



Aviation Investigation Final Report

Location:	Jackson, Ohio	Accident Number:	IAD04LA037
Date & Time:	August 14, 2004, 17:20 Local	Registration:	N1222J
Aircraft:	Aero Commander 112	Aircraft Damage:	Substantial
Defining Event:		Injuries:	1 Minor
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot took off with an unknown quantity of fuel. The engine lost power, and the pilot maneuvered for a forced landing to a field. During the approach, the engine stopped producing power, and the airplane touched down, struck trees, and separated the right wing before coming to rest. There was little evidence of fuel and no odor of fuel at the scene. An annual inspection had been completed 6 months prior, but the airplane had flown less than 1 hour since the inspection. The fuel capacity of the airplane was 68 gallons, and the owner said he serviced the airplane with 56 gallons of fuel between the time of the annual inspection and the accident flight. The pilot said that while he did not determine the exact amount of fuel on board, the left tank contained fuel and the fuel gauge indicated one-quarter tank. The right tank gauge indicated full. The pilot said he found this unusual because the right tank was "up", but not full. According to the before-takeoff checklist in the Pilot's Operating Handbook, the pilot is directed to place the fuel selector on the "RIGHT or LEFT (fullest)" tank prior to takeoff. When asked, the pilot said the fuel selector was placed in the right tank position. After the accident, the engine started and ran on the airframe. According to the pilot, "I didn't bring my stick with me. The only way to tell [fuel level] is to stick it, and unfortunately, I didn't stick the tanks."

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: the loss of engine power for undetermined reasons over unsuitable terrain.

Findings

Occurrence #1: LOSS OF ENGINE POWER(TOTAL) - NONMECHANICAL

Phase of Operation: TAKEOFF - INITIAL CLIMB

Findings

1. (C) REASON FOR OCCURRENCE UNDETERMINED

Occurrence #2: FORCED LANDING

Phase of Operation: DESCENT - EMERGENCY

Occurrence #3: ON GROUND/WATER COLLISION WITH OBJECT

Phase of Operation: EMERGENCY LANDING AFTER TAKEOFF

Findings

2. OBJECT - TREE(S)

Factual Information

On August 14, 2004, at 1720 eastern daylight time, an Aero Commander 112, N1222J, was substantially damaged during a forced landing in Jackson, Ohio. The certificated airline transport pilot received minor injuries. Visual meteorological conditions prevailed for local personal flight that originated at James A. Rhodes Airport (I43), Jackson, Ohio, at 1715. No flight plan was filed for the flight conducted under 14 CFR Part 91.

During a telephone interview, the pilot reported that he last flew the airplane about one year prior to the accident, and during that flight, he returned to the airport immediately after takeoff due to a rough-running engine. On February 1, 2004, the airplane received an annual inspection and new fuel injectors were installed to address the rough engine. The airplane was last flown at the completion of that inspection.

The owner then asked the pilot to fly passengers in the airplane in August 2004. The pilot elected to fly the airplane solo first, in order to check the airplane prior to carrying passengers.

On the day of the accident, the preflight was performed, the airplane was started, and the before-takeoff checks were completed. The airplane was then ground-taxed and brought to full power three times with no anomalies noted prior to takeoff.

After takeoff, the landing gear handle was actuated, but the gear was slow to retract. At that time, the engine began to sputter, and produced only 20 percent power by the pilot's estimate.

The pilot initiated a right turn to avoid rising terrain in the takeoff path, the engine stopped producing power, and then the pilot selected a pasture for a forced landing. After touchdown with the landing gear partially retracted, the airplane slid along the ground, struck a tree with the right wing, spun around, and came to rest in a creek bed. The right wing, a wet-wing design, had ruptured and separated from the airplane during the crash sequence.

Examination of the airplane by Federal Aviation Administration (FAA) aviation safety inspectors revealed little evidence of fuel and no odor of fuel at the scene. Trace amounts of fuel were noted in the left fuel tank. The airplane was subsequently transported to a hangar on the airport for further examination.

The FAA inspectors examined the airplane, installed a replacement propeller, and attempted an engine start on August 25, 2004. The attempt was unsuccessful due to a damaged starter. On August 27, 2004, a slave starter was installed; the engine started, and ran continuously for approximately 20 seconds until the airplane's fuel supply was exhausted.

Fuel was then added to the left tank and the engine would not restart. The fuel system was

disassembled from the fuel selector valve to the engine injector. All lines, valves, and screens were clear and absent of debris. The fuel system was reassembled and the engine started and ran continuously without interruption. The fuel selector was moved from the left to the both position and the engine continued to run without interruption.

Examination of airplane records revealed that the annual inspection was completed February 1, 2004 at 1507.4 aircraft hours. Total time on the airplane at the crash site was 1508.2 aircraft hours.

The fuel capacity of the airplane was 68 gallons. The owner of the airplane provided 2 fuel receipts dated February 28, 2004. The first receipt was for 49 gallons at 1448. At 1453, 5 minutes later, the owner purchased 7 gallons of fuel. The receipts displayed the owner's name, but not the registration number of the aircraft serviced.

During telephone interviews, the pilot said that the exact quantity of fuel in the airplane was not determined prior to takeoff. He said that he visually confirmed that each tank contained fuel, but that he did not measure the exact amount in each tank. The fuel gauges showed the left tank at one-quarter capacity and the right tank as "full". The pilot said he found this unusual because the right tank was "up", but not full. According to the pilot, "I didn't bring my stick with me. The only way to tell [fuel level] is to stick it, and unfortunately, I didn't stick the tanks."

According to the before-takeoff checklist in the Pilot's Operating Handbook, the pilot is directed to place the fuel selector on the "RIGHT or LEFT (fullest)" tank prior to takeoff. When asked, the pilot said he placed the fuel selector on the right tank for takeoff.

Prior to the accident, the airplane was stored in a hangar on the Jackson County Airport. Examination of the hangar floor revealed no evidence of fuel spillage or staining.

The weather reported at the Tri-State Airport, Huntington, West Virginia, 37 miles south of Jackson, at 1620, included winds from 360 degrees at 3 knots, 10 statute miles visibility, a broken ceiling at 8,000 feet, temperature 72 degrees Fahrenheit, dew point 54 degrees Fahrenheit, and a barometric pressure of 30.16 inches of mercury.

Pilot Information

Certificate:	Airline transport; Flight engineer; Flight instructor	Age:	80, Male
Airplane Rating(s):	Single-engine land; Multi-engine sea	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	Airplane multi-engine; Airplane single-engine; Instrument airplane	Toxicology Performed:	No
Medical Certification:	Class 3 Valid Medical--w/ waivers/lim	Last FAA Medical Exam:	July 12, 2004
Occupational Pilot:	UNK	Last Flight Review or Equivalent:	April 6, 2004
Flight Time:	26000 hours (Total, all aircraft), 400 hours (Total, this make and model), 16000 hours (Pilot In Command, all aircraft), 12 hours (Last 90 days, all aircraft), 7 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Aero Commander	Registration:	N1222J
Model/Series:	112	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	222
Landing Gear Type:	Retractable - Tricycle	Seats:	4
Date/Type of Last Inspection:	February 1, 2004 Annual	Certified Max Gross Wt.:	2150 lbs
Time Since Last Inspection:	1 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	1507 Hrs as of last inspection	Engine Manufacturer:	Lycoming
ELT:	Installed, not activated	Engine Model/Series:	IO-360
Registered Owner:	On file	Rated Power:	200 Horsepower
Operator:	On file	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	HTS,726 ft msl	Distance from Accident Site:	0 Nautical Miles
Observation Time:	17:51 Local	Direction from Accident Site:	0°
Lowest Cloud Condition:	8000 ft AGL	Visibility	10 miles
Lowest Ceiling:	Broken / 8000 ft AGL	Visibility (RVR):	
Wind Speed/Gusts:	3 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	360°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.15 inches Hg	Temperature/Dew Point:	22°C / 12°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Jackson, OH (I43)	Type of Flight Plan Filed:	None
Destination:		Type of Clearance:	None
Departure Time:	17:15 Local	Type of Airspace:	Class G

Airport Information

Airport:	James A Rhodes Airport I43	Runway Surface Type:	Grass/turf
Airport Elevation:	726 ft msl	Runway Surface Condition:	Dry
Runway Used:		IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	Forced landing

Wreckage and Impact Information

Crew Injuries:	1 Minor	Aircraft Damage:	Substantial
Passenger Injuries:		Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Minor	Latitude, Longitude:	38.967224,-82.577774

Administrative Information

Investigator In Charge (IIC): Rayner, Brian
Additional Participating Persons: Leon Awalt; FAA; Cincinnati, OH

Original Publish Date: January 24, 2005

Last Revision Date:

Investigation Class: [Class](#)

Note:

Investigation Docket: <https://data.nts.gov/Docket?ProjectID=59902>

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](#).