is calculated. Control Measures are then put in place to eliminate, or reduce the initial risk and then recalculated as the* ***RESIDUAL RISK****. This residual risk should be considered* ***ALARP (A s L ow A s R easonably P racticable)***

This Risk Assessrnent should be considered as a generic assessment and has tried to take into account as many hazards as can be considered foreseeable within our threshold of operations. Safety is the responsibility of each individual attending an incident and a site specific Risk Assessment should be carried out for each task required to be undertaken.

ALL PERSONNEL MUST FOLLOW CURRENT COVID 19 GUIDELINES, AND HAVE 2 NEGATIVE TESTS PRIOR TO TRAVELING

NUMERICAL VALUE	LIKELIHOOD	SEVERITY
1	Very Unlikely	Minor Injury with no time off work
2	Unlikely	Injury and/or up to 3 days off work
3	Likely	Injury resulting in over 3 days off work
4	Very Likely	Major Injury resulting in long term absence
5	Certain	Death



Task	Hazard	L	S	IR	Risk Controls	L	S	RR
Travelling to/from incident location	Vehicle accident due to:							
	>Other vehicles	2	5	10	Drive defensively	2	3	6
	>Weather conditions	3	3	9	Drive within limits of weather conditions	2	2	4
	>Road conditions	3	4	12	Drive within limits of road conditions	2	3	6
	>Over speeding	4	5	20	Do not exceed speed limit	1	3	3
	>Pedestrians	3	5	10	Be aware of pedestrians	1	5	5
	Breakdown	3	1	3	Ensure vehicle in good condition	1	1	1
	Getting lost	4	1	4	Plan route or use Satnav system	2	1	2

Task	Hazard	L	S	IR	Risk Controls	L	S	RR
Preparing equipment	Back injury due to:							
	>Lifting CRRC	3	3	9	Use minimum of 4 persons + MH techniques	2	2	4
	>Lifting outboard	3	3	9	Use 2 persons to lift motor + MH techniques	2	2	4
	motor	2	1	2	Use correct MH techniques	1	1	1
	>Lifting fuel tanks	3	2	6	Use correct MH techniques	2	1	2
	>Equipment bags	3	3	9	Use 2 hands, don't carry by valve	2	1	2
	>Compressed air cylinders							
	Hand injuries due to:							
	>Using compressed	3	1	3	Wear thick/neoprene gloves	1	1	1
	air	3	3	9	Wear thick or Kevlar gloves	2	2	4
	>Working with knives	2	1	2	Keep fingers clear of pinch points	1	1	1
	>Wichard carabiners	2	1	2	Be aware of pinch points when assembling kit	1	1	1
	>Preparing equipment	3	2	6	Wear grip gloves to avoid rope burns	1	1	1
	>Handling ropes							
	Slipping/tripping:							
	>Equipment	3	2	6	Keep walkways clear of equipment especially near	2	1	2
	>Loose ropes	3	3	9	quay	2	1	2
					Keep ropes tidy and tied up			
	Bodily injury due to slip, trip, fall:							
	>Head injury	2	5	10	Always wear a helmet during LWDT operations	2	1	2
	>Broken/twisted ankle	2	4	8	Wear stout boots, check access & egress routes	1	4	4
	>Broken arms/legs	2	4	8	Be aware of potential slipping or tripping hazards	1	4	4
	Manual handling injuries	3	3	9	Always use appropriate MH techniques	2	2	4

Task	Hazard	L	S	IR	Risk Controls	L	S	RR
Travelling to/from incident location via water	Sea conditions:							
	>Heavy swell							
	>Breaking waves							
	>Wave height							
	>Unpredictable boat movement	5	3	15	Always maintain 3 points of contact when moving on boat	5	1	5
	>Sea sickness	3	1	3	Use anti sea sickness medication	1	1	1
	The boat:							
	>No communications	2	2	4	Ensure secondary VHF radio is available and tested	1	1	1
	>Unpredictable boat movement	5	3	15	Always maintain 3 points of contact when moving on boat	5	1	5
	>Getting lost	2	2	4	Ensure GPS and charts are available and skipper	1	1	1
	>Breakdown	2	2	4	has local knowledge	2	1	2
	>Man overboard	2	5	10	Check that boat has tool kit and is regularly serviced	2	2	4
	>Hypothermia	2	5	10	Always wear lifejacket and check boat has life rings	2	2	4
	>Distress situation	1	5	5	Drysuit or survival suit must be worn	1	3	3
	>Sinking	1	5	5	Ensure boat has in date flare pack on board	1	3	3

					Ensure vessel has life raft			
	Weather:							
	>Wind	4	2	10	Obtain weather forecast prior to departure	2	2	4
	>Fog	3	2	6	Ensure vessel has radar, compass or radar reflector	3	1	3
	>Sunshine	3	2	6	Keep out of direct sunlight, watch for hyperthermia	3	1	3
	>Rain	3	2	6	Be aware of slippery decks and gunnels	3	1	3
	>Ice	3	2	6	Be aware of slippery decks and gunnels, watch for hypothermia	3	1	3

Task	Hazard	L	S	IR	Risk Controls	L	S	RR
Launching CRRC	Manual handling injuries	3	3	9	Use correct MH techniques, get assistance from Level 2s	2	2	4
	Man overboard	2	5	10	Always maintain 3 points of contact and wear lifejacket	2	2	4
	Engine overboard	2	2	4	Ensure that engine is lowered down on a rope with sufficient bodies to secure	2	1	2
	Fuel spill	2	1	2	Ensure tank cap and breather are tightly shut	1	1	1
	Tube leak							
	>Valve	3	1	3	Ensure valve has not frozen or plunger has become stuck	2	1	2
	>Puncture	3	2	6	Keep tubes away from all sharp objects	2	2	4
	Engine breakdown							
	>Fuel starvation	2	1	2	Ensure fuel bulb is primed	1	1	1
	>Fuel contamination	3	1	3	Keep breather valve closed during transport and when on support vessel	1	1	1
	>Rotten fuel	5	1	5	Discard fuel after use	1	1	1
	>Damage to fuel line	2	1	2	Carry spare fuel line and bulb on support vessel	1	1	1
	>Engine seizure	3	4	12	Ensure correct 2 stroke oil mixing used. Ensure fuel is 2 stroke mix	2	2	4
	>Engine flooding	3	2	6	Keep plug socket and wire brush with support vessel to clean spark plugs	2	1	2
	Loss of boat							
	>Towing	3	3	9	Ensure towing bridle is securely attached at both ends	2	2	4
	>General	3	3	9	Ensure bow and stern lines are securely attached	2	2	4

Task	Hazard	L	S	IR	Risk Controls	L	S	RR
Assessing cetacean	Snagging on trailing gear							
	>Engine snagging	5	5	25	Keep engine lock off, do not approach with engine running, lift engine when near whale	2	2	4
	>Standby vessel snagging	5	2	10	Keep standby vessel back at least 400m	2	1	2
	>Human snagging	5	5	25	Keep feet and legs clear of any trailing gear. Always stay in the boat	2	5	10
	Whale roll over							
	>Pulling gear towards CRRC	4	5	20	Always be observant and warn CRRC if gear comes close towards boat	4	2	8
	>Whale crushing CRRC	3	5	15	If whale observed to roll, vacate area immediately until roll has stopped	2	2	4
	Tail flukes							
	>Striking CRRC	3	4	12	Crew to duck below level of tubes	3	2	6
	>Striking LWDT Level 3s	3	5	15	Always watch for tail flukes and wear helmet and PFD	2	2	4
	Pectoral flippers							
	>Striking CRRC	3	4	12	Crew to duck below level of tubes	3	2	6
	>Striking LWDT Level 3s	3	5	15	Always watch for tail flukes and wear helmet and PFD	2	2	4

	Man overboard							
	>Fall on to whale	4	5	20	Maintain tight grip of tube life lines	2	5	10
	>Fall into trailing gear	4	5	20	2nd Level 3 to hold on to Level 3 carrying out assessment over tube	1	5	5

Task	Hazard	L	S	IR	Risk Controls	L	S	RR
Grappling cetacean	Engine snagging	5	5	25	Keep engine off Keep safe distance and approach from 4 or 8 o'clock position Lift engine as soon as grapple has snagged	2	2	4
	Throwing grapple							
	>Grapple striking coxswain	3	5	15	Always throw forward and left Helmets must always be worn	1	2	2
	>Boat puncture	3	3	9	Keep grapple in protective pouch	2	2	4
	>Rope entanglement	3	3	9	Keep rope flaked in bag or bucket	2	1	2
	>Man overboard	2	5	10	Adopt correct throwing posture	1	5	5
	Striking whale	4	3	12	Always throw over the whale	2	1	2
					Throw safe distance behind the tail fluke	2	1	2
	Loosing grapple	3	2	6	Ensure carabiner is attached correctly Keep tight grip of control line Recover as soon as possible	1	2	2

Task	Hazard	L	S	IR	Risk Controls	L	S	RR
Attaching control line and buoys	Nantucket sleigh ride							
	>Rope burn	5	2	10	Always wear grip gloves	2	2	4
	>Limb strain	3	3	9	2nd Level 3 to assist during strenuous operations	2	1	2
	>Fatigue	5	1	5	Swap out Level 3s if required	2	1	2
	>Man overboard	3	5	15	Keep gear and ropes over side of CRRC, do not let lines cross CRRC	1	5	5
	>CRRC damage	3	3	9	Keep control line over double hypalon section on bow tube	2	2	4
	>CRRC bow down	3	2	6	Keep water levels in CRRC to a minimum	2	2	4
	>CRRC flooding	2	2	6	Empty CRRC by use of transom auto ballers in flooding occurs	1	2	2
	>CRRC broach	3	3	9	Release control line if CRRC broaches. Keep crew clear of any lines	2	2	4
	>CRRC capsize	5	5	10	Surface with arm above head in fist. Keep clear of any floating lines	2	3	6
	>Grapple detaching	4	4	8	Always wear helmet, duck below tube level if grapple detaches	2	2	4
	Hauling in gear							
	>Rope burn	5	2	10	Always wear grip gloves, do not let rope slip through hands	2	2	4
	>Rope entanglement	4	5	20	Keep hauled gear outside of CRRC except for section where buoys to be attached	1	5	5
	>Snagging on CRRC internals	3	5	15	Keep hauled gear outside of CRRC except for section where buoys to be attached	1	5	5
	>CRRC damage	3	2	6	Keep gear over double hypalon patch on CRRC bow tube	2	2	4
	Tying loop in gear							
	>Trapping hand/finger	2	5	10	Do not allow fingers to enter any loops or knots in trailing gear	1	5	5
	>Human entanglement	2	5	10	Keep body parts clear of rope entanglements in any hauled gear	1	5	5
	Attaching/deploying buoys							
	>Restricted deck space	5	2	10	Only keep required equipment on CRRC. Keep remaining kit on support vessel	3	1	3
	>Manual handling strain	2	3	6	Use correct MH techniques. Get assistance if required	1	1	1

	>Struck by exiting buoy	3	3	9	Throw attached buoys over side of CRRC, do not allow to exit over bow	1	3	3
	>Rope entanglement	3	3	9	Keep all ropes coiled and neatly stowed	2	2	4
	>Hand injury by wichard carabiner	2	1	2	Wear grip gloves and avoid pinch points	1	1	1
	>CRRC entanglement	3	5	15	Keep all ropes and line clear of snagging points on CRRC including engine and internal fittings	1	5	5
	>Human entanglement	3	5	15	Keep buoy and control line clear of CRRC crew.	1	5	5
	>Man overboard	2	5	10	Avoid coils on deck that could snag feet Wear helmet and PFD, deploy buoys over side, maintain tight grip of life lines on CRRC	1	3	3

Task	Hazard	L	S	IR	Risk Controls	L	S	RR
Cutting whale free	Sharps hazard							
	>Cutting fingers	3	4	12	Wear thick gloves and don't check for sharpness	2	2	4
	>Puncturing boat	3	3	9	Keep knives in protective pouch until required	2	3	6
	Approaching whale							
	>Engine entanglement	5	5	25	Keep engine lock off and approach for 4 or 8 o'clock positions. Life engine near gear	2	2	4
	>Spooking whale	5	5	25	Avoid sudden noise, gear changes or manouvers with CRRC	2	2	4
		3	5	15	Abort approach and wait until situation has settled	2	2	4
	>Whale roll over	3	5	15	Do not approach whale if fluke slapping, wait until situation has settled	2	2	4
	>Whale tail flukes	3	5	15	Do not approach whale if fin slapping, wait until situation has settled	2	2	4
	>Whale pectoral fins							
	Use of poles and knives							
	>CRRC puncture	5	3	15	Keep knife clear of CRRC tubes. Attach float to pole and discard overboard for recovery	2	3	5
	>Striking CRRC crew	3	5	15	Watch pole swing. Always wear helmets	2	2	4
	>Man overboard	3	5	15	2nd Level 3 to hold PFD harness of L3 cutting whale	2	2	4
	>Change in whale behaviour	3	5	15	free Stop attempt, back off and reassess	2	2	4
	>Fatigue	5	3	15		2	1	2
	>Injuring whale	3	3	9	Swap over L3 if required. Get assistance as required.	2	2	4
	>Losing pole	3	2	6	Keep point away from whale's skin and make slow controlled movements Attach float and rope prior to use for later recovery if discarded	2	2	4

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Preparing equipment	Back injury due to:							
	>Lifting CRRC	3	3	9	Use minimum of 4 persons + MH techniques	2	2	4
	>Lifting outboard motor	3	3	9	Use 2 persons to lift motor + MH techniques	2	2	4
	>Lifting fuel tanks	2	1	2	Use correct MH techniques	1	1	1
	>Equipment bags	3	2	6	Use correct MH techniques	2	1	2
	Hand injuries due to:							
	>Working with knives	3	3	9	Wear thick or Kevlar gloves	2	2	4
	>Wichard carabiners	2	1	2	Keep fingers clear of pinch points	1	1	1
	>Preparing equipment	2	1	2	Be aware of pinch points when assembling kit	1	1	1
	>Handling ropes	3	2	6	Wear grip gloves to avoid rope burns	1	1	1
	Slipping/tripping:							
	>Equipment	3	2	6	Keep walkways clear of equipment especially near	2	1	2
	>Loose ropes	3	3	9	quay	2	1	2
					Keep ropes tidy and tied up			
	Bodily injury due to slip, trip, fall:							
	>Head injury	2	5	10	Always wear a helmet during LWDT operations	2	1	2
	>Broken/twisted ankle	2	4	8	Wear stout boots, check access & egress routes	1	4	4
	>Broken arms/legs	2	4	8	Be aware of potential slipping or tripping hazards	1	4	4
	Manual handling injuries	3	3	9	Always use appropriate MH techniques	2	2	4