



# Aviation Investigation Final Report

<b>Location:</b>	Oshkosh, Wisconsin	<b>Incident Number:</b>	CEN191A234
<b>Date &amp; Time:</b>	July 21, 2019, 10:00 Local	<b>Registration:</b>	N9201A (A1); N197CV (A2)
<b>Aircraft:</b>	Mooney M20J (A1); Mooney M20U (A2)	<b>Aircraft Damage:</b>	Minor (A1); Minor (A2)
<b>Defining Event:</b>	Midair collision	<b>Injuries:</b>	2 None (A1); 2 None (A2)
<b>Flight Conducted Under:</b>	Part 91: General aviation - Personal (A1); Part 91: General aviation - Personal (A2)		

## Analysis

Both pilots and their passengers were flying in formation as a part of a mass arrival. The airplanes were a two-ship element with the Mooney M20J as the lead and the Mooney M20U as the wing. They were to join up with the preceding two-ship element after departure.

After takeoff, the pilots of both airplanes were maneuvering into position to the right of the lead airplane in the preceding element. The pilot of Mooney M20U reported that he encountered wake turbulence that forced him above Mooney M20J. The pilot of Mooney M20J reported that he saw Mooney M20U above and forward of his right wing and slowing. Both pilots immediately maneuvered in attempt to deconflict their airplanes before they rejoined the formation and continued the flight. Neither pilot reported feeling the collision and there were no anomalies with either airplane for the remainder of the flight and subsequent landing. After landing, the pilots discovered the damage to the airplanes. The Mooney M20J sustained minor damage to the right outboard wing leading edge and the Mooney M20U sustained minor damage to the rudder.

## Probable Cause and Findings

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

The failure of both pilots to remain clear of the other while flying in formation.

## Findings

<b>Personnel issues (A1)</b>	Monitoring other aircraft - Pilot
<b>Personnel issues (A2)</b>	Monitoring other aircraft - Pilot

## Factual Information

### History of Flight

<b>Enroute-cruise (A1)</b>	Midair collision (Defining event)
<b>Enroute-cruise (A2)</b>	Midair collision

On July 21, 2019, about 1000 central daylight time a Mooney M20J airplane, N9201A, and a Mooney M20U airplane, N197CV, sustained minor damage when they were involved in an incident near Wittman Regional Airport (OSH), Oshkosh, Wisconsin. Neither pilot nor their passengers were injured. Both airplanes were operated as Title 14 Code of Federal Regulations Part 91 personal flights.

According to the pilots of both airplanes, they had briefed the mass arrival flight procedures and intended to fly in formation from Dane County Regional Airport - Truax Field (MSN), Madison, Wisconsin, to OSH. The airplanes were a two-ship element with N9201A as the lead and N197CV as the wing. They were to join up with the preceding two-ship element after departing MSN.

After takeoff, the pilots of both airplanes were maneuvering into position to the right of the lead airplane in the preceding element. The pilot of N197CV reported that he encountered wake turbulence that forced him above N9201A. The pilot of N9201A reported that he saw N197CV above and forward of his right wing and slowing. Both pilots immediately maneuvered in attempt to deconflict their airplanes before they rejoined the formation and continued the flight. Neither pilot reported feeling the collision and there were no anomalies with either airplane for the remainder of the flight and subsequent landing. After landing, the pilots discovered the damage to the airplanes. N9201A sustained minor damage to the right outboard wing leading edge and N197CV sustained minor damage to the rudder.

## Pilot Information (A1)

<b>Certificate:</b>	Airline transport; Commercial; Flight instructor	<b>Age:</b>	55, Male
<b>Airplane Rating(s):</b>	Single-engine land; Multi-engine land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	Lap only
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	Airplane single-engine	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 1 Waiver time limited special	<b>Last FAA Medical Exam:</b>	February 16, 2019
<b>Occupational Pilot:</b>	Yes	<b>Last Flight Review or Equivalent:</b>	March 15, 2019
<b>Flight Time:</b>	3501 hours (Total, all aircraft), 1500 hours (Total, this make and model), 3014 hours (Pilot In Command, all aircraft), 190 hours (Last 90 days, all aircraft), 66 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

## Pilot Information (A2)

<b>Certificate:</b>	Commercial; Flight instructor	<b>Age:</b>	61, Male
<b>Airplane Rating(s):</b>	Single-engine land; Multi-engine land	<b>Seat Occupied:</b>	Left
<b>Other Aircraft Rating(s):</b>	None	<b>Restraint Used:</b>	3-point
<b>Instrument Rating(s):</b>	Airplane	<b>Second Pilot Present:</b>	No
<b>Instructor Rating(s):</b>	Airplane multi-engine; Airplane single-engine	<b>Toxicology Performed:</b>	No
<b>Medical Certification:</b>	Class 2 With waivers/limitations	<b>Last FAA Medical Exam:</b>	May 2, 2019
<b>Occupational Pilot:</b>	No	<b>Last Flight Review or Equivalent:</b>	
<b>Flight Time:</b>	4600 hours (Total, all aircraft), 1800 hours (Total, this make and model), 45 hours (Last 90 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

## Aircraft and Owner/Operator Information (A1)

<b>Aircraft Make:</b>	Mooney	<b>Registration:</b>	N9201A
<b>Model/Series:</b>	M20J No Series	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>	1978	<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Normal	<b>Serial Number:</b>	24-0610
<b>Landing Gear Type:</b>	Retractable - Tricycle	<b>Seats:</b>	4
<b>Date/Type of Last Inspection:</b>	Annual	<b>Certified Max Gross Wt.:</b>	2740 lbs
<b>Time Since Last Inspection:</b>		<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>		<b>Engine Manufacturer:</b>	Lycoming
<b>ELT:</b>	Installed, not activated	<b>Engine Model/Series:</b>	IO-360-A1B
<b>Registered Owner:</b>	On file	<b>Rated Power:</b>	200 Horsepower
<b>Operator:</b>	On file	<b>Operating Certificate(s) Held:</b>	None

## Aircraft and Owner/Operator Information (A2)

<b>Aircraft Make:</b>	Mooney	<b>Registration:</b>	N197CV
<b>Model/Series:</b>	M20U	<b>Aircraft Category:</b>	Airplane
<b>Year of Manufacture:</b>	2015	<b>Amateur Built:</b>	
<b>Airworthiness Certificate:</b>	Experimental (Special)	<b>Serial Number:</b>	32-0001
<b>Landing Gear Type:</b>	Retractable - Tricycle	<b>Seats:</b>	4
<b>Date/Type of Last Inspection:</b>	Annual	<b>Certified Max Gross Wt.:</b>	3368 lbs
<b>Time Since Last Inspection:</b>		<b>Engines:</b>	1 Reciprocating
<b>Airframe Total Time:</b>		<b>Engine Manufacturer:</b>	Continental
<b>ELT:</b>	C126 installed, not activated	<b>Engine Model/Series:</b>	IO-550-G
<b>Registered Owner:</b>	On file	<b>Rated Power:</b>	310 Horsepower
<b>Operator:</b>	On file	<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>	KOSH	<b>Distance from Accident Site:</b>	
<b>Observation Time:</b>	09:53 Local	<b>Direction from Accident Site:</b>	
<b>Lowest Cloud Condition:</b>	Clear	<b>Visibility</b>	10 miles
<b>Lowest Ceiling:</b>	None	<b>Visibility (RVR):</b>	
<b>Wind Speed/Gusts:</b>	4 knots /	<b>Turbulence Type Forecast/Actual:</b>	None / None
<b>Wind Direction:</b>	30°	<b>Turbulence Severity Forecast/Actual:</b>	N/A / N/A
<b>Altimeter Setting:</b>	30.01 inches Hg	<b>Temperature/Dew Point:</b>	24°C / 14°C
<b>Precipitation and Obscuration:</b>	No Obscuration; No Precipitation		
<b>Departure Point:</b>	Madison, WI (KMSN) (A1); Madison, WI (KMSN) (A2)	<b>Type of Flight Plan Filed:</b>	VFR/IFR (A1); VFR/IFR (A2)
<b>Destination:</b>	Oshkosh, WI (A1); Oshkosh, WI (A2)	<b>Type of Clearance:</b>	VFR;VFR flight following (A1); VFR;VFR flight following (A2)
<b>Departure Time:</b>		<b>Type of Airspace:</b>	Class G (A1); Class G (A2)

## Wreckage and Impact Information (A1)

<b>Crew Injuries:</b>	1 None	<b>Aircraft Damage:</b>	Minor
<b>Passenger Injuries:</b>	1 None	<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	2 None	<b>Latitude, Longitude:</b>	43.13972,-89.340553(est)

## Wreckage and Impact Information (A2)

<b>Crew Injuries:</b>	1 None	<b>Aircraft Damage:</b>	Minor
<b>Passenger Injuries:</b>	1 None	<b>Aircraft Fire:</b>	None
<b>Ground Injuries:</b>	N/A	<b>Aircraft Explosion:</b>	None
<b>Total Injuries:</b>	2 None	<b>Latitude, Longitude:</b>	43.13972,-89.340553(est)

## Administrative Information

<b>Investigator In Charge (IIC):</b>	Rodi, Jennifer
<b>Additional Participating Persons:</b>	Jon Weston; Federal Aviation Administration; Milwaukee, WI
<b>Original Publish Date:</b>	May 5, 2021
<b>Last Revision Date:</b>	
<b>Investigation Class:</b>	<a href="#">Class 3</a>
<b>Note:</b>	The NTSB did not travel to the scene of this incident.
<b>Investigation Docket:</b>	<a href="https://data.ntsb.gov/Docket?ProjectID=99916">https://data.ntsb.gov/Docket?ProjectID=99916</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](#).