The Bahamas Maritime Authority

Danish Maritime Authority

THE JOINT DIVISION FOR INVESTIGATION OF MARITIME ACCIDENTS & BAHAMAS MARITIME AUTHORITY REPORT

QUEST

Grounding on 27 June 2007

Division for Investigation of Maritime Accidents – Danish Maritime Authority

Division for Investigation of Maritime Accidents. Danish Maritime Authority,
Vermundsgade 38 C, DK 2100 Copenhagen
Phone: +45 39 17 44 00, Fax: +45 39 17 44 16 CVR-nr.: 29 83 16 10

The Bahamas Maritime Authority

120 Old Broad Street, LONDON EC2N 1AR United Kingdom
Tel: +44 207 562 1300 Fax: +44 207 614 0608

The casualty report has been issued on 4 August 2008

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This joint casualty report is available from the Bahamas Maritime Authority and on: www.dma.dk.

The Division for Investigation of Maritime - Danish Maritime Authority
The Division for Investigation of Maritime Accidents is responsible for investigating accidents and serious occupational accidents on Danish merchant and fishing vessels. The Division also investigates accidents at sea on foreign ships in Danish waters.

The purpose of the investigation is to clarify the actual sequence of events leading to the accident. With this information in hand, others can take measures to prevent similar accidents in the future.

The aim of the investigations is not to establish legal or economic liability.

The Division's work is separated from other functions and activities of the Danish Maritime Authority.

When a Danish merchant or fishing vessel has been involved in a serious accident at sea, the Division for Investigation of Maritime Accidents must be informed immediately.

Phone: 39 17 44 00
Fax: 39 17 44 16
E-mail: oke@dma.dk

Cell-phone: +45 2334 2301 (24 hours a day).

The Bahamas Maritime Authority

The Bahamas Maritime Authority investigates incidents at sea for the sole purpose of discovering any lessons which may be learned with a view to preventing any repetition. It is not the purpose of an investigation to establish liability or to apportion blame, except in so far as emerges as part of the process of investigating that incident.

It should be noted that the Bahamas Merchant Shipping Act, Section 170(2) requires officers of a ship involved in an incident to answer an Inspector's questions fully and truthfully. If the contents of a subsequent report were submitted as evidence in court proceedings relating to an accident this could offend the principle that a person cannot be required to give evidence against himself. The Bahamas Maritime Authority would only make a report available to an interested party on the strict understanding that it would not be used as evidence in any court proceedings anywhere in the world

Contents

1 Summary

QUEST is a passenger ship, which sails tourists on one week round trips in Greenland waters. The actual voyage started in Kangerlussuaq on 22 June with 54 passengers and a crew of 20.

In the morning of 27 June the ship was on a passage from Equip Sermia to Qeqertarsuaq (Godhavn), when it grounded in calm weather 0.24 miles from the coast of the Disko Isle approximately 1 mile east of Qeqertarsuaq.

At low water the ship listed about 15 degrees to starboard and the passengers were transferred to the shore by the ship's Zodiac craft.

The ship was pulled free on 29 June and was after an inspection by divers allowed proceeding to Nuuk Shipyard for temporary repair of cracks in the bulb and of several dents and deformed frames in the bottom.

2 Conclusion

QUEST grounded on a rock in a sparsely surveyed area. The rock was not marked in the chart. (5.3)

The route used near to the coast was not in accordance with the ship's Voyage Plan. The route was deliberately chosen by the Master in order to give the passengers the possibility to watch ice bergs and whales. (5.3)

QUEST was sailed in and out between the ice bergs at a speed of about 9 knots. This was unnecessarily hazardous and must be considered as not being in accordance with the ordinary practice of seamen. (5.3)

The Master was the only one on board, who had experience in navigation in Greenland water and his experience did not cover the area of the grounding. (5.1)

QUEST did not use a local ice navigator. (5.1)

QUEST did not report the grounding to the Coastal Control System by itself but only on the request from Aasiaat Radio and 50 minutes after the grounding. (5.2)

QUEST was equipped with VDR but the data was not preserved. (5.4)

3 The investigation

The Danish Division for Investigation of Maritime Accidents and the Bahamas Maritime Authority (BMA) have co-operated during the investigation of the accident and the production of the joint report.

The Investigation Authorities have received written statements from involved crew members and also documentation relevant for the investigation.

The Danish Division for Investigation of Maritime Accidents went on board the ship in Nuuk on 2 July, interviewed the Master, the Chief Officer and the 2nd Officer and secured hard evidence concerning the navigation of the ship.

Tele Greenland A/S has provided information on QUEST's participation in the Coastal Control System (KTR) in Greenland and from Island Commander Greenland information is received on the ship's participation in GREENPOS.

4 Factual Information

4.1 Accident data

Type of accident (the incident in details)	Grounding
Character of the accident	Serious
Time and date of the accident	27 June 2007 at 0648 LT (UTC -2)
Position of the accident	69°14.9' N - 053°29.3' W
Area of accident	Disko Bay
Injured persons	None
Ship abandoned (usage of either rescue boat or fleet)	Yes, the 54 passengers were transferred to shore by the ship's Zodiac craft
IMO Casualty Class	Serious

4.2 Navigation Data

Stage of navigation	Navigation in confined waters
Port of departure	Equip Sermia
Date and time of departure	26 June at 1530
Depth of the time of the accident	4 m

4.3 Ship data

Name	QUEST
Home port	Nassau
Call sign	C6WE3
IMO No	8913904
Registration No	8001365
Register	Bahamas
Flag State	Bahamas
Construction year	1991
Type of ship	Passenger Vessel
Tonnage	1268 GT
Classification	Bureau Veritas
The owner	International Shipping Partners INC, Miami
Management	International Shipping Partners INC, Miami
Length	45.61 m
Engine power	1470 kW
Regulation	SOLAS

From September 1991 to June 2004 the vessel was Danish registered under the name SAQQIT ITTUK and with Nuuk as the Port of Registry.

From June 2004 to 13 June 2007 the vessel was Danish registered under the name DISKO II and with Aalborg as the Port of Registry.

On 14 June 2007 the vessel was registered in the Bahamas under the name QUEST.

The vessel has always been used as passenger vessel in Greenland waters.

4.4 Weather data

Wind – direction and speed	Calm
Sea	Calm
Current	None
Visibility	Good
Light/dark	Light

4.5 The Crew

Number of crewmembers	20
Number of crewmembers certified to act as bridge watch	3
Watch on the bridge	Master, Chief Officer and look-out
Minimum Safe Manning	9 – issued 20 April 2007
Occupation on board the ship at the time of the accident (crewmembers relevant to the accident)	Age, Certificate of Competency, other certificates, training, sailing time.
Master	59 years, Unlimited Master, endorsed by Bahamas, General Operator GMDSS. Many years experience as Master on

	passenger ships on regular routes in Greenland waters. Danish citizen.
Chief Officer	36 years. Unlimited Master, Panama, endorsement by Bahamas is ongoing. General Operator GMDSS. 6 years as Chief Officer in a passenger ship. First time in Greenland waters. Signed on QUEST on 15 May 2007. Panamanian citizen.
2nd Officer	53 years. Master Certificate, endorsement by Bahamas is ongoing. 9 years as officer, 4 years in passenger ships. First time in Greenland waters. Signed on QUEST on 26 May 2007. US citizen.

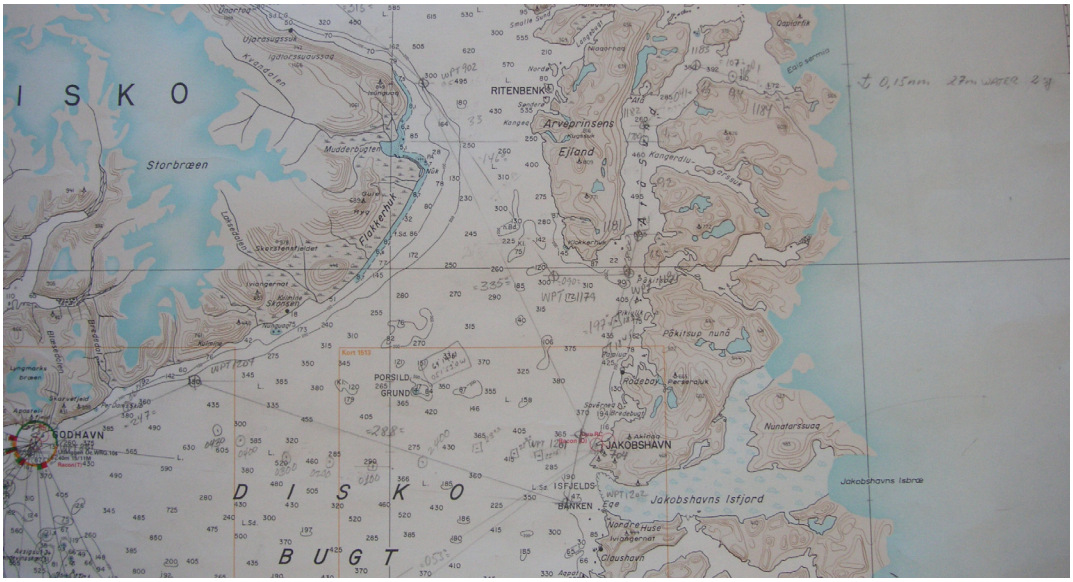
4.6 Narratives

QUEST sailed from Eqip Sermia on 26 June at 1530 hours with 54 passengers and 20 crew members. It sailed with low speed towards the Ice Fiord.

The Chief Officer (CO) and the 2nd Officer run a two-shift bridge watch with the CO on the 06-12 and 18-24 watches.

For navigation they use GPS, Radar (ARPA), Echo sounder, paper charts and electronic charts. The route and way points are in the paper charts. The electronic charts are used as reference. The entire route is covered by raster charts.

At the departure the Master was on the bridge together with the 2nd Officer and an AB. The Master left the bridge at 1600 and returned at about 2000 when the ship was off the Ice Fiord. There were large areas of ice and the Master remained on the bridge until these areas have been passed. He left the bridge at about 2215 with a message for the 2nd Officer to call him when at the Way Point (WP) 1204 (*see pictures next page)* and to regulate the speed to arrive at the WP at about 0515. Finally the 2nd Officer was instructed not to pass too close to the Porsild Ground north of the track.



QUEST's Danish chart no. 1500. Photo by the Investigation Division

When the 2nd Officer took over as OOW at 0000 hours on 27 June the speed was reduced to about 4 knots and he was told by the CO to remain on this speed and to call the Master at 0430. The course according to the voyage plan was 288° but due to icebergs the vessel was deviating from the plan.

Together with the 2nd Officer on the bridge was an AB as look-out. The three ABs run a 3 shift watch.

The 2nd Officer called the Master, and he came on the bridge at about 0440. He took over the watch at 0520 and changed course to 270°. At 0530 the speed was increased to 8 knots.

QUEST's Danish chart no. 1511. Photo by the Investigation Division

It was the decision of the Master to go closer to the coast than original planned in the Voyage Plan. He did so for the benefit of the passengers, who could watch the ice bergs and whales at close hand.

The 2nd Officer called the CO at 0520, and the CO arrived on the bridge a few minutes before 0600 hours.

At 0600 the 2nd Officer inserted the position in charts no 1500 and 1511, 69°17.8' N - 053°09.0' W, and he showed the position to the CO, and told him that there were ice bergs ahead, that the course on auto pilot was 244° and that the Master was in charge of the navigation. Then the 2nd Officer left the bridge.

The weather was calm with a clear sky. There was not much current, as normal for this area.

The ship was sailing along the coastline changing course all the time to pass between the ice bergs. The CO was steering on the auto pilot as instructed by the Master. The speed was increased so that the passengers could watch the coast and whales and the ship still be able to arrive at Qeqertarsuaq at 0800 as scheduled.

The echo sounder was on the 400 m range scale. When the readings of the echo-sounder went below 100m, the under keel clearance gradually decreased to 40-30m and a little later to 20m, where it stayed over some time.

The CO was checking the distance to the coast frequently by the radar. At the beginning of his watch the distance was about 4 cables.

At about 0645 the Master chose to go inside a big ice berg ahead and he ordered the CO to turn to starboard. According to the Master an inside passage was most natural in the situation and he was of the opinion that when an about 20 high ice berg could float then there would be plenty of water for the ship. The distance of passage to the ice berg was about 25m.

Just when QUEST was passing the ice berg the echo sounder indicated a sudden decrease of the depth of water, from about 20m to about 10m, and the Master ordered the CO to turn to port, away from the coast. The ship grounded immediately after at a speed of 8.5 knots. The grounding was rough, and the ship stopped almost immediately 0.24 miles from the coast. At the time of the grounding it was almost morning high water, 1.2m.

The forepart of QUEST with the bulb was lifted and the ship was listing 10° to 15° to starboard.

The safety of the passenger and the crew was checked, no one was hurt, and the tanks were sounded with no ingress of water found. The Master then tried to take the ship off the ground with the engine full astern but without success. Ballast was shifted aft and new attempts were made to re-float the vessel, but still without success.

From about 0815 to 0915 the passengers were taken ashore by the ship's Zodiacs.

After several attempt the following days to re-float the vessel at high tides the newly arrived vessel OCEAN NOVA succeeded in pulling QUEST off the ground on 29 June at 2135 hours.

QUEST proceeded to Qerqertarsuaq Road for anchorage. Based on a diving survey the next day the classification society issued permission for a single voyage to Nuuk shipyard for temporary repair.

4.7 The crew

QUEST arrived in Greenland waters on 19 June just after having changed flag and management and with a new crew of 20, among who the Master was the only one with experience in navigation in Greenland waters. His experience comes from many years as Master on passenger ships on regular routes in Greenland. He had no experience in the special form of navigating close to the coast and the ice edge for the benefit of the passengers. He had not before navigated close to the south coast of Disko.

The CO and the 2nd Officer were experienced navigators. It was their first voyage to Greenland and they had no experience in navigating in ice filled waters. The 2nd Officer has explained that he had had no instructions as to how close the ship could pass the ice bergs.

4.8 QUEST's reporting

According to MRCC Greenland QUEST reported to GREENPOS on 19 June at 1200 UTC in the position 58°50' N - 44°00' W and reported the intention of following the ice edge and the coastline to Kangerlussuaq (Soendre Stroemfjord).

The ship reported every 6 hours to GREENPOS until the arrival of Kangerlussuaq on 22 June at 0800 UTC, when the reporting was changed to the Coastal Control System via Aasiaat Radio.

In Kangerlussuaq the passengers went on board for the one week cruise and QUEST sailed on 22 June at 1800 LT.

According to QUEST's reports to Aasiaat Radio the vessel visited Sisimiut, Ilulissat, Uummannaq and EQI (Equip Sermia). It sailed from the latter on 26 June at 1530 LT with an ETA (Estimated Time of Arrival) Qeqertarsuaq on 27 June at 0830 LT.

On 27 June at 0715 hours Aasiaat Radio was informed by the Qeqertarsuaq Police that QUEST had grounded on a rock close to Qeqertarsuaq. Aasiaat Radio at once called QUEST and asked for a situation report. The ship reported about the situation at 0740 and Aasiaat Radio relayed the report to the rescue authorities.

4.9 The Voyage Plan and the actual navigation

The Voyage Plan was drawn up by the Master, who also inserted it in the relevant charts.

For the voyage across the Disko Bay the course according to the Voyage Plan was 288° towards WP 1204 in position 69°20' N - 52°50' W. From WP 1204 the track inserted in chart No. 1511 went along the coastline on course 247° to WP No. 851 in position 69°13,25' N - 53°35,80' W, just outside Qeqertarsuaq.

The actual route sailed across the bay was about 3 miles south of the route of the Voyage Plan. According to the 2nd Officer, this was because of the many ice bergs.

According to the notes in the used chart, No 1511, the course was altered to 335° towards WP 1204 at 0430 hours.

At 0520 the Master altered the course to 270° and continued on this course past the Voyage Plan track on course 247° along the coastline. At 0600 the position according to the Deck Log Book was 69°17,8' N - 53°09,6' W . The Master has explained that he decided to sail closer to the coast than originally planned, so they could manoeuvre between the ice bergs and the passengers could watch the whales between the ice bergs.

The distance between the position at 0600 and the grounding position is 7.5 miles. The average speed over the ground has therefore been 9.4 knots.

The Voyage Plan was not altered to reflect the changes in the actual navigation.

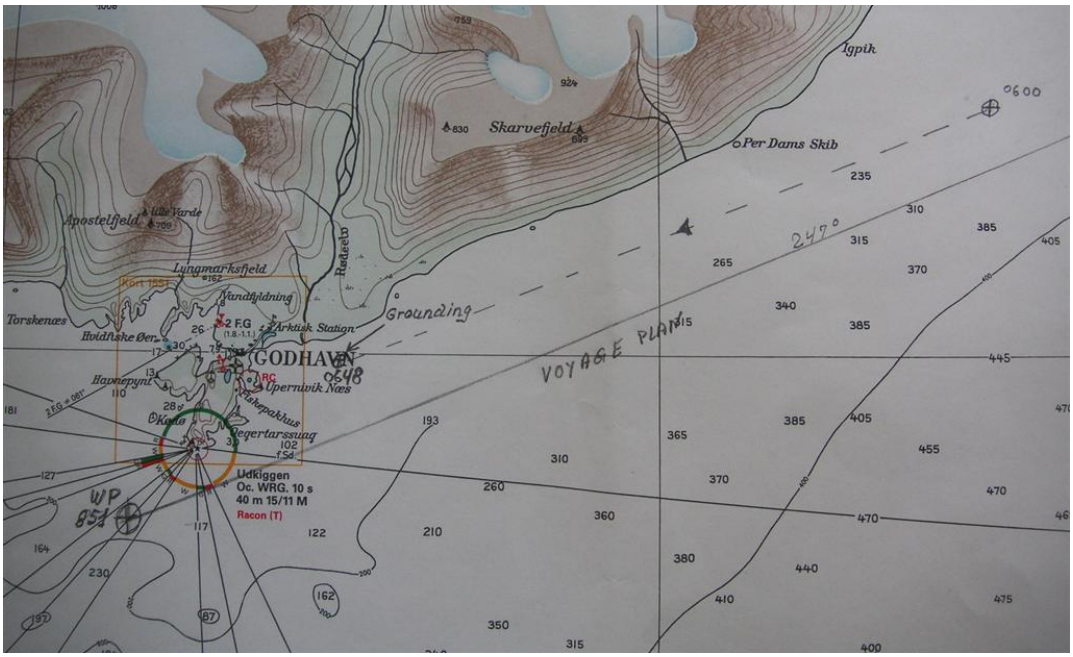


Photo by the Investigation Division. Chart no. 1511

4.10 The chart and the navigational equipment

The chart used for the last part of the voyage before the grounding was the Danish chart no. 1511. It is published in 2003.

In the chart is printed the following caution: “Sounding tracks in the inshore routes is of a reconnaissance nature only. Mariners are therefore urged to exercise due caution”.

From about 0600 and until the grounding at 0648 the vessel passed an area for which the chart did not contain any depth curves and with only very few soundings marked in the chart.

The GPS was used for position determination. The last position before the grounding, which is noted in the log book and inserted in the chart is the position at 0600 hours. In the chart, under the heading Satellite-Derived Positions is printed the following note: “Positions obtained from satellite navigation systems are referred to WGS-84 Datum: they should be moved 0.06’ northward and 0.32’ westward to agree with this chart”.

The two radars were operating. According to the CO he observed the distances to the coast regular by radar. In the beginning of his watch the distance to the coast was about 4 cables. The ship grounded at a distance from the coast of about 2½ cables.

The echo-sounder was operating and it was set to the 400m scale. According to the CO the ship manoeuvred among the ice bergs between 0600 and 0645 on or about 100m depth of water gradually decreasing to about 40m. At 0647 the echo-sounder indicated a rapidly decrease of the under keel clearance. It was at the time, when the ship was passing between the coast and a big ice berg.

According to the Master the ship passed the 100m depth curve some time before the grounding, and the echo-sounder indicated 40-30m and later 20m water under the keel.

QUEST is equipped with VDR, a Furuno VR 5000. On the day of the grounding The Bahamas Maritime Authority verbally requested the managers of the vessel to preserve the VDR data. This request was followed up with a written request by email on the 28th June. Apparently this request was never relayed to the ship and the data were not preserved.

4.11 Consequences

Shortly after the grounding the 54 passengers were evacuated to the shore by the ship's own Zodiacs. Their cruise was interrupted. They were later transferred to another vessel.

On the ship there were cracks in the forepart of the bulb and several dents in the bottom plates and also deformed frames inside the vessel.

The vessel was allowed a single voyage without passengers to Nuuk for docking and temporary repairs.

5 Analyses

5.1 The crew

Most of the crew members had been on board QUEST (DISKO II) for about one month, of which about 3 weeks in Danish port to prepare the ship for the cruises in Greenland. They were of different nationalities and they all, except the Master, had no experience of navigation in these archipelagic waters.

It is possible to hire a local ice navigator to assist during navigation in Greenland waters. With the Master as the only one on board with experience in navigation in Greenland waters, it would have been expedient for the owner to hire an ice navigator to advice and teach the navigators of the special circumstances of navigating in Greenland ice filled waters and also to advice during navigation of special areas in relation to tourist cruises.

5.2 OUEST's reporting

QUEST reported to MRCC Greenland and to the Coastal Control System in accordance with the requirements of the legislation.

When the ship grounded this was however not reported to Aasiaat Radio. A situation report was transmitted to the Radio approximately one hour after the grounding and on the request from the Radio, which learned of the grounding from the police. The Aasiaat Radio then informed the rescue authorities.

It is important that the rescue authorities are informed as early as possible in case of accidents at sea. This is especially important in waters as the Greenland waters, because many places are difficult to reach, the weather can change rapidly, the rescue resources are sparse and wide spread, and local assistance must be organized.

From QUEST the grounding should have been reported immediately after the grounding and before attempts were made to re-float the vessel.

5.3 The Voyage Plan and the actual navigation

The ship's SMS contains a procedure for Route Planning according to which route planning should be carried out in accordance with the ICS Bridge Procedures Guide, Third Edition, Chapter 2.

The Master had prepared the Voyage Plan and had inserted it in the relevant charts. On several occasions the plan was not followed, because it became necessary to deviate from the planned track due to ice.

This is quite understandable. However, in those occasions where it became necessary to deviate from the Voyage Plan, a corrected plan should have been prepared, and the areas to be navigated should have been carefully considered in the relevant charts.

During the last hour before the grounding the ship followed a route near the coast, nearer than planned for in the Voyage Plan. In the chart the depth information for this route was very sparse, and the Master did not have any experience in navigating in this area.

The route was deliberately chosen for the benefit of the passengers, to give them a chance to watch the ice bergs and the whales swimming between the ice bergs. The ship was sailed in and out between the ice bergs with a speed of about 9 knots.

The ship grounded on a rock, which was not marked in the chart.

The navigation during the last hour before the grounding was unnecessarily hazardous and must be considered as not being I accordance with the ordinary practice of seamen.

5.4 The Voyage Data Recorder (VDR)

Quest was equipped with VDR. The action to preserve the data following an incident is by the pressing a button on the VDR, which stop the recording process thus preserving the data.

It is very unfortunate that the data were not saved. The idea of the VDR is to make it possible to analyse the circumstances of incidents and accidents, such as this grounding, in order to learn from them and to prevent repetition.

6 Recommendations

6.1 Voyage Planning

It is recommended that the managers update QUEST's ISM procedures concerning Voyage Planning to reflect the importance of carefully routeing in Greenland waters, where surveys may be sparse, to reflect the importance of following the Voyage Plan,

and finally to reflect the importance of updating the Voyage Plan, when circumstances have necessitated a deviation from the plan.

6.2 Ice navigators

It is recommended that the managers consider making use of local ice navigators in ships navigating in Greenland waters, especially when the crew is new and inexperienced in navigation in archipelagic waters, and also when the voyage plan of the ship includes navigation in inshore routes.

6.3 Voyage Data Recorder

It is recommended that the managers issue clear instructions to its ships on preserving VDR data in case of incidents and accidents and how the data is preserved.