



National Transportation Safety Board Aviation Accident Final Report

Location:	Chandler, AZ	Accident Number:	GAA19CA546
Date & Time:	09/14/2019, 0805 MST	Registration:	N1085W
Aircraft:	Mooney M20M	Aircraft Damage:	Substantial
Defining Event:	Loss of control in flight	Injuries:	2 None
Flight Conducted Under:	Part 91: General Aviation - Instructional		

Analysis

The pilot reported that, during a familiarization flight with a flight instructor in a recently purchased airplane and while demonstrating a soft-field takeoff, the tower controller cleared him for takeoff "with no delay." He quickly taxied the airplane to the runway centerline, applied power, and pulled back on the yoke. He added that, in retrospect, the back pressure he used was too abrupt. The airplane entered ground effect about 10 knots slower than normal and was unable to maintain flight in ground effect, and he was struggling to maintain the runway heading. The airplane then touched down "abruptly several times." The airplane drifted left, and the pilot thought there was a positive climb rate, so he retracted the landing gear. Additionally, he was "too aggressive" with control inputs and "caused a stall." The left wing struck the taxiway, and the airplane came to rest on the ramp. The pilot reported that the instructor did not take the flight controls. The airplane sustained substantial damage to the left wing. The pilot reported that there were no preaccident mechanical failures or malfunctions with the airplane 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 improper pitch control during takeoff and his exceedance of the airplane's critical angle of attack, which resulted in an aerodynamic stall. Contributing to the accident was the flight instructor's failure to take remedial action.

Findings

Aircraft	Pitch control - Not attained/maintained (Cause) Angle of attack - Capability exceeded (Cause)
Personnel issues	Aircraft control - Pilot (Cause) Lack of action - Instructor/check pilot (Factor)
Environmental issues	Crosswind - Effect on operation

Factual Information

History of Flight

Takeoff	Loss of control in flight (Defining event) Abnormal runway contact Aerodynamic stall/spin Collision with terr/obj (non-CFIT)
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Pilot Information

Certificate:	Private	Age:	63, Male
Airplane Rating(s):	Single-engine Land	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	BasicMed	Last FAA Medical Exam:	
Occupational Pilot:	No	Last Flight Review or Equivalent:	01/19/2018
Flight Time:	(Estimated) 1041.3 hours (Total, all aircraft), 46.7 hours (Total, this make and model), 926.8 hours (Pilot In Command, all aircraft), 31.3 hours (Last 90 days, all aircraft), 13.3 hours (Last 30 days, all aircraft)		

Flight Instructor Information

Certificate:	Airline Transport; Flight Instructor; Flight Engineer	Age:	72, Male
Airplane Rating(s):	Multi-engine Land; Single-engine Land	Seat Occupied:	Unknown
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	Airplane Multi-engine; Airplane Single-engine; Instrument Airplane	Toxicology Performed:	No
Medical Certification:	Class 3 With Waivers/Limitations	Last FAA Medical Exam:	09/04/2019
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	
Flight Time:	(Estimated)		

Aircraft and Owner/Operator Information

Aircraft Make:	Mooney	Registration:	N1085W
Model/Series:	M20M No Series	Aircraft Category:	Airplane
Year of Manufacture:	1990	Amateur Built:	No
Airworthiness Certificate:	Normal	Serial Number:	27-0043
Landing Gear Type:	Retractable - Tricycle	Seats:	4
Date/Type of Last Inspection:	09/27/2018, Annual	Certified Max Gross Wt.:	3368 lbs
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:	2724.9 Hours at time of accident	Engine Manufacturer:	Lycoming
ELT:	C126 installed, not activated	Engine Model/Series:	TIO-540-AF1B
Registered Owner:	On file	Rated Power:	270 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:	KCHD, 1243 ft msl	Distance from Accident Site:	0 Nautical Miles
Observation Time:	1510 UTC	Direction from Accident Site:	127°
Lowest Cloud Condition:		Visibility	10 Miles
Lowest Ceiling:	Broken / 12000 ft agl	Visibility (RVR):	
Wind Speed/Gusts:	13 knots /	Turbulence Type Forecast/Actual:	None / None
Wind Direction:	90°	Turbulence Severity Forecast/Actual:	N/A / N/A
Altimeter Setting:	29.99 inches Hg	Temperature/Dew Point:	31° C / 13° C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Chandler, AZ (CHD)	Type of Flight Plan Filed:	None
Destination:	Chandler, AZ (CHD)	Type of Clearance:	VFR
Departure Time:	0755 MST	Type of Airspace:	Class D

Airport Information

Airport:	CHANDLER MUNI (CHD)	Runway Surface Type:	Asphalt
Airport Elevation:	1243 ft	Runway Surface Condition:	Dry
Runway Used:	04L	IFR Approach:	None
Runway Length/Width:	4401 ft / 75 ft	VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	2 None	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	2 None	Latitude, Longitude:	33.269722, -111.814167 (est)

Administrative Information

Investigator In Charge (IIC):	Kathryn R Benhoff	Report Date:	03/17/2020
Additional Participating Persons:	Raymond D Adams; FAA; Scottsdale, AZ		
Publish Date:	03/17/2020		
Note:	This accident report documents the factual circumstances of this accident as described to the NTSB.		
Investigation Docket:	http://dms.nts.gov/pubdms/search/dockList.cfm?mKey=100260		

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