



National Transportation Safety Board

Aviation Accident Final Report

Location:	Rio Grande, PR	Accident Number:	ATL02FA031
Date & Time:	01/05/2002, 1423 AST	Registration:	N441AW
Aircraft:	Cessna 441	Aircraft Damage:	Destroyed
Defining Event:		Injuries:	5 Fatal
Flight Conducted Under:		Part 91: General Aviation - Personal	

Analysis

The pilot was on a visual rules flight from Culebra, Puerto Rico to San Juan, Puerto Rico. No flight plan was filed and a weather briefing was not obtained. The pilot contacted San Juan Radar Approach Control 10 miles east of Fajardo, Puerto Rico and the controller stated the airplane was in radar contact 3 miles east of Farjardo airport. The pilot was instructed to enter a right downwind for runway 10 south of plaza Carolina. The pilot acknowledged the transmission and reported he was at 1,600 feet. Two minutes later the controller stated on the radio frequency, radar contact was lost. The airplane was located by ground personnel on the side of El Yunque Mountain. Review of weather data revealed a weak cold front extended over Puerto Rico. Satellite imagery at the time of the accident revealed a band of low clouds obscuring the accident site. A police helicopter pilot who attempted to reach the crash site reported instrument flight conditions. Examination of the airframe, flight controls, engine assemblies and accessories revealed no anomalies.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot continued visual flight flight into instrument flight conditions resulting in an in-flight collision with terrain. Low clouds were a factor.

Findings

Occurrence #1: IN FLIGHT ENCOUNTER WITH WEATHER

Phase of Operation: CRUISE

Findings

1. WEATHER CONDITION - CLOUDS
 2. (C) VISUAL LOOKOUT - NOT MAINTAINED - PILOT IN COMMAND
 3. (C) VFR FLIGHT INTO IMC - CONTINUED - PILOT IN COMMAND
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Occurrence #2: IN FLIGHT COLLISION WITH TERRAIN/WATER

Phase of Operation: CRUISE

Findings

4. TERRAIN CONDITION - MOUNTAINOUS/HILLY

Factual Information

HISTORY OF FLIGHT

On January 5, 2002, about 1423 Atlantic Standard Time, a Cessna 441, N441AW, registered to Alexander Leasing LLC, operating as a 14 CFR Part 91 personal flight, crashed on El Yunque Mountain located in the vicinity of Rio Grande, Puerto Rico. Visual meteorological conditions prevailed and no flight plan was filed. The airplane was destroyed by impact forces and a post crash fire. The commercial pilot and four passengers were fatally injured. The flight was estimated to have departed from Culebra, Puerto Rico, at about 1400.

A review of radio communication between San Juan Center Radar Approach Control East Control, and the pilot, revealed that contact was established about 10 miles east of Fajardo, Puerto Rico, at 1418:09. The pilot was given a transponder code, 0477, and stated that his destination was San Juan International Airport. At 14:19:54, radar contact was established three miles east of Fajardo Airport. The pilot was instructed to enter a right downwind for runway 10 south of plaza Carolina. The controller provided the pilot with the current automatic terminal information for San Juan and requested his altitude. The pilot reported that he was at 1,600 feet and would stay south at plaza Carolina.

At 1420:19, the controller asked the pilot what type of Cessna he was, and the pilot stated that he was a Cessna 441. The controller replied at 1420:29, "rodger uh that's a uh golden eagle." The pilot replied, "no sir it is a Cessna conquest one alpha whiskey." There were no other recorded communications received from the pilot. At 1422:25, the controller reported that radar contact was lost. Numerous attempts by the controller to contact the pilot were unsuccessful. The controller asked several aircraft in the vicinity to attempt radio contact with the pilot, which were unsuccessful.

At 1456: 37, a police helicopter pilot contacted the controller and report the possible notification of a downed aircraft and that he was going to inspect the scene in the Rio Grande area. The controller informed the police pilot that he would provide a vector direct to the area. The police pilot was given a 125 degree heading to fly for five miles." The police pilot replied, "rodger one two five I'm going to move out a little bit here for some weather and uh we'll come back into the area."

At approximately the same time, two witnesses located near the crash site, stated they heard the engines of an airplane approaching their location and they could not see the airplane because of rain and fog. They heard an impact, sounds of falling trees, an explosion, and saw a ball of fire and smoke. One witness called 911 and the other witness went up the mountain to the accident site. A strong smell of fuel and oil was present at the accident sit.

Another witness, whose house is located further downs slope from the accident site, stated he was in his garage when he heard an airplane approaching his location. He estimated that the airplane flew over his house 20 to 50 feet above the roof. The airplane was in straight and level flight and traveling very fast. He heard an explosion followed by the sounds of the airplane colliding with trees. The mountaintop was covered with clouds, fog, and there had been intermittent rain in the valley below throughout the day.

PERSONNEL INFORMATION

Review of information on file with the FAA Airman's Certification Division, Oklahoma City, Oklahoma, revealed the pilot was issued a commercial pilot certificate on April 24, 1990, with ratings for lighter than air free balloon limited to hot air balloons with an airborne heater, airplane single engine land, airplane multiengine land, and instrument airplane. The pilot held a third class medical certificate issued on April 5, 2000, with the restriction must wear corrective lenses for near and distant vision. The pilot reported on his application for the third class medical certificate that he had accumulated 3,609 total flight hours and he had flown 135 hours in the last six months According to the pilots wife, the pilot had flown 1,494 hours in the Cessna 441 as of January 5, 2002. Review of training records obtained from Pro Flight revealed the pilot successfully completed the required curriculum for Cessna Conquest II Recurrent Flight Training on December 10, 2001. The training consisted of 10 hours of classroom instruction, and four flight hours. The pilot completed a biennial flight review and was issued an instrument proficiency check. The pilot's logbook was not located.

AIRCRAFT INFORMATION

Review of the aircraft logbooks revealed the last recorded maintenance logbook total time was 5157.9 hours on September 21, 2001. The altimeter system, static pressure system, and transponder were inspected on March 22, 2001. Review of all fixed base operators refueling records at San Juan revealed that N441AW did not obtain any jet fuel from December 28, 2001 through January 5, 2002.

METEOROLOGICAL INFORMATION

The closest weather reporting location at the time of the accident was Roosevelt Field Naval Air Station, Roosevelt Roads, Puerto Rico. The 1355 surface weather observation was: wind 030-degrees at 14 knots, visibility greater than 6 knots, 2,000 scattered, 4,000 broken, 22,000 broken, temperature 80-degrees Fahrenheit, dew point temperature 75-degrees Fahrenheit, and altimeter 30.06.

The National Weather Service reported a weak cold front extended over the island of Puerto Rico with a band of clouds and scattered rain showers. The Geostationary Operations Environmental Satellite imagery showed a band of low clouds obscuring the accident site.

WRECKAGE AND IMPACT INFORMATION

The wreckage of N441AW was located on the side of El Yunque Mountain in the El Yunque National Park in a wooded area about 14.6 nautical miles east of Louis Marin Munoz International Airport, San Juan, Puerto Rico. El Yunque mountain field elevation is 3,378 feet. Examination of the crash site revealed the airplane collided with upslope terrain on a heading of 309-degrees magnetic in a nose-up right wing low attitude, west of road 191 located near Rio Grande, Puerto Rico. The up slope was estimated between 20 to 25 degrees, and the crash debris line extended 415 feet.

The right wing outboard of the engine collided with 45-feet tall trees about 20 feet above the base of the trees. The right stub wing, station sustained extensive fire damage from the wing

root extending outboard to the right engine nacelle. The leading edge of the wing separated in several segments outboard of the engine nacelle for about 10 feet 6 inches. A 38-inch section of the leading edge including the fuel filler cap was observed separated. The remainder of the wing tip was fragmented in several segments. The right main fuel tank was ruptured and browning of vegetation continued up the crash debris line. The right main landing gear and flaps were in the retracted position.

The left wing collided with trees about 13 feet above the base of the trees. The left wing sustained extensive fire damage from the wing root outboard 13 feet 6 inches. The wing was intact from the wing tip inboard 10 feet. There was evidence of a tree strike 4 feet inboard from the wing tip. The left main landing gear and flaps were in the retracted position. The left main fuel tank was ruptured and browning of vegetation continued up the crash debris line.

The airplane fuselage collided with a large rock and tree in a nose down left wing low attitude separating the right propeller from the propeller flange and all four propeller blades separated from the shattered propeller hub 230 feet from the initial point of impact. Fire consumed the fuselage from the radar dome aft to the aft pressure bulkhead. The pilot and four passengers were ejected to the left of the aircraft wreckage with seats attached, and were located 45 feet left of the cockpit.

The tail section aft of the aft pressure bulkhead was located forward of the right horizontal stabilizer and elevator. The right horizontal stabilizer remained intact and sustained impact damage. The left horizontal stabilizer and elevator separated and were located under the tail section along with a segment of the flap system. The left horizontal stabilizer separated at the stabilizer root. There was evidence of a tree strike on the leading edge 6 feet 6 inches outboard of the stabilizer root. The vertical stabilizer and rudder assembly sustained impact damage and separated into multiple pieces. The lower rudder hinge-bearing bracket separated and was not recovered. There was no evidence of rotational scoring on the lower rudder hinge bracket.

The nose gear fork and piston assembly were located adjacent to the rocks and trees near the tail section and was in the retracted position. The right engine separated and was located to the right and abeam of the cockpit area. The left propeller assembly separated at the propeller flange and was located 44 feet forward of the cockpit. One propeller blade separated from the propeller hub.

The left engine was located 30 feet forward of the left propeller. The right main landing gear was located 50 feet forward of the left engine assembly 354 feet from the initial point of impact.

Examination of the airframe, and flight controls revealed no pre-existing mechanical failure or malfunction. All components necessary for flight were present at the crash site. Continuity of the flight control system was confirmed for pitch, roll, and yaw. All flight control cables failed in overload or were cut during recovery.

The left and right engine assembly was transported to Honeywell Product Integrity Investigation Facility in Phoenix, Arizona, for examination. The examination revealed the type and degree of damage observed was indicative of engine rotation and operation at the time of impact, and no pre-existing conditions were observed on either engine, which would have interfered with normal engine operation.

The left and right propeller systems were transported to Mc McCauley propeller system in Vandalia, Ohio for further analysis. There was no evidence of any type of fatigue propeller failure. The propellers were rotating under conditions of high power (hub breakup, prop

attachment impact and separation, pitch change damage, and blade bending and twisting) at impact and were not at or near the feather or reverse positions. The reverse stop and feather stop mechanisms were not damaged.

MEDICAL AND PATHOLOGICAL INFORMATION

Dr. Mari Conte, Medical Examiner, Office of Forensic Science, Caparra High Station, San Juan, Puerto Rico, conducted a postmortem examination of the pilot-in-command, on January 6, 2002. The cause of death was multiple blunt force traumatic injuries. Postmortem toxicology of specimens from the pilot was performed by the Forensic Toxicology Research Section, Federal Aviation Administration, Oklahoma City, Oklahoma. No carbon monoxide or cyanide was detected in the blood, and no ethanol was detected in the muscle. Ethanol and acetaldehyde was detected in the kidney. The ethanol found in this case may potentially be from postmortem ethanol formation and not from the ingestion of ethanol. Quinine was detected in the blood and liver.

Dr. Mari Conte, Medical Examiner, Office of Forensic Science, Caparra High Station, San Juan, Puerto Rico, conducted postmortem examinations on the four passengers, on January 6, 2002. The cause of death was multiple blunt force traumatic injuries.

ADDITIONAL INFORMATION

The wreckage of N441AW was released to Christopher C. Cartwright, General Manager, Atlanta Air Salvage, Griffin, Georgia, on January 16, 2002. The aircraft logbooks were released to Mr. Theodore A. Kurz, Attorney at Law, Debevoise and Plimpton, New York, New York, representing the estate of the pilot on January 31, 2002. The engines and propellers were released to Mr. Cartwright on August 8, 2002.

Pilot Information

Certificate:	Commercial	Age:	63, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	Balloon	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	Yes
Medical Certification:	Class 3 Valid Medical--no waivers/lim.	Last FAA Medical Exam:	04/05/2000
Occupational Pilot:		Last Flight Review or Equivalent:	12/10/2001
Flight Time:	3609 hours (Total, all aircraft), 1494 hours (Total, this make and model)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	Registration:	N441AW
Model/Series:	441	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	441-0199
Landing Gear Type:	Retractable - Tricycle	Seats:	8
Date/Type of Last Inspection:	04/11/2001, Continuous Airworthiness	Certified Max Gross Wt.:	9850 lbs
Time Since Last Inspection:	42 Hours	Engines:	2 Turbo Prop
Airframe Total Time:	5200 Hours at time of accident	Engine Manufacturer:	Garrett
ELT:	Installed, not activated	Engine Model/Series:	TPE331-10N
Registered Owner:	Alexander Leasing LLC	Rated Power:	715 hp
Operator:	Alex F. Wojciechowicz	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	TJNR, 38 ft msl	Distance from Accident Site:	8 Nautical Miles
Observation Time:	1355 AST	Direction from Accident Site:	160°
Lowest Cloud Condition:	Scattered / 2000 ft agl	Visibility	6 Miles
Lowest Ceiling:	Broken / 4000 ft agl	Visibility (RVR):	
Wind Speed/Gusts:	14 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	3°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.06 inches Hg	Temperature/Dew Point:	27°C / 24°C
Precipitation and Obscuration:			
Departure Point:	Culebra, PR (CPX)	Type of Flight Plan Filed:	None
Destination:	San Juan, PR (SJU)	Type of Clearance:	None
Departure Time:	1309 AST	Type of Airspace:	Class G

Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Destroyed
Passenger Injuries:	4 Fatal	Aircraft Fire:	On-Ground
Ground Injuries:	N/A	Aircraft Explosion:	On-Ground
Total Injuries:	5 Fatal	Latitude, Longitude:	18.317778, -65.767222

Administrative Information

Investigator In Charge (IIC):	Carrol A Smith	Report Date:	09/30/2003
Additional Participating Persons:	Frank Morales; San Juan FSDO-21; San Juan, PR Andrew L Hall; Cessna Aircraft Company; Wichita, KS Peter B Baker; Honeywell; Phoenix, AZ Thomas M Knopp; McCauley Propeller Systems; Vandalia, OH		
Publish Date:			
Investigation Docket:	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 pubinq@ntsb.gov , or at 800-877-6799. Dockets released after this date are available at http://dms.ntsb.gov/pubdms/ .		

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