Aviation Investigation Final Report

Location:	Yacoit, Washington	**Accident Number:**	WPR11LA306
Date & Time:	July 5, 2011, 10:50 Local	**Registration:**	N1334R
Aircraft:	GRUMMAN AMERICAN AVN. CORP. AA-5	**Aircraft Damage:**	Substantial
Defining Event:	Controlled flight into terr/obj (CFIT)	**Injuries:**	2 Serious
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot reported that the airplane was climbing to cruise altitude up a valley in mountainous terrain when he felt a "small bump" and that the airplane subsequently began descending. While maintaining a low altitude to avoid overlying controlled airspace, he initiated a left turn to avoid rising terrain ahead, but a wing collided with a tree. The airplane came to rest in a gravel pit. The pilot reported no preimpact mechanical malfunctions or failures with the airplane that would have precluded normal operation.

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 clearance from terrain.

Findings

Aircraft	Altitude - Not attained/maintained
Personnel issues	Incorrect action performance - Pilot
Environmental issues	Mountainous/hilly terrain - Awareness of condition

Factual Information

History of Flight

Enroute-climb to cruise	Controlled flight into terr/obj (CFIT) (Defining event)

On July 5, 2011, about 1050 Pacific daylight time, a Grumman AA-5, N1334R, collided with a tree and then terrain near Yacoit, Washington. The pilot/owner was operating the airplane under the provisions of 14 Code of Federal Regulations (CFR) Part 91. The commercial pilot and one passenger sustained serious injuries; the airplane sustained substantial damage from impact forces. The personal cross-country flight departed Grove Field, Camas, Washington, about 1040, with a planned destination of Grant County Regional/Ogilvie Field, John Day, Oregon. Visual meteorological conditions prevailed, and a visual flight rules (VFR) plan had been filed.

The pilot reported that he departed straight out from runway 25, and opened his flight plan. He contacted Portland Approach Control for VFR flight following. Approach Control instructed him to remain clear of the class C airspace until they had positive radar identification. The pilot reversed his course, and the airplane was back abeam Grove Field. He remained on an easterly heading, and climbed to 2,400 feet. He observed rising terrain to the east. He decided to head back to the west, and maintained a reduced power setting and 100 miles per hour (mph) airspeed.

Portland Approach contacted the pilot and stated that they had radar contact, and queried when he could accept a clearance to continue on course. He replied that he could proceed on course immediately, and indicated that his position was about 4 miles from the Gymme intersection, which was the first waypoint on his planned route of flight. He requested to cruise at 9,500 feet mean sea level (msl). He added full power, and began a climbing left turn to proceed on course. The pilot stated that he did not lose adequate terrain clearance at any time during the course reversal.

The airplane was at full power climbing about 400-500 feet per minute. About 3,000 feet msl, he felt a small bump, and noted that the airspeed dropped to 80 mph. He verified that the throttle was in full, and then noticed that the airspeed dropped to 60 mph, which he said was 2 mph above the clean stall speed. While maintaining 60 mph with full power, the airplane began descending.

At this point, the pilot noticed that a large fir tree was in the airplane's path; he stated that the airplane had about 1,000 feet of clearance above the tree's elevation prior to the bump. He started a gentle 4-degree bank turn to avoid the tree. The airplane descended until the right wing collided at midspan with a smaller unseen tree. The airplane came to rest in a gravel pit. Both the pilot and passenger sustained broken legs and lacerations; the pilot sustained broken fingers on his right hand as well, which he attributed to his maintaining the full throttle position until touchdown.

The pilot stated that his preflight forecast was for calm conditions to 6,000 feet, and he did not encounter any turbulence during the flight.

The Federal Aviation Administration (FAA) accident coordinator interviewed a bystander who came to the aid of the airplane's occupants. The bystander arrived about 5 minutes after the crash; he observed

one person with a shattered ankle standing by the left side of the airplane, and one person still in the right seat. He noted that he saw a small fuel leak from under the left wing, and there was a fuel odor.

Two FAA inspectors examined the airplane on scene. They observed a 5-gallon bucket under the left wing with about 1/2 inch of fuel in it. They opened the fuel caps on each wing tank, but could not determine if any or how much fuel was in the tanks.

The FAA accident coordinator interviewed the pilot. The pilot indicated that he was maintaining a low altitude to avoid the controlled airspace above him. The pilot initiated a left turn to avoid rising terrain ahead, and could not estimate the altitude above ground level (agl). The pilot did not think that winds were a factor, but that the airplane might have been too low at the intuition of the turn.

The FAA accident coordinator interviewed the passenger. The passenger stated that he was looking around enjoying the flight and the scenery as they were heading up a valley. He did recall looking at the engine gauges as this time, and the engine rpm was in the green operating range. The engine sounded good up until the end. As he looked back to the front of the airplane, he and the pilot almost simultaneously stated that they were not going to make it. The pilot indicated that they would be all right if they could get between two trees. The airplane hit one of the trees, and then the ground. The passenger was not sure what direction the airplane was headed or if it was turning. He felt that all changes to the airplane's flight path were controlled at all times, and did not think that there were air pockets, updrafts, or downdrafts that affected the airplane's flight path.

Pilot Information

Certificate:	Commercial; Flight engineer; Private	**Age:**	54
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	Unknown
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	No
Medical Certification:	Class 1 With waivers/limitations	**Last FAA Medical Exam:**	May 25, 2011
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	November 23, 2010
Flight Time:	494 hours (Total, all aircraft), 394 hours (Total, this make and model), 412 hours (Pilot In Command, all aircraft), 21 hours (Last 90 days, all aircraft), 21 hours (Last 30 days, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	GRUMMAN AMERICAN AVN. CORP.	**Registration:**	N1334R
Model/Series:	AA-5	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Aerobatic; Normal	**Serial Number:**	AA5-0734
Landing Gear Type:	Tricycle	**Seats:**	4
Date/Type of Last Inspection:	June 22, 2011 Annual	**Certified Max Gross Wt.:**	2200 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	2926 Hrs as of last inspection	**Engine Manufacturer:**	LYCOMING
ELT:	Installed, activated, did not aid in locating accident	**Engine Model/Series:**	O-320-C2G
Registered Owner:	Steven L Emerson	**Rated Power:**	180 Horsepower
Operator:	Steven L Emerson	**Operating Certificate(s) Held:**	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	KTTD	**Distance from Accident Site:**	
Observation Time:	10:53 Local	**Direction from Accident Site:**	
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	/	**Turbulence Type Forecast/Actual:**	/
Wind Direction:		**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30.12 inches Hg	**Temperature/Dew Point:**	21°C / 12°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Yacoit, WA	**Type of Flight Plan Filed:**	VFR
Destination:	John Day, OR (GCD)	**Type of Clearance:**	VFR
Departure Time:	10:40 Local	**Type of Airspace:**	

Wreckage and Impact Information

Crew Injuries:	1 Serious	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 Serious	**Aircraft Fire:**	None
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	2 Serious	**Latitude, Longitude:**	45.711944,-122.336944(est)

Administrative Information

Investigator In Charge (IIC):	Plagens, Howard
Additional Participating Persons:	Paul Lehman; FAA FSDO; Hillsboro, OR
Original Publish Date:	May 21, 2014
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=80989