Safety & News

RV-10 Door Open in Flight

and

AAL Flight 5342

RV-10 Fatal Accident

January 30, 2025 By Jim Moore [AOPA]

A witness who watched the Van's Aircraft RV–10 depart from Fullerton Municipal Airport [KFUL] in California on January 2 told investigators that the left-side gull-wing door was open after takeoff, and that he saw the pilot's arm reach up to pull it down.

Investigators found the left cabin door of the Van's Aircraft RV-10 that crashed January 2 on the roof of the same warehouse that the airplane struck while attempting an emergency landing at Fullerton Municipal Airport. Blue arrows point to the primary door latches, and the area where a secondary latch should have been installed is circled in red. NTSB image.

The RV–10 was about 100 feet in the air after takeoff when this observation was made, and the eyewitness was unable to follow the action from there as the departing aircraft flew away, though others helped NTSB investigators piece together the sequence of events detailed in a preliminary report that focuses most of the attention on the open door.

There are no indications of engine trouble in the report. Wreckage showed signs of the propeller turning under power, and a camera located about 500 feet from the crash captured normal engine sounds in the final second.

Pilot Pascal Reid reported "immediate landing required" soon after departure, and initially stated he would land on Runway 6, the reciprocal of the runway he had just departed. According to the audio recording, Reid decided seconds later to attempt Runway 24 after being cleared to land in either direction. The NTSB report notes investigators were able to obtain recordings from the FAA that add to the recordings available immediately after the accident from LiveATC.net, documenting both sides of Reid's communications with the tower. The report also notes additional details about the final seconds, the aircraft passing the Runway 24 threshold on the downwind leg at 435 feet msl (airport elevation is 96 feet) at 85 knots during the attempt to return to Runway 24.

The aircraft's builder and owner, Reid died along with his passenger and teenage daughter, when the RV–10 stuck the roof of a furniture outlet warehouse about 1,500 feet from the threshold of Runway 24. The impact and ensuing fire injured 19 people inside the building, 11 of them seriously.

The NTSB preliminary report notes the left-side door was visible in security camera footage of the aircraft departing the runup area, down but not flush with the fuselage. It separated from the aircraft just before impact and was found on the roof of the building. Additional witnesses, all pilots, observed the final stages of the flight as the RV–10 flew the downwind leg, which they described to investigators as a lower-than-normal approach, the RV–10 "banking aggressively left as it made the transition from downwind to base. Three witnesses then saw the airplane roll aggressively again to the left for what they assumed was a turn to final, all stating that they could almost see the full wing profile, and were concerned it may stall. The airplane then rolled right as its nose dropped, and dove towards the warehouse where it collided in a fireball."

The witnesses also saw a white, panel-like piece fall from the airplane just before impact. Investigators found the door on the roof of the damaged building, and determined that a secondary safety latch shipped by the manufacturer to Reid in 2010 was never installed.

A Van's Aircraft Service Bulletin issued in January 2010 directs owners to install the safety latch assembly, which includes an aluminum hook that engages as the door's edge comes within range, prior to full closure. Installation was directed "before further flight."

The gull-wing doors on both sides of an RV–10 are secured by top hinges and locking pins at the bottom of the frame, forward and aft. The secondary latch, mounted on the bottom of the door frame, was added to the original design and made standard on all kits shipped on or after January 4, 2010. Reid, who received his first kit components in 2007 and completed the build in 2011, was shipped a safety latch kit on January 25, 2010, the NTSB report notes.

While many general aviation aircraft can fly relatively undisturbed by a door opening in flight, the RV–10 is a different story. Online discussions among RV–10 builders and owners have noted the danger of an open door departing the aircraft in flight and striking the horizontal stabilizer,

rendering the aircraft uncontrollable. Pilots who have experienced an RV–10 door opening in flight have described the event as violent and disruptive.

The NTSB report notes that Reid made some modifications to the door design, including replacement of aluminum locking pins with steel pins—and, more significantly, the absence of two of the four magnetic switches included in the kit that trigger LED indication lights that confirm that the door is locked.

"As such, the modified system would not have warned the pilot if the forward latch pins had failed to fully engage," the report states. Investigators found the left door handle short of the locked position. When they moved the handle forward, the pins extended nearly half an inch further, and the locking button engaged.

[Comments: Van's RV-10 (the company's only 4 seat aircraft) appears to be one of the few kit aircraft in which a door opening in flight can be catastrophic. Most others just provide a huge distraction and all the light unfixed debris (charts, dust, etc.) depart the aircraft. These aircraft are still controllable, and the main thrust is to avoid the distraction, continue flying the aircraft to a safe landing, forgoing any attempt to close the door or canopy. Apparently, Van's recognized the potential problem early on and provided a solution, which was not installed. There was, from the beginning, a circuit to detect the unlatched condition, which was also not installed. This provides an object lesson to kit builders. Be very careful with alterations to the design that they actually add to, rather than detract from, the functionality and/or safety of the original design. If possible, check with the aircraft designer, before making alterations. I don't think EAA Chapter 818 has any RV-10 builders. However, it might be a good idea to contemplate the results of any door, canopy, or window opening in whatever aircraft you fly. Have an idea of the characteristics and what you will do about it.

I looked into the failure characteristics of the canopy on the Zodiac 601-XLB that I built (and am rebuilding). It is hinged in front and tilts upwards to open. If unlatched it hovers about 11" open at the back. It is a distraction to try closing and not possible to relatch it while flying. The aircraft can be controlled and landed with the canopy unlatched. The original 601-XL design had a canopy latch that sometimes opened on one or both sides. Harry Watkins had one of these and made some improvements to prevent unlatching. My 601-XL came with the same original canopy latch, but I backfitted it with the improved design Zenith came out with for the Zodiac 650-XLB. It is much more foolproof and reliable.]

AAL FI 5342 and US Army Black Hawk Helicopter Collision

From Wikipedia

On January 29, 2025, PSA Airlines Flight 5342 (marketed as American Eagle Flight 5342), a Bombardier CRJ700 airliner, collided mid-air with a U.S. Army Sikorsky UH-60 Black Hawk helicopter over the Potomac River, about half a mile (0.8 km) short of runway 33 at Ronald Reagan Washington National Airport [KDCA] in Arlington, Virginia. All 67 people aboard the two aircraft were killed in the crash (64 on the airliner, 3 on the helicopter).

Flight 5342 was enroute from Wichita Dwight D. Eisenhower National Airport [KICT] in Wichita, Kansas, and was on final approach to Ronald Reagan Washington National Airport. The helicopter was performing an annual evaluation to test the pilot's knowledge and proficiency in the cockpit at night, out of Davison Army Airfield in Fairfax County, Virginia

Preliminary data shows the collision likely occurred at an altitude of 325 feet (99 m), plus or minus 25 feet (7.6 m). Reagan National requires helicopters on that route to stay at or below 200 feet (61 m). A single air traffic controller was managing both aircraft at the time of the crash, an arrangement deemed "not normal" for that time of day at the airport. Controllers warned the helicopter crew twice about the approaching American Airlines jet; the first alert was issued two minutes before the collision.

Passengers and crew

The airliner carried sixty passengers and four crew members; the helicopter had a crew of three military personnel.

The airliner's captain, Jonathan Campos, 34, had worked with the airline for six years. The first officer, Samuel Lilley, 28, had worked with the airline for two years.

The helicopter had a crew of three Army personnel:

Captain Rebecca Lobach, 28, from Durham, North Carolina, was the pilot flying and undergoing her annual night evaluation flight. She had accumulated more than 450 hours of flight time at the time of the crash.

An evaluator for the pilot, Chief Warrant Officer 2 Andrew Eaves, 39, of Great Mills, Maryland, who was the pilot monitoring.

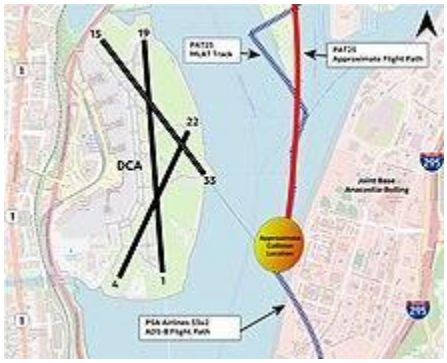
The crew chief, Staff Sergeant Ryan O'Hara, 29, from Lilburn, Georgia.

The airspace around Reagan National Airport is considered one of the world's most controlled airspaces. Its airspace is restricted on both sides of the Potomac River to protect government buildings in Washington D.C. Efforts were made to reduce the congestion of the airspace around the airport, but Congress approved more flights to and from Reagan in 2024.

"Like most of the country's air traffic control facilities, the tower at Reagan airport has been understaffed for years", The New York Times reported on January 30. On the night of the collision, staffing at the tower was "not normal for the time of day and volume of traffic," according to an internal preliminary Federal Aviation Administration (FAA) safety report about the collision that was reviewed by The New York Times. A single controller handled helicopters in and around the airport and instructed landing and departing planes. "Those jobs typically are assigned to two controllers, rather than one" between 10 a.m. and 9:30 p.m., The New York Times wrote. The duties are normally combined at 9:30 p.m., when traffic has slackened. But on the night of the crash, an air controller supervisor combined the duties sometime before 9:30 p.m., to allow one air traffic controller to leave early.

Accident

Flight paths of the helicopter and regional jet, with an approximate location of the collision:



Around 8:47 p.m. EST, less than 30 seconds before the collision, an air traffic controller asked the helicopter crew if they had the airliner in sight. The crew confirmed visual contact with an aircraft and requested "visual separation" from the airliner—meaning they would visually acquire and maintain separation from the aircraft on their own—which the controller approved.

Moments later, the controller instructed the helicopter to pass behind Flight 5342. The two aircraft collided at a height yet to be precisely established (at its last tracking point, the plane was below 300 feet (91 m)), causing the helicopter to explode and crash into the Potomac River. The airliner's airspeed was 128 miles per hour (206 km/h; 111 knots). The CRJ700's radio transponder ceased transmitting about 2,400 feet (730 m) short of Runway 33, where the plane was cleared to land.

The collision was captured by a webcam at the John F. Kennedy Center for the Performing Arts, and another video showed a brief trail of fire. Other videos showed the airliner in a left-hand spiral into the water after the collision, apparently missing most of or all of the left wing. Witnesses reported that the airliner "split in half" upon impact, while the helicopter crashed upside down near the airliner. A pilot in an uninvolved aircraft confirmed seeing the crash to an air traffic controller and reported seeing flares from the opposite side of the Potomac as his flight was on short final.

After the collision, Ronald Reagan Washington National Airport suspended all takeoffs and landings, diverting flights to nearby airports, including Dulles International Airport [KIAD], Baltimore/Washington International Airport [KBWI], and Richmond International Airport [KRIC]. The airport remained closed until 11:00 a.m. on January 30. The Washington Metropolitan Area Transit Authority extended Silver Line service to help passengers whose flights were diverted to Dulles International Airport and dispatched "warming buses" to help relief operations.

Casualties

Among the passengers were several U.S. Figure Skating athletes, personnel, and family members returning from a national development camp held in conjunction with the 2025 U.S. Figure

Skating Championships in Wichita, Kansas. As many as 15 passengers may have been affiliated with figure skating.

Coaches traveling as passengers were Russian nationals Evgenia Shishkova and Vadim Naumov, the pair skating gold medalists at the 1994 World Figure Skating Championships, along with Russian three-time figure skating champion and coach Inna Volyanskaya and another Russian coach, Alexandr Kirsanov. A Chilean skater and his father were also on the plane. It was the second time members of the U.S. Figure Skating team died in an aviation accident, after the 1961 crash of Sabena Flight 548 in Belgium. A former competitor indicated that it was rare to have many American skaters flying together following the 1961 crash.

Among other passengers on Flight 5342 were four members of the D.C.-based UA Steamfitters Local 602 Union; three students and six parents from schools of Fairfax County Public Schools in Virginia; a civil rights attorney; a colonel of the Philippine National Police, the president-elect of the National Association of Biology Teachers, two Chinese nationals, a Pakistani national, two Polish-American nationals, an unspecified number of German nationals, and a Danish citizen.

Aftermath

On January 31, 2025, the FAA restricted helicopter flights near the airport. The FAA partially closed both the route that the Black Hawk was on when it collided with the CRJ700 and another route that runs south of the Key Bridge in Washington and connects the neighborhood of Georgetown to Rosslyn, Virginia. These routes, designated Route 4 and Route 1 respectively, remain open only to police, medical, air defense, and presidential transport flights.

Separately, two staff members of the Metropolitan Washington Airports Authority were taken into custody on suspicion of providing CNN with surveillance footage of the crash.

Investigations

The National Transportation Safety Board (NTSB), the FAA, the U.S. Department of Defense, and the U.S. Army announced they would launch investigations into the collision. The NTSB prepared an investigation team to send to the site of the accident. After the crash, to retain needed personnel, the agency acquired an exemption from the "Fork in the Road" memo which purported to allow all of its agents to quit with severance paid through September 2025. The Federal Bureau of Investigation (FBI) also stated it would help with the response, though there were no indications of terrorism or criminal activity. The Transportation Safety Board of Canada (TSB) deployed two investigators to help the investigation, since the Bombardier CRJ700 was designed and manufactured in Canada.

On the evening of January 30, the flight recorder ("black box") of Flight 5342 was recovered from the wreckage and brought to the NTSB lab for evaluation. The helicopter was fitted with a combined voice and flight data recorder, which was recovered on January 31. The flight recorder of the UH-60 Black Hawk helicopter was recovered by the NTSB from the Potomac River on February 2, 2025.

According to the NTSB, preliminary data shows that the collision likely occurred at an altitude of 325 feet (99 m), plus or minus 25 feet (7.6 m. Reagan National requires helicopters on that route to stay at or below 200 feet (61 m). Preliminary data suggested that, at the moment of impact, the control tower's radar scope may have incorrectly displayed the helicopter at an altitude of 200 feet (61 m). A single air traffic controller was managing both aircraft at the time of the crash, an arrangement deemed "not normal" for that time of day at the airport. Controllers twice warned the helicopter crew about the approaching PSA jet, with the first alert issued two minutes before the collision, according to radio transmissions. Data from the flight recorder showed the PSA jet made a change in its pitch about one second before impact, possibly suggesting an attempted evasive maneuver by the PSA pilots.

[Comments: I have seriously edited and shortened this article, eliminated reference notation, and only added airport designators. Several entities fell short in the performance of their obligations, and it led to this disaster. Is 100 Feet enough vertical clearance between two intersecting routes?]

[Quite a few spelling and punctuation corrections have been made.]

Words in brackets [ ] have been added for clarity or additional information.

Respectfully submitted by: Stu. Ashley