



National Transportation Safety Board Aviation Accident Final Report

Location:	Sebring, FL	Accident Number:	ERA15FA139
Date & Time:	03/02/2015, 1150 EST	Registration:	N797A
Aircraft:	ADAMS DONALD L DA1	Aircraft Damage:	Substantial
Defining Event:	Loss of engine power (partial)	Injuries:	1 Fatal
Flight Conducted Under:	Part 91: General Aviation - Personal		

Analysis

The private pilot, who was also the owner/builder of the experimental amateur-built airplane, had just taken off for a personal flight. Witnesses reported hearing “spitting and sputtering” engine noise as they observed the airplane descending from a low altitude. The pilot subsequently performed an off-airport landing about 1 mile south of the airport. During the landing, the fuel tank was compromised, and a postcrash fire ensued, which destroyed the cockpit and consumed the propeller and all of the fuselage fabric coverings forward of the empennage. Based on this evidence, it is likely that the engine experienced a loss of power shortly after takeoff, which resulted in the need for an off-airport landing.

Postaccident examination of the airplane, which included disassembly of its converted 75-horsepower automobile engine, did not reveal evidence of any preimpact mechanical malfunctions or failures; however, fire damage destroyed the fuel tank, fuel lines, carburetor, and fuel filter. According to a friend of the pilot, the accident flight was the airplane’s first flight since it was damaged after experiencing a loss of engine power during takeoff about 2 years before the accident. The airplane’s maintenance logbooks were not located, and its maintenance and operational history could not be verified. The reason for the partial loss of engine power could not be determined based on the available evidence.

Toxicology testing of the pilot detected several previously unreported medications, and an autopsy identified hypertensive and atherosclerotic heart disease; however, it is unlikely that symptoms from the pilot’s heart disease or the effects of any of the detected medications impaired his ability to respond to the emergency.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: A partial loss of engine power for reasons that could not be determined based on the available evidence.

Findings

Not determined

Not determined - Unknown/Not determined (Cause)

Factual Information

HISTORY OF FLIGHT

On March 2, 2015, about 1150 eastern standard time, an experimental amateur-built Adams DA1, N797A, owned and operated by a private individual, was substantially damaged during an off-airport landing and subsequent postcrash fire, shortly after takeoff from the Sebring Regional Airport (SEF), Sebring, Florida. The private pilot was fatally injured. Visual meteorological conditions prevailed and no flight plan had been filed for the personal flight that was conducted under the provisions of 14 Code of Federal Regulations Part 91.

The airplane was built by the pilot and based at SEF.

According to a friend of the pilot, about 2 years prior to the accident, the pilot was flying the airplane when it experienced a loss of engine power just after takeoff, due to a clogged fuel filter. The pilot landed back on the runway and the airplane sustained a propeller strike. The accident flight was the airplane's first flight since that incident. Recent maintenance included replacing the fuel filter and converting the airplane from a tailwheel to tricycle landing gear configuration.

Witnesses near the accident site reported hearing a "spitting and sputtering" engine as they observed the airplane descending from a low altitude. The pilot was able to land the airplane on grass about 1 mile south of SEF; however, after landing a postcrash fire erupted and destroyed the cockpit before the pilot could exit the airplane.

PERSONNEL INFORMATION

The pilot, age 76, held a private pilot certificate with ratings for airplane single-engine land and instrument airplane. The pilot's logbook were not recovered. He reported 1,950 hours of total flight experience, with 40 hours accumulated during the preceding 6 months, on his most recent application for a Federal Aviation Administration (FAA) third-class medical certificate, which was issued on November 10, 2014. In addition, at that time, he reported no chronic medical conditions and no medication use.

AIRCRAFT INFORMATION

The single-engine, fixed-gear airplane, serial number 01, was issued an experimental special airworthiness certificate by the FAA on July 7, 2009. Its construction was based on a Sonerai homebuilt airplane kit, and it was powered by a converted Volkswagen 75-horsepower automobile engine, equipped with a Sterba wood propeller. The fuselage was constructed of steel tubing with fabric covering and the wings were constructed of aluminum.

The pilot's wife not able to locate the airplane's maintenance records, nor were they observed in the hangar where the airplane was kept.

METEOROLOGICAL INFORMATION

A weather observation taken at SEF, at 1155, reported: wind from 130 degrees at 6 knots, 10 statute miles visibility, scattered clouds at 3,400 and 4,000 feet, temperature 26 degrees Celsius (C), dew point temperature 17 degrees C, and an altimeter setting of 30.28 in-Hg.

WRECKAGE INFORMATION

The airplane touched down on the ground, and slid for about 75-feet on a magnetic heading

about 070 degrees before it came to rest upright, adjacent to a canal, behind a residence.

All major portions of the airplane were located at the accident site. The right aileron, nose landing gear, and wooden propeller fragments were located along a ground scar leading to the main wreckage. The fuel tank, which was located aft of the engine firewall and in front of the cockpit area was compromised during the off-airport landing. A postcrash fire destroyed the cockpit, and consumed the propeller and all fuselage fabric coverings forward of the empennage, which was undamaged. The right wing sustained impact damage to the tip and forward outboard leading edge corner. In addition, the right wing inboard trailing edge corner was deformed diagonally approximately 1-foot. The inboard 4 feet of the left wing was consumed to the spar and the majority of the wing was fire damaged. Flight control continuity was confirmed from the cockpit controls to the rudder and elevator control surfaces. The respective left and right aileron connections were displaced consistent with impact damage. The airplane's entire fuel system, which included the fuel tank, the carburetor and fuel filter were consumed by fire.

The engine was also fire damaged, and could not be rotated. Subsequent disassembly of the engine at SEF, which included examination of all cylinders, pistons, rocker arms, valves, and spark plugs did not reveal any evidence of preimpact mechanical malfunctions.

MEDICAL AND PATHOLOGICAL INFORMATION

An autopsy was performed on the pilot by the Office of the District 10 Medical Examiner, Winter Haven, Florida. The autopsy report identified hypertensive and atherosclerotic heart disease and indicated the cause of death was due to the postcrash fire.

Toxicological testing performed on the pilot by the FAA Bioaeronautical Science Research Laboratory, Oklahoma City, Oklahoma, was positive for the following:

"0.665 (ug/ml, ug/g) Citalopram detected in Blood

Citalopram detected in Liver

Desloratadine detected in Blood

Desloratadine detected in Urine

Ephedrine detected in Urine

Ephedrine NOT detected in Blood

Loratadine detected in Blood

0.368 (ug/mL, ug/g) N-Desmethylcitalopram detected in Blood

N-Desmethylcitalopram detected in Liver

Pseudoephedrine detected in Blood

Pseudoephedrine detected in Urine

Tamsulosin detected in Blood

Tamsulosin detected in Urine"

History of Flight

Initial climb	Loss of engine power (partial) (Defining event)
Emergency descent	Off-field or emergency landing
Post-impact	Fire/smoke (post-impact)

Pilot Information

Certificate:	Private	Age:	76, Male
Airplane Rating(s):	Single-engine Land	Seat Occupied:	Rear
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	Yes
Medical Certification:	Class 3 With Waivers/Limitations	Last Medical Exam:	11/10/2014
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:	(Estimated) 1950 hours (Total, all aircraft), 50 hours (Total, this make and model)		

Aircraft and Owner/Operator Information

Aircraft Manufacturer:	ADAMS DONALD L	Registration:	N797A
Model/Series:	DA1	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	Yes
Airworthiness Certificate:	Experimental	Serial Number:	01
Landing Gear Type:	Tricycle	Seats:	2
Date/Type of Last Inspection:	Unknown	Certified Max Gross Wt.:	750 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:		Engine Manufacturer:	Volkswagen
ELT:	Installed, not activated	Engine Model/Series:	
Registered Owner:	On file	Rated Power:	75 hp
Operator:	On file	Air Carrier Operating Certificate:	None

Meteorological Information and Flight Plan

Observation Facility, Elevation:	SEF, 33 ft msl	Observation Time:	1155 EST
Distance from Accident Site:	1 Nautical Miles	Condition of Light:	Day
Direction from Accident Site:	177°	Conditions at Accident Site:	Visual Conditions
Lowest Cloud Condition:	Scattered / 3400 ft agl	Temperature/Dew Point:	26° C / 17° C
Lowest Ceiling:		Visibility	10 Miles
Wind Speed/Gusts, Direction:	6 knots, 130°	Visibility (RVR):	
Altimeter Setting:	30.28 inches Hg	Visibility (RVV):	
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Sebring, FL (SEF)	Type of Flight Plan Filed:	None
Destination:	Sebring, FL (SEF)	Type of Clearance:	None
Departure Time:	1148 EST	Type of Airspace:	Class G

Airport Information

Airport:	SEBRING RGNL (SEF)	Runway Surface Type:	N/A
Airport Elevation:	62 ft	Runway Surface Condition:	Unknown
Runway Used:	N/A	IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	Forced Landing

Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	On-Ground
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Fatal		

Administrative Information

Investigator In Charge (IIC):	Luke Schiada	Adopted Date:	06/09/2016
Additional Participating Persons:	David J Green; FAA/FSDO; Orlando, FL		
Publish Date:	06/09/2016		
Note:	The NTSB traveled to the scene of this accident.		
Investigation Docket:	http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=90799		

The National Transportation Safety Board (NTSB), established in 1967, is an independent federal agency mandated by Congress through the Independent Safety Board Act of 1974 to investigate transportation accidents, determine the probable causes of the accidents, issue safety recommendations, study transportation safety issues, and evaluate the safety effectiveness of government agencies involved in transportation. The NTSB makes public its actions and decisions through accident reports, safety studies, special investigation reports, safety recommendations, and statistical reviews.

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