



Aviation Investigation Final Report

Location:	Sturgis, Michigan	Accident Number:	CHI04LA065
Date & Time:	February 9, 2004, 15:30 Local	Registration:	N6387X
Aircraft:	Cessna 402B	Aircraft Damage:	Substantial
Defining Event:		Injuries:	1 Serious, 1 Minor
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The airplane sustained substantial damage when it impacted a tree during low altitude maneuvering. The pilot-in-command decided to over fly a friend's house. The pilot-in-command executed a steep left turn for 360 degrees and leveled the airplane just above the tree line. The pilot saw a large pine tree about 30 feet ahead of the airplane. The pilot-in-command began to pull up on the airplane but it impacted the tree causing serious injuries to the pilot. The pilot rated passenger took control of the airplane and landed without further incident. The pilot rated passenger reported that neither he nor the pilot-in-command were using their shoulder harnesses at the time of the accident.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The failure to maintain obstacle clearance during an intentional low altitude maneuver and the ostentatious display by the pilot-in-command. A factor to the accident was the tree.

Findings

Occurrence #1: IN FLIGHT COLLISION WITH OBJECT
Phase of Operation: MANEUVERING

Findings

1. (C) LOW ALTITUDE FLIGHT/MANEUVER - INTENTIONAL - PILOT IN COMMAND
2. (C) OSTENTATIOUS DISPLAY - PILOT IN COMMAND

- 3. (C) CLEARANCE - NOT MAINTAINED - PILOT IN COMMAND
 - 4. (F) OBJECT - TREE(S)
 - 5. SHOULDER HARNESS - NOT USED - PILOT IN COMMAND
 - 6. SHOULDER HARNESS - NOT USED - PILOT PASSENGER
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Occurrence #2: FORCED LANDING

Phase of Operation: EMERGENCY LANDING

Factual Information

On February 9, 2004, at 1530 eastern standard time, a Cessna 402B, N6387X, sustained substantial damage when it impacted a tree during low altitude maneuvering near Sturgis, Michigan. The pilot rated passenger took control of the airplane and landed without further incident at the Kirsch Municipal Airport (IRS), Sturgis, Michigan. The commercial pilot sustained serious injuries, and the pilot rated passenger received minor injuries. The flight was operated under 14 CFR Part 91. Visual meteorological conditions prevailed at the time of the accident. The flight originated from Battle Creek, Michigan, at 1510 and was en route to IRS.

The pilot rated passenger reported that the airplane was about 5 miles north of IRS when the pilot-in-command said that he wanted to fly over a friend's house. The airplane was on a southerly heading and the house was to the left of the airplane. The pilot-in-command executed a steep left turn for 360 degrees and leveled the airplane just above the tree line. The pilot rated passenger stated that he remembers the pilot-in-command said something like, "This is low." According to the pilot rated passenger, he remembers the pilot responding, "I think someone is home." The pilot rated passenger stated that he and the pilot both looked forward and saw a large pine tree 30 feet ahead of the airplane. The pilot rated passenger reported that the pilot-in-command began to pull up, but it was too late. According to the pilot rated passenger, the airplane struck the pine tree at 170-180 knots. The impact shattered the pilot side window and the left forward baggage door came open. The pilot-in-command remained conscious, but was bleeding from the head area. The pilot rated passenger took control of the airplane and landed without further incident at IRS. The pilot rated passenger reported that neither he nor the pilot-in-command were using their shoulder harnesses at the time of the accident.

The Federal Aviation Administration's Advisory Circular (AC) number 91-65, "Use Of Shoulder Harness In Passenger Seats," was released on August 4, 1986. In the AC it is reported that the National Transportation Safety Board examined 500 relatively severe general aviation airplane accidents to determine what proportion of the occupants would have benefited from the use of shoulder harnesses. The AC states, "The [national transportation] safety board found that 20 percent of the fatally-injured occupants in these accidents could have survived with shoulder harnesses (assuming the seat belt was fastened) and 88 percent of the seriously injured could have had significantly less severe injuries with the use of shoulder harnesses."

Pilot Information

Certificate:	Commercial; Flight instructor	Age:	30, Male
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	Airplane single-engine; Instrument airplane	Toxicology Performed:	No
Medical Certification:	Class 1 Valid Medical--no waivers/lim.	Last FAA Medical Exam:	June 30, 2003
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	July 14, 2003
Flight Time:	2400 hours (Total, all aircraft), 120 hours (Total, this make and model), 2300 hours (Pilot In Command, all aircraft), 120 hours (Last 90 days, all aircraft), 42 hours (Last 30 days, all aircraft), 0 hours (Last 24 hours, all aircraft)		

Other flight crew Information

Certificate:	Commercial; Flight instructor	Age:	29, Male
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Rear
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	Airplane single-engine	Toxicology Performed:	No
Medical Certification:	Class 1 Valid Medical--no waivers/lim.	Last FAA Medical Exam:	October 15, 2003
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	July 14, 2003
Flight Time:	2096 hours (Total, all aircraft), 106 hours (Total, this make and model), 2034 hours (Pilot In Command, all aircraft), 78 hours (Last 90 days, all aircraft), 48 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	Registration:	N6387X
Model/Series:	402B	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	1350
Landing Gear Type:	Retractable - Tricycle	Seats:	7
Date/Type of Last Inspection:	February 2, 2004 100 hour	Certified Max Gross Wt.:	6300 lbs
Time Since Last Inspection:	7.9 Hrs	Engines:	2 Reciprocating
Airframe Total Time:	7792 Hrs as of last inspection	Engine Manufacturer:	Continental
ELT:	Installed, not activated	Engine Model/Series:	TSIO-520
Registered Owner:		Rated Power:	300 Horsepower
Operator:		Operating Certificate(s) Held:	None
Operator Does Business As:		Operator Designator Code:	BLIV

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	KIRS, 925 ft msl	Distance from Accident Site:	5 Nautical Miles
Observation Time:	15:36 Local	Direction from Accident Site:	360°
Lowest Cloud Condition:		Visibility	10 miles
Lowest Ceiling:	Broken / 2200 ft AGL	Visibility (RVR):	
Wind Speed/Gusts:	13 knots / 20 knots	Turbulence Type Forecast/Actual:	/
Wind Direction:	240°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.1 inches Hg	Temperature/Dew Point:	-1°C / -3°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Sturgis, MI (KBTL)	Type of Flight Plan Filed:	None
Destination:	Sturgis, MI (KIRS)	Type of Clearance:	None
Departure Time:	15:10 Local	Type of Airspace:	Class G

Airport Information

Airport:	KIRSCH MUNI IRS	Runway Surface Type:	Asphalt
Airport Elevation:	925 ft msl	Runway Surface Condition:	Dry
Runway Used:	24	IFR Approach:	None
Runway Length/Width:	3421 ft / 75 ft	VFR Approach/Landing:	Traffic pattern

Wreckage and Impact Information

Crew Injuries:	1 Serious, 1 Minor	Aircraft Damage:	Substantial
Passenger Injuries:		Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Serious, 1 Minor	Latitude, Longitude:	41.812778,-85.439163

Administrative Information

Investigator In Charge (IIC):	Silliman, James
Additional Participating Persons:	Mike Kenna; Federal Aviation Administration; South Bend, IN
Original Publish Date:	September 1, 2004
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=58736

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](#).