



AVIATION



HIGHWAY



MARINE



RAILROAD



PIPELINE

# Aviation Investigation Final Report

<b>Location:</b>	Santa Ana, California	<b>Accident Number:</b>	WPR23LA146
<b>Date &amp; Time:</b>	April 1, 2023, 13:43 Local	<b>Registration:</b>	N1399U
<b>Aircraft:</b>	Cessna 172M	<b>Aircraft Damage:</b>	Substantial
<b>Defining Event:</b>	Aircraft wake turb encounter	<b>Injuries:</b>	N/A
<b>Flight Conducted Under:</b>	Part 91: General aviation - Instructional		

## Analysis

The flight instructor reported that while practicing crosswind landings with his student, the tower advised the pilot of wake turbulence from a commercial airliner on the parallel runway. They flew a steeper approach but noticed a moderate right quartering headwind on the windsock. At about 100 feet above ground level the airplane encountered wake turbulence and banked sharply to the right. Both pilots added full left aileron and applied backpressure to the yoke as the airplane contacted the terrain. The airplane sustained substantial damage to the right 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 flight instructor's failure to maintain clearance from a medium category commercial airliner which resulted in an encounter with wake turbulence and subsequent loss of control resulting in impact with terrain.

## Findings

<b>Environmental issues</b>	Wake turbulence - Ability to respond/compensate
<b>Aircraft</b>	Descent/approach/glide path - Not attained/maintained
<b>Personnel issues</b>	Aircraft control - Student/instructed pilot

## Factual Information

### History of Flight

<b>Landing</b>	Aircraft wake turb encounter (Defining event)
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### Pilot Information

<b>Certificate:</b>	Commercial	<b>Age:</b>	21, Male
<b>Airplane Rating(s):</b>	Single-engine land	<b>Seat Occupied:</b>	Right
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	3-point
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	Yes
<b>Instructor Rating(s):</b>	Airplane single-engine; Instrument airplane	<b>Toxicology Performed:</b>	
<b>Medical Certification:</b>	Class 1 Without waivers/limitations	<b>Last FAA Medical Exam:</b>	June 13, 2019
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	December 8, 2021
<b>Flight Time:</b>	891.5 hours (Total, all aircraft), 890.5 hours (Total, this make and model), 862.3 hours (Pilot In Command, all aircraft), 175.2 hours (Last 90 days, all aircraft), 64.5 hours (Last 30 days, all aircraft), 7.5 hours (Last 24 hours, all aircraft)		

### Pilot Information

<b>Certificate:</b>	Student	<b>Age:</b>	26, Male
<b>Airplane Rating(s):</b>	None	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	3-point
<b>Instrument Rating(s):</b>	None	<b>Second Pilot Present:</b>	Yes
<b>Instructor Rating(s):</b>	None	<b>Toxicology Performed:</b>	
<b>Medical Certification:</b>	Class 1 Without waivers/limitations	<b>Last FAA Medical Exam:</b>	January 30, 2023
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	0 hours (Total, all aircraft), 0 hours (Total, this make and model)		

## Aircraft and Owner/Operator Information

<b>Aircraft Make:</b>	Cessna	<b>Registration:</b>	N1399U
<b>Model/Series:</b>	172M	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>	1976	<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal; Utility	<b>Serial Number:</b>	17267070
<b>Landing Gear Type:</b>	Tricycle	<b>Seats:</b>	4
<b>Date/Type of Last Inspection:</b>	September 13, 2012 Annual	<b>Certified Max Gross Wt.:</b>	2300 lbs
<b>Time Since Last Inspection:</b>		<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>	9779 Hrs at time of accident	<b>Engine Manufacturer:</b>	Lycoming
<b>ELT:</b>	Installed, not activated	<b>Engine Model/Series:</b>	O-320-E2D
<b>Registered Owner:</b>	OC 172 GROUP LLC	<b>Rated Power:</b>	
<b>Operator:</b>	OC 172 GROUP LLC	<b>Operating Certificate(s) Held:</b>	None

## Meteorological Information and Flight Plan

<b>Conditions at Accident Site:</b>	Visual (VMC)	<b>Condition of Light:</b>	Day
<b>Observation Facility, Elevation:</b>	KSNA, 43 ft msl	<b>Distance from Accident Site:</b>	0 Nautical Miles
<b>Observation Time:</b>	13:53 Local	<b>Direction from Accident Site:</b>	13°
<b>Lowest Cloud Condition:</b>	Few / 3500 ft AGL	<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>		<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	9 knots /	<b>Turbulence Type Forecast/Actual:</b>	None / None
<b>Wind Direction:</b>	220°	<b>Turbulence Severity Forecast/Actual:</b>	N/A / Severe
<b>Altimeter Setting:</b>	30.12 inches Hg	<b>Temperature/Dew Point:</b>	19°C / 7°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	Santa Ana, CA (KSNA)	<b>Type of Flight Plan Filed:</b>	None
<b>Destination:</b>	Santa Ana, CA	<b>Type of Clearance:</b>	VFR
<b>Departure Time:</b>	13:43 Local	<b>Type of Airspace:</b>	Class C

## Airport Information

<b>Airport:</b>	John Wayne/Orange County Airport KSNA	<b>Runway Surface Type:</b>	Asphalt
<b>Airport Elevation:</b>	56 ft msl	<b>Runway Surface Condition:</b>	Dry
<b>Runway Used:</b>	20L	<b>IFR Approach:</b>	Unknown
<b>Runway Length/Width:</b>	2886 ft / 75 ft	<b>VFR Approach/Landing:</b>	Touch and go;Traffic pattern

## Wreckage and Impact Information

<b>Crew Injuries:</b>	N/A	<b>Aircraft Damage:</b>	Substantial
<b>Passenger Injuries:</b>	N/A	<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>		<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	N/A	<b>Latitude, Longitude:</b>	33.675662,-117.86823

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Johnson, Scott
<b>Additional Participating Persons:</b>	Marcus Giordano; Federal Aviation Administration; Sacramento, CA
<b>Original Publish Date:</b>	July 7, 2023
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class 4</a>
<b>Note:</b>	The NTSB did not travel to the scene of this accident.
<b>Investigation Docket:</b>	<a href="https://data.nts.gov/Docket?ProjectID=106999">https://data.nts.gov/Docket?ProjectID=106999</a>

The National Transportation Safety Board (NTSB) is an independent federal agency charged by Congress with investigating every civil aviation accident in the United States and significant events in other modes of transportation—railroad, transit, highway, marine, pipeline, and commercial space. We determine the probable causes of the accidents and events we investigate, and issue safety recommendations aimed at preventing future occurrences. In addition, we conduct transportation safety research studies and offer information and other assistance to family members and survivors for each accident or event we investigate. We also serve as the appellate authority for enforcement actions involving aviation and mariner certificates issued by the Federal Aviation Administration (FAA) and US Coast Guard, and we adjudicate appeals of civil penalty actions taken by the FAA.

The NTSB does not assign fault or blame for an accident or incident; rather, as specified by NTSB regulation, “accident/incident investigations are fact-finding proceedings with no formal issues and no adverse parties ... and are not conducted for the purpose of determining the rights or liabilities of any person” (Title 49 *Code of Federal Regulations* section 831.4). Assignment of fault or legal liability is not relevant to the NTSB’s statutory mission to improve transportation safety by investigating accidents and incidents and issuing safety recommendations. In addition, statutory language prohibits the admission into evidence or use of any part of an NTSB report related to an accident in a civil action for damages resulting from a matter mentioned in the report (Title 49 *United States Code* section 1154(b)). A factual report that may be admissible under 49 *United States Code* section 1154(b) is available [here](#).