



Aviation Investigation Final Report

Location:	Chino, California	Accident Number:	WPR11LA075
Date & Time:	December 11, 2010, 12:41 Local	Registration:	N4326H
Aircraft:	Mooney M20J	Aircraft Damage:	Substantial
Defining Event:	Loss of control on ground	Injuries:	1 Serious, 1 None
Flight Conducted Under:	Part 91: General aviation - Instructional		

Analysis

The student pilot and certified flight instructor (CFI) had just completed two simulated short-field takeoffs, and decided to perform a simulated soft-field takeoff. The student was at the controls during the takeoff roll and, as the airplane rotated, the nose lifted at an angle that the CFI determined was excessive. He verbally coached the student to lower the nose, but the nose did not lower. He again requested that the student lower the nose, but he did not respond. The airplane then began to drift to the left, so the CFI took the controls. The CFI attempted to regain control of the airplane; however, the wing dropped and the airplane landed hard. The airplane departed the runway and was consumed by a postimpact fire after coming to rest on a taxiway. The CFI reported no preimpact mechanical malfunctions or failures with the airframe or engine that would have precluded normal operation. Examination of the flap actuator mechanism revealed that the flaps were fully extended at the time of the accident, rather than set to the mid-range takeoff position. The extended flap position likely resulted in the excessive nose-up tendencies experienced during the takeoff roll.

Probable Cause and Findings

The National Transportation Safety Board determines the probable cause(s) of this accident to be: The student pilot's failure to properly position the flaps for the takeoff, failure to maintain airplane control during the procedure, and the flight instructor's delayed remedial action.

Findings

Aircraft	Directional control - Not attained/maintained
Personnel issues	Task monitoring/vigilance - Instructor/check pilot
Personnel issues	Delayed action - Instructor/check pilot
Aircraft	TE flap control system - Incorrect use/operation
Personnel issues	Aircraft control - Student/instructed pilot

Factual Information

History of Flight

Takeoff	Loss of control on ground (Defining event)
Takeoff	Runway excursion
Takeoff	Collision with terr/obj (non-CFIT)

On December 11, 2010, at 1241 Pacific standard time, a Mooney M20J, N4326H, collided with the runway surface during takeoff at Chino Airport, Chino, California. The student pilot/owner was operating the airplane under the provisions of Title 14 Code of Federal Regulations Part 91. The student pilot sustained serious injuries, and the certified flight instructor (CFI) was not injured. The airplane sustained substantial damage secondary to impact forces and a post crash fire. The instructional flight departed John Wayne-Orange County Airport, Santa Ana, California, about 1200. Visual meteorological conditions prevailed, and no flight plan had been filed.

The CFI stated that they had just completed two simulated short-field takeoffs and decided to perform a simulated soft-field takeoff. The student pilot was at the controls during the takeoff roll, and as the airplane rotated, the nose lifted at an angle that the CFI determined was excessive. He verbally coached the student to lower the nose, but the nose did not lower. He again requested that the student lower the nose, but he did not respond. The airplane then began to drift to the left, so the CFI took the controls, and attempted to lower the nose. Before the angle of attack was corrected, the right wing dropped. The CFI responded with rudder input, which was followed by an opposite wing drop. The airplane then landed hard, and skidded off the runway on its belly; the CFI reported that fire simultaneously erupted as the airplane slid to a stop.

The airplane came to rest on a taxiway, adjacent to the departure runway. The left main landing gear was located next to a manhole cover on the grass intermediate verge. The soil appeared freshly disrupted in the area of the cover, and a scrape and burn mark continued across the taxiway surface to the airplane's location.

The airplane was consumed by post accident fire, with only the outboard wing sections and tail remaining. Examination of the wreckage by the NTSB investigator-in-charge revealed that the steel flight controls were continuous from each control surface through to their respective cabin flight controls. The jack screw actuator extension dimensions for the elevator trim, landing gear, and flaps were compared to Mooney reference documentation. The positions revealed that the airplane was configured with the landing gear down, and flaps fully extended (33 degrees), with the elevator set to the takeoff trim position.

According to the Mooney Pilot's Operating Handbook, applicable to the airplane serial number

and type, prior to takeoff, the wing flaps should be set for the takeoff configuration of 15 degrees.

The CFI reported no preimpact mechanical malfunctions or failures with the airframe or engine that would have precluded normal operation. All sections of the airplane were located at the accident site.

Flight instructor Information

Certificate:	Commercial; Flight instructor	Age:	66, Male
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Right
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	Airplane	Second Pilot Present:	Yes
Instructor Rating(s):	Airplane single-engine	Toxicology Performed:	No
Medical Certification:	Class 3 With waivers/limitations	Last FAA Medical Exam:	April 28, 2009
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	February 20, 2010
Flight Time:	2100 hours (Total, all aircraft), 10 hours (Total, this make and model), 1900 hours (Pilot In Command, all aircraft), 100 hours (Last 90 days, all aircraft), 30 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Student pilot Information

Certificate:	Student	Age:	48, Male
Airplane Rating(s):	None	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	
Instrument Rating(s):	None	Second Pilot Present:	Yes
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 3 With waivers/limitations	Last FAA Medical Exam:	June 21, 2010
Occupational Pilot:	No	Last Flight Review or Equivalent:	
Flight Time:	(Estimated) 59 hours (Total, all aircraft), 52 hours (Total, this make and model), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Mooney	Registration:	N4326H
Model/Series:	M20J	Aircraft Category:	Airplane
Year of Manufacture:		Amateur Built:	
Airworthiness Certificate:	Normal	Serial Number:	24-0707
Landing Gear Type:	Retractable - Tricycle	Seats:	4
Date/Type of Last Inspection:	November 1, 2010 Annual	Certified Max Gross Wt.:	2750 lbs
Time Since Last Inspection:	5 Hrs	Engines:	1 Reciprocating
Airframe Total Time:	4490 Hrs as of last inspection	Engine Manufacturer:	LYCOMING
ELT:	Not installed	Engine Model/Series:	IO-360
Registered Owner:	On file	Rated Power:	200 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:	CNO,650 ft msl	Distance from Accident Site:	0 Nautical Miles
Observation Time:	12:41 Local	Direction from Accident Site:	0°
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	Broken / 20000 ft AGL	Visibility (RVR):	
Wind Speed/Gusts:	/	Turbulence Type Forecast/Actual:	/
Wind Direction:		Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.05 inches Hg	Temperature/Dew Point:	26°C / 9°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Santa Ana, CA (SNA)	Type of Flight Plan Filed:	None
Destination:	Chino, CA (CNO)	Type of Clearance:	VFR
Departure Time:	12:00 Local	Type of Airspace:	

Airport Information

Airport:	Chino CNO	Runway Surface Type:	Asphalt
Airport Elevation:	650 ft msl	Runway Surface Condition:	Dry
Runway Used:	26L	IFR Approach:	None
Runway Length/Width:	7000 ft / 150 ft	VFR Approach/Landing:	Stop and go

Wreckage and Impact Information

Crew Injuries:	1 Serious, 1 None	Aircraft Damage:	Substantial
Passenger Injuries:		Aircraft Fire:	On-ground
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Serious, 1 None	Latitude, Longitude:	33.973056,-117.630836

Administrative Information

Investigator In Charge (IIC):	Simpson, Elliott
Additional Participating Persons:	Michael J Spencer; Federal Aviation Administration FSDO; Riverside, CA
Original Publish Date:	May 26, 2011
Last Revision Date:	
Investigation Class:	Class
Note:	
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=77982

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