



A. Preparation before using the winch

1. Make sure the total weight of the boat and trolley are below the safe working loading of the machine. (2 tons)
2. The machine can only be used when at least three operators are on duty, who are the leader, winch operator and trolley controller.
3. All the operators can only operate the machine provided that they are approved by HKUST WSC coordinator and fit for the following requirements:
 - 3.1 Finished the winch operation training by HKUST WSC (see attachment 1)
 - 3.2 Registered as a winch operator
 - 3.3 Read and familiar with this user manual
4. Operating tools, working avenue and description of working procedures (see attachment 2)
 - 4.1 Figures of the operating tools
 - 4.2 Work location of the operator
 - 4.3 Description of the work of the operator
5. Outfit of the operator :
 - 5.1 Operator must wear dry clothes and heel-toe covered shoes;wrist should not be covered by the sleeves and shoes heel should not be covered by trousers leg.
 - 5.2 All neck accessories are forbidden, including necklace, scarf and tie.
 - 5.3 Protecting gloves must be putting on before handling or pulling the wire.

B. Reminders of the winch operation.

1. Only qualified leader, winch operator* and boat or trolley controller are permitted to use the winch machine.
2. Operator must check that all parts of the machine are joined correctly and the wire hook is already locked to the trolley before the operation.
3. Make sure there aren't any people or barriers in the wire working area during the operation.
4. Make sure there aren't any people standing behind the boat when loading the boat along the slip way to the sea. .
5. If any parts of the winch are damaged or not functioned e.g. wire is damaged or wire hook is not working, stop the operation immediately and inform the coordinator to arrange repairing ASAP. DO NOT open the electrical box or the cover case to do any checking.
6. Press the emergency button and stop the operation for emergency cases. (See attachment 2)
7. Operator should avoid doing other work during the operation.



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8. Operator should not touch the electrical box or motor with wet hands or body.
9. Use fresh water to clean the wire if it is wet by seawater.
10. The Winch storehouse must be locked when it is not in use and the key must be kept by the coordinator.

C. Emergency contacts

Security Office of the Hong Kong University of Science and Technology:

2358-6565

Mr. Brian Chan (Coordinator of HKUST Water Sports Center)

2358-6108/9033-0288

**Winch operator: Water Sports Center will provide an assigned winch operator and will depend on situations and experiences, assign other suitable candidates to be the winch operator.*



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Attachment 1

Winch operation training of HKUST WSC

- **Aim:**
To provide candidates with basic knowledge to operate the winch of the WSC. After the training, candidates should be able to have adequate knowledge and technology, pass both the exam and practical training test to meet our requirements.

- **Course outline:**
 1. Water Sports Center will authorize a specialist to explain the tool, user manual, working positions, winch usage procedures and safety rules.
 2. Candidates will experience the winch operating procedures under the instruction of our assigned specialist.

- **Test:**
 1. Written test
Multiple choices
 2. Practical test
Candidates need to finish the boat launching and landing procedures by using the winch machine without any instructions.





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Attachment 2



A. Figures of the operating tools

Tool	Figure
Storage place of the winch machine	 A photograph showing the exterior of a large, double-door metal cabinet. The cabinet is situated outdoors under a roof structure. To the right of the cabinet, an orange lifebuoy is mounted on the wall. The ground in front of the cabinet is concrete.
Winch machine	 A photograph showing the interior of the metal cabinet. A green winch machine is mounted on a wooden board supported by two red metal legs. The winch has a large spool of white rope. To the left of the winch, there is an electrical control panel with a red emergency stop button and a yellow warning light. A black cable runs from the panel to the winch. The floor is concrete.



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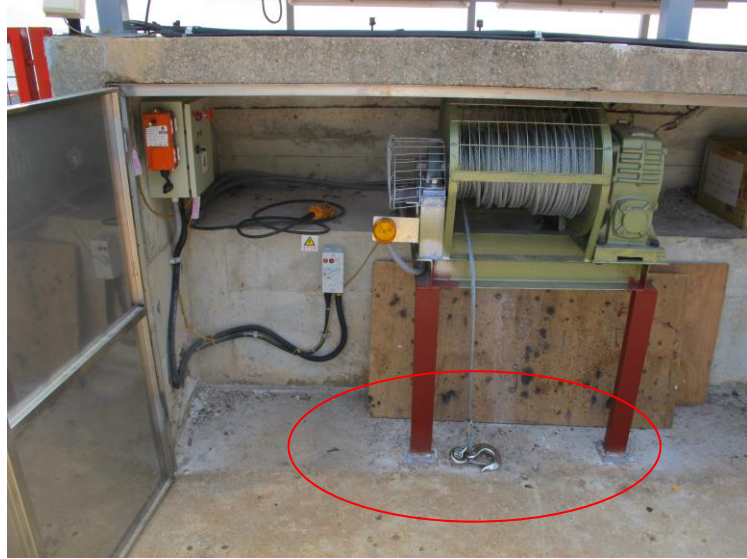
<p>Power source panel in the winch machine storeroom</p>		<p>off</p> <p>on</p>
<p>The control device of the winch machine</p>		<p>Release the wire</p> <p>Collect the wire</p>



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Wire and wire hook





Emergency button





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<p>Wire supporting shelf</p>	
<p>Red gate next to the seafront pier</p>	



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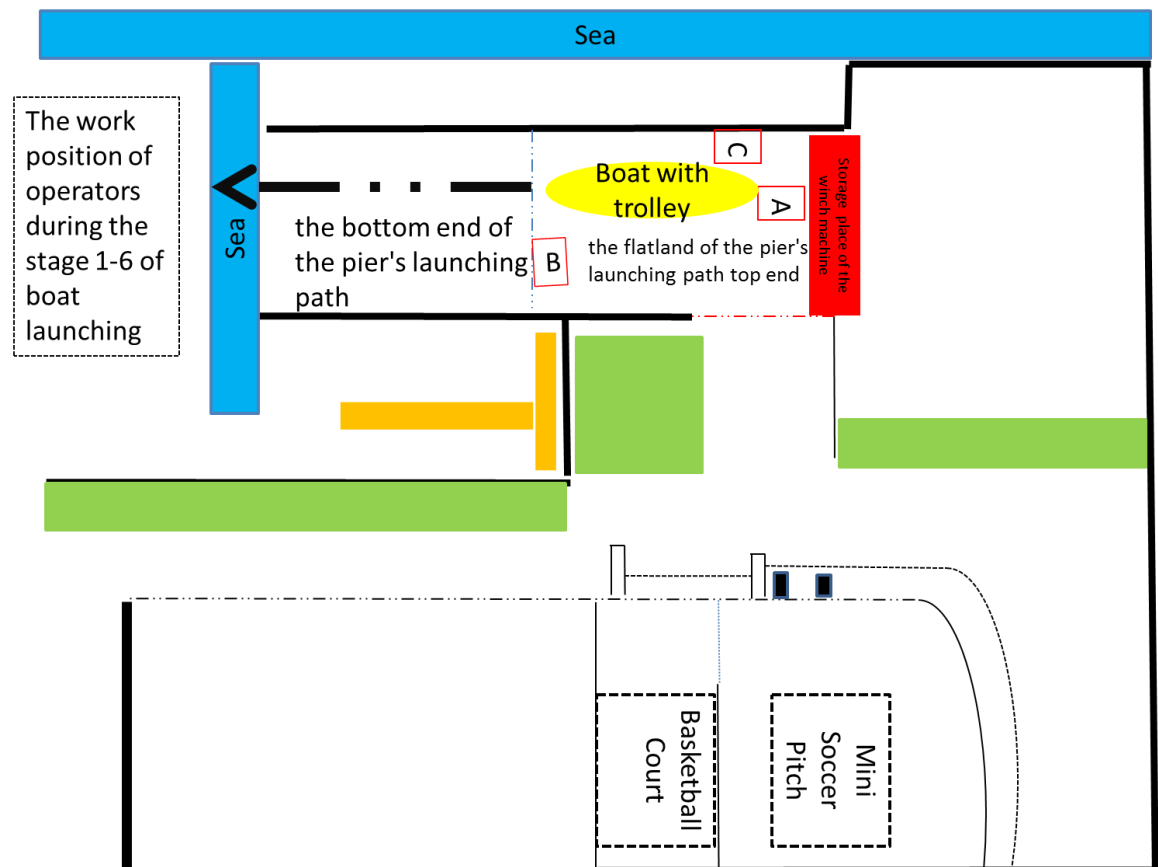
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B. Work location of the operators

B1. This user manual will use the following codes to represent different roles of the operators

Official	Code
Winch Operator	A
Leader	B
Trolley controller	C

B2(a) The work position of the operators during the stage 1-6 of boat launching

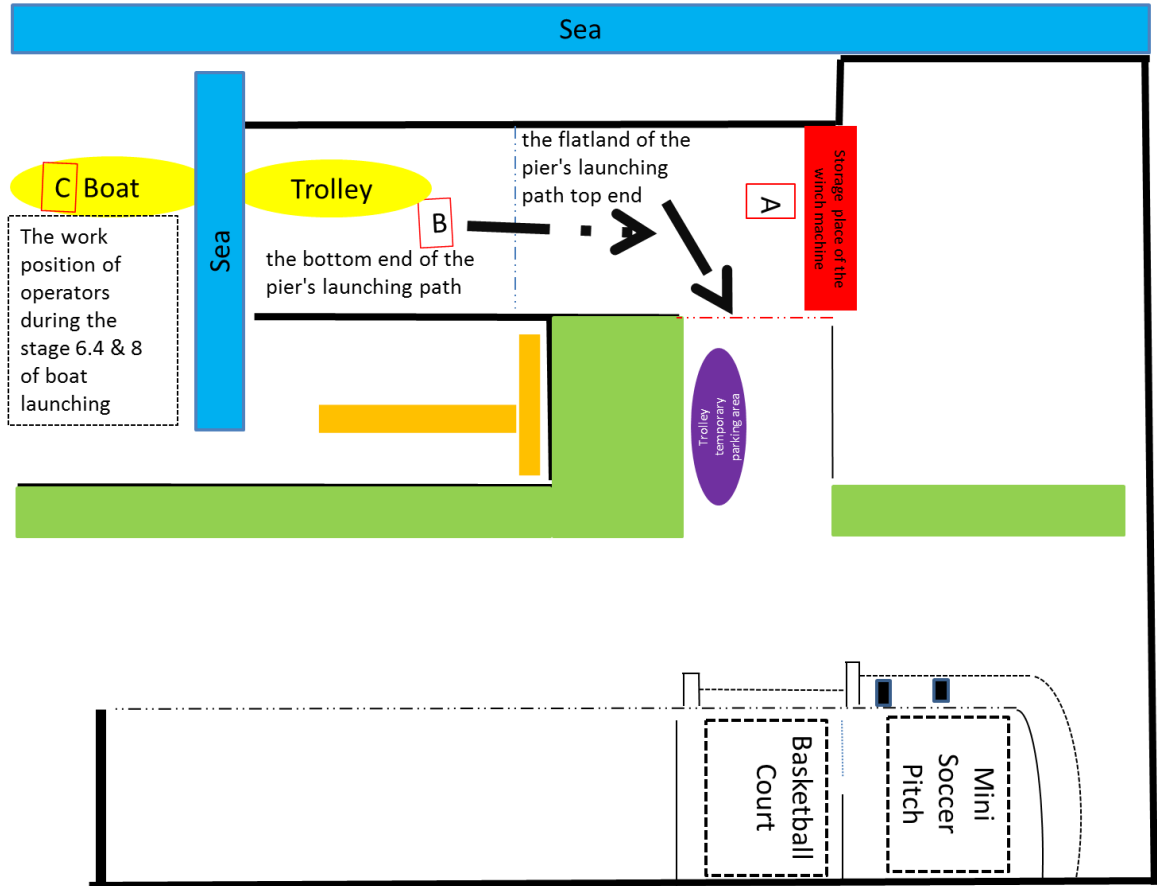




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B.(b) The work position of the operators during stage 6.4 and 8 of boat launching

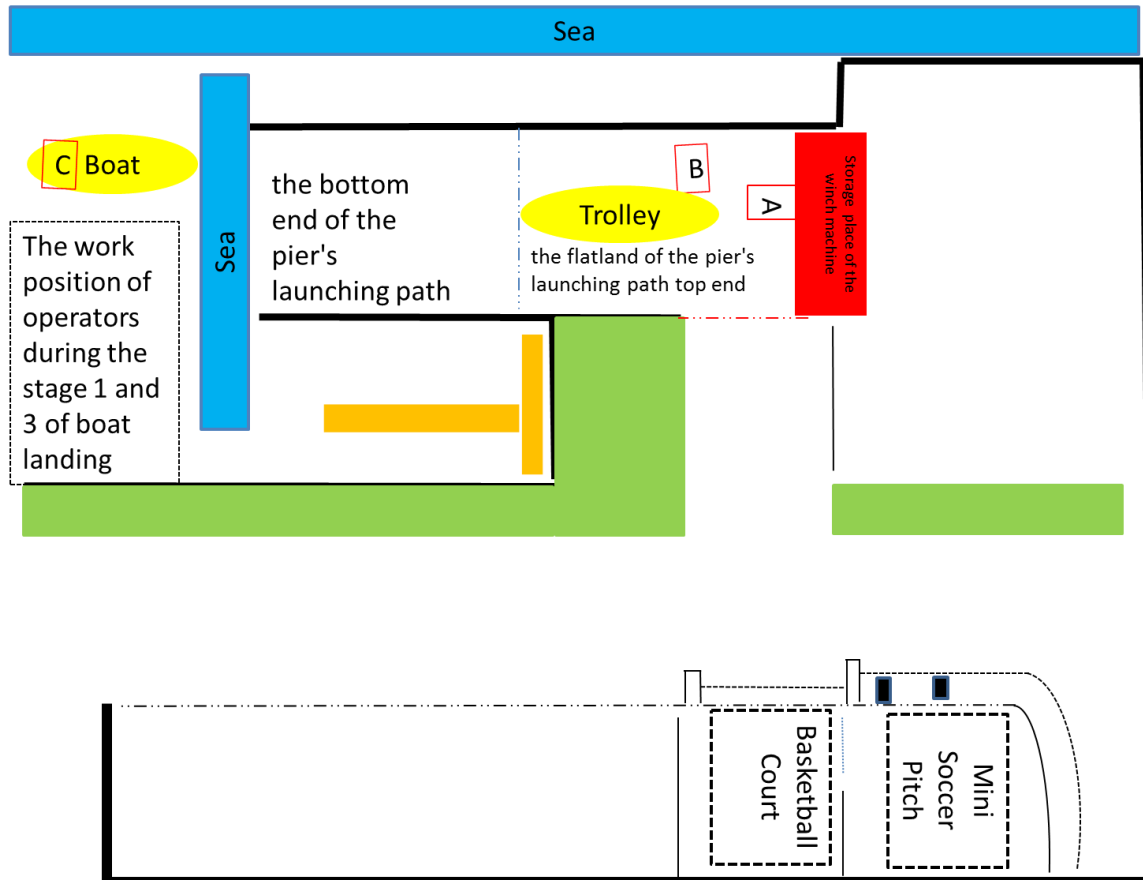




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B.(c) The work position of operators during the stage 1 and 3 of boat landing

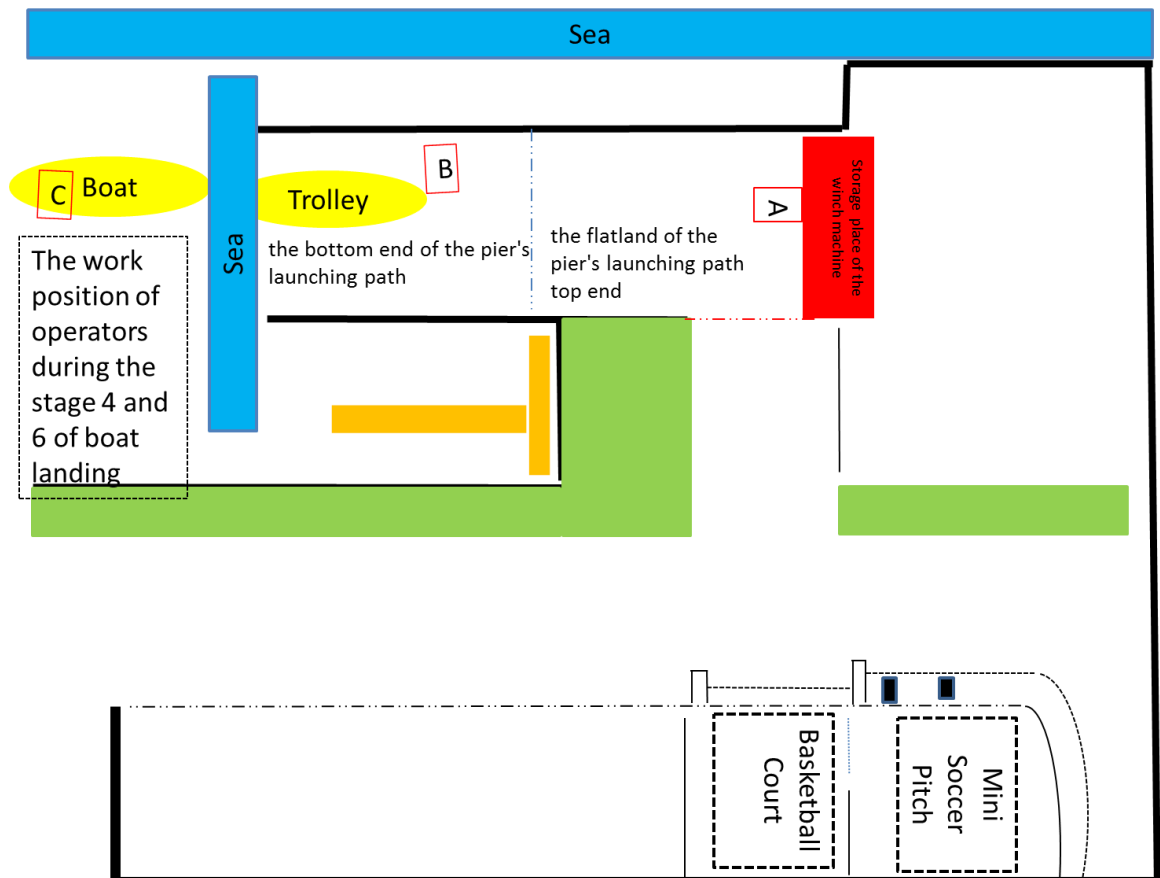




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B (d) The work position of operators during stage 4 and 6 of boat landing

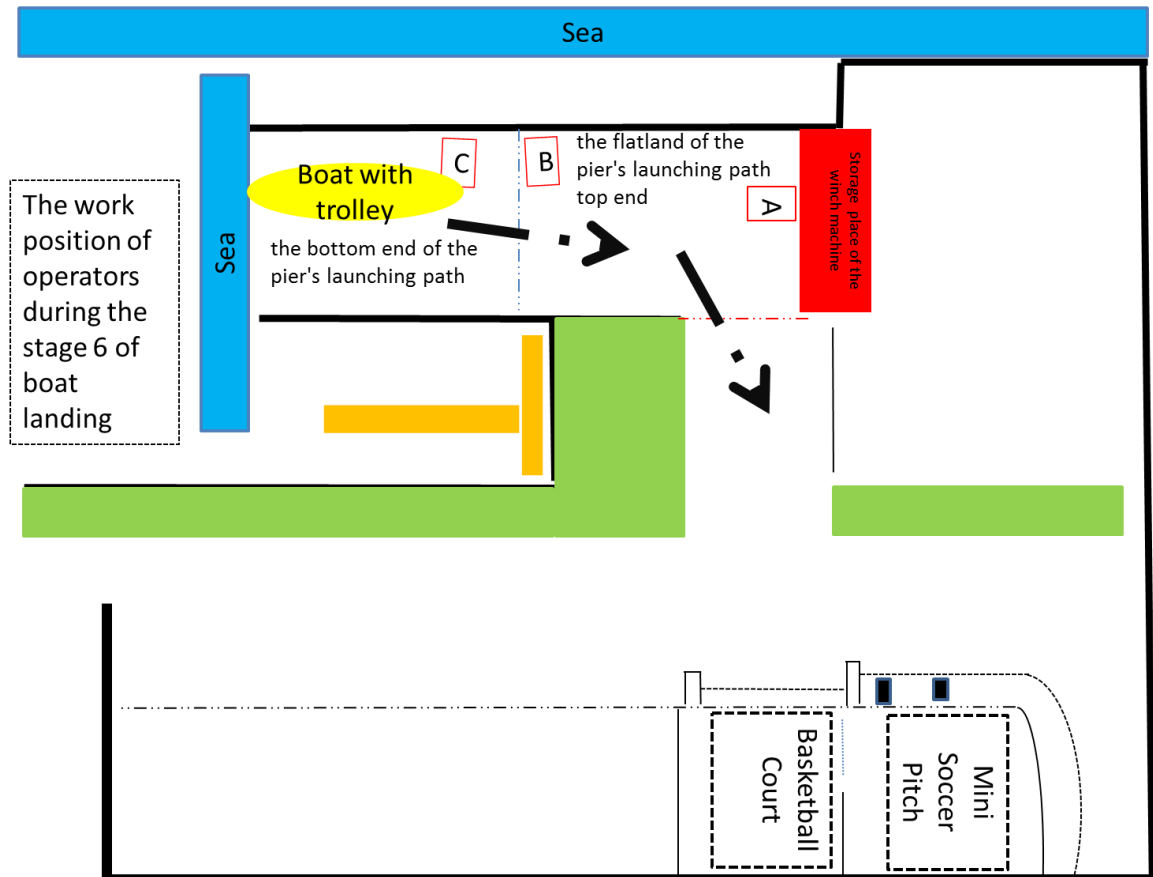




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B. (e) The work position of operators during stage 6 of boat landing









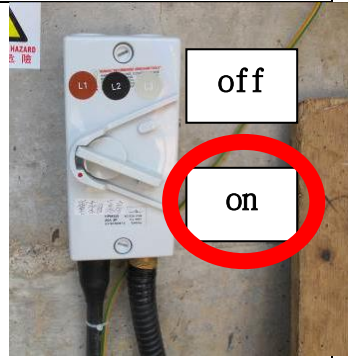
B3. Description of operator's working procedures



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B3(a) Boat Launching
Stage 1

Step	Description	Figure
Down 1.1	(A) open the storeroom and lock the door at the opening position to avoid it close and affect the operation.	   
	(C) move the boat with trolley to the flatland at the top end of the launching path.	
Down 1.2	(A) turn on the main power button in the winch storeroom.	 



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Down 1. 3	After (C) dragged the boat with trolley back to pier, (A) should close the red gate near the sea.	
Down 1. 4	(A) get ready with the winch control	
Down 1. 5	(A) turn on the machine and release the wire under the instruction of (B)	




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Down 1. 6	(B) drag the hook all the way to the trolley then give signal to assist (A) to stop the machine.	
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Down 1. 7	(B) put the wire shelf on the launching path top end, in order to lift up the wire and avoid friction to the concrete surface while pulling.	
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Down 1. 8	(B) shout loud to remind other people not to enter into the operation area.	
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	<p>(C) buckle the wire hook tightly to the metal ring at the end of the trolley.</p>	
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Stage 2

Step	Description	Figure
<p>Down 2. 1</p>	<p>(A) and (C) wait for (B)'s signal Signal shall be given to (A) and (C) after (B) make sure no other people in the operation area.</p>	

Stage 3

Step	Description	Figure
<p>Down 3. 1</p>	<p>(B) give signal to (A) to turn on the machine</p>	
<p>Down 3. 2</p>	<p>(A) again remind other people not to enter the area, then turn on the machine and release the wire under the instruction of (B)</p>	
	<p>(C) control the downward direction of trolley.</p>	



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Stage 4

Step	Description	Figure
Down 4.1	(C) indicate (B) and (A) to stop the machine after the trolley is on the water.	
Down 4.2	(C) indicate (A) to stop after confirming the trolley is on the water.	
Down 4.3	(A) stop running the machine as (B) commanded.	

Stage 5


Step	Description	Figure
Down 5.1	(A) wait for (B)'s signal and make announcement to remind other people not to enter the operation area while running the winch machine.	
	(A) make sure the wire shelf is running smoothly.	
	(B) walk next to the boat and trolley after the machine is stopped.	
	(B) stabilize the position of boat and trolley to avoid the sway of the sea.	
	(C) remove the string which tight the boat and the trolley.	





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Down 5. 2	(C) drive the boat off from the trolley.	
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Stage 6

Step	Description	Figure
Down 6. 1	(B) make sure the wire hook is buckle with the trolley.	
Down 6. 2	(A) once again make announcement to remind other people not to enter the operation area.	




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Down 6. 3	(A)turn on the machine and collect the wire under (B)'s instruction.	
Down 6. 4	(B) control the upward direction of trolley.	

Stage 7

Step	Description	Figure
Down 7. 1	When the trolley reached the end of the launching path, (B) give signal to (A) to stop the machine.	




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<p>Down 7.2</p>	<p>(A) give signal to remind other people not to enter the operation area and stop the machine under (B)'s instruction.</p>	
<p>Down 7.3</p>	<p>After (B) removed the wire from the shelf and put it back next to the machine storeroom.</p>	
<p>Down 7.4</p>	<p>(B) remove the wire hook from the trolley</p>	



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Down 7.5	(B) give signal to (A) to turn on the machine and collect the wire.	
Down 7.6	(A) turn on the machine and collect the wire according to the instruction of (B)	


Stage 8

Step	Description	Figure
Down 8.1	(A) lock the storeroom after turning off the machine and power button.	
	(B) open the red gate	



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Down 8.2	<p>(B) move the trolley to the assigned parking area.</p> <p>(A) assist (B) to move the trolley to the assigned parking area.</p>			
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B. Boat landing


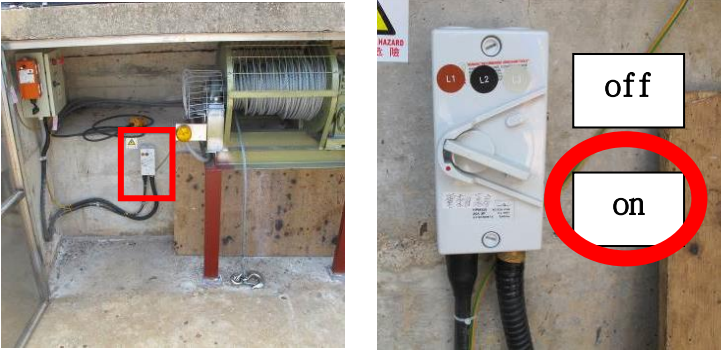

Stage 1

Step	Description	Figure	
Up 1.1	(A) open the storeroom and lock the door at the opening position to avoid it close and affect the operation.		
		1	2
			
		3	4
	(B) move the trolley to the flatland at the end of the launching path.		
	(C) drive the boat back to the close shore and standby.		




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Up 1.2	(A) close the red gate	
Up 1.3	(A) turn on the main power button at the winch storeroom.	
Up 1.4	(A) get ready with the winch control.	



Stage 2

Step	Description	Figure
Up 2.1	(A) and (C) wait for (B)'s signal (B) get the wire shelf that placed next to the storeroom	





Stage 3

Step	Description	Figure
Up 3.1	(B) command (A) to turn on the machine (C) wait for (B)'s signal	
Up 3.2	(A) open the machine and release the wire under (B)'s instruction.	
Up 3.2	(A) remind other people not enter the operation area.	



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Up 3.3	(B) drag the wire hook to the trolley and command (A) to stop.		
Up 3.4	(A) stop the machine as (B) commanded.		
Up 3.5	(B) put the wire shelf at the top end of the launching path and life up the wire.		






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Stage 4

Step	Description	Figure
Up 4.1	(B) command (A) to turn on the machine and push the trolley all the way down along the launching path.	
	(B) wait for (C)'s signal	
Up 4.2	(A) release the wire under (B)'s instruction.	
	(A) remind other people not to enter the operation area.	
Up 4.3	(A) make sure the wire shelf is running smoothly.	
	(B) control the downward position of trolley, and command (A) to stop when the head of trolley reached the water.	



Up 4.4	(A) stop the machine under (B)'s instruction.		
	(B) stabilize the position of the trolley, minimize the wave power to the sway of both boat and trolley.		

Stage 5




Step	Description	Figure
Up 5.1	(C) drive the boat back to the trolley	
	(C) use the boat line to connect the boat and the trolley tightly.	
Up 5.2	(B) stabilize the position of trolley to avoid the sway of the sea.	



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Stage 6

Step	Description	Figure
Up 6.1	(A) remind other people not enter the operation area.	
	(C) make sure the hook is locked to the trolley and boat tightly.	
	(B) monitor the whole operation area from the top end of the launching path.	
Up 6.2	(B) double check and make sure (C) has locked the hook at the trolley and boat tightly.	
Up 6.3	(C) give signal to (B) to instruct (A) to open the machine.	
Up 6.4	(B) give signal to (A) to turn on the machine.	
Up 6.5	(A) turn on the machine and collect the wire under (B)'s instruction.	





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登 6.6	(C) control the direction of the boat and trolley; tell the surrounding people not to stand at the back of boat and be careful of the trolley wheels.	
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Stage 7





Step	Description	Figure
Up 7.1	(C) control the direction of boat and trolley.	
Up 7.2	When both the boat and trolley have reached the flatland at the top end of the launching path, (B) give signal to (A) to stop the machine.	



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Up 7.3	(A) stop the machine according to (B)'s instruction, and remind other people not to enter the operation area.	
Up 7.4	After (B) removed the wire from the shelf, put the shelf back to the space next to the storeroom.	
Up 7.5	(B) shall give signal to (A) to turn on the machine and collect the wire back after (B) removed the wire hook from the boat and trolley.	
Up 7.6	(A) turn on the machine and collect the wire under (B)'s instruction.	



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Stage 8

Step	Description	Figure
Up 8.1	(B) open the red gate	
Up 8.2	(A) turn off the power source and lock the storage door after turning off the machine. (C) move the trolley to the assigned parking area. (B) assist (C) to move the boat and trolley to the assigned parking area.	
Up 8.3	(A) assist (C) to move the trolley to the assigned parking area.	