



National Transportation Safety Board Aviation Accident Final Report

Location:	Savoonga, AK	Accident Number:	ANC09LA104
Date & Time:	09/18/2009, 1412 AKD	Registration:	N349TA
Aircraft:	CASA 212-200	Aircraft Damage:	Substantial
Defining Event:	Loss of control on ground	Injuries:	2 None
Flight Conducted Under:	Part 135: Air Taxi & Commuter - Non-scheduled		

Analysis

The crew noted overcast skies, light rain, and a gusty crosswind prior to landing on runway 5, which was approximately 4,400 feet long by 100 feet wide and composed of gravel. The captain, who was the pilot flying, noted that he used full flaps during the landing approach and had to make significant corrections for the crosswind, which was reported to be from 010 degrees at 26 knots, gusting to 34 knots. The captain reported that during the landing roll, despite the use of differential power and other control adjustments, he could not maintain directional control and the airplane went off the right side of the runway. Postaccident inspection of the airplane revealed no preimpact mechanical malfunctions or failures that would have precluded normal operation. The airplane's flight manual suggests not using full flaps while landing in strong crosswind due to controllability issues and also recommends that the pilot reduce the crosswind component if the runway conditions are slippery.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's failure to maintain directional control during the landing roll in a gusting crosswind.

Findings

Aircraft	Directional control - Not attained/maintained (Cause)
Personnel issues	Aircraft control - Flight crew (Cause)
Environmental issues	Wet surface - Contributed to outcome Crosswind - Contributed to outcome

Factual Information

On September 18, 2009, at 1412 Alaska daylight time, a Construcciones Aeronauticas SA (CASA) C-212-CC, N349TA, sustained substantial damage after veering off runway 05 during landing at Savoonga Airport (SVA), Savoonga, Alaska. Bering Air Inc., operated the airplane under the provisions of Title 14 Code of Federal Regulations (CFR) Part 135, as a cargo flight. The certificated airline transport pilot captain, and certificated commercial pilot first officer were not injured. Visual meteorological conditions prevailed, and a Defense Visual Flight Rules (DVFR) flight plan was in effect. The flight departed Nome Airport (OME), Nome, Alaska, at 1312.

During a telephone interview with the National Transportation Safety Board (NTSB) investigator-in-charge (IIC), the captain reported that he was the flying pilot on the accident leg, and that prior to departure they had checked the weather, and obtained the pertinent Notice to Airman (NOTAMs) for the destination airport. The captain reported that one of the NOTAMs identified a partial runway closure with construction crews in the vicinity. The flight took about an hour, with no problems encountered; they noted gusty wind conditions, light rain, and an overcast cloud condition. Twenty miles from the destination airport, the flight crew notified the construction crew of their intent to land. On approach, they overflew the runway at 500 feet to verify the NOTAM, and noted a graded and rough runway. The captain indicated that they flew a teardrop approach and noted that the winds were from the north. He stated that he had to "crab" the airplane into the wind while on final, and said that while on the landing roll, he tried to maintain aircraft control with forward pressure on the nose and applying differential power while the first officer turned the ailerons into the wind. The airplane was difficult to control, and it began to veer to the right side of the runway. The airplane continued to the right, exited the runway surface, and came to rest in a ditch adjacent to the landing runway.

In the captain's written statement, he reported that the airplane was stabilized on a 3-mile final with 100 percent flaps, at an approach speed of 100 knots prior to touchdown. He calculated the crosswind component to be 16 knots gusting to 23 knots with the wind from the left. In the section titled: "Recommendation (How could this accident/incident been prevented?)" of NTSB form 6120.1, the captain recommended a lower crosswind limit for narrow runways, specifically that with runways less than 100 feet in width, the crosswind should be limited to 75 percent maximum demonstrated crosswind component.

A Federal Aviation Administration (FAA) inspector responded to the site and reported that the right main landing gear tire was depleted of air; it was a serviceable tire, but near its wear limit. The inspector stated that the right wing sustained structural damage, and that there were no mechanical anomalies noted with the remaining aircraft systems.

Automated Weather Observing System (AWOS) weather recorded from Savoonga at 1456 was, wind from 010 degrees at 26 knots gusting to 34 knots; visibility 5 statute miles, overcast sky conditions at 800 feet; temperature 04 degrees Celsius; dew point 02 degrees Celsius; the altimeter setting was 29.70 inches of Mercury.

The Airport/Facility Directory indicated that the runway at Savoonga is 4,400 feet in length by 100 feet in width. The airport is unattended and the runway conditions are not monitored. A visual inspection of the runway is recommended prior to landing. The runway is comprised of gravel, with rocks up to 5 inches on the sides of the landing surface. Several Notices to Airmen

(NOTAMs) were in effect at the time of the accident. One of the NOTAMs reported that the north half of runway 5/23 was closed.

ADDITIONAL INFORMATION

According to the airplane’s Operations Manual, under “Crosswind Speed Limits,” it notes a critical crosswind component has not been determined. However, the maximum crosswind component demonstrated during takeoffs and landings is 20 knots. In addition, a subheading titled “Slippery Runways,” in the Crosswind Landing section of the Operations Manual, recommends, in part, that the operators adjust the crosswind limit, reducing it by 25 to 75 percent, depending on slippery conditions.

In the section of the Operations Manual titled Landings, subheading “Final Approach, Flaps,” it is recommended that flaps be at 15 degrees for a normal approach and landing, and suggests that full flaps not be deployed in strong crosswinds due to controllability in the flare.

History of Flight

Landing-landing roll	Loss of control on ground (Defining event) Runway excursion
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Pilot Information

Certificate:	Airline Transport; Commercial	Age:	51, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt, Shoulder harness
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:	04/24/2009
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	07/13/2009
Flight Time:	29025 hours (Total, all aircraft), 4904 hours (Total, this make and model), 28425 hours (Pilot In Command, all aircraft), 254 hours (Last 90 days, all aircraft), 97 hours (Last 30 days, all aircraft)		

Co-Pilot Information

Certificate:	Flight Instructor; Commercial	Age:	29, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Right
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	Airplane Single-engine; Instrument Airplane	Toxicology Performed:	No
Medical Certification:	Class 1 With Waivers/Limitations	Last Medical Exam:	12/31/2008
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	06/08/2009
Flight Time:	1100 hours (Total, all aircraft), 280 hours (Total, this make and model), 300 hours (Pilot In Command, all aircraft), 300 hours (Last 90 days, all aircraft), 70 hours (Last 30 days, all aircraft), 5 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Manufacturer:	CASA	Registration:	N349TA
Model/Series:	212-200	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Transport	Serial Number:	349
Landing Gear Type:	Retractable - Tricycle	Seats:	2
Date/Type of Last Inspection:	09/07/2009, 100 Hour	Certified Max Gross Wt.:	16976 lbs
Time Since Last Inspection:	3 Hours	Engines:	2 Turbo Prop
Airframe Total Time:	9906 Hours	Engine Manufacturer:	Honeywell
ELT:	Installed, not activated	Engine Model/Series:	TPE331-10R511
Registered Owner:	Bering Air Inc.	Rated Power:	1000 hp
Operator:	Bering Air Inc.	Air Carrier Operating Certificate:	On-demand Air Taxi (135)

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	SVA, 53 ft msl	Observation Time:	1416 ADT
Distance from Accident Site:	0 Nautical Miles	Direction from Accident Site:	0°
Lowest Cloud Condition:	Clear	Temperature/Dew Point:	4° C / 2° C
Lowest Ceiling:	Overcast / 1000 ft agl	Visibility	3 Miles
Wind Speed/Gusts, Direction:	28 knots/ 33 knots, 10°	Visibility (RVR):	
Altimeter Setting:	29.71 inches Hg	Visibility (RVV):	
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Nome, AK (OME)	Type of Flight Plan Filed:	VFR/IFR
Destination:	Savoonga, AK (SVA)	Type of Clearance:	VFR
Departure Time:	1312 ADT	Type of Airspace:	

Airport Information

Airport:	Savoonga Airport (SVA)	Runway Surface Type:	Gravel
Airport Elevation:	53 ft	Runway Surface Condition:	Rough; Wet
Runway Used:	05	IFR Approach:	None
Runway Length/Width:	4400 ft / 100 ft	VFR Approach/Landing:	Traffic Pattern

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:	63.683333, -170.488889 (est)

Administrative Information

Investigator In Charge (IIC):	Tealeye Cornejo	Adopted Date:	04/12/2011
Additional Participating Persons:	Brice Banning; Federal Aviation Administration; Fairbanks, AK		
Publish Date:	04/12/2011		
Investigation Docket:	http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=74766		

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