National Transportation Safety Board
Aviation Accident Final Report

Location:	NICKERSON, KS	**Accident Number:**	CHI00LA289
Date & Time:	09/01/2000, 1600 CDT	**Registration:**	N9326R
Aircraft:	Cessna A188B	**Aircraft Damage:**	Substantial
Defining Event:		**Injuries:**	1 None
Flight Conducted Under:	Part 137: Agricultural		

Analysis

During initial climb after takeoff the aerial application aircraft, loaded with 165-gallons of chemical, impacted a hay bale located off the end of the runway. The pilot maneuvered the aircraft back for a landing and during the landing the right main landing gear collapsed, the right wing impacted the terrain, and the aircraft skidded to a stop. Witnesses to the accident saw the aircraft impact a hay bale, located off the end of the runway used for the takeoff run, severing the right main landing gear. The pilot reported that the accident could have been prevented by, "I could have carried a smaller load or simply not flown when the density altitude gets too high. Also could have checked the adjacent fields for temporary obstructions (in this case some hay bales) that may have been placed there." The density altitude was approximated at 4,780-mean sea level.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: altidude/clearance not obtained/maintained by the pilot. Factors to the accident were the hay bale, the inadequate preflight planning/preparation by the pilot, the high-density altitude, and the high weight of the aircraft at the time of the accident.

Findings

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

Findings
1. (F) OBJECT - OTHER
2. (C) ALTITUDE/CLEARANCE - NOT OBTAINED/MAINTAINED - PILOT IN COMMAND
3. (F) WEATHER CONDITION - HIGH DENSITY ALTITUDE
4. (F) AIRCRAFT WEIGHT AND BALANCE - HIGH
5. (F) PREFLIGHT PLANNING/PREPARATION - INADEQUATE - PILOT IN COMMAND

Occurrence #2: GEAR COLLAPSED
Phase of Operation: LANDING

Findings
6. (F) LANDING GEAR,MAIN GEAR - FAILURE,TOTAL

Factual Information

On September 1, 2000, at 1600 central daylight time, a Cessna A188B, N9326R, owned and operated by a commercial pilot, sustained substantial damage during an in-flight collision with a hay bale during initial climb and subsequent main landing gear collapse during a precautionary landing at the pilot's private airstrip near Nickerson, Kansas. Visual metrological conditions prevailed at the time of the accident. The aerial application flight was operating under the provisions of 14 CFR Part 137 and was not on a flight plan. The pilot, the sole occupant, sustained no injuries. The flight was departing for the local aerial application flight at the time of the accident.

According the pilot's written statement, he was departing for an aerial application flight when on takeoff the aircraft impacted a hay bale located at the end of the runway. The pilot stated, "The acceleration during the take-off roll seemed lower than normal, this was expected given the heavy load [165-gallons of herbicide solution] and high density altitude [approximated at 4,780-mean sea level]." The pilot reported, "The aircraft became airborne just prior to reaching the end of the runway, but the airspeed was still well below Vy [best rate of climb airspeed]. I attempted to accelerate in 'ground effect' to Vy [best rate of climb airspeed], but the aircraft did not accelerate, so I decided to dump some of the load." The pilot stated that while he was dumping some of the chemical load, the aircraft "...bounce off the alfalfa field at least once and perhaps several times." The pilot reported that after releasing most of the chemical load, the aircraft was able to establish a normal climb attitude and speed. The pilot stated that he maneuvered the aircraft back for a landing and during the landing the right main landing gear collapsed, the right wing impacted the terrain, and the aircraft skidded to a stop.

The pilot reported that witnesses to the accident saw the aircraft impact a hay bale, located off the end of the runway used for the takeoff run, severing the right main landing gear.

The pilot reported that the accident could have been prevented by, "I could have carried a smaller load or simply not flown when the density altitude gets too high. Also could have checked the adjacent fields for temporary obstructions (in this case some hay bales) that may have been placed there."

Pilot Information

Certificate:	Flight Instructor; Commercial	**Age:**	42, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	**Seat Occupied:**	Center
Other Aircraft Rating(s):	Glider	**Restraint Used:**	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane	**Second Pilot Present:**	No
Instructor Rating(s):	Airplane Multi-engine; Airplane Single-engine; Glider	**Toxicology Performed:**	No
Medical Certification:	Class 2 Valid Medical--w/ waivers/lim.	**Last FAA Medical Exam:**	03/01/2000
Occupational Pilot:		**Last Flight Review or Equivalent:**	
Flight Time:	1980 hours (Total, all aircraft), 298 hours (Total, this make and model), 1775 hours (Pilot In Command, all aircraft), 206 hours (Last 90 days, all aircraft), 73 hours (Last 30 days, all aircraft), 6 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	**Registration:**	N9326R
Model/Series:	A188B A188B	**Aircraft Category:**	Airplane
Year of Manufacture:		**Amateur Built:**	No
Airworthiness Certificate:	Restricted	**Serial Number:**	18802237T
Landing Gear Type:	Tailwheel	**Seats:**	1
Date/Type of Last Inspection:	03/21/2000, Annual	**Certified Max Gross Wt.:**	4200 lbs
Time Since Last Inspection:	295 Hours	**Engines:**	1 Reciprocating
Airframe Total Time:	5235 Hours	**Engine Manufacturer:**	Continental
ELT:	Not installed	**Engine Model/Series:**	IO-520-D
Registered Owner:	BRIAN ANDREW BIRD	**Rated Power:**	300 hp
Operator:	BRIAN ANDREW BIRD	**Operating Certificate(s) Held:**	
Operator Does Business As:		**Operator Designator Code:**	Y7BG

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual Conditions	**Condition of Light:**	Day
Observation Facility, Elevation:	HUT, 1542 ft msl	**Distance from Accident Site:**	12 Nautical Miles
Observation Time:	1553 CDT	**Direction from Accident Site:**	130°
Lowest Cloud Condition:	Clear / 0 ft agl	**Visibility**	10 Miles
Lowest Ceiling:	None / 0 ft agl	**Visibility (RVR):**	0 ft
Wind Speed/Gusts:	10 knots /	**Turbulence Type Forecast/Actual:**	/
Wind Direction:	210°	**Turbulence Severity Forecast/Actual:**	/
Altimeter Setting:	29 inches Hg	**Temperature/Dew Point:**	102°C / 57°C
Precipitation and Obscuration:			
Departure Point:	(PVT)	**Type of Flight Plan Filed:**	None
Destination:		**Type of Clearance:**	None
Departure Time:	1600 CDT	**Type of Airspace:**	Class G

Airport Information

Airport:	PRIVATE AIRSTRIP (PVT)	**Runway Surface Type:**	Gravel
Airport Elevation:	1500 ft	**Runway Surface Condition:**	Dry
Runway Used:	27	**IFR Approach:**	None
Runway Length/Width:	2600 ft / 15 ft	**VFR Approach/Landing:**	Precautionary Landing; Traffic Pattern

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:**	

Administrative Information

Investigator In Charge (IIC):	ANDREW T FOX	**Report Date:**	10/09/2001
Additional Participating Persons:	JOHN PARSONS; WICHITA, KS		
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.ntsb.gov/pubdms/.		