



# Aviation Investigation Final Report

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<b>Location:</b>	MIDLOTHIAN, Texas	<b>Accident Number:</b>	GAA15CA242
<b>Date &amp; Time:</b>	August 29, 2015, 13:20 Local	<b>Registration:</b>	N5255G
<b>Aircraft:</b>	Cessna 305A	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Loss of control on ground	<b>Injuries:</b>	1 None
<b>Flight Conducted Under:</b>	Part 91: General aviation - Glider tow		

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## Analysis

The pilot reported that after a simulated rope break maneuver while towing a glider, he maneuvered to the runway and landed "normal". The pilot reported that during the landing roll the airplane "yawed" to the left; he applied right rudder inputs to correct the yaw, but it was ineffective. The pilot reported that he "quickly applied right brake", but "felt no brake pressure in the pedal". He "pressed the brake pedal 4-5 times as the aircraft continued to yaw", subsequently the airplane ground looped to the left.

The airplane sustained substantial damage to the right wing and the fuselage.

The pilot reported that when he applied the right brake he "heard the pedal click against something behind it, creating a metallic sound."

A post-accident examination of the right brake system components revealed, that the brake disc was within limits, and brake pads were within limits. The aluminum hydraulic brake line tube which is lead along the aft edge of the gear leg from the brake caliper toward the master cylinder was broken about halfway down the gear leg, under the retaining bracket. The retaining bracket was canted and the brake line and rubber padding had been secured with a zip tie. There were no signs of impact damage at the break.

In a statement from the airplane's type certificate holder to the National Transportation Safety Board (NTSB) investigator-in-charge (IIC) dated October 14, the holder reported that at the point where the zip tie had been installed, the brake line was supposed to be held in place by a green bracket, with the small section of rubber tube protecting the line from direct contact with the other metal parts. The green bracket should be positioned perpendicular to the aft contour line of the gear leg.

It is likely that the canted bracket and zip tie created a pinch point on the flexing gear leg and resulted in the failure of the brake line.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The failure of the brake line tubing for the right main landing gear brake, due to a non-standard method used to secure the brake line, which resulted in a loss of control during landing, and a ground loop.

### Findings

<b>Aircraft</b>	Landing gear brakes system - Failure
<b>Aircraft</b>	Directional control - Attain/maintain not possible
<b>Personnel issues</b>	Modification/alteration - Maintenance personnel

## Factual Information

### History of Flight

<b>Prior to flight</b>	Aircraft maintenance event
<b>Landing-landing roll</b>	Miscellaneous/other
<b>Landing-landing roll</b>	Loss of control on ground (Defining event)
<b>Landing-landing roll</b>	Collision with terr/obj (non-CFIT)

### Pilot Information

<b>Certificate:</b>	Commercial	<b>Age:</b>	24
<b>Airplane Rating(s):</b>	Single-engine land	<b>Seat Occupied:</b>	Front
<b>Other Aircraft Rating(s):</b>	Glider	<b>Restraint Used:</b>	4-point
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	Airplane single-engine	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 1 Without waivers/limitations	<b>Last FAA Medical Exam:</b>	September 14, 2014
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	July 17, 2015
<b>Flight Time:</b>	(Estimated) 2300 hours (Total, all aircraft), 130 hours (Total, this make and model), 1415 hours (Pilot In Command, all aircraft), 157 hours (Last 90 days, all aircraft), 63 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Cessna	<b>Registration:</b>	N5255G
<b>Model/Series:</b>	305A A	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>	1951	<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Utility	<b>Serial Number:</b>	22655
<b>Landing Gear Type:</b>	Tailwheel	<b>Seats:</b>	2
<b>Date/Type of Last Inspection:</b>	Annual	<b>Certified Max Gross Wt.:</b>	2101 lbs
<b>Time Since Last Inspection:</b>		<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>		<b>Engine Manufacturer:</b>	CONT MOTOR
<b>ELT:</b>	Installed, not activated	<b>Engine Model/Series:</b>	O-470
<b>Registered Owner:</b>	SETIAN PETER	<b>Rated Power:</b>	213 Horsepower
<b>Operator:</b>	SETIAN PETER	<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>	Day
<b>Observation Facility, Elevation:</b>	KJWY,749 ft msl	<b>Distance from Accident Site:</b>	0 Nautical Miles
<b>Observation Time:</b>	20:15 Local	<b>Direction from Accident Site:</b>	188°
<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>	8 knots /	<b>Turbulence Type Forecast/Actual:</b>	/ None
<b>Wind Direction:</b>	170°	<b>Turbulence Severity Forecast/Actual:</b>	/ N/A
<b>Altimeter Setting:</b>	29.98 inches Hg	<b>Temperature/Dew Point:</b>	33°C / 18°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	MIDLOTHIAN, TX (JWY)	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>	MIDLOTHIAN, TX (JWY)	<b>Type of Clearance:</b>	None
<b>Departure Time:</b>	13:15 Local	<b>Type of Airspace:</b>	Class G

## Airport Information

<b>Airport:</b>	MID-WAY RGNL JWY	<b>Runway Surface Type:</b>	Grass/turf
<b>Airport Elevation:</b>	727 ft msl	<b>Runway Surface Condition:</b>	Dry
<b>Runway Used:</b>	36	<b>IFR Approach:</b>	None
<b>Runway Length/Width:</b>	6500 ft / 100 ft	<b>VFR Approach/Landing:</b>	Full stop;Straight-in

## Wreckage and Impact Information

<b>Crew Injuries:</b>	1 None	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>		<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	1 None	<b>Latitude, Longitude:</b>	32.458889,-96.912498(est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Vanover, Jackie
<b>Additional Participating Persons:</b>	Morris McAllister; FAA; Irving, TX
<b>Original Publish Date:</b>	November 5, 2015
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class</a>
<b>Note:</b>	This accident report documents the factual circumstances of this accident as described to the NTSB.
<b>Investigation Docket:</b>	<a href="https://data.nts.gov/Docket?ProjectID=91890">https://data.nts.gov/Docket?ProjectID=91890</a>

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