



AVIATION



HIGHWAY



MARINE



RAILROAD



PIPELINE

# Aviation Investigation Final Report

<b>Location:</b>	Phoenix, Arizona	<b>Accident Number:</b>	DCA21LA024
<b>Date &amp; Time:</b>	November 13, 2020, 17:50 Local	<b>Registration:</b>	N778SK
<b>Aircraft:</b>	Bombardier CL600 2C10	<b>Aircraft Damage:</b>	None
<b>Defining Event:</b>	Cabin safety event	<b>Injuries:</b>	1 Serious, 60 None
<b>Flight Conducted Under:</b>	Part 121: Air carrier - Scheduled		

## Analysis

On November 13, 2020, at about 5:50 PM Mountain standard time, a flight attendant suffered a serious injury on SkyWest flight 3145, a Bombardier CL600, N778SK, while at the gate at the Phoenix Sky Harbor International Airport (PHX), Phoenix, Arizona. Of the 61 passengers and crew onboard, one flight attendant was seriously injured, and the airplane was not damaged. The regularly scheduled passenger flight was operating under 14 CFR Part 121 from Albuquerque International Sunport Airport, Albuquerque (ABQ), New Mexico to PHX.

The takeoff, cruise and landing were uneventful. After landing, the airplane taxied to the gate and came to a stop at the gate. The forward flight attendant (FA) fell from the top of the main cabin doorsteps to the ramp surface while opening the main cabin door (MCD). Phoenix ramp personnel immediately came to the FA's aid; she was conscious and lying on her left side with multiple lacerations to the head. Airport emergency medical services arrived on scene and transported her to a local hospital where she was diagnosed with fractures to both elbows and wrists.

The MCD is located on the left side of the forward fuselage and is equipped with air stairs that open outward and downward. Handrails are attached to the stairs and, if the handrail latch pins are engaged, the handrails will automatically extend to their up and locked position when the door is opened. The CRJ 700 Inflight Operations manual provides instructions for the closing and opening of the main cabin door. The manual states that the handrails must be in their up and locked position prior to closing the door. According to the operator, the FA had received and completed initial training on the CRJ 700 in September 2019 and recurrent training in September 2020.

Post-accident examination of the MCD and its handrail assembly by SkyWest maintenance personnel found that the handrail was not in its up and locked position and that none of the four handrail latch pins were engaged (locked). Maintenance personnel also functionally tested the

door by opening and closing it with the latch pins engaged and did not find any defects with the door or handrail; the handrail moved to its up and locked position when the door was opened.

The FA indicated that she was aware of how to operate the MCD but that she was distracted by a passenger when opening the door, which may have been why she guided the MCD down with her hands resulting in her being pulled from the top of the main cabin doorsteps.

**Probable Cause and Findings**

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

The flight attendant’s use of improper procedures when opening the main cabin door.

Findings	
Personnel issues	Incorrect action performance - Cabin crew

## Factual Information

### History of Flight

Other	Cabin safety event (Defining event)
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### Pilot Information

Certificate:	Airline transport	Age:	51
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:	
Medical Certification:	Class 1	Last FAA Medical Exam:	
Occupational Pilot:		Last Flight Review or Equivalent:	
Flight Time:	(Estimated) 11516 hours (Total, all aircraft), 2461.3 hours (Total, this make and model)		

### Co-pilot Information

Certificate:	Airline transport	Age:	28,
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Right
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	None	Second Pilot Present:	Yes
Instructor Rating(s):	None	Toxicology Performed:	
Medical Certification:		Last FAA Medical Exam:	
Occupational Pilot:		Last Flight Review or Equivalent:	
Flight Time:	(Estimated) 2216.5 hours (Total, all aircraft), 17.03 hours (Total, this make and model)		

## Cabin crew Information

<b>Certificate:</b>	<b>Age:</b>
<b>Airplane Rating(s):</b>	<b>Seat Occupied:</b> Front
<b>Other Aircraft Rating(s):</b>	<b>Restraint Used:</b>
<b>Instrument Rating(s):</b>	<b>Second Pilot Present:</b> Yes
<b>Instructor Rating(s):</b>	<b>Toxicology Performed:</b>
<b>Medical Certification:</b>	<b>Last FAA Medical Exam:</b>
<b>Occupational Pilot:</b>	<b>Last Flight Review or Equivalent:</b>
<b>Flight Time:</b>	

## Cabin crew Information

<b>Certificate:</b>	<b>Age:</b>
<b>Airplane Rating(s):</b>	<b>Seat Occupied:</b> Rear
<b>Other Aircraft Rating(s):</b>	<b>Restraint Used:</b>
<b>Instrument Rating(s):</b>	<b>Second Pilot Present:</b> Yes
<b>Instructor Rating(s):</b>	<b>Toxicology Performed:</b>
<b>Medical Certification:</b>	<b>Last FAA Medical Exam:</b>
<b>Occupational Pilot:</b>	<b>Last Flight Review or Equivalent:</b>
<b>Flight Time:</b>	

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Bombardier	<b>Registration:</b>	N778SK
<b>Model/Series:</b>	CL600 2C10	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>	2006	<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Transport	<b>Serial Number:</b>	10242
<b>Landing Gear Type:</b>	Retractable - Tricycle	<b>Seats:</b>	65
<b>Date/Type of Last Inspection:</b>		<b>Certified Max Gross Wt.:</b>	75000 lbs
<b>Time Since Last Inspection:</b>		<b>Engines:</b>	2
<b>Airframe Total Time:</b>		<b>Engine Manufacturer:</b>	
<b>ELT:</b>		<b>Engine Model/Series:</b>	
<b>Registered Owner:</b>	SKYWEST AIRLINES INC	<b>Rated Power:</b>	
<b>Operator:</b>	SKYWEST AIRLINES INC	<b>Operating Certificate(s) Held:</b>	Flag carrier (121), Supplemental
<b>Operator Does Business As:</b>		<b>Operator Designator Code:</b>	SWIA

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Dusk
<b>Observation Facility, Elevation:</b>	KPHX, 1107 ft msl	<b>Distance from Accident Site:</b>	1 Nautical Miles
<b>Observation Time:</b>	17:51 Local	<b>Direction from Accident Site:</b>	133°
<b>Lowest Cloud Condition:</b>		<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>		<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	7 knots / None	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	300°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	29.98 inches Hg	<b>Temperature/Dew Point:</b>	23°C / -4°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	Albuquerque, AZ (ABQ)	<b>Type of Flight Plan Filed:</b>	
<b>Destination:</b>	Phoenix, AZ	<b>Type of Clearance:</b>	Unknown
<b>Departure Time:</b>	11:31 Local	<b>Type of Airspace:</b>	

## Airport Information

<b>Airport:</b>	Phoenix Sky Harbor International Airport PHX	<b>Runway Surface Type:</b>	
<b>Airport Elevation:</b>	1135 ft msl	<b>Runway Surface Condition:</b>	Unknown
<b>Runway Used:</b>		<b>IFR Approach:</b>	Unknown
<b>Runway Length/Width:</b>		<b>VFR Approach/Landing:</b>	Unknown

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 Serious, 3 None	<b>Aircraft Damage:</b>	None
<b>Passenger Injuries:</b>	57 None	<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>		<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	1 Serious, 60 None	<b>Latitude, Longitude:</b>	33.4373, -112.0078

## Administrative Information

**Investigator In Charge (IIC):** Hauf, Michael

**Additional Participating Persons:** Monty Montgomery; SkyWest Airlines

**Original Publish Date:** June 8, 2021

**Last Revision Date:**

**Investigation Class:** [Class 4](#)

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

**Investigation Docket:** <https://data.nts.gov/Docket?ProjectID=102304>

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](#).