



AVIATION



HIGHWAY



MARINE



RAILROAD



PIPELINE

Aviation Investigation Preliminary Report

Location:	Auburn, WA	Accident Number:	WPR24FA182
Date & Time:	June 6, 2024, 11:59 Local	Registration:	N412JN
Aircraft:	VANS AIRCRAFT INC RV-12	Injuries:	1 Fatal
Flight Conducted Under:	Part 91: General aviation - Personal		

On June 6, 2024, about 1159 Pacific daylight time, an experimental amateur built Vans Aircraft Inc. RV-12, N412JN, was substantially damaged when it was involved in an accident near Auburn, Washington. The pilot was fatally injured. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

The airplane departed Auburn Municipal Airport (S50), Auburn, Washington, for what family members of the pilot reported as a routine pleasure flight. Preliminary Automatic Dependent Surveillance-Broadcast (ADS-B) data indicated that shortly after takeoff the airplane followed a southeast track, and after reaching the eastern foothills of Mt. Rainier, performed a 180° right turn, and followed a similar track back to Auburn. As the airplane approached the airport from the east, the pilot reported over the common traffic advisory frequency (CTAF) that he was just over midfield and intended to perform a full stop landing on runway 35. Correlation between recorded CTAF audio and ADS-B data indicated that over the next 60 seconds, the airplane overflew the runway, while descending from 1,500 to 1,250 ft. It then began a left turn, and as it rolled out onto the left downwind leg, the pilot transmitted, "Pan Pan RV412JN, I just had a control failure, I'm inbound for 35, without any controls".

Over the next 45 seconds, the airplane began a descending left turn, that witnesses described as similar to a spin or spiral dive. A west-facing security camera, located on the exterior wall of a warehouse about $\frac{3}{4}$ miles southwest of the runway 35 threshold, captured the final 3 seconds of flight. It showed the airplane come into view at the top of the frame while in a 45° descending left turn. The airplane's roll rate rapidly increased, and the airplane struck the warehouse roof inverted in a 45° nose-down attitude.

The airplane came to rest inside the reception area of the warehouse. The forward cabin sustained crush damage through to the main wing spar. The complete right, and the inboard left section of the wings remained attached to the fuselage by the main spar, and the outboard fragments of the left wing were located on the building's roof.

The airplane's roll control system consisted of full-length flaperons, connected to tandem control sticks through a series of pushrods, torque tubes, and a centrally mounted flaperon mixer bellcrank. Examination of the wreckage revealed that the left control stick pushrod (F-1264-1) was not connected to the inboard eyebolt bearing (CM-4MS) at the flaperon mixer bellcrank (see figure 1).

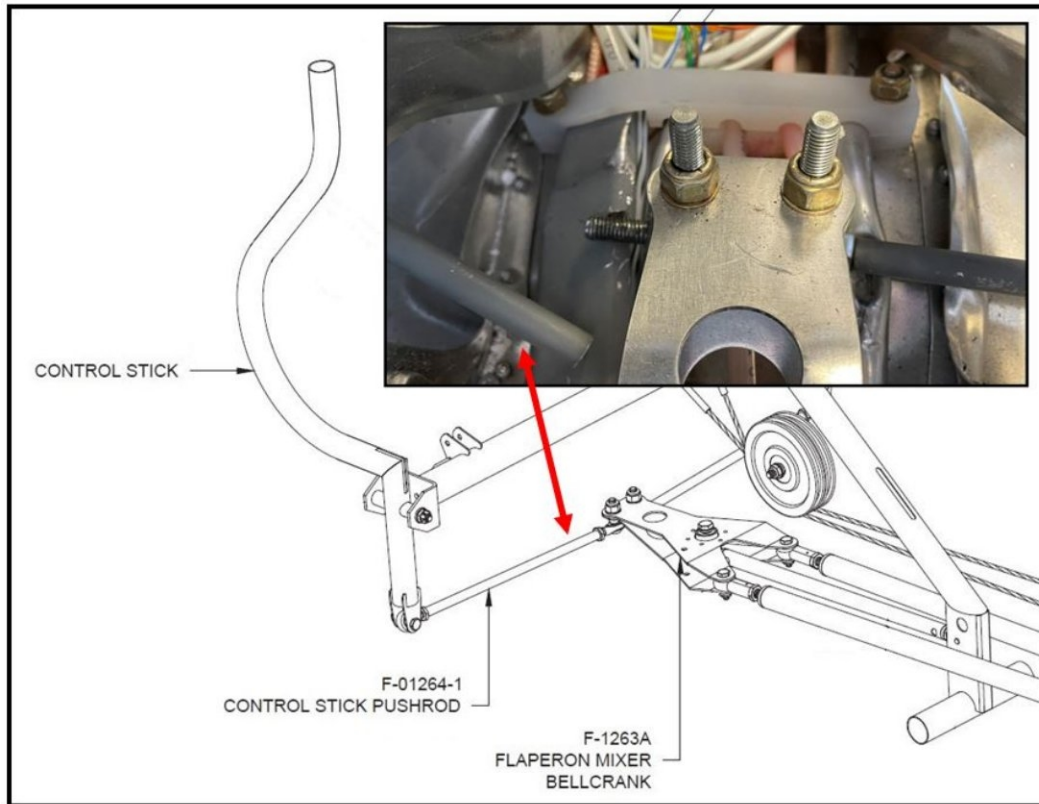


Figure 1 – Disconnected left control stick pushrod.

When compared with the airplane's plans, the inboard eyebolts were installed such that the eyebolt stud was connected to the pushrod, and its body to the mixing bellcrank, rather than the other way around (see figure 2). In this configuration, the stud end of the eyebolt was free to rotate within the threaded inboard section of pushrod.

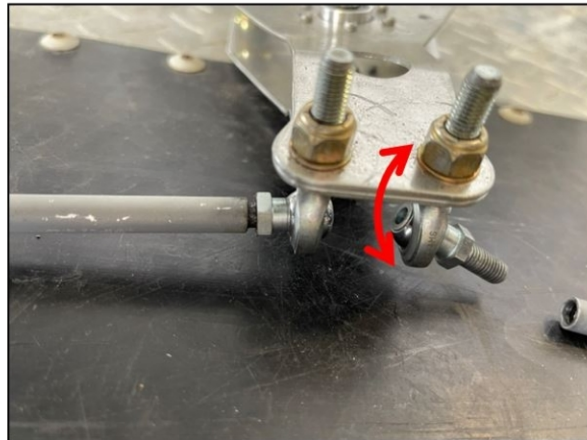
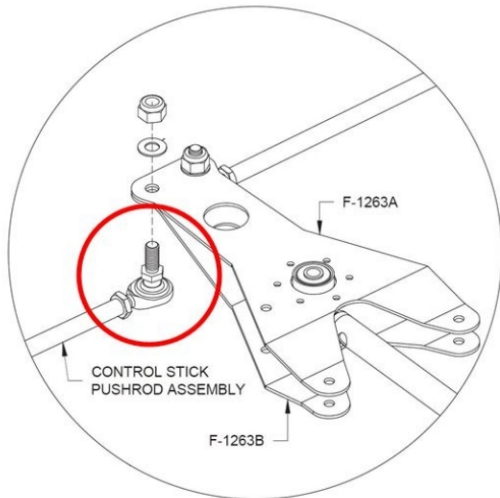


Figure 2 – Installation of the CM-4MS eyebolt per plans on the left vs the installed eyebolt on the accident airplane as found on the right.

Construction of the airplane was completed in May 2021, and by the time of the accident it had accrued about 100 hours of flight time. The pilot was flying the airplane from the left seat.

The wreckage has been recovered for further examination.

Aircraft and Owner/Operator Information

Aircraft Make:	VANS AIRCRAFT INC	Registration:	N412JN
Model/Series:	RV-12	Aircraft Category:	Airplane
Amateur Built:	Yes		
Operator:	On file	Operating Certificate(s) Held:	None
Operator Designator Code:			

Meteorological Information and Flight Plan

Conditions at Accident Site:	VMC	Condition of Light:	Day
Observation Facility, Elevation:	KSEA, 434 ft msl	Observation Time:	11:53 Local
Distance from Accident Site:	9 Nautical Miles	Temperature/Dew Point:	18°C / 8°C
Lowest Cloud Condition:	Clear	Wind Speed/Gusts, Direction:	7 knots / , 20°
Lowest Ceiling:	Broken / 25000 ft AGL	Visibility:	10 miles
Altimeter Setting:	30.12 inches Hg	Type of Flight Plan Filed:	None
Departure Point:	Auburn, WA	Destination:	Auburn, WA

Wreckage and Impact Information

Crew Injuries:	1 Fatal	Aircraft Damage:	Substantial
Passenger Injuries:	N/A	Aircraft Fire:	None
Ground Injuries:	N/A	Aircraft Explosion:	None
Total Injuries:	1 Fatal	Latitude, Longitude:	47.311494,-122.23403

Administrative Information

Investigator In Charge (IIC):	Simpson, Elliott
Additional Participating Persons:	Christopher Tuman; FAA FSDO; Seattle, WA Rian Johnson; Vans Aircraft; Aurora, OR
Investigation Class:	Class 3
Note:	