



National Transportation Safety Board Aviation Accident Final Report

Location:	Monument Valley, Utah	Accident Number:	WPR11FA232
Date & Time:	May 23, 2011, 15:20 Local	Registration:	N803AN
Aircraft:	Cessna T207A	Aircraft Damage:	Substantial
Defining Event:	Loss of control in flight	Injuries:	3 Serious, 3 Minor
Flight Conducted Under:	Part 135: Air taxi & commuter - Non-scheduled - Sightseeing		

Analysis

According to the airplane's operator, the airplane was part of a flight of four airplanes that were taking an organized tour group of revenue passengers on a sightseeing tour of southern Utah. While operating in a high density altitude environment, the pilot was flying into an airport that had a 1,000-foot cliff about 400 feet from the end of the runway he was landing on. Because of the presence of the cliff, the Airguide Publications Airport Manual stated that all landings should be made on the runway that was headed toward the cliff and that all takeoffs should be made on the runway that was headed away from the cliff. The manual also stated that a go-around during landing was not possible. During his approach, the pilot encountered a variable wind and downdrafts. During the landing flare, the airplane dropped onto the runway hard and bounced back into the air. The pilot then immediately initiated a go-around and began a turn away from the runway heading. While in the turn, he was most likely unable to maintain sufficient airspeed, and the airplane entered a stall/mush condition and descended into the ground. A postaccident examination of the airframe and engine revealed no evidence of mechanical malfunctions or failures that would have precluded normal operation.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The pilot's decision to initiate a go-around after a bounced landing at an airport where go-arounds were not advised and his failure to maintain adequate airspeed during the go-around.

Findings

Aircraft	Airspeed - Not attained/maintained
Personnel issues	Decision making/judgment - Pilot
Environmental issues	High density altitude - Contributed to outcome
Environmental issues	Mountainous/hilly terrain - Contributed to outcome
Environmental issues	Downdraft - Contributed to outcome
Environmental issues	Variable wind - Contributed to outcome
Personnel issues	Aircraft control - Pilot

Factual Information

HISTORY OF FLIGHT

On May 23, 2011, about 1520 mountain daylight time, a Cessna T207A, N803AN, impacted the terrain during an attempted visual flight rules (VFR) go-around from Runway 16 at Monument Valley Airport, Monument Valley, Utah. The commercial pilot and two of his passengers received serious injuries, and the other three passengers received minor injuries. The airplane, which was owned by Yaki Point, LLC, and operated by Grand Canyon Airlines, sustained substantial damage. The 14 Code of Federal Regulations Part 135 on-demand sightseeing flight, which departed Grand Canyon Airport, Grand Canyon, Arizona, about one hour and forty minutes prior to the accident, was being operated in visual meteorological conditions. A company VFR flight plan had been filed.

According to the airplane's operator, the airplane was part of a flight of four airplanes that were taking an organized tour group of revenue passengers on a sightseeing tour of Southern Utah. Although the final destination of the tour was Page Municipal Airport, Page, Arizona, there was a planned stop at the Monument Valley Airport, where the passengers were scheduled to spend time at the Goulding Lodge and Trading Post.

The lead airplane of the group, and the first to land at Monument Valley, was a Cessna 208 Caravan. The other three airplanes were all Cessna T207's. The pilot of the Caravan reported that there were strong gusty winds in the area, and that twice while he was on final approach he hit downdrafts that caused the airplane to sink and lose airspeed. In both instances he had to apply "significant power" to recover. One of the downdraft encounters was while he was on short final. He also stated that once he was down on the runway, the winds were not as "squirrely" as they had been in the air, but more of a constant wind of about 10 knots out of the west. After landing, the Caravan pilot advised the following pilots that the winds on final were "weird," but not especially strong.

The second pilot to land (flying the first T207) touched down about 3 or 4 minutes after the Caravan. That pilot reported that although there was some bumpiness while she was on final, while she was on short final she detected hardly any wind at all. She said that she was able to fly a smooth stabilized approach to a smooth normal touchdown. The pilot of the Caravan confirmed this description, stating that from his position it appeared that the first T207 had not encountered any strong downdrafts or unusual winds.

The third airplane landed about 3 minutes after the second one. The pilot of that airplane said that although he had seen the windsock hanging limp when he overflew the airfield, once he was established on final approach it got really bumpy. He further stated that the winds were coming from all different directions, and that he had encountered a number of updrafts and downdrafts. He also stated that by the time he pulled off the runway and into his parking spot, that the winds were from about 240 degrees at about 25 knots, and that the wind sock was standing straight out.

The accident airplane was the last to land, and the other pilots were watching it while it was on

final approach. They reported that the pilot seemed to be a little high, and that the airplane's wings were rocking in a manner consistent with the pilot making corrections as a result of the airplane encountering variable winds. One of the pilots turned away before the airplane was on short final, but the other two who continued to watch reported that the airplane appeared to drop onto the runway and hit hard enough to bounce back into the air. At that point it appeared that the pilot added full power and initiated a go-around with what was described as a "very high" angle of attack. Soon thereafter it appeared that the pilot entered a left bank, and the airplane began sinking toward the terrain. It eventually impacted the terrain in a left wing low attitude, and appeared to the witnesses to cartwheel before coming to a stop.

All the pilots agreed that the engine sounded as if it was running strong and smooth during the apparent go-around attempt. And it reportedly remained at a very high power setting until the airplane impacted the terrain.

A review of the written statements provided by the passengers revealed that the airplane was being thrown around by gusty winds while on final. They also reported that when the airplane touched down it was somewhat sideways and not aligned with the runway, and that soon after contacting the runway, the pilot added power and executed a go-around. One passenger reported hearing a beeping sound, which she thought was some kind of warning, just before the airplane touched down, and again after the pilot initiated the go-around. She further stated that during the go-around, after the pilot initiated the left turn, the beeping appeared to get louder and faster. The passengers also stated that the pilot flew what appeared to them to be a "very tight turn," and confirmed that the airplane's left wing tip was the first part to impact the ground.

PERSONNEL INFORMATION

The 34 year old commercial pilot held Airplane Single-Engine Land and Airplane Instrument ratings. He also held Airplane-Single-Engine Land and Instrument Airplane Instructor ratings. Of his 965 hours of total flight time, 140 hours were in the make and model airplane involved in the accident. Of the 140 hours in make and model, 108 of those hours were accumulated in the 90 days prior to the accident. His last flight review, which was completed in a Cessna T207A, was signed off on March 10, 2011. His last FAA airman's medical, a class 2, was completed on March 29, 2011. The medical contained the limitation that the pilot had to wear corrective lenses while acting as a pilot. As of the date of this report, the pilot had no recollection of the sequence of events related to the accident.

AIRCRAFT INFORMATION

The airplane was a 1979 Cessna T207A, with a Teledyne Continental Motors TSIO520M, 310 horsepower engine, and a McCauley D3A34C401 controllable pitch propeller. The airplane's last 100 hour/annual inspection was completed on April 9, 2011, at which time the airframe had accumulated 13,417 hours. The engine had accumulated 1,326 hours since a major overhaul. At the time of the accident the airplane was below maximum allowable gross weight and within center of gravity limits.

METEOROLOGICAL INFORMATION

There was no weather recording or transmitting equipment at the Monument Valley Airport. The nearest weather reporting facility was at Kayenta, Arizona, which is located about 20 miles south of the accident site. According to the pilot of the third airplane to land, he listened to the transmission of the Automatic Weather Observation System at Kayenta while he was approaching Monument Valley, and the wind there was from 150 degrees at 25 knots, gusting to 30 knots.

According to the operator, at the time of the accident, the temperature at Monument Valley was 26 degrees C (68 degrees F), with a barometric pressure of 29.74 inches of Mercury, giving a density altitude of 6,790 feet. The wind around the airport was varying widely, sometimes with gusts up to 25 knots from 240 degrees (80 degrees off the runway heading), and a few minutes later being light to calm. Some of the airplanes in the four-plane group encountered a strong variable wind and moderate turbulence while on final, but at least one airplane did not encounter those conditions. Some of the airplanes encountered downdrafts on final that required significant power inputs to recover from their sink rate and decrease in airspeed, while others encountered very little if any downdraft activity. One pilot reported that immediately after the accident the wind appeared to be, "very inconsistent." He described the wind as being perfectly calm for awhile, and then having a sudden strong gust come up that rocked the wings of the tied down airplanes and caused the wind sock to stand straight out.

AIRPORT INFORMATION

The Monument Valley Airport is located on a flat desert plateau 5,280 feet above sea level. It has one asphalt paved runway designated 16/34. About 400 feet off the south end of runway 16 there is a nearly vertical sandstone rock wall that towers about 700 feet above the elevation at the end of the runway. Because of this obstacle, all of the flight guides that provide information about the airport indicate that all landings should be made on runway 16 (toward the obstacle), and all takeoffs should be made on runway 34 (away from the obstacle). Runway 16, the landing runway, is 4,100 feet long, 45 feet wide, and contains an uphill slope of 2.0%. The Airguide Publications Airport Manual states that "Cliff South is 1,000 feet above airport elevation," that there should be no touch-and-go landings, and the warning, "Go-around not possible."

WRECKAGE AND IMPACT INFORMATION

The airplane's left wing contacted the terrain at a point 1,660 feet from the runway threshold on a heading of 140 degrees. Fragments of the red navigational light lens and portions of the landing light lens were found at that location. About 45 feet further along the impact track, which ran on a heading of about 090 degrees, was an indentation in the sand where the propeller and engine made contact with the terrain. Ground scars indicated that at that point the engine separated from the airframe, and the propeller separated from the crankshaft flange. The propeller came to rest about ten feet past where it first impacted the terrain, but the engine and its cowling tumbled about another 120 feet further down track, coming to rest about 40 feet past the fuselage, which was located at 37 degrees, 01 minutes, 2.3 seconds North, by 110 degrees, 11 minutes, 55 seconds West. The outboard one-half of the left wing had been torn open, twisted, and severely distorted from the leading edge to the aft spar. Although the

lift strut was still attached to both the wing and the fuselage, the aft spar had separated from where it connected to the fuselage spar carry-through. The left flap cables and the aileron crossover cable contained separation failures, with the failure ends showing a broom straw condition consistent with overload. Except for the aforementioned cable overload failures, flight control continuity was established throughout the remainder of the airplane. The flaps were set at the 10 degree position, and the throttle, propeller, and mixture controls were in the full forward position. Neither of the main fuel tanks had been breached, and both contained an undetermined amount of fuel. The right wing had retained its basic form along its entire span, with the section outboard of the inboard end of the aileron being bent up about 15 degrees. The leading edge of the outboard section was crushed aft at about a 10 degree angle, starting at a point directly forward of the inboard end of the aileron and continuing to the tip where the aft-crushing was to the depth of the forward wing spar. The cabin portion of the fuselage retained its basic form from a point just forward of the lift strut attach fittings, to a point just aft of the most rear seat. At that point the aft portion of the fuselage had torn almost completely loose, and was being retained only by a small section of stressed skin along the right side, and by the empennage flight control cables. All passenger restraints remained attached to the fuselage and intact. The aft portion of the fuselage had been crushed, twisted, and severely deformed to a point just forward of the empennage. The empennage itself retained its basic form, with the trailing edges of both elevators exhibiting forward crushing consistent with their aft edges coming in contact with the terrain during the accident sequence. In addition, there was a crease/fold of the skin of the right horizontal stabilizer, running at about a 45 degree angle from its leading edge, starting about 2 feet inboard of its tip, to a point on its trailing edge, about two feet outboard of its juncture with the vertical stabilizer. The skin on both sides of the rudder showed a small degree of accordioning consistent with it also being pushed forward as its trailing edge came in contact with the terrain.

All three propeller blades remained attached to the propeller hub, with one being at the full flat pitch position, and the other two having rotated to about 90 degrees from flat pitch, with their leading edges facing directly forward in relation to the hub. The blade at flat pitch was bent aft about 5 degrees starting about one-half its span. The leading edge of its cambered face, from a point about 12 inches from the hub to its tip, displayed chord-wise burnishing removal of both the paint and the primer down to bare metal. From its tip to a point about 18 inches inboard of the tip, the chord-wise burnishing was also present from its leading edge to its trailing edge, although in that area it had not removed all of the paint. One of the two 90 degree blades was bent forward about 30 degrees in a constant arc that started about 18 inches out from the hub. The leading edge of its cambered face displayed only paint burnishing consistent with operational use, but much of the paint on its flat face had been removed due to chord-wise burnishing. The burnished area was only along the leading edge near half its span, but the burnished area grew progressively wider as it progressed toward the tip, stretching across the full chord at the tip itself. The second 90 degree blade was bent aft about 10 degrees about 18 inches from the hub, and then curved forward again about 10 degrees along its outboard 2 feet, so that the root and the tip were in the same plain. The leading edge of its cambered face showed the same operationally induced burnishing as the other 90 degree blade. Both the paint and the primer on the outboard one-third of its flat face were completely removed down to bare metal due to the same chord-wise burnishing. The propeller spinner had been crushed nearly straight aft into the hub, and it displayed clear rotational scarring and twisting, with the blade openings having been pushed against the direction of rotation into the leading edge of

the respective propeller blades.

History of Flight

Landing-aborted after touchdown	Abnormal runway contact
Takeoff	Loss of control in flight (Defining event)

Pilot Information

Certificate:	Commercial	Age:	34, Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	Airplane single-engine; Instrument airplane	Toxicology Performed:	No
Medical Certification:	Class 1 With waivers/limitations	Last FAA Medical Exam:	March 29, 2011
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	March 10, 2011
Flight Time:	965 hours (Total, all aircraft), 140 hours (Total, this make and model), 890 hours (Pilot In Command, all aircraft), 108 hours (Last 90 days, all aircraft), 54 hours (Last 30 days, all aircraft), 5 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Cessna	Registration:	N803AN
Model/Series:	T207A	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	20700570
Landing Gear Type:	Tricycle	Seats:	8
Date/Type of Last Inspection:	April 9, 2011 100 hour	Certified Max Gross Wt.:	3800 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	13417 Hrs as of last inspection	Engine Manufacturer:	CONT MOTOR
ELT:	Installed, activated, did not aid in locating accident	Engine Model/Series:	TSIO-520-M
Registered Owner:		Rated Power:	310 Horsepower
Operator:		Operating Certificate(s) Held:	On-demand air taxi (135)

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:		Distance from Accident Site:	
Observation Time:		Direction from Accident Site:	
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	25 knots / 30 knots	Turbulence Type Forecast/Actual:	/
Wind Direction:	150°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:		Temperature/Dew Point:	20° C / 2° C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Grand Canyon, AZ (KGCN)	Type of Flight Plan Filed:	Company VFR
Destination:	Monument Valley, UT (UT25)	Type of Clearance:	
Departure Time:	13:18 Local	Type of Airspace:	

Airport Information

Airport:	Monument Valley UT25	Runway Surface Type:	Asphalt
Airport Elevation:	5280 ft msl	Runway Surface Condition:	Dry
Runway Used:	16	IFR Approach:	None
Runway Length/Width:	4100 ft / 75 ft	VFR Approach/Landing:	Full stop;Go around;Straight-in

Wreckage and Impact Information

Crew Injuries:	1 Serious	Aircraft Damage:	Substantial
Passenger Injuries:	2 Serious, 3 Minor	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	3 Serious, 3 Minor	Latitude, Longitude:	37.016666, -110.206947(est)

Administrative Information

Investigator In Charge (IIC):	Anderson, Orrin
Additional Participating Persons:	Vahl Buchanan; Salt Lake City FSDO; Salt Lake City, UT Steve Miller; Cessna Aircraft company; Wichita, KS
Original Publish Date:	July 18, 2012
Note:	The NTSB traveled to the scene of this accident.
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=79179

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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](#).