Report of Investigation into the Accident of Man Overboard from a Locally Licensed Dumb Lighter "Winsmart" (B21658V) under Towing on 27 January 2016

Marine Accident Investigation Section
Marine Department
The Hong Kong Special Administrative Region

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Purpose of Investigation

The purpose of this investigation conducted by the Marine Accident Investigation and Shipping Security Policy Branch (MAISSPB) of the Marine Department (MD) and the conclusions drawn in this report is to determine the circumstances and the causes of the incident with the aim of improving the safety of life at sea and avoiding similar incidents in future.

It is not intended to apportion blame or liability towards any particular organisation or individual except so far as necessary to achieve the said purpose.

The MAISSPB has no involvement in any prosecution or disciplinary action that may be taken by the MD resulting from this incident.

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1. Summary

1.1 Around 1500 hours on 27 January 2016, a locally licenced tug "CHUNG HING NO.5" (hereinafter referred to as "the tug") towed a locally licenced dumb lighter "Winsmart" (hereinafter referred to as "Winsmart") from northern Tsing Yi to the River Trade Terminal in Tuen Mun.

1.2 "Winsmart" carried on board a crane operator and a person in charge of works. When the tug-and-tow was navigating in the waters off the north of Lantau Island and the south of Tsing Lung Tau, the person in charge of works and the crane operator on board "Winsmart" jointly moved a damaged water dispenser from the stern to a part of the deck with no bulwarks nor railings installed, and threw it overboard around 1530 hours. As the power cord of the water dispenser got entangled with the waist bag of the person in charge of works, it came off and fell into the sea together with the water dispenser. Seeing his waist bag flying off into the sea, the person in charge of works reached out his hand trying to catch it but instead he lost his balance and fell overboard.

1.3 The person in charge of works sank and went missing soon after he fell overboard due to the strong current in that water area. His body was found floating in nearby waters by some fishermen about a month later.

1.4 At the time of the accident, the weather was overcast with easterly wind of force 2, slight sea and good visibility. The subject water area has always been a busy traffic spot with strong currents.

1.5 The investigation of the accident revealed that the contributory factor were as follows: the safety awareness of the person in charge of works and the crane operator on board "Winsmart" was low. They, without taking any safety precautions against drowning or falling overboard (such as wearing lifejackets or fastening safety harnesses), stood close to the side of the vessel with no bulwarks nor railings installed, and lifted and threw a water dispenser of considerable weight overboard during the voyage. As the power cord of the water dispenser got entangled with and pulled off the waist bag of the person in charge of works, he reached out his hand trying to catch the flying-off waist bag but lost his balance and fell overboard, which led to his death.

1.6 The investigation also revealed the following safety factors: the personnel of "Winsmart" were not provided with appropriate ready-to-use communication equipment. The coxswain of "the tug" only learnt that someone had fallen overboard after having reversed course and berthed alongside "Winsmart" in response to the cries of the personnel on "Winsmart", thus deferring the search and rescue efforts.

2. Description of the Vessel

2.1 Hong Kong Local Vessel “CHUNG HING NO.5”

Certificate of Ownership Number	:	B2704
Class/Type of Ship	:	Class II/Tug
Gross Tonnage	:	133.26
Net Tonnage	:	89.02
Length Overall	:	21.62 metres
Extreme Breadth	:	6.81 metres
Minimum Number of Crew	:	3
Total Number of Persons Permitted to Carry	:	6
Main Engine and Power	:	Internal Combustion Diesel Engine 637 kilowatts
Year of Build	:	1993

Fig.1 – Tug “CHUNG HING NO.5”

2.2 Hong Kong Local Dumb Lighter “Winsmart”

Certificate of Ownership Number	:	B21658V
Class/Type of Ship	:	Class II/Dumb lighter
Gross Tonnage	:	1952.67
Net Tonnage	:	1366.87
Length Overall	:	44.95 metres
Extreme Breadth	:	19.52 metres
Moulded Depth	:	5.01 metres
Length of Derrick Boom	:	40.27 metres
Year of Build	:	1994
Total Number of Persons Permitted to Carry	:	6

Fig.2 – Lighter “Winsmart”

3. Sources of Evidence

3.1 Crew members of “the tug”

3.2 The crane operator of “Winsmart”

3.3 The Hong Kong Observatory

3.4 Harbour Patrol Section of the MD of Hong Kong

3.5 The autopsy report of the deceased who fell overboard (the person in charge of works)

4. Outline of Events

4.1 Around 1500 hours on 27 January 2016, "the tug" started towing "Winsmart", which had been repaired, from a shipyard in northern Tsing Yi to the River Trade Terminal in Tuen Mun.

4.2 During the towage, "the tug" maintained a distance of about 50 metres ahead of "Winsmart". "Winsmart" carried on board a crane operator and a person in charge of works, who were organising the equipment on the vessel and tidying up during the towing voyage.

4.3 Around 1530 hours, "the tug" was towing "Winsmart" and navigating in the waters off the north of Lantau Island and the south of Tsing Lung Tau at a speed of 6.5 knots and on a course of 250° (Fig. 3). The crane operator and the person in charge of works jointly moved a damaged water dispenser from the stern to the side of the vessel with no bulwarks nor railings installed for throwing it overboard. At that time, the person in charge of works wore loose clothes and a waist bag. When the water dispenser was thrown overboard, the power cord of the water dispenser accidentally got entangled with the waist bag of the person in charge of works, which came off instantly and fell overboard together with the water dispenser. At the time when the waist bag came off, the person in charge of works reached out his hand trying to catch the waist bag but instead he lost his balance and fell overboard.

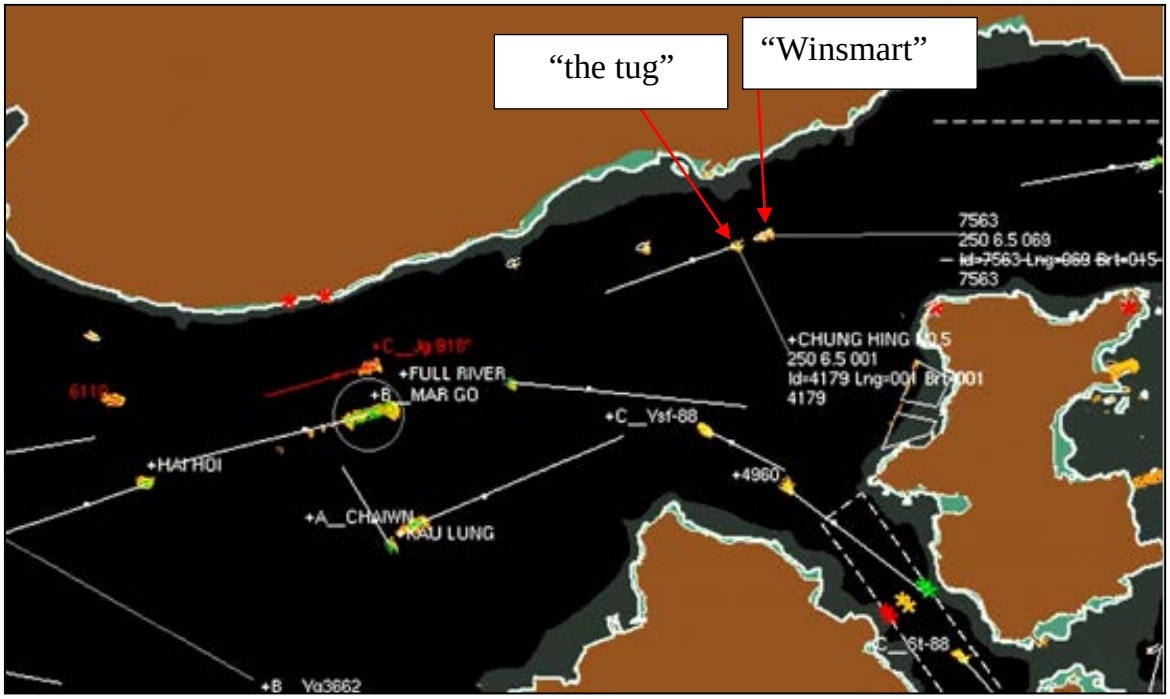

Fig. 3 – Location where the person in charge of works fell overboard when "Winsmart" was in the waters off the south of Tsing Lung Tau

4.4 The person in charge of works cried for help in the water and asked the crane operator to throw him a lifebuoy. The crane operator immediately ran to the storeroom and took out a lifebuoy. He ran back to the original position and threw the lifebuoy with his best effort to the sea where the person in charge of works fell overboard. In panic, the crane operator did not note the exact location and condition of the person in charge of works when throwing the lifebuoy into the sea. Having thrown the lifebuoy, the crane operator rushed to the bow to activate the generator for retracting the towing wire connected to "the tug" at the bow in order to alert "the tug" promptly, and he dropped the anchor to secure "Winsmart" after obtaining the confirmation from "the tug". Then the crane operator used a loudhailer to inform "the tug" and nearby vessels of the man overboard incident and call for emergency rescue.

4.5 Around 1537 hours, the coxswain of "the tug" slowed down at once and reversed course to berth alongside "Winsmart" in response to the rescue call from "Winsmart" (Fig. 4). Around 1539 hours, the coxswain of "the tug" learnt that someone had fallen overboard and was carried eastward by the current. He then steered "the tug" away from "Winsmart" and reversed on an easterly course of about 070° at a speed of about ten knots and steered along the current to search for the person in charge of works who fell overboard.

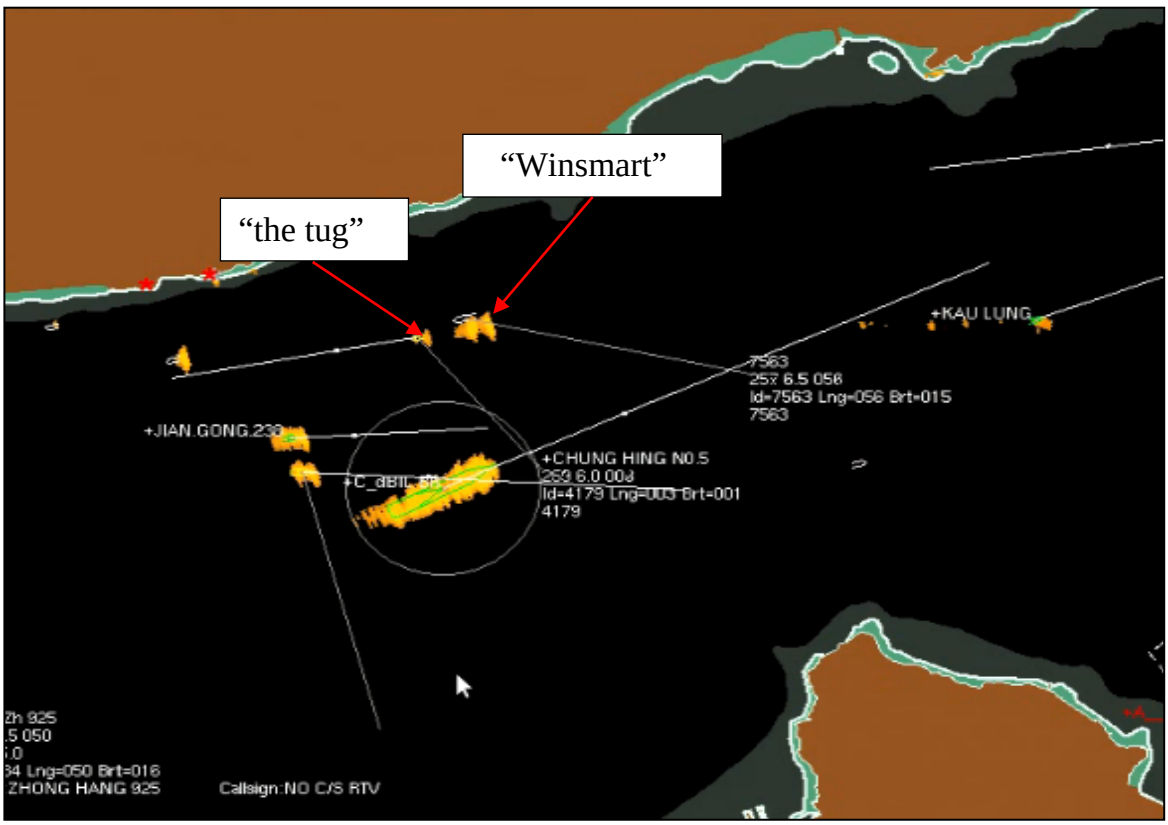

Fig. 4 – Location where "the tug" received the rescue call

4.6 Having reversed course by about one kilometre, in the waters to the south of Tsing Lung Tau, “the tug” and a river trade cargo vessel that came to rescue in response to the cries for help from “Winsmart” both located the person in charge of works somewhere a dozen metres from both vessels. However, the person in charge of works suddenly sank into the water without a trace when “the tug” tried to approach and save him. About ten minutes later, the Marine Department’s and other rescue vessels arrived and joined the rescue but in vain. The heavily decomposed body of the person in charge of works was found floating in nearby waters by some fishermen about a month later.

5. Analysis of Evidence

Weather and Environmental Conditions

5.1 At the time of the accident, the weather was overcast with easterly wind of force 2, slight sea and good visibility. The weather condition did not contribute to the man overboard accident.

5.2 The subject water area was a busy traffic spot with strong current. At the time of the accident, the speed of eastward current exceeded one knot and the current near the shoreline might be even stronger with directions variable due to changes in coastal and seabed terrains. A high tide two hours after the accident turned the current westward at a speed of over two knots. All of these factors added difficulties to the search and rescue for the man overboard.

Vessel Certificates and Experience of the Crew

5.3 "The tug" had a valid certificate of survey and an operating licence issued by the Marine Department under the Merchant Shipping (Local Vessels) Ordinance at the material time. The coxswain of "the tug" held a valid Coxswain Grade 1 Certificate and was qualified to operate "the tug".

5.4 "Winsmart" also had a valid certificate of survey and an operating licence at the material time. As the crane operator and the person in charge of works of "Winsmart" were not crew members, they were not required to hold the Seafarer's Certificate of Competency.

5.5 At the material time, the crane operator of "Winsmart" had ten years of experience in barge operations. He held a valid certificate of Shipboard Cargo Handling Basic Safety Training Course and a certificate of Shipboard Crane Operator Safety Training Course, and met the certificate requirement for cargo handling under the Merchant Shipping (Local Vessels) (Works) Regulations. As stated by the crane operator, he and the person in charge of works were qualified crane operators who took turns to operate the crane for cargo work operations on "Winsmart".

Dumping of Garbage

5.6 At the time of the accident, the crane operator and the person in charge of works on "Winsmart" were organising the equipment and tidying up the accommodation area on board while the vessel was under tow. They breached local law by throwing a large, damaged and unwanted water dispenser into the sea.

Fatigue at Work

5.7 For the ten days prior to the accident, "Winsmart" had been under regular maintenance in a shipyard in northern Tsing Yi. The crane operator and the person in charge of works reported duty at the shipyard at 8 a.m. and left at 3 to 4 p.m. every day. In the morning on the day of the accident, they arrived at the shipyard and started working on board at 8 a.m. as usual. After a statutory survey was completed, they stayed on board "Winsmart" awaiting towage by "the tug" from the shipyard in northern Tsing Yi back to the River Trade Terminal in Tuen Mun for long-term berthing.

5.8 On the day of the accident, they followed a normal daily routine. As recalled by the crane operator, the person in charge of works did not show obvious signs of fatigue or abnormal behaviour. As such, fatigue at work did not contribute to the accident.

Safety Awareness and Risk Assessment

5.9 "Winsmart" is a locally licensed dumb lighter equipped with a derrick crane. It is usually berthed at the River Trade Terminal in Tuen Mun, engaging in cargo handling operations carried out between vessels or between a vessel and the terminal with the use of its crane. "Winsmart" seldom needs to be towed. Bulwarks are only installed along the accommodation area located at the stern of the vessel. Other parts of the deck are not installed with bulwarks, railings or the like. Generally speaking no personnel should move about on the deck while the vessel is under tow as it will heave and roll randomly during a voyage. If, for operational reasons, someone on board needs to stand close to the side of the vessel where no protective bulwark nor railing is installed, appropriate safety or protective precautions should be taken to prevent accidents. At the material time, neither the crane operator nor the person in charge of works were wearing proper personal protective equipment. The person in charge of works even wore a waist bag which could get caught or pulled on, reflecting their lack of safety awareness and neglect of the risks of accidents.

5.10 At the material time, the crane operator and the person in charge of works, who were at the stern of the vessel, together carried a water dispenser which was about three feet tall and weighed over ten pounds to the side of the vessel with no protective bulwarks nor railings installed for throwing it overboard. In the course of lifting and throwing the water dispenser overboard, the power cord of the water dispenser got entangled with and pulled off the waist bag on the waist

of the person in charge of works. When the person in charge of works reached out his hand trying to catch the waist bag, he obviously failed to notice that he was at the side of the vessel where there were no bulwarks nor railings. He lost his balance and fell overboard.

5.11 After the accident had occurred, the crane operator threw a lifebuoy into the sea but he did not confirm if the person in charge of works managed to catch it. He, however, ran to the bow and shouted to "the tug" saying that someone had accidentally fallen overboard, thus delaying the rescue. Also, having left the stern, the crane operator failed to keep track of the person in charge of works. It is evident that "Winsmart" did not carry any ready-to-use communication equipment for communication with "the tug". Moreover, the crane operator of "Winsmart" apparently lacked training in man overboard prevention and emergency response.

Autopsy Report and Toxicological Analysis

5.12 According to the findings of the autopsy report and toxicological examination in respect of the deceased provided by the Government Laboratory of Hong Kong, although the circumstances suggested that the deceased most probably died of drowning, the cause of death could not be ascertained by autopsy as the body was heavily decomposed. The toxicological examination revealed that the blood alcohol content was 43 milligrams (mg) of alcohol per 100 millilitres (ml) of blood (43 mg/100 ml). Paracetamol was detected at 2.5 to 3.0 micrograms (ug) per ml (2.5-3.0 ug/ml). No other common drugs or poisons were found. Also, the report on the toxicological examination pointed out that the blood alcohol content could be due to the fermentation of bacterial strains as the body was heavily decomposed.

Influence of Alcohol and Drugs

5.13 According to the statement given by the crane operator, he himself never drank but he did not recall whether the deceased had taken any alcohol or drug(s) containing paracetamol on the day of the incident. According to the toxicological examination report, the deceased had taken drug(s) containing paracetamol but it could not be ascertained whether the drug(s) had influenced the bodily movement or balance of the deceased.

6. Conclusions

6.1 Around 1500 hours on 27 January 2016, “the tug” towed “Winsmart” from a shipyard in northern Tsing Yi to the River Trade Terminal in Tuen Mun. Around 1530 hours, while the tug-and-tow was navigating westwards in the waters off the north of Lantau Island and the south of Tsing Lung Tau, the crane operator and the person in charge of works on board “Winsmart” jointly threw an unwanted water dispenser overboard and in the course of it, the person in charge of works lost his footing, fell overboard and disappeared. His body was found floating in nearby waters about a month later.

6.2 The investigation of the accident revealed that the contributory factors were as follows: the safety awareness of the two personnel on board “Winsmart” was low. They, without taking any appropriate safety or protective precautions, stood close to the side of the vessel with no bulwarks nor railings installed, and lifted and threw a water dispenser of considerable weight overboard during the voyage. As the power cord of the water dispenser got entangled with and pulled off the waist bag of the person in charge of works, he reached out his hand trying to catch the flying-off waist bag but lost his balance and fell overboard, which led to his death.

6.3 The investigation also revealed the following safety factors: “Winsmart” did not carry appropriate communication equipment on board. The coxswain of “the tug” only learnt that someone had fallen overboard after having reversed course and berthed alongside “Winsmart” in response to the cries of the personnel on “Winsmart”, thus delaying the search and rescue efforts.

6.4 The investigation also revealed that the two personnel on “Winsmart” were not environmentally conscious. They breached local laws by throwing garbage from the vessel overboard.

7. Recommendations

7.1 A copy of this report should be sent to the owners of "the tug" and "Winsmart", advising them of the findings of the investigation of the accident. The owner of "Winsmart" should:

(i) display conspicuous warning signs on board to advise that there are no guard rails installed on deck. Notices should also be issued to remind all lighter workers that while the lighter is under tow, they are advised against moving close to the side of the lighter with no guard rails installed unless it is necessary and they have taken appropriate safety or protective precautions (e.g. wearing suitable working clothes, safety shoes, lifejackets, properly fastened safety harnesses, etc.).

(ii) provide proper training to the personnel working on board in preparedness for man overboard incidents, and raise their awareness of the advice regarding personnel working on board a lighter given in Marine Department Notice No. 128 of 2014, including the provision of appropriate communication equipment such as walkie-talkies or mobile telephones to facilitate communication in an emergency; and

(iii) educate the personnel working on local vessels against illegal dumping of garbage or other unwanted articles overboard and alert them that offenders are liable for prosecution.

7.2 A Marine Department Notice should be issued to promulgate the lessons learnt from the accident.

8. Submissions

8.1 A copy of the draft report was sent to the following parties for their comments:

- the owner and the coxswain of “the tug”; and
- the owner and the crane operator of “Winsmart”.

8.2 No comments from any interested parties above were received during the consultation period.