



National Transportation Safety Board Aviation Accident Final Report

Location:	Chadron, NE	Accident Number:	CHI03LA244
Date & Time:	08/02/2003, 0815 MDT	Registration:	N70522
Aircraft:	Piper J3C-65	Aircraft Damage:	Substantial
Defining Event:		Injuries:	1 Minor
Flight Conducted Under:	Part 91: General Aviation - Personal		

Analysis

The airplane was substantially damaged when it impacted a hangar immediately after takeoff from an alfalfa field. The pilot reported that he taxied for takeoff, leaving what he thought was sufficient distance for the takeoff roll and initial climb. He noted that during the takeoff, at a point three-quarters of the distance to the hangar, he realized he was not going to be able to clear the obstacles. The pilot stated: "I was in a nose up attitude to try to clear the hangar but could not gain enough altitude. I hit the hangar just left of center and the plane fell back to the ground." The field was approximately one mile square and was surrounded by a barbed-wire fence. The available distance from the point where the takeoff was initiated to the hangar was approximately 730 feet. The takeoff path reportedly sloped upward about 10 feet. The pilot reported that there were no malfunctions with the aircraft or engine prior to the accident. Winds in the vicinity were reported from the south at eight knots. Temperature and dew point were 22 degrees Celsius and 29.98 inches of mercury. Density altitude was calculated as 4,847 feet. Federal regulations require the pilot-in-command to review takeoff distance data prior to flight to ensure sufficient runway distance is available.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: Inadequate preflight planning by the pilot to ensure the required takeoff distance was utilized, as well as a failure to abort the takeoff. Contributing factors were the uphill gradient and the hangar.

Findings

Occurrence #1: IN FLIGHT COLLISION WITH OBJECT
Phase of Operation: TAKEOFF - INITIAL CLIMB

Findings

1. (C) PREFLIGHT PLANNING/PREPARATION - INADEQUATE - PILOT IN COMMAND
2. (C) ABORTED TAKEOFF - NOT PERFORMED - PILOT IN COMMAND
3. (F) OBJECT - HANGAR/AIRPORT BUILDING
4. (F) TERRAIN CONDITION - UPHILL

Occurrence #2: IN FLIGHT COLLISION WITH TERRAIN/WATER
Phase of Operation: TAKEOFF - INITIAL CLIMB

Factual Information

On August 2, 2003, at 0815 mountain daylight time, a Piper J3C-65, N70522, piloted by a private pilot, was substantially damaged following an in-flight collision with a hangar immediately after takeoff from a field in Chadron, Nebraska. Visual meteorological conditions prevailed at the time of the accident. The personal flight was being conducted under 14 CFR Part 91 and was not on a flight plan. The pilot reported minor injuries. The local flight was originating at the time of the accident.

The pilot's written statement reported that he taxied for takeoff, leaving what he thought was sufficient distance for the takeoff roll and initial climb. The operating area was reportedly an alfalfa field with a hangar located on the north end.

The pilot noted that during the takeoff, at a point three-quarters of the distance to the hangar, he realized he was not going to be able to clear the obstacles. He reported he stayed to the left of his intended takeoff path in order to minimize the hazard to people on the ground. The pilot stated: "I was in a nose up attitude to try to clear the hangar but could not gain enough altitude. I hit the hangar just left of center and the plane fell back to the ground."

The owner of the aircraft reported that prior to the accident he had flown two passes over the field in the accident airplane, landed and shutdown approximately 50 yards south of the hangar. He stated that the pilot, who was going to take the aircraft for a flight, situated himself in the rear seat. He assisted the pilot start the engine and observed him taxi to the south. He noted: "I had began to walk back to the [hangar] when my attention was returned to the aircraft ... and noted he had shorten[ed] the takeoff area to less [than] I expected. ... As the aircraft passed by me I noted he had enough altitude to clear the fence, but the aircraft seemed to stall as it hit the [hangar]."

According to the Federal Aviation Administration (FAA) investigator on-scene, the field was approximately one mile square and was surrounded by a barbed-wire fence. The investigator estimated the available distance from the point where the takeoff was initiated to the hangar was approximately 730 feet. In addition, the takeoff path reportedly sloped upward about 10 feet.

Owners of the same make and model aircraft were asked about the expected takeoff performance by the FAA investigator. They reportedly estimated a required takeoff distance of 900 feet based on the weather and loading conditions.

The post-accident examination of the aircraft did not reveal any pre-impact anomalies. In addition, the pilot reported that there were no malfunctions with the aircraft or engine prior to the accident.

The pilot reported weather conditions at the scene as clear, 10 miles visibility, and northeast winds at less than 10 knots. Conditions reported by the Chadron Municipal Airport (CDR) Automated Surface Observing System at 0753, located 6 miles south-southwest of the accident site, were clear skies, 10 miles visibility, and winds from 160 degrees at 8 knots. The temperature and altimeter setting were reported as 22 degrees Celsius and 29.98 inches of mercury. The density altitude calculated based on these conditions was 4,847 feet.

Federal regulations require the pilot-in-command to review takeoff distance data prior to flight. Specifically, 14 CFR 91.103, Preflight Action, states in part: "For civil aircraft for which

an approved Airplane or Rotorcraft Flight Manual containing takeoff and landing distance data is required, the takeoff and landing distance data contained therein," or for other civil aircraft "other reliable information appropriate to the aircraft, relating to aircraft performance under expected values of airport elevation and runway slope, aircraft gross weight, and wind and temperature."

Pilot Information

Certificate:	Private	Age:	54, Male
Airplane Rating(s):	Single-engine Land	Seat Occupied:	Rear
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 3 Valid Medical--w/ waivers/lim.	Last FAA Medical Exam:	10/18/2002
Occupational Pilot:		Last Flight Review or Equivalent:	10/18/2002
Flight Time:	836 hours (Total, all aircraft), 3 hours (Total, this make and model), 782 hours (Pilot In Command, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	Registration:	N70522
Model/Series:	J3C-65	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	17528
Landing Gear Type:	Tailwheel	Seats:	2
Date/Type of Last Inspection:	06/12/2003, Annual	Certified Max Gross Wt.:	1220 lbs
Time Since Last Inspection:	5 Hours	Engines:	1 Reciprocating
Airframe Total Time:	2863 Hours at time of accident	Engine Manufacturer:	Continental
ELT:	Installed, not activated	Engine Model/Series:	C65
Registered Owner:	On file	Rated Power:	65 hp
Operator:	On file	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	Condition of Light:	Day
Observation Facility, Elevation:	CDR, 3297 ft msl	Distance from Accident Site:	6 Nautical Miles
Observation Time:	0753 MDT	Direction from Accident Site:	210°
Lowest Cloud Condition:	Clear	Visibility	10 Miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	8 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	160°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29.98 inches Hg	Temperature/Dew Point:	22° C / 15° C
Precipitation and Obscuration:			
Departure Point:	Chadron, NE (PVT)	Type of Flight Plan Filed:	None
Destination:		Type of Clearance:	None
Departure Time:	0715 MDT	Type of Airspace:	Class G

Airport Information

Airport:	Pvt	Runway Surface Type:	
Airport Elevation:		Runway Surface Condition:	
Runway Used:	N/A	IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	1 Minor	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Minor	Latitude, Longitude:	42.933333, -103.000000

Administrative Information

Investigator In Charge (IIC):	Tim Sorensen	Report Date:	12/30/2003
Additional Participating Persons:	Douglas Dymock; FAA -- Lincoln FSDO; Lincoln, NE		
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/ .		

The National Transportation Safety Board (NTSB), established in 1967, is an independent federal agency mandated by Congress through the Independent Safety Board Act of 1974 to investigate transportation accidents, determine the probable causes of the accidents, issue safety recommendations, study transportation safety issues, and evaluate the safety effectiveness of government agencies involved in transportation. The NTSB makes public its actions and decisions through accident reports, safety studies, special investigation reports, safety recommendations, and statistical reviews.

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](#).