



AVIATION



HIGHWAY



MARINE



RAILROAD



PIPELINE

# Aviation Investigation Final Report

<b>Location:</b>	Buffalo, Oklahoma	<b>Accident Number:</b>	CEN17LA235
<b>Date &amp; Time:</b>	June 17, 2017, 09:45 Local	<b>Registration:</b>	N6196B
<b>Aircraft:</b>	Cessna 182A	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Part(s) separation from AC	<b>Injuries:</b>	3 None
<b>Flight Conducted Under:</b>	Part 91: General aviation - Personal		

## Analysis

The private pilot stated that the airplane touched down about halfway down the turf runway and that the landing was normal until the nosewheel touched down, when he heard a loud noise from the nose landing gear area. The airplane nosed over on the runway and came to rest inverted. Markings in the turf showed 3 tire tracks consistent with all three landing gear. The center tire mark transitioned into two parallel tracks consistent with the nose gear fork dragging through the grass. About 20 ft later, there was a single track in the runway with about six perpendicular propeller slash marks through the track, consistent with the nose gear strut collapsing and the rotating propeller striking the ground as the airplane continued forward. The nose wheel axle tube was found near the end of the slash marks. The single track continued to the main wreckage.

A postaccident examination of the airplane revealed that the nose wheel had separated from the nose gear fork, and the fork separated from the strut. A grease seal ring from the nose wheel assembly and a portion of the nose wheel axle tube were found in the debris path. The nose wheel axle bolt was not recovered.

The available evidence is consistent with the nose wheel axle bolt separating from the wheel, which resulted in separation of the nosewheel. The nose wheel axle bolt was not found during the investigation; therefore, the reason for its separation could not be determined.

## Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

The separation of the nose wheel axle bolt and the nose wheel during the landing roll for reasons that could not be determined because the bolt was not recovered.

## Findings

<b>Aircraft</b>	Nose/tail gear strut/axle - Malfunction
<b>Not determined</b>	(general) - Unknown/Not determined

# Factual Information

## History of Flight

Landing-landing roll	Landing gear collapse
Landing-landing roll	Nose over/nose down
Landing-landing roll	Part(s) separation from AC (Defining event)

On June 17, 2017, about 0945 central daylight time, a Cessna 182A, N6196B, nosed over after landing on turf runway 17 at Mike's Place Airport (96OK), Buffalo, Oklahoma. The two pilots and one passenger were not injured. The airplane sustained substantial damage. The airplane was registered to and operated by a private individual under the provisions of *14 Code of Federal Regulations* Part 91 as a personal flight. Visual meteorological conditions prevailed at the time of the accident and no flight plan had been filed. The flight departed Alva Regional Airport (AVK), Alva, Oklahoma, about 0915 and was destined for 96OK.

The pilot reported that the airplane touched down about midfield and the landing was normal until the nose wheel touched down. He heard a loud noise from the nose landing gear area. The airplane nosed over on the runway and came to rest inverted (figure 1).



Figure 1 – Accident site

The landing path consisted of three parallel tire marks on the grass runway. A grease seal ring from the nose wheel assembly was found next to the center tire mark. The center tire mark transitioned into two parallel tracks in the grass; the tracks were about 1 ft wide and extended for about 8 ft in a straight line. About 20 ft later, there was a single track in the runway with about 6 perpendicular slash marks through



the track. The nose wheel axle tube was found near the end of the slash marks. The single track continued to the main wreckage.

The responding Federal Aviation Administration (FAA) inspector stated that the airplane sustained substantial damage to both wings, the fuselage, and the vertical stabilizer. The nose wheel was separated from the nose gear fork and the fork separated from the strut. A grease seal ring from the nose wheel assembly and a portion of the nose wheel axle tube were found in the debris path. The nose wheel axle bolt (figure 2) had separated and was not found. There were no preaccident anomalies noted with the recovered components.

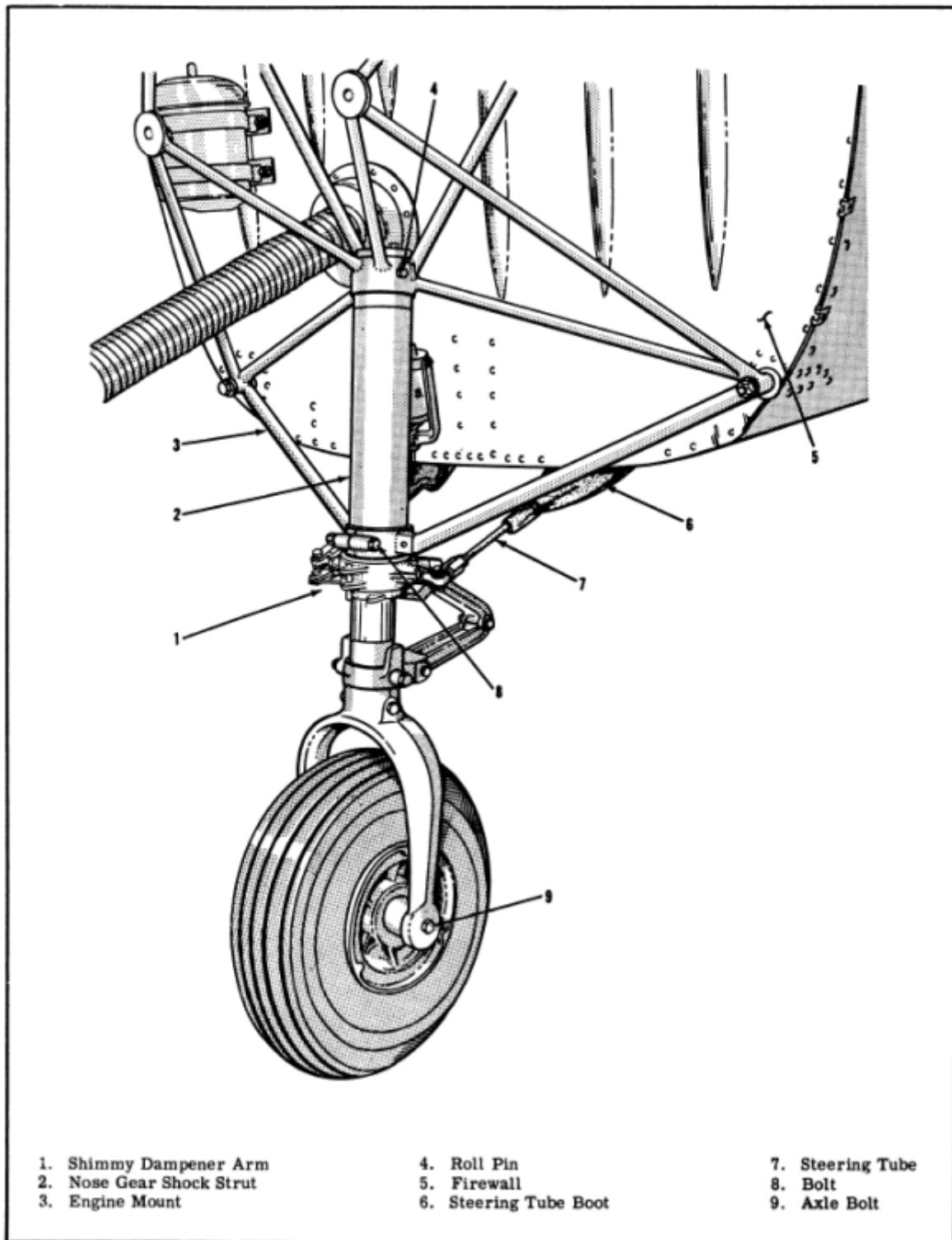


Figure 2 – Nose landing gear depiction

A review of the maintenance logbooks revealed that during the most recent annual inspection on April 8, 2017, the wheel bearings were packed. No other recent maintenance had been completed on the landing gear system.

### Co-pilot Information

<b>Certificate:</b>	Private	<b>Age:</b>	62,Male
<b>Airplane Rating(s):</b>	Single-engine land	<b>Seat Occupied:</b>	Right
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	4-point
<b>Instrument Rating(s):</b>	None	<b>Second Pilot Present:</b>	Yes
<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>	September 14, 2016
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	March 19, 2016
<b>Flight Time:</b>	642 hours (Total, all aircraft), 170 hours (Total, this make and model), 620 hours (Pilot In Command, all aircraft), 13 hours (Last 90 days, all aircraft), 5 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

### Pilot Information

<b>Certificate:</b>	Private	<b>Age:</b>	62,Male
<b>Airplane Rating(s):</b>	Single-engine land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	4-point
<b>Instrument Rating(s):</b>	None	<b>Second Pilot Present:</b>	Yes
<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>	January 8, 2016
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	February 6, 2016
<b>Flight Time:</b>	319 hours (Total, all aircraft), 12 hours (Total, this make and model), 167 hours (Pilot In Command, all aircraft), 25 hours (Last 90 days, all aircraft), 18 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

## Passenger Information

<b>Certificate:</b>		<b>Age:</b>	Female
<b>Airplane Rating(s):</b>		<b>Seat Occupied:</b>	Right
<b>Other Aircraft Rating(s):</b>		<b>Restraint Used:</b>	Lap only
<b>Instrument Rating(s):</b>		<b>Second Pilot Present:</b>	Yes
<b>Instructor Rating(s):</b>		<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>		<b>Last FAA Medical Exam:</b>	
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>			

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Cessna	<b>Registration:</b>	N6196B
<b>Model/Series:</b>	182A	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>	1957	<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	34196
<b>Landing Gear Type:</b>	Tricycle	<b>Seats:</b>	4
<b>Date/Type of Last Inspection:</b>	April 8, 2017 100 hour	<b>Certified Max Gross Wt.:</b>	2348 lbs
<b>Time Since Last Inspection:</b>	17.7 Hrs	<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	6827.3 Hrs at time of accident	<b>Engine Manufacturer:</b>	Continental Motors
<b>ELT:</b>	C91A installed, not activated	<b>Engine Model/Series:</b>	O-470-L
<b>Registered Owner:</b>		<b>Rated Power:</b>	230 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>	Day
<b>Observation Facility, Elevation:</b>	KWWR,2188 ft msl	<b>Distance from Accident Site:</b>	25 Nautical Miles
<b>Observation Time:</b>	09:35 Local	<b>Direction from Accident Site:</b>	187°
<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>	9 knots /	<b>Turbulence Type Forecast/Actual:</b>	/
<b>Wind Direction:</b>	210°	<b>Turbulence Severity Forecast/Actual:</b>	/
<b>Altimeter Setting:</b>	29.7 inches Hg	<b>Temperature/Dew Point:</b>	28°C / 18°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	ALVA, OK (AVK )	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>	Buffalo, OK (96OK)	<b>Type of Clearance:</b>	None
<b>Departure Time:</b>	09:15 Local	<b>Type of Airspace:</b>	Class G

## Airport Information

<b>Airport:</b>	MIKE'S PLACE 96OK	<b>Runway Surface Type:</b>	Grass/turf
<b>Airport Elevation:</b>	1787 ft msl	<b>Runway Surface Condition:</b>	Dry
<b>Runway Used:</b>	17	<b>IFR Approach:</b>	None
<b>Runway Length/Width:</b>	4000 ft / 35 ft	<b>VFR Approach/Landing:</b>	Full stop;Traffic pattern

## Wreckage and Impact Information

<b>Crew Injuries:</b>	2 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>	3 None	<b>Latitude, Longitude:</b>	36.847499,-99.457496(est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Lindberg, Joshua
<b>Additional Participating Persons:</b>	Julie Orrick; Federal Aviation Administration; Oklahoma City, OK
<b>Original Publish Date:</b>	July 5, 2018
<b>Note:</b>	The NTSB did not travel to the scene of this accident.
<b>Investigation Docket:</b>	<a href="https://data.nts.gov/Docket?ProjectID=95395">https://data.nts.gov/Docket?ProjectID=95395</a>

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The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).