



National Transportation Safety Board Aviation Accident Final Report

Location:	Baltimore, MD	Accident Number:	ERA15LA135
Date & Time:	02/24/2015, 0612 EST	Registration:	N989FX
Aircraft:	CESSNA 208	Aircraft Damage:	Substantial
Defining Event:	Abrupt maneuver	Injuries:	1 None
Flight Conducted Under:	Part 135: Air Taxi & Commuter - Non-scheduled		

Analysis

The airline transport pilot was taxiing the airplane to the parking ramp after a night flight. As he approached a point where the taxiway intersected a service road, a ground service vehicle crossed in front of the airplane. To avoid a collision, the pilot applied the brakes and used reverse thrust, which stopped the airplane about 3 ft from the vehicle. The rapid application of braking and reverse thrust resulted in the airplane rocking backward and the empennage striking the ground, substantially damaging the airframe. The operator of the ground service vehicle reported that he was distracted while he attempted to retrieve a security badge and did not see the airplane as it approached the intersection. State law required that ground vehicles always yield right of way to taxiing aircraft.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The ground service vehicle operator's failure to yield right of way to the airplane due to distraction, which necessitated the pilot's use of reverse thrust and braking to avoid a collision and resulted in the airplane's empennage striking the ground.

Findings

Personnel issues	Monitoring environment - Other/unknown (Cause)
Environmental issues	Ground vehicle - Effect on operation (Cause)

Factual Information

On February 24, 2015, at 0612 eastern standard time, a Cessna 208B, N989FX, was substantially damaged when its empennage struck the ground while taxiing at Baltimore Washington International Airport (BWI), Baltimore, Maryland. The airline transport pilot was not injured. Night visual meteorological conditions prevailed, and an instrument flight rules flight plan was filed for the flight, which originated from Newark Liberty International (EWR), Newark, New Jersey and was destined for BWI. The on-demand cargo flight was conducted under the provisions of 14 *Code of Federal Regulations* Part 135.

Following an uneventful flight, the pilot landed the airplane on runway 33R, before exiting to the left onto taxiway J. He then continued to taxi to the southwest and transitioned onto taxiway AA. As the airplane approached the intersection of the taxiway and a service road, a ground service vehicle approached from the airplane's right. The pilot applied the airplane's brakes and full reverse thrust, and the airplane came to a stop. The ground service vehicle passed in front of the airplane at an estimated distance of between 2 and 3 feet, and the vehicle and the airplane did not collide.

The pilot stated that the "hard" braking and reverse thrust application caused the nose landing gear strut to compress, resulting in a "spring effect that was multiplied by removing reverse thrust rapidly." The airplane then pitched up and the empennage struck the ground, resulting in substantial damage to the airframe. The pilot reported that there were no pre-accident mechanical malfunctions or failures of the airplane's systems.

The operator of the ground service vehicle stated that he was proceeding to the security gate and was reaching down to grab an airport badge. The operator noticed the airplane when he looked up and immediately "slammed" on the brakes. The vehicle eventually came to a stop after crossing the taxiway.

Review of security camera video showed a sequence of events consistent with the statements provided by the pilot and the ground vehicle operator. Additionally, the airplane was taxiing with its landing lights, taxi lights, strobe lights, and rotating beacon lights on. The ground service vehicle's headlights, taillights, running lights, and a roof-mounted beacon were also on.

The 0554 weather conditions reported at BWI included 10 statute miles visibility and scattered clouds at 22,000 feet. The beginning of civil twilight occurred at 0620 and sunrise occurred at 0647. Moonrise occurred at 1024.

Code of Maryland Regulations 11.03.01.04 K(1) titled "Yielding the Right-of-Way" states "Any person operating a motor vehicle on the air operations area shall yield the right-of-way to aircraft in motion or aircraft with engines running, ready to be put in motion."

History of Flight

Taxi-from runway	Abrupt maneuver (Defining event)
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Pilot Information

Certificate:	Airline Transport	Age:	50, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	5-point
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	Airplane Multi-engine; Airplane Single-engine	Toxicology Performed:	No
Medical Certification:	Class 1 With Waivers/Limitations	Last Medical Exam:	09/24/2014
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	12/29/2014
Flight Time:	7116 hours (Total, all aircraft), 3615 hours (Total, this make and model), 4837 hours (Pilot In Command, all aircraft), 155.2 hours (Last 90 days, all aircraft), 47.6 hours (Last 30 days, all aircraft), 2.7 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Manufacturer:	CESSNA	Registration:	N989FX
Model/Series:	208 B	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	208B2403
Landing Gear Type:	Tricycle	Seats:	2
Date/Type of Last Inspection:	02/19/2015, AAIP	Certified Max Gross Wt.:	8785 lbs
Time Since Last Inspection:		Engines:	1 Turbo Prop
Airframe Total Time:	1103.3 Hours	Engine Manufacturer:	P&W CANADA
ELT:	C126 installed, not activated	Engine Model/Series:	PT6A-114A
Registered Owner:	FEDERAL EXPRESS CORP	Rated Power:	675 hp
Operator:	MOUNTAIN AIR CARGO INC	Air Carrier Operating Certificate:	On-demand Air Taxi (135)
Operator Does Business As:		Operator Designator Code:	MTNA

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Night
Observation Facility, Elevation:	BWI, 155 ft msl	Observation Time:	0554 EST
Distance from Accident Site:	1 Nautical Miles	Direction from Accident Site:	210°
Lowest Cloud Condition:	Scattered / 22000 ft agl	Temperature/Dew Point:	-16° C / -20° C
Lowest Ceiling:	None	Visibility	10 Miles
Wind Speed/Gusts, Direction:	Calm	Visibility (RVR):	
Altimeter Setting:	30.33 inches Hg	Visibility (RVV):	
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Newark, NJ (EWR)	Type of Flight Plan Filed:	IFR
Destination:	Baltimore, MD (BWI)	Type of Clearance:	IFR
Departure Time:	0455 EST	Type of Airspace:	Class B

Airport Information

Airport:	BALTIMORE/WASHINGTON INTL (BWI)	Runway Surface Type:	N/A
Airport Elevation:	146 ft	Runway Surface Condition:	
Runway Used:	N/A	IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 None	Latitude, Longitude:	39.184722, -76.667222 (est)

Administrative Information

Investigator In Charge (IIC):	Dennis Diaz	Adopted Date:	05/25/2017
Additional Participating Persons:	Jackie Radford; FAA/FSDO; Baltimore, MD		
Publish Date:	05/26/2017		
Note:	The NTSB did not travel to the scene of this accident.		
Investigation Docket:	http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=90779		

The National Transportation Safety Board (NTSB), established in 1967, is an independent federal agency mandated by Congress through the Independent Safety Board Act of 1974 to investigate transportation accidents, determine the probable causes of the accidents, issue safety recommendations, study transportation safety issues, and evaluate the safety effectiveness of government agencies involved in transportation. The NTSB makes public its actions and decisions through accident reports, safety studies, special investigation reports, safety recommendations, and statistical reviews.

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