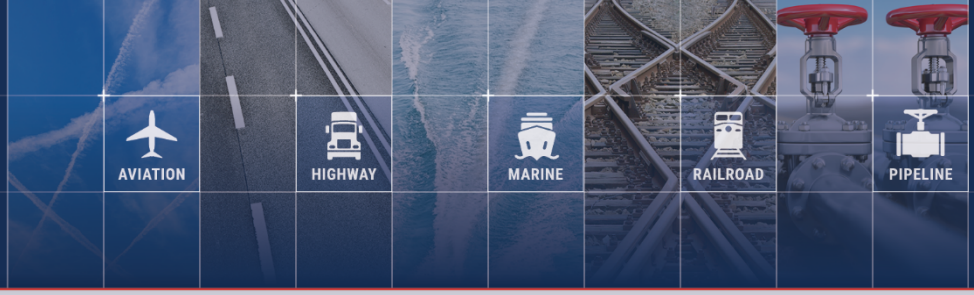

Aviation Investigation Final Report

Location:	Burlington, Wisconsin	**Accident Number:**	CEN13FA060
Date & Time:	November 18, 2012, 13:20 Local	**Registration:**	N6273L
Aircraft:	GRUMMAN AMERICAN AVN. CORP. AA-1B	**Aircraft Damage:**	Substantial
Defining Event:	Aerodynamic stall/spin	**Injuries:**	2 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

A witness observed the airplane maneuvering near the airport in a left turn and steep descent. Moments later, the witness observed the airplane in a tight, right turn that developed into a spin. The airplane impacted the terrain in an extremely nose-low attitude about 1/4 mile from the runway's threshold. An examination of the airplane's wreckage revealed no evidence of mechanical malfunctions or failures that would have precluded normal operation. The circumstances of the accident are consistent with an inadvertent stall and spin. It could not be determined if the pilot was maneuvering the airplane due to a perceived traffic conflict or for some other purpose. The pilot had not flown routinely in the preceding 2 years, and his most recent flight occurred more than 5 months before the accident flight.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's failure to maintain control of the airplane while maneuvering at a low altitude, which resulted in an inadvertent stall and spin.

Findings

Aircraft	Airspeed - Not attained/maintained
Personnel issues	Aircraft control - Pilot
Personnel issues	Recent experience - Pilot

Factual Information

History of Flight

Maneuvering-low-alt flying	Aerodynamic stall/spin (Defining event)
Uncontrolled descent	Collision with terr/obj (non-CFIT)

HISTORY OF FLIGHT

On November 18, 2012, about 1320 central standard time, a Grumman American Aviation Corporation AA-1B airplane, N6273L, impacted terrain near Burlington, Wisconsin. The private pilot and passenger were fatally injured. The airplane was substantially damaged. 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 for the flight, which operated without a flight plan. The local flight originated from the Burlington Municipal Airport (KBUU), Burlington, Wisconsin, at an undetermined time.

An eyewitness to the accident, who was flying in the traffic pattern for runway 19, saw the accident airplane flying towards the airport from the southwest consistent with an attempt to land on runway 11. About that time, the pilot of another airplane reported on the common traffic advisory frequency (CTAF) that it was departing the airport on runway 29. The witness visually located both airplanes and did not perceive an imminent collision hazard. The accident airplane appeared to be in a steep descent with a slight left turn. A few moments later, the witness saw the airplane in a tight, right turn that developed into a spin. The airplane rapidly descended towards the terrain.

The pilot of the airplane that departed runway 29, reported that he was unaware of the accident airplane's location during his departure. He did not see the accident airplane or hear any radio calls during his takeoff or departure.

PERSONNEL INFORMATION

The pilot, age 50, held a private pilot certificate with a rating for single-engine land. On July 12, 2012, the pilot received a Special Restriction third class medical certificate with the restriction that it was not valid for any class after July 31, 2013, due to the pilot's treatment of psoriatic arthritis. On his medical application, the pilot had reported 290 total hours, with 7 hours in the preceding six months.

The pilot's log book was recovered from the accident airplane. The most recent log book entry was May 30, 2012, when the pilot logged four landings and 1.2 hours of flight time. There was no record of the pilot flying in the preceding 5 months. According to logbook entries, the pilot had flown five flights during 2010 (for a total of 5 hours) and four flights during 2011 (for a

total of 4.8 hours). The pilot had logged the following flights prior to the accident:

July 10, 2011, 1.5 hours
October 10, 2011, 1 hour
April 23, 2012, 1.5 hours (biennial flight review)
May 30, 2012, 1.2 hours

Not including the accident flight, the pilot had logged 290.4 hours of total time, with a majority of that time in the accident airplane.

AIRCRAFT INFORMATION

The single-engine, low wing, fixed landing gear airplane was manufactured in 1972. It was powered by a 115-horsepower Lycoming O-235-C2C engine driving a two-blade, metal, McCauley 1AI05 SCM 7154 propeller. It was registered with the Federal Aviation Administration (FAA) on a standard airworthiness certificate under both the normal and utility categories. The airplane's log books recorded an annual inspection on September 14, 2012, at a tachometer time of 2,060 hours, total airframe time of 2,303 hours, and 2,329 hours since the engine's last major overhaul. On the airframe's annual inspection entry, contained the note: "Advised owner that ELT batt[ery] was overdue."

METEOROLOGICAL INFORMATION

At 1315, an automated weather reporting facility located at KBUU, reported wind from 170 degrees at 8 knots, variable winds from 150 to 210 degrees, visibility 10 miles, a clear sky, temperature 54 degrees Fahrenheit (F), dew point 34 F, and a barometric pressure of 30.35 inches of mercury.

AIRPORT INFORMATION

The Burlington Municipal Airport is a publicly-owned airport located near Burlington, Wisconsin. It is a non-towered airport with a CTAF. It has two runways, an asphalt runway aligned with 11/29 and a turf runway aligned with 1/19.

The prevailing wind favored takeoffs and landings on runways 19 and 11.

WRECKAGE AND IMPACT INFORMATION

The accident site, which was located in a muddy, cultivated field about 1/4 nautical miles west-southwest from the threshold of runway 11. The wreckage was about 20 degrees right of the runway's extended centerline and was aligned with a magnetic heading of 092 degrees. The initial impact point was an impact crater which contained the engine, propeller, and a majority of the cockpit instrumentation. The main wreckage was two feet west of the impact crater. Impact signatures were consistent with a nose-low impact. The fuselage was torn and broken

forward of the pilot seat. Both wings displayed accordion crushing. The right wing fractured from the fuselage at the wing root. The right aileron and flap remained attached to the right wing. The fuselage and empennage were buckled and distorted. The vertical stabilizer, horizontal stabilizers, rudder, and elevators were unremarkable. The fuel tank was breeched and the odor and residue of fuel was present in the soil beneath the wings. The cockpit controls were destroyed and flight control continuity was confirmed from the controls to the respective flight control surface. The cockpit instrumentation had separated from their cockpit locations and did not convey reliable readings.

The emergency locator transmitter (ELT) was an ACK Technologies E-01-01, was found behind the pilots' seats, and had not been installed in the airplane. The ELT's RJ-11 cord was plugged into the ELT's port, the external coaxial antenna was not connected, and the ELT switch was found in the off position. Handwriting consistent with the pilot's writing documented that batteries were installed on October 8, 2012. Neither law enforcement nor first responders reported handling the ELT and a photo taken by law enforcement about 20 minutes after the accident showed the ELT in the same condition seen by investigators.

The propeller remained attached to the engine at the propeller flange. The aluminum nose cone was crushed rearward into the propeller hub and was distorted opposite the direction of blade rotation. The propeller blades were labeled blade A and blade B for documentation purposes. Blade A displayed signatures of leading edge polishing, s-bending, and was deformed aft. Blade B was bent slightly aft.

The engine was removed and examined. The top bank of sparkplugs were removed and displayed a light gray coloring consistent with a lean fuel burn. The engine was rotated by hand at the propeller flange. Engine continuity was confirmed and thumb compression was identified at each cylinder. The carburetor was fragmented with damage to the fuel inlet screen housing; the inlet screen was not recovered. The engine's oil screen was free of obstructions. No preimpact anomalies were detected with the engine.

MEDICAL AND PATHOLOGICAL INFORMATION

An autopsy was conducted on the pilot by the Walworth County Coroner's Office. The autopsy noted the cause of death as massive trauma that occurred in a crash of a single airborne aircraft. The autopsy noted the presence of cardiomegaly.

Forensic toxicology was performed on specimens from the pilot by the FAA Bioaeronautical Sciences Research Laboratory, Oklahoma City, Oklahoma. Testing did not detect carbon monoxide, cyanide, ethanol, or drugs.

ADDITIONAL INFORMATION

Lowrance Airmap 2000c

An Airmap 2000c GPS was found in the airplane wreckage. It was shipped to the NTSB laboratories in Washington D.C. The device recorded several flights, none of which were consistent with the accident flight.

Accelerated Stalls

An excerpt from the FAA's "Airplane Flying Handbook," 2004:

The airplane will, however, stall at a higher indicated airspeed when excessive maneuvering loads are imposed by steep turns, pull-ups, or other abrupt changes in its flightpath. Stalls entered from such flight situations are called "accelerated maneuver stalls," a term, which has no reference to the airspeeds involved.

Stalls which result from abrupt maneuvers tend to be more rapid, or severe, than the unaccelerated stalls, and because they occur at higher-than-normal airspeeds, and/or may occur at lower than anticipated pitch attitudes, they may be unexpected by an inexperienced pilot

Safety Alert SA-019

On March 2013, the NTSB held a general aviation safety forum. One of the safety alert issues was the prevention of aerodynamic stalls at low altitude. This alert provided recommended tools to avoid this accident potential.

Pilot Information

Certificate:	Private	**Age:**	50,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	Yes
Medical Certification:	Class 3 With waivers/limitations	**Last FAA Medical Exam:**	July 12, 2012
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	April 23, 2012
Flight Time:	290 hours (Total, all aircraft), 0 hours (Last 90 days, all aircraft), 0 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	GRUMMAN AMERICAN AVN. CORP.	**Registration:**	N6273L
Model/Series:	AA-1B	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:		**Serial Number:**	AA1B-0073
Landing Gear Type:		**Seats:**	2
Date/Type of Last Inspection:	September 14, 2012 Annual	**Certified Max Gross Wt.:**	1560 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	2303 Hrs as of last inspection	**Engine Manufacturer:**	LYCOMING
ELT:	Not installed	**Engine Model/Series:**	O-235-C2C
Registered Owner:	PARFITT TODD A	**Rated Power:**	115 Horsepower
Operator:	PARFITT TODD A	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	KBUU,780 ft msl	**Distance from Accident Site:**	0 Nautical Miles
Observation Time:	13:15 Local	**Direction from Accident Site:**	265°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	8 knots / None	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	170°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.35 inches Hg	**Temperature/Dew Point:**	12°C / 1°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Burlington, WI (KBUU)	**Type of Flight Plan Filed:**	None
Destination:	Burlington, WI (KBUU)	**Type of Clearance:**	None
Departure Time:		**Type of Airspace:**	Class E

Airport Information

Airport:	Burlington Municipal KBUU	**Runway Surface Type:**	Asphalt
Airport Elevation:	780 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	11	**IFR Approach:**	None
Runway Length/Width:	4300 ft / 75 ft	**VFR Approach/Landing:**	Unknown

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 Fatal	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 Fatal	**Latitude, Longitude:**	42.669242,-88.270988(est)

Administrative Information

Investigator In Charge (IIC):	Aguilera, Jason
Additional Participating Persons:	Michael Mecha; FAA FSDO; Milwaukee, WI
Original Publish Date:	November 6, 2013
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=85618