



Aviation Investigation Final Report

Location:	Reno, Nevada	Accident Number:	WPR17LA209
Date & Time:	September 17, 2017, 08:20 Local	Registration:	C-GTPX
Aircraft:	Trudel GP 4	Aircraft Damage:	Minor
Defining Event:	Midair collision	Injuries:	1 None
Flight Conducted Under:	Part 91: General aviation - Air race/show		

Analysis

During the initial start of an air race, nine airplanes were positioned in a line-abreast formation. The RV-8 was positioned in the No. 7 slot, and the GP 4 was right of the RV-8 in the No. 8 slot. The RV-8 pilot reported that, during the race start, he felt an air current push down his airplane. He then moved forward of the No. 6 slot airplane and initiated corrections to reestablish his position within the formation. The GP 4 pilot reported that he saw the RV-8 descend below his airplane's left wing and that he reduced power while initiating a slight right bank in an attempt to "back out" of the formation. The pilot who was in the No. 9 slot reported that he observed the GP-4 move forward back into the formation very quickly. At that time, he noticed the pilot of the GP-4 trying to slow or correct his position to the right using ailerons. Shortly after, the propeller of the GP-4 struck the right aileron of the RV-8. Following the collision, the RV-8 entered an uncommanded left roll; however, the pilot was able to level the airplane and land uneventfully. The GP-4 pilot pitched his airplane upward and rolled right to avoid the surrounding airplanes and was also able to land the airplane uneventfully.

It is likely that, if the pilot of the GP-4 had maintained adequate lateral distance from the RV-8 while advancing forward to maintain a line-abreast formation, he would have been able to maintain clearance from the RV-8 as it descended and would not have needed to bank right, which further reduced the GP-4 pilot's visual contact with the RV-8 and led to the midair collision.

Probable Cause and Findings

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

The pilot's failure to maintain clearance from another airplane during the line-abreast formation.

Findings

Personnel issues	Monitoring environment - Pilot
Environmental issues	Aircraft - Effect on operation

Factual Information

History of Flight

Maneuvering	Miscellaneous/other
Maneuvering	Midair collision (Defining event)

On September 17, 2017, about 0820 Pacific daylight time, a Trudel GP 4 airplane, C-GTPX and a Farnsworth RV-8 airplane, N248DF, collided in midair about 1 mile southeast of the Reno Stead Airport (RTS), Reno, Nevada. The GP 4's airline transport pilot and the RV-8's airline transport pilot were not injured. The GP 4 sustained minor damage to the propeller; the RV-8 sustained substantial damage to the right wing and aileron. The GP 4 was registered to a private individual and was operated as Race 96. The RV-8 was registered to the pilot and was operated as Race 26. Both airplanes were operated by the pilots under the provisions of Title 14 *Code of Federal Regulations Part 91* as an air race flight. Visual meteorological conditions prevailed, and no flight plan was filed for either flight, which originated from RTS about 5 minutes prior to the accident.

The pilot of the RV-8 reported that he was positioned in the number 7 slot of a line abreast formation during the start sequence for the sport medallion race. As the flight was completing their turn toward the race course, prior to the pace plane releasing the flight, he felt an air current push his airplane down; he reduced power and maneuvered to stop the closure toward the airplane in the number 6 slot. At this time, the pilot estimated he was about 5 ft low, and 3 to 5 ft in front of the number 6 airplane and estimated he had about 15 ft of wingtip clearance. About 5 to 7 seconds later, the pilot heard a buzz and thump sound, followed by an uncommanded roll to the left. The pilot stated that he was able to level the airplane and landed uneventfully on runway 32.

The pilot of the GP 4 reported that he was positioned in the number 8 slot of the formation, during the start sequence for the sport medallion race; he was located to the right of the RV-8. As the flight descended toward the race course, he saw the RV-8 drop below his wing, and he reduced power and initiated a slight right bank in an attempt to back out of the formation. The pilot stated that shortly after, his airplane collided with the RV-8. Following the collision, he pitched upward and rolled to the right to avoid the surrounding airplanes. Subsequently, the pilot landed uneventfully on runway 26.

The pilot located in the number 9 slot reported that he was located on the outside of the flight, and that they were entering the start of the chute via an echelon turn to the left, when he saw that both the RV-8 and GP 4 further behind the formation flight. The pilot stated that both the RV-8 and GP 4 were advancing forward toward the flight as the flight was beginning to fly a line abreast in preparation for release to enter the race course. The pilot further stated that the GP 4 moved forward, back into position very quickly. At that time, he saw the GP 4 try to slow or correct his position to the right using ailerons. Shortly after, the propeller on the GP 4 contacted the right aileron of the RV-8.

Pilot Information

Certificate:	Airline transport	Age:	48, Male
Airplane Rating(s):	Single-engine land; Single-engine sea; Multi-engine land; Multi-engine sea	Seat Occupied:	Left
Other Aircraft Rating(s):	None	Restraint Used:	3-point
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	None	Toxicology Performed:	No
Medical Certification:	Class 1 Without waivers/limitations	Last FAA Medical Exam:	July 22, 2017
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	April 29, 2017
Flight Time:	9300 hours (Total, all aircraft), 110 hours (Total, this make and model), 7800 hours (Pilot In Command, all aircraft), 85 hours (Last 90 days, all aircraft), 30 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	Trudel	Registration:	C-GTPX
Model/Series:	GP 4	Aircraft Category:	Airplane
Year of Manufacture:	2016	Amateur Built:	Yes
Airworthiness Certificate:	Experimental (Special)	Serial Number:	PT 572
Landing Gear Type:	Retractable - Tricycle	Seats:	2
Date/Type of Last Inspection:	Annual	Certified Max Gross Wt.:	
Time Since Last Inspection:		Engines:	1 Reciprocating
Airframe Total Time:		Engine Manufacturer:	Lycoming
ELT:	C91 installed, not activated	Engine Model/Series:	IO-360-A1A
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:	KRTS,5053 ft msl	Distance from Accident Site:	1 Nautical Miles
Observation Time:	15:15 Local	Direction from Accident Site:	324°
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	4 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	350°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.1 inches Hg	Temperature/Dew Point:	10°C / 1°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Reno, NV (RTS)	Type of Flight Plan Filed:	None
Destination:	Reno, NV (RTS)	Type of Clearance:	None
Departure Time:	08:15 Local	Type of Airspace:	Class G

Airport Information

Airport:	RENO/STEAD RTS	Runway Surface Type:	
Airport Elevation:	5050 ft msl	Runway Surface Condition:	
Runway Used:		IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	None

Wreckage and Impact Information

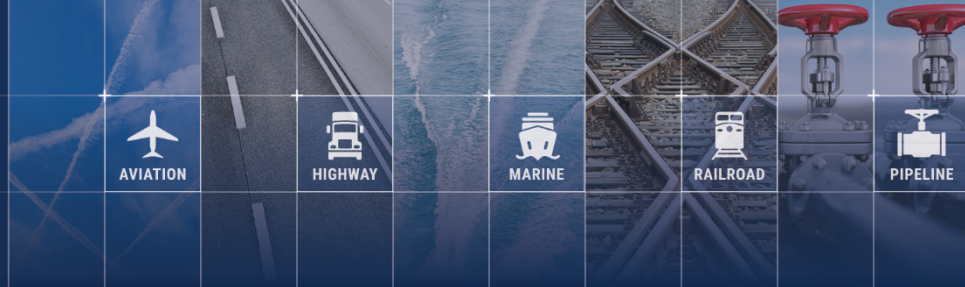
Crew Injuries:	1 None	Aircraft Damage:	Minor
Passenger Injuries:		Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 None	Latitude, Longitude:	39.65139,-119.858612(est)

Administrative Information

Investigator In Charge (IIC):	Cawthra, Joshua
Additional Participating Persons:	Will Geyer, Federal Aviation Administration; Reno, NV
Original Publish Date:	March 18, 2019
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=96037

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](#).



Aviation Investigation Final Report

Location:	Reno, Nevada	Accident Number:	WPR17LA209
Date & Time:	September 17, 2017, 08:20 Local	Registration:	N248DF
Aircraft:	FARNSWORTH RV-8	Aircraft Damage:	Substantial
Defining Event:	Midair collision	Injuries:	1 None
Flight Conducted Under:	Part 91: General aviation - Air race/show		

Analysis

During the initial start of an air race, nine airplanes were positioned in a line-abreast formation. The RV-8 was positioned in the No. 7 slot, and the GP-4 was right of the RV-8 in the No. 8 slot. The RV-8 pilot reported that, during the race start, he felt an air current push down his airplane. He then moved forward of the No. 6 slot airplane and initiated corrections to reestablish his position within the formation. The GP-4 pilot reported that he saw the RV-8 descend below his airplane's left wing and that he reduced power while initiating a slight right bank in an attempt to "back out" of the formation. The pilot who was in the No. 9 slot reported that he observed the GP-4 move forward back into the formation very quickly. At that time, he noticed the pilot of the GP-4 trying to slow or correct his position to the right using ailerons. Shortly after, the propeller of the GP-4 struck the right aileron of the RV-8. Following the collision, the RV-8 entered an uncommanded left roll; however, the pilot was able to level the airplane and land uneventfully. The GP-4 pilot pitched his airplane upward and rolled right to avoid the surrounding airplanes and was also able to land the airplane uneventfully.

It is likely that, if the pilot of the GP-4 had maintained adequate lateral distance from the RV-8 while advancing forward to maintain a line-abreast formation, he would have been able to maintain clearance from the RV-8 as it descended and would not have needed to bank right, which further reduced the GP-4 pilot's visual contact with the RV-8 and led to the midair collision.

Probable Cause and Findings

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

The other pilot's failure to maintain clearance from the airplane during the line-abreast formation.

Findings

Personnel issues	Monitoring environment - Pilot of other aircraft
Environmental issues	Aircraft - Effect on operation

Factual Information

History of Flight

Maneuvering	Miscellaneous/other
Maneuvering	Midair collision

On September 17, 2017, about 0820 Pacific daylight time, a Trudel GP 4 airplane, C-GTPX and a Farnsworth RV-8 airplane, N248DF, collided in midair about 1 mile southeast of the Reno Stead Airport (RTS), Reno, Nevada. The GP 4's airline transport pilot and the RV-8's airline transport pilot were not injured. The GP 4 sustained minor damage to the propeller; the RV-8 sustained substantial damage to the right wing and aileron. The GP 4 was registered to a private individual and was operated as Race 96. The RV-8 was registered to the pilot and was operated as Race 26. Both airplanes were operated by the pilots under the provisions of Title 14 *Code of Federal Regulations Part 91* as an air race flight. Visual meteorological conditions prevailed, and no flight plan was filed for either flight, which originated from RTS about 5 minutes prior to the accident.

The pilot of the RV-8 reported that he was positioned in the number 7 slot of a line abreast formation during the start sequence for the sport medallion race. As the flight was completing their turn toward the race course, prior to the pace plane releasing the flight, he felt an air current push his airplane down; he reduced power and maneuvered to stop the closure toward the airplane in the number 6 slot. At this time, the pilot estimated he was about 5 ft low, and 3 to 5 ft in front of the number 6 airplane and estimated he had about 15 ft of wingtip clearance. About 5 to 7 seconds later, the pilot heard a buzz and thump sound, followed by an uncommanded roll to the left. The pilot stated that he was able to level the airplane and landed uneventfully on runway 32.

The pilot of the GP 4 reported that he was positioned in the number 8 slot of the formation, during the start sequence for the sport medallion race; he was located to the right of the RV-8. As the flight descended toward the race course, he saw the RV-8 drop below his wing, and he reduced power and initiated a slight right bank in an attempt to back out of the formation. The pilot stated that shortly after, his airplane collided with the RV-8. Following the collision, he pitched upward and rolled to the right to avoid the surrounding airplanes. Subsequently, the pilot landed uneventfully on runway 26.

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Pilot Information

Certificate:	Airline transport	Age:	54, Male
Airplane Rating(s):	Single-engine land; Multi-engine land	Seat Occupied:	Front
Other Aircraft Rating(s):	None	Restraint Used:	4-point
Instrument Rating(s):	Airplane	Second Pilot Present:	No
Instructor Rating(s):	Airplane single-engine; Instrument airplane	Toxicology Performed:	No
Medical Certification:	Class 1 Without waivers/limitations	Last FAA Medical Exam:	April 1, 2017
Occupational Pilot:	Yes	Last Flight Review or Equivalent:	October 1, 2016
Flight Time:	16500 hours (Total, all aircraft), 227 hours (Total, this make and model), 16300 hours (Pilot In Command, all aircraft), 165 hours (Last 90 days, all aircraft), 40 hours (Last 30 days, all aircraft), 1 hours (Last 24 hours, all aircraft)		

Aircraft and Owner/Operator Information

Aircraft Make:	FARNSWORTH	Registration:	N248DF
Model/Series:	RV-8	Aircraft Category:	Airplane
Year of Manufacture:	2013	Amateur Built:	Yes
Airworthiness Certificate:	Experimental (Special)	Serial Number:	81751
Landing Gear Type:	Tailwheel	Seats:	2
Date/Type of Last Inspection:	September 1, 2017 Condition	Certified Max Gross Wt.:	
Time Since Last Inspection:	10 Hrs	Engines:	Reciprocating
Airframe Total Time:		Engine Manufacturer:	Mattituck
ELT:	Installed, not activated	Engine Model/Series:	IO-360
Registered Owner:	On file	Rated Power:	
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:	KRTS,5053 ft msl	Distance from Accident Site:	1 Nautical Miles
Observation Time:	15:15 Local	Direction from Accident Site:	324°
Lowest Cloud Condition:	Clear	Visibility	10 miles
Lowest Ceiling:	None	Visibility (RVR):	
Wind Speed/Gusts:	4 knots /	Turbulence Type Forecast/Actual:	/
Wind Direction:	350°	Turbulence Severity Forecast/Actual:	/
Altimeter Setting:	30.1 inches Hg	Temperature/Dew Point:	10°C / 1°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Reno, NV (RTS)	Type of Flight Plan Filed:	None
Destination:	Reno, NV (RTS)	Type of Clearance:	None
Departure Time:	08:15 Local	Type of Airspace:	Class G

Airport Information

Airport:	RENO/STEAD RTS	Runway Surface Type:	
Airport Elevation:	5050 ft msl	Runway Surface Condition:	
Runway Used:		IFR Approach:	None
Runway Length/Width:		VFR Approach/Landing:	None

Wreckage and Impact Information

Crew Injuries:	1 None	Aircraft Damage:	Substantial
Passenger Injuries:		Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 None	Latitude, Longitude:	39.65139,-119.858612(est)

Administrative Information

Investigator In Charge (IIC):	Cawthra, Joshua
Additional Participating Persons:	Will Geyer, Federal Aviation Administration; Reno, NV
Original Publish Date:	March 18, 2019
Last Revision Date:	
Investigation Class:	Class
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=96037

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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](#).