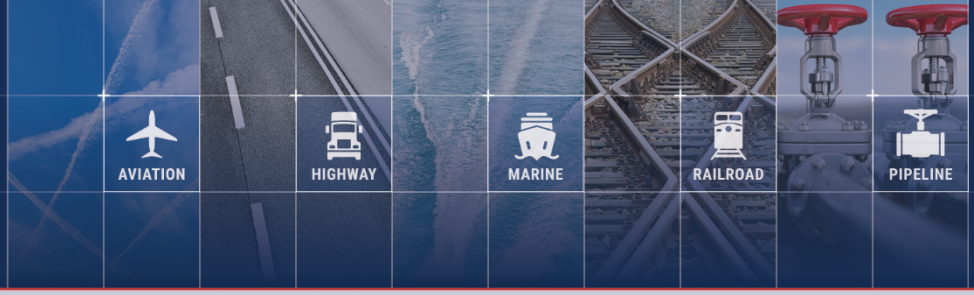

Aviation Investigation Final Report

Location:	PLYMOUTH, Michigan	**Accident Number:**	CHI94FA310
Date & Time:	September 3, 1994, 08:43 Local	**Registration:**	N8470S
Aircraft:	CESSNA 182H	**Aircraft Damage:**	Destroyed
Defining Event:		**Injuries:**	1 Fatal, 1 Serious, 2 Minor
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

THE COMMERCIAL/PILOT RATED PASSENGER SAID THE TAKEOFF WAS UNEVENTFUL UNTIL THE AIRPLANE REACHED AN ALTITUDE OF A FEW HUNDRED FEET. HE STATED THAT HE HEARD A LOUD NOISE THAT SOUNDED LIKE A BACKFIRE AND THE ENGINE LOST POWER. A FORCED LANDING APPROACH WAS MADE TO A SMALL FIELD LOCATED IN A CONGESTED INDUSTRIAL PARK. DURING THE APPROACH, THE LEFT WING OF THE AIRPLANE IMPACTED A TREE. THE AIRPLANE THEN YAWED, THE LEFT WING DROPPED, AND THE AIRPLANE IMPACTED THE TERRAIN. INVESTIGATION REVEALED NO EVIDENCE OF A PREIMPACT MECHANICAL FAILURE. THE TEMPERATURE AND DEW POINT WERE 53 AND 52 DEGREES, RESPECTIVELY. ACCORDING TO ICING PROBABILITY CHARTS, CONDITIONS WERE CONDUCIVE FOR SERIOUS CARBURETOR ICING. THE CARBURETOR HEAT WAS FOUND IN THE 'OFF' POSITION.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: CARBURETOR ICE, AND IMPROPER USE OF (OR FAILURE TO USE) THE CARBURETOR HEAT. FACTORS RELATED TO THE ACCIDENT WERE: CARBURETOR ICING (WEATHER) CONDITIONS, AND THE LACK OF SUITABLE TERRAIN FOR A FORCED LANDING.

Findings

Occurrence #1: LOSS OF ENGINE POWER(TOTAL) - NONMECHANICAL
Phase of Operation: TAKEOFF - INITIAL CLIMB

Findings
1. (F) WEATHER CONDITION - CARBURETOR ICING CONDITIONS
2. (C) FUEL SYSTEM,CARBURETOR - ICE
3. (C) CARBURETOR HEAT - IMPROPER USE OF

Occurrence #2: FORCED LANDING
Phase of Operation: EMERGENCY DESCENT/LANDING

Occurrence #3: IN FLIGHT COLLISION WITH OBJECT
Phase of Operation: EMERGENCY LANDING

Findings
4. (F) TERRAIN CONDITION - NONE SUITABLE
5. (F) OBJECT - TREE(S)

Factual Information

HISTORY OF FLIGHT

On September 3, 1994, at 0843 eastern daylight time, a Cessna 182H, N8470S, operated by Lawrence C. Gillelan was destroyed during a forced landing shortly after takeoff at the Mettetal-Canton Airport in Plymouth, Michigan. The private pilot sustained fatal injuries. One pilot rated passenger sustained serious injuries and two other passengers sustained minor injuries. The personal flight was planned to St. James, Michigan, and was conducted under 14 CFR Part 91 in visual meteorological conditions. No flight plan was filed.

According to witnesses, the purpose of the flight was to travel to Beaver Island, Michigan, for the Labor Day Weekend. The commercial pilot rated passenger said the pilot performed a thorough preflight inspection and completed a normal runup prior to the takeoff. He said the takeoff was uneventful until the airplane reached an altitude of a few hundred feet. He heard a loud noise that sounded like a backfire and the engine lost power. The stall warning horn sounded and the pilot pointed the airplane down toward a small field in an industrial complex. He said there was insufficient time for the pilot to troubleshoot the engine problem.

The pilot rated passenger said the left wing of the airplane impacted a tree and yawed the airplane to the left. He said he had not expected the tree to alter the flight path so severely. The left wing dropped and the airplane impacted the terrain. He said it bounced up on the nose and came to rest. A fire immediately started behind the engine.

He said his wife climbed out from the seat behind him, seat 2B. He unbuckled his seat belt and fell out of the airplane. Several rescuers assisted them away from the burning airplane.

The Plymouth Township Police and Fire Departments responded to the scene. One of the first officers to arrive said the pilot was unconscious and rescuers could not open his seat belt. He said several rescuers pulled him and his seat out of the airplane. They also assisted the remaining passenger, in seat 2A, away from the airplane.

AIRCRAFT INFORMATION

The aircraft log books were not recovered. During a telephone interview, an aircraft inspector reported he had conducted an annual inspection of the airplane on August 3, 1994. He reported the total airframe time was 1665.46 and the engine had 276.44 hours since major overhaul. He said his records reflected that he had accomplished three recurring airworthiness directives during the inspection. He said the airplane had flown 14 hours since the prior annual inspection.

METEOROLOGICAL INFORMATION

Visual meteorological conditions existed at the accident site. The temperature was 53 degrees and the dew point was 52 degrees. The carburetor icing probability chart contained in DAT/FAA/CT- 82/44 indicates the potential for "serious icing at cruise power."

WRECKAGE AND IMPACT INFORMATION

The NTSB on scene investigation began about 1500 on September 3, 1994. The beginning of the wreckage path was a large tree, located on the northeast corner of the industrial building at 9135 General Court. Several branches of the tree were broken. Leaves and branches were strewn to the north of the tree for approximately 40 feet. An examination of the top of the building revealed no evidence of impact or damage. The main impact crater was located 222 feet from the tree on a bearing of 028 degrees. The main wreckage was 45 feet further.

The accident site was located in a large industrial complex. The small field where the wreckage was located, was the only open area in the immediate vicinity.

The center section and nose of the airplane, except for steel components, forward of the aft seat, were completely melted and charred. The landing gear and both wings were collapsed to the ground. The right wing was buckled midspan and both wings exhibited crushing to the leading edges at the tips. The right stabilizer was outboard section was bent downward and inboard. The top portion of the fuselage was buckled behind the wing. The aft fuselage and empennage were intact. The propeller exhibited aft bending with no rotational damage.

Both fuel tanks were burned open on the inboard ends. They each contained several gallons of red colored fuel, several quarts of clear fluid, and fire retardant foam. A representative of the local police department reported that fire crews had sprayed the foam to extinguish the post crash fire. All fuel lines were melted. The carburetor exhibited severe burning and melting. Disassembly revealed no evidence of malfunction. The composite float exhibited severe charring. The fuel selector was in the both position.

The spark plugs were blackened with carbon. Examination of the upper cylinders and pistons revealed clean, slightly yellow-grey colored combustion chambers.

Examination of engine and flight control continuity revealed no evidence of preimpact malfunction.

MEDICAL AND PATHOLOGICAL INFORMATION

The autopsy of the pilot was conducted September 4, 1994, by the Wayne County Coroner, 400 E. Lafayette, Detroit, Michigan. The results of FAA toxicological testing of specimens from the pilot were negative for all tests conducted.

FIRE

Witnesses to the accident reported the postcrash fire initiated in the area behind the engine. Rescuers used hand held fire extinguishers to suppress the fire during the rescue effort.

TESTS AND RESEARCH

A fuel sample taken from the left main fuel tank was provided to the DuPage County Sheriff's Office Crime Laboratory for analysis. The forensic chemist concluded that the specimen contained an undetermined fraction of automotive gasoline.

The engine was crated and shipped to Teledyne Continental Motors, Mobile, Alabama. Laboratory examination of the engine, conducted on November 17, 1994, revealed no evidence of preimpact mechanical malfunction.

ADDITIONAL INFORMATION

Parties to the investigation were the Federal Aviation Administration Flight Standards District Office, Belleville, Michigan, Cessna Aircraft Corporation, Wichita, Kansas, and Teledyne Continental Motors, Mobile, Alabama.

Following the on scene portion of the investigation, the wreckage, with the exception of the engine, was released to the son of the pilot. The engine was returned on December 7, 1994 and the pilot's son acknowledged receipt on the shipping receipt.

Pilot Information

Certificate:	Private	**Age:**	58,Male
Airplane Rating(s):	Single-engine land	**Seat Occupied:**	Left
Other Aircraft Rating(s):	None	**Restraint Used:**	
Instrument Rating(s):	None	**Second Pilot Present:**	No
Instructor Rating(s):	None	**Toxicology Performed:**	Yes
Medical Certification:	Class 3 Valid Medical--w/ waivers/lim	**Last FAA Medical Exam:**	January 31, 1994
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	680 hours (Total, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	CESSNA	**Registration:**	N8470S
Model/Series:	182H 182H	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	
Airworthiness Certificate:	Normal	**Serial Number:**	18256570
Landing Gear Type:	Tricycle	**Seats:**	4
Date/Type of Last Inspection:	September 3, 1994 Annual	**Certified Max Gross Wt.:**	2800 lbs
Time Since Last Inspection:		**Engines:**	1 Reciprocating
Airframe Total Time:		**Engine Manufacturer:**	CONTINENTAL
ELT:	Installed, not activated	**Engine Model/Series:**	O-470
Registered Owner:	LAWRENCE C. GILLELAN	**Rated Power:**	235 Horsepower
Operator:	LAWRENCE C. GILLELAN	**Operating Certificate(s) Held:**	None
Operator Does Business As:		**Operator Designator Code:**	

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	**Condition of Light:**	Day
Observation Facility, Elevation:	YIP ,716 ft msl	**Distance from Accident Site:**	8 Nautical Miles
Observation Time:	08:45 Local	**Direction from Accident Site:**	210°
Lowest Cloud Condition:	Scattered / 1500 ft AGL	**Visibility**	15 miles
Lowest Ceiling:	None	**Visibility (RVR):**	
Wind Speed/Gusts:	5 knots / None	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	30°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	30 inches Hg	**Temperature/Dew Point:**	12°C / 11°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:		**Type of Flight Plan Filed:**	None
Destination:	ST JAMES (SJX)	**Type of Clearance:**	VFR
Departure Time:	00:00 Local	**Type of Airspace:**	Class G

Airport Information

Airport:		**Runway Surface Type:**	
Airport Elevation:		**Runway Surface Condition:**	
Runway Used:	0	**IFR Approach:**	None
Runway Length/Width:		**VFR Approach/Landing:**	Forced landing

Wreckage and Impact Information

Crew Injuries:	1 Fatal	**Aircraft Damage:**	Destroyed
Passenger Injuries:	1 Serious, 2 Minor	**Aircraft Fire:**	On-ground
Ground Injuries:	N/A	**Aircraft Explosion:**	None
Total Injuries:	1 Fatal, 1 Serious, 2 Minor	**Latitude, Longitude:**	42.369453,-83.460914(est)

Administrative Information

Investigator In Charge (IIC):	Robbins, Wesley
Additional Participating Persons:	KRIS WETHERELL; WICHITA , KS DALE CARTER; MARIETTA , GA MARTHA M WINNARD; BELLEVILLE , MI GERALD C CARTER; BELLEVILLE , MI
Original Publish Date:	September 24, 1995
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=9390