



# Aviation Investigation Final Report

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<b>Location:</b>	Nashville, Tennessee	<b>Accident Number:</b>	ERA11LA345
<b>Date &amp; Time:</b>	June 15, 2011, 17:25 Local	<b>Registration:</b>	N129SG
<b>Aircraft:</b>	Cessna 525A	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Landing area overshoot	<b>Injuries:</b>	5 None
<b>Flight Conducted Under:</b>	Part 91: General aviation		

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## Analysis

The pilot-in-command (PIC) was in the left cockpit seat, and a passenger, who possessed a student pilot certificate, was in the right cockpit seat. The PIC was not a certificated flight instructor; however, the student pilot was at the controls for a majority of the flight. During the descent and initial approach, the student pilot allowed the airplane to become high and fast, and the PIC subsequently took over the controls and continued the approach. During the final approach, the ground proximity warning system announced "sink rate" eight times. After touchdown, the antiskid system activated; however, there was insufficient runway remaining on which to stop the airplane. The PIC reported that he neglected to consider the wet runway condition. The airplane overran the runway and struck the instrument landing system antennas before coming to a stop. The PIC reported that there were no mechanical malfunctions or failures during the flight. As a result of the accident, the operator modified its operational procedures to restrict unqualified personnel from the cockpit during flight and initiated a formal risk assessment program.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot-in-command's failure to execute a go-around when the airplane was high and fast on the final approach.

## Findings

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**Personnel issues**

Lack of action - Pilot

**Aircraft**

Descent/approach/glide path - Incorrect use/operation

## Factual Information

### History of Flight

<b>Landing</b>	Landing area overshoot (Defining event)
<b>Landing-landing roll</b>	Runway excursion
<b>Landing-landing roll</b>	Collision during takeoff/land

On June 15, 2011, about 1725 central daylight time, a Cessna 525A, N129SG, was substantially damaged following a runway overrun at John C. Tune Airport (JWN), Nashville, Tennessee. The certificated airline transport pilot and four passengers were not injured. The airplane was registered to and operated by Deer Horn Aviation LTD under the provisions of 14 Code of Federal Regulations Part 91, as a business flight. Visual meteorological conditions prevailed and an instrument flight rules (IFR) flight plan was filed. The flight originated from Artesia Municipal Airport (ATS), Artesia, New Mexico, about 1406 mountain daylight time.

The pilot-in-command (PIC) reported the following. As the airplane was approaching JWN, one of the owners of the airplane, who held a student pilot certificate, was in the right seat and at the controls. Air traffic control vectored the airplane to the final approach course, and the PIC acquired the airport and cancelled the IFR clearance. He informed the student pilot that the airplane was "high and hot" and he needed to "get down and slow down." The student pilot told the PIC that this "landing is yours" and the PIC assumed the controls. He configured the airplane for landing and "started a steep approach." He considered a go-around, but elected to continue the approach. Approaching the runway, the "sink rate" and "pull up" aural warnings activated on the ground proximity warning system (GPWS). He continued with the approach and the airplane touched down about 1,500 feet down the 5,500 foot long runway. The PIC applied the brakes fully, but the airplane continued down the runway. The PIC reported that he could feel the antiskid braking system working, but he neglected to consider the runway condition, which was wet. The airplane overran the runway and struck the instrument landing system antennas. The PIC applied full left rudder to avoid going down an embankment. The airplane came to rest after turning about 180 degrees.

An inspector with the Federal Aviation Administration responded to the accident site and examined the airplane. The left main landing gear was collapsed, and structural damage to the wings was evident. The cockpit voice recorder (CVR) was sent to the NTSB Vehicle Recorders Laboratory for further examination.

A review of the CVR recording revealed the following. The recording began at 1521 as the airplane was in cruise climb to flight level 390. The student pilot was at the controls, receiving guidance and instruction from the PIC. During cruise, the pilots discussed various non-pertinent topics, interspersed with operational instruction related to convective activity along the route, avionics, aircraft operating techniques, and the use of weather radar. During the

descent into JWN, the student pilot noted how fun it was to deviate around thunderstorms while the PIC explained that the nearby storms were of significant intensity. About 1717, air traffic control assigned an altitude of 3,000 feet and the PIC directed the student pilot to start a descent. The PIC advised the student that the winds may be gusty and that he had the student's "back." About 1721, after ATC assigned a 170 degree heading and cleared the aircraft for the instrument landing system (ILS) runway 20 approach, the PIC noted that the localizer was not being received. He then realized that he had entered the incorrect frequency into the radio. The airplane subsequently flew through the localizer course, and ATC issued a vector to re-intercept the course. At 1722, the PIC noted that the airplane was on course, reported that the runway was in sight, and cancelled the IFR flight plan with ATC. At 1723, the PIC noted that the aircraft was "real high," and the student pilot should get the plane down. The student pilot acknowledged, and then asked the PIC if he wanted to take the landing. The PIC responded that he would take the controls. The PIC then advised on the common traffic advisory frequency that the airplane was on a straight-in approach to runway 20 at JWN. At 1724, the GPWS announced "sink rate sink rate," followed by a radio altimeter annunciation of "five hundred." From this point until touchdown, the GPWS repeated "pull up" eight times, as the PIC stated, "Don't worry about it." During the landing roll, the student pilot and the PIC began making animated expressions of concern, commencing at 1724:56 and continuing until the end of the recording.

The PIC reported that he was not a certified flight instructor. He also reported that there were no mechanical malfunctions or failures with the airplane during the accident flight.

JWN was equipped with an Automated Weather Observing System (AWOS); however, at the time of the accident, wind, temperature, and dew point information were not available. The 1711 weather at Nashville International Airport (BNA) located 9 miles east of JWN, included the following: winds from 180 degrees at 6 knots, 6 miles visibility, light rain and thunderstorms, scattered clouds at 4,500 feet, scattered cumulonimbus clouds at 6,000 feet, broken clouds at 11,000 feet, overcast clouds at 25,000 feet, temperature 19 degrees Celsius, dew point 18 degrees Celsius, and altimeter 29.78 inches of mercury. Thunderstorms began at 1701 and rain began at 1701. There was occasional lightning in the area.

As a result of the accident, the operator modified its operational procedures to restrict unqualified personnel from the cockpit during flight. Also, a formal risk assessment program was initiated.

## Pilot Information

<b>Certificate:</b>	Airline transport	<b>Age:</b>	63, Male
<b>Airplane Rating(s):</b>	Multi-engine land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	Helicopter	<b>Restraint Used:</b>	
<b>Instrument Rating(s):</b>	Airplane; Helicopter	<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>	January 20, 2011
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	March 31, 2011
<b>Flight Time:</b>	13488 hours (Total, all aircraft), 670 hours (Total, this make and model), 11099 hours (Pilot In Command, all aircraft), 100 hours (Last 90 days, all aircraft), 28 hours (Last 30 days, all aircraft), 3 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Cessna	<b>Registration:</b>	N129SG
<b>Model/Series:</b>	525A	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	525A0129
<b>Landing Gear Type:</b>	Retractable - Tricycle	<b>Seats:</b>	9
<b>Date/Type of Last Inspection:</b>	December 7, 2010 Continuous airworthiness	<b>Certified Max Gross Wt.:</b>	12375 lbs
<b>Time Since Last Inspection:</b>	116 Hrs	<b>Engines:</b>	2 Turbo fan
<b>Airframe Total Time:</b>	3224 Hrs at time of accident	<b>Engine Manufacturer:</b>	WILLIAMS
<b>ELT:</b>	Installed, not activated	<b>Engine Model/Series:</b>	FJ 44 SERIES
<b>Registered Owner:</b>	DEER HORN AVIATION LTD CO	<b>Rated Power:</b>	2400 Lbs thrust
<b>Operator:</b>	DEER HORN AVIATION LTD CO	<b>Operating Certificate(s) Held:</b>	None

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Instrument (IMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	BNA,599 ft msl	<b>Distance from Accident Site:</b>	11 Nautical Miles
<b>Observation Time:</b>	17:11 Local	<b>Direction from Accident Site:</b>	90°
<b>Lowest Cloud Condition:</b>	Scattered / 4500 ft AGL	<b>Visibility</b>	6 miles
<b>Lowest Ceiling:</b>	Broken / 11000 ft AGL	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	6 knots /	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	180°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	29.78 inches Hg	<b>Temperature/Dew Point:</b>	19°C / 18°C
<b>Precipitation and Obscuration:</b>	Light - None - Rain		
<b>Departure Point:</b>	Artesia, NM (ATS )	<b>Type of Flight Plan Filed:</b>	IFR
<b>Destination:</b>	Nashville, TN (JWN )	<b>Type of Clearance:</b>	IFR
<b>Departure Time:</b>	14:06 Local	<b>Type of Airspace:</b>	

## Airport Information

<b>Airport:</b>	John C. Tune JWN	<b>Runway Surface Type:</b>	Asphalt
<b>Airport Elevation:</b>	495 ft msl	<b>Runway Surface Condition:</b>	Wet
<b>Runway Used:</b>	20	<b>IFR Approach:</b>	Visual
<b>Runway Length/Width:</b>	5500 ft / 150 ft	<b>VFR Approach/Landing:</b>	Full stop

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 None	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>	4 None	<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	5 None	<b>Latitude, Longitude:</b>	36.17361,-86.889167(est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Hicks, Ralph
<b>Additional Participating Persons:</b>	David Alderman; FAA/FSDO; Nashville, TN
<b>Original Publish Date:</b>	January 17, 2012
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class</a>
<b>Note:</b>	
<b>Investigation Docket:</b>	<a href="https://data.nts.gov/Docket?ProjectID=80792">https://data.nts.gov/Docket?ProjectID=80792</a>

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