Aviation Investigation Final Report

Location:	Boulder City, Nevada	**Accident Number:**	WPR22LA317
Date & Time:	August 26, 2022, 12:53 Local	**Registration:**	N916CA
Aircraft:	FLIGHT DESIGN GENERAL AVN GMBH CTSW SuperSport	**Aircraft Damage:**	Substantial
Defining Event:	Unknown or undetermined	**Injuries:**	1 Serious, 1 Minor
Flight Conducted Under:	Part 91: General aviation - Personal		

Analysis

The pilot reported that he and his passenger were on the second flight of the day when the accident occurred. He refueled the airplane with 8 gallons and departed on the accident flight with a total of 19 gallons of fuel on board. During the accident flight the pilot maintained equal levels of fuel in both wing tanks for about 1 hour 20 minutes into the 2-hour flight, when he placed the fuel selector to “BOTH.” Calculations based on time and fuel flow indicated that about 7.5 gallons of fuel was consumed during the flight.

The pilot reported that he saw his fuel pressure gauge move from indicating green to 0 psi. The pilot turned on the fuel pump and soon after the engine started to “sputter” and then the propeller stopped. He attempted to restart the engine three times without success. Although the airplane was equipped with an emergency parachute, the pilot elected to execute a forced landing to an unpaved service road; subsequently, the landing gear collapsed and the airplane veered into a fence. The airplane’s wing and fuselage, including the windshield right pillar, sustained substantial damage. The right fuel tank delivery lines at the inboard side of the right wing separated from impact damage, and an undetermined amount of fuel continued to pour into the cabin area as the pilot and passenger were egressing the airplane.

Postaccident examination of the engine and airframe revealed no evidence of any preimpact mechanical malfunctions or failures that would have precluded normal operation. The reason for the total loss of engine power could not be determined.

Probable Cause and Findings

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

A total loss of engine power for undetermined reasons.

Findings

Aircraft	(general) - Unknown/Not determined

Factual Information

History of Flight

Maneuvering	Unknown or undetermined (Defining event)

On August 26, 2022, about 1253 Pacific daylight time, a Flight Design CTSW SuperSport airplane, N916CA, was substantially damaged when it was involved in an accident near Boulder City, Nevada. The pilot sustained minor injuries and the passenger sustained serious injuries. The airplane was operated as a Title 14 *Code of Federal Regulations* Part 91 personal flight.

The pilot reported that he and his passenger were on the second flight of the day when the accident occurred. While maneuvering near a mountain range approaching his destination airport, Henderson Executive Airport (HND), Hendersen, Nevada,, he saw his fuel pressure gauge move from indicating green to 0 psi. The pilot turned on the fuel pump and soon after the engine started to "sputter." The pilot decided to turn back to the Boulder City Municipal Airport (BVU), Boulder City, Nevada, which was the closer airport. The propeller then stopped. He attempted to restart the engine three times without success. The pilot configured the airplane for best glide and soon after realized that he was not going to make the runway at BVU. Although the airplane was equipped with an emergency parachute, he elected to execute a forced landing to an unpaved service road; subsequently, the landing gear collapsed and the airplane veered into a fence. The airplane's wing and fuselage, including the windshield right pillar, sustained substantial damage.

During the first flight of the day, the pilot reported that the fuel selector was in the "BOTH" position for the entire 3 hour and 7-minute flight. The flight was uneventful and the airplane had consumed six gallons of fuel from the left tank and two gallons of fuel from the right tank. The airplane was refueled with 8 gallons and departed with a total of 19 gallons of fuel onboard. During the accident flight the pilot maintained equal levels of fuel in both wing tanks for about 1 hour 20 minutes into the 2-hour flight, when he placed the fuel selector to "BOTH." Fuel flow calculations indicated that about 7.5 gallons of fuel was consumed during the flight.

The pilot further reported that the fuel tank delivery lines at the inboard side of the right wing separated, and an undetermined amount of fuel continued to pour into the cabin area as they were egressing the airplane. Both he and the passenger were soaked from fuel.

An examination of the accident site conducted by the Federal Aviation Administration indicated that the left tank was about half full of fuel and the amount of fuel in the right tank could not be determined due to the position of the airplane after the accident sequence. The main fuel shutoff valve was found in the closed position for both tanks.

The airplane's fuel cell installation was comprised of two 17.2-gallon capacity wing tanks (1/2 gallon unusable for each tank). Manufacturer data indicated that the airplane's engine consumed about 4.5 gallons of fuel per hour.

Postaccident examination of the engine and fuel system, including the fuel pumps, as well as the airframe revealed no evidence of any preimpact mechanical malfunctions or failures that would have precluded normal operation.

A Dynon SkyView panel-mounted display was downloaded and contained accident flight data. The data showed that about an hour and 50 minutes into the accident flight the fuel flow dropped from 4.7 to 3.7 gph and a few seconds later fuel pressure dropped from about 40 to 34 psi About 30 seconds later, both fuel flow and fuel pressure dropped to near zero.

Pilot Information

Certificate:	Commercial	**Age:**	69,Male
Airplane Rating(s):	Single-engine land	**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:**	
Medical Certification:	Class 3 With waivers/limitations	**Last FAA Medical Exam:**	July 19, 2021
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:	525 hours (Total, all aircraft), 72 hours (Total, this make and model), 393 hours (Pilot In Command, all aircraft)		

Passenger Information

Certificate:		**Age:**	Female
Airplane Rating(s):		**Seat Occupied:**	Right
Other Aircraft Rating(s):		**Restraint Used:**	3-point
Instrument Rating(s):		**Second Pilot Present:**	No
Instructor Rating(s):		**Toxicology Performed:**	
Medical Certification:		**Last FAA Medical Exam:**	
Occupational Pilot:	No	**Last Flight Review or Equivalent:**	
Flight Time:			

Aircraft and Owner/Operator Information

Aircraft Make:	FLIGHT DESIGN GENERAL AVN GMBH	**Registration:**	N916CA
Model/Series:	CTSW SuperSport	**Aircraft Category:**	Airplane
Year of Manufacture:	2021	**Amateur Built:**	
Airworthiness Certificate:	Normal; Special light-sport (Special)	**Serial Number:**	D-21-09-02
Landing Gear Type:	Tricycle	**Seats:**	2
Date/Type of Last Inspection:	May 28, 2022 Annual	**Certified Max Gross Wt.:**	1320 lbs
Time Since Last Inspection:	71.3 Hrs	**Engines:**	1 Reciprocating
Airframe Total Time:	95 Hrs at time of accident	**Engine Manufacturer:**	ROTAX
ELT:	C126 installed, activated, did not aid in locating accident	**Engine Model/Series:**	912IS2
Registered Owner:	FLIGHTSTAR INC	**Rated Power:**	100 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:	KBVU,2202 ft msl	**Distance from Accident Site:**	4 Nautical Miles
Observation Time:	14:55 Local	**Direction from Accident Site:**	62°
Lowest Cloud Condition:		**Visibility**	
Lowest Ceiling:		**Visibility (RVR):**	
Wind Speed/Gusts:	8 knots /	**Turbulence Type Forecast/Actual:**	Unknown / Terrain-Induced
Wind Direction:	310°	**Turbulence Severity Forecast/Actual:**	Unknown / Light
Altimeter Setting:	29.87 inches Hg	**Temperature/Dew Point:**	38°C / 11°C
Precipitation and Obscuration:	No Obscuration; No Precipitation		
Departure Point:	Milford, UT (MLF)	**Type of Flight Plan Filed:**	None
Destination:	Henderson, NV (HND)	**Type of Clearance:**	VFR flight following
Departure Time:	12:05 Local	**Type of Airspace:**	Class E

Airport Information

Airport:	Boulder City Municipal Airport BVU	**Runway Surface Type:**	
Airport Elevation:	2203 ft msl	**Runway Surface Condition:**	Dry
Runway Used:		**IFR Approach:**	None
Runway Length/Width:		**VFR Approach/Landing:**	Precautionary landing

Wreckage and Impact Information

Crew Injuries:	1 Minor	**Aircraft Damage:**	Substantial
Passenger Injuries:	1 Serious	**Aircraft Fire:**	None
Ground Injuries:		**Aircraft Explosion:**	None
Total Injuries:	1 Serious, 1 Minor	**Latitude, Longitude:**	35.942499,-114.88212(est)

Administrative Information

Investigator In Charge (IIC):	Swick, Andrew
Additional Participating Persons:	Jordan Paskevich; Rotax-Rotech Flight Safety John C Waugh; FAA-FSDO; Las Vegas, NV
Original Publish Date:	May 2, 2024
Last Revision Date:	
Investigation Class:	Class 3
Note:	The NTSB did not travel to the scene of this accident.
Investigation Docket:	https://data.ntsb.gov/Docket?ProjectID=105805