



Aviation Investigation Final Report

Location:	Casa Grande, Arizona	Accident Number:	WPR13LA408
Date & Time:	September 14, 2013, 12:24 Local	Registration:	N6324B
Aircraft:	Cessna 182A	Aircraft Damage:	Substantial
Defining Event:	Loss of engine power (total)	Injuries:	1 None
Flight Conducted Under:	Part 91: General aviation - Skydiving		

Analysis

The pilot reported that, while on final approach, he performed the landing checklist and confirmed that the carburetor heat was on. About 100 feet above ground level, he advanced the throttle; however, the engine did not respond. The pilot verified that the mixture, throttle, and propeller setting were in the full-forward position, but, despite his efforts, the engine would not restart. He subsequently initiated a forced landing to an open area. During the landing, the airplane impacted a ditch and nosed over. Seven gallons of fuel were found in the right fuel tank, and 11 gallons of fuel were found in the left fuel tank. A postaccident examination and operational run of the recovered engine revealed no evidence of mechanical malfunctions or failures that would have precluded normal operation. Although the reported weather conditions at the time of the accident were conducive to the accumulation of carburetor icing at glide power, the pilot reported that he used carburetor heat, which would have prevented the accumulation of ice. The reason for the loss of engine power could not be determined.

Probable Cause and Findings

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

A loss of engine power during final approach for reasons that could not be determined because postaccident examinations did not reveal any anomalies that would have precluded normal operation.

Findings

Not determined	(general) - Unknown/Not determined
Environmental issues	Conducive to carburetor icing - Effect on equipment

Factual Information

History of Flight

Approach-VFR pattern final	Loss of engine power (total) (Defining event)
Landing-landing roll	Nose over/nose down

On September 14, 2013, about 1224 mountain standard time, a Cessna 182A, N6324B, sustained substantial damage during a forced landing while on approach to landing at the Casa Grande Municipal Airport, Casa Grande, Arizona. The airplane was registered to Aivcon Inc., and operated by Phoenix Aerial Skydiving under the provisions of 14 Code of Federal Regulations Part 91. The commercial pilot, sole occupant of the airplane, was not injured. Visual meteorological conditions prevailed and no flight plan was filed for the local skydiving flight which originated from CGZ about 24 minutes before the accident.

The pilot reported to the National Transportation Safety Board (NTSB) investigator-in-charge (IIC) that he had performed six flights earlier in the day for skydiving operations. After the sixth flight the pilot had the airplane refueled by a local fixed base operator and requested that each wing fuel tank have 10 gallons added. The pilot stated that the lineman told him the right tank only took a couple of gallons before it was full. The pilot visually verified that the right fuel tank was full and then requested that the lineman put seven gallons in the left tank. The pilot stated that he should have had a total of 40 gallons onboard the airplane following refueling. The pilot performed three more skydiving flights.

The pilot reported that as he was on final approach to landing, he noted the engine oil and temperature was in the green and he performed his GUMPS checklist, a before landing checklist. He stated that during the descent and prior to reaching final approach, he would perform this GUMPS checklist and confirm that the carburetor heat was in the "On" position. He further stated that this was "part of his flow" when preparing to land. About 100-feet above ground level he added throttle and the engine did not respond. He verified that the engine controls were in their full forward positions. Despite his efforts, he was unable to restart the engine and subsequently initiated a forced landing to an open area adjacent to the airport. During the landing roll the airplane impacted a ditch and nosed over.

Examination of the airplane by a Federal Aviation Administration (FAA) Inspector revealed that the left wing was buckled and the vertical stabilizer and rudder were damaged. The inspector noted the smell of fuel at the accident site and that the airplane had been leaking fuel from the wings.

The airplane wreckage was recovered from the accident site and transported to a secure facility for subsequent examination. According to the recovery team, 7 gallons were removed from the right fuel tank and 11 gallons were removed from the left fuel tank.

The recovered engine and airframe were examined by representatives from the FAA and the NTSB IIC. The Continental O-470-R engine was prepared for a test run on the airframe by utilizing a fuel source attached to the wing tank inlets at the wing roots. The carburetor inlet screen was removed and was

partially blocked about one-third with light fibrous debris. The engine was started and ran smoothly for several minutes at various power settings. The examination of the engine revealed no evidence of mechanical malfunctions or failures that would have precluded normal operation.

Examination of the cabin fuel gages revealed that they were inoperative. The airframe fuel system, from the wing root area to the engine was examined and no anomalies were noted. Both wing tank fuel bladders were examined. The left bladder was found loose from one of its upper attach points. The right wing fuel cap was removed and the tank bladder had a large fold visible on the lower surface of the bladder directly below the filler neck area. The fold was about 2.5 inches in height and ran diagonally from the aft wing root area to the leading edge side of the bladder tank, about 2 feet outboard from the wing root area. The right wing fuel sending unit was removed and was undamaged. The fuel bladder interior surfaces were visible from the fuel sending unit's mounting flange. The interior surfaces of the bladder showed multiple folds on the lower surface and a drooping upper surface outboard and aft of the filler neck area. The fuel bladder was removed and several hanger clips were not attached to their wing structure attach points. The forward outboard hanger clip and the two forward inboard hanger clips remained attached to the wing structure. The bladder was removed from the wing and the upper aft outboard hanger clip and two lower aft outboard hanger clips were not found.

Weather conditions recorded at the CGZ, at 1235, were wind 130 degrees at 4 knots, visibility 10 statute miles, clear sky, temperature 35 degrees Celsius, dew point 16 degrees Celsius, and an altimeter setting of 29.71 inches of mercury. According to the Federal Aviation Administration Special Airworthiness Information Bulletin, entitled Carburetor Icing Prevention, the temperature and dew point were conducive to the formation of icing at glide power.

A review of the airplane's maintenance logbooks revealed that the most recent annual inspection was completed on August 30, 2013. The logbook entry for the annual inspection stated that seven upper fuel bladder hanger clips were replaced on the left bladder tank and the right bladder tank was replaced. An airworthiness directive (AD) preventing power loss or engine stoppage due to water contamination of the fuel system, is a detailed inspection of the wing fuel bladder tank assemblies and was reportedly complied with at the last annual inspection 15 days prior to the accident.

Pilot Information

Certificate:	Commercial; Recreational	Age:	31
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Lap only
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:	January 31, 2013
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	
Flight Time:	(Estimated) 513 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	Registration:	N6324B
Model/Series:	182A	Aircraft Category:	Airplane
Year of Manufacture:	1957	Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	34224
Landing Gear Type:	Tricycle	Seats:	1
Date/Type of Last Inspection:	August 30, 2013 Annual	Certified Max Gross Wt.:	2348 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	9866 Hrs as of last inspection	Engine Manufacturer:	CONT MOTOR
ELT:	Installed, not activated	Engine Model/Series:	O-470 SERIES
Registered Owner:	AIVCON INC	Rated Power:	230 Horsepower
Operator:	Phoenix Area Skydiving	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	KCGZ,1463 ft msl	Distance from Accident Site:	0 Nautical Miles
Observation Time:	18:55 Local	Direction from Accident Site:	170°
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	6 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	120°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29.72 inches Hg	Temperature/Dew Point:	34°C / 16°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Casa Grande, AZ (KCGZ)	Type of Flight Plan Filed:	None
Destination:	Casa Grande, AZ (KCGZ)	Type of Clearance:	None
Departure Time:		Type of Airspace:	Unknown

Airport Information

Airport:	Casa Grande Municipal Airport KCGZ	Runway Surface Type:	Asphalt
Airport Elevation:	1464 ft msl	Runway Surface Condition:	Dry
Runway Used:	23	IFR Approach:	None
Runway Length/Width:	5200 ft / 100 ft	VFR Approach/Landing:	Forced landing;Full stop;Straight-in

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:		Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 None	Latitude, Longitude:	32.955276,-111.768058(est)

Administrative Information

Investigator In Charge (IIC): Swick, Andrew

Additional Participating Persons: Paula A Behrend; Federal Aviation Administration; Scottsdale, AZ

Original Publish Date: August 14, 2014

Last Revision Date:

Investigation Class: [Class](#)

Note:

Investigation Docket: <https://data.nts.gov/Docket?ProjectID=88039>

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate, and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, “accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties ... and are not conducted for the purpose of determining the rights or liabilities of any person” (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available [here](#).