



# National Transportation Safety Board Aviation Accident Final Report

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<b>Location:</b>	Cheyenne, WY	<b>Accident Number:</b>	CEN16LA256
<b>Date &amp; Time:</b>	07/07/2016, 1155 MDT	<b>Registration:</b>	N26908
<b>Aircraft:</b>	GULFSTREAM AMERICAN CORP AA 5	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Windshear or thunderstorm	<b>Injuries:</b>	2 None
<b>Flight Conducted Under:</b>	Part 91: General Aviation - Instructional		

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## Analysis

The flight instructor and student pilot were departing on an instructional cross-country flight when, just after takeoff, the airplane encountered wind and turbulence. The instructor had difficulty maintaining altitude and elected to perform an off-airport precautionary landing, during which the right wing sustained substantial damage. A weather study revealed conditions conducive to low-level wind shear and turbulence at the accident site at the time of the accident. Although the instructor had received an abbreviated weather briefing before departure, the briefing did not advise of the potential for low-level wind shear. It is likely that the encounter with wind shear during departure made it difficult for the airplane to maintain altitude.

## Probable Cause and Findings

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

The airplane's encounter with low-level wind shear during takeoff, which resulted in an off-airport landing.

## Findings

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<b>Aircraft</b>	Climb capability - Capability exceeded (Cause)
<b>Environmental issues</b>	Windshear - Ability to respond/compensate (Cause)

## Factual Information

On July 7, 2016, about 1155 mountain daylight time, a Gulfstream American CORP AA-5A airplane, N26908, was substantially damaged during a forced landing after departing Cheyenne Regional Airport/Jerry Olson Field (KCYS), Cheyenne, Wyoming. The flight instructor and student pilot were not injured. The instructional flight was conducted under the provisions of 14 Code of Federal Regulations Part 91. Visual meteorological conditions prevailed and a visual flight rules flight plan had been filed for the flight. The flight was originating at the time of the accident and was en route to Eppley Airfield (KOMA), Omaha, Nebraska.

The flight instructor stated that the takeoff was normal; however, at the departure end of the runway, between 300 and 400 feet above the ground, "the wind started blowing from all directions" and he had difficulty maintaining control of the airplane. The flight instructor had difficulty maintaining altitude and elected to land the airplane on the road next to a school. During the landing roll, the flight instructor maneuvered the airplane to avoid hitting construction workers directly ahead of him. The right wing hit a construction sign and was substantially damaged. The pilot stated that there were no mechanical anomalies with the airplane or engine at the time of the accident.

A weather study was conducted by a meteorologist with the National Transportation Safety Board. The National Weather Service charts depicted a low pressure system over southeast Wyoming and a mid-level trough just west of the accident site. Winds at the 700-hPa level were westerly around 10 knots, whereas winds at the 500-hPa level increased to 60 knots. There were no AIRMETS, SIGMETs, or center weather advisories valid for the accident site at the time of the accident. One PIREP in the area reported moderate "chop" between 6,500 feet and 8,500 feet mean sea level. The terminal aerodrome forecast valid at the time of the accident forecast winds from 300° at 12 knots gusting to 20 knots.

Cheyenne Regional Airport had the closest official weather station to the accident site, 2 miles south-southeast of the accident location. The observation taken at 1153 reported wind 090° at 9 knots, and clear skies. The observation taken at 1208, after the accident, reported wind from 090° at 7 knots. The closest non-official surface observation site (5 miles west of the accident site) reported wind from 274° with gusts to 19 knots at 1215. Weather service radar depicted a dry-line boundary at the accident site, at the time of the accident. Wind speed and direction changed with altitude associated with this dry-line boundary and would have had a corresponding increase in low-level turbulence and low-level wind shear.

A search of official weather briefing sources revealed that the flight instructor contacted Lockheed Martin Flight Service at 0853 on the morning of the accident and received an abbreviated briefing for the flight from Rock Springs, Wyoming, to Cheyenne, Wyoming. There was no record of the flight instructor receiving or retrieving any additional weather information before the accident flight.

## History of Flight

Initial climb	Windshear or thunderstorm (Defining event)
Landing-landing roll	Collision with terr/obj (non-CFIT)

## Flight Instructor Information

<b>Certificate:</b>	Flight Instructor; Commercial; Flight Engineer	<b>Age:</b>	62, Male
<b>Airplane Rating(s):</b>	Multi-engine Land; Single-engine Land	<b>Seat Occupied:</b>	Right
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	3-point
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	Yes
<b>Instructor Rating(s):</b>	Airplane Multi-engine; Airplane Single-engine	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 2 With Waivers/Limitations	<b>Last FAA Medical Exam:</b>	03/02/2016
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	07/04/2014
<b>Flight Time:</b>	17786 hours (Total, all aircraft), 123 hours (Total, this make and model), 9555 hours (Pilot In Command, all aircraft), 120 hours (Last 90 days, all aircraft), 27 hours (Last 30 days, all aircraft), 8 hours (Last 24 hours, all aircraft)		

## Student Pilot Information

<b>Certificate:</b>	None	<b>Age:</b>	16, Male
<b>Airplane Rating(s):</b>	None	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	3-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>	None None	<b>Last FAA Medical Exam:</b>	
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	8 hours (Total, all aircraft), 8 hours (Total, this make and model), 0 hours (Pilot In Command, all aircraft), 8 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information

Aircraft Make:	GULFSTREAM AMERICAN CORP	Registration:	N26908
Model/Series:	AA 5 A	Aircraft Category:	Airplane
Year of Manufacture:	1979	Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	AA5A0805
Landing Gear Type:	Retractable - Tricycle	Seats:	4
Date/Type of Last Inspection:	04/07/2016, Annual	Certified Max Gross Wt.:	2200 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	2710 Hours as of last inspection	Engine Manufacturer:	LYCOMING
ELT:	C126 installed, not activated	Engine Model/Series:	0-320 E2G
Registered Owner:	Tomorrows Aeronautical Museum	Rated Power:	150 hp
Operator:	Tomorrows Aeronautical Museum	Operating Certificate(s) Held:	None

## Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	CYS, 6160 ft msl	Distance from Accident Site:	2 Nautical Miles
Observation Time:	1153 MDT	Direction from Accident Site:	135°
Lowest Cloud Condition:	Clear	Visibility	10 Miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	9 knots /	Turbulence Type Forecast/Actual:	/ None
Wind Direction:	90°	Turbulence Severity Forecast/Actual:	/ N/A
Altimeter Setting:	30.1 inches Hg	Temperature/Dew Point:	26° C / 4° C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Cheyenne, WY (CYS)	Type of Flight Plan Filed:	None
Destination:	Chicago, IL (MDW)	Type of Clearance:	VFR
Departure Time:	1152 MDT	Type of Airspace:	Class D

## Wreckage and Impact Information

Crew Injuries:	2 None	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 None	Latitude, Longitude:	41.159444, -104.817500 (est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Jennifer Rodi	<b>Report Date:</b>	06/20/2017
<b>Additional Participating Persons:</b>	Phillip Potter; Federal Aviation Administration; Denver, CO		
<b>Publish Date:</b>	06/20/2017		
<b>Note:</b>	The NTSB did not travel to the scene of this accident.		
<b>Investigation Docket:</b>	<a href="http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=93563">http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=93563</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](#).