



National Transportation Safety Board Aviation Accident Final Report

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|--------------------------------|---|-------------------------|------------|
| Location: | FLAGSTAFF, AZ | Accident Number: | LAX96FA105 |
| Date & Time: | 01/31/1996, 1305 MST | Registration: | N300SP |
| Aircraft: | Beech E90 | Aircraft Damage: | Destroyed |
| Defining Event: | | Injuries: | 3 Fatal |
| Flight Conducted Under: | Part 91: General Aviation - Positioning - Air Medical (Medical Emergency) | | |

Analysis

The pilot and 2 nurses departed IFR to transport a patient from another location. During the initial climb, the pilot observed a gear unsafe light. He requested clearance to an area of VFR conditions to address the gear problem. Subsequently, the gear was manually extended with safe gear indications. The flight department requested that the pilot return to base. The pilot obtained an IFR clearance to return for an ILS approach. After handoff to the tower, he was requested to report the FAF inbound after an eastbound procedure turn. That was the last communication from the pilot. Subsequently, the aircraft crashed on the southeast side of Humphreys Peak at an elevation of about 10,500 feet and about 10 miles west of the final approach course. Wreckage was scattered along a heading of 230 degrees. There was evidence that the airplane was in a steep descent when it crashed. Radar data revealed an outbound track west of the published course and no procedure turn. The weather was IMC with light snow and rain. Moderate to severe turbulence was forecast and confirmed by other pilots. The winds at 10,000 feet were forecast to be 50 knots out of the southwest. Moderate turbulence and light rime ice had been reported along the ILS approach course before to the accident time.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: failure of the pilot to follow prescribed IFR procedures and his failure to maintain control of the aircraft. Factors relating to the accident were: the adverse weather conditions with icing and turbulence.

Findings

Occurrence #1: LOSS OF CONTROL - IN FLIGHT

Phase of Operation: APPROACH

Findings

1. (F) TERRAIN CONDITION - MOUNTAINOUS/HILLY
2. (F) WEATHER CONDITION - TURBULENCE, TERRAIN INDUCED
3. (F) WEATHER CONDITION - ICING CONDITIONS
4. (C) IFR PROCEDURE - NOT FOLLOWED - PILOT IN COMMAND
5. (C) AIRCRAFT CONTROL - NOT MAINTAINED - PILOT IN COMMAND

Occurrence #2: IN FLIGHT COLLISION WITH TERRAIN/WATER

Phase of Operation: DESCENT - UNCONTROLLED

Factual Information

HISTORY OF FLIGHT

On January 31, 1996, about 1305 hours mountain standard time, a Beech E-90, N300SP, was destroyed during an instrument approach to the Flagstaff Pulliam Airport, Flagstaff, Arizona. The pilot and his two passengers received fatal injuries. Instrument meteorological conditions prevailed for the positioning flight and an IFR flight plan had been filed.

The flight originated at 1228 on the day of the accident, and was to have made a medical patient pickup at Phoenix, Arizona. Shortly after takeoff from Flagstaff, the pilot contacted the maintenance department and reported an unsafe gear light. The maintenance department advised him to follow normal emergency procedures. He modified his instrument departure with Albuquerque Air Route Traffic Control Center (ZAB) to seek an area of VFR conditions to resolve the gear problem. Afterwards, he reported to ZAB that the problem was resolved. The pilot manually extended the landing gear with safe light indications.

At 1251:41, the pilot requested a clearance back to Flagstaff when he was about 20 miles south of the airport. At that time, ZAB gave him the altimeter setting of 29.89 inHg. The ZAB controller cleared him to the Flagstaff airport via direct with the option of going direct to "FRISY" intersection to eliminate the procedure turn. He said he would go direct to the VOR. The pilot received clearance at 1255:38 for an ILS DME runway 21 approach, however, he did not have the current Flagstaff weather.

Subsequently, the pilot advised ZAB that he had the weather. At 1257:48, ZAB cleared him for the ILS runway 21 approach and advised that radar service was terminated and to contact Flagstaff ATCT. At 1258:18, he contacted the Flagstaff ATCT and was advised to report "SHUTR" fix inbound. The local controller advised him that Flagstaff weather information "ZULU" was current. The pilot responded he had the weather and stated he was proceeding direct to the VOR. The local controller asked "you are on the ILS, verify," and he responded, "that's right I'm doing the ILS 21."

At 1302:48, the ATCT advised the pilot of new weather information which was: 600 feet scattered, measured ceiling 1,000 variable broken, 1,800 overcast; visibility 7 miles with light snow; and the ceiling was 800 variable to 1,200 feet. At 1303:01, the pilot acknowledged and that was the last radio contact with him. The last recorded radar contact was at 1305:06, at 10,000 feet msl.

During the initial search phase for the missing aircraft radar data was obtained by the FAA Western Pacific Region from Albuquerque Center and reviewed. According to the radar data, the aircraft flew an outbound course west of the published course with a meandering and undulating flight path. Subsequently, the Safety Board's Office of Research and Engineering further refined the data which revealed a wide range of airspeeds during the outbound course from the Flagstaff VOR.

On February 3, 1996, the wreckage was located at the 10,500 foot level on the northeast side of Humphreys Peak along the 354-degree radial about 15 DME from the Flagstaff VOR and 10 miles west of the final approach course.

PILOT INFORMATION

According to the operator, the airline transport rated pilot had accumulated 10,700 flight hours

with 613 hours in the make and model of the accident airplane. On July 12, 1995, the pilot received a biennial flight review in the accident airplane. According to the operator's Pilot Flight and Duty Time Summary, the pilot's last flight prior to the accident occurred on January 23, 1996. The pilot logged ground time for January 24, 25, 30 and 31. According to the log, on the 31st and prior to the accident flight, he worked 10 hours on reports and setting up a computer in Flagstaff. According to the director of operations, the pilot had not been previously scheduled to fly on the day of the accident.

AIRCRAFT INFORMATION

The aircraft was being maintained under an FAA Approved Airplane Inspection Program (AAIP). At the time of the accident the aircraft had accumulated 5,952 total flight hours. The next scheduled inspection (second detailed inspection) was due at 5,954 hours or, within 2.5 hours at the time of the accident.

An inspection had been started on the aircraft and it involved one maintenance technician at that point. It started with the landing gear inspection and the aircraft had not yet been put on jacks. The inspection was stopped for the accident flight.

According to the technicians written statement to the best of his recollection, he performed a visual inspection of the main and nose landing gear system. He measured the compressed length of the gear actuator springs. He lubricated the landing gear system and the components of the gear system and nothing else.

AIRPORT INFORMATION

The accident airplane was based at Flagstaff. The airplane had been handed off from Albuquerque Center to the FAA contract tower (ATCT) at Flagstaff for the ILS DME runway 21 approach. The inbound course to the runway is 210 degrees magnetic. The ATCT requested the pilot to report the final approach fix (SHUTR) inbound, which is 7.5 miles from the runway. Subsequently after the accident, the ILS approach system was flight checked. All navigation aids were reported as operational by the FAA.

According to Albuquerque Center, in the Flagstaff area radar coverage is usually lost about 10,000 feet msl. Albuquerque does not provide radar vectors to the final approach course.

METEOROLOGICAL INFORMATION

There were several in-flight advisories (AIRMETs) applicable to the accident area and time. They were for mountain obscuration, in-flight icing, and turbulence. In the area of the accident the winds were forecast to be out of the southwest at 30 to 40 knots.

About 1200, a pilot reported that during the ILS approach into Flagstaff he experienced light rime ice and light to moderate turbulence. The winds at 10,000 feet were forecast to be 50 knots out of the southwest.

An Arizona Department Of Public Safety (DPS) helicopter pilot reported that during the time of the accident they were experiencing moderate to extreme turbulence in the Flagstaff area.

At the time of the accident the Flagstaff Automated Surface Observation System (ASOS) was reporting: 600 hundred feet scattered, measured 1,000 feet broken, 1,800 feet overcast, 7 miles visibility and light snow.

According to the FAA Report Of Aircraft Accident, near the time of the accident the altimeter

was 29.87 inHg. Subsequent to the accident the altimeter was 29.86 inHg. During the wreckage examination the barometric reading observed on the pilot's damaged altimeter was 29.88 inHg and 1012 millibars.

A weather package generated by a Safety Board meteorologist is included in this report.

WRECKAGE AND IMPACT INFORMATION

The on-scene examination of the wreckage revealed that the airplane had descended vertically between Aspen trees into the mountainous terrain. The accident site terrain was estimated to be about 30 degrees upslope from the horizontal. The accident site elevation was estimated to be about 10,500 feet msl. The wreckage path of the airplane was about 230 degrees magnetic over a short distance.

A postcrash fire consumed the fuselage and center section from the nose aft to the empennage area just forward of the horizontal stabilizer. The unburnt airframe structure was deformed. All oxygen bottles had ruptured. The left wing and the left engine were located underneath the fuselage with extensive fire damage. The right wing was more intact and had less postcrash fire damage. The wing tip was missing. The engine was still attached and was laying against Aspen trees near the main wreckage.

Both propellers had separated from their respective drive shaft flanges with rotational shear deformation evident in a direction opposite that of normal engine rotation.

The entire airplane was accounted for at the accident scene. Complete control continuity was not possible due to the extent of the postcrash fire.

Examination of the landing gear system revealed it to be in the down and locked position. Examination of the wing flap system revealed it to be in the retracted position.

The on-scene examination of the pilot's altimeter revealed an altitude of 10,500 feet msl. The pilot's airspeed gauge was indicating 250 knots. The pilot's horizontal situation indicator (HSI) bug was found set at 210 degrees on the HSI compass card.

The wreckage was recovered from the accident site to a storage facility in Phoenix, Arizona. Under the supervision of the Safety Board, the airframe and the engines were examined in detail with a representation from the manufacturers, Beech Aircraft Company and Pratt and Whitney Canada, and the FAA.

Both of the engines were disassembled and examined. The internal damage observed is consistent with a sudden stoppage by impact.

MEDICAL AND PATHOLOGICAL INFORMATION

Due to the extent of the postcrash fire, there were no autopsy or toxicological functions performed.

TESTING AND RESEARCH INFORMATION

The autopilot annunciator light panel was removed from the wreckage and sent to the National Transportation Safety Board's materials laboratory for analysis of the lamp elements. here were no hot element stretching or elongations observed.

ADDITIONAL INFORMATION

The wreckage was subsequently released to the insurance company representative on July 29,

1996.

Pilot Information

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| Certificate: | Airline Transport | Age: | 60, Male |
| Airplane Rating(s): | Multi-engine Land; Single-engine Land | Seat Occupied: | Left |
| Other Aircraft Rating(s): | Helicopter | Restraint Used: | |
| Instrument Rating(s): | Airplane | Second Pilot Present: | No |
| Instructor Rating(s): | None | Toxicology Performed: | No |
| Medical Certification: | Class 2 Valid Medical--w/ waivers/lim. | Last FAA Medical Exam: | 12/15/1995 |
| Occupational Pilot: | | Last Flight Review or Equivalent: | |
| Flight Time: | 10700 hours (Total, all aircraft), 613 hours (Total, this make and model), 9189 hours (Pilot In Command, all aircraft), 32 hours (Last 90 days, all aircraft), 16 hours (Last 30 days, all aircraft) | | |

Aircraft and Owner/Operator Information

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|--------------------------------------|----------------------------|---------------------------------------|--------------------------|
| Aircraft Make: | Beech | Registration: | N300SP |
| Model/Series: | E90 E90 | Aircraft Category: | Airplane |
| Year of Manufacture: | | Amateur Built: | No |
| Airworthiness Certificate: | Normal | Serial Number: | LW-166 |
| Landing Gear Type: | Retractable - Tricycle | Seats: | 6 |
| Date/Type of Last Inspection: | 01/25/1996, AAIP | Certified Max Gross Wt.: | 10100 lbs |
| Time Since Last Inspection: | 53 Hours | Engines: | 2 Turbo Prop |
| Airframe Total Time: | 5952 Hours | Engine Manufacturer: | P&W |
| ELT: | Installed, not activated | Engine Model/Series: | PT6A-28 |
| Registered Owner: | FLAGSTAFF MEDICAL CENTER | Rated Power: | 550 hp |
| Operator: | FLAGSTAFF MEDICAL CENTER | Operating Certificate(s) Held: | On-demand Air Taxi (135) |
| Operator Does Business As: | GUARDIAN MEDICAL TRANSPORT | Operator Designator Code: | GDHA |

Meteorological Information and Flight Plan

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|----------------------------------|--------------------------|---|-------------------|
| Conditions at Accident Site: | Instrument Conditions | Condition of Light: | Day |
| Observation Facility, Elevation: | FLG, 7011 ft msl | Distance from Accident Site: | 13 Nautical Miles |
| Observation Time: | 1255 MST | Direction from Accident Site: | 174° |
| Lowest Cloud Condition: | Thin Broken / 600 ft agl | Visibility | 4 Miles |
| Lowest Ceiling: | Overcast / 1800 ft agl | Visibility (RVR): | 0 ft |
| Wind Speed/Gusts: | 6 knots / | Turbulence Type Forecast/Actual: | / |
| Wind Direction: | 210° | Turbulence Severity Forecast/Actual: | / |
| Altimeter Setting: | 29 inches Hg | Temperature/Dew Point: | 1°C / -1°C |
| Precipitation and Obscuration: | | | |
| Departure Point: | , AZ (FLG) | Type of Flight Plan Filed: | IFR |
| Destination: | PHOENIX, AZ (PHX) | Type of Clearance: | IFR |
| Departure Time: | 1230 MST | Type of Airspace: | Class D |

Airport Information

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|----------------------|-------------------------|---------------------------|-----------|
| Airport: | FLAGSTAFF PULLIAM (FLG) | Runway Surface Type: | Asphalt |
| Airport Elevation: | 7011 ft | Runway Surface Condition: | Wet |
| Runway Used: | 21 | IFR Approach: | ILS |
| Runway Length/Width: | 6999 ft / 150 ft | VFR Approach/Landing: | Full Stop |

Wreckage and Impact Information

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|---------------------|---------|----------------------|-----------|
| Crew Injuries: | 1 Fatal | Aircraft Damage: | Destroyed |
| Passenger Injuries: | 2 Fatal | Aircraft Fire: | On-Ground |
| Ground Injuries: | N/A | Aircraft Explosion: | None |
| Total Injuries: | 3 Fatal | Latitude, Longitude: | |

Administrative Information

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|-----------------------------------|--|--------------|------------|
| Investigator In Charge (IIC): | GEORGE E PETERSON | Report Date: | 12/23/1996 |
| Additional Participating Persons: | LYLE E ALEXANDER; SCOTTSDALE, AZ THOMAS R CAMPAGNOLA; WICHITA, KS YVON BOILEAU; LONGUEUIL, OF MICHAEL J MCVEAN; FLAGSTAFF, AZ | | |
| 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 pubinquiry@ntsb.gov , or at 800-877-6799. Dockets released after this date are available at http://dms.nts.gov/pubdms/ . | | |

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The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).