



Aviation Investigation Final Report

Location:	St. Louis, Missouri	Accident Number:	DEN08LA151
Date & Time:	September 7, 2008, 08:00 Local	Registration:	N122UX
Aircraft:	Beech 1900D	Aircraft Damage:	Substantial
Defining Event:	Ground collision	Injuries:	6 None
Flight Conducted Under:	Part 121: Air carrier - Scheduled		

Analysis

The scheduled domestic passenger flight was taxiing to parking and while turning into a parking space, the empennage struck the overhang to the adjacent building resulting in substantial damage. An examination of the airplane's systems revealed no anomalies. Neither the captain nor the first officer could see the empennage during the turn. Both the marshaller and the wing walker felt that the empennage was clear of the building. At the time of the accident, company procedures for turning an airplane into its parking position did not exist. Prior to the impact, the flight crew conversations deviated from checklists and required communications for critical flight phases, landing, and taxi operations and they were engaged in nonessential communications. The flight crew's lack of professionalism and deviation from essential communications led to a lack of situational awareness.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The ground crew's failure to ensure airplane clearance from the building while parking the airplane. Contributing to the accident was the flight crew's unprofessional behavior and the lack of marshaling procedures for the ground crew.

Findings

Personnel issues	(general) - Ground crew
Organizational issues	Availability of policy/proc - Operator
Personnel issues	CRM/MRM techniques - Flight crew

Factual Information

History of Flight

Taxi	Ground collision (Defining event)
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HISTORY OF FLIGHT

On September 7, 2008, approximately 0800 central daylight time, a Beech 1900D, N122UX, owned and operated by Great Lakes Aviation Ltd as Lakes Air Flight 5215, was substantially damaged while parking at the gate at Lambert-St. Louis International Airport (KSTL), St. Louis, Missouri. Visual meteorological conditions prevailed at the time of the accident. The scheduled domestic passenger flight was being conducted under the provisions of Title 14 Code of Federal Regulations Part 121 on an instrument flight rules flight plan. The pilot, first officer, and four passengers were not injured. The cross-country flight departed Quincy Regional Airport - Baldwin Field, Quincy, Illinois, (KUIB) at 0600.

According to the written statements provided by the pilots and the two ground crew personnel, the airplane was being marshaled to a parking spot by a marshaller and a wing walker. The parking spot was a tight fit due to the proximity of several other airplanes and ground vehicles parked on the ramp. After the right wing cleared several obstacles, the marshaller instructed the pilot to turn. During the turn, the empennage struck an overhang from an adjacent building. It was the perception of the marshaller and the wing walker that the empennage was clear of the building during the turn. Neither the captain nor the first officer could see the empennage. Neither crew member acknowledged being aware of the proximity of the airplane to the building or its overhang during parking. The airplane continued forward and was secured. The flight crew and passengers deplaned without further incident.

An examination of the airframe revealed the vertical stabilizer was twisted, and the rudder and right side of the elevator were wrinkled. No other systems anomalies were noted.

PERSONNEL INFORMATION

The captain, age 26, held an airline transport pilot certificate with an airplane multiengine land rating and a commercial pilot certificate with airplane single engine land rating. In addition, he held a type rating in the Beech 1900 with the limitation that a second in command is required. He was issued a first class airman medical certificate on March 27, 2008. The certificate contained no limitations. According to the Pilot/Operator Aircraft Accident Report form submitted by Great Lakes Airlines, the captain had logged no less than 2,680 hours; 2,300 of which were in the make and model and six hours of which were in the previous 24 hours.

The first officer, age 27, held a commercial pilot certificate with airplane single engine,

multiengine, and instrument ratings. He was issued a second class airman medical certificate in September of 2007. The certificate contained no limitations. Great Lakes Airlines reported that the first officer had logged no less than 900 hours total time; 410 hours of which were in the make and model and six hours of which were in the previous 24 hours.

AIRCRAFT INFORMATION

The accident airplane, a Beech 1900D (serial number UE-122), was manufactured in 1994. It was registered with the Federal Aviation Administration on a standard airworthiness certificate for transport operations. The airplane was powered by two Pratt and Whitney turbo propeller engines. The airplane was configured to carry two flight crewmembers, and 19 passengers.

The airplane was registered to and operated by Great Lakes Aviation Ltd, Cheyenne, Wyoming, and was maintained under an approved continuous airworthiness inspection program. The last inspection was conducted on September 31, 2008. The airframe had a total time of 24,954 hours at the time of the accident.

AIRPORT INFORMATION

Lambert-St Louis International Airport is a public, controlled airport (Class B) located ten miles northwest of St. Louis, Missouri, at a surveyed elevation of 618 feet. According to Great Lakes Airlines, their parking area is designated as gates D8 and D10 between the C and D concourses.

FLIGHT RECORDERS

The airplane was equipped with a Fairchild Model A 100A (serial number 56687) 30-minute solid-state cockpit voice recorder (CVR). The CVR was secured and sent to the National Transportation Safety Board's (Safety Board) Audio Laboratory for readout. The CVR was not damaged. The audio information was extracted normally from the recorder. The recording consisted of four channels of audio information. A CVR group was convened on September 25, 2008, and a partial transcript was created from the recording.

A review of the recording and transcript from the accident flight revealed that while descending, while on the instrument approach, during the landing, and while taxiing to parking from the landing, the crew deviated from the sterile cockpit environment. Character voices were used, chicken noises were made, and nonessential communications were made. Prior to the impact, one crew member stated that they would like to "blast" a colleague with their engines as they taxied by.

ADDITIONAL INFORMATION

Great Lakes Airlines Safety Improvements

Following the accident, Great Lakes Airlines added an operations requirement for parking procedures. Any time "spinning" or turning an airplane into a parking position is required for parking three ramp employees are now required to be present. These include a "signalman" and two "wing walkers." Prior to the accident, there were no procedures or requirements for "spinning" an airplane into a parking place.

Great Lakes Airlines also added a checklist requirement for in-flight operations. When an airplane descends below 10,000 feet mean sea level, a call for "sterile cockpit" will be made.

FAA Regulations

Title 14 Code of Federal Regulations Part 121.542 states, in part, the following:

"(b) No flight crewmember may engage in, nor may any pilot in command permit, any activity during a critical phase of flight which could distract any flight crewmember from the performance of his or her duties or which could interfere in any way with the proper conduct of those duties. Activities such as eating meals, engaging in nonessential conversations within the cockpit and nonessential communications between the cabin and cockpit crews, and reading publications not related to the proper conduct of the flight are not required for the safe operation of the aircraft.

(c) For the purposes of this section, critical phases of flight include all ground operations involving taxi, takeoff and landing, and all other flight operations conducted below 10,000 feet, except cruise flight."

Operational History

On June 20, 2007, a Beech 1900D, operated by Great Lakes Aviation Ltd, was involved in an accident in Laramie, Wyoming, when the propeller struck an electrical box during a high speed turn off of the runway after landing. (Please refer to accident number DEN07LA101) On March 26, 2008, a Hawker Beechcraft Corporation 1900D, operated by Great Lakes Aviation Ltd, was involved in an incident in Page, Arizona, after a cargo door came open during takeoff. (Please refer to accident number SEA08IA096) These investigations revealed a lack of crew resource management and a lack of professionalism by both flight crew members.

Following the accident in Laramie, Wyoming, the Federal Aviation Administration took multiple steps to address the flight crew professionalism. This included increased surveillance and increased presence of check airmen during revenue flights. The FAA has also worked directly with Great Lakes Airlines to develop professionalism courses for their flight crew.

Pilot Information

Certificate:	Airline transport; Commercial	Age:	26, Male
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 1 Without waivers/limitations	Last FAA Medical Exam:	March 27, 2008
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	March 20, 2008
Flight Time:	2680 hours (Total, all aircraft), 2300 hours (Total, this make and model), 1250 hours (Pilot In Command, all aircraft), 260 hours (Last 90 days, all aircraft), 100 hours (Last 30 days, all aircraft), 6 hours (Last 24 hours, all aircraft)		

Co-pilot Information

Certificate:	Commercial	Age:	27, Male
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Right
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 2 Without waivers/limitations	Last FAA Medical Exam:	
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	March 20, 2008
Flight Time:	900 hours (Total, all aircraft), 410 hours (Total, this make and model), 430 hours (Pilot In Command, all aircraft), 254 hours (Last 90 days, all aircraft), 100 hours (Last 30 days, all aircraft), 6 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Beech	Registration:	N122UX
Model/Series:	1900D	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	UE-122
Landing Gear Type:	Retractable - Tricycle	Seats:	21
Date/Type of Last Inspection:		Certified Max Gross Wt.:	
Time Since Last Inspection:		Engines:	2 Turbo prop
Airframe Total Time:		Engine Manufacturer:	Pratt and Whitney Canada
ELT:	Installed, not activated	Engine Model/Series:	PT6-67D
Registered Owner:	Great Lakes Airlines	Rated Power:	
Operator:		Operating Certificate(s) Held:	Flag carrier (121)
Operator Does Business As:		Operator Designator Code:	GRLM

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	STL,618 ft msl	Distance from Accident Site:	
Observation Time:	07:51 Local	Direction from Accident Site:	
Lowest Cloud Condition:	Few / 700 ft AGL	Visibility	6 miles
Lowest Ceiling:	Overcast / 4200 ft AGL	Visibility (RVR):	
Wind Speed/Gusts:	/	Turbulence Type Forecast/Actual:	/
Wind Direction:		Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.12 inches Hg	Temperature/Dew Point:	17°C / 16°C
Precipitation and Obscuration:			
Departure Point:	Quincy, IL (UIN)	Type of Flight Plan Filed:	IFR
Destination:	St. Louis, MO (STL)	Type of Clearance:	IFR
Departure Time:	06:00 Local	Type of Airspace:	

Airport Information

Airport:	St. Louis, MO STL	Runway Surface Type:	
Airport Elevation:	618 ft msl	Runway Surface Condition:	
Runway Used:		IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	2 None	Aircraft Damage:	Substantial
Passenger Injuries:	4 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	6 None	Latitude, Longitude:	38.748611,-90.370002(est)

Administrative Information

Investigator In Charge (IIC):	Rodi, Jennifer
Additional Participating Persons:	John A Marshall; FAA Flight Standards District Office; St. Louis, MO Heather Halverson; Great Lakes Airlines; Cheyenne, WY
Original Publish Date:	May 12, 2009
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=68889

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](#).