



Aviation Investigation Final Report

Location:	Shelbyville, Illinois	Accident Number:	CHI05CA172
Date & Time:	August 7, 2005, 11:15 Local	Registration:	N7446
Aircraft:	Waco CTO	Aircraft Damage:	Substantial
Defining Event:		Injuries:	1 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The tailwheel airplane sustained substantial damage on impact with crops and terrain during a forced landing following an in-flight loss of engine power. The pilot stated, "There were only wooded areas and farm fields with near mature crops in the vicinity. My only practical choice of terrain for landing was either a generally level soy bean field or a corn field. I decided to land on a farm in a soy bean field. I made a slow landing which was appropriate to the soft and "grabby" nature of the vegetation. The landing rollout was approximately 100 feet and was straight, but at the end with the beans being full and of different heights, some around four feet tall, the uneven drag on the wings caused the plane to slowly turn to the left with the right lower wing becoming entangled in the beans. Both upper and lower wings are attached to each other through brace wires and struts and both right wings and right side of the center section were damaged. ... The airplane did not tumble, but simply stopped right side up in a slight nose down attitude. I was wearing both the seat belt and shoulder harness installed in the airplane and was not injured" An examination of wreckage revealed no pre-impact anomalies. The temperature and dew point at an airport in the area was: Temperature 28 degrees C; dew point 17 degrees C. The temperature and dew point were plotted on a Transport Canada icing chart and their intersection fell in the serious icing - descent power area of the chart.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The loss of engine power during cruise due to carburetor ice. A factor was conditions conducive to carburetor icing.

Findings

Occurrence #1: LOSS OF ENGINE POWER

Phase of Operation: CRUISE

Findings

1. (C) FUEL SYSTEM, CARBURETOR - ICE
2. (F) WEATHER CONDITION - CARBURETOR ICING CONDITIONS

Occurrence #2: FORCED LANDING

Phase of Operation: EMERGENCY DESCENT/LANDING

Occurrence #3: ON GROUND/WATER ENCOUNTER WITH TERRAIN/WATER

Phase of Operation: EMERGENCY LANDING

Findings

3. (F) TERRAIN CONDITION - CROP
4. (C) UNSUITABLE TERRAIN OR TAKEOFF/LANDING/TAXI AREA - ENCOUNTERED - PILOT IN COMMAND

Factual Information

On August 7, 2005, about 1115 central daylight time, a Waco CTO, N7446, piloted by a commercial pilot, sustained substantial damage on impact with crops and terrain during a forced landing following an in-flight loss of engine power near Shelbyville, Illinois. The personal flight was operating under 14 Code of Federal Regulations Part 91. Visual meteorological conditions prevailed at the time of the accident. No flight plan was on file. The pilot reported no injuries. The local flight originated from the Shelby County Airport, near Shelbyville, Illinois, about 1100.

The pilot's accident report, in part, stated:

I climbed to approximately 1000 feet [above ground level]. Approximately fifteen minutes later, just to the west of Kirksville, Illinois I noticed the engine showed signs of losing power and the oil pressure was low. I did not believe that I had any reasonable choice but to land the airplane immediately. There were only wooded areas and farm fields with near mature crops in the vicinity. My only practical choice of terrain for landing was either a generally level soy bean field or a corn field. I decided to land on a farm in a soy bean field. I made a slow landing which was appropriate to the soft and "grabby" nature of the vegetation. The landing rollout was approximately 100 feet and was straight, but at the end with the beans being full and of different heights, some around four feet tall, the uneven drag on the wings caused the plane to slowly turn to the left with the right lower wing becoming entangled in the beans. Both upper and lower wings are attached to each other through brace wires and struts and both right wings and right side of the center section were damaged. The lower left wing had a minor tear in the fabric. The landing gear and right wheel were damaged. The propeller tips were slightly bent. There was some minor non-structural damage to the left front fuselage. All parts stayed with the plane as it came to rest and were not distributed separately from it. The airplane did not tumble, but simply stopped right side up in a slight nose down attitude. I was wearing both the seat belt and shoulder harness installed in the airplane and was not injured and climbed out of the open cockpit of the airplane without assistance.

A Federal Aviation Administration Inspector examined the wreckage. No pre-impact anomalies were detected with the airframe and engine.

At 1054, the recorded weather observation at the Decatur Airport, near Decatur, Illinois, was: Wind 040 degrees at 5 knots; visibility 10 statute miles; sky condition clear; temperature 28 degrees C; dew point 17 degrees C; altimeter 30.14 inches of mercury.

A copy of a Transport Canada Carburetor Icing chart was reviewed. The temperature and dew point were plotted on the chart and their intersection fell in the serious icing - descent power area of the chart. The icing chart is appended to the docket material associated with this case.

Pilot Information

Certificate:	Commercial	Age:	65, Male
Airplane Rating(s):	Single-engine land; Single-engine sea; Multi-engine land	Seat Occupied:	Rear
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 3 With waivers/limitations	Last FAA Medical Exam:	May 1, 2005
Occupational Pilot:	No	Last Flight Review or Equivalent:	May 1, 2005
Flight Time:	3000 hours (Total, all aircraft), 180 hours (Total, this make and model), 3000 hours (Pilot In Command, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Waco	Registration:	N7446
Model/Series:	CTO	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	A-19
Landing Gear Type:	Tailwheel	Seats:	3
Date/Type of Last Inspection:	August 1, 2005 Annual	Certified Max Gross Wt.:	2600 lbs
Time Since Last Inspection:	0.25 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	2122.05 Hrs at time of accident	Engine Manufacturer:	Wright
ELT:	Installed, not activated	Engine Model/Series:	J4-B
Registered Owner:	Robert Kerr Howie Jr	Rated Power:	200 Horsepower
Operator:		Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	DEC,682 ft msl	Distance from Accident Site:	
Observation Time:	10:54 Local	Direction from Accident Site:	
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	5 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	40°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.13 inches Hg	Temperature/Dew Point:	28°C / 17°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Shelbyville, IL (2H0)	Type of Flight Plan Filed:	None
Destination:		Type of Clearance:	None
Departure Time:	11:00 Local	Type of Airspace:	

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:	39.410556,-88.845558

Administrative Information

Investigator In Charge (IIC):	Malinowski, Edward
Additional Participating Persons:	Dave Slaybaugh; Springfield, IL, FSDO
Original Publish Date:	October 27, 2005
Last Revision Date:	
Investigation Class:	Class
Note:	This accident report documents the factual circumstances of this accident as described to the NTSB.
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=62264

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](#).