



# National Transportation Safety Board Aviation Accident Final Report

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<b>Location:</b>	PRESQUE ISLE, ME	<b>Accident Number:</b>	NYC98FA071
<b>Date &amp; Time:</b>	03/01/1998, 0352 EST	<b>Registration:</b>	N777HM
<b>Aircraft:</b>	Piper PA-31-310	<b>Aircraft Damage:</b>	Destroyed
<b>Defining Event:</b>		<b>Injuries:</b>	2 Fatal

**Flight Conducted Under:** Part 91: General Aviation - Positioning

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## Analysis

The pilot was performing a night VOR/DME approach during which instrument meteorological conditions prevailed. The airplane was equipped with VOR, LORAN, and R-NAV receivers. There were two step-downs fixes on the approach. At 13 DME the minimum altitude was 1,800 feet. At 10 DME the minimum altitude was 1,040 feet. The missed approach point was at 6 DME, and the VOR/DME transmitter was located 5.5 miles beyond the airport. Radar data revealed a descent profile based upon distances from the end of the runway, rather than DME from the VOR. The airplane reached an altitude of 1,000 feet when it was 13.52 miles from the VOR, and 7.58 miles from the approach end of the runway. It subsequently impacted rising terrain at an altitude of about 900 feet, about 11.5 miles from the VOR, and 5.5 miles from the approach end of the runway. Impact damage and a post-crash fire precluded a check of the radio set up at the time of the accident. According to FAR 135 a pilot-in-command was required to have 1,200 hours total time. The investigation documented the pilot's total time as about 1,057 hours.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's failure to follow the published instrument approach procedure and his descent below the minimum descent altitude. Contributing factors were the night conditions, low ceilings, and fog.

## Findings

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Occurrence #1: IN FLIGHT COLLISION WITH TERRAIN/WATER

Phase of Operation: APPROACH - IAF TO FAF/OUTER MARKER (IFR)

### Findings

1. (F) LIGHT CONDITION - DARK NIGHT
2. (F) WEATHER CONDITION - LOW CEILING
3. (F) WEATHER CONDITION - FOG
4. (C) IFR PROCEDURE - NOT FOLLOWED - PILOT IN COMMAND
5. (C) MINIMUM DESCENT ALTITUDE - NOT MAINTAINED - PILOT IN COMMAND

## Factual Information

### HISTORY OF FLIGHT

On March 1, 1998, about 0352 eastern standard time, a Piper PA-31-310, N777HM, operated by Bird Air Fleet, as Bird Air 60, was destroyed when it collided with terrain during an instrument approach to the Northern Maine Regional Airport (PQI), Presque Isle, Maine. The certificated commercial pilot and passenger were fatally injured. Night instrument meteorological conditions prevailed for the flight that originated at the Bangor International Airport, Bangor, Maine at 0309. An instrument flight rules (IFR) flight plan was filed for the positioning flight that was conducted under 14 CFR Part 91.

The pilot had reported for duty about 1830, for a series of flights for the U.S. Post Office, during which the pilot flew about 4 1/2 hours. The series of flights were conducted under 14 CFR Part 135, and terminated in Bangor. The purpose of the accident flight was to position the airplane to PQI for the next days flights.

According to Federal Aviation Administration (FAA) records, Bangor automated Flight Service Station provided the pilot an abbreviated weather briefing at 0257. The pilot received the forecast for the PQI area that called for ceilings of 100 feet and visibility of 1/4 mile. The briefing also included cautions for mountain obscurement and icing. The pilot's attention was drawn to a widespread area of precipitation that was moving north. The weather at Caribou, Maine, 11 nautical miles (NM) to the north was the same as PQI, and 36 NM to the south, the terminal forecast for Houlton, Maine called for ceilings of 200 feet and visibility's of 1/2 mile. The pilot asked about the localizer, and was informed that it was still inoperative. Due to the weather and the inoperative localizer, the specialist recommended that the pilot spend the night in Bangor, at which time the briefing ended. The pilot then departed at 0300 for PQI on a company pre-stored IFR flight plan.

En route to PQI, at 0321:05, the Boston Center, Parso Sector controller transmitted, "bird air sixty you have the presque isle weather sir." The pilot replied, "bird air sixty ready to copy."

The controller transmitted, "yeah they show ah zero eight fifteen the awos shows winds are calm visibility one half a mile this they have a one hundred foot overcast ceiling and temperature two dew point two altimeter two nine eight four."

At 0321:27, the pilot replied, "roger two niner eight four on the altimeter and we'll be looking for the ah v o r d m e runway ah one approach."

At 0337:29, Bird Air 60 was descended to 3,000 feet.

At 0340:07, the controller transmitted, "bird air sixty cleared v o r d m e to runway one at presque isle sir and ah cancel with me ah if youre able ah on the ground you probably would be able so on ground at one two one point six sir." This was acknowledged by the pilot.

At 0353:19, the controller transmitted, "bird air sixty radar service is terminated." No reply was received from this or subsequent radio calls.

The accident occurred during the hours of darkness at 46 degrees, 35 minutes, 35 seconds north latitude and 68 degrees, 00 minutes, 23 seconds west longitude.

### PERSONNEL INFORMATION

The pilot held a commercial pilot certificate with ratings for single and multi-engine land, and instrument airplane. He was last issued a second class FAA Airman Medical Certificate with no limitations on June 4, 1997. According to the pilots logbook, he had a total time of 907.4 hours as of January 14, 1998. The Chief Pilot of Bird Air estimated the pilot flew an additional 150 hours up to the time of the accident for an estimated total time of 1,057.4 hours. According to 14 CFR Part 135, a pilot-in-command was required to have 1,200 hours of total flight experience.

The chief pilot also reported that the pilot presented a logbook to him which showed a total time of over 1,200 hours prior to his captain's checkride. Company records indicated he received his second-in-command checkout on October 26, 1997, and his captain's checkout on February 1, 1998.

The pilot's log book also revealed that between October 15, 1997, and January 14, 1998, he had logged 415.8 hours. Then between November 12, 1997, and January 14, 1998, the pilot logged 367 hours.

#### RADAR AND OTHER REMOTELY RECORDED DATA

Radar data was received from the Boston Air Route Traffic Control (ARTCC) facility. The data was in the National Track Analysis Program (NTAP) format. The data was changed from latitude and longitude, to a X/Y format with the approach end of Runway 1 as the zero reference point. Altitudes were recovered from a corresponding Data Analysis Reduction Tool (DART) run, log sort, and merged with the NTAP position data.

#### WRECKAGE AND IMPACT INFORMATION

The wreckage was examined at the accident site March 2 and 3, 1998. All major components of the airplane were accounted for at the accident site. The airplane came to rest on an approximate heading of 005 degrees, at an approximate elevation of 950 feet, and was consumed by a post crash fire. The debris trail measured 340 feet on a heading of 005 degrees. Tree tops about 50 feet above ground level, along the swath path, were broken at a constant elevation. Flight control continuity was confirmed from the rudder, and rudder trim to the cockpit area. However, separation of the wings and vertical stabilizer precluded a continuity check of the ailerons and elevator. All navigation radios and flight instruments, except the airspeed indicator and tachometer, were consumed by post crash fire.

The engines were recovered from the accident site and examined on March 11, 1998 at the Limington-Harmon Airport, Limington, Maine. The left engine had remained attached to the airplane through cables and was damaged by post crash fire. The left engine propeller remained attached to the engine, and all blades had S bending. When the propeller was rotated by hand, continuity to the valve train and vacuum pump was confirmed. The turbo charger rotated freely by hand. Thumb compression was obtained on all the cylinders except the number two, which had impact damage to the intake port. Both magnetos were rotated by hand and produced spark.

The right engine had separated from the wing and was not burned. The right engine propeller had separated from the engine at the propeller hub, and all propeller blades had S bending. The crankshaft flange was rotated by hand, and valve train continuity was confirmed for all cylinders, and the vacuum pump, compression was obtained on all cylinders, and spark was obtained on all ignition harness leads.

## MEDICAL AND PATHOLOGICAL INFORMATION

Toxicological testing was completed by the FAA Toxicology Accident Research Laboratory, in Oklahoma City, Oklahoma.

An autopsy was conducted on the pilot by Chief Medical Examiner for the State of Maine on March 2, 1998.

## ADDITIONAL INFORMATION

Documentation from Bird Air indicated that pilots were not allowed to carry passengers onboard company airplanes.

The investigation revealed that the airspace of the Boston ARTCC was divided into blocks. Each block had a minimum safe altitude warning (MSAW) for operation, and if a tracked airplane descended below that altitude, the controller would be alerted. Due to the low altitudes an airplane can reach on the final approach course, Bird Air 60 did not initiate an MSAW alert when it was within the block that contained the destination airport, and was within 50 miles of that airport.

The VOR/DME RWY 1 instrument approach procedure for PQI was recovered at the accident site. The procedure was in a book with an effective date of 0901Z 1 January 1988, to 0901 26 February 1998. A check with the FAA New England Air Traffic Procedures Branch revealed the last revision to instrument approach occurred on May 22, 1997.

According to records of weather at PQI, between the hours of 0034, and 0615, the ceiling remained at 100 feet overcast. The visibility was measured at 1/4 mile from 0034 through 0255, and was measured at 1/2 mile from 0315 through 0615.

The airplane was equipped with dual very high frequency omni-directional radio range (VOR) receivers. In addition it was equipped with both a long range aid to navigation (LORAN-C) receiver, and remote area navigation (R-NAV). These units were capable of providing navigation information including bearing and range to pilot selected points, such as the approach end of the Runway 1.

The pilot was cleared to perform the VOR/DME RWY 1 approach. Radar data revealed that the airplane approached the final approach course from the west. There were three fixes on the final approach course, which had an inbound heading of 001 degrees.

The first fix was called LABOR and was identified as 13 DME from the PQI VOR. After LABOR, the flight was authorized to descend to 1,800 feet.

At the 10 DME fix, the instrument approach procedure authorized a descent to the minimum descent altitude (MDA) of 1,040 feet. The required flight visibility for the approach was 1/2 mile,

The missed approach point (MAP) was at 6 DME. At that point the pilot was expected to either take over visually and continue for a landing, or execute a missed approach.

Radar data revealed that the airplane was established on the final approach course at 3,000 feet, about 22 DME from the PQI VOR.

The airplane had been maintaining 2,900 feet for over a minute when the descent was initiated. At that point the airplane was 17.45 miles from the PQI VOR, and 11.51 miles from the approach end of Runway 1.

When the airplane was 15.95 miles from the PQI VOR, and 10.01 miles from the approach end of Runway 01, it momentarily leveled off at 1,700 feet for two sweeps of the radar antenna (12 seconds), after which the descent continued to 1,000 feet.

The airplane reached an altitude of 1,000 feet when it was 13.52 miles from the PQI VOR, and 7.58 miles from the approach end of Runway 1.

The airplane impacted rising terrain at an altitude of about 900 feet, about 11.5 miles from the PQI VOR, and 5.5 miles from the approach end of Runway 1, along the final approach course to Runway 1.

A FAA flight check of the VOR/DME Runway 1 approach conducted after the accident found the approach to be within limits.

The airplane wreckage was released to Ryan Insurance Services, Inc., Scarborough, Maine, March 11, 1998.

### Pilot Information

<b>Certificate:</b>	Commercial	<b>Age:</b>	24, Male
<b>Airplane Rating(s):</b>	Multi-engine Land; Single-engine Land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	Yes
<b>Medical Certification:</b>	Class 2 Valid Medical--no waivers/lim.	<b>Last FAA Medical Exam:</b>	06/04/1997
<b>Occupational Pilot:</b>		<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	1057 hours (Total, all aircraft), 440 hours (Total, this make and model), 629 hours (Pilot In Command, all aircraft)		

## Aircraft and Owner/Operator Information

Aircraft Make:	Piper	Registration:	N777HM
Model/Series:	PA-31-310 PA-31-310	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	31-7812110
Landing Gear Type:	Retractable - Tricycle	Seats:	2
Date/Type of Last Inspection:	01/21/1998, 100 Hour	Certified Max Gross Wt.:	6500 lbs
Time Since Last Inspection:	87 Hours	Engines:	2 Reciprocating
Airframe Total Time:	9318 Hours	Engine Manufacturer:	Lycoming
ELT:	Installed	Engine Model/Series:	TSIO-540-A2B
Registered Owner:	PETER E. TOROSIAN	Rated Power:	310 hp
Operator:	BIRD AIR FLEET	Operating Certificate(s) Held:	On-demand Air Taxi (135)
Operator Does Business As:		Operator Designator Code:	BRDA

## Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument Conditions	Condition of Light:	Night/Dark
Observation Facility, Elevation:	PQI, 534 ft msl	Distance from Accident Site:	6 Nautical Miles
Observation Time:	0355 EST	Direction from Accident Site:	5°
Lowest Cloud Condition:	Unknown / 0 ft agl	Visibility	0.5 Miles
Lowest Ceiling:	Overcast / 100 ft agl	Visibility (RVR):	0 ft
Wind Speed/Gusts:	3 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	230°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29 inches Hg	Temperature/Dew Point:	2°C / 1°C
Precipitation and Obscuration:			
Departure Point:	BANGOR, ME (BGR)	Type of Flight Plan Filed:	IFR
Destination:	(PQI)	Type of Clearance:	IFR
Departure Time:	0300 EST	Type of Airspace:	Class G

## Airport Information

Airport:	PRESQUE ISLE (PQI)	Runway Surface Type:	Asphalt
Airport Elevation:	534 ft	Runway Surface Condition:	
Runway Used:	1	IFR Approach:	VOR/DME
Runway Length/Width:	7438 ft / 150 ft	VFR Approach/Landing:	None

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 Fatal	<b>Aircraft Damage:</b>	Destroyed
<b>Passenger Injuries:</b>	1 Fatal	<b>Aircraft Fire:</b>	On-Ground
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	2 Fatal	<b>Latitude, Longitude:</b>	

## Administrative Information

<b>Investigator In Charge (IIC):</b>	RANDI-JEAN KUKLA	<b>Report Date:</b>	06/21/2000
<b>Additional Participating Persons:</b>	DAVID KNOWLES; PORTLAND, ME PAUL LEHMAN; VERO BEACH, FL GREG ERICKSON; WILLIAMSPORT, PA		
<b>Publish Date:</b>			
<b>Investigation Docket:</b>	NTSB accident and incident dockets serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at <a href="mailto:pubinq@ntsb.gov">pubinq@ntsb.gov</a> , or at 800-877-6799. Dockets released after this date are available at <a href="http://dms.nts.gov/pubdms/">http://dms.nts.gov/pubdms/</a> .		

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