



National Transportation Safety Board Aviation Accident Final Report

Location:	Portland, ME	Accident Number:	IAD04LA029
Date & Time:	07/02/2004, 1936 EDT	Registration:	N421KS
Aircraft:	Cessna 421B	Aircraft Damage:	Substantial
Defining Event:		Injuries:	2 None

Flight Conducted Under: Part 91: General Aviation - Personal

Analysis

Line personnel reported to the pilot that while the airplane had been parked on the ramp, heavy wind and rain "hydroplaned" the airplane across the ramp about 25 feet. After takeoff, the pilot retracted the landing gear and noticed an unfamiliar "clunking" noise during the retraction cycle. During the approach to the destination airport, he extended the landing gear and noted all three of the landing gear down and locked indicator lights were green. Sometime during the rollout he heard the "clunk" noise again, and the right wing began to settle lower than normal. The airplane then began to veer to the right and came to rest in the grass on the right side of runway. Examination of the right main landing gear revealed that two components of the down-lock mechanism had broken. The parts were submitted to the Safety Board Materials Laboratory. Metallurgical examination of the mating fractures revealed features typical of overstress separation. The fractures contained no evidence of fatigue.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: Failure of the right main landing gear down-lock mechanism resulting in the collapse of the right main landing gear.

Findings

Occurrence #1: GEAR COLLAPSED
Phase of Operation: LANDING - ROLL

Findings

1. (C) LANDING GEAR, GEAR LOCKING MECHANISM - FAILURE

Factual Information

On July 2, 2004, about 1936 eastern daylight time, a Cessna 421B, N421KS, was substantially damaged while landing at Portland International Jetport (PWM), Portland, Maine. The certificated private pilot and passenger were not injured. Visual meteorological conditions prevailed, and the airplane was operating on an instrument flight rules flight plan. The personal flight, which departed Groton-New London Airport (GON), Groton, Connecticut, at 1730, was conducted under 14 CFR Part 91.

According to a written statement submitted by the pilot, prior to his departure from Groton, the airplane was involved in "thunderstorm activity" while parked on the ramp. Line personnel reported to him that heavy wind and rain "hydroplaned" the airplane across the ramp about 25 feet. Prior to departing Groton Airport, the pilot performed a preflight examination of the airplane and found no abnormalities.

After takeoff, the pilot retracted the landing gear and noticed an unfamiliar "clunking" noise during the retraction cycle. The climb, cruise, and decent portions of the flight were all uneventful. During the approach to Portland Jetport, he extended the landing gear and noted all three of the landing gear down and locked indicator lights were green. The airplane touched down on the main landing gear, and as the airplane decelerated, it touched down softly on the nose wheel. Sometime thereafter, the pilot heard the "clunk" noise again, and the right wing began to "settle down lower than normal." The airplane then began to veer to the right side of the runway and came to rest in the grass on the right side of runway 29.

Examination of the right main landing gear revealed that the upper right landing gear trunnion ear and the attaching drag brace end ear had broken. The parts were submitted to the Safety Board Materials Laboratory. Metallurgical examination of the mating fractures revealed features typical of overstress separation. The fractures contained no evidence of fatigue.

The weather reported at Groton, on the day of the accident at 1649, included winds from 190 degrees at 7 knots gusting to 33 knots, and 3/4 statute miles visibility in heavy rain.

Pilot Information

Certificate:	Private	Age:	57, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	Seatbelt, Shoulder harness
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 3 Valid Medical--w/ waivers/lim.	Last FAA Medical Exam:	10/06/2003
Occupational Pilot:		Last Flight Review or Equivalent:	05/28/2003
Flight Time:	4312 hours (Total, all aircraft), 294 hours (Total, this make and model), 46 hours (Last 90 days, all aircraft), 9 hours (Last 30 days, all aircraft), 2 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	Registration:	N421KS
Model/Series:	421B	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	421B-0507
Landing Gear Type:	Retractable - Tricycle	Seats:	7
Date/Type of Last Inspection:	06/20/2004, Annual	Certified Max Gross Wt.:	7680 lbs
Time Since Last Inspection:	8.5 Hours	Engines:	2 Reciprocating
Airframe Total Time:	4310.1 Hours as of last inspection	Engine Manufacturer:	Teledyne Continental
ELT:	Installed, not activated	Engine Model/Series:	GTSIO-520-H
Registered Owner:	On file	Rated Power:	375 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:	PWM, 74 ft msl	Distance from Accident Site:	0 Nautical Miles
Observation Time:	1951 EDT	Direction from Accident Site:	0°
Lowest Cloud Condition:	Clear	Visibility	6 Miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	3 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	50°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	29.91 inches Hg	Temperature/Dew Point:	20° C / 17° C
Precipitation and Obscuration:			
Departure Point:	Groton, CT (GON)	Type of Flight Plan Filed:	IFR
Destination:	Portland, ME (PWM)	Type of Clearance:	IFR
Departure Time:	1830 EDT	Type of Airspace:	Class C

Airport Information

Airport:	Portland International Jetport (PWM)	Runway Surface Type:	Asphalt
Airport Elevation:	74 ft	Runway Surface Condition:	Unknown
Runway Used:	29	IFR Approach:	Unknown
Runway Length/Width:	6800 ft / 150 ft	VFR Approach/Landing:	Full Stop

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:	1 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 None	Latitude, Longitude:	43.646111, -70.308611

Administrative Information

Investigator In Charge (IIC):	Paul Cox	Report Date:	12/03/2004
Additional Participating Persons:	Gary H Readio; FAA/FSDO; Portland, ME		
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 pubinquiry@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](#).