



# Aviation Investigation Final Report

<b>Location:</b>	West Palm Beach, Florida	<b>Accident Number:</b>	ERA15LA288
<b>Date &amp; Time:</b>	July 22, 2015, 14:10 Local	<b>Registration:</b>	N613PJ
<b>Aircraft:</b>	Canadair CL-600-2B16	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Ground collision	<b>Injuries:</b>	2 None
<b>Flight Conducted Under:</b>	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
Personnel issues	Task monitoring/vigilance - Flight crew
Personnel issues	Monitoring environment - Flight crew

# Factual Information

## History of Flight

Taxi	Ground collision (Defining event)
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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.

## Pilot Information

<b>Certificate:</b>	Airline transport; Commercial	<b>Age:</b>	68,Male
<b>Airplane Rating(s):</b>	Single-engine land; Single-engine sea; Multi-engine land	<b>Seat Occupied:</b>	Right
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	4-point
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	Yes
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 1 With waivers/limitations	<b>Last FAA Medical Exam:</b>	March 17, 2015
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	May 7, 2015
<b>Flight Time:</b>	(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

<b>Certificate:</b>	Commercial; Flight instructor	<b>Age:</b>	40,Female
<b>Airplane Rating(s):</b>	Single-engine land; Multi-engine land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	4-point
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	Yes
<b>Instructor Rating(s):</b>	Airplane multi-engine; Airplane single-engine	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 1 None	<b>Last FAA Medical Exam:</b>	July 21, 2015
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	May 13, 2015
<b>Flight Time:</b>	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

<b>Aircraft Make:</b>	Canadair	<b>Registration:</b>	N613PJ
<b>Model/Series:</b>	CL-600-2B16	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>	1992	<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Transport	<b>Serial Number:</b>	5123
<b>Landing Gear Type:</b>	Retractable - Tricycle	<b>Seats:</b>	13
<b>Date/Type of Last Inspection:</b>	Continuous airworthiness	<b>Certified Max Gross Wt.:</b>	45000 lbs
<b>Time Since Last Inspection:</b>		<b>Engines:</b>	2 Turbo fan
<b>Airframe Total Time:</b>		<b>Engine Manufacturer:</b>	GE
<b>ELT:</b>	C126 installed, not activated	<b>Engine Model/Series:</b>	CF34-3A
<b>Registered Owner:</b>	On file	<b>Rated Power:</b>	8500 Lbs thrust
<b>Operator:</b>	On file	<b>Operating Certificate(s) Held:</b>	On-demand air taxi (135)
<b>Operator Does Business As:</b>	On file	<b>Operator Designator Code:</b>	J6BA

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	KPBI, 21 ft msl	<b>Distance from Accident Site:</b>	0 Nautical Miles
<b>Observation Time:</b>	13:53 Local	<b>Direction from Accident Site:</b>	264°
<b>Lowest Cloud Condition:</b>	Scattered / 4300 ft AGL	<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>	Broken / 5500 ft AGL	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	7 knots / None	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	250°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	30.02 inches Hg	<b>Temperature/Dew Point:</b>	34°C / 22°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	West Palm Beach, FL (PBI)	<b>Type of Flight Plan Filed:</b>	IFR
<b>Destination:</b>	Opa Locka, FL (OPF)	<b>Type of Clearance:</b>	None
<b>Departure Time:</b>	14:10 Local	<b>Type of Airspace:</b>	Class D

## Airport Information

<b>Airport:</b>	Palm Beach International PBI	<b>Runway Surface Type:</b>	
<b>Airport Elevation:</b>	19 ft msl	<b>Runway Surface Condition:</b>	Dry
<b>Runway Used:</b>		<b>IFR Approach:</b>	None
<b>Runway Length/Width:</b>		<b>VFR Approach/Landing:</b>	None

## Wreckage and Impact Information

<b>Crew Injuries:</b>	2 None	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>		<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	2 None	<b>Latitude, Longitude:</b>	26.685556, -80.092781 (est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Boggs, Daniel
<b>Additional Participating Persons:</b>	Larry Hazel; FAA/FSDO; Miramar, FL Walter Garner; Paragon Jets; Teterboro, NJ
<b>Original Publish Date:</b>	May 1, 2017
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class</a>
<b>Note:</b>	The NTSB did not travel to the scene of this accident.
<b>Investigation Docket:</b>	<a href="https://data.nts.gov/Docket?ProjectID=91657">https://data.nts.gov/Docket?ProjectID=91657</a>

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](#).