

REVIEW OF THE ROYAL CAYMAN ISLANDS POLICE SERVICE RESPONSE TO REPORTS OF MISSING PERSONS AT SEA 6 MARCH 2016

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1. Overview

1.1 Executive Summary

At 2357 on Sunday 6th March 2016 a telephone call was received at the Cayman Islands emergency 911 service centre from a member of the public reporting her two children and brother missing having failed to return from a boating trip earlier in the day. Further investigation revealed that there were 5 persons aboard, 3 adults and the two children. Initial enquiries by the Royal Cayman Islands Police Service resulted in no confirmation as to the whereabouts of the craft or occupants. Search and Rescue units were not tasked until daylight the following morning due to concerns over safety of crews. During their first flight the Police Air Operations Unit helicopter located the craft which was subsequently recovered by the Joint Marine Unit launch, however the occupants were never found and the cause of the incident remains unexplained.

Following this incident the Governor of the Cayman Islands called for an independent review of the Royal Cayman Islands Police Service (RCIPS) Search and Rescue response to this incident. The United Kingdom Maritime and Coastguard Agency (MCA) were approached in April 2016 and asked to assist by sending a representative to the Cayman Islands to conduct an independent review of the Royal Cayman Islands Police Service response to reports of persons missing at sea from 6 March until the operation concluded.

The review was conducted by Maritime Operations Commander Andrew Jenkins a senior officer with nearly 20 years of Search and Rescue (SAR) experience which has included working at various roles which has encompassed all levels of command from operational through tactical to strategic as well as working to review incidents, recommend or implement best practice and identify issues when they have occurred.

The review took one week to complete and a draft report was presented to Her Excellency The Governor on completion. The nominated Justices of the Peace who were assigned to oversee the process were in receipt of the draft report also.

The conclusions from the review found no major faults with the SAR response to the incident either with the Royal Cayman Islands Police Service or the 911 emergency service centre. Information gathering was appropriate as was search planning both at the outset and as the incident progressed. The decision to not launch either the Police helicopter or Cayman Guardian during the hours of darkness was concluded to be correct once all the factors had been considered and these factors are clearly laid down in this report for clarity. The incident does however highlight some areas for consideration with the SAR infrastructure in particular, the oversight of SAR operations and integration of communications.

1.2 Terms of Reference

The purpose of this report is to provide the Cayman Islands Governor with a summary of the review of the Search and Rescue response to highlight any considerations for modifications to process and procedure following the incident on the 6th March 2016. The review focused on the "Search and Rescue decision making process as part of the mission coordination process and the subsequent response". This scope of the report was to the review the Police response from the time of the first emergency call to the termination of search. The review **does not** seek to assign culpability or blame, is not an investigation and does not seek to determine the cause of the incident. Any outcomes are for consideration and are not prescriptive.

In response to a motion agreed in the Cayman Islands Legislative Assembly on the 25th April 2016, the Governor invited the Premier and Leader of the Opposition to each nominate a Justice of the Peace (JP) to observe the process. Mary Lawrence and Kirkland Nixon were nominated and agreed to sit on the review panel.

1.3 Methodology

The review was conducted over a seven day period from the 28th April 2016 to the 04th May 2016. To establish the facts of the incident and the response measures taken, all the key personnel from the **incident response** were spoken to verbally and all available documentation including analysis of the Police RMS system, witness statements, charts, logs were reviewed. In addition the relevant audio files for the key stages of the incident were reviewed. At the 911 centre audio files of the relevant calls were listened to and call logs of the times checked for consistency with the Police logs.

Given the timescale for the review there will undoubtedly be information that was not seen. The information that was reviewed was sufficient and adequate for this report.

Table of personnel spoken to during review period

Title	Overseas responsibility area
911 emergency service director	Receive initial incident information. Assess information, plan response and contact Duty Critical Incident Manager
Duty Silver (Critical) Tactical Commander	Liaise with Duty CIM and Gold Commander to ensure tactical awareness of incident.
Chief Inspector Joint Marine Unit	Tactical level awareness of marine operations and provide support to operational inspector from command position.
Duty Inspector Joint Marine Unit	Operational responsibility for asset tasking, search planning and mission coordination duties for JMU. Acts in the role of Bronze commander.
Unit Executive Officer Air Operations Unit	Overall command of Air Operations Unit, provides tactical level support to Operational officers as well as taking over mission coordination duties when required. Acts in the role of bronze commander alongside the marine unit commander.
Deputy Unit Executive Officer Air Operations Unit	Operational responsibility for asset tasking, search planning and mission coordination duties for AOU.
RCIPS Major Incident Team	Collates and validates all relevant information including logs, audio, timings of phone calls and other data together during and following a major incident.
RCIPS Media Officer	Liaison with media outlets and public. Provision of media releases to inform public, monitor and respond to media enquiries.
Cayman Islands National Weather Service	Provision of forecasts and other weather information including small boat warnings for Cayman Islands area.

Note, due to long term sickness absence the Critical Incident Manager who was on duty on the night of the incident was not available during the review.

The family members of the missing persons were also given the opportunity to express their concerns regarding the incident and were provided the terms of reference for the review.

2. Search and Rescue

2.1 Introduction

Incident Ref: 2016-006228 - At 2357 on Sunday 6th March 2016 a telephone call was received at the Cayman Islands emergency 911 service from a member of the public reporting her two children and brother missing having failed to return from a boating trip earlier in the day. Further information from the first informant and her husband revealed an additional two adult males were known to have been aboard totalling five. Initial enquiries by the Royal Cayman Islands Police Service resulted in no positive information as to the whereabouts of the craft or occupants. The craft was located the following day by the Police Air helicopter and subsequently recovered by the Joint Marine Unit launch however the occupants were never recovered and the cause of the incident remains unexplained.

2.2 Background on Maritime Search and Rescue in Cayman Islands

Historically the requirement for an adequate Search and Rescue service has come from historical treaties and conventions which require those signatories to implement the processes as described either directly or by cooperation with neighbouring states.

The IMO Instruments Implementation Code (III Code) part 3 details that;

"Coastal States have certain rights and obligations under various international instruments. When exercising their rights under those instruments coastal States incur additional obligations. In order to effectively meet its obligations, a coastal State should:

- 1. Implement policies through issuing national legislation and guidance, which will assist in the implementation and enforcement of the requirements of all safety and pollution prevention conventions and protocols to which it is a party; and
- 2. Assign responsibilities to update and revise any relevant policies adopted, as necessary.

And

"A coastal State should ensure that its legislation, guidance and procedures are established for the consistent implementation and verification of its rights, obligations and responsibilities contained in the relevant international instruments to which it is a party."

"Those rights, obligations and responsibilities may include, inter alia:

- 1. radiocommunication services;
- 2. meteorological services and warnings;
- 3. search and rescue services;
- 4. hydrographic services;
- 5. ships' routeing;

- 6. ship reporting systems;
- 7. vessel traffic services; and
- 8. aids to navigation."

Maritime Search and Rescue within the Cayman Islands Search and Rescue Region (SRR) is delegated by the Cayman Islands Government to the Royal Cayman Islands Police Service (RCIPS) which have various specialist departments including the Joint Marine Unit (JMU) and an Air Operations Unit (AOU) to deliver this function.

These two units comprise specialist officers and equipment to perform Search and Rescue (SAR) alongside other varied duties which include medical transfer, illegal migration patrols and interception, narcotics patrols and interception and air support in ground based responses.

In 2015 the JMU dealt with around 50 incidents of varying nature in addition to the various routine duties and patrols which would be undertaken.

2.3 Command, Control and Coordination

In countries where Maritime Search and Rescue is coordinated by a dedicated Coastguard service there is usually one or more Maritime Rescue Coordination Centres (MRCC's) setup to handle the coordination of SAR.

Because the responsibility for Maritime Search and Rescue within the Cayman Islands has been devolved to the RCIPS who also oversee many other functions including traditional law and order there is no such MRCC in existence. Instead, the coordination for an incident is handled from differing locations as the incident progresses. Figure 1 shows how information will flow to different levels and departments as an incident unfolds.

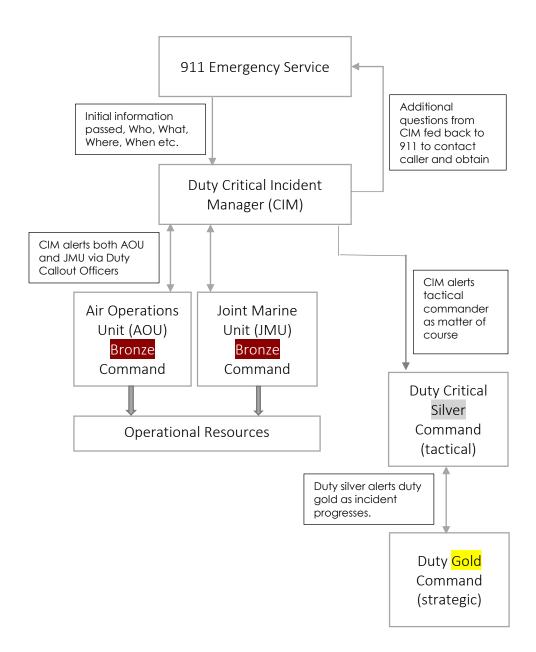


Figure 1 - command, control and coordination

The RCIPS operate a UK emergency services standard model of command and control utilising three levels of command namely Gold, Silver and Bronze [1]

At the outset of an incident the 911 service is the only authority aware of the incident. As such they are the coordinators of the incident.

Once the emergency call details have been passed to the Duty Critical Incident Manager (CIM) he takes over coordination of the incident and assumes coordination and control of the incident.

The CIM contacts the Air Operations Unit (AOU) and Joint Marine Unit (JMU) and delegates the Operational Bronze control to the section commanders who in turn organise their own units. At this stage most of the coordination function in terms of asset dispatch and search planning is done by these Bronze commanders who will organise their own units and also liaise with each other to form a joint response.

The CIM will always contact the Duty Critical Silver Commander who operates at a tactical level. In this review the role of Silver was taken by the rank of Chief Inspector.

At this stage the Duty Silver is the most senior officer to be involved and has a tactical oversight of the incident.

If required the Duty Silver Commander will contact the Duty Gold Commander who will take overall strategic level responsibility for the incident. In this review the role was taken by the rank of Deputy Commissioner of Police.

Whilst the command and control roles shown here are fairly standard the coordination role starts with the 911 service, is passed to the Duty CIM and then passed onto the operational unit heads. A Search and Rescue Mission Coordinator is not clearly defined.

3. Incident review

3.1 Narrative to Incident 6228

The narrative details below are factual notes of the incident with amplifying information presented in a time ordered manner [a]. The information was compiled by studying the all the relevant incident logs and files available and from speaking to the key individual personnel involved. Although the first call to 911 was recorded at 2357 on Sunday 6th March, the following narrative commences during the morning of the 6th as the additional information is crucial to the decisions taken. Key event times are highlighted in **bold**.

3.1.1 Sunday March 6th 2016

1000 Weather forecast issued by the Cayman Islands National Weather Service (NWS) ^[2]. The forecasted period is valid from the afternoon of Sunday 6th March to the afternoon of Monday 7th March. Forecast indicates predicted winds for Sunday afternoon of North Easterly 10-15 knots with wave heights of 2-4 feet increasing to 3-5 feet through the night and again increasing to 4-6 feet through Monday as the winds increase to 15-20 knots.

1833 Police aircraft deployed to a report of a red flare sighted from Rum Point area. Joint Marine Unit launch a vessel to accompany the aircraft and investigate the report.

Whilst airborne the crew of the helicopter spotted a second red flare. Two vessels are sighted to be in close proximity to the location the flare was fired from. Upon arrival of the aircraft the vessels appeared to separate and depart in different directions. The aircraft is able to communicate the details to the JMU launch whose crew locate one of the vessels in the area of Governors creek. The occupants are interviewed and indicate that the flare was fired from the second vessel but that there seemed to be no distress and they knew nothing further.

1900 During the coordination of this incident another flare report was received via the emergency 911 service from a member of the public. The caller initially stated that he had seen the flare from his position at Macabuca Restaurant, North West Point (See figure 2) and it had been around three miles offshore in a North West direction. The 911 call handler believing the call to be the same as that in the Rum Point area thanked the caller and closed down the call. She then communicated this report to the Police aircraft which was still hovering in a position around Governor's creek. The aircraft captain upon receiving this new report was able to confirm that a flare on the west side of the island was a different one to that reported earlier. Subsequently the 911 operator called back the first informant for more details and later Police officers were dispatched to speak to the first informant. Upon arrival they were able to determine with a compass and the caller

 $^{^{\}rm a}$ All times shown in local Cayman Islands time zone and in 24 hour format

pointing in the direction he had seen the flare that it probably came more from a South West direction and not North West as he had originally stated. Further questioning indicated that the first informant had sighted a red coloured light for approximately 2-3 seconds falling below the fascia bar of the restaurant. Nothing further had been seen. Meanwhile the Police aircraft began a search of the area using their Forward Looking Infra-Red (FLIR) camera transiting from their position to North West Point and then offshore in a North West direction as had been initially indicated.

Note: the Police aircraft is subject to regulations detailed in the Royal Cayman Islands Police Service Police Air Operations Manual (PAOM) as approved by the Cayman Islands Civil Aviation Authority [3] which in turn oversees compliance with standards defined by the International Civil Aviation Authority (ICAO) [4] through the Air Navigation (Overseas Territory) Order [5]. The aircraft is flown using Visual Flight Rules (VFR) where the Captain of the aircraft can **only** operate the craft when weather conditions are clear enough to allow him to see where the aircraft is going and in particular he must have a visual reference to the ground or horizon [6].

It should be noted that both the log for the flight shows that the seas were rough and the moonlight available was insufficient. The Captain of the aircraft had indicated that as he approached a position 4 miles offshore he felt it was too dangerous to continue given the insufficient moonlight by which to see the surface of the water and horizon. Given this, the aircraft Captain began to fly back to shore but continued to make sweeps with their FLIR camera in the direction of land as well as to the South. The conditions on the night were confirmed by conversation with the aircraft observer who indicated they were considered to be dangerous.

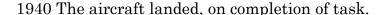




Figure 2 - Map of the West side of Grand Cayman showing the **approximate** location of the three red flares. For illustrative purposes only.

1833 - Sunset [7]

1855 - Civil Twilight [7]

2357 An emergency call is received at the 911 emergency centre from a member of the public. The caller reports that she is concerned that her two children and brother had not returned from a boat trip from earlier in the day at 12 mile bank. She indicated that her brother was not answering his phone and advised that at one stage he had been having engine trouble. She was advised that Police officers would be coming to see her.

Note: at 2242 and thus prior to this report a call was received at 911 from the cell phone which matches that used by the first informant above. The call lasts for approx. 30 seconds. The audio is quite clear and the 911 operator can be heard asking what the emergency is however the caller says nothing directly but voices can be heard talking and laughing in the background and a dog barking. It is assumed by the 911 centre that this was a mistaken call (dialled in pocket).

3.1.2 Monday March 7th 2016

0003 The 911 service operator called the Critical Incident Manager (CIM) Inspector (Insp) Livingston Bailey who indicated a police unit would be dispatched to the first informants address. During a further conversation with the 911 service operator it transpired that the first informant would be attending the George Town Police Station herself to speak to officers.

Upon arrival at the George Town Police station the first informant and her husband were met by Police Constable (PC) Burke and PC Brown who took further information regarding the incident including the details of the time the brother and sons were believed to have departed on their fishing trip (thought to be between 1000 and 1100). Neither of the parents were able to give a description of what the boys were wearing or a name or description of the boat they were on. The log also indicates that the father of the children had received information from a friend, a local fisherman, who after making some checks stated that he had word from another fisherman that the vessel in question had been spotted near the 12 Mile Bank at around 1500 hours. The fisherman had indicated that one of the engines was not working but no help had been offered and that he had also witnessed another two males on board the vessel along with the three missing persons to make five in total.

0037 The CIM Insp Bailey contacted Detective Sergeant (DS) Neil Mohammed from the Police Air Operations Unit. DS Mohammed was acting in the role of Duty Officer for the Police Air Operations Unit (AOU). During the call Insp Bailey informed DS Mohammed that a vessel had been reported missing and requested the police helicopter to be deployed. DS Mohammed asked for further details and was told the vessel had last been seen at 12 Mile Bank off North West Point but there was no description of it and a more accurate position was not available.

At this point the decision was taken not to launch the aircraft based on the following reasons which were discussed with the DS Mohammed;

- The aircraft had been deployed the previous evening (Sunday) and the crew had been airborne until 1940. To deploy at this stage would have meant a very limited period to search possibly up to 5 hours maximum before the aircraft would be grounded due to the limits of duty hours and lack of rest for the Captain. Note that from this point forwards a 5 hour search would see the aircraft leave in the dark and return to base still in complete darkness with sunrise not until 0640 [2][7]. With these limitations of crew the implications of this would mean there would be no air support for the valuable daylight hours when detection chances would be much improved. It should be noted that the Captain did not go off duty until 2000 the previous evening and as such required 12 full hours rest before he could work a further 12 hour shift. This meant that by not bringing him in until 0800 he could be utilised all day for the search. It should also be noted that due to staffing issues within AOU there was only one crew available with a second position for pilot still vacant.
- Due to lack of information, the search area and potential datum had not been defined at this stage and indeed a vague position at 12 mile bank sometime earlier in the day was not considered good enough to deploy to in the conditions with the probability of detection likely to be extremely low.
- From the experience of the previous night and given the weather forecast predicted the conditions to worsen, it was felt that to take the aircraft to the bank would be dangerous especially given the lack of moonlight and lack of visual references for the aircraft Captain as it was discussed that he would have been not only putting himself and his crew at extreme risk but also flying against the VFR regulations [6].

0040 The CIM Insp Bailey, contacted Chief Inspector (CI) Harlon Powery who was acting as Duty Silver Critical. CI Powery advised Insp Bailey to contact the Joint Marine Unit (JMU).

0043 Insp Bailey makes contact with the Duty Inspector (DI) Leo Anglin of the JMU to advise him of the incident and request deployment. After consideration Insp Anglin advised Insp Bailey that due to a lack of information, worsening conditions and no air support available a surface deployment could not be made until morning.

At this point the decision not to launch a surface asset was taken based on the reasoning below;

- Given the lack of any credible information regarding position and time and thus no datum to work from, a search area based on 12 mile bank which was potentially 9 hours or more old would have meant a very large search area with a potentially very low probability of detection and thus likely to yield no results.
- It was not known if the vessel had been involved in an incident, was drifting or had transited to another location where it was either at sea or alongside so at this stage the incident was being treated as an overdue vessel, no distress had been received.
- Putting a launch to sea in the dark with the forecasted weather conditions
 was considered to be extremely dangerous especially as the vessel would be
 required to transit through the main channel which Insp Anglin knew from
 his experience could be hazardous in rough seas even in the daytime let
 alone the darkness.
- The Forward Looking Infra-Red system fitted to the Cayman Guardian was defective and had been for some time. The Radar system was described as ineffective which thus meant that the crew would have been relying on a visual search with no moonlight in rough seas.
- There was no air support to help cover the area as the AOU Duty Officer had already made the decision not to deploy (See above).
- With severe limitations in crew numbers, deployment overnight would likely have seen a reduction in capacity and available crew to deploy in daylight when the chance of location would be greatly enhanced.

Following this information Insp Bailey informed the family of the decision not to task either assets at this time.

0046 PC Burke contacted George Town Hospital (GTH) to make enquiries regarding the missing persons with negative results

0048 PC Burke contacted the Chrissie Tomlinson Memorial Hospital (CTMH) to make enquiries regarding the missing persons with negative results.

0120 CI Powery contacted Insp Bailey to discuss the incident and was told that contact had been made with the JMU but that resources would not be deployed. By this time the Deputy Commissioner of Police (DCOP) Anthony Ellis who was acting as Duty Gold Commander had also been contacted and told that due to lack of resources an aerial support deployment to search would not be made until morning.

0130 (approx.) Information was given to me that at this time the Port Security made a VHF call regarding this incident after they had been notified of it by a member of the public. The informant and exact timing cannot be verified at this time.

0600 The crew of the JMU informed to report to base at 0800 for deployment alongside the AOU.

0609 DS Mohammed contacted the Duty CIM for an update. At this point DS Mohammed was told that it was five persons aboard a vessel which had not returned from a position somewhere at the 12 mile bank. DS Mohammed asked if the JMU had been deployed to which the answer was given as no. DS Mohammed advised the CIM that he would direct the Search Planning and liaison to the AOU Unit Executive Officer (UEO) Steve Fitzgerald and that he would be contacted shortly. DS Mohammed then contacted Mr Fitzgerald to appraise him of the situation and asked him to call the CIM direct. DS Mohammed then contacted Captain Nigel Pitt the aircraft pilot and the Tactical Flying Officer (TFO) to appraise them.

0815 Several calls made to the first informant with no answer. A subsequent call made to her husband was successful and he was able to pass more details of the persons on board and provided some contact numbers.

0830 The log shows that information was received from a Mr Cameron Ebanks reporting that whilst at sea on Sunday 6th March he had sighted the missing vessel with three adults and two children. Mr Ebanks was able to name all three adults and provided further information regarding the type of vessel, colour and engine configuration. He also stated that children were not wearing lifejackets and appeared to be just wearing shorts. It was stated that one of the engines looked to be disabled. The crew aboard the craft are reported as being alongside and asking Mr Ebanks for a fuel primer bulb however he did not have such an item to give them. He noticed that the starboard side engine was running, the port side was not. This was around 1445 on Sunday 6th March. Mr Ebanks indicated that a short while later he began to return to shore. The weather was described as deteriorating with low clouds and with the sea getting choppy and the waves displaying white caps. Mr Ebanks headed eastwards towards Grand Cayman initially and then due to worsening weather conditions altered his course to the South East until he reached the coast at North West Point at which time he hugged the coast on the North side. He observed the casualty vessel to be proceeding under its own power in a South Easterly direction towards George Town until he lost sight of them as he rounded Boatswain Point at around 1600. These details are also confirmed from his official statement.

0845 Police aircraft deployed to conduct a search pattern from North West Point to a position 7 miles west of the point.

0850 Family Support Unit (FSU) contacted and advised that assistance in the form of a Family Liaison Officer (FLO) would be required.

0900 JMU launch Guardian deployed with 4 crew aboard to assist in the search.

0900 (approx.) CI Ebanks contacts the port to ask if any distress calls had been received. The answer was negative.

0915 The Cayman Guardian whilst transiting the main channel on route out to the search area reported as taking damage to the propeller on the starboard side (see figure 3). Tide tables for this period indicate the tide should have been nearly high water with levels around 1ft [8] above MLLW [9]. The incident is said to have been caused by excessive wave action causing the vessel to hit the seabed at the trough of the wave. Given the sea conditions and excessive vibration from the starboard side drive area the decision was taken to return the vessel to base, arriving at 1030. The Guardian was subsequently lifted from the water at a local boatyard and a new propeller was fitted. This process took several hours and delayed deployment of the vessel into the search area until the following day.



Figure 3 - Shows the damage to the starboard propeller

0933 United States Coastguard (USCG) 7th District (RCC Miami) contacted by Insp Anglin and assistance requested in the form of a C-130 fixed wing Search and Rescue aircraft or similar asset to assist search. The USCG said they would call back to confirm if assistance could be given. At this point the USCG informed Insp Anglin that there were no United States Coastguard cutters in Caribbean which could assist.

1011 E mail sent to Port Security from JMU with details of the casualty vessel including a photo.

1025 Insp Anglin receives an e mail from USCG 7th District. The content is a relay of information from the USCG National Coordination Centre. It details a call received at the centre from a member of the public reporting to be a family member of one of the crew aboard the missing craft. The telephone numbers are also included in the e mail but these are not recognised as Cayman Island telephone numbers. The NCC report that this is the first contact they have had with this person and the first they had heard regarding this incident. As well as passing this message, the RCC also promise to send over the required search plans and likely drift vector data as soon as they could.

1034 Missing vessel located in a position approximately 20 nautical miles south west of George Town by the Police aircraft. The vessel was inverted. The log shows no record of survivors being spotted.

1045 - Police aircraft returns to base for refuel

1050 - Steve Myers appointed as Family Liaison Officer

1304 With the Cayman Guardian still out of the water having the propeller replaced, two officers from the JMU went aboard a cruise ship tender to try and assist with the search. Not considered safe so plan abandoned.

1317 Police aircraft advised that on return to search location the inverted craft could not be located.

1440 Information received from the USCG that approval had been given to launch the C-130, call sign RESCUE 1706 from Clearwater in Florida to assist with the search.

1715 The inverted vessel is reported to have been located again by the Cayman Islands Helicopter in a position believed to be approximately 3 miles from the original found position.

For the remainder of the day the search continued with the C-130 remaining on scene until darkness fell at which point it returned to Owen Roberts Airport, Grand Cayman. At this stage all vessels involved in the search were stood down and to return at first light.

1746 Police media office issue press release to ask for volunteers to assist with the search the following morning. Any volunteers with experience of the sea and a vessel over 50ft are asked to contact the JMU and leave their details.

3.1.3 Tuesday 8th March 2016

0700 MV Guardian deployed to continue search for missing persons and to recover vessel.

1500 C-130 returned to Florida USA. Another request made to USCG by Insp Anglin for another deployment. Request granted and C-130 call sign RESCUE 1715 tasked from South Florida USA.

1530 Deputy Commissioner Ennis, Chief Inspector Ebanks and Air Unit Executive Officer Fitzgerald met with family members of the missing persons.

3.1.4 Wednesday 9th March 2016

0430 C-130 deployed from South Florida, USA - Arrived on scene and spent 3-5 hours searching for missing persons.

0800 MV Guardian deployed to search coordinates provided by USCG.

1120 MV Guardian crew report that sea conditions are continuing to worsen and they are experiencing difficulties communicating with the C-130 aircraft.

1200 MV Guardian crew report that sea conditions are presenting a severe risk to the crew as the vessel had become unstable and had almost rolled over three times. The log indicates that sea states on scene were estimated to be around 12-15 feet. The MV Guardian was advised to return to base due to these conditions. Guardian reports to maritime command that a crew member is badly ill and needs treatment by the Emergency Medical Service (EMS).

1234 MV Guardian crew granted permission to make way to George Town port to deliver sick crew member to medical authorities.

1300 MV Guardian is released by Chief Inspector Ebanks to stand down and return to base.

3.1.5 Thursday 10th March 2016

0948 MV guardian reported to be departing base to search an area supplied by USCG.

1049 Sea conditions in area reported to be 6 feet. No air support available at this time.

1228 Police aircraft departed base on route to search area coordinates.

1353 Police aircraft completed search with no sightings and returns to base for refuel.

1430 A welfare check to the crew of the MV Guardian reveal that nothing untoward has been sighted.

1537 MV Guardian advised to return to base by Insp Anglin.

1706 MV Guardian back at base all crew accounted for.

3.1.6 Friday 11th March 2016

The log states that following consultation with Dr Jefferson the Chief Medical Officer for the Cayman Islands and the USCG on the likely survival times DCOP Ennis, Chief Superintendent (CS) Walton, CI Ebanks, UEO Fitzgerald and Insp Anglin all agree that survival is very unlikely and thus the incident has entered a search and recovery phase.

1500 DCOP Ennis, CI Ebanks, UEO Fitzgerald and Insp Anglin all meet with family members of the missing persons to brief them on the actions taken so far and next course of action as the incident is now in Search and Recovery phase.

4. Response

4.1 Analysis of response

To achieve consistency and ensure a mission is correctly executed IAMSAR Volume 2 [10] lists five stages of an incident.

4.1.1 Awareness

Initial information gathering is performed at the emergency 911 centre. Initial awareness came through the 911 call. At this stage there is no dedicated Search and Rescue Mission Coordinator (SMC) as the incident is only seconds old.

Information gathering at the **outset of an incident is critical**. Key information can be lost, overlooked or simply not acquired if the questioning is not correct. Operators at the 911 centre are trained in call handling techniques. They have available cue cards which have appropriate questions for them to ask in differing situations. They have a card for use in all calls to obtain generic caller information and then specific cards to prompt for more information. There is no obvious emergency phase declared here as per the IAMSAR DUS descriptors.

4.1.2 Initial Actions

These are the initial preliminary actions following the first call taken to obtain more information and to dispatch initial units. The log does not indicate that any additional amplifying information is passed at this stage however it does show that after the initial decision to dispatch a unit to the home address the first informant intended to proceed into George Town Police Station where she could be interviewed to obtain as much detail as possible.

In this instance following the initial call the Duty CIM was contacted 6 minutes after the first report a timescale which was appropriate. All details are passed to the CIM who indicated he would look to dispatch a police unit to the first informant (see above). The 911 service have a standard operating procedure (SOP) to contact the Duty CIM in the event of this type of incident. The SOP was followed correctly in this case.

VHF channel 16 is monitored 24/7 by the Port Security and 911 centre and no distress was reported. Information received from RCIPS suggests that at 0130 Port Security reported that they had been made aware of the incident and were making broadcasts. What is not clear however is the number and the frequency of these broadcasts?

Preliminary actions to alert SAR facilities were completed in a good time, the correct assets were chosen however they were both unable to deploy due to

limitations. Given that there was little information available and this was an overdue vessel, this timescale of alerting was acceptable.

4.1.3 Planning

Planning of the SAR response is a specialist role and as such it was appropriate that this was done by the AOU and JMU units respectively and as a combined response. The construction of a search plan and subsequent search area is extremely important to ensure that assets start searching in the correct place.

The role of SMC is not quite clear at this stage however it is clear that both AOU and JMU specialists worked closely together to construct their SAR response and this was appropriate given their resources and methods.

Limitations of units were shown to have been considered. One of the key areas of community concern is why a first light search was not completed. Starting the search at sunrise (0640) as opposed to at 0830 would have meant that the Police aircraft captain was brought in early and thus would not be able to fly all day without going home again due to limitations on duty hours.

The JMU deployment was also around the same time with the hours between sunrise and deployment taken up with Search planning and preparation. There is also a factor to suggest that with one surface vessel and one aircraft both units are often tasked together to provide mutual support. It thus made sense to prepare properly and deploy both units at around the 0830 mark which would ensure both units had fresh crew who could be searching for the entire period of the day. It may be the case however for future missions that a surface unit with a slower transit speed could be deployed early to the approximate location of the search whilst a detailed plan is prepared. This then puts the launch in the correct place once the plan is prepared.

In terms in search planning, the time before deployment was used to good effect to look at all the factors of the incident, obtain additional phone records and locations, create a search plan using available tidal and wind vectors and using local knowledge a search box was created. This was completed on paper as the service does not have a computerised search modelling platform. That level of detail was requested from the USCG after initial deployment when further international support was sought.

4.1.4 Operations

This stage deals with the dispatch of units and the conduct of the search. Both Police aircraft and the Cayman Guardian were deployed between 0845 and 0900 to commence a search of the area which had been calculated. Whilst this was happening and units were proceeding, officer's back at base and at RCIPS HQ continued to evaluate all the information and obtain further details. There was no confirmation evident of the emergency phase that commanders were working to.

Search planning forward look was actioned early and especially so by requesting assistance from the USCG with drift data and search areas. This call was also made to ask for additional surface vessels (CG Cutters) which were not available and an additional top cover fixed wing aircraft (C-130) which was granted sometime later. There are no records of a dedicated / single SMC and it seems this function was performed by collective of staff from AOU and JMU. Management oversight was good with tactical (silver) and strategic (gold) commanders both in the loop throughout. Communications with resources was good despite some limitations on equipment. It is not clear when survivability factors were first considered, it is mentioned at the end of the week and an expert opinion was sought however it is not clear if survivability was considered earlier in the week with regards to water temperature and exposure. Local pressure to keep searching was very high and the search period was long enough to ensure that survivability limits would have been exceeded.

Note: During the incident the logs for all cell phone numbers that the RCIPS had been provided with were checked. The cell phone belonging to the brother of the first informant was shown to have disconnected from the network at approximately 1545 on Sunday afternoon (6th March). This disconnect could have resulted from a flat battery or potentially by the phone being submerged in water. It was also found from a GPS unit recovered from the casualty vessel that the GPS unit had also recorded its last position around the same time. The positions given by the unit log were extracted and plotted. This did not happen for some days following the incident as it took time to dry the unit out before it could be powered on and the data extracted.

With both units appearing to deactivate at the same time it was factored that this may have been the time of the incident when the vessel got into difficulties and so this was the time used as a base to determine predicted survivability.

4.1.5 SAR Conclusion

At the conclusion of an incident SAR units are returned and there is an official termination of search of the incident. In this case the overturned vessel was located very quickly after commencement of search but the five aboard were not located despite searching for five days. The size of the search area was not given however from verbal communications it appeared to be very large given the inclement weather and higher than average drift rates and long elapsed time.

The order to terminate was taken as a collective once all the factors had been considered. There are also other factors to consider when keeping units deployed including resilience for other incidents / patrols which may occur. A balance must be struck between likelihood of search success and leaving assets available for other tasking's.

Finally after the incident had concluded there was a "hot wash up" where the operational teams discussed the incident. A fuller debrief however has not yet

taken place. This is something which can engender good team learning and is a platform to highlight where things went well or not so well. A system of "post mission review" could also be considered to capture this detail for future missions. Confirmation was received that this process does take place at both AOU and JMU in a more informal way.

5. Review conclusions

5.1 Conclusions

The following conclusions are observations from the notes and details extracted from the logs, reports and from speaking to the key individuals involved in the incident.

• Initial accurate and comprehensive information gathering is essential especially so in maritime Search and Rescue where targets will move with wind and tide and occupants cannot simply step off to safety. Thus asking the correct questions at the outset is critical.

The current arrangement sees initial call handling fulfilled by the 911 service. The operators at this service also deal with a plethora of other calls and so have limited knowledge of maritime SAR, relying on checklists to ask the appropriate questions. Following an emergency call reporting an incident in the maritime domain, the 911 operator will report to the Critical Incident Manager (CIM) who in turn will speak to the relevant unit either AOU, JMU or other specialist units within RCIPS. To my knowledge the CIM does not have specific maritime knowledge or expertise. The role is that of a duty officer and thus he must be contacted and then briefed before making a decision on a course of action from a remote location. He only has the details passed to him on the phone and thus possibly cannot get an appreciation of the bigger picture.

Even if assets cannot be deployed due to adverse conditions, darkness or for other reasons, information gathering should continue through this period to obtain as much and as precise data as possible to produce an accurate mission plan ready for when units are able to deploy. This information gathering phase can be difficult especially overnight but if key information around the last known position can be obtained it can greatly enhance the accuracy of any search area and thus increase the likelihood of detection.

• The report of the red flare from Macabuca restaurant was received at the 911 centre but the operator became confused and assumed the flare was from the same incident as that in the North Sound and so thanked the caller and cleared down the call. Although this error was picked up by the Police aircrew just a few minutes later and the caller re-contacted for further details there was inevitably delays in response. It is also the case that had 911 not been able to get back in touch with the first informant then vital and critical information may have been lost. It should be the case that each and every 911 call is treated as an individual and unique call unless the operator is absolutely certain that the time, location and circumstances are already being dealt with. This instance has already been noted by the 911 centre and steps put in place to remind operators to confirm all details and treat each case on its own merits.

• The decisions not to deploy the Police helicopter or the Cayman Guardian during darkness were taken based on sound reasoning by experienced duty operational officers at both AOU and JMU. For the air unit the lack of moonlight and the worsening weather conditions which they had witnessed first-hand the previous night when the crew had declared that it simply was not safe to fly in the darkness with no visual reference in conjunction with flying against regulations and the issue of reduced hours available. Safety of the SAR crews should always be of paramount importance, considered and weighed up against the likely chance of a successful outcome. Both crews have indicated that had a position of the craft been known or even approximated to a more accurate area and within safe travel distances then it is likely that there would have been further conservation regarding an immediate launch despite the potential risks to crew.

The Last Known Position (LKP) of the vessel was not confirmed, leaving the commanders of both air and marine units with a huge area of sea to consider in the darkness and thus the decision was taken by experienced officers to wait until daylight to deploy. The decision making process is logical in this instance.

- The decision to commence search at 0845 and indeed after 0900 for the launch as opposed to sunrise at 0640 was noted to be of concern from the community. The marine commander and air commander have both stated that the time was taken up gathering additional information and creating the search plan which is important and indeed the aircraft did locate the missing vessel on its first sweep which would validate that work. It may be the case however that for future missions if the weather conditions allow and fresh crews are available then the marine launch especially could be deployed to sea earlier and thus would be in a position to commence search immediately once the details had been passed across the radio by marine command. This would however require adequate crew to be available at both specialist units.
- Limitations of resources has been noted throughout this review. The Police Air Unit currently have one pilot available and although there is a vacant position for a second pilot this has not yet been filled which means that the unit is always reliant on the one pilot to fly. If he becomes unavailable due to restriction of hours or potentially illness for example then the aircraft will be sat on the ground and unavailable for SAR or any other missions.
- The JMU also have resourcing challenges with 14 current staff out of 37 positions available to perform all duties including customs, SAR and immigration. This can be a challenge to provide crews to deploy especially in protracted incidents where crews returning from a mission will require sufficient downtime to recover. Any type of search is extremely tiring and additional resources may assist with the prosecution of incidents and allow crews to receive adequate rest.

- Equipment was also highlighted during this review. The Cayman Guardian reportedly has an issue with one of its fuel tanks which leaks fuel into the surrounding compartment space. Aside from the other issues with fuel leaking and moving around this also means the crews have to contend with a very strong and often nauseous smell of diesel whilst they are at their lookout positions in the upper part of the vessel. The FLIR camera is currently unserviceable and the radar system is described by the marine commander and Chief Inspector of the Marine unit as inefficient. Limitations with equipment such as this can hinder efficient operation. These defects should if possible be rectified to ensure that when crews put to sea they have the very best chance of a successful mission. A second vessel which is highly rated by the crew as being a stable and good search platform currently sits alongside and was reported as having sufficient defects to restrict its operation.
- During any incident but especially so an overdue or missing vessel communications with the vessel and local craft are essential. VHF Channel 16 is the international Distress, Safety and Calling channel and should be monitored and used throughout. Current Channel 16 monitoring is done 24 hours a day from both the Port security and the 911 Centre with the Port Security location assigned as the main agent for monitoring this channel. The Port Security will receive distress traffic and alert either RCIPS or 911 as appropriate. They will also make broadcasts on behalf these agencies at request. A general broadcast to vessels at sea to assist in the search for a missing vessel may well elicit the response of local fishing vessels however once these vessels have responded they need coordination to instruct them where to search, to keep an overview of their safety and to update them as required with new information. This coordination function could be reviewed in the future to provide a more effective and efficient response.

Annex 'A' - Supporting Material

RCIPS Air Operations Unit (AOU)

The RCIPS Air Operations Unit is a critical element of the Cayman Islands Police service providing support to law enforcement, customs as well as Search and Rescue. The unit operates a Eurocopter EC135 helicopter (see Figure 3) which is equipped with stabilised day and low light cameras, a Forward Looking Infra-Red (FLIR) heat tracking camera for day or night use, SX5 starburst light for ground illumination as well as a 700 watt Skyshout public address system and video microwave downloading. Although not winch equipped, the aircraft has lifebuoys and liferafts which can be deployed to a casualty to aid survivability until surface support can arrive.

The staff comprises officers with many years of experience including the unit executive officer Mr Steve Fitzgerald a former search adviser in the United Kingdom who has gained a large amount of knowledge skills and experience from being involved in many incidents large and small in scale over the past twenty years.

The AOU continually strive to review and modify their approach to maintain an effective response.



Figure 4 - Police aircraft - Eurocopter 135

RCIPS Joint Marine Unit (JMU)

The Joint Marine Unit comprises officers from RCIPS, HM Customs and Immigration and daily operations are led by Inspector Leo Anglin the Joint Marine Commander who has seen service with the RCIPS since 2009. The Unit has multiple responsibilities with its major functions being search and rescue operations as well as the interdiction of drugs and firearms.

In addition officers also investigate maritime incidents, marine property thefts and illegal immigrants at sea. They patrol waterborne tourist activity areas, conduct maritime safety checks and police maritime public activities such as regattas, swims etc.

Much like the AOU the JMU is headed up by officers with many years of experience. They have expertise in all areas of marine work not just Search and Rescue. The unit currently runs the patrol vessel Cayman Guardian as their main workhorse supported with smaller faster vessels. Typical duties of this craft are patrol and interception as well as Search and Rescue.



Figure 5 - Marine launch Cayman Guardian

Glossary

AOU	Air Operations Unit	Police helicopter unit
CI	Chief Inspector	Senior Police officer with tactical level responsibilities
CICAA	Cayman Islands Civil Aviation Authority	Oversea air rules and regulations in the Cayman Islands
СТМН	Chrissie Tomlinson Memorial Hospital	Hospital on Grand Cayman
CIM	Critical Incident Manager	First call by 911 emergency centre to initiate Police response
CG	Coastguard	Coastguard
CS	Chief Superintendent	Senior Police officer
DS	Detective Sergeant	Police Officer
DCOM	Deputy Commissioner Of Police	Senior Police officer with strategic level responsibilities
DUS	Distress Urgency Safety	Three emergency phases
EMS	Emergency Medical Service	Medical service provider
FLIR	Forward Looking Infra-Red	Thermal imaging camera can display differences in heat sources
FLO	Family Liaison Officer	Police officer allocated to be main contact with family
FSU	Family Support Unit	Police unit who look after family's needs
GTH	George Town Hospital	Hospital on Grand Cayman
IAMSAR	International Aeronautical and Maritime Search and Rescue	SAR Convention from 1979 which lays down principles for SAR infrastructure and operating guidelines for nations and states as well as shipping
ICAO	International Civil Aviation Authority	Overseas and develops policy for international air operations
JMU	Joint Marine Unit	RCIPS Marine unit comprising SAR, Customs and Immigration officers
JP	Justice of the Peace	Judicial officer of the Cayman Islands
LKP	Last Known Position	Last position that a vessel was sighted or reported in with a valid date and time
MCA	Maritime & Coastguard Agency	UK Maritime Authority

MRCC	Maritime Rescue Coordination Centre	A location where SAR is coordinated from. Houses all required expertise and personnel
NCC	National Coordination Centre	National Coordination Centre
NWS	National Weather Service	Provides a national and official weather service
PAOM	Police Air Operations Manual	Operating guidelines for Police aircraft
PC	Police Constable	Police man or woman
RCIPS	Royal Cayman Islands Police Service	Police service of the Cayman Islands
RCC	Rescue Coordination Centre	Like MRCC but can also coordinate SAR from other domains
RMS	Record Management System	RCIPS system for recording incidents and actions.
SAR	Search and Rescue	Function to search and rescue persons in difficulty
SMC	Search and Rescue Mission Coordinator	Person in charge of SAR operations and SAR missions
SOLAS	Safety of Life at Sea	International Convention from 1974 which laid down the guidelines for shipping safety including equipment to carry on board, GMDSS
SOP	Standard Operating Procedure	Consistent way or operating to avoid mistakes or errors
TFO	Tactical Flying Officer	Police crew used to keep lookout whilst pilot flies aircraft
UEO	Unit Executive Officer	Head of unit for Air operations
USCG	United States Coastguard	North American Coastguard service
VFR	Visual Flight Rules	Rules by which an aircraft pilot must be able to see a visual reference to fly safely.

References

- $^{1}\,https://en.wikipedia.org/wiki/Gold\%E2\%80\%93silver\%E2\%80\%93bronze_command_structure$
- ² Cayman Islands National Weather Service
- ³ http://www.caacayman.com/
- 4 http://www.icao.int/
- ⁵ http://www.legislation.gov.uk/uksi/2013/2870/contents/made
- ⁶ https://en.wikipedia.org/wiki/Visual flight rules
- ⁷ http://www.timeanddate.com/sun/uk/georgetown?month=3&year=2016
- 8 <u>https://tidesandcurrents.noaa.gov/</u>
- $^{9}\ \underline{https://tidesandcurrents.noaa.gov/datum\ options.html}$
- ¹⁰ IAMSAR Volume Description