



Aviation Investigation Final Report

Location:	Santa Teresa, New Mexico	Accident Number:	CEN18LA383
Date & Time:	August 31, 2018, 17:00 Local	Registration:	N747DA
Aircraft:	Piper PA46	Aircraft Damage:	Substantial
Defining Event:	Runway excursion	Injuries:	6 None
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot and five passengers were departing the airport on an international cross-country flight. The pilot attempted an intersection takeoff in high density altitude conditions over the airplane's maximum gross weight. The airplane would not become airborne, so the pilot back taxied and attempted to take off on the full length of another runway. The airplane lifted off but was not climbing, so the pilot lowered the nose and the airplane hit the runway hard. The airplane veered right and exited the runway surface, which resulted in substantial damage to the wings. The pilot reported that there were no mechanical malfunctions or failures with the airplane or engine that would have precluded normal operation and that he attempted the takeoff in an overweight airplane at a high density altitude. Calculations showed that the airplane's maximum gross takeoff weight was exceeded by at least 300 lbs, and the density altitude was about 6,900 ft.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be:

The pilot's decision to attempt to take off in an overweight airplane in high density altitude conditions, which resulted in the airplane's inability to climb, an aborted takeoff, and a subsequent runway excursion.

Findings

Personnel issues	Decision making/judgment - Pilot
Environmental issues	High density altitude - Effect on operation
Aircraft	Maximum weight - Capability exceeded

Factual Information

History of Flight

Prior to flight	Aircraft loading event
Takeoff	Runway excursion (Defining event)

On August 31, 2018, about 1700 mountain daylight time, a Piper PA46-350P airplane, N747DA, registered to a private individual, sustained substantial damage during an aborted takeoff from the Dona Ana International Jetport (DNA), Santa Teresa, New Mexico. All 6 occupants, the private pilot and 5 passengers, were not injured. Visual meteorological conditions prevailed and a flight plan was not filed. The personal cross country flight was conducted under the provisions of Title 14 *Federal Code of Regulations* Part 91. The flight's intended destination was Chihuahua, Mexico.

After refueling and loading the passengers and baggage, the pilot taxied to the intersection of taxiway Delta and runway 10 at DNA. With 10° of flaps and full throttle, the pilot began the takeoff on runway 10 from the intersection. The airplane did not lift off, so the pilot stopped the takeoff and back taxied to the end of the reciprocal runway (runway 28). The pilot reported that the wind was calm. With 20° of flaps and full throttle, the pilot started to takeoff, using the full length of runway 28. Approaching 60-70 knots, the airplane started to liftoff, but was not climbing. The pilot then lowered the nose toward the runway. The airplane hit the runway hard, veered to the right, and exited the runway. After the airplane came to a stop in the grass, all occupants exited. During the excursion, the left main landing gear collapsed. The top of the left wing was punctured and the right wing's leading edge was buckled and dented along the span of the front spar.

The pilot reported on the National Transportation Safety Board Accident Report Form 6120 that he took off overweight and at a high density altitude. The pilot also indicated on the form that there were no mechanical anomalies with the airplane that would have precluded normal operations. Data from the aircraft's weight and balance sheet (dated June 8, 2008), fuel logs, and estimated pilot/passenger weights were used to calculate the airplane's takeoff weight at the time of the accident. The calculations estimated the takeoff weight to be about 4,675 lbs., without baggage. Fixed Base Operator personnel reported that a large amount of baggage was loaded onto the airplane before takeoff; however, the weight of this baggage was not known. The maximum takeoff weight for the airplane was 4,358 lbs. the density altitude was approximately 6,900 ft.

Pilot Information

Certificate:	Private	Age:	56,Male
Airplane Rating(s):	Single-engine land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	4-point
Instrument Rating(s):	None	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 2 Without waivers/limitations	Last FAA Medical Exam:	May 26, 2016
Occupational Pilot:	No	Last Flight Review or Equivalent:	April 12, 2014
Flight Time:	(Estimated) 1500 hours (Total, all aircraft), 700 hours (Total, this make and model), 30 hours (Last 90 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Piper	Registration:	N747DA
Model/Series:	PA46 350P	Aircraft Category:	Airplane
Year of Manufacture:	2008	Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	4636445
Landing Gear Type:	Retractable - Tricycle	Seats:	8
Date/Type of Last Inspection:	July 26, 2017 Annual	Certified Max Gross Wt.:	4299 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	1277 Hrs as of last inspection	Engine Manufacturer:	Lycoming
ELT:	Installed, not activated	Engine Model/Series:	TIO-540-AE2A
Registered Owner:		Rated Power:	350 Horsepower
Operator:	On file	Operating Certificate(s) Held:	None

Meteorological Information and Flight Plan

Conditions at Accident Site:	Visual (VMC)	Condition of Light:	Day
Observation Facility, Elevation:	DNA,4112 ft msl	Distance from Accident Site:	0 Nautical Miles
Observation Time:	16:56 Local	Direction from Accident Site:	0°
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	6 knots /	Turbulence Type Forecast/Actual:	None / None
Wind Direction:	140°	Turbulence Severity Forecast/Actual:	N/A / N/A
Altimeter Setting:	29.89 inches Hg	Temperature/Dew Point:	30°C / 24°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Santa Teresa, NM (DNA)	Type of Flight Plan Filed:	None
Destination:	Chihuahua	Type of Clearance:	None
Departure Time:	17:00 Local	Type of Airspace:	Class E

Airport Information

Airport:	Dona Ana County Int Jetport DNA	Runway Surface Type:	Asphalt
Airport Elevation:	4112 ft msl	Runway Surface Condition:	Dry
Runway Used:	28	IFR Approach:	None
Runway Length/Width:	9550 ft / 100 ft	VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:	5 None	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	6 None	Latitude, Longitude:	31.880556,-106.70333(est)

Administrative Information

Investigator In Charge (IIC):	Lemishko, Alexander
Additional Participating Persons:	Raymond Romero; FAA FSDO; Albuquerque, NM
Original Publish Date:	June 3, 2020
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.nts.gov/Docket?ProjectID=98326

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