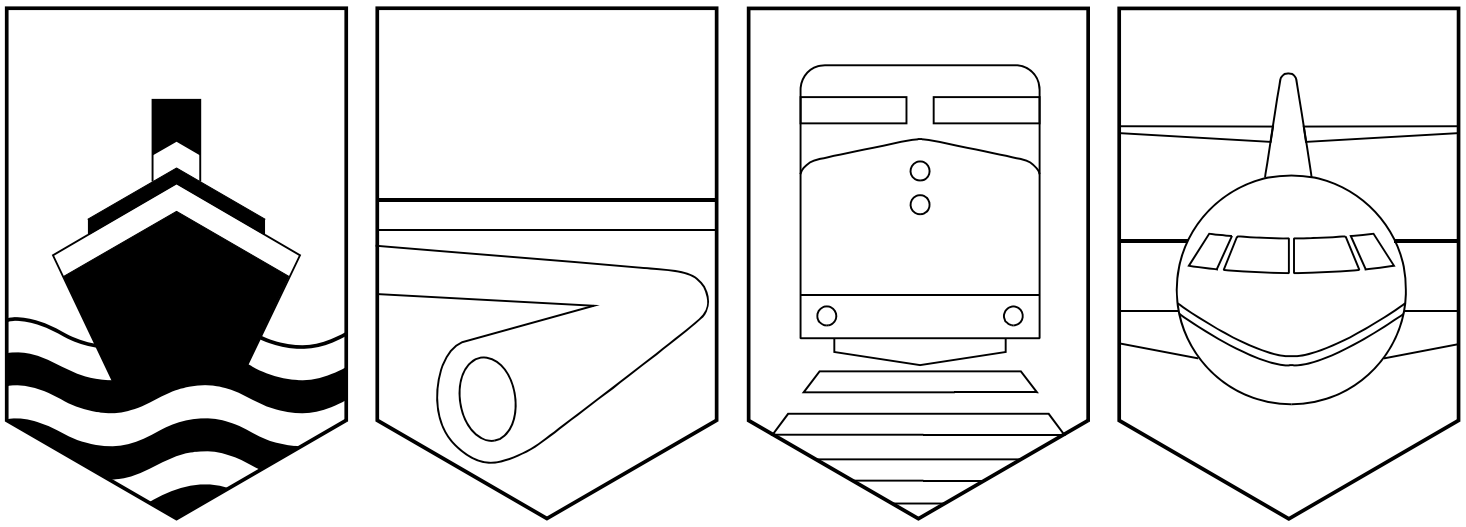
Transportation Safety Board of Canada

Bureau de la sécurité des transports du Canada



MARINE OCCURRENCE REPORT

SINKING

PLEASURE CRAFT "QASAOQ"
FROBISHER BAY, NORTHWEST TERRITORIES
29 OCTOBER 1994

REPORT NUMBER M94H0002

Canada

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The *Canadian Transportation Accident Investigation and Safety Board Act* provides the legal framework governing the TSB's activities.

The TSB has a mandate to advance safety in the marine, pipeline, rail, and aviation modes of transportation by:

- conducting independent investigations and, if necessary, public inquiries into transportation occurrences in order to make findings as to their causes and contributing factors;
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Marine Occurrence Report

Sinking

Pleasure Craft "QASAOQ"
Frobisher Bay, Northwest Territories
29 October 1994

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Synopsis

At about 1900 on 29 October 1994, as the "QASAOQ" was returning from a walrus hunting expedition at the mouth of Frobisher Bay, Northwest Territories, an ingress of water was discovered in the bilge that could not be handled by the bilge pumps. At about 2300, the 10 occupants of the vessel, including the owner/operator, abandoned the vessel aboard a boat. Shortly thereafter, a breaking wave swamped the boat and threw the occupants into the sea. Three days later, 2 of the 10 victims were picked up from the "QASAOQ", which had remained half-submerged; the other 8 were reported missing and are presumed drowned.

The Board determined that the condition of the hull of the "QASAOQ", coupled with the sea and weather conditions, had a direct impact on the shipwreck. The fact that there was no life-saving equipment on board and that the occupants abandoned the vessel in a boat not designed to hold 10 persons reduced the victims' chances of survival. Furthermore, since no transmission could be made on the designated distress frequency from the vessel's radiotelephone, it was not possible to launch an early search and rescue operation.

Ce rapport est également disponible en français.

Table of Contents

1.0 Factual Information

1.1 Particulars of the Vessel

"QASAOQ"	
Small Vessel Licence Number	5FC19877
Port of Issuance of Licence	Iqaluit, N.W.T.[1]
Flag	Canadian
Type	Pleasure craft
Length	11.3 m
Built	1954
Propulsion	One Isuzu diesel engine
Owner	Simonie Alainga, Iqaluit, N.W.T.

1.1.1 Description of the Vessel

The "QASAOQ" was a wooden, longliner-type pleasure craft. The vessel's gross tonnage was estimated at approximately 11 tons[2] based on the dimensions given on the small vessel licence. The vessel had a wheel-house aft, a hold in the middle of the main deck and crew's quarters in the bow.

While the "QASAOQ" was beached at Iqaluit for over two years, her owner/operator took the opportunity to replace the engine and coat the hull with fibreglass. Two steel plates were bolted on either side of the keel to strengthen it. Reportedly, the keel, part of the transom and some garboards were rotted.

[1] See Glossary for all abbreviations and acronyms.

[2] Units of measurement in this report conform to International Maritime Organization (IMO) standards or, where there is no such standard, are expressed in the International System (SI) of units.

When the "QASAOQ" was put into the water in the fall of 1994, a significant ingress of water was detected, and it was patched up with fibreglass. When the vessel was put back into the water, one bilge pump was operating non-stop while another operated intermittently to keep the vessel afloat. When the vessel left Iqaluit, both pumps operated intermittently.

1.2 History of the Voyage

The "QASAOQ" departed Iqaluit on 25 October 1994 with nine persons on board to go walrus hunting at the mouth of Frobisher Bay. The route included resupplying the advance camp at Kuyait (Gold Cove) with two drums of fuel, where a tenth person boarded.

The vessel was then to head for the usual hunting grounds west of Loks Land Island.

Bad weather forced the vessel to take shelter north-west of Loks Land for two and a half days.

On 29 October, as weather conditions had improved, the "QASAOQ" resumed her course toward the hunting grounds. At about 1730[3], after a dozen walrus had been captured and stowed in the hold, the vessel headed for the camp at Kuyait.

Apart from a magnetic compass and a portable FM radiotelephone, the vessel had no other navigational aids. Navigation was done by visual landmarks and local knowledge. Darkness made it difficult for the vessel's occupants to determine their position with certainty. They had to zigzag in and out along the coast to avoid reefs and shoals.

At about 1900, when the vessel is estimated to have been at the farthest point from shore, an accumulation of seawater was discovered whose source could not be determined. The bilge pumps were unable to prevent flooding, and the owner/operator immediately steered his vessel toward the shore. In addition, as the compass was not fitted with a light, it was difficult to make out the vessel's heading. The weather conditions worsened, and the steering gear cables went slack, thereby making the "QASAOQ" hard, if not impossible, to steer.

At about 2300, as they were still unable to control the flooding and were afraid that they would not be able to reach shore in time, the owner/operator and the nine other occupants abandoned the vessel in a 5.2 m boat stowed on the deck which was usually used for hunting. Before they could start the boat's outboard motor, however, a large wave broke over the stern and capsized the boat, and all the occupants were thrown into the sea. Two of them managed to swim to the "QASAOQ", but the eight others vanished under the surface.

All that remained afloat of the half-submerged vessel was the forecastle and the afterdeck.

[3] The times for Saturday, 29 October 1994, are EDT (Coordinated Universal Time (UTC) minus four hours).

Both survivors were rescued by a fishing vessel after spending three days on the parts of the "QASAOQ" above water and were transferred to a Department of Fisheries and Oceans vessel which took them to the camp at Kuyait. A helicopter then transported them to the Iqaluit hospital. The two survivors were suffering from frostbitten feet.

1.3 Injuries to Persons

	Crew	Passengers	Others	Total
Fatal	-	-	-	-
Missing	8	-	-	8
Serious	2	-	-	2
Minor/None	-	-	-	-
Total	10	-	-	10

1.4 Damage

1.4.1 Damage to the Vessel

The "QASAOQ" is a constructive total loss. She was last seen with the hull half-submerged during the rescue of the survivors south of Gabriel Island.

1.5 Certification

1.5.1 Vessel

A small vessel licence had been issued to the "QASAOQ" by the Department of Transport in 1991.

1.5.2 Personnel

The owner/operator did not hold any certificate and was not required to by regulations. No one on board had formal navigation training and no one had received any formal or practical training in marine emergency duties (MED).

1.6 Personnel History

Walrus hunting is a traditional activity practised from generation to generation for centuries among the Inuit of Canada's Far North. The elders initiate the younger people to the basics and the ancestral techniques of walrus hunting.

The skipper had owned the "QASAOQ" for more than 20 years.

1.7 Weather Information

1.7.1 Weather Forecast

The Arctic Weather Centre of Environment Canada issued a gale warning for the Frobisher Bay area at 0500 on Saturday, 29 October 1994. The bulletin read as follows:

> Gale warning in effect. South-easterly winds at 15 strengthening to 25 this afternoon and south-easterly gales at 35 this evening. Gales decreasing to south-easterly winds at 25 Sunday morning. Fog patches. Scattered snow flurries. Visibility restricted to two nautical miles in snow flurries.

1.7.2 Weather Experienced by the Vessel

According to the witnesses, when the vessel was abandoned, the winds were from the south at between 30 and 35 knots, and the sea was rough.

1.7.3 Weather Conditions Experienced During the Search and Rescue (SAR) Operation

During the search operation, the weather was bad to fair with visibility between 0 and 10 nautical miles in snow and fog with moderate to gale-force winds from the east and south-east. The air temperature remained at freezing point, and the water temperature was minus 1˚C.

1.8 Navigation Equipment

The "QASAOQ" was fitted with a magnetic compass and a portable FM radiotelephone capable of transmitting and receiving messages on the 5,210.00 and 5,031.00 kHz frequencies. There was also an ultrasound fishfinder on board, but it was out of order.

1.9 Radio Communications

The owner/operator of the "QASAOQ" was required to have a private commercial radio station licence to use a SPILBURY Model SBX-11A portable FM radio; however, he was not required to hold a Restricted Radiotelephone Operator's Certificate. This radio, which is in widespread use in the Arctic, did not have the marine frequencies.

The vessel contacted, on the 5,210.00 kHz frequency, the person in charge of the Kuyait camp at about 1900 to inform him of the situation and request assistance. However, given the adverse weather conditions, it was virtually impossible to send help from Kuyait.

The person in charge of the camp therefore tried to contact Iqaluit by radiotelephone, but no Iqaluit station could be reached.

The last communication from the "QASAOQ" came at about 2300 when the owner/operator told the person in charge of the Kuyait camp that the occupants were going to abandon the vessel in a boat. Throughout the night, the Kuyait camp tried in vain to contact Iqaluit on the 5,210.00 kHz frequency.

Communication was finally established with a private Iqaluit station only the next day. At 0715[4], the operator of the station in question alerted the dispatcher of the Iqaluit emergency service. This service is responsible for maintaining an all-night telephone watch for the Royal Canadian Mounted Police (RCMP) and the Emergency Measures Organization (EMO) of the municipal and community affairs department of the Baffin region.

The Local Authority - Town of Iqaluit Search and Rescue Advisory Group was informed of the situation at 0717; the RCMP Iqaluit detachment, at 0724; and the EMO authorities of the Government of the Northwest Territories (GNWT), at 0750.

The EMO contacted the Halifax Rescue Coordination Centre (RCC) at 0903 on 30 October, or 1 hour and 13 minutes later.

1.9.1 Coast Guard Radio Station

The Iqaluit Coast Guard Radio Station (CGRS) did not receive any distress call.

[4] As 30 October 1994 was the last Sunday in October, all times are EST (UTC minus five hours) as of Sunday morning.

At 0746 on 30 October, the dispatcher of the Iqaluit emergency service contacted the Iqaluit CGRS by telephone to inform it of the distress situation. The CGRS radio operator gave him the telephone number of the Halifax RCC without first obtaining details about the call received by the Iqaluit emergency service. According to CGRS operating standards, an operator who receives a distress call is supposed to obtain any information necessary to render assistance to the vessel in distress and to notify the RCC as soon as practicable.

1.10 Life-saving Equipment

The "QASAOQ" carried a 5.2 m boat used for walrus hunting. It was a low-freeboard wooden boat which was not designed to operate on the open seas nor for use as a lifeboat.

Apart from one personal flotation device (PFD) which belonged to one of the vessel's occupants, there was one lifebuoy on board. No other equipment was available.

The Small Vessel Regulations stipulate that a vessel like the "QASAOQ" must carry:

a) one approved small vessel lifejacket or approved personal flotation device for each person on board;

b) one approved 762 mm or 610 mm lifebuoy;

c) one buoyant heaving line of not less than 15 m in length;

d) one bailer and one manual bilge pump;

e) six pyrotechnic distress signals of any type and six Type A, B or C pyrotechnic distress signals;

f) one anchor with not less than 15 m of cable, rope or chain;

g) one Class B II fire extinguisher.

In addition, the vessel must be fitted with navigation lights and a sound signalling apparatus.

The Canadian Coast Guard (CCG) publication entitled *Small Fishing Vessel: Safety Manual* (TP 10038) has been translated into Inuktitut for the benefit of Arctic communities. In 1992, working (protective) suits were demonstrated and general small vessel information discussed with local authorities and users at a Canadian Marine Advisory Council meeting sponsored by the CCG and the GNWT, held in Yellowknife, N.W.T.

In March 1993, the CCG made presentations on fishing vessel safety at a Fisheries Workshop sponsored by the GNWT Department of Economic Development in Pangnirtung, N.W.T.

A series of four boating safety documentaries produced in English by the CCG for the Inuit has been shown on community television.

1.11 Search and Rescue (SAR)

The Halifax RCC launched a SAR operation at 0920 on 30 October, and Hercules and Aurora aircraft from the Canadian Armed Forces base at Halifax were dispatched to the scene. Helicopters, fishing vessels and a Fisheries and Oceans vessel from the Iqaluit area also joined in the search.

When the "QASAOQ" was found on 01 November, south of Gabriel Island, the wreck was half-submerged, and the wheel-house had been torn off by the waves. The two survivors had been on the wreck for some 60 hours. After being rescued, they were taken to hospital in Iqaluit.

1.12 Notification and Deployment of SAR Resources

Several agencies are involved in SAR operations in the Canadian Arctic.

It was acknowledged that problems had occurred in SAR operations in the past, and meetings were held between the various agencies concerned to solve these problems by clarifying the roles and responsibilities of each agency. The correspondence dealing with the agenda items for those meetings reveals some ambiguity about the procedures to be followed, especially as regards notifying the relevant agencies in a timely manner. It was agreed that the Halifax or Trenton RCC would be the only agency to be contacted for air and sea SAR operations, and that the RCC was to be contacted directly to report the situation as soon as practicable.

1.13 National Objective of the SAR System

The national SAR objective is to prevent loss of life and injury by conducting SAR activities and providing assistance (using public and private resources) after notification of an occurrence.

The national SAR objective is met through two different areas of activity:

a) SAR operations *per se*, aimed at detection, response and rescue; and

b) prevention activities, aimed at reducing the number and severity of incidents through public awareness programs and the enforcement of relevant regulations.

There are three phases of urgency used in the conduct of marine SAR incidents: UNCERTAINTY, ALERT and DISTRESS.

In this occurrence, all radio communications between the "QASAOQ" and the camp at Kuyait were conducted on the 5,210.00 kHz frequency. The first distress call communication occurred at about 1900 EDT when the "QASAOQ" reported an ingress of water; and the last communication took place at about 2300 EDT to inform the Kuyait camp that the 10 persons were abandoning the vessel in a boat.

From that moment on and throughout the night, the camp at Kuyait tried to establish radio contact with Iqaluit.

The Iqaluit emergency service was finally informed of the situation around 0715 EST on the morning of 30 October. By that time, the UNCERTAINTY and ALERT phases had passed, and the DISTRESS phase was in effect.

Owing to ambiguity about the routing of communications and the length of time the Local Authority - Town of Iqaluit SAR Advisory Group spent assessing the situation, the SAR authorities were not advised of the situation until 0903, or 1 hour and 13 minutes later.

2.0 Analysis

2.1 Condition of the Hull of the "QASAOQ"

Coating a wooden hull with fibreglass takes experience and very specific knowledge. The wood must be dry, clean and free of any anomalies, or the fibreglass will not adhere to the hull. The "QASAOQ" had been beached at Iqaluit for two years unprotected from the weather, and this made proper drying of the hull difficult.

It is imperative when performing hull renovation work that any parts in bad condition due to rot or damage be repaired or replaced before the fibreglass is applied. The surface of these parts must be carefully prepared before they are coated with fibreglass in order to ensure better adhesion. The techniques used in applying the fibreglass, the quality of the material, the tools used and the place where the work is done are all factors that must not be overlooked.

The renovations to the "QASAOQ" were done outdoors, at times under adverse weather conditions for this kind of work. A marine type of fibreglass and resin is required to make repairs. Because the vessel sank, the quality of the fibreglass used could not be verified.

2.2 Vessel Inspection

The Small Vessel Regulations apply to all pleasure craft not exceeding 20 tons permanently or temporarily equipped with a motor of 7.5 kW. The Regulations therefore applied to the "QASAOQ" which was considered a pleasure craft.

Reportedly, no Iqaluit peace officer had examined the "QASAOQ" in the past 20 years, and such an examination was not required under the regulations. It is the responsibility of a vessel's owner to carry on board the safety equipment required by the Small Vessel Regulations. The Regulations do, however, provide that a peace officer may examine vessels at random to ensure that they comply with the regulatory requirements.

2.3 Radio Communications

All communications between the vessel and the shore stations were conducted on the 5,210.00 kHz frequency, which is not a designated marine frequency.

The radio used could not transmit on the designated marine distress frequency of 2,182 kHz and, therefore, could not be used to contact the Iqaluit CGRS. However, the frequency used for marine distress situations can easily be added to this type of radio by a technician.

2.4 Organization of SAR Operations in the Arctic

Rapid response mechanisms have been put in place to ensure prompt and effective coverage in the event of a casualty.

The RCC has to cover vast areas, and, as more than one SAR operation may be in progress at the same time, it is essential that the RCC be notified of occurrences as soon as practicable. Rapid deployment of resources is the key to success in SAR missions.

The speedy relaying of information enables the RCC to organize and assemble additional resources in case they have to be deployed.

The EMO apparently did not fully appreciate the need to notify the RCC immediately, since 1 hour and 13 minutes elapsed before the information was passed to the RCC. Fortunately in this case, the time taken to notify the RCC of the incident did not play any role in the outcome of the occurrence.

As soon as a CGRS is informed of an incident that requires a SAR response, the radio operator must obtain the relevant information and notify the RCC as soon as practicable.

In this case, although the CGRS had been notified of the incident, the radio operator did not obtain the relevant information or even contact the RCC; instead, he gave the telephone number of the RCC to the night dispatcher of the emergency service.

The publication *Radio Station: Operations Standards, 1992* (TP 989) sets out the procedure for the receipt of shipping casualty reports by CGRSs.

Section 5.20.2, Chapter 2, of the publication states: "In addition to acknowledging receipt of the distress message or other transmission indicating the existence of a distress situation, the Radio Operator shall obtain any information in addition to that contained in the distress message or equivalent which may aid in the rendering of assistance to the vessel in distress."

Section 4.1.1 of the same chapter states in part that: "A CGRS that becomes aware of a shipping casualty shall, as soon as practicable, notify the appropriate RCC/MRSC via SARCOM."

The Iqaluit CGRS operator who received the distress notice over the telephone on 30 October did not comply with the operations standards. He did not obtain all the information concerning the nature of the distress call, nor did he notify the Halifax RCC.

3.0 Conclusions

3.1 Findings

1. The keel, part of the transom and some garboards were rotted.

2. The owner had performed the repair work on the hull himself.

3. The quality of the fibreglass used for the repairs could not be verified.

4. The "QASAOQ" had not been examined by a peace officer for some 20 years, and such an examination was not required under the regulations.

5. The vessel was not carrying the life-saving equipment required for pleasure craft.

6. The victims were not wearing lifejackets or personal flotation devices (PFD).

7. No one aboard the "QASAOQ" could communicate with the Iqaluit Coast Guard Radio Station (CGRS) because the vessel's radiotelephone could not transmit on the designated marine frequencies.

8. The CGRS operator did not ask for the details of the accident when he received the initial distress call.

9. The methods of notification in effect unduly delayed the search and rescue (SAR) operation.

10. A period of 1 hour and 13 minutes elapsed before the Emergency Measures Organization (EMO) alerted the authorities at the Halifax Rescue Coordination Centre (RCC).

3.2 Causes

The condition of the hull of the "QASAOQ", coupled with the sea and weather conditions, had a direct impact on the shipwreck. The fact that there was no life-saving equipment on board and that the occupants abandoned the vessel in a boat not designed to hold 10 persons reduced the victims' chances of survival. Furthermore, since no transmission could be made on the designated distress frequency from the vessel's radiotelephone, it was not possible to launch an early search and rescue operation.

4.0 Safety Action

4.1 Action Taken

4.1.1 Processing of Distress Messages

Following this accident, personnel from the key agencies[5] involved in search and rescue (SAR) operations in the North and representatives of Local Authorities met to review mandates and to discuss procedures relating to SAR operations. It was agreed that immediate notification of marine accidents must be made to the appropriate Rescue Coordination Centre (RCC) located at Trenton or Halifax. To avoid misunderstandings and delays, effective 01 April 1996, emergency dispatching and communications are handled by a dedicated Emergency Measures Organization (EMO) Centre.

4.1.2 Safety Information Program

A series of four boating safety documentaries produced by the Canadian Coast Guard (CCG) for the Inuit was broadcast locally on community television. Furthermore, safety posters and copies of the *Small Fishing Vessel: Safety Manual* (TP 10038) in Inuktitut, containing a 1-800 information number, were distributed to local fishing communities.

This report concludes the Transportation Safety Board's investigation into this occurrence. Consequently, the Board, consisting of Chairperson, John W. Stants, and members Zita Brunet and Maurice Harquail, authorized the release of this report on 28 May 1996.

[5] The Department of National Defence (DND), Royal Canadian Mounted Police (RCMP), Rescue Coordination Centres (RCC), Canadian Coast Guard (CCG), and Emergency Measures Organization (EMO) of the Government of the Northwest Territories (GNWT).

Appendix A - Sketch of the Occurrence Area

Appendix B - Photographs

The half-submerged "QASAOQ" as found by Search and Rescue.

The half-submerged "QASAOQ" as found by Search and Rescue.

Appendix C - Glossary

C	Celsius
CCG	Canadian Coast Guard
CGRS	Coast Guard Radio Station
DND	Department of National Defence
EDT	eastern daylight time
EMO	Emergency Measures Organization
EST	eastern standard time
GNWT	Government of the Northwest Territories
FM	frequency modulation
IMO	International Maritime Organization
kHz	kilohertz
knot	nautical mile(s) per hour
m	metre(s)
MED	Marine Emergency Duties
mm	millimetre(s)
N.W.T.	Northwest Territories
PFD	personal flotation device
RCC	Rescue Coordination Centre
RCMP	Royal Canadian Mounted Police
SAR	Search and Rescue
SI	International System (of units)
TSB	Transportation Safety Board of Canada
UTC	Universal Coordinated Time
°	degree(s)

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