



National Transportation Safety Board Aviation Accident Final Report

Location:	West Palm Beach, FL	Accident Number:	ERA15LA288
Date & Time:	07/22/2015, 1410 EDT	Registration:	N613PJ
Aircraft:	CANADAIR CL-600-2B16	Aircraft Damage:	Substantial
Defining Event:	Ground collision	Injuries:	2 None
Flight Conducted Under:	Part 91: General Aviation - Positioning		

Analysis

According to the captain, the pilots were "rushed" as they performed their preflight preparations of the jet and forgot to close the baggage door. Ground personnel noticed the discrepancy and drove an all-terrain vehicle (ATV) out to the airplane so that they could advise the crew. After dismounting from the ATV, which they had parked about 10 ft in front of the airplane's left wing, they warned the captain, who left the cockpit to close the baggage door. Once the door was closed, he returned to the cockpit. The captain then looked out the side window and noticed that the airplane was rolling forward, and he asked the first officer what she was doing. About that time, the airplane struck the ATV. The flight crew stated that once they realized the airplane was moving, they attempted to apply the brakes, but it was not until they shut down the engines and re-applied the parking brake that the airplane came to a stop. A postaccident functional check of the airplane's hydraulic and braking systems did not reveal any anomalies.

Review of the airplane's cockpit voice recorder revealed that the crew did not verbally follow the airplane's before start checklist, which required them to verify hydraulic system pressure, and that the parking brake was set before starting the engines. Had the flight crew followed this procedure, monitored the airplane's motion during and immediately after the engine start, and been more cognizant of the objects surrounding the airplane, it is likely that the ground collision would have been avoided.

Probable Cause and Findings

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

The flight crew's failure to properly use the before start checklist, to monitor the airplane's motion, and to see and avoid objects around the airplane, which resulted in an inadvertent roll into a ground vehicle.

Findings

Personnel issues	Use of checklist - Flight crew (Cause)
	Task monitoring/vigilance - Flight crew (Cause)
	Monitoring environment - Flight crew (Cause)

Factual Information

On July 22, 2015, about 1410 eastern daylight time, a Canadair CL-600-2B16, N613PJ, registered to Paragon Transport Management LLC, and operated by USAC Airways 691 LLC, doing business as Paragon Jets, was substantially damaged when it struck an all-terrain ground vehicle (ATV) while taxiing at Palm Beach International Airport (PBI), West Palm Beach, Florida. Both airline transport pilots were not injured. Visual meteorological conditions prevailed and an instrument flight rules flight plan was filed for the flight, which was destined for Opa-Locka Executive Airport (OPF), Miami, Florida. The positioning flight was operated under the provisions of Title 14 Code of Federal Regulations Part 91.

According to the captain, the flight crew was under pressure from the operations department to continue to southern Florida to complete their flight and pick up customers that were waiting. The flight crew forgot to close the baggage door; they began the prestart checklist and started both engines. The flightcrew then noticed that ground personnel drove up in an ATV and were waving their arms to get their attention. The captain then remembered that he forgot to close the baggage door and got up to go back and close the door. Once closed, he returned to his seat, on the right side, buckled his seat belt and resumed reviewing the checklist. The captain then looked out the side window and noticed the airplane was rolling forward and he asked the first officer what she was doing. At that time, they heard a noise and bounce in the airplane and thought they travelled over a wheel chock. The captain further stated that he was pushing very hard on the brakes and the airplane would not stop. They both made several attempts to stop the airplane and applied maximum brake pressure, but it would not stop. The captain then reached over with both hands and shut down the engines at the same time the first officer released and re-applied the parking brake. The airplane then came to a stop. The captain added that he heard no alarms or sounds during this event.

According to ground service personnel at OPF, they observed the accident airplane as it prepared to taxi and noticed that its baggage door was open. Two of the ground handlers subsequently boarded an ATV and drove out to the airplane, parking about 10 feet in front of the left wing. One of the ground handlers then dismounted the ATV and proceeded in front of the airplane while motioning to the flightcrew in the cockpit that the baggage door was open. The pilot seated in the right seat then stood up and proceeded into the cabin. Shortly after, the airplane began moving forward. The ground handler then attempted to gain the attention of the pilot seated in the left seat, but was unsuccessful as that pilot never looked up. The airplane's left wing then struck the ATV before it came to a stop.

About 1 week after the accident, the operator's director of maintenance completed a preflight inspection and check of the airplane's hydraulic and braking systems under the supervision of a Federal Aviation Administration inspector, with no anomalies noted.

The airplane's cockpit voice recorder (CVR) and flight data recorder (FDR) were forwarded to the NTSB Vehicle Recorders Laboratory, Washington, DC for data download. Review of the CVR data did not reveal any tasks associated with the formal prestart checklist being completed. The CVR recorded a conversation about programming the flight management system and then it recorded the captain asking the first officer if she wanted to fly from the left seat. One minute later the first officer replied that she did want to fly from the left seat. The

recorder then captured a conversation of an informal checklist usage along with a departure briefing. Two minutes later the recorder captured sounds consistent with both engines starting and then the captain stated, "baggage door... I'll get it." Then sounds consistent with switch manipulation and shortly after the captain asked "what are you doing" with an immediate sound of a warning or alert tone as the captain stated, "no brakes....what are you doing?" the first officer responded, "ah I didn't do anything. What's going on? What is going on? Stop." The captain replied, "I don't know." Then the CVR recorded sounds of engines shutting down, followed by one second later a sound consistent with a collision.

Review of the plotted data from the FDR revealed that it only recorded in-flight parameters and that it did not record any on-ground parameters.

Review of the Challenger 601-3A/3R pilot checklist manual, before shut down, the crew was to verify the parking brake was set and check the hydraulic pressure. If this was the last flight of the day, once the airplane wheels were chocked, the parking brake should be released. The before starting checklist stated the wheel chocks must be removed, hydraulic pressure verified, and the parking brakes set before engine start.

The 13-seat airplane was manufactured in 1992, and was equipped with two GE, CF34-3A, turbine engines. The aircraft maintenance records indicated that airplane was maintained on a continuous airworthiness inspection program, and the brake accumulators test was last performed on May 1, 2015, with an airframe total time recorded of 9,649.3 hours. The total time on the airframe at the time of the accident was 9,770.9 hours.

History of Flight

Taxi	Ground collision (Defining event)
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Pilot Information

Certificate:	Airline Transport; Commercial	Age:	68, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land; Single-engine Sea	Seat Occupied:	Right
Other Aircraft Rating(s):	None	Restraint Used:	4-point
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 1 With Waivers/Limitations	Last Medical Exam:	03/17/2015
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	05/07/2015
Flight Time:	(Estimated) 11926 hours (Total, all aircraft), 3324 hours (Total, this make and model), 10191 hours (Pilot In Command, all aircraft), 92 hours (Last 90 days, all aircraft), 77 hours (Last 30 days, all aircraft)		

Co-Pilot Information

Certificate:	Flight Instructor; Commercial	Age:	40, Female
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	4-point
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	Airplane Multi-engine; Airplane Single-engine	Toxicology Performed:	No
Medical Certification:	Class 1 None	Last Medical Exam:	07/21/2015
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	05/13/2015
Flight Time:	1800 hours (Total, all aircraft), 105 hours (Total, this make and model), 300 hours (Last 90 days, all aircraft), 65 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Manufacturer:	CANADAIR	Registration:	N613PJ
Model/Series:	CL-600-2B16	Aircraft Category:	Airplane
Year of Manufacture:	1992	Amateur Built:	No
Airworthiness Certificate:	Transport	Serial Number:	5123
Landing Gear Type:	Retractable - Tricycle	Seats:	13
Date/Type of Last Inspection:	Continuous Airworthiness	Certified Max Gross Wt.:	45000 lbs
Time Since Last Inspection:		Engines:	2 Turbo Fan
Airframe Total Time:		Engine Manufacturer:	GE
ELT:	C126 installed, not activated	Engine Model/Series:	CF34-3A
Registered Owner:	On file	Rated Power:	8500 lbs
Operator:	On file	Air Carrier Operating Certificate:	On-demand Air Taxi (135)
Operator Does Business As:	Paragon jets	Operator Designator Code:	J6BA

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	KPBI, 21 ft msl	Observation Time:	1353 EDT
Distance from Accident Site:	0 Nautical Miles	Direction from Accident Site:	264°
Lowest Cloud Condition:	Scattered / 4300 ft agl	Temperature/Dew Point:	34° C / 22° C
Lowest Ceiling:	Broken / 5500 ft agl	Visibility	10 Miles
Wind Speed/Gusts, Direction:	7 knots, 250°	Visibility (RVR):	
Altimeter Setting:	30.02 inches Hg	Visibility (RVV):	
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	West Palm Beach, FL (PBI)	Type of Flight Plan Filed:	IFR
Destination:	Opa Locka, FL (OPF)	Type of Clearance:	None
Departure Time:	1410 EDT	Type of Airspace:	Class D

Airport Information

Airport:	Palm Beach International (PBI)	Runway Surface Type:	
Airport Elevation:	19 ft	Runway Surface Condition:	Dry
Runway Used:	N/A	IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	2 None	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 None	Latitude, Longitude:	26.685556, -80.092778 (est)

Administrative Information

Investigator In Charge (IIC):	Daniel P Boggs	Adopted Date:	05/01/2017
Additional Participating Persons:	Larry Hazel; FAA/FSDO; Miramar, FL Walter Garner; Paragon Jets; Teterboro, NJ		
Publish Date:	05/01/2017		
Note:	The NTSB did not travel to the scene of this accident.		
Investigation Docket:	http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=91657		

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.

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.