Transportation Safety Board of Canada

Bureau de la sécurité des transports du Canada

AVIATION INVESTIGATION REPORT
A04Q0196

LANDING BESIDE THE RUNWAY

AÉROPRO
PIPER PA-31-350 C-GBYL
GASPÉ AIRPORT, QUEBEC
19 DECEMBER 2004

Canada

The Transportation Safety Board of Canada (TSB) investigated this occurrence for the purpose of advancing transportation safety. It is not the function of the Board to assign fault or determine civil or criminal liability.

Aviation Investigation Report

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Summary

The Piper PA-31-350, registration C-GBYL, serial number 31-7752144, operated by Aéropro as Flight APO754, was on an instrument flight from Port-Menier, Quebec, to the Du Rocher-Percé Aerodrome (Pabok), Quebec, with four passengers and one pilot on board. At 1026 eastern standard time, the pilot notified the Montréal control centre, Quebec, that he was executing a missed approach at Pabok and was heading to Gaspé, Quebec. The first approach to Runway 29 at Gaspé was a missed approach. At 1110, during the second approach to Runway 29, the aircraft landed 60 feet to the left of the runway and 2400 feet past the runway threshold on a snow-covered surface. The nosewheel broke and the aircraft overturned. In the moments immediately after the incident, airport employees rescued the occupants of the aircraft. One passenger suffered serious injuries; the four other occupants received minor injuries.

Ce rapport est également disponible en français.

Other Factual Information

History of the Flight

The flight was the second stage in a series of planned flights. The aircraft left Port-Menier, Quebec, for Du Rocher-Percé Aerodrome (Pabok), Quebec, with four passengers on board. The flight was without incident. At 1005 eastern standard time,[1] at about 17 nautical miles (nm) from the destination, Québec Radio informed the pilot that he was authorized outside controlled airspace through an approach at Du Rocher-Percé, and then provided him with the latest hourly weather report (METAR) from Gaspé, issued at 1000: vertical visibility 1400 feet above ground level (agl), horizontal visibility ¾ mile in light snow, and altimeter setting 29.90.

Two instrument approaches have been published for the Du Rocher-Percé Aerodrome: RNAV (GPS) and NDB A (GPS). Because of the instruments on board the aircraft, the NDB A (GPS) approach was the only authorized instrument approach. However, when the pilot was over the aerodrome, he did not carry out the published instrument approach procedure (see Appendix A). Instead, he followed an improvised flight path towards the final approach waypoint[2] AVRIR for the RNAV (GPS) RUNWAY 09 approach. At ½ mile south of AVRIR, the aircraft turned onto final for Runway 09 and then orbited above the aerodrome at an altitude of 1000 feet agl. At 1020, the pilot executed a missed approach after seeing that the snow-covered runway did not allow for a safe landing.

The aircraft turned right over the ocean and climbed to 4000 feet. At 1027, the pilot informed Québec Radio that he was heading towards Gaspé, the alternate airport entered on the flight plan, and that his estimated arrival time was in 10 minutes. He was once again given the 1000 weather report for Gaspé and the latest observations for the runway conditions, also taken at 1000: the Canadian Runway Friction Index (CRFI) was 0.20 and the runway was completely covered with loose snow. At 1032, the person responsible for snow removal at the Gaspé Airport advised Québec Radio that the short time before the aircraft's estimated arrival did not allow enough time to clear the snow from the runway.

When the aircraft was three miles south of the airport, the pilot turned right and headed east in preparation for a LOC(BC)/DME approach to Runway 29. At 12 nm from the airport, the aircraft turned left and then intercepted and followed the final approach path. The aircraft's speed on the final approach varied between 140 knots and 160 knots, or 40 to 60 knots above the landing reference speed (V_{ref}) of 100 knots. At about ½ mile from the runway threshold and at the minimum descent altitude (MDA), or 460 feet, the pilot saw that the runway was completely covered with snow. The aircraft's speed was about 135 knots, the flaps were extended to 15°, and the landing gear was retracted.[3] Because the approach was not stable and the aircraft was

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1 All times are eastern standard time (Coordinated Universal Time minus five hours).

2 Virtual waypoint determined by geographic coordinates

3 The maximum landing gear extended speed (V_{le}) is 128 knots.

too high for a landing, the pilot-in-command executed a missed approach. At 1047, the pilot informed Québec Radio that he was executing a missed approach and would like to make the same approach again.

The pilot did not follow the published missed approach procedure (see Appendix B) that requires a climbing turn to the right to 3500 feet above sea level (asl) to intercept Radial 308 outbound of the Gaspé VOR before turning left towards the VOR. Instead, he followed the runway heading for six miles before turning left to follow a heading of 135° to the 13 DME arc for the approach (see Appendix C). At 1104 and 12 miles out on final, the pilot received the 1100 weather report: winds from 290° at 4 knots; visibility ¾ mile in light snow; vertical visibility 1100 feet; temperature -9°C; dew point -8°C; altimeter setting 29.87.

The pilot executed a manual approach without the assistance of the autopilot available on the aircraft. After passing the GADMU final approach fix located 5.4 nm from the runway, the pilot established visual contact with the ground at about 1000 feet asl and initiated a descent to the MDA. From this moment on, he guided the aircraft using visual references. The flaps were extended to 15°, the landing gear was extended and the aircraft's speed was 100 knots. At about two miles from the runway threshold, the aircraft's flight path started to weave and crossed the runway centreline several times. Soon after reaching the MDA, the pilot saw what he thought was the right-side runway lights. He corrected the aircraft's flight path to the right and decided to land. The aircraft landed 60 feet to the left of the runway and 2400 feet past the runway threshold, on a surface covered with about 60 cm of snow; 70 feet later, the nosewheel separated from the aircraft. The aircraft overturned and suffered major damage. One passenger was seriously injured.

Personnel Information

Because the aircraft was equipped with a functional autopilot in compliance with Section 703.66 of the *Canadian Aviation Regulations* (CARs), the flight could be completed with a single pilot on board. The pilot was certified and qualified for the flight in accordance with existing regulations. In April 2004, the pilot started working for Aéropro at the Sept-Îles base. He had a total of about 2200 flying hours, with about 300 hours on the PA-31. In the 30 days before the accident, the pilot had completed 70 flying hours. The day of the accident, the pilot woke up at about 0430. He arrived at the company's offices at the Sept-Îles Airport at around 0605 to prepare for the flight. He had to complete 10 flights of a total estimated duration of 7 hours 44 minutes.

Scheduled Departure Time	Departure Airport	Destination	Expected Flight Time
0800	Sept-Îles	Port-Menier	42 min
0830	Port-Menier	Gaspé	36 min
0930	Gaspé	Port-Menier	36 min
1000	Port-Menier	Mont-Joli	77 min
1130	Mont-Joli	Sept-Îles	60 min
1200	Sept-Îles	Port-Menier	42 min
1500	Port-Menier	Sept-Îles	42 min
1600	Sept-Îles	Port-Menier	42 min
1630	Port-Menier	Sainte-Anne-des-Monts	49 min
1700	Sainte-Anne-des-Monts	Sept-Îles	38 min

Table 1. Flight schedule according to the flight manifests

The schedule of flights planned for the day was not realistic. The departure times on the flight manifests did not take the flight time or time on the ground into account. Initially, the aircraft was to leave Port-Menier to go to Gaspé, but the pilot changed this destination to Rocher-Percé.

Meteorological Information

There is no Atmospheric Environment Service (AES) weather station at the Du Rocher-Percé Aerodrome. The closest station is located 24 nm farther north at Gaspé. Qualified observers at the Gaspé Airport collect weather information and relay it to the Québec flight information centre (FIC) for dissemination.

At 0822, at the Port-Menier Airport, the pilot obtained the terminal aerodrome forecast (TAF) for Gaspé, issued on 19 December 2004 at 0239, and the METAR issued at 0800. The TAF was valid from 0300 to 1500: winds variable at 3 knots, visibility more than 6 statute miles, some clouds at 3000 feet; starting at 0500, winds variable at 3 knots, visibility more than 6 miles, broken cloud at 2000 feet, temporarily from 0500 to 1100, broken cloud at 3000 feet; starting at 1100, wind 100° true at 5 knots, visibility 2½ miles in light snow, broken cloud at 800 feet, temporarily from 1100 to 1500, visibility 1 mile in light snow and broken cloud at 400 feet.

The table below lists the conditions at the Gaspé Airport on the morning of the accident:

Report time	Wind direction and speed	Visibility (statute miles)	Obstruction to vision	Sky condition
0800	250°/2 knots	12		Broken at 2000 feet
0900	270°/3 knots	8	Light snow	Overcast at 2000 feet
0909	290°/2 knots	1½	Light snow	Vertical visibility 1200 feet
0920	230°/2 knots	¾	Light snow	Vertical visibility 1000 feet
1000	250°/3 knots	¾	Light snow	Vertical visibility 1400 feet
1036	260°/4 knots	¾	Light snow	Vertical visibility 900 feet
1050	270°/4 knots	¾	Light snow	Vertical visibility 1100 feet
1100	270°/3 knots	¾	Light snow	Vertical visibility 1100 feet
1113	280°/3 knots	¼	Heavy snow	Vertical visibility 700 feet
1124	260°/2 knots	¼	Heavy snow	Vertical visibility 500 feet

Table 2. Weather observation for Gaspé the morning of the accident

The conditions deteriorated significantly after 0900, going from visual meteorological conditions (VMC) to instrument meteorological conditions (IMC). Soon after the 1100 report, after noting that the intensity of snow precipitation had increased, the weather observer on duty decided to issue a special weather observation. Visibility had decreased from ¾ mile to ¼ mile, the snow was falling more heavily, and the ceiling had lowered by 400 feet. The aircraft was on its final approach when the data were being gathered and crashed before this observation could be transmitted to the pilot.

Aerodrome Information

The Du Rocher-Percé Aerodrome is operated by the Du Rocher-Percé regional county municipality (RCM). The runway has threshold and runway end lights, as well as low-intensity runway edge lights; it does not have approach lights. It is maintained from Monday to Friday from 0800 to 1600. Outside these hours, runway maintenance is provided on request and service charges are billed to the air operator requesting the service. While he was on the ground at Port-Menier, the pilot called the Du Rocher-Percé Aerodrome operator. The clerk informed him that the weather was unfavourable for landing and that the runway had not been cleared because it was Sunday. After this conversation, the pilot confirmed that, in light of the existing conditions, it would not be necessary to clear the snow from the runway because he would not be landing there.

The Gaspé Airport is owned and operated by the City of Gaspé. The Gaspé Airport is Transport Canada–certified and is uncontrolled. Emergency services are provided by the Gaspé municipal fire safety service. According to city records, the accident was reported at 1115 and three emergency vehicles arrived at the site at 1129.

The airport's reference altitude is 108 feet asl. Runway 11/29 is paved and measures 4500 feet long by 150 feet wide. Runway 29 is equipped with approach lights,[4] runway identification lights,[5] three-way medium-intensity runway edge lights, threshold and runway end lights and a type K aircraft radio control of aerodrome lighting (ARCAL) system[6] that can be activated from a range of up to 15 nm for about 15 minutes. The runway is also equipped with a P2 precision approach path indicator (PAPI) with a slope of three degrees.

During the first approach, the pilot activated the ARCAL at 1045:36, at about 2.5 miles from the runway threshold. During the second approach, the ARCAL was activated first at 1103 when the aircraft was on the 13 DME arc and a second time at 1108:06, at about 3 nm from the threshold. Both times, medium intensity was selected by keying the microphone button five times.

According to the airport operations manual for the Gaspé Airport, snow-clearing operations are to start when one inch of snow has accumulated. A snow-clearing team was on duty the day of the accident. The last runway report was done at 1000. At that time, the runway was covered with ¼ inch of loose snow and the CRFI for the entire length of the runway was 0.20.[7] At about 1030, after learning that Flight APO754 was changing its course for Gaspé and that the pilot expected to arrive in 15 minutes, the person responsible for snow removal informed Québec Radio that the runway could not be cleared in time.[8] He estimated that there was about ½ inch of snow on the runway. At the time of the second approach, he estimated that the snow on the runway was ¾ inch deep. One hour after the accident, 1½ inches of snow was on the runway and the CRFI was 0.22.

Aircraft Information

The records indicate that the aircraft was maintained and certified in accordance with existing regulations and that it was operated as an air taxi service pursuant to Subpart 703 of the CARs. There was no evidence found of any mechanical malfunction in the aircraft or the navigational aids on the ground that were used to carry out the instrument approach at Gaspé. The aircraft's altimeters were set on 29.92.

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4 Low-intensity centre row

5 Unidirectional capacitor discharge lights

6 The pilot must key the microphone button 7 times for high intensity. The light intensity can be changed by keying the button 7, 5 or 3 times within 5 seconds for high-, medium- or low-intensity lighting, respectively.

7 A CRFI of 0 to 0.05 would be equivalent to the braking action while hydroplaning, while a bare and dry runway would have a CRFI of 0.8 to 1.0.

8 According to the maintenance employee, 60 minutes were required to completely clear the snow from the runway and 30 minutes to clear the snow on half the width.

Two global positioning systems (GPS) were on board. The aircraft was equipped with a Garmin GPS 155XL and the pilot had a Garmin GPS III Pilot.[9] However, the Garmin GPS 155XL was not certified for instrument approaches and its database was not up to date. This GPS model does not save the history of flight paths in memory after it is turned off. An examination of the pilot's Garmin GPS III that was found in the wreckage made it possible to reconstruct the aircraft's flight path from 37 nm south of the Port-Menier Aerodrome to the impact location. However, this model GPS does not record the aircraft's altitude.

The aircraft had 1000 pounds of fuel on board at the time of take-off from Port-Menier. Using a conservative estimate, the fuel burned from when the engines were started at Port-Menier until the accident would have been about 410 pounds. The cargo was weighed before loading and the pilot had calculated the aircraft's weight and balance before taking off. According to the flight documentation and the calculations, the aircraft's weight and balance were within the prescribed limits during the flight.

The cargo on board the aircraft weighed 475 pounds and it was not secured. It consisted of personal baggage and several 35-pound boxes of frozen meat. There was no cargo net on board. There were tie-down straps for cargo in the aircraft, but they had not been used. The aircraft's rapid deceleration on landing propelled the cargo towards the front of the cabin. The wood utility cabinets were destroyed by the objects shifting forward.

Section 602.86(1) of the CARs states that carry-on baggage, equipment and cargo on board must be restrained so as to prevent them from shifting during movement of the aircraft. In addition, Section 2.6.1 of the Aéropro operations manual for multi-engine IFR states that cargo, baggage and unrestrained objects, for example, must be properly secured before the flight using straps, ropes, nets and suitable fasteners.

The aircraft overturned and came to rest on its back. The nose was crushed and bent upwards. The cockpit and cabin were only slightly distorted, except that the part of the roof above the number one seat row was pushed slightly inward. The left fuel tank was leaking.

The aerodrome maintenance employee who was on the taxiway at the time of the accident arrived at the accident site a few minutes afterward and helped the pilot escape through the right cockpit window. The passenger in the co-pilot's seat also escaped through this window. The passengers in seats 1A and 1B escaped through a cabin window. The passenger in seat 2B escaped through the main right rear door. The debris from the utility cabinets and cargo hindered evacuation of the occupants.

Approach Ban

Because the Gaspé Airport does not have a device for measuring runway visual range (RVR), there are no regulations prohibiting pilots from attempting an approach. According to Section 602.128 of the CARs, a pilot should not continue the descent below the MDA unless the

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[9] The Garmin GPS III Pilot is a portable GPS that is not certified for instrument approaches.

required visual references necessary to continue the approach to land have been established. The visual references that pilots require to continue the approach to Runway 29 and to land safely should include at least one of the following references:

- runway or runway markings;
- runway threshold or threshold markings;
- touchdown zone or touchdown zone markings;
- approach slope indicator;
- runway identification lights;
- runway edge lights on both sides of the runway.

These visual references must enable the pilot to estimate the position of the aircraft and its rate of change of position in relation to the nominal path. The visibility published on the approach chart was 1¼ nm. This visibility is published for information purposes only. It indicates the visibility that should enable the pilot to establish visual contact with the necessary references during the approach and to judge whether it is possible to make a safe landing when this value is compared to the visibility available at the aerodrome. If the pilot cannot establish visual contact with the required references, the pilot must execute the missed approach procedure.

Amendments to the CARs have been put forward that would constitute an approach ban preventing the flight crew of an aircraft on commercial service from continuing the approach if the reported visibility is below the limit value during the approach. In this occurrence, the pilot would not have been able to continue the approach if visibility had been less than ¾ mile.

Analysis

There is no indication that the aircraft experienced problems before the impact or that the airport equipment was malfunctioning at the time of the accident. It was also established that the aircraft had sufficient fuel to return to Port-Menier if a second missed approach had been executed at Gaspé.

According to the weather information that the pilot had received from the Québec FIC before taking off from Port-Menier, he could expect VFR conditions upon his arrival at the Du Rocher-Percé Aerodrome. However, the aerodrome maintenance employee had informed the pilot that the weather was unfavourable and that the runway was covered with snow. Further to this information, the pilot declined the employee's offer to remove the snow from the runway and told him that he was not going to Rocher-Percé. Yet, contrary to what he told the employee, the pilot went to Rocher-Percé after all. Because the flight was on a Sunday, the pilot should have known that the runway was not maintained and that the snow would not be cleared when he arrived. It is possible that the pilot had not been fully aware of the difficulties that could be caused by an absence of contrast during a landing.

Considering the proximity of the weather station, it is reasonable to believe that the weather at Rocher-Percé was similar to that observed at Gaspé. Consequently, to land at Rocher-Percé, the pilot would have had to execute an instrument approach according to the NDB A procedure. However, the pilot followed an improvised flight path that suggested the use of a GPS for guiding the aircraft. By departing from the approved approach procedures in the prevailing instrument flight conditions and relying on minimal external references, the pilot reduced the

margin of safety required for the flight. Given that the runway had not been cleared of snow, the pilot judged that the surrounding surfaces did not provide enough contrast to attempt to land and he decided to divert to the Gaspé Airport located 24 nm to the northeast.

After the missed approach, the pilot could expect the same landing difficulties at Gaspé as he had faced at Du Rocher-Percé if the runway was not cleared of snow. For this reason, it would have been prudent to delay the approach and ask that the runway be cleared to make it easier to see. The accumulated delays in his schedule[10] and the additional delay required to clear the runway could have influenced the pilot's decision to land without waiting.

The snow was not cleared from the runway at the Gaspé Airport before the arrival of Flight APO754 for several reasons. First, the aircraft was not expected at the airport and the depth of the snow was within the limits of the airport's snow-clearing plan.[11] Second, the time the maintenance team learned that the aircraft was diverting to Gaspé to its estimated time of arrival was not long enough to clear the snow. Third, the pilot did not request that the runway be cleared.

On the first approach at Gaspé, the pilot had the time to configure the aircraft to execute a stable approach and to complete the tasks required for this purpose. However, the fact that he activated the airport's medium-intensity lighting using the ARCAL, did not extend the landing gear and did not set the aircraft altimeter to the airport pressure, combined with the high, fluctuating speed of the aircraft, point to the conclusion that the approach was not stable. Consequently, the probability of completing a safe landing after the pilot had established visual contact with the required references was practically nil.

Because he could not see the runway, the pilot executed a missed approach but did not follow the missed approach procedure published on the approach chart he was using. Although the published procedure is designed to allow a missed approach safely away from the higher ground on the runway centreline, the pilot maintained the runway heading before turning left and proceeding southeast.

After this approach, it is probable that the pilot concluded that the landing could be completed in the existing conditions if he compensated for the deficiencies mentioned. He may have believed that a landing was possible if the aircraft was correctly configured and if he executed a stable approach.

During an IMC flight, the workload of a pilot flying alone is high. That is why an autopilot capable of carrying out manoeuvres in the lateral and longitudinal axes is required to reduce the pilot's workload. Although an autopilot of this type was available, the pilot instead decided to execute a manual approach, thereby increasing his workload.

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10 The pilot had not yet completed his second flight according to the flight manifest for the day when he should have been on his fourth flight.

11 Half an inch of snow covered the runway surface, or half of the depth required before snow-clearing operations would be started.

The weather information transmitted to the pilot six minutes before the accident suggested that the conditions were quite similar to those on the first approach. Consequently, the pilot could expect to see the runway about 30 seconds before crossing the runway threshold. However, visibility deteriorated to ¼ mile while the aircraft was in the final approach segment. As a result, the pilot had only about 10 seconds before reaching the runway threshold to incorporate the visual references when cross-checking the instruments, check the aircraft's position laterally and vertically, determine a visual flight path, and make the necessary corrections. In addition, the pilot had to take a few seconds to incorporate the visual references before making the necessary control inputs. In conclusion, the pilot had only a few seconds to decide whether to land or execute a missed approach.

About 1 ½ miles from the runway, the aircraft was correctly configured and the pilot had activated the aerodrome lighting. However, he had selected medium-intensity lighting. About one mile from the runway threshold, the aircraft was slightly to the left of the localizer course and was heading several degrees to the left. The deviations from the runway centreline could be partly attributed to the inherent difficulty in a LOC (BC) approach for a pilot to stay on the back course.[12] Further, searching for visual references upon approaching the runway certainly distracted the pilot from monitoring the instruments. As he was nearing the runway, the deviation from the localizer course and the heading changes increased, making the approach unstable. Because of the reduced visibility and obscurity, and because the pilot was sitting in the left seat and did not have his peripheral vision, he did not see the approach lights and ended up to the left of the runway when he reached the threshold. As the only crew member, the pilot's workload was high in such conditions. It is conceivable that a co-pilot would have been able to inform the pilot of any deviations in the approach.

In the case of an instrument approach carried out in such conditions, it can be presumed that the approach lights, runway markings, runway lights and contrast of the runway constitute the main visual references. However, the value of these elements was either reduced or cancelled out because of the following:

- the highest intensity of aerodrome lighting was not selected;
- the pilot could not see the approach lights because the aircraft was to the left of the runway centreline;
- the runway markings were covered with snow;
- the runway surface offered no contrast with the surrounding terrain.

Once the pilot finally saw a row of runway lights, he mistook the left row of lights for the right row. Since only one row of runway lights was visible, it was impossible for him to confirm the exact position of the runway and he should have initiated the missed approach procedure. For an undetermined reason, he assumed that the runway was below the aircraft even though he could not see the left row of lights, and he decided to land.

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[12] The localizer transmitter is located about 1000 feet from the runway end (departure end) and the beam is very narrow when seen from a short distance. Consequently, only fine corrections must be made when approaching the transmitter.

The reduced visibility conditions, the absence of a contrast between the runway and the surrounding terrain, the pilot's high workload, partial use of the airport lighting capacity and the pilot's assumption that the aircraft was over the runway without having the necessary visual references contributed to the accident.

The following Engineering Laboratory report was completed:

LP 172/2004 — GPS Analysis

This report is available upon request from the Transportation Safety Board of Canada.

Findings as to Causes and Contributing Factors

1. Considering the weather conditions and the runway condition, the airport environment did not provide enough visual contrast to allow the pilot to see the runway surface.

2. The pilot mistook the left row of runway lights for the right row and assumed that he was over the runway without having the necessary visual references when he decided to land.

3. The pilot did not use the autopilot available on board, thereby increasing his workload and reducing the time available to complete the visual scan that would have revealed the deviations from the runway centreline, which contributed to making the approach unstable.

4. The pilot activated medium-intensity runway lighting in conditions where high-intensity lighting would have been preferable.

5. The cargo on the aircraft was not secured and was projected to the front of the cabin in the crash. Debris from the utility cabinets and the cargo hindered the evacuation of the occupants.

6. On the second approach at Gaspé, the pilot did not initiate the missed approach procedure and decided to land without the references necessary to complete the approach safely.

Findings as to Risk

1. Upon his arrival at Du Rocher-Percé, the pilot executed an improvised instrument approach, which suggests the use of a global positioning system (GPS) although neither the pilot nor the aircraft was certified for a GPS approach.

2. On the first approach at Gaspé, the pilot did not follow the published missed approach procedure, which reduced the obstacle clearance.

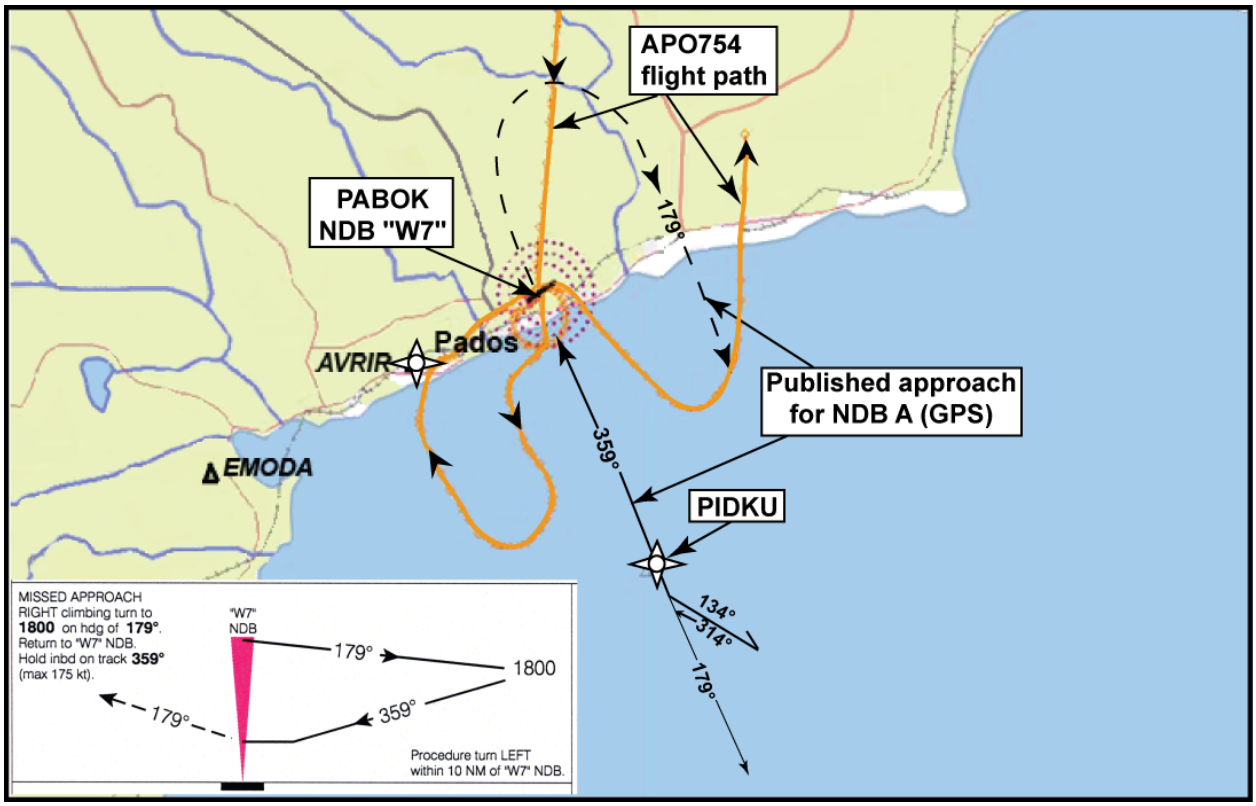
Other Finding

1. The proposed approach ban would not have prevented the pilot from executing the approach because the visibility communicated to the pilot was within the prescribed limits.

This report concludes the Transportation Safety Board's investigation into this occurrence. Consequently, the Board authorized the release of this report on 09 August 2006.

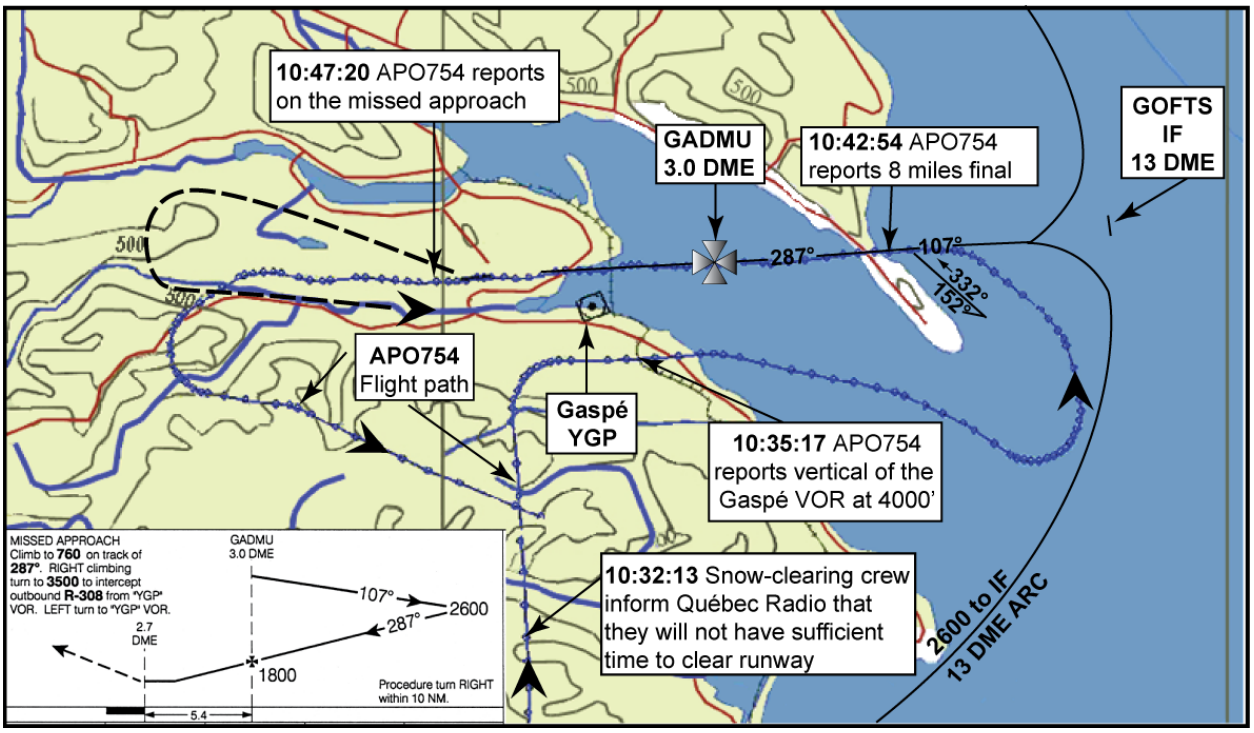
Appendix A – Approach to the Du Rocher-Percé Aerodrome (Pabok)

The following illustrates the aircraft's flight path compared with the published NDB A (GPS) approach path.



Appendix B – First Approach to the Gaspé Airport

The following illustrates the aircraft's flight path during the first approach to the Gaspé Airport compared with the LOC (BC)/DME RUNWAY 29 approach path.



Appendix C – Second Approach to the Gaspé Airport

The following illustrates the aircraft's flight path during the second approach to the Gaspé Airport compared with the LOC (BC)/DME RUNWAY 29 approach path.