



National Transportation Safety Board Aviation Accident Final Report

Location:	Nantucket, MA	Accident Number:	NYC06FA040
Date & Time:	12/01/2005, 1644 EST	Registration:	N64PW
Aircraft:	Beech B-55	Aircraft Damage:	Destroyed
Defining Event:		Injuries:	1 Fatal
Flight Conducted Under:	Part 91: General Aviation - Personal		

Analysis

The instrument rated pilot obtained a weather briefing from a flight service station (FSS), filed an instrument flight rules (IFR) flight plan, and proceeded in a Beech B-55 on a return flight to his home airport. The flight was in radio and radar contact with air traffic control (ATC). As the airplane intercepted the localizer course for the instrument landing system (ILS) approach, the Approach controller vectored the airplane off the localizer for spacing. The controller then vectored the airplane back onto the localizer, and cleared the flight for the ILS approach. At that time, the airplane was approximately 2 miles prior to the final approach fix (FAF), at 300 feet above the crossing altitude, and a groundspeed of 140 knots. The controller advised the pilot to contact the local air traffic control tower (ATCT), but did not provide a frequency. The controller was not required to provide the frequency, and recalled that the airplane was based at the destination airport. The airplane crossed the FAF at 300 feet above the crossing altitude, at a groundspeed of 110 knots. The airplane tracked the localizer course above the glideslope, and then flew below the glideslope during the approach. The Automated Radar Terminal System (ARTS) generated the first of two Minimum Safe Altitude Warning (MSAW) alerts. At the time, the airplane was 600 to 700 feet agl; and a second MSAW alert was generated when the airplane was approximately 200 feet agl. The Approach and ATCT controllers were required to provide those warnings to the accident pilot; however, they did not. At 200 feet, the pilot asked the Approach controller for the local ATCT frequency. The Approach controller advised the pilot of the frequency, but radar contact and radio communication were lost when the airplane impacted the Atlantic Ocean approximately 1 mile from the airport. Night instrument meteorological conditions prevailed at the time, with an overcast ceiling of 400 feet, and visibility 2 1/2 miles in light rain and mist.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's failure to maintain the proper glidepath during the instrument approach, which resulted in controlled flight into water. Factors were the failure of the air traffic controllers to issue minimum safe altitude warnings, night lighting conditions, and a low ceiling.

Findings

Occurrence #1: IN FLIGHT COLLISION WITH TERRAIN/WATER

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

Findings

1. (F) LIGHT CONDITION - NIGHT
2. (C) PROPER GLIDEPATH - NOT MAINTAINED - PILOT IN COMMAND
3. (F) WEATHER CONDITION - LOW CEILING
4. (F) UNSAFE/HAZARDOUS CONDITION WARNING - NOT ISSUED - ATC PERSONNEL(DEP/APCH)
5. TERRAIN CONDITION - WATER
6. (F) UNSAFE/HAZARDOUS CONDITION WARNING - NOT ISSUED - ATC PERSONNEL(LCL/GND/CLNC)

Factual Information

HISTORY OF FLIGHT

On December 1, 2005, at 1644 eastern standard time, a Beech B-55, N64PW, was presumed destroyed during collision with water, while on approach to Nantucket Memorial Airport (ACK), Nantucket, Massachusetts. The certificated commercial pilot was not located, and presumed to be fatally injured. Night instrument meteorological conditions prevailed for the flight that departed Teterboro Airport (TEB), Teterboro, New Jersey, about 1530. An instrument flight rules (IFR) flight plan was filed for the personal flight conducted under 14 CFR Part 91.

The airplane was based at ACK. Earlier in the day, the pilot flew his son to TEB, dropped him off, and refueled the airplane to capacity. The pilot then obtained a weather briefing from a flight service station (FSS), and filed an IFR flight plan for the return flight to ACK. According to Federal Aviation Administration (FAA) air traffic control (ATC) data, the pilot was in radio contact with Cape Cod Approach at 1633. At that time, the airplane was descending to 4,000 feet and approaching ACK. The ATC controller then provided vectors for the ILS Runway 6 approach.

At 1640:03, the controller vectored the airplane off the localizer for spacing, with an assigned heading of 100 degrees, and a descent to 1,700 feet.

At 1641:05, the controller vectored the airplane back onto the localizer, and subsequently cleared the flight for the ILS approach at 1642:04. At that time, the airplane was approximately 2 miles prior to the final approach fix (CRAYG intersection), at 2,000 feet, and 140 knots groundspeed. The crossing altitude at CRAYG was 1,700 feet, and the decision height for the approach was 239 feet.

At 1642:53, the controller advised the pilot to contact the Nantucket air traffic control tower (ATCT), but did not provide a frequency. The pilot acknowledged the transmission.

At 1643:12, a radar target indicated the airplane was over CRAYG at 2,000 feet, and a groundspeed of 110 knots. Further review of radar data indicated the airplane tracked the localizer course, above the glideslope, and then flew below the glideslope during the approach.

At 1644:06, the Automated Radar Terminal System (ARTS) generated the first of two Minimum Safe Altitude Warning (MSAW) alerts. At the time, the airplane was 600 to 700 feet agl.

At 1644:25, the second MSAW alert was generated when the airplane was approximately 200 feet agl.

At 1644:33, the pilot asked Cape Approach for the Nantucket ATCT frequency.

At 1644:36, the Cape Approach controller advised the pilot of the frequency. However, neither the Cape Approach controller nor the Nantucket ATCT controller issued an MSAW alert to the pilot.

Radar contact and radio communication were lost when the airplane was approximately 1 mile from the airport, about 200 feet msl. No known distress calls were received by ATC.

The accident occurred during the hours of night; located approximately 41 degrees, 15 minutes north latitude, and 70 degrees, 03 minutes west longitude.

A search was initiated by the United States Coast Guard, and subsequently terminated about 1315 on December 2, 2005. As of the publication of this report, the pilot and main wreckage were not located.

PILOT INFORMATION

The pilot's logbook and aircraft logbooks were reported to be in the accident airplane, and were not recovered. The pilot held a commercial pilot certificate with ratings for single engine land, single engine sea, multiengine land, and instrument airplane. The pilot also held a certified flight instructor certificate.

The pilot's most recent FAA third class medical certificate was issued on February 14, 2005. At that time, he reported a total flight experience of 5,000 hours.

In addition, the pilot's son stated that the pilot had accumulated approximately 1,000 total hours of actual instrument flight time, and 400 hours in the same make and model as the accident airplane. The pilot had flown about 5 hours within the 90 days preceding the accident; of which, about 3 hours were in actual instrument conditions.

According to the pilot's son, the pilot did not exhibit any abnormal behavior on the day of the accident, nor did he complain of any ailments.

AIRCRAFT INFORMATION

The pilot's son stated that the airplane was operated about 250 hours during the prior year, with no difficulties noted. The airplane was equipped with new engines during 2002, and the last annual inspection was completed during April 2005.

Review of maintenance invoices revealed that the airplane's last annual inspection was completed on April 26, 2005. At that time, the airplane had accumulated 2,592 total hours of operation.

METEOROLOGICAL INFORMATION

The recorded weather at ACK, at 1653, was: wind from 020 degrees at 17 knots; visibility 2 1/2 miles in light rain and mist; overcast ceiling at 400 feet; temperature 45 degrees F; dew point 42 degrees F; altimeter 29.65 inches Hg.

WRECKAGE INFORMATION

An approximate 3-foot by 5-foot section of airplane cabin roof washed up on the south shore of Nantucket, and was recovered by the Nantucket Police Department. Examination of the roof by a Safety Board investigator and the pilot's family confirmed that it was from the accident airplane.

AIR TRAFFIC CONTROL

During interviews, the Cape Cod Approach controller stated that he did not notice the two visual MSAW alerts. He further stated that the accident airplane was based at ACK and flew frequently. The Nantucket Tower controller stated that she heard two aural MSAW alerts, which were accompanied by two visual alerts. At the time, the accident airplane had not established communication with her, and she did not attempt to transmit an alert or notify Cape Cod Approach. She did attempt to contact the accident airplane after the first alert, and check if the pilot was on her frequency, but she did not receive a response.

Review of FAA Order 7110.65, "Air Traffic Control," paragraph 2-1-6, stated:

"...Issue a safety alert to an aircraft if you are aware the aircraft is in a position/altitude which, in your judgment, places it in unsafe proximity to terrain, obstructions, or other aircraft. Once the pilot informs you action is being taken to resolve the situation, you may discontinue the issuance of further alerts. Do not assume that because someone else has responsibility for the aircraft that the unsafe situation has been observed and the safety alert issued; inform the appropriate controller.

NOTE-

1. The issuance of a safety alert is a first priority (see para 2-1-2, Duty Priority) once the controller observes and recognizes a situation of unsafe aircraft proximity to terrain, obstacles, or other aircraft. Conditions, such as workload, traffic volume, the quality/limitations of the radar system, and the available lead time to react are factors in determining whether it is reasonable for the controller to observe and recognize such situations. While a controller cannot see immediately the development of every situation where a safety alert must be issued, the controller must remain vigilant for such situations and issue a safety alert when the situation is recognized.
2. Recognition of situations of unsafe proximity may result from MSAW/E-MSAW/LAAS, automatic altitude readouts, Conflict/Mode C Intruder Alert, observations on a PAR scope, or pilot reports.
3. Once the alert is issued, it is solely the pilot's prerogative to determine what course of action, if any, will be taken.
 - a. Terrain/Obstruction Alert. Immediately issue/initiate an alert to an aircraft if you are aware the aircraft is at an altitude which, in your judgment, places it in unsafe proximity to terrain/obstructions. Issue the alert as follows:

PHRASEOLOGY-

LOW ALTITUDE ALERT (call sign),

CHECK YOUR ALTITUDE IMMEDIATELY.

THE (as appropriate) MEA/MVA/MOCA/MIA IN YOUR AREA IS (altitude),

or if an aircraft is past the final approach fix (nonprecision approach),

or the outer marker,

or the fix used in lieu of the outer marker (precision approach),

and, if known, issue

THE (as appropriate) MDA/DH IS (altitude)..."

Further review of the FAA Order revealed that during radio communication transfer, controllers did not have to provide the ATCT frequency if in their opinion, the pilot knew which frequency was in use.

The FAA conducted a flight inspection of the ILS Runway 6 approach on December 2, 2005, and the equipment operation was found to be satisfactory.

ADDITIONAL INFORMATION

The recovered wreckage was released to a representative for the owner's insurance company on September 6, 2006.

Pilot Information

Certificate:	Commercial	Age:	66, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land; Single-engine Sea	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	Airplane Single-engine	Toxicology Performed:	No
Medical Certification:	Class 3 With Waivers/Limitations	Last Medical Exam:	02/01/2005
Occupational Pilot:		Last Flight Review or Equivalent:	
Flight Time:	5000 hours (Total, all aircraft), 400 hours (Total, this make and model), 5 hours (Last 90 days, all aircraft), 2 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Manufacturer:	Beech	Registration:	N64PW
Model/Series:	B-55	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	TC2054
Landing Gear Type:	Retractable - Tricycle	Seats:	6
Date/Type of Last Inspection:	04/01/2005, Annual	Certified Max Gross Wt.:	5100 lbs
Time Since Last Inspection:		Engines:	2 Reciprocating
Airframe Total Time:	2592 Hours	Engine Manufacturer:	Continental
ELT:	Installed, not activated	Engine Model/Series:	IO-550-E
Registered Owner:	Herradura Inc.	Rated Power:	300
Operator:	George F. Baker III	Air Carrier Operating Certificate:	None

Meteorological Information and Flight Plan

Observation Facility, Elevation:	ACK, 48 ft msl	Observation Time:	1653 EST
Distance from Accident Site:	1 Nautical Miles	Condition of Light:	Night
Direction from Accident Site:	60°	Conditions at Accident Site:	Instrument Conditions
Lowest Cloud Condition:		Temperature/Dew Point:	7° C / 5° C
Lowest Ceiling:	Overcast / 400 ft agl	Visibility	2.5 Miles
Wind Speed/Gusts, Direction:	17 knots, 20°	Visibility (RVR):	
Altimeter Setting:	29.65 inches Hg	Visibility (RVV):	
Precipitation and Obscuration:	Light - Rain; Mist		
Departure Point:	Teterboro, NJ (TEB)	Type of Flight Plan Filed:	IFR
Destination:	Nantucket, MA (ACK)	Type of Clearance:	IFR
Departure Time:	1530 EST	Type of Airspace:	

Airport Information

Airport:	Nantucket Memorial (ACK)	Runway Surface Type:	Asphalt
Airport Elevation:	48 ft	Runway Surface Condition:	Dry
Runway Used:	6	IFR Approach:	ILS
Runway Length/Width:	6303 ft / 150 ft	VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Destroyed
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Fatal		

Administrative Information

Investigator In Charge (IIC):	Robert J Gretz	Adopted Date:	10/31/2006
Additional Participating Persons:	Donald E Small; FAA FSDO-01; Logan, MA Richard Bunker; Massachusetts Aeronautics Commission; Boston, MA Timothy Rainey; Raytheon Aircraft; Wichita, KS John Kent; Teledyne Continental Motors; Mobile, AL Scott Proudfoot; National Air Traffic Controllers Association; Washington, DC		
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.nts.gov/pubdms/ .		

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