



Aviation Investigation Final Report

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| Location: | CHAMBLEE, Georgia | Accident Number: | ATL95FA046 |
| Date & Time: | January 29, 1995, 16:56 Local | Registration: | N3086T |
| Aircraft: | BEECH A36 | Aircraft Damage: | Destroyed |
| Defining Event: | | Injuries: | 1 Fatal |
| Flight Conducted Under: | Part 91: General aviation - Personal | | |

Analysis

THE PILOT WAS PROVIDED VECTORS FOR AN ILS RUNWAY 20L APPROACH IN INSTRUMENT METEOROLOGICAL CONDITIONS (IMC). IN ANTICIPATION OF OTHER TRAFFIC, THE RADAR CONTROLLER VECTORED THE AIRCRAFT ONTO A CLOSE-IN FINAL APPROACH. THE AIRCRAFT INTERCEPTED THE LOCALIZER ABOUT .5 MILE OUTSIDE THE OUTER MARKER WITH A 35-DEGREE INTERCEPT. THE ILS APPROACH GATE IS DEFINED AS BEING 1 MILE OUTSIDE THE OUTER MARKER, AND AIRCRAFT ARE REQUIRED TO BE VECTORED TO INTERCEPT AT LEAST 2 MILES OUTSIDE THE GATE. (ACCORDING TO FAA ORDER 7110.65G, THE MAXIMUM ANGLE OF INTERCEPT WITHIN 2 MILES OF THE APPROACH GATE IS 20 DEGREES.) RADAR DATA INDICATED THAT, ABOUT 2.5 MILES FROM THE APPROACH END OF THE RUNWAY, THERE WERE ERRATIC HEADING AND ALTITUDE EXCURSIONS. THESE LASTED FOR ABOUT 2 MINUTES, AND THEN THE PILOT CALLED A MISSED APPROACH. DURING THE MISSED APPROACH, THE AIRCRAFT ENTERED A DESCENDING RIGHT TURN AND CRASHED. WITNESSES REPORTED THAT THE ENGINE WAS RUNNING AT HIGH RPM AT THE TIME OF IMPACT. EXAMINATION OF THE AUTOPILOT DID NOT INDICATE EVIDENCE OF MALFUNCTION OR FAILURE. THE PILOT DID NOT REPORT ANY AIRCRAFT PROBLEMS. THE PILOT HAD JUST ATTENDED A BONANZA OWNER'S PROFICIENCY COURSE. AN INSTRUCTOR FOR THAT COURSE SAID THE PILOT'S SKILLS AT INSTRUMENT FLYING WERE POOR AND THAT HE WOULD NOT SIGN OFF THE PILOT'S INSTRUMENT COMPETENCY CHECK.

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 AIRCRAFT CONTROL AFTER BECOMING SPATIALLY DISORIENTED. FACTORS RELATING TO THE ACCIDENT WERE: THE PILOT'S LACK OF PROFICIENCY (RECENT EXPERIENCE) IN INSTRUMENT FLYING, AND IMPROPER APPROACH

CONTROL SERVICE BY VECTORING THE AIRPLANE ONTO THE ILS LOCALIZER COURSE AT AN INADEQUATE DISTANCE FROM THE OUTER MARKER AND AT AN INTERCEPT ANGLE THAT DID NOT ALLOW THE PILOT TO ESTABLISH A STABILIZED APPROACH.

Findings

Occurrence #1: LOSS OF CONTROL - IN FLIGHT
Phase of Operation: MISSED APPROACH (IFR)

Findings

1. WEATHER CONDITION - LOW CEILING
 2. WEATHER CONDITION - FOG
 3. (F) APPROACH/DEPARTURE CONTROL SERVICE - IMPROPER - ATC PERSONNEL(DEP/APCH)
 4. (C) AIRCRAFT CONTROL - NOT MAINTAINED - PILOT IN COMMAND
 5. (C) SPATIAL DISORIENTATION - PILOT IN COMMAND
 6. (F) LACK OF RECENT INSTRUMENT TIME - PILOT IN COMMAND
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Occurrence #2: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: DESCENT - UNCONTROLLED

Factual Information

HISTORY OF FLIGHT

On January 29, 1995, at 1656 eastern standard time, a Beech A36, N3086T, collided with terrain during a missed approach at Chamblee, Georgia. The private pilot was fatally injured, and the aircraft was destroyed. The aircraft was operated under the provisions of 14 CFR Part 91 by the pilot. Instrument meteorological conditions existed at the time, and an instrument flight rules flight plan was in effect for the personal flight. The flight originated in Orlando, Florida, at 1403.

At 1622:00, the pilot of N3086T contacted Atlanta Approach Control, following a handoff from Macon Approach Control. At 1626:50, twin Cessna traffic was called out to N3086T, and the pilot responded that he was "in solid ah i-f..instrument conditions can't see a thing." At 1646:01, the controller inquired "november eight six tango what speed will you be able to give me down final." N3086T responded that he could maintain 120 knots until he lowered his landing gear.

At 1646:41, the radar controller transmitted "november eight six tango turn left heading two eight zero." The pilot acknowledged the heading. At 1648:05, the radar controller instructed, "and ah eight six tango turn right heading ah three zero zero....may turn a little soon three zero zero for just a little bit." The pilot acknowledged the heading assignment. At 1649:01, the radar controller advised, "bonanza eight six tango it'll be a turn in about a mile ah off the three zero zero heading if that won't be too much for you ah about two miles from Chamb now." At 1649:08, the pilot replied, "eight six tango I'll listen for it." At 1649:10, the radar controller transmitted, "eight one six tango turn left turn left heading ah two four five two four five you are two miles from Chamb maintain three thousand until established on the localizer cleared ILS runway two zero left." At 1649:19, the pilot replied, "to two four five intercept the....localizer." The controller then asked N3086T to call when established on the localizer, and the pilot acknowledged, "eight six tango I'll call ya on the localizer." At 1650:23, the radar controller inquired, "eight six tango you on the localizer okay." The pilot then replied, "eight six tango on the localizer....I couldn't get in there." The radar controller then advised N3086T to contact the tower on 120.9, and the pilot replied "one two zero nine thank you."

At 1650:10, the pilot of N3086T established initial contact with Dekalb-Peachtree (PDK) Tower. After being given landing traffic information, the pilot reported, "eight six tango's a missed approach." The local controller inquired, "bonanza eight six tango uh roger just uh continue uh have you started your turn yet sir." The pilot replied, "no sir I haven't I, turning now." The local controller transmitted, "bonanza eight six tango roger remain this frequency for now." The local controller then initiated an interphone call to Atlanta Approach Control to advise them that N3086T had started a right turn. The local controller was advised to put N3086T on a 320

degree heading, at 3,000 feet. This instruction was then relayed to N3086T by the local controller. The local controller then advised Atlanta Approach on the interphone line, "hey satellite I'm not sure what he's doing I told him three twenty but he looks like he's headed back east so just watch him." The local controller then instructed N3086T to contact Atlanta Approach, and there was no response. The local controller again repeated the request, with no response heard.

The pilot of N3086T called the satellite controller at Atlanta at 1654:10 to advise, "Atlanta departure bonanza three zero eight six tango is in I-M-C and I'm calling a missed approach." The radar controller then issued instructions to maintain 3,000 feet, on a heading of 270 degrees. N3086T acknowledged the instructions. At 1654:50, the radar controller transmitted, "okay november three zero eight six tango I want you to turn right heading three...one...zero three one zero." There was no response from the pilot. The controller again called the pilot. At 1655:03, the pilot replied "three zero eight six tango's at three thousand two hundred." The controller transmitted, "okay sir I want you to turn right right turn heading three....one....zero." The pilot acknowledged. At 1655:42, the radar controller transmitted, "okay november eight six tango ah climb and maintain four thousand sir climb and maintain four thousand." There were no further transmissions from the pilot.

Several witnesses heard or saw the accident. Three witnesses reported that the airplane sounded like a remote control, or toy airplane. One witness reported that the aircraft was on its side, with the bottom of the aircraft facing her position, in a nose low attitude. The aircraft then disappeared behind buildings. Another witness stated that he heard the engine stop, then later he heard the engine running, at high rpm. Another witness reported that the engine was running normally, with no smoke or flames visible, but the engine noise was loud. Another witness reported that the aircraft was in a dive, and she observed a thin trail of black smoke.

One local resident came to the accident site on the day following the accident. He reported the following: He was at his residence at the time of the accident, which is located about 3 miles from the Dekalb-Peachtree Airport, directly under the localizer approach course for runway 20L. He believed that he heard the accident aircraft prior to the accident. He stated that he has listened to thousands of aircraft before, and he believed that the aircraft lost control over his house. He heard engine noise, and stated that the engine was running well, but it sounded like an aircraft doing aerobatics. He stated that the widely varying degrees of engine noise sounded like an aircraft performing aerobatics. He did not hear the aircraft crash, but at the time, he believed that something was wrong.

Recorded radar data indicates that at about 1650, N3086T intercepted the localizer (Runway 20L), at about 3,000 feet mean sea level (msl). The aircraft intercepted the localizer about 1/2 nautical mile (nm) outside of the outer marker. N3086T was being sequenced in front of a Mitsubishi MU-300, N119MH. N3086T continued inbound, on the localizer, until about 2.5 (nm) from the approach end of the runway. At this point, at an altitude of about 1,900 feet msl, a descending, right hand turn was observed. During a time frame of about two minutes, erratic heading and altitude excursions were observed (see Recorded Radar Study). The excursions

then ceased, and the aircraft was observed about one nm right of the localizer, about 1.5 nm north of the Runway 20L approach end, at 2,700 feet and climbing. The aircraft continued in a gradual climb, until it intercepted the Runway 20L localizer at the middle marker, at an altitude about 3,100 feet. As the aircraft then crossed over the approach end of runway 20L (3,000 feet msl), a descending, right hand turn was observed. The last radar hit from N3086T was noted at 1655:24, at 1,700 feet msl. For additional radar data, refer to the NTSB Specialist's Report of Investigation - Recorded Radar Study, attached to this report.

PERSONNEL INFORMATION

The pilot, John E. Ramsey, held a private pilot certificate, number 454364838. He held single engine land privileges, and an instrument rating.

During the period of January 27 through 29, 1995 (the weekend of the accident flight), the pilot participated in a proficiency program offered by BPPP (Bonanza/Baron Proficiency Programs), Inc., of Wichita, Kansas. The program was held in Orlando, Florida, and the pilot flew N3086T during the course. The president of BPPP, Inc. reported that the course consists of ground and flight instruction, including about 4 hours of dual instruction. A successful participant can earn a biennial flight review (BFR), instrument competency check (ICC), and Pilot Proficiency Award (Wings). The program provides information about the Bonanza airplane, as well as piloting techniques for achieving the expected performance. He also stated that the program does not pretend to greatly improve a participant's performance, since only 4 hours of dual instruction are provided. For a participant to obtain a BFR or ICC, they must demonstrate appropriate pilot skill and knowledge.

On January 28, 1995, Dr. Ramsey flew his first dual instruction flight with his instructor, Robert P. Lavery. The first flight included airwork, takeoffs, and landings. The flight lasted about 1.6 hours. Mr. Lavery reported that Dr. Ramsey's airwork was initially "tentative", but with coaching, showed improvement. He also reported that, "(Dr. Ramsey) tended to try to use abrupt and full aileron movement to stop a dropping wing in slow flight and stalls." Additional instruction in this area resulted in improvement from Dr. Ramsey.

On January 29, 1995 (the day of the accident), Mr. Lavery again flew a dual instruction flight with Dr. Ramsey. This flight primarily focused on instrument work. A back course localizer approach was planned to the airport in Melbourne, Florida, however, Dr. Ramsey demonstrated a lack of understanding of this type of instrument approach. He later remarked to Mr. Lavery that he had never flown a back course approach. During the flying of the approach, Dr. Ramsey became confused over missed approach instructions, and made a turn at greater than standard rate. On this and other occasions, Mr. Lavery had to remind Dr. Ramsey not to exceed standard rate turns in instrument flight. Mr. Lavery had to take control of the airplane during the back course approach because Dr. Ramsey was not following Air Traffic Control instructions.

Following the instrument work at Melbourne, Dr. Ramsey picked up his instrument clearance to

Orlando Executive Airport. He was assigned a heading of 360 degrees. While consulting his approach charts, Dr. Ramsey allowed the aircraft to enter a steepening, descending turn to the right. Again, the instructor had to take control of the airplane, and return it to assigned heading and altitude.

During the post-flight debriefing session, Mr. Lavery stated that, "I very strongly told (Dr. Ramsey) that he needed a lot of instrument instruction by an instrument instructor and had to make considerable improvements before flying IFR." He told Dr. Ramsey that he could not sign off his instrument competency check. When Mr. Lavery heard that there was "bad weather" to the north, he suggested that Dr. Ramsey spend the night in Orlando, and Dr. Ramsey replied that he would probably do that.

Mr. Lavery summed up his appraisal of Dr. Ramsey's flying skills by saying that, "...the Doctor's skills at instrument flying were very poor." He also reported that Dr. Ramsey told him that he "always uses the autopilot."

An examination of the pilot's flight records revealed that he failed the instrument flight examination on his first attempt. He then logged about 6.1 hours of dual instruction, including at least 11 instrument approaches. He passed the instrument flight check on his second attempt. Additional information on the pilot is included in the section titled "First Pilot Information." Documentation from BPPP, Inc. is included as an attachment to this report.

AIRCRAFT INFORMATION

Information of the aircraft is contained in the section titled "Aircraft Information." Copies of logbook entries are included as an attachment to this report.

METEOROLOGICAL INFORMATION

Instrument meteorological condition existed at the time of the accident. Additional information is contained in the section titled "Weather Information." and in the Air Traffic Control Group Chairman's Factual report, included as an attachment to this report.

WRECKAGE AND IMPACT INFORMATION

The aircraft impacted in a drainage area, between two parking lots, in an industrial area. The accident site was located about 1 mile north-northeast of the Dekalb-Peachtree Airport. The wreckage was distributed on a magnetic heading of 255 degrees. The length of the wreckage distribution was about 200 feet, ending at a warehouse. Several small pieces of aircraft debris were located on the forward edge of the warehouse roof. The initial impact area was a chain link fence, adjacent to small trees, and a sloping, concrete spillway. The down slope of the spillway was about 25 degrees. There were several slash marks observed on the downsloping side of the concrete spillway surface. Refer to the wreckage distribution diagram provided by Beech Aircraft Corporation for additional details of the wreckage distribution.

Both the left and right wings exhibited general disintegration. The left wing sections were found predominantly on the left side of the wreckage path centerline; the right wing fragments were found predominantly on the right side. Most of the wing fragments were located within the drainage area confines. Impact damage to the wings prevented confirmation of flight control continuity to the ailerons. Both the left and right wing fuel bladder tanks were torn open; no residual fuel was observed.

The trailing edge flap actuator was found in the "flaps retracted" position. The landing gear actuator was found in the "gear retracted" position. The fuel selector handle was found in the "left main" tank position.

The main wreckage consisted of the engine, fuselage fragments, and empennage. The fuselage exhibited general disintegration. The instrument panel was fragmented, several flight and system instruments were broken away from the panel, and found separate from the main wreckage. Impact damage prevented documentation of the engine control positions. The vacuum powered attitude director indicator (ADI) was disassembled; there were rotational scoring signatures inside the rotor case.

The left aileron trim tab actuator was found in a position corresponding to 4 degrees tab trailing edge down. The elevator trim tab actuator was found in a position corresponding to the 6 degree tab trailing edge down position.

The vertical stabilizer and rudder were torn away from the empennage, and were located in the drainage area. The horizontal stabilizer and rudder were still in place on the main wreckage.

The propeller assembly was found in the drainage area. Two blades, and a fragment of the third blade were located. The blades were separated from the hub, which broke away at the crankshaft attachment flange. The blades exhibited chordwise scratching, "s" bending, and tip twisting.

MEDICAL AND PATHOLOGICAL INFORMATION

A post mortem examination of the pilot was performed at the Dekalb County Medical Examiner's Office. The cause of death was from generalized trauma. Toxicological testing on the pilot was negative for drugs and alcohol.

TESTS AND RESEARCH

The aircraft engine was shipped to the manufacturer's facility for disassembly and examination. Details of the examination are located in the Teledyne Continental Motors Analytical Inspection Report, attached to this report.

The aircraft autopilot components were shipped to the manufacturer's facility for examination.

The pitch and roll servo engage/disengage solenoids were found in the "disengaged" position. The autopilot on/off switch (cockpit control) was found in the "off" position. Although there was substantial impact damage to the KC-295 flight computer, functional testing indicated: (1) the autopilot disconnect function disengaged the autopilot, (2) the autopilot engage function turned the autopilot on and off, (3) the manual electric trim activation disengaged the autopilot, (4) removal of dc power disengaged the autopilot, and (5) autotrim fault detection was functional. Additional details of the examination are located in the attached report provided by Allied Signal Aerospace.

The Satellite P radar controller, based at the William B. Hartsfield International Airport, Atlanta, Georgia, was among several air traffic controllers interviewed following the accident. He received an automated handoff of N3086T from Macon Approach Control. He recalled that the traffic density, at the time of the accident, was light to moderate, and the complexity was moderate. He recalled asking the pilot of N3086T about his airspeed, because of a Mitsubishi MU-300 Diamond that was straight-in behind him. The radar was set to a range of 60 miles, and the video was centered. MOROW (the initial approach fix, or the PDK 10.1 DME) and CHAMB (the outer marker) were depicted on the radar video map. Since the time of the accident, he had reviewed the ATC controllers handbook (FAA Order 7110.65G), specifically paragraphs 5-120 and 5-121, concerning vectors to the final approach course and intercept angles. He did this review on his own volition, because he stated that he knew he had turned the airplane (N3086T) on "tight." He said that, because there was jet traffic that was to follow N3086T, it prompted him to turn the aircraft on tight. He stated that he did make an attempt to reduce the airspeed of the jet. He defined the approach gate as "a point on final, one mile from the final approach fix." He said that the purpose of the gate was to be used as a reference point for pilots and controllers to initiate a good approach. (The gate for the ILS Runway 20L at PDK is one mile outside of CHAMB.) In his view, he believed that he had met the track angle intercept for N3086T, however, the requirement to intercept outside the gate was not met. (According to FAA Order 7110.65G, the maximum intercept angle when the distance from the interception point to the approach gate is less than two miles is 20 degrees. Radar data indicated that N3086T intercepted final on an intercept angle of about 35 degrees.) For an explanation of "approach gate" and the radar arrival procedures, refer to the excerpts from FAA Order 7110.65G, attached to this report.

ADDITIONAL INFORMATION

The wreckage was released to:

Harry Brooks (Owner's Representative)
888525 Atlanta, Georgia 30356.

Carson-Brooks, Inc.

P.O. Box

Pilot Information

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|----------------------------------|---|--|-----------------|
| Certificate: | Private | Age: | 66,Male |
| Airplane Rating(s): | Single-engine land | Seat Occupied: | Left |
| Other Aircraft Rating(s): | None | Restraint Used: | |
| Instrument Rating(s): | Airplane | Second Pilot Present: | No |
| Instructor Rating(s): | None | Toxicology Performed: | Yes |
| Medical Certification: | Class 3 Valid Medical-w/ waivers/lim | Last FAA Medical Exam: | August 27, 1993 |
| Occupational Pilot: | No | Last Flight Review or Equivalent: | |
| Flight Time: | 600 hours (Total, all aircraft), 25 hours (Last 90 days, all aircraft), 6 hours (Last 30 days, all aircraft), 4 hours (Last 24 hours, all aircraft) | | |

Aircraft and Owner/Operator Information

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|--------------------------------------|------------------------|---------------------------------------|-----------------|
| Aircraft Make: | BEECH | Registration: | N3086T |
| Model/Series: | A36 A36 | Aircraft Category: | Airplane |
| Year of Manufacture: | | Amateur Built: | |
| Airworthiness Certificate: | Normal; Utility | Serial Number: | E-2309 |
| Landing Gear Type: | Retractable - Tricycle | Seats: | 6 |
| Date/Type of Last Inspection: | March 4, 1994 Annual | Certified Max Gross Wt.: | 3600 lbs |
| Time Since Last Inspection: | 56 Hrs | Engines: | 1 Reciprocating |
| Airframe Total Time: | 1728 Hrs | Engine Manufacturer: | CONTINENTAL |
| ELT: | Installed | Engine Model/Series: | IO-550-B1 |
| Registered Owner: | 3086 TANGO, INC. | Rated Power: | 300 Horsepower |
| Operator: | RAMSEY, JOHN E. | Operating Certificate(s) Held: | None |
| Operator Does Business As: | | Operator Designator Code: | |

Meteorological Information and Flight Plan

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|---|-----------------------|---|------------------|
| Conditions at Accident Site: | Instrument (IMC) | Condition of Light: | Day |
| Observation Facility, Elevation: | PDK ,1002 ft msl | Distance from Accident Site: | 1 Nautical Miles |
| Observation Time: | 16:53 Local | Direction from Accident Site: | 170° |
| Lowest Cloud Condition: | Unknown | Visibility | 1.5 miles |
| Lowest Ceiling: | Overcast / 500 ft AGL | Visibility (RVR): | |
| Wind Speed/Gusts: | 5 knots / None | Turbulence Type Forecast/Actual: | / |
| Wind Direction: | 60° | Turbulence Severity Forecast/Actual: | / |
| Altimeter Setting: | 29 inches Hg | Temperature/Dew Point: | 6°C / 5°C |
| Precipitation and Obscuration: | N/A - None - Fog | | |
| Departure Point: | ORLANDO (ORL) | Type of Flight Plan Filed: | IFR |
| Destination: | (PDK) | Type of Clearance: | IFR |
| Departure Time: | 14:03 Local | Type of Airspace: | Class D |

Airport Information

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|-----------------------------|----------------------|----------------------------------|----------|
| Airport: | DEKALB-PEACHTREE PDK | Runway Surface Type: | Concrete |
| Airport Elevation: | 1002 ft msl | Runway Surface Condition: | |
| Runway Used: | 20L | IFR Approach: | ILS |
| Runway Length/Width: | 6001 ft / 100 ft | VFR Approach/Landing: | None |

Wreckage and Impact Information

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|----------------------------|---------|-----------------------------|---------------------------|
| Crew Injuries: | 1 Fatal | Aircraft Damage: | Destroyed |
| Passenger Injuries: | | Aircraft Fire: | None |
| Ground Injuries: | N/A | Aircraft Explosion: | None |
| Total Injuries: | 1 Fatal | Latitude, Longitude: | 33.900108,-84.300704(est) |

Administrative Information

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| Investigator In Charge (IIC): | Hicks, Ralph |
| Additional Participating Persons: | GEORGE H GUNN; COLLEGE PARK , GA DIANE K PRITCHARD; KANSAS CITY , MO RICHARD WENTWORTH; WASHINGTON , DC |
| Original Publish Date: | June 13, 1996 |
| Last Revision Date: | |
| Investigation Class: | Class |
| Note: | |
| Investigation Docket: | https://data.nts.gov/Docket?ProjectID=3469 |

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate, and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, “accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties ... and are not conducted for the purpose of determining the rights or liabilities of any person” (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available [here](#).