



National Transportation Safety Board Aviation Accident Data Summary

Location:	Manteo, NC	Accident Number:	ERA11FA001
Date & Time:	10/01/2010, 0830 EDT	Registration:	N262Y
Aircraft:	CESSNA 550	Injuries:	7 Minor
Flight Conducted Under:	Part 91: General Aviation - Executive/Corporate		

Analysis

According to postaccident written statements from both pilots, the pilot-in-command (PIC) was the pilot flying and the copilot was the pilot monitoring. As the airplane approached Dare County Regional Airport (MQI), Manteo, North Carolina, the copilot obtained the current weather information. The automated weather system reported wind as 350 degrees at 4 knots, visibility at 1.5 miles in heavy rain, and a broken ceiling at 400 feet. The copilot stated that the weather had deteriorated from the previous reports at MQI. The PIC stated that they would fly one approach to take a look and that, if the airport conditions did not look good, they would divert to another airport. Both pilots indicated in phone interviews that, although they asked the Washington air route traffic control center controller for the global positioning system (GPS) runway 5 approach, they did not expect it due to airspace restrictions. They expected and received a GPS approach to runway 23 to circle-to-land on runway 5. According to the pilots' statements, the airplane was initially fast on approach to runway 23. As a result, the copilot could not deploy approach flaps when the PIC requested because the airspeed was above the flap operating range. The PIC subsequently slowed the airplane, and the copilot extended flaps to the approach setting. The PIC also overshot an intersection but quickly corrected and was on course about 1 mile prior to the initial approach fix. The airplane crossed the final approach fix on speed (V_{ref} was 104) at the appropriate altitude, with the flaps and landing gear extended. The copilot completed the approach and landing checklist items but did not call out items because the PIC preferred that copilots complete checklists quietly.

The PIC then stated that they would not circle-to-land due to the low ceiling. He added that a landing on runway 23 would be suitable because the wind was at a 90-degree angle to the runway, and there was no tailwind factor. Based on the reported weather, a tailwind component of approximately 2 knots existed at the time of the accident, and, in a subsequent statement to the Federal Aviation Administration, the pilot acknowledged there was a tailwind about 20 degrees behind the right wing. The copilot had the runway in sight about 200 feet above the minimum descent altitude, which was 440 feet above the runway. The copilot reported that he mentally prepared for a go around when the PIC stated that the airplane was high about 300 feet above the runway, but neither pilot called for one. The flight crew stated that the airplane touched down at 100 knots between the 1,000-foot marker and the runway intersection-about 1,200 feet beyond the approach end of the 4,305-foot-long runway. The speed brakes, thrust reversers, and brakes were applied immediately after the nose gear touched down and worked properly, but the airplane departed the end of the runway at about 40 knots. According to data extracted from the enhanced ground proximity warning system, the airplane touched down about 1,205 feet beyond the approach end of the 4,305-foot-long wet runway, at a groundspeed of 127 knots.

Data from the airplane manufacturer indicated that, for the estimated landing weight, the airplane required a landing distance of approximately 2,290 feet on a dry runway, 3,550 feet on a wet runway, or 5,625 feet for a runway with 0.125 inch of standing water. The chart also contained a note that the published limiting maximum tailwind component for the airplane is 10 knots but that landings on precipitation-covered runways with any tailwind component are not recommended. The note also

indicates that if a tailwind landing cannot be avoided, the above landing distance data should be multiplied by a factor that increases the wet runway landing distance to 3,798 feet, and the landing distance for .125 inch of standing water to 6,356 feet. All distances in the performance chart are based on flying a normal approach at Vref, assume a touchdown point 840 feet from the runway threshold in no wind conditions, and include distance from the threshold to touchdown.

The PIC's statement about the airplane being high at 300 feet above the runway reportedly prompted the copilot to mentally prepare for a go around, but neither pilot called for one. However, the PIC asked the copilot what he thought, and his reply was "it's up to you." The pilots touched down at an excessive airspeed (23 knots above Vref), more than 1,200 feet down a wet 4,305-foot-long runway, leaving about 3,100 feet for the airplane to stop. According to manufacturer calculations, about 2,710 feet of ground roll would be required after the airplane touched down, assuming a touchdown speed at Vref; a longer ground roll would be required at higher touchdown speeds. Although a 2 knot crosswind component existed at the time of the accident, the airplane's excessive airspeed at touchdown (23 knots above Vref) had a much larger effect on the outcome of the landing.

Flight Events

Landing - Landing area overshoot

Landing - Runway excursion

Landing - Collision during takeoff/land

Probable Cause

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot-in-command's failure to maintain proper airspeed and his failure to initiate a go-around, which resulted in the airplane touching down too fast on a short, wet runway and a subsequent runway overrun. Contributing to the accident was the copilot's failure to adequately monitor the approach and call for a go around and the flight crew's lack of proper crew resource management.

Findings

Aircraft-Aircraft oper/perf/capability-Performance/control parameters-Airspeed-Not attained/maintained - C

Personnel issues-Action/decision-Action-Incorrect action performance-Pilot - C

Personnel issues-Action/decision-Action-Lack of action-Copilot - F

Personnel issues-Task performance-Communication (personnel)-CRM/MRM techniques-Flight crew - F

Environmental issues-Physical environment-Runway/land/takeoff/taxi surfa-Wet-Decision related to condition

Pilot Information

Certificate:	Airline Transport; Commercial	Age:	67
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Instrument Rating(s):	Airplane
Other Aircraft Rating(s):	None	Instructor Rating(s):	Airplane Multi-engine; Airplane Single-engine
Flight Time:	9527 hours (Total, all aircraft), 2025 hours (Total, this make and model), 9400 hours (Pilot In Command, all aircraft), 30 hours (Last 90 days, all aircraft), 18 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

Co-Pilot Information

Certificate:	Flight Instructor; Commercial; Private	Age:	43
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Instrument Rating(s):	Airplane
Other Aircraft Rating(s):	None	Instructor Rating(s):	Airplane Multi-engine; Airplane Single-engine; Instrument Airplane
Flight Time:	3193 hours (Total, all aircraft), 150 hours (Total, this make and model), 2673 hours (Pilot In Command, all aircraft), 57 hours (Last 90 days, all aircraft), 25 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Manufacturer:	CESSNA	Registration:	N262Y
Model/Series:	550 CITATION I	Engines:	2 Turbo Jet
Operator:	Colnan Inc.	Engine Manufacturer:	Pratt & Whitney
Air Carrier Operating Certificate:	None	Engine Model/Series:	JT15D-4
Flight Conducted Under:	Part 91: General Aviation - Executive/Corporate		

Meteorological Information and Flight Plan

Observation Facility, Elevation:	MQI, 13 ft msl	Weather Information Source:	Weather Observation Facility
Conditions at Accident Site:	Instrument Conditions	Lowest Ceiling:	Broken / 400 ft agl
Condition of Light:	Day	Wind Speed/Gusts, Direction:	4 knots, 350°
Temperature:	22°C / 21°C	Visibility	2 Miles
Precipitation and Obscuration:	Heavy - Showers - Rain; Moderate - Partial - Mist		
Departure Point:	Tampa, FL (TPA)	Destination:	Manteo, NC (MQI)

Airport Information

Airport:	Dare County Regional (MQI)	Runway Surface Type:	Asphalt
Runway Used:	23	Runway Surface Condition:	Standing Water; Wet
Runway Length/Width:	4305 ft / 100 ft		

Wreckage and Impact Information

Crew Injuries:	2 Minor	Aircraft Damage:	Substantial
Passenger Injuries:	5 Minor	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None

Administrative Information

Investigator In Charge (IIC):	Ralph L Wilson	Adopted Date:	06/22/2011
Investigation Docket:	http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=77468		

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