



Aviation Investigation Final Report

Location:	Grand Forks, North Dakota	Accident Number:	CEN16LA089
Date & Time:	November 11, 2015, 09:50 Local	Registration:	N617ST
Aircraft:	Cessna 208B	Aircraft Damage:	Substantial
Defining Event:	Aircraft loading event	Injuries:	10 None
Flight Conducted Under:	Part 91: General aviation		

Analysis

The commercial pilot was conducting a cross-country business flight. He landed the airplane and then taxied to the ramp. The pilot instructed the passengers to remain seated and then deplaned to attach the tailstand, at which point the airplane tipped back and struck the pavement with its tail. The pilot reboarded and instructed the passengers to leave their seats and move forward, and the airplane righted itself. The forward bulkhead for the horizontal stabilizer attachment point was crushed and torn, and three stringers, another bulkhead, and the lower skin were damaged in the accident. The center of gravity (CG) was calculated postaccident based on the available weight and balance data, and it was aft of the CG limit. It is likely that the pilot did not properly calculate the airplane's weight and balance and CG, which resulted in the airplane tipping backward as the pilot attempted to attach the tailstand.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

The pilot's failure to properly calculate the airplane's weight and balance and center of gravity, which resulted in the tail striking the ground.

Findings

Personnel issues	Weight/balance calculations - Pilot
Aircraft	CG/weight distribution - Capability exceeded

Factual Information

History of Flight

Standing-engine(s) not oper	Aircraft loading event (Defining event)
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On November 11, 2015, about 0950 central standard time, a Cessna 208B, N617ST, tipped back and the tail struck the pavement while parked at the ramp at Grand Forks International Airport (KGFK), Grand Forks, North Dakota. The pilot and nine passengers on board were not injured. The airplane was substantially damaged. The airplane was registered to and operated by Sartec Corporation, Anoka, Minnesota, under the provisions of 14 Code of Federal Regulations Part 91 as a business flight. Instrument meteorological conditions prevailed at the time of the accident, and an instrument flight plan had been filed. The flight originated from Anoka, Minnesota, approximately 0730, and was destined for KGFK.

According to the Federal Aviation Administration (FAA) inspector's statement and the pilot's loss statement, the airplane had landed and had taxied to the ramp. As the pilot got out of the airplane, he instructed the passengers to remain seated. As he deplaned to attach the tail stand, the airplane tipped back and struck the pavement with its tail. The pilot re-boarded and instructed the passengers to leave their seats and move forward. The airplane righted itself. The inspector said the forward bulkhead for the horizontal stabilizer attachment point was crushed and torn, and three stringers, another bulkhead, and the lower skin were damaged.

The inspector stated that because of the uncooperative attitude of the pilot, most of their data was derived from the airplane's registered owner, insurance company, and repair facility. In his report, the inspector wrote: "Passenger information included a seating chart showing the location and weights of each individual. Aircraft information included W&B (weight and balance) data and loading chart from the AFM (Airplane Flight Manual) and seat CG (center of gravity) location from STC'd (Supplemental Type Certificate) interior data. Fuel load was derived from [the] pilot's statement on the insurance loss statement, which was 800 pounds. With that information a weight and balance was calculated and the aircraft's center of gravity (CG) was found to be aft of the aft CG limit."

Pilot Information

Certificate:	Airline transport; Commercial	Age:	35, Male
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	None
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 1 Without waivers/limitations	Last FAA Medical Exam:	November 1, 2014
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	
Flight Time:	6814 hours (Total, all aircraft), 4 hours (Total, this make and model)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	Registration:	N617ST
Model/Series:	208B	Aircraft Category:	Airplane
Year of Manufacture:	2004	Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	208B1044
Landing Gear Type:	Tricycle	Seats:	11
Date/Type of Last Inspection:		Certified Max Gross Wt.:	8750 lbs
Time Since Last Inspection:		Engines:	2 Turbo prop
Airframe Total Time:		Engine Manufacturer:	PRATT & WHITNEY
ELT:		Engine Model/Series:	PT6A-114A
Registered Owner:	SARTEC CORP	Rated Power:	675 Horsepower
Operator:	SARTEC CORP	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Instrument (IMC)	Condition of Light:	Day
Observation Facility, Elevation:	KGFK,845 ft msl	Distance from Accident Site:	
Observation Time:	09:03 Local	Direction from Accident Site:	
Lowest Cloud Condition:		Visibility	3 miles
Lowest Ceiling:	Overcast / 300 ft AGL	Visibility (RVR):	
Wind Speed/Gusts:	12 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	350°	Turbulence Severity Forecast/Actual:	/ N/A
Altimeter Setting:	29.84 inches Hg	Temperature/Dew Point:	2°C / 1°C
Precipitation and Obscuration:			
Departure Point:	ANOKA, MN (KANE)	Type of Flight Plan Filed:	IFR
Destination:	GRAND FORKS, ND (KGFK)	Type of Clearance:	IFR
Departure Time:	07:30 Local	Type of Airspace:	Class D

Airport Information

Airport:	GRAND FORKS INTERNATIONAL KGFK	Runway Surface Type:	
Airport Elevation:	845 ft msl	Runway Surface Condition:	
Runway Used:		IFR Approach:	Unknown
Runway Length/Width:		VFR Approach/Landing:	Unknown

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:	9 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	10 None	Latitude, Longitude:	47.947223,-97.173889(est)

Administrative Information

Investigator In Charge (IIC): Scott, Arnold

Additional Participating Persons:

Original Publish Date: December 12, 2016

Last Revision Date:

Investigation Class: [Class](#)

Note: The NTSB did not travel to the scene of this accident.

Investigation Docket: <https://data.ntsb.gov/Docket?ProjectID=92593>

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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](#).