



National Transportation Safety Board Aviation Accident Final Report

Location:	Grandfield, OK	Accident Number:	FTW03LA091
Date & Time:	02/01/2003, 1300 CST	Registration:	N474BG
Aircraft:	Gilbertson Zodiac CH601HDS	Aircraft Damage:	Substantial
Defining Event:		Injuries:	1 None

Flight Conducted Under: Part 91: General Aviation - Flight Test

Analysis

During a test flight on the morning of the accident, the engine was running rough; however, the pilot landed the airplane without further incident. The pilot removed the carburetor screen, cleaned the debris from the screen, and reinstalled the screen. During the accident flight, the oil and water temperature indicated 205-210 degrees, and the flight was returning to the airport. At an airspeed of 70 knots and an altitude of 500 feet agl, there was a total loss of engine power. The pilot performed the emergency landing procedures; however, he was not able to turn the airplane into the wind due to an unsafe landing area east of the airport traffic pattern for the runway. The pilot landed the airplane with a right quartering tailwind (25 knots, gusts 30 knots) in a field. During the landing roll, the nose landing gear struck a berm, the nose landing gear collapsed, and the airplane structure twisted as the airplane came to rest. The reason for the loss of engine power was not determined. The pilot reported the winds were from the southwest at 25 knots with gust to 30 knots. The airplane had accumulated 27.6 hours of the required 40 hours of flight time under the operating limitations for the homebuilt airplane.

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 an undetermined reason. Contributing factors were the lack of suitable terrain for the forced landing and the unfavorable wind.

Findings

Occurrence #1: LOSS OF ENGINE POWER

Phase of Operation: CRUISE

Findings

1. (C) REASON FOR OCCURRENCE UNDETERMINED

Occurrence #2: FORCED LANDING

Phase of Operation: DESCENT - EMERGENCY

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

Phase of Operation: EMERGENCY LANDING

Findings

2. (F) TERRAIN CONDITION - NONE SUITABLE

3. TERRAIN CONDITION - HIGH VEGETATION

4. (F) WEATHER CONDITION - UNFAVORABLE WIND

Factual Information

On February 1, 2003, approximately 1300 central standard time, a Gilbertson Zodiac CH601HDS experimental airplane, N474BG, struck a berm during a forced landing following a total loss of engine power near Grandfield, Oklahoma. The airplane was built, owned, and operated by the pilot under 14 Code of Federal Regulations (CFR) Part 91. The airline transport pilot, sole occupant of the airplane, was not injured, and the airplane sustained substantial damage. Visual meteorological conditions prevailed for the local flight, and a flight plan was not filed. The test flight originated from Chattanooga Sky Harbor Airport (92F) at Chattanooga, Oklahoma, approximately 1240.

The 5,043 hour pilot reported to the FAA inspector that during a flight that morning, the 73 horsepower Subaru automotive engine was running rough; however, he landed the airplane without further incident. The carburetor screen was removed, cleaned of debris, and reinstalled by the pilot.

On the Pilot/Operator Aircraft Accident Report, NTSB Form 6120.1/2, the pilot reported that during the accident flight, the oil and water temperature indicated 205-210 degrees, and the pilot elected to return to the airport at an initial altitude of 700 feet agl. At an airspeed of 70 knots and an altitude of 500 feet agl, there was a total loss of engine power. The pilot performed the emergency landing procedures. The pilot was not able to turn the airplane into the wind due to an unsafe landing area east of the airport traffic pattern for runway 17. The pilot attempted a 270 degree turn to a landing area; however, due to the decreasing altitude and airspeed (55 knots) of the airplane, he was not able to complete the turn. The pilot landed the airplane in a field with a right quartering tailwind. During the landing roll, the nose landing gear struck a berm, the nose landing gear collapsed, and the airplane came to rest 110 feet from the initial impact point in the field. The pilot reported the winds were from the southwest at 25 knots, with gust to 30 knots.

The FAA inspector reported that during the impact sequence, the airplane structure twisted, and the firewall and all components forward of the firewall separated from the airplane. The integrity of the fuel tank was compromised. The airplane had accumulated 27.6 hours of the required 40 hours of flight time under the operating limitations for the homebuilt airplane.

Pilot Information

Certificate:	Airline Transport	Age:	53, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	Helicopter	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane; Helicopter	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 2 Valid Medical--no waivers/lim.	Last FAA Medical Exam:	04/26/2002
Occupational Pilot:		Last Flight Review or Equivalent:	10/05/2001
Flight Time:	5043 hours (Total, all aircraft), 28 hours (Total, this make and model), 3117 hours (Pilot In Command, all aircraft), 67 hours (Last 90 days, all aircraft), 21 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Gilbertson	Registration:	N474BG
Model/Series:	Zodiac CH601HDS	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	Yes
Airworthiness Certificate:	Experimental	Serial Number:	63628
Landing Gear Type:	Tricycle	Seats:	2
Date/Type of Last Inspection:	08/31/2002, Condition	Certified Max Gross Wt.:	1200 lbs
Time Since Last Inspection:	31 Hours	Engines:	1 Reciprocating
Airframe Total Time:	28 Hours at time of accident	Engine Manufacturer:	Subaru
ELT:	Installed, activated, did not aid in locating accident	Engine Model/Series:	EA81
Registered Owner:	Keith G. Gilbertson	Rated Power:	73 hp
Operator:	Keith G. Gilbertson	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:		Distance from Accident Site:	
Observation Time:		Direction from Accident Site:	
Lowest Cloud Condition:	Clear	Visibility	10 Miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	25 knots / 30 knots	Turbulence Type Forecast/Actual:	/
Wind Direction:	325°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:		Temperature/Dew Point:	21 °C
Precipitation and Obscuration:			
Departure Point:	Chattanooga, OK (92F)	Type of Flight Plan Filed:	None
Destination:	Chattanooga, OK (92F)	Type of Clearance:	VFR
Departure Time:	1240 CST	Type of Airspace:	Class E

Airport Information

Airport:	Chattanooga Sky Harbor (92F)	Runway Surface Type:	Asphalt
Airport Elevation:	1135 ft	Runway Surface Condition:	Dry
Runway Used:	17	IFR Approach:	None
Runway Length/Width:	3400 ft / 60 ft	VFR Approach/Landing:	Forced Landing

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 None	Latitude, Longitude:	34.237778, -98.741944

Administrative Information

Investigator In Charge (IIC):	Joyce Roach	Report Date:	05/13/2003
Additional Participating Persons:	Don Cook; FAA FSDO; Oklahoma City, OK		
Publish Date:			
Investigation Docket:	NTSB accident and incident dockets serve as permanent archival information for the NTSB's investigations. Dockets released prior to June 1, 2009 are publicly available from the NTSB's Record Management Division at pubinq@ntsb.gov , or at 800-877-6799. Dockets released after this date are available at http://dms.nts.gov/pubdms/ .		

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The Independent Safety Board Act, as codified at 49 U.S.C. Section 1154(b), precludes the admission into evidence or use of any part of an NTSB report related to an incident or accident in a civil action for damages resulting from a matter mentioned in the report. A factual report that may be admissible under 49 U.S.C. § 1154(b) is available [here](#).