

Upper Forth Boat Club



Risk Assessment

Boat Launching / Recovery Risk Assessment

Author	Revision	Date
WR	D2: Adopted for Issue	17/04/15

TABLE OF CONTENTS

1.0 Summary..... 3

2.0 Risk Ranking 3

3.0 Roles & Responsibilities..... 3

 3.1 Engine / Winch Operator 3

 3.2 Banksman 3

 3.3 Pushers..... 3

 3.4 Traffic / Access Controllers..... 3

 3.5 Boat Owners 4

4.0 Boat movement Procedure..... 4

 4.1 Winch Preparation 4

 4.2 Manually Move Boat to Traverse Rails 4

 4.3 Manually Move Traverse Bogie to Slipway Rails 4

 4.4 Winch Boat Down Slipway 5

 4.5 Boat Safety checks..... 5

 4.6 Recover Winch Gear..... 5

 4.7 Winch Boat up Slipway 5

5.0 Risk Assessment Criteria 6

6.0 Risk Assessment Table 7

Boat Movement Procedure

1.0 SUMMARY

The Upper Forth Boat Club is situated on the south shore of the River Forth within the town of Bo'ness. Part of the club activities involves launching and recovering boats using the slipway adjacent to the boat yard. This is achieved by means of a bespoke railway system installed within the yard and down the slipway.

This risk assessment provides a record of the boat launching and recovery activities and details the risk control and mitigation measures in place with which to ensure that the activities detailed can be carried out safely and without injury to boatyard personnel and members of the public who may be present.

2.0 RISK RANKING

The risk criteria described in section 5.0 is based on a ranking scale of 1 to 15 where level 1 is considered as a trivial risk rising to level 15 – almost certain fatality.

As with all such assessments of risk, the most likely and credible hazard effect and the probability of the hazard effect being realised are subjective and all personnel involved in the assessment must have the opportunity to review and suggest modifications to the assessment prior to approval.

The actual hazard and risk criteria included herein is generic and must be confirmed as adequate and suitable for the hazards and risks involved with the task.

3.0 ROLES & RESPONSIBILITIES

In order to properly control all boat movements in a safe manner it is necessary to assign duties to the team of personnel involved. The duties are listed below.

1. Engine / winch operator
2. Banksman
3. Pushers
4. Traffic / access control
5. Boat owners

3.1 Engine / Winch Operator

The responsibilities of the engine / winch operator are to operate the winch gear machine in accordance with the signals received from the banksman and to keep a lookout for any hazards while operating the machinery. The winchman must ensure that any personnel not trained in the operation of the engine / winch assembly are prevented from entering the winch enclosure area.

3.2 Banksman

The banksman shall be in control of all boat movements, either by winching or by manual pushing / pulling. The banksman shall have a distinctive high visibility waist coat (or similar) in order that he may be readily identified by other members of the boat movement team and members of the public. The banksman shall be responsible for ensuring that any movement of boats is properly controlled and that all personnel involved have received a safety brief on how to avoid the hazards associated with the boat movement activities. During the safety brief he shall assign personnel with their official duties, roles and responsibilities as described herein. He shall be responsible for ensuring that the traverse bogie is suitably chocked in position prior to moving any boat bogie on or off the traverse bogie. Similarly, he shall ensure that the boat bogie is suitably chocked onto the traverse bogie prior to commencing movement of the traverse.

3.3 Pushers

The pushers are defined as those personnel who will take directions from the banksman in order to move boats around the yard and slipway safely.

3.4 Traffic / Access Controllers

Traffic / access controllers shall be responsible for ensuring that boatyard personnel and members of the public are kept away from the potential hazards present until such times as the hazard has been removed. The controllers will be responsible for deploying danger tape, traffic cones, etc. and shall also ensure that line of sight is maintained between banksman and winch operator. The controllers shall also keep a lookout while moving boats to ensure that any overhanging masts or other equipment do not come into contact with any other boats or yard equipment.

Boat Movement Procedure

3.5 Boat Owners

Preparation of the boat for moving from berth to the slipway involves several key activities and these may differ for each boat in the yard. However, there are several generic activities that must be carried out by each boat owner in order to safely move boats as listed below.

1. Ensure there is no loose equipment or materials on board that could be displaced and injure personnel or damage other boats should they come loose or be dislodged during boat movements.
2. Examine bogie structure and wheels to ensure there are no faults such as corrosion or damage that have weakened the bogie and may present a risk to personnel.
3. Test steering gear and propulsion systems to be used after launching.
4. Ensure sufficient number of personnel available to safely move and launch boat.
5. Ensure lifejackets are available for any assistant crew members.

Boat owners must be note that the UFBC Committee discourages children from being aboard boats during boat movement activities. Children are welcome within the yard provided that they are properly supervised by the boat owners but they will not be allowed to participate in any boat movement activities. Children must remain at or within the clubhouse or outside the safety tapes at the slip way at all times.

4.0 BOAT MOVEMENT PROCEDURE

There are several distinct steps involved in moving a boat from the yard and down the slipway as noted below.

1. Winch preparation
2. Manually move onto the traverse rails
3. Manually move to the slipway rails
4. Winch down the slipway
5. Check boat for leaks while still attached to the bogie
6. Recover winching gear and bogie

4.1 Winch Preparation

Prior to using the winch, it is necessary for the winchman to carry out some essential checks as listed below.

1. Ensure engine warmed up and running smoothly and reliably before commencing.
2. Examine all winch components for wear or damage that may have occurred since last usage of the winch. This includes gears, brakes, wire ropes, shackles, wire rollers. It is anticipated that the services of an assistant will be required to play out the wire rope for inspection purposes prior to commencing.

4.2 Manually Move Boat to Traverse Rails

Once the initial boat and winch safety checks have been completed the boat may be moved to the traverse rails. This is achieved by removing wheel locks and manually pushing / pulling the boat from its berth on its bogie. The banksman shall direct and co-ordinate all such movements and he shall ensure that the traverse bogie is in place and suitably chocked prior to moving the boat bogie onto it.

The traffic / access controllers shall ensure that there are no personnel (or members of the public) ahead of the boat and traverse bogies during movements in order to ensure personnel cannot be crushed and run over.

4.3 Manually Move Traverse Bogie to Slipway Rails

As described in section 3.4, the traffic / access controllers shall ensure that there are no personnel ahead of the boat and traverse bogies during movements in order to ensure personnel cannot be crushed and run over.

Once in place at the slipway rails the banksman shall ensure that the traverse bogie is adequately chocked in position. He shall also ensure that the winch cable is correctly attached to the bogie with suitable shackles prior to commencing winching operations and removing the boat bogie chocks.

Boat Movement Procedure

4.4 Winch Boat Down Slipway

The banksman shall co-ordinate all boat movements down the slipway. Winching shall not commence until the traffic / access controllers have secured the area and closed the adjacent road. On commencement of winching the pusher team must be aware of the need for a co-ordinated approach and shall follow the instructions of the banksman without impeding the communication line between the banksman and the winch operator.

Pushers should be aware of the need to keep the winch rope taut at all times. This means keeping a pushing force on the bogie until it has definitely cleared the “humps” outside the yard gate.

To prevent wear on the winch cable by dragging along the ground several rollers may be deployed between the winch and the boat bogie as the boat is winched down the slipway. The rollers are placed between the rope and the ground while the boat is moving down the slipway. It is considered a greater risk to stop bogie midway to deploy the rollers due to loadings on the winch mechanism. To enable safer insertion of the rollers a means of raising the winch rope mat be deployed without actually requiring hands on the rope. A chain or sling may be deployed under the rope and then lifted by one person either side while another person inserts the roller underneath the rope.

4.5 Boat Safety checks

While the boat is still attached to the bogie it is prudent for boat owners to confirm that boat is seaworthy. The following minimum checks are recommended:

1. Check for leaks below the waterline
2. Confirm engine starts and forward / reverse gears are selectable
3. Confirm there are no trailing lines in the water that could foul the propeller
4. Confirm steering gear is functioning correctly

4.6 Recover Winch Gear

Once the boat has been successfully launched the bogie can be winched back up the slipway and into the yard once again. The same procedure applies to all bogie movement as previously described.

4.7 Winch Boat up Slipway

This operation is carried out exactly as described for winching down the slipway with one key difference: removing the rope rollers.

When a boat is being recovered from the water and being winched up the slipway the rollers are removed while the bogie is moving. The rollers shall be removed as soon as possible as the bogie travels up the slipway to maximise the time and space available for the person to get close to the roller and remove before the bogie reaches that position. It is critically important that this operation is completed carefully as it represents one of the greatest hazards associated with the whole operation. If the person were to become entrapped the possible outcome is a fatality. The more likely situation would be a sudden stop to winching operation midway up the slip (greatest load on wire rope), potentially causing an increased and sudden load on the winch and wire leading to failure of either. This could then lead to a lifeboat launch, potentially dragging the person down the slip or being injured from the parted wire rope.

The person removing the roller must do so without falling or becoming entrapped / tangled with the roller / rope. If any issues are encountered with this operation, then winching shall be stopped immediately by ANYONE shouting the STOP command.

Risk Assessment Criteria

5.0 RISK ASSESSMENT CRITERIA

Hazard Effect (HE)

Personal Injury	Property Damage	Environmental Impact	HE Rating
Fatality	Major Loss Loss: > 2 weeks	Total Loss of Containment. Public affected. Assistance required from external agency.	A
Likely Permanent Disability	Significant Damage Loss: 1 to 2 weeks	Significant Loss of Containment. Public not affected. Assistance required from external agency.	B
Hospital Stay	Moderate Damage Loss: 2 days to 1 week	Significant Loss of Containment. Workplace Affected. Assistance required from external agency.	C
Lost Time Injury, Medical Treatment, Onshore Treatment by Doctor	Minor Damage Loss: 1 to 2 days	Minor Loss of Containment. Workplace Affected. Production Loss.	D
Simple On/Offshore First Aid	Insignificant Damage Loss: < 1 day	Slight Loss of Containment. Workplace Affected. No Production Loss.	E

Probability (P)

Likelihood of event occurring and resulting in the specified Hazard Effect	P Rating
Will occur nearly every time.	High (H)
Will occur sometimes.	Medium (M)
Will occur hardly ever.	Low (L)

Residual Risk (R)

HE	P	R	CONTROL ACTIONS
A B C	H H H	15 14 13	Immediate action, task must not proceed , serious loss potential. Task should be redefined or further control measures put in place to reduce risk. These controls again must be subject to a full assessment and accepted before the task may commence.
A B C D	M M M H	12 11 10 9	Task may only proceed following direct authorisation from Senior Manager following consultation with any specialist personnel and full assessment team. Wherever possible the task should be redefined to take account of the hazards involved or the risk should be reduced further prior to the task commencing.
A B C	L L L	8 7 6	The task may proceed, however, only under strict supervision and monitoring. The team must revisit all areas of the assessment to see if risks may be reduced further before the task is allowed to proceed.
D E E D	M H M L	5 4 3 2	Acceptable measures, however, review to see if risk can be reduced still further.
E	L	1	Acceptable level of risk – no need to consider further measures. Review to ensure that level of risk does not increase.

Risk Assessment Table

6.0 RISK ASSESSMENT TABLE

REF NO. UFBC_RA_01	SITE: Upper Forth Boatyard & Slipway	DEPARTMENT/LOCATION: N/A			NO. PERSONS INVOLVED: 5+				
ACTIVITY: Boat Launching / Recovery		METHOD: As described in Section 4.							
HAZARDS IDENTIFIED	HAZARD EFFECT Type of injury/damage or environmental impact	RISK EVALUATION Refer to evaluation forms			CONTROL MEASURES (including existing & proposed)	ACTION	RESIDUAL RISK (R)		
		HE	P	R		PERSON RESPONSIBLE	HE	P	R
Entrapment.	Fatality. Significant damage.	A	L	8	No public access to boat movement areas. No personnel in front of bogies while moving. Pre-use safety inspection of winch gear and wire rope. Structural integrity of bogies to be maintained to prevent failure during boat movement. Steel toe cap footwear to be worn by all personnel.	Access / traffic controllers. Access / traffic controllers. Winchman / Banksman. Boat Owners. All	E	L	1
Falls from height.	Fatality.	A	L	8	Boat owners to access boats only while chocked. Loose materials / equipment (trip hazards) to be secured / removed prior to boat movement / access. No children on board during boat movements.	Banksman. Boat owners. Boat Owners.	A	L	8
Fall of objects / materials from height.	Lost time injury.	D	M	12	Loose materials / equipment (trip hazards) to be secured / removed prior to boat movement / access.	Boat owners.	E	L	1
Slips, trips, falls.	Lost time injury.	D	M	5	Loose materials / equipment (trip hazards) in traverse area and slipway to be removed prior to boat movement activities. Sturdy footwear to be worn by all personnel	Banksman. All personnel.	E	M	3
Manual handling.	Lost time injury.	D	M	5	Co-ordinated boat movements. Safe / adequate number of pushers on duty to move boat. (Determined by experience / committee estimates.)	Banksman. Boat owner	D	L	2
Use of machinery.	Fatality.	A	M	12	Winch man trained for safe operation of winch. No access to non-trained personnel in winch area (including members of public). Guarding to be installed around machinery part that	Commodore / committee. Winch man / Banksman Commodore / committee.	E	L	1

Risk Assessment Table

					can cause danger of entrapment. Pre-use safety inspection of winch gear and wire rope.	Winch man / Banksman			
Noise.	Permanent disability.	B	M	11	Ear plugs to be worn by winch man.	Winch man.	E	L	1
Adverse weather / boat toppling (crushing). Adverse weather (lightning)	Fatality. Significant damage.	A	M	12	No public access to boat movement areas. No personnel in front of bogies while moving. Boats adequately secured to bogies. Bogie safety examination prior to movement. Bogies chocked to prevent unintended movement. No boat movements during thunderstorms.	Access / traffic controllers. Access / traffic controllers. Boat owner / Banksman Boat owner / Banksman Banksman. Banksman.	E	L	1
Operation of vehicles.	Fatality. Significant damage.	A	L	8	No vehicular movements on slipway or in boatyard during boat movements.	Banksman.	E	L	1
Drowning	Fatality	A	L	8	Lifejackets to be worn by all personnel going afloat.	Boat owners / assistants.	D	L	2

GENERAL COMMENTS :

1. The risk reduction calculated and shown in the residual risk column assumes that all listed actions are in place.
2. Some actions have greater effect on residual risk ranking than others. Any changes to the risk reduction measures implemented will require the overall risk reduction to be re-evaluated. The greatest weighting factor is associated with those control and mitigation actions which proactively prevent an incident occurring. Actions such as hazard awareness training, operations and maintenance procedures for high risk activities and safety procedures will bring the greatest benefit in terms of safety improvement and assurance.

	POSITION	SIGNATURE	DATE
COMPLETED BY:			
William Rose	Secretary	<i>William Rose</i>	17/04/2015
REVIEWED BY:			
Alex Fernie	Vice Commodore	<i>Alex Fernie</i>	17/04/2015
APPROVED BY:			
Paul Shave	Commodore	<i>Paul Shave</i>	17/04/2015