Aviation Investigation Final Report

Location:	Compton, California	**Accident Number:**	WPR15FA238
Date & Time:	August 9, 2015, 12:33 Local	**Registration:**	N6090U
Aircraft:	AVIAT INC A 1	**Aircraft Damage:**	Destroyed
Defining Event:	Aerodynamic stall/spin	**Injuries:**	1 Fatal
Flight Conducted Under:	Part 91: General aviation - Banner tow		

Analysis

The commercial pilot was conducting a local banner tow flight. After five unsuccessful attempts to pick up the banner, the pilot was successful on the sixth attempt. According to ground personnel, the banner deployed normally, and the airplane's engine sounded normal. However, the pilot radioed to the ground personnel that the airplane was unable to climb. About that time, the ground personnel observed the banner releasing from the airplane's tail hook and falling to the ground. The airplane then wallowed left and right until it spun to the left as it descended and subsequently impacted the ground. The airplane burst into flames and was consumed by the postimpact fire. Postaccident examination noted no preimpact anomalies with the airframe or engine that would have precluded normal operation. The pilot had a history of difficulties executing banner pickups that included multiple low misses, adding power late, and pitching up too high. Although the pilot had been retrained the year before the accident, it is likely that he added power late, pitched up too high, or made both errors when picking up the banner, which resulted in the airplane's airspeed decaying to the point where the airplane exceeded its critical angle of attack and experienced an aerodynamic stall.

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 adequate airspeed and/or appropriate pitch attitude during a banner pickup, which resulted in the airplane exceeding its critical angle of attack and experiencing an aerodynamic stall/spin at too low an altitude to allow recovery.

Findings

Personnel issues	Aircraft control - Pilot
Aircraft	Angle of attack - Not attained/maintained
Aircraft	Airspeed - Not attained/maintained

Factual Information

History of Flight

Initial climb	Aerodynamic stall/spin (Defining event)
Uncontrolled descent	Collision with terr/obj (non-CFIT)

On August 9, 2015, at 1233 Pacific daylight time, an Aviat Husky A-1, N6090U, impacted the ground following a loss of control during a banner tow pickup at Compton/Woodley Airport, Compton, California. The commercial pilot sustained fatal injuries; the airplane was destroyed by impact forces and postcrash fire. Aviad Corporation was operating the airplane under the provisions of 14 Code of Federal Regulations Part 91. Visual meteorological conditions prevailed, and no flight plan had been filed for the local banner tow flight.

Witnesses, who were ground personnel for the tow operation, reported that the pilot had unsuccessfully attempted to pick up a tow banner five times. He was successful on the sixth attempt, and the banner deployed normally, and the airplane's engine sounded normal. However, the pilot radioed to ground personnel that he was unable to climb. Witnesses reported that the banner released from the airplane's tail hook and fell to the ground. The airplane was wallowing left and right until it spun to the left and descended, subsequently impacted the ground, and burst into flames.

Pilot Information

Certificate:	Commercial	**Age:**	48,Male
Airplane Rating(s):	Single-engine land; Multi-engine land	**Seat Occupied:**	Front
Other Aircraft Rating(s):	None	**Restraint Used:**	4-point
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	Yes
Medical Certification:	Class 1 Without waivers/limitations	**Last FAA Medical Exam:**	July 27, 2015
Occupational Pilot:	Yes	**Last Flight Review or Equivalent:**	
Flight Time:	2501 hours (Total, all aircraft), 976 hours (Total, this make and model), 2400 hours (Pilot In Command, all aircraft)		

The pilot held a commercial pilot certificate with ratings for airplane single-engine land, multiengine land, and instrument airplane. He held a first-class medical certificate with no limitations or waivers that was issued on July 27, 2015. The pilot reported on the application for this medical certificate that he had a total time of 2,501 hours with 367 hours logged in the last 6 months. No personal flight records were located for the pilot. The pilot submitted an insurance form to the operator dated January 21, 2014, which reported a total of 384 hours in the accident airplane make and model.

Training records for the pilot were obtained from the operator, and the training instructor was interviewed. The records indicated that the pilot began banner tow training on May 8, 2013, and he completed the training on May 26, 2013. The training included 10 hours of ground school and 8.1 hours of flight training. According to the instructor who provided the training and served as the chief pilot for the operator, after the pilot completed this initial training, he was placed on the operator's waiver to conduct banner tows. The instructor reported that soon thereafter, "safety issues started developing" with the pilot. The issues included picking up the banner with the tailwheel, low approaches, nonstandard patterns, dragging banners along the ground, adding power late, pitching up too high, multiple low misses, flying under instrument flight rules in an airplane equipped only for flight under visual flight rules during multiple ferry flights, and making unapproved repairs to banner equipment. All of these issues arose during 2014; the instructor reported them to the owner, and the pilot was retrained. The instructor left the operator in December 2014.

Aircraft and Owner/Operator Information

Aircraft Make:	AVIAT INC	**Registration:**	N6090U
Model/Series:	A 1 UNDESIGNAT	**Aircraft Category:**	Airplane
Year of Manufacture:	1995	**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	1300
Landing Gear Type:	Tailwheel	**Seats:**	2
Date/Type of Last Inspection:	April 17, 2015 100 hour	**Certified Max Gross Wt.:**	
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:	1878.8 Hrs as of last inspection	**Engine Manufacturer:**	LYCOMING
ELT:		**Engine Model/Series:**	O-360-A1P
Registered Owner:	Wyoming Services LLC	**Rated Power:**	180 Horsepower
Operator:	Aviad Corporation	**Operating Certificate(s) Held:**	None

The airplane was an Aviat Inc., Model A-1, serial number 1300. A review of the airplane's logbooks revealed that the airplane had a total airframe time of 1,818.4 hours at the last annual inspection on April 17, 2015. The last maintenance entry in the logbook was dated July 18, 2015, at a total time of 1,878.8 hours.

The engine was a Lycoming O-360-A1P, serial number L-34663.36A. Total time recorded on the engine at the last 100-hour inspection on April 17, 2015, was 1,818.4 hours, which was also the time at major overhaul.

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	KHHR,63 ft msl	**Distance from Accident Site:**	5 Nautical Miles
Observation Time:	19:53 Local	**Direction from Accident Site:**	295°
Lowest Cloud Condition:	Clear	**Visibility**	10 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	6 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:		**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29.97 inches Hg	**Temperature/Dew Point:**	24°C / 14°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Compton, CA (CPM)	**Type of Flight Plan Filed:**	None
Destination:	Compton, CA (CPM)	**Type of Clearance:**	None
Departure Time:	12:35 Local	**Type of Airspace:**	Class E

Airport Information

Airport:	COMPTON/WOODLEY CPM	**Runway Surface Type:**	Asphalt
Airport Elevation:	98 ft msl	**Runway Surface Condition:**	Dry
Runway Used:	25L	**IFR Approach:**	None
Runway Length/Width:	3322 ft / 60 ft	**VFR Approach/Landing:**	None

Compton/Woodley Airport is owned by the County of Los Angeles and is operated under contract by American Airports Corporation (AAC). AAC is responsible for the management and operation of the uncontrolled general aviation airport.

At the time of the accident, AAC's under the contract with the County of Los Angeles was required AAC to have three airport facility employees on the airport. At the time of the accident, there was only one employee on site. No other employees were available to respond to the accident site with any of the available airport equipment.

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:		**Aircraft Fire:**	On-ground
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Fatal	**Latitude, Longitude:**	33.889446,-118.245552

The airplane wreckage was located in the grass to the south of runway 25L and adjacent to taxiway Foxtrot. The banner system was located about midfield in the grassy area between runways 25L and 25R. Examination revealed no damage to either the banner or the tow hook rope.

The airplane came to rest in a nose-down configuration. The underside of the airplane was facing west. The tail section was bent forward towards the east. The fabric of the airplane was thermally consumed by the postimpact fire.

The on-scene examination of the airplane confirmed flight control continuity throughout the airplane. All flight control surfaces were located and attached at their respective locations. The tow hook on the airplane was examined; no abnormalities were noted. The hook was in the released position. There was no damage noted to the rudder horn or tail section.

Medical and Pathological Information

The Los Angeles County Medical Examiner-Coroner completed an autopsy on the pilot. The examination determined that the manner of death was multiple traumatic injuries.

The FAA Bioaeronautical Sciences Research Laboratory, Oklahoma City, Oklahoma, performed toxicological testing of specimens from the pilot, which were negative for carbon monoxide, cyanide, volatiles, and tested drugs.

Tests and Research

Investigators examined the wreckage at Air Transport, Phoenix, Arizona, on August 26, 2015. The engine remained attached to the airframe and was removed before the examination. The engine was thermally damaged, which was a result of the postimpact fire.

All engine components were in their expected locations. The magnetos were attached; however, they were thermally damaged. The carburetor was detached due to the impact forces but was complete. Engine continuity was established from front to back. Cylinder compression was established on all cylinders. Oil was found in the crankcase, and the oil screen was clear of metallic debris. Oil was found in the propeller governor. The spark plugs were clean and intact. The examination identified no mechanical anomalies that would have precluded normal operation.

Administrative Information

Investigator In Charge (IIC):	Jones, Patrick
Additional Participating Persons:	Steve Sonneson; Federal Aviation Administration; Lawndale, CA Mark Platt; Lycoming Engines; Mesa, AZ
Original Publish Date:	August 9, 2017
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=91731