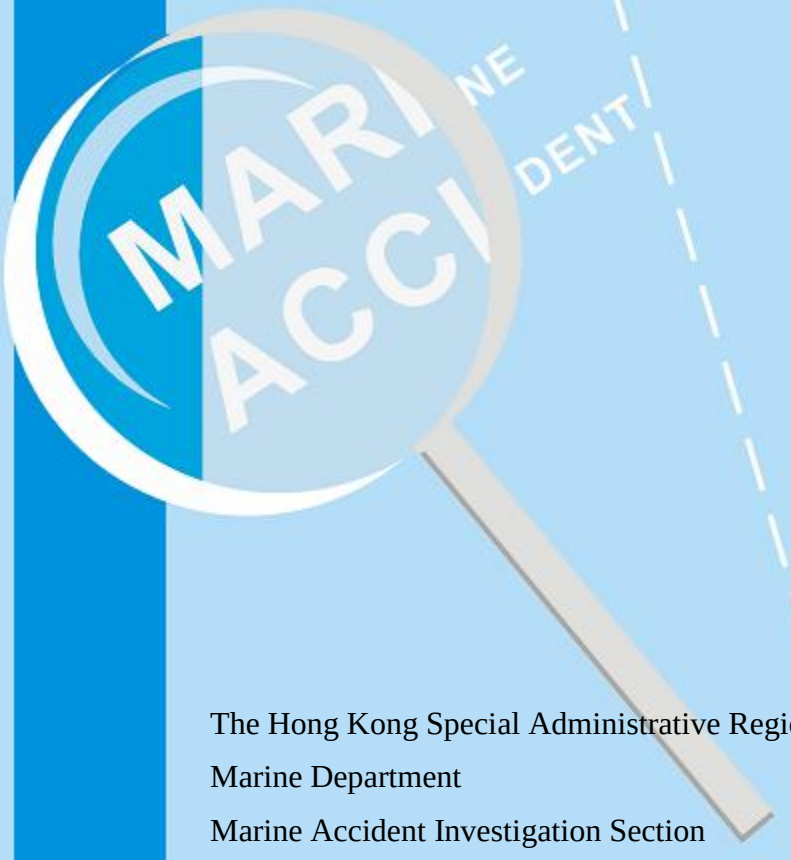
Report of investigation into the missing of auxiliary powered yacht *"141839"* in the South China Sea on 3rd October 2015



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

16 January 2019

Purpose of investigation

The purpose of this investigation conducted by the Marine Accident Investigation and Shipping Security Policy Branch (MAISSPB) of Marine Department 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 incident in future.

It is not intended to apportion blame or liability towards any particular organization 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 Marine Department resulting from this incident.

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1. Summary

1.1 At about 1030 hours on 1 October 2015, the Hong Kong locally licensed auxiliary powered yacht (Certificate of Ownership Number 141839) (the yacht) departed from Clear Water Bay, Hong Kong for her destination Subic Bay of the Philippines. There were 5 sailors on board the yacht including the skipper. At the time of departure, the weather was cloudy with light wind force 1.

1.2 At 1832 hours on 1 October 2015, the Hong Kong Observatory (HKO) issued a tropical cyclone warning alerting that a tropical depression (TD) named "Mujigae" was formed near the Philippines. It was forecasted that the TD would move northwestwards at 12 knots for the next 24 hours. The warning was updated continuously at about 3-hour regular intervals. "Mujigae" entered into the South China Sea consequently and developed into a severe typhoon in the early morning on 4 October 2015, reaching its peak intensity before noon with an estimated sustained wind speed of 95 knots (175 km/h) near its centre. "Mujigae" finally entered Zhanjiang of China in the afternoon on 4 October 2015, and weakened gradually then.

1.3 At 1600 hours on 4 October 2015, the yacht did not arrive at Subic Bay Yacht Club, the Philippines in accordance with her Estimated Time of Arrival (ETA). A friend (the Friend A) of one of the yacht's sailors living in the Philippines tried to contact the yacht but in vain.

1.4 On 5 October 2015, a bulletin was sent out to the Royal Hong Kong Yacht Club (RHKYC) by the Friend A stating that the yacht was overdue on her ETA and lost contact. In the afternoon, the RHKYC reported to the Hong Kong Maritime Rescue Co-ordination Centre (HKMRCC) that the yacht did not arrive at her final destination and lost contact. The RHKYC also reported that the yacht was licensed in Hong Kong but carrying a UK registered emergency position indicating radio beacon (EPIRB) assigned with a Maritime Mobile Service Identity (MMSI) No. 235113883.

1.5 On 6 October 2015, the flights of Hong Kong Government Flying Service (HKGFS) were tasked to conduct searching operation. A private plane carrying Philippine Coast Guard (PCG) staff together with some patrol boats from Manila PCG also joined the search. Although a debris field was found which is quite common after typhoon in the region, there was no evidence to indicate that the debris field was related to the yacht. The search finally stood down on 14 October 2015. The yacht

together with the 5 sailors on board were missing. The investigation into this incident was difficult to reach a solid conclusion because only indirect pieces of information could be collected from the friends of the yacht's sailors and the equipment supplier of the yacht. Nevertheless, it could be determined that the severe sea and weather conditions due to the typhoon "Mujigae" would probably be the main contributory cause of this tragic incident.

1.6 The investigation into the incident revealed the following safety issues:

(a) the sailors did not prepare well for the intended high sea voyage:

(i) there was a lack of appropriate communications equipment for the intended voyage. The only long range communication equipment, the handheld Isatphone was not an approved equipment for marine use and therefore its performance might be adversely affected by severe sea and weather conditions;

(ii) the yacht company failed to monitor the movement of the yacht at sea by establishing an effective communication procedure in advance; and

(iii) there was no equipment such as MF radio, Inmarsat C, NAVTEX and weather facsimile receiver etc. on board to receive updated weather information.

(b) the sailors were not aware of the yacht's acceptable operating environment limit (e.g. wind force and wave height) despite knowing that there was a typhoon in the course of the yacht;

(c) the yacht of 17.75 metres in length overall requires a person holding a valid local certificate of competency as a Grade I pleasure vessel operator (Grade I COC). However, the skipper was not a Grade I COC holder qualified to operate the yacht; and

(d) the EPIRB of the yacht used an outdated MMSI number which was assigned previously for a vessel already deregistered from UK. Using an EPIRB with outdated MMSI number had caused difficulty to identify the yacht in the first place and confused the search and rescue (SAR) operation.

2. Description of the yacht

Model of yacht	:	Oceanis 60 FR-SPBCK097G516
Certificate of Ownership number	:	141839
Operating licence issue date	:	30th September 2015
Type of vessel	:	Auxiliary powered yacht
EC-type examination[1] certificate number	:	B SPB 09011 VM
Year of construction	:	2015
Place of construction	:	Dompierre Sur Yon-France
Materials of hull	:	Glassfibre Reinforced Plastic (GRP)
Length overall	:	17.75 metres
Breadth	:	4.99 metres
Depth	:	2.29 metres
Engine type / power	:	Volkswagen, Diesel Inboard – ANH 02869, 103 kW
Total number of person permitted to carry	:	12
Name of owner	:	Europa Yachts Limited

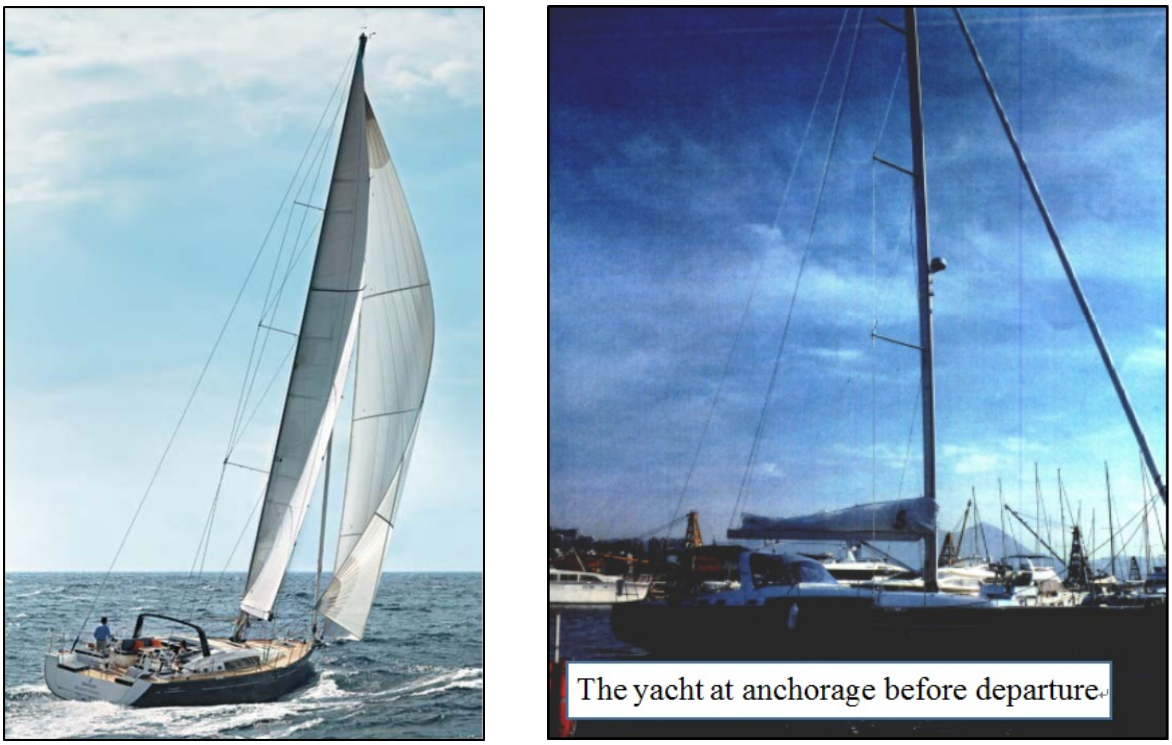

Figure 1 Similar yacht (Oceanis 60) (from website of Beneteau)

[1] EC-type examination is the part of a conformity assessment procedure in which a notified body examines the technical design of a product and verifies and attests that the technical design of the product meets the requirements of the legislative instrument that apply to it.

3. Sources of evidence

3.1 Report of Marine Incident from “Brookes Bell Hong Kong” (the Friend B) on behalf of the family of the skipper.

3.2 A statement provided by the Friend A of one of the sailors of the yacht.

3.3 Information provided by equipment supplier.

3.4 Weather report provided by HKO.

3.5 SAR information from HKMRCC.

4. Outline of events

(All times were local time (GMT + 8) unless otherwise stated)

4.1 At about 1030 hours on 1 October 2015, the yacht sailed from Clear Water Bay, Hong Kong for her destination Subic Bay of the Philippines. There were 5 sailors on board including the skipper. At the time of departure, the weather was cloudy with light wind force 1.

4.2 In the afternoon on 1 October 2015, the TD No.1522 ("Mujigae") was formed over a sea area about 156 nautical miles (n.ms) east of Manila, the Philippines, and moved west-northwestwards in the direction of Luzon. At 1832 hours, HKO issued a tropical cyclone warning alerting that the TD was formed near the Philippines. It was forecasted that the TD would move northwestwards at 12 knots for the next 24 hours. The warning was updated continuously at about 3-hour regular intervals. Annex 1 contains the table showing the development of the typhoon relevant to the movements of the yacht.

4.3 In the morning on 2 October 2015, "Mujigae" entered into the South China Sea and intensified into a tropical storm, moving west-northwestwards steadily. "Mujigae" further developed into a severe typhoon in the early morning on 4 October, reaching its peak intensity before noon with an estimated sustained wind speed of 95 knots (175 km/h) near its centre. "Mujigae" finally entered Zhanjiang of China in the afternoon on 4 October 2015, and weakened gradually then.

4.4 At about 0405 hours on 3 October 2015, HKMRCC received an EPIRB distress signal of MMSI No. 235113883 transmitted at a position of 17°35.2'N, 116°56.0'E in the South China Sea. The position was about 55 n.ms to the centre of "Mujigae". HKMRCC coordinated with the HKGFS to dispatch a search aircraft searching the distress signal area, but with no findings. Meanwhile, HKMRCC relayed the distress alert by NAVTEX at regular intervals to call vessels in the vicinity of the concerned area to keep watching and searching. Three vessels had responded to HKMRCC that they were very close to the signal position and would keep watching and searching.

4.5 At 1600 hours on 4 October 2015, the yacht did not arrive at Subic Bay Yacht Club, the Philippines in accordance with her ETA. The Friend A of one of the yacht sailors living in the Philippines tried to contact the yacht by calling its Isatphone but received no response.

4.6 On 5 October 2015, the Friend A advised the RHKYC that the yacht was overdue on her ETA and lost contact. In the afternoon on the same day, RHKYC informed HKMRCC about the missing yacht incident, and reported that the yacht was licensed in Hong Kong but carrying a UK registered EPIRB with an assigned MMSI No. 235113883.

4.7 On 6 October 2015, SAR operation for the distress signal area was resumed by flights of HKGFS. A private plane carrying PCG staff together with some patrol boats from Manila PCG joined the search. The assistance on SAR operation was rendered also by the nearby fishing boats and merchant vessels. Although a debris field was found which is quite common after typhoon in the region, there was no evidence to indicate that the debris field was related to the missing yacht. No trace of the missing yacht was found.

4.8 At 2136 hours on 6 October 2015, United Kingdom Costal Guard (UKCG) informed HKMRCC that the MMSI No. had been assigned to an UK yacht "Venom" but she was no longer under their registration.

4.9 At 1031 hours on 7 October 2015, the EPIRB gave off the last transmission of position of 18°16.3'N 116°41.1'E. The flights of HKGFS, the Philippine private aircraft and two vessels which were sent by PCG searched the area again, but no trace of the missing yacht could be found.

4.10 From 7 to 14 October 2015, the flights of HKGFS were tasked to search in the South China Sea every day but without any findings. The SAR operation finally stood down on 14 October 2015. The yacht together with 5 sailors on board were missing.

4.11 At 0036 hours on 11 February 2016, a distress signal transmitted at a position of 8°08.93'N, 100°17.93' E was received by HKMRCC indicating a Personal Locator Beacon (PLB) of series No.15119. This PLB was supposedly belonged to one of the yacht's sailors and the distress signal was emitted at a beach in the Gulf of Thailand. The information was relayed to Bangkok Rescue Coordination Centre (RCC) to carry out an investigation but did not reach any conclusion. The distress signal went silent at 2236 hours on 12 February 2016.

5. Analysis

Certificate and licence of the yacht

5.1 The yacht was licensed in Hong Kong on 30 September 2015. On the same day, the skipper made a general declaration and sailing notice to the Marine Department for obtaining the Port Clearance Certificate. Under the declaration and notice, the yacht would sail to Subic Bay from Hong Kong on 1 October 2015. There were 5 sailors on board: 2 British men (one was the skipper), 1 Filipino, 1 U.S. citizen and 1 Canadian. Meanwhile the skipper had made a declaration to the Immigration Department and the yacht was cleared for departure on 30 September 2015.

Construction and equipment of the yacht

5.2 The yacht was a GRP auxiliary powered yacht built in France in 2015. In accordance with the information obtained from equipment supplier, the yacht was fitted with the following equipment:

Item	Equipment	Number
1	Multifunction Zeus 7” wide screen display (GPS, Charter plotter, Chart reader – Cartography Navionics Silver included)	1
2	Wind sensor (Windvane, Anemometer)	1
3	Sensor (Log, Speedometer, Temperature)	1
4	Navigation electronics assemble: B&G	1
	High definition digital radar	1
	AC42 autopilot +Control at steering station	1
	Chart table with fixed RS 90 VHF, function AIS receiver + H50 cockpit handset	1
	WR 10 Wireless autopilot remote control	1
	AIS 400	1
	Forward scan sensor (underwater vision forward)	1
	Binnacle compasses	2
5	Manual bilge pump	1
	Electric bilge pump	1

6	Additional equipment (supplied on 30 September 2015): A. EPIRB: GME MT403G MMSI No.: 235113883 UIN ID64379B60FFBFF  Figure 2 Similar EPIRB B. Handheld VHF (set) C. Isatphone (Inmarsat Isatphone Pro) D. Torches and electronic flares	1 2 1 unknown
7	Personal Locator Beacon (PLB) (carried by one of the sailors): ACR Electronics INC, PLB-375(RESQLINK+) Station No.: 00001-PPPL1 Licence issued on 1 April 2015	1

	 Figure 3 Similar PLB	
8	Spot tracker (no particulars)	1
9	Liferaft (6 persons) Lifejacket	2 unknown

5.3 The table above reveals that the yacht possessed two sets of handheld VHF but these were used for short distance radio communication. The yacht had not been fitted with proper navigational equipment (such as Inmarsat C or DSC HF radio) to receive weather and other marine safety information as well as for communication purpose. The only equipment available on board the yacht for long distance communication with shore for obtaining safety information was the Isatphone. However, the Isatphone was not an approved radio communication equipment for marine use. Its signal transmission and receiving could be affected seriously by adverse weather condition on high sea. This, perhaps, may explain the reason why the Friend A at shore could not receive any call from the yacht after the first contact on 2 October 2015. In conclusion, the yacht had not been fitted with proper communication equipment for her intended voyage from Hong Kong to the Philippines.

5.4 Although a set of AIS 400 B&G had been installed on board the yacht, no AIS signal was received or identified by shore side AIS receiver since her departure on 1 October 2015. Therefore, the movement of the yacht could not be traced.

5.5 One day before her departure, the yacht was supplied with an EPIRB "GME MT403G" (Figure 2). The EPIRB could be activated manually by the yacht's sailors or automatically when its hydrostatic release unit submerged in the sea to a depth 2 – 4 metres from sea surface. In addition, its battery power could normally maintain to transmit distress signals on 121.5MHZ for 48 hours continuously. At 0405 hours on 3 October 2015, its first transmission was received by HKMRCC. Until 1031 hours on 7 October 2015, the EPIRB gave off the last transmission. The EPIRB was working in good function but regrettably, it carried an outdated MMSI number thus confused the SAR operation.

5.6 It was known that one of the sailors carried a PLB (Figure 3) which could only be activated manually and its power could normally work for 24 hours continuously. As confirmed by the Office of the Communications Authority of Hong Kong, a data licence with a station No. 0001-PPPL1 was issued for this equipment. No transmission was received since departure until the first transmission from a beach of Thailand months later on 11 February 2016 but the investigation carried out by Bangkok RCC reached no conclusion.

5.7 The Friend B of the skipper stated that a spot tracker was carried onboard by one of the sailors. The spot tracker was capable to transmit position signal every 6 hours, but no particulars of the spot tracker were available. Furthermore, no tracking signal was received by shore persons (the Friend A and the wife of the sailor who carried the spot tracker) since the commencement of the voyage.

Manning of the yacht

5.8 As reported by the Friend B and a family member of the skipper, all 5 sailors including the skipper who was also the owner of the yacht were experienced in operating auxiliary powered yacht. They had sailed from Hong Kong to Subic Bay in other yachts several times without any problem.

5.9 The skipper held a certificate of competency as a pleasure vessel operator grade 2 valid till 2025. He was qualified to operate a pleasure vessel not more than 15 metres of length overall. In addition, one of the sailors held an old certificate of competency of

pleasure vessel engineer grade II valid till April 2016.

5.10 As reported by the Friend B, the other 3 sailors were seasoned yacht operators. However, no information was available to confirm whether they held any certificate of competency.

5.11 Since the length overall of the yacht was 17.75 metres, the information above revealed that the skipper was not qualified to operate the yacht.

Routes of the yacht and the typhoon "Mujigae", and the positions of distress signal received

5.12 In the report submitted by the representative of the family of the skipper, no information was available with regard to the yacht's final movement. Since her departure, the only telephone call communication between shore persons and the yacht was made on 2 October 2015 before the first distress signal was emitted 17.5 hours later. At the time of the communication, it was reported that the yacht was about 210 n.ms away from Hong Kong, and was adjusting her route to the north of the Philippines to avoid typhoon. The communication did not make any information exchange with regard to the exact position of the yacht and the weather condition (Figure 4).

5.13 At 0405 hours on 3 October 2015 (about 17.5 hours after the telephone call communication), the EPIRB of the yacht transmitted its first distress signal at a position 17°35.2'N, 116°56.0'E. The subsequent signals were received till 1031 hours on 7 October 2015. The table below lists the time sequence of the distress signals received.

No.	Local Date-Time	Position
Initial	0405 hours 3 October	17°35.2'N 116°56.0'E
2	1548 hours 3 October	17°59.0'N 117°10.0'E
3	0422 hours 4 October	18°00.8'N 117°23.6'E
4	1646 hours 4 October	18°09.0'N 117°09.7'E
5	0513 hours 5 October	18°21.5'N 117°12.2'E
6	1622 hours 5 October	18°18.2'N 117°11.2'E
7	0449 hours 6 October	18°17.6'N 116°54.4'E

Last	1031 hours 7 October	18°16.3'N 116°41.1'E

5.14 The time sequence of EPIRB distress signal received was plotted on the chart against the track of typhoon "Mujigae" (Figure 4). It indicated that the yacht was very likely at the east side (right hand) of typhoon "Mujigae" at the time of the incident. Although the Friend A reported that the yacht had changed her course to the northern Philippines as mentioned in the telephone call communication on 2 October 2015, it was however, doubtful that whether the yacht had really succeeded to adjust her route to the northern Philippines.

5.15 The centre of severe tropical storm "Mujigae" was at the position 18°N, 116°07'E at that time of first distress signal received, which was about 55 n.ms west of the EPIRB position (Figure 4).

5.16 Based on the estimated movements of the yacht and the track of the typhoon, it was considered that the time when they were closest (less than 30 n.ms) to each other was at about 0200 hours on 3 October 2015. The yacht would be within the right semicircle of the typhoon facing very severe weather condition with wave height much more than 2 metres and strong wind of more than 50 knots in accordance with the weather report shown in Annex I. Being overwhelmed by the sea and weather conditions, it could be deduced that the yacht might have capsized and sunk. All sailors might have fallen into the sea or sunk with the yacht without traces.

Design limits of the yacht

5.17 The yacht was built to meet the standard of the European Recreational Craft Directive (Directive 94/25/EC as amended by Directive 2003/44/EC) for Design Category A[2]. As revealed from footnote 2, the yacht was not designed for operating under the unfavourable prevailing sea and weather conditions in the early morning hours on 3 October 2015 as caused by the severe typhoon "Mujigae".

[2] Design Category A means the yacht should be designed for wind that may exceed wind force 8 (Beaufort scale) and significant wave height of 4 metres and above but excluding abnormal conditions, such as storm, violent storm, hurricane, tornado and extreme sea conditions or rogue waves.

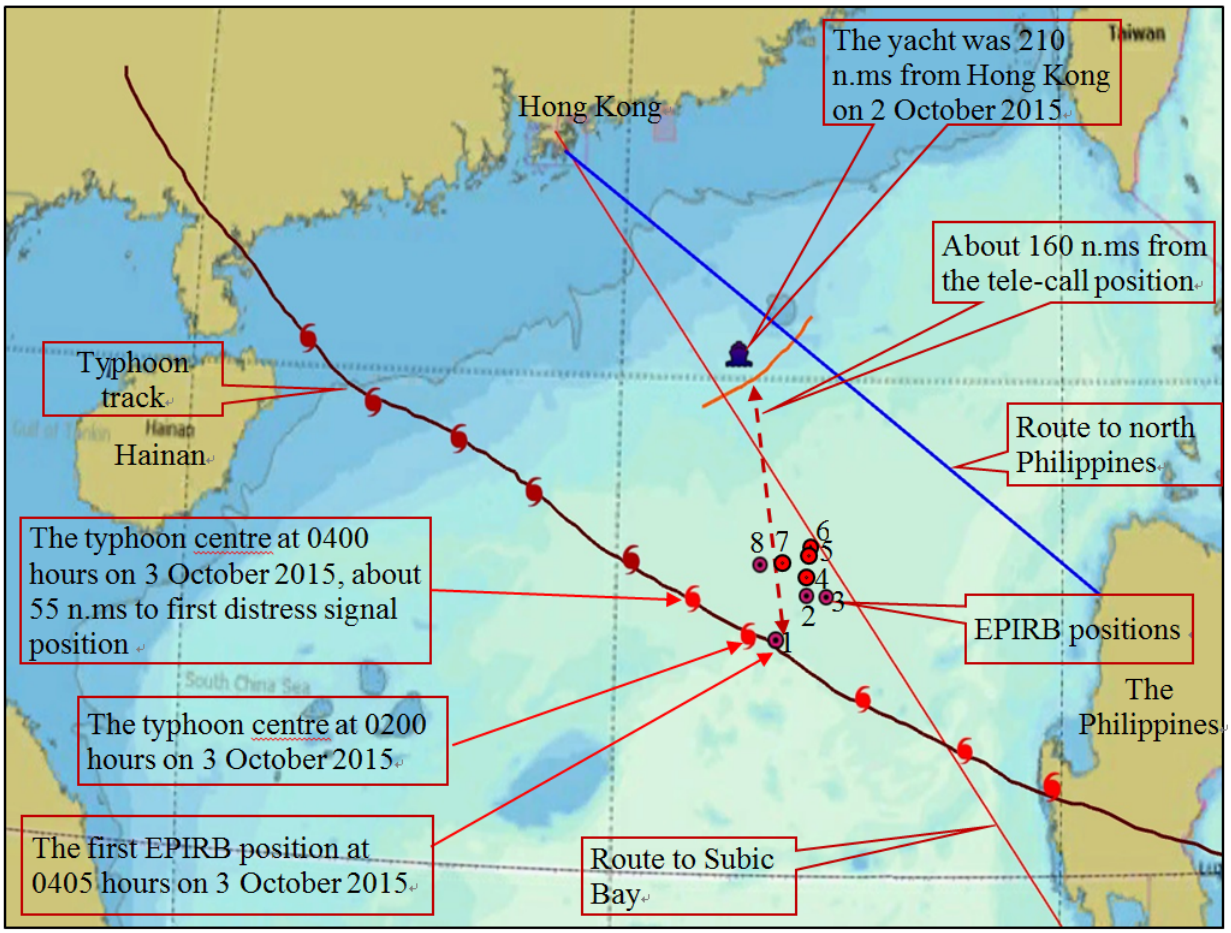

Figure 4 Illustration of the track of typhoon "Mujigae" and the EPIRB distress signal position

- Typhoon Position
- EPIRB Position

6. Conclusions

6.1 At 1030 on 1 October 2015, the Hong Kong locally licensed auxiliary powered yacht "141839" departed from Clear Water Bay, Hong Kong for her destination Subic Bay. There were 5 sailors on board including the skipper.

6.2 The yacht's EPIRB transmitted distress signal on 3 October 2015 but the yacht could not be located. A continuous search between 6 October 2015 to 14 October 2015 was conducted but without any findings. The yacht with all 5 sailors on board went missing.

6.3 The investigation into this incident was largely based on indirect information collected from the friends of the yacht's sailors and the equipment supplier of the yacht. Judging from the yacht's likely movements as revealed by EPIRB's distress signals received coupled with the movement of the severe typhoon "Mujigae", it could be determined that the missing yacht might have capsized and sunk in the early morning hours on 3 October 2015 as overwhelmed by the unfavourable prevailing sea and weather conditions which exceeded the yacht's design limit. All sailors might have fallen into the sea or sunk with the yacht without traces.

6.4 The investigation into the incident found the following safety issues:

(a) the sailors did not prepare well for the intended high sea voyage:

(i) there was a lack of appropriate communications equipment for the intended voyage. The only long range communication equipment, the handheld Isatphone, was not an approved equipment for marine use and therefore its performance might be adversely affected by severe sea and weather conditions;

(ii) the yacht company failed to monitor the movement of the yacht at sea by establishing an effective communication procedure in advance; and

(iii) there was no equipment such as MF radio, Inmarsat C, NAVTEX and weather facsimile receiver etc. on board to receive updated weather information.

(b) the sailors were not aware of the yacht's acceptable operating environment limit (e.g. wind force and wave height) despite knowing that there was a typhoon in the course of the yacht;

(c) the yacht of 17.75 metres in length overall requires a person held a valid local certificate of competency as a Grade I pleasure vessel operator (Grade I COC). However, the skipper was not a Grade I COCO holder qualified to operate the yacht; and

(d) the EPIRB of the yacht used an outdated MMSI number which was assigned previously for a vessel already deregistered from UK. Using an EPIRB with outdated MMSI number had caused difficulty to identify the yacht in the first place and confused the SAR operation.

7. Recommendations

7.1 A Marine Department Notice will be issued and the findings of this incident will be presented at the Navigational Safety Seminar in order to promulgate the lessons learnt from the incident, in particular of the following points:

(a) the hand held Isatphone was not an approved long range communication equipment for marine use due to its limitation under adverse weather. It is of vital importance of the need to carry and use long range communication equipment such as DSC HF Radio, Inmarsat C and / or other approved satellite telephony which are designed to work under adverse weather condition when engaging high sea voyage;

(b) the establishment of an effective communication procedure between yacht and shore before sailing to high sea;

(c) the importance of providing equipment on board to receive updated weather information, such as Inmarsat C, NAVTEX and weather facsimile receiver etc.;

(d) the compliance with the requirements of the Merchant Shipping (Local Vessels) (Certification and Licensing) Regulation to have a qualified pleasure vessel operator appropriate to the size of the yacht in operation; and

(e) in order to avoid in causing confusion over SAR operation, shipowner should confirm that the official assigned MMSI number has to be set correctly for the EPIRB and/or other distress signal transmitting equipment. Outdated MMSI number shall never be reused for other vessels.

8. Submission

8.1 The draft report was sent to HKMRCC and the Local Vessels Safety Section of Hong Kong Marine Department for their review and input.

8.2 The draft report was sent to the next of kin and friends of the sailors and the RHKYC for their comments.

8.3 Comments were received from the above parties, and the final report was adjusted accordingly.

Annex 1 The development of the typhoon relevant to the movements of the yacht

Date	Time (hours)	Tropical cyclone warning issued by the Hong Kong Observatory	Tropical cyclone information: condition at time / central pressure (HP[3]) / position	Centre maximum wind speed (knots)	Wave height 2 metres and above covered area in radius (n.ms)	Typhoon moving speed and direction (knots / direction)
1/10/2015	1832	Tropical depression (TD) formed	1700 hours / 1002 HP / 14.7°N, 123.3°E, near the Philippines	25 knots	60 n.ms	12 knots / northwesterly
2/10/2015	0336	TD was assigned a name "Mujigae" (TD No.1522)	0200 hours / 1000 HP / 15.7°N, 121.4°E, over Luzon Island	30 knots	90 n.ms	12 knots / west-northwesterly
	0946	"Mujigae" intensified into a tropical storm	0800 hours / 996 HP / 16.3°N, 120°E, South China Sea	35 knots	120 n.ms	12 knots / west-northwesterly
	1100	According to a statement given by the Friend B of the skipper, one sailor of the yacht had reported to the Friend A in the Philippines by a handheld satellite telephone (Inmarsat Isatphone Pro) at 1100 hours on 2 October 2015 that the yacht travelling at about 9 knots was 210 n.ms away from Hong Kong and its course had been adjusted to head for the northern Philippines to avoid the typhoon. However, the sailor did not provide further information such as the specific position of the yacht, the weather condition, or matter as if encountered any difficulties in handling the yacht, etc. The Friend B also stated that the sailor had carried a spot tracker on board. However, they did not talk about this device at the telephone call communication even the Friend A had not received any transmission signal from the spot tracker since departure.				
3/10/2015	0330	"Mujigae" intensified into a severe tropical	0200 hours / 984 HP / 17.8° N 116.4°E,	50 knots	240 n.ms over the northern	12 knots / west-northwesterly

[3] Hectopascal

		storm	South China Sea		semicircle	
	0405	HKMRCC detected an initial distress signal transmitted from an EPIRB of MMSI No. 235113883 with country of beacon registration in UK. The signal indicated a position at 17°35.2'N, 116°56.0'E which was about 310 n.ms south east of Hong Kong within the SAR zone covered by Hong Kong. In order to verify if the EPIRB signal received was in connection with any vessel in distress, SAR was initiated at 0440 hours. HKMRCC broadcasted distress relayed message of the EPIRB alert on NAVTEX at regular intervals, requesting vessels in the vicinity to keep sharp lookout. Three vessels responded to HKMRCC that they were very close to the alert position and would keep a sharp look-out. A HKGFS aircraft was also tasked at 0721 hours and arrived at the scene at about 0856 hours to search for the vessel in distress but without any findings. As no information of MMSI No. 235113883 could be found in the International Beacon Registration Database and the HKMRCC's EPIRB/PLB Database. HKMRCC made an inquiry to the UKCG by telephone communication. UKCG replied that they had no information related to this MMSI number, and further confirmed that the concerned MMSI number was not registered in any region of UK.				
	0630	Severe tropical storm	0500 hours / 984 HP / 18.2°N, 116.0°E, South China Sea	50 knots	240 n.ms over the northern semicircle	12 knots / west-northwesterly
	1530	"Mujigae" intensified into a typhoon	1400 hours / 970 HP / 19.0°N, 114.3°E, South China Sea	65 knots	270 n.ms over the northern semicircle	12 knots / west-northwesterly
	1800	A vessel advised HKMRCC that she was about 20 n.ms to the distress signal position, but no findings of vessel in distress. Another vessel was also at the distress signal position and reported no findings of objects on the sea surface. Given no positive findings by the vessels in the vicinity of the distress signal position, the SAR was suspended.				
4/10/2015	0630	"Mujigae" intensified into a severe typhoon	0500 hours / 950 HP / 20.1°N, 111.8°E	85 knots	270 n.ms over the northern semicircle	10 knots / west-northwesterly