



National Transportation Safety Board Aviation Accident Final Report

Location:	Nightmute, AK	Accident Number:	ANC11FA091A
Date & Time:	09/02/2011, 1335 AKD	Registration:	N207DR
Aircraft:	CESSNA 208B	Aircraft Damage:	Destroyed
Defining Event:	Midair collision	Injuries:	1 Fatal
Flight Conducted Under:	Part 135: Air Taxi & Commuter - Non-scheduled		

Analysis

A Cessna 208B and a Cessna 207 collided in flight in daylight visual meteorological conditions. The Cessna 208B and the Cessna 207 were both traveling in an easterly direction. According to the Cessna 207 pilot, the airplanes departed from two neighboring remote Alaskan villages about the same time, and both airplanes were flying along similar flight routes. While en route, the Cessna 207 pilot talked with the Cessna 208B pilot on a prearranged, discreet radio frequency, and the two agreed to meet up in flight for the return to their home airport. The Cessna 207 pilot said that the pilot of the Cessna 208B flew his airplane along the left side of her airplane while she was in level cruise flight at 1,200 feet mean sea level and that they continued to talk via the radio. Then, unexpectedly and unannounced, the pilot of the Cessna 208B maneuvered his airplane above and over the top of her airplane. She said that she immediately told the Cessna 208B pilot that she could not see him and that she was concerned about where he was. She said that the Cessna 208B pilot then said, in part: "Whatever you do, don't pitch up." The next thing she recalled was seeing the wings and cockpit of the descending Cessna 208B pass by the right side of her airplane, which was instantly followed by an impact with her airplane's right wing. She said that after the collision, the Cessna 208B passed underneath her airplane from right-to-left before beginning a gradual descent that steepened as the airplane continued to the left. It then entered a steep, vertical, nose-down descent before colliding with the tundra-covered terrain below followed by a postcrash fire. Unable to maintain level cruise flight, the Cessna 207 pilot selected an area of rolling, tundra-covered terrain as a forced landing site.

An examination of both airplanes revealed impact signatures consistent with the Cessna 208B's vertical stabilizer impacting the Cessna 207's right wing. A portion of crushed and distorted wreckage, identified as part of the Cessna 208B's vertical stabilizer assembly, was found embedded in the Cessna 207's right wing. The Cessna 208B's severed vertical stabilizer and rudder were found about 1,000 feet west of the Cessna 208B's crash site.

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 adequate clearance while performing an unexpected and unannounced abrupt maneuver, resulting in a midair collision between the two airplanes.

Findings

Personnel issues	Monitoring other aircraft - Pilot (Cause) Unnecessary action - Pilot (Cause)
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Factual Information

HISTORY OF FLIGHT

On September 2, 2011, about 1335 Alaska daylight time, a Cessna 208B airplane, N207DR, and a Cessna 207 airplane, N73789, collided in midair about 9 miles north of Nightmute, Alaska. Both airplanes were being operated as charter flights under the provisions of 14 Code of Federal Regulations (CFR) Part 135 in visual meteorological conditions when the accident occurred. The Cessna 208B was operated by Grant Aviation Inc., Anchorage, Alaska, and the Cessna 207 was operated by Ryan Air, Anchorage, Alaska. Visual flight rules (VFR) company flight following procedures were in effect for each flight. The sole occupant of the Cessna 208B, an airline transport pilot, sustained fatal injuries. The sole occupant of the Cessna 207, a commercial pilot, was uninjured. The Cessna 208B was destroyed, and the Cessna 207 sustained substantial damage. After the collision, the Cessna 208B descended uncontrolled and impacted tundra-covered terrain, and a postcrash fire consumed most of the wreckage. The Cessna 207's right wing was damaged during the collision and the subsequent forced landing on tundra-covered terrain. Both airplanes were based at the Bethel Airport, Bethel, Alaska, and were returning to Bethel at the time of the collision. The Cessna 208B departed from the Toksook Bay Airport, Toksook Bay, Alaska, about 1325, and the Cessna 207 departed from the Tununak Airport, Tununak, Alaska.

During separate telephone conversations with the National Transportation Safety Board (NTSB) investigator-in-charge on September 2, the chief pilot for Ryan Air, as well as the director of operations for Grant Aviation, independently reported that both pilots had a close personal relationship.

During an initial interview with the NTSB IIC on September 3, in Bethel, the pilot of the Cessna 207 reported that both airplanes departed from the neighboring Alaskan villages about the same time and that both airplanes were en route to Bethel along similar flight routes. She said that, just after takeoff from Tununak, she talked with the pilot of the Cessna 208B on a prearranged, discreet radio frequency, and the two agreed to meet up in-flight for the flight back to Bethel. She said that, while her airplane was in level cruise flight at 1,200 feet above mean sea level (msl), the pilot of the Cessna 208B flew his airplane along the left side of her airplane, and they continued to talk via radio. She said that the pilot of the Cessna 208B then unexpectedly and unannounced climbed his airplane above and over the top of her airplane. She said that she immediately told the pilot of the Cessna 208B that she could not see him and that she was concerned about where he was. She said that the Cessna 208B pilot then said, in part: "Whatever you do, don't pitch up." The next thing she recalled was moments later seeing the wings and cockpit of the descending Cessna 208B pass by the right the side of her airplane, which was instantaneously followed by an impact with her airplane's right wing.

The Cessna 207 pilot reported that, after the impact, while she struggled to maintain control of her airplane, she saw the Cessna 208B pass underneath her airplane from right-to-left, and it began a gradual descent, which steepened as the airplane continued to the left and away from her airplane. She said that she told the pilot of the Cessna 208B that she thought she was going to crash. She said that the pilot of the Cessna 208B simply stated, "Me too." She said that she watched as the Cessna 208B continued to descend, and then it entered a steep, vertical, nose-down descent before it collided with the tundra-covered terrain below. She said that a postcrash fire started instantaneously upon impact.

Unable to maintain level cruise flight and with limited roll control, the Cessna 207 pilot selected an area of rolling, tundra-covered terrain as a forced landing site. During touchdown, the airplane's nosewheel collapsed, and the airplane nosed down. The Cessna 207's forced landing site was about 2 miles east of the Cessna 208B's accident site.

PERSONNEL INFORMATION

Cessna 208B:

The pilot, age 24, held an airline transport pilot certificate with airplane single-engine land and multiengine land ratings. The pilot's most recent second-class medical certificate was issued on December 23, 2010, and contained no limitations.

According to information provided by Grant Aviation, the pilot's total aeronautical experience was 3,710 flight hours with 875 flight hours in the accident airplane make and model. In the 90 and 30 days prior to the accident, the pilot accrued 320 flight hours and 92 flight hours, respectively.

On August 30, the pilot's duty day started at 0800 and ended at 1930, and he flew 4.0 hours. On August 31, his duty day started at 0800 and ended at 2000, and he flew 6.3 hours. On September 1, his duty day started at 0800 and ended at 1930, and he flew 4.5 hours. On the day of the accident, September 2, his duty day started about 0800, and he flew about 3.0 hours before the accident.

According to the operator, the pilot was hired by the company on August 22, 2008, after satisfactorily completing the new hire training curriculum, including Cessna 207 pilot-in-command (PIC) ground and flight training. On August 28, 2008, he was assigned to fly as PIC of Cessna 207 airplanes at the company base in Bethel.

On August 13, 2011, the pilot was upgraded to captain of Cessna 208 airplanes. His most recent ride 14 CFR 135.293 airman competency/proficiency check was on May 31, 2011. A company check airman administered the check ride.

Cessna 207:

The pilot, age 25, held a commercial pilot certificate with airplane single-engine land, multiengine land, and instrument airplane ratings. Her most recent first-class medical certificate was issued on April 28, 2011, and contained no limitations.

According to information provided by Ryan Air, the pilot's total aeronautical experience was 1,670 flight hours, with 216 flight hours in the accident airplane make and model. In the 90 and 30 days prior to the accident, the pilot accrued a total of 209 flight hours and 48 flight hours, respectively.

On August 30, the pilot's duty day started at 0800 and ended at 1700, and she flew 2.8 hours. On August 31, her duty day started at 0800 and ended at 1600, and she flew 2.3 hours. On September 1, her duty day started at 0800 and ended at 1700, and she flew 2.4 hours. On the day of the accident, September 2, her duty day started about 0800, and she flew about 3.0 hours before the accident.

According to the operator, the pilot was officially hired by the company on May 18, 2010, and, at that time, her total flight experience was 690 hours. She completed her initial company training, including Cessna 207 PIC ground and flight training, on May 18, 2010.

On June 5, 2010, she successfully completed her initial second-in-command (SIC) pilot training for CASA 212 airplanes, which included both ground and flight training, and she was assigned to fly SIC in CASA 212 airplanes at the company's base in Bethel.

On June 8, 2011, she completed her initial operating experience in Cessna 207 airplanes, and she was assigned to fly as PIC of Cessna 207 airplanes at the company base in Bethel.

Her most recent 14 CFR 135.293 airman competency/proficiency check ride was on June 2, 2011. A company check airman administered the check ride in a company Cessna 207 airplane in Bethel.

Company Information

Grant Aviation

Grant Aviation holds a Part 135 operating certificate for commuter and on-demand operations. Company facilities are located at Anchorage, Bethel, Dillingham, Emmonak, Homer, and Kenai, Alaska.

A review of the company's operations manual revealed that the president, director of maintenance, director of operations, and chief pilot are designated as having the authority of exercising operational control over company aircraft and/or flight crews. The president, chief pilot, director of maintenance, and director of operations all reside in Anchorage.

In addition, the company operations manual states, in part: "The pilot-in-command always retains the final authority for safe operation of the aircraft and compliance with Federal Aviation Regulations."

Ryan Air

Ryan Air holds a Part 135 operating certificate for commuter and on-demand operations. Company facilities are located at Anchorage, Bethel, Aniak, St. Mary's, Emmonak, Unalakleet, Nome, and Kotzebue, Alaska.

A review of the company's operations manual revealed that the president, director of maintenance, director of operations, and chief pilot, are designated as having the authority of exercising operational control over company aircraft and/or flight crews. The president, director of maintenance, and director of operations reside in Anchorage, and the chief pilot resides in Bethel.

In addition, the company operations manual states, in part: "The Pilot-in-command always retains the final authority for safe operation of the aircraft and compliance with Federal Aviation Regulations."

AIRPLANE INFORMATION

Cessna 208B:

The Cessna 208B airplane was an unpressurized, single-engine turboprop, equipped with a Pratt & Whitney PT6A-114A engine that produces 675 horsepower. It was outfitted with a Hartzell three-bladed propeller with composite blades.

The airplane had a total time in service of 8,483 hours. The airplane was maintained on an Approved Airworthiness Inspection Program (AAIP). The most recent inspection event was on August 21, 2011, 46 hours before the accident.

The Cessna 208B's paint scheme consisted of a base color of white with red accent striping which extended along both sides of the fuselage. The wings, vertical stabilizer, rudder, horizontal stabilizer, and elevators were all painted white.

Cessna 207:

The Cessna 207 airplane was unpressurized and was equipped with a single, reciprocating Continental Motors IO-520F engine that produces 300 horsepower.

The airplane had accumulated a total time in service of 19,562.9 hours. The airplane was maintained on an AAIP. The most recent inspection was accomplished on August 3, 2011, 47.2 hours before the accident.

The Cessna 207's paint scheme consisted of red and black, with silver accent striping which extended along both sides of the fuselage. The wings, vertical stabilizer, rudder, horizontal stabilizer, and elevators were all painted red.

METEOROLOGICAL INFORMATION

The closest official weather observation station is at the Toksook Bay Airport, Toksook Bay. On September 2, 2011, at 1356, an Aviation Routine Weather Report (METAR) was reporting in part: Wind, 130 degrees at 14 knots; visibility, 10 statute miles; clouds, 1,100 feet overcast; temperature, 46 degrees F; dew point, 42 degrees F; altimeter, 29.84 inHg.

Pilots who were flying in the area about the same time as the accident reported unlimited visibility with patchy clouds between 1,500 to 2,000 feet.

COMMUNICATIONS

According to the pilot of the Cessna 207, both pilots were communicating on a prearranged radio frequency of 126.30.

Both airplanes were operating in Class E airspace. The pilots were not in contact with any air traffic control facility, nor were they required to be.

Radar coverage was not available in the accident area at the flights' altitudes.

WRECKAGE AND IMPACT INFORMATION

Cessna 208B:

The wreckage of the Cessna 208B had extensive ground impact and fire damage. Portions of the airplane wreckage were still burning when the NTSB IIC and the Alaska State Trooper arrived at the scene. A majority of the main fuselage, cockpit/cabin area, and engine were found embedded in a large crater.

The entire cockpit/cabin area from the instrument panel to just forward of the horizontal stabilizer was consumed by fire.

The Pratt & Whitney PT6A-114A turbine engine was found imbedded, vertically, into the tundra-covered terrain, leaving only the aft portion of the engine accessory gearbox visible.

Portions of the incinerated fuselage structure and the wings of the airplane were in a vertical, nose-down attitude. The longitudinal axis of the fuselage was oriented on a magnetic heading of about 040 degrees. (All heading/bearings noted in this report are oriented toward magnetic north.)

The entire airplane was separated into several main groups. The wings were separated from the fuselage and displayed extensive spanwise, leading-edge-aft crushing and folding. The forward spar of each wing was compressed to its respective aft spar. The wings were oriented in a near-vertical attitude with the leading edge of the wings oriented down, about 2 feet beneath the surface of the soft and spongy terrain. Each aileron and flap assembly remained attached to the trailing edge of their respective wing. Both wing lift struts were still attached to the wings, but both were separated at the lower fuselage attach points as a result of fuselage incineration.

The empennage separated from the fuselage just forward of the vertical stabilizer attach point. The empennage was inverted and located just aft of the incinerated fuselage. The right horizontal stabilizer displayed leading-edge-aft crushing and upward buckling on the underside of the stabilizer. The left horizontal stabilizer displayed aft crushing about midspan and aft compression and folding of the leading edge along the outboard half of the stabilizer.

The vertical stabilizer and rudder assemblies were severed about 18 inches outboard of the fuselage attachment points. The upper portions of the vertical stabilizer and rudder were not found at the main wreckage site. The fracture surfaces that were present on the aluminum sheet metal of which the vertical stabilizer and rudder are constructed showed significant tearing and ripping signatures that extended from the leading edge of the horizontal stabilizer aft to the trailing edge of the rudder.

Wreckage Path

The farthest portion of wreckage was found about 1,500 feet west of the main wreckage site of the Cessna 208B. The area was marked by the discovery of portions of the Cessna 208B's fragmented vertical stabilizer, which included portions of the black rubber leading-edge deicing boot. The flattened portion of the vertical stabilizer's leading edge had red paint transfers matching that of the wing of the Cessna 207.

A large portion of the Cessna 207's severed right aileron was discovered about 1,400 feet west of the Cessna 208B's wreckage site. Attached to the severely distorted and crushed portion of aileron were portions of structural wing stringers, as well as a small portion of the Cessna 207's aft main wing spar. The aileron had black rubber smears embedded into the trailing edge.

The Cessna 208B's severed rudder and vertical stabilizer were found separately, but close together, about 1,000 feet west of the main wreckage site. The fracture surfaces on the lower portions of both control surfaces matched those portions still attached to the Cessna 208's empennage.

Cessna 207:

The wreckage of the Cessna 207 was about 2 miles east of the Cessna 208B's wreckage site, in an area of hilly, soft, tundra-covered terrain. With the exception of a large portion of the airplane's right aileron, all of the airplane's major components were found at the main wreckage site.

The airplane's right wing trailing edge sustained extensive structural damage during the collision. About 48 inches of the airplane's right aileron was missing, and the outboard portion right wing flap was crushed and folded inward toward the fuselage. An 18-inch section of the aft wing spar was fractured and compressed forward about 6 inches beyond the rest of the aft wing spar assembly. The severed portion of wing spar was held into place by only small shreds of aluminum wing skin. The entire outboard section of the right wing was buckled and

distorted.

A portion of crushed and distorted wreckage, measuring about 6 inches by 4 inches, was discovered imbedded into the trailing edge of the right wing. The portion of wreckage was painted white, and it had a part number 2631000-16 stamped on the back. The part number was identified as a structural doubler assembly for Cessna 208 airplanes, which is installed on the upper portion of the vertical stabilizer assembly.

MEDICAL AND PATHOLOGICAL INFORMATION

A postmortem examination of the Cessna 208B pilot's remains was done under the authority of the Alaska State Medical Examiner, Anchorage, on September 6, 2011. However, the report notes that, due to the limited amount of remains presented at the time of the autopsy, the medical examiner's cause of death was attributed to extensive thermal charring. The report also notes that blunt force injury could not be excluded.

No toxicological examination was done due to the lack of suitable specimens.

History of Flight

Maneuvering	Abrupt maneuver Midair collision (Defining event)
Uncontrolled descent	Collision with terr/obj (non-CFIT)

Pilot Information

Certificate:	Airline Transport	Age:	24
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 1 Without Waivers/Limitations	Last Medical Exam:	12/23/2010
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	
Flight Time:	3710 hours (Total, all aircraft), 875 hours (Total, this make and model), 3660 hours (Pilot In Command, all aircraft), 320 hours (Last 90 days, all aircraft), 92 hours (Last 30 days, all aircraft), 5 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Manufacturer:	CESSNA	Registration:	N207DR
Model/Series:	208B	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	208B0859
Landing Gear Type:	Tricycle	Seats:	12
Date/Type of Last Inspection:	08/21/2011, AAIP	Certified Max Gross Wt.:	
Time Since Last Inspection:	46 Hours	Engines:	1 Turbo Prop
Airframe Total Time:	8483 Hours	Engine Manufacturer:	P&W CANADA
ELT:	C126 installed, activated, did not aid in locating accident	Engine Model/Series:	PT6A-114
Registered Owner:	DESERT ROSE AVIAITON LLC	Rated Power:	600 hp
Operator:	Grant Aviation	Air Carrier Operating Certificate:	On-demand Air Taxi (135)

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	PAOO, 59 ft msl	Observation Time:	1253 ADT
Distance from Accident Site:	12 Nautical Miles	Direction from Accident Site:	90°
Lowest Cloud Condition:		Temperature/Dew Point:	8°C / 6°C
Lowest Ceiling:	Overcast / 1100 ft agl	Visibility	10 Miles
Wind Speed/Gusts, Direction:	14 knots, 130°	Visibility (RVR):	
Altimeter Setting:	29.84 inches Hg	Visibility (RVV):	
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Toksook Bay, AK (OOK)	Type of Flight Plan Filed:	Company VFR
Destination:	Bethel, AK (BET)	Type of Clearance:	None
Departure Time:	1330 ADT	Type of Airspace:	Class E

Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Destroyed
Passenger Injuries:	N/A	Aircraft Fire:	On-Ground
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Fatal	Latitude, Longitude:	60.605556, -164.598611 (est)

Administrative Information

Investigator In Charge (IIC):	Clinton O Johnson	Adopted Date:	02/03/2014
Additional Participating Persons:	Tony Fischer; Federal Aviation Administration-Operations; Anchorage, AK Jon Eichler; Grant Aviation-Director of Operations; Anchorage, AK Andy Angstman; Ryan Air - Director of Safety; Anchorage, AK Stephen Stewart; Federal Aviation Administration-Operations; Anchorage, AK		
Publish Date:	02/03/2014		
Investigation Docket:	http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=81691		

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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.