



# Aviation Investigation Final Report

<b>Location:</b>	Austin, Texas	<b>Accident Number:</b>	CEN13LA170
<b>Date &amp; Time:</b>	February 16, 2013, 21:45 Local	<b>Registration:</b>	N4426C
<b>Aircraft:</b>	Cessna 195	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Sys/Comp malf/fail (non-power)	<b>Injuries:</b>	2 None
<b>Flight Conducted Under:</b>	Part 91: General aviation - Personal		

## Analysis

The pilot reported that, as the airplane approached the end of the unlit taxiway, adjacent to the runway threshold, the right wing landing light failed, significantly reducing his forward visibility in the dark night conditions. The pilot cycled the right wing landing light switch as he applied wheel brakes; however, the light did not illuminate. The pilot stated that he was unable to stop the airplane before it departed the end of the taxiway and traveled down an embankment. The airplane overran the end of the taxiway despite the pilot's immediate application of brakes after the failure of the landing light, which is consistent with the pilot's use of an excessive taxi speed. Although the pilot did not recall seeing any reflective markers identifying the end of the taxiway, the end of the taxiway was identified by ground-level red reflectors, and the taxiway edges were identified by evenly spaced blue reflective posts. In response to the accident, the airport authority agreed to purchase additional blue reflective posts to more adequately mark the limits of the unlit taxiway. Additionally, the Federal Aviation Administration agreed to amend its Airport Facility Directory to reflect that the taxiway edges were marked by reflector posts and that the northwest end of runway 13-31 and parallel taxiway had a 16-foot descending embankment beginning at the end of the pavement.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's use of an excessive taxi speed, which resulted in the airplane overrunning the end of the unlit taxiway after the failure of the right wing landing light.

## Findings

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<b>Aircraft</b>	Exterior lighting - Failure
<b>Aircraft</b>	Surface speed/braking - Incorrect use/operation
<b>Personnel issues</b>	Aircraft control - Pilot
<b>Environmental issues</b>	Taxiway lighting - Effect on operation

## Factual Information

### History of Flight

Taxi-to runway	Sys/Comp malf/fail (non-power) (Defining event)
Taxi-to runway	Ground collision
Taxi-to runway	Landing gear collapse

On February 16, 2013, about 2145 central standard time, a Cessna model 195 airplane, N4426C, was substantially damaged while taxiing at the Austin Executive Airport (EDC), Austin, Texas. The private pilot and passenger were not injured. The airplane was registered to and operated by the pilot, under the provisions of 14 Code of Federal Regulations Part 91, without a flight plan. Night visual meteorological conditions prevailed for the personal flight. The flight had the intended destination of Gillespie County Airport (T82), Fredericksburg, Texas.

The pilot reported that the accident occurred as he was taxiing on the unlit taxiway that paralleled runway 13-31. As the airplane approached the end of the taxiway, adjacent to the runway 13 threshold, the right wing landing light became inoperable, significantly reducing the pilot's forward visibility in the dark night conditions. The pilot cycled the right wing landing light switch as he applied wheel brakes; however, the light did not illuminate. The pilot stated that he was unable to stop the airplane before it departed the end of the taxiway and traveled down an embankment. He did not recall seeing any reflective markers identifying the end of the taxiway. Although the airplane was equipped with two landing lights, one on each wing, the pilot reported that he avoided using both lights simultaneously during taxi operations because such use rapidly depletes the battery charge at the lower engine power settings required to taxi.

According to information provided by the EDC airport manager, the unlit taxiway that serviced runway 13-31 was marked with blue reflective posts that were 24-inches tall. These blue reflective posts were spaced at 31-foot intervals along the taxiway edges only. The end of the taxiway was identified by red reflectors that were installed at ground level. Additionally, an airport survey plot indicated that there was a 16-foot descending embankment, specified to have a 3:1 graded slope, located immediately adjacent to the northwest end of the taxiway and the runway 13 threshold. The use of reflective posts to identify the taxiway and the descending embankment were not identified in the Federal Aviation Administration (FAA) Airport Facility Directory.

According to the FAA Airplane Flying Handbook, the requirements for safe taxi operations include the ability to recognize potential hazards in time to avoid them, as well as the ability to stop or turn where and when desired. The handbook further stipulates that taxi speeds should be slow enough that the airplane can be stopped promptly and "without undue reliance on the brakes."

At 2155, the airport's automated surface observing system reported: wind 210 degrees true at 4 knots, visibility 10 miles, sky clear, temperature 8 degrees Celsius, dew point -3 degrees Celsius, and an altimeter setting 30.24 inches of mercury.

The United States Naval Observatory reported that sunset and end of civil twilight at the airport on the night of the accident occurred at 1820 and 1844, respectively. At 2145, the waxing crescent moon was visible to the west of airport, located about 36 degrees above the horizon, with about 44 percent of the moon's visible disk illuminated. The moonset occurred about 3 hours after the accident at 0046.

In response to the accident, the airport authority agreed to purchase additional blue reflective posts to more adequately mark the limits of the unlit taxiway. Additionally, the FAA agreed to amend its Airport Facility Directory to reflect that the taxiway edges were marked by reflector posts and that the northwest end of runway 13-31 and parallel taxiway had a 16-foot descending embankment beginning at the end of the pavement.

### Pilot Information

<b>Certificate:</b>	Private	<b>Age:</b>	58
<b>Airplane Rating(s):</b>	Single-engine land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	3-point
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 3 With waivers/limitations	<b>Last FAA Medical Exam:</b>	February 1, 2012
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	June 19, 2012
<b>Flight Time:</b>	1469 hours (Total, all aircraft), 377 hours (Total, this make and model), 1334 hours (Pilot In Command, all aircraft), 59 hours (Last 90 days, all aircraft), 21 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Cessna	<b>Registration:</b>	N4426C
<b>Model/Series:</b>	195	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>		<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	16011
<b>Landing Gear Type:</b>	Tailwheel	<b>Seats:</b>	5
<b>Date/Type of Last Inspection:</b>	May 5, 2012 Annual	<b>Certified Max Gross Wt.:</b>	3350 lbs
<b>Time Since Last Inspection:</b>		<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	3539 Hrs as of last inspection	<b>Engine Manufacturer:</b>	Jacobs
<b>ELT:</b>	Installed, not activated	<b>Engine Model/Series:</b>	R755-A2
<b>Registered Owner:</b>	On file	<b>Rated Power:</b>	300 Horsepower
<b>Operator:</b>	On file	<b>Operating Certificate(s) Held:</b>	None

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Night/dark
<b>Observation Facility, Elevation:</b>	EDC,620 ft msl	<b>Distance from Accident Site:</b>	0 Nautical Miles
<b>Observation Time:</b>	21:55 Local	<b>Direction from Accident Site:</b>	
<b>Lowest Cloud Condition:</b>	Clear	<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>	None	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	4 knots /	<b>Turbulence Type Forecast/Actual:</b>	/ Unknown
<b>Wind Direction:</b>	210°	<b>Turbulence Severity Forecast/Actual:</b>	/ Unknown
<b>Altimeter Setting:</b>	30.23 inches Hg	<b>Temperature/Dew Point:</b>	8°C / -3°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	Austin, TX (EDC )	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>	Fredericksburg, TX (T82 )	<b>Type of Clearance:</b>	None
<b>Departure Time:</b>	21:45 Local	<b>Type of Airspace:</b>	Class G

## Airport Information

<b>Airport:</b>	Austin Executive Airport EDC	<b>Runway Surface Type:</b>	
<b>Airport Elevation:</b>	620 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>	1 None	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>	1 None	<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>	30.397499,-97.56639(est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Fox, Andrew
<b>Additional Participating Persons:</b>	Carlos F Gallardo; Federal Aviation Administration, San Antonio FSDO; San Antonio, TX
<b>Original Publish Date:</b>	January 30, 2014
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class</a>
<b>Note:</b>	
<b>Investigation Docket:</b>	<a href="https://data.ntsb.gov/Docket?ProjectID=86266">https://data.ntsb.gov/Docket?ProjectID=86266</a>

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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](#).